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nation of the *property in controversy, at Buenos Ayres, during the pendency of this suit. Assuming, for the purpose of argument, that the condemnation was regularly made, and is duly authenticated, we are of opinion, that it cannot oust the jurisdiction of this court, after it had once regularly attached itself to the cause. By the seizure and possession of the property, under the process of the district court, the possession of the captors was divested, and the property was emphatically placed in the custody of the law. It has been since sold, by consent of the parties, under an interlocutory decree of the court, and the proceeds are deposited in its registry, to abide the final adjudication. Admitting, then, that property may be condemned in the courts of the captor, while lying in a neutral country (a doctrine which has been affirmed by this court), still, it can be so adjudicated only while the possession of the captor remains; for if it be divested, in fact, or by operation of law, that possession is gone, which can alone sustain the jurisdiction. *A fortiori*, where the property is already in the custody of a neutral tribunal, and the title is in litigation there, no other foreign court can, by its adjudication, rightfully take away its jurisdiction, or forestall and defeat its judgment. It would be an attempt to exercise a sovereign authority over the court having possession of the thing, and take from the nation the right of vindicating its own justice and neutrality.

Upon the whole, it is the opinion of the court, that the decree of the circuit court be affirmed, with costs.

Decree affirmed.

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Patents.—Witnesses.

A party cannot entitle himself to a patent for more than his own invention; and if the patent be for the whole of a machine, he can maintain a title to it, only by establishing that it is substantially new in its structure and mode of operation.

If the same combination existed before, in machines of the same nature, up to a certain point, and the party's invention consists in adding some new machinery, or some improved mode of operation, to the old, the patent should be limited to such improvement, for if it includes the whole machine, it includes more than his invention, and therefore, cannot be supported.

When the patent is for an improvement, the nature and extent of the improvement must be stated in the specification, and it is not sufficient, that it be made out and shown at the trial, or established by comparing the machines specified in the patent with former machines in use.

The former judgment of this court in the same case (3 Wheat. 454), commented on, explained and confirmed.

A person having an interest only in the question, and not in the event of the suit, is a competent witness.

In general, the liability of a witness to a like action, or his standing in the same predicament with the party sued, if the verdict cannot be given in evidence for or against him, is an interest in the question and does not exclude him.

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ERROR to the Circuit Court of Pennsylvania. This is the same case which was formerly before this court, and is reported 3 Wheat. 454; and by a reference to that report, the form of the patent, the nature of the action, and the subsequent proceedings, will fully appear. The cause was now again brought before the court, upon a writ of error to the judgment of the circuit court, rendered upon the new trial, had in pursuance of the mandate of this court.

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Upon the new trial, several exceptions were taken *by the counsel for the plaintiff, Evans. The first was to the admission of one Frederick as a witness for the defendant, upon the ground of his interest in the suit. The witness, on his examination on the *voir dire*, denied that he had any interest in the cause, or that he was bound to contribute to the expenses of it. He said, that he had not a hopperboy in his mill at present, it being then in court; that it was in his mill, about three weeks ago, when he gave it to a person to bring down to Philadelphia; and that his hopperboy spreads and turns the meal, cools it some, dries it, and gathers it to the bolting-chest. Upon this evidence, the plaintiff's counsel contended that Frederick was not a competent witness; but the objection was overruled by the court.

Another exception was to the refusal of the court, to allow the deposition of one Shetter to be read in evidence by the plaintiff, which had been taken according to a prevalent practice of the state courts, instead of being taken pursuant to the provisions of the act of congress. But the principal exceptions were to the charge by the circuit court, in summing up the cause to the jury, which it is deemed necessary here to insert at large.

WASHINGTON, Justice.—This is an action for an infringement of the plaintiff's patent, which the plaintiff alleges to be, 1. For the whole of the machine employed in the manufacture of flour, called the hopperboy. 2. For an improvement on the hopperboy.

The question is, is the plaintiff entitled to recover upon either of these *358] claims? The question is stated *thus singly, because the defendant admits that he uses the very hopperboy for which the patent is, in part, granted, and justifies himself by insisting, 1st. That the plaintiff was not the original inventor of, but that the same was in use prior to the plaintiff's patent, the hopperboy as patented. 2d. That his patent for an improvement is bad; because the nature and extent of the improvement is not stated in his specification; and if it had been, still, the patent comprehends the whole machine, and is, therefore, too broad.

1st. The first is a mixed question of fact and law. In order to enable you to decide the first, it will be well to attend to the description, which the plaintiff has given of this machine, in his specification, a model of which is now before you. Its parts are: 1. An upright round shaft, to revolve on a pivot in the floor: 2. A leader or upper arm: 3. An arm set with small inclining boards, called flights and sweepers: 4. Cords from the leader to the arm to turn it: 5. A weight passing over a pully, to keep the arm tight on the meal: 6. A log at the top of the shaft to turn it, which is operated upon by the water-power of the mill. The flights are so arranged as to track the one below the other, and to operate like ploughs, and at every revolution of the machine, to give the meal two turns towards the centre. The sweepers are to receive the meal from the elevator, and to trail it round the circle, for the flights to gather it to the centre, and also to sweep the *359] meal into the bolt. *The use of this machine is stated to be, to spread any granulated substance over a floor; to stir and expose it to the air; to dry and cool it, and to gather it to the bolt.

The next inquiry under this head is, when was this discovery made? Joseph Evans has sworn, that in 1783, the plaintiff informed him, that he was engaged in contriving an improvement in the manufactory of flour, and

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had completed it in his mind, sometime in July of that year. In 1784, he construed a rough model of the hopperboy, but having no cords from the extremities of the leader to those of the arm, it was necessary, in making his experiment, to turn around the arm by hand. In 1785, he set up a hopperboy in his mill, resembling the model in court, and the machine described in his specification. The evidence of Mr. Anderson strongly supports this witness, and, indeed, the discovery, as early as 1784 or 1785, is scarcely controverted by the defendant.

The defendant insists, that a hopperboy, similar to the plaintiff's, was discovered, and in use, many years anterior even to the year 1783, and relies upon the testimony of the following witnesses: Daniel Stouffer, who deposes, that he first saw the Stouffer hopperboy in his father's, Christian Stouffer's mill, in the year 1764. In the year 1775 or 1776, he erected a similar one, in the mill of his brother Henry, and another in Jacob Stouffer's mill, in 1777, 1778 or 1779. *Philip Frederick swears, that in 1778, he saw a Stouffer hopperboy in operation in Christian Stouffer's mill, [*360 and in the year 1783, he saw one in Jacob Stouffer's mill, and another in U. Charles's mill, and that it was always called Stouffer's machine. George Roup stated, that in 1784, he erected one of these hopperboys in the mill of one Braniwar; and that in 1782, Abraham Stouffer described to him a similar machine, which his father used in his mill. Christopher Stouffer, the son of Christian, has sworn, that his father, having enlarged his mill, in the year 1780, erected a new hopperboy of the description above mentioned, which is still in use in the same mill, now owned by Peter Stouffer. If these witnesses are believed by the jury, they establish the fact asserted by the defendant, that the Stouffer hopperboy was in use prior to the plaintiff's discovery.

The next inquiry is, into the parts, operation and use of the Stouffer hopperboy. This consists of an upright square shaft, which passes lightly through a square mortice in an arm, underneath which are fixed slips of wood, called flights, and the arm is turned by a log on the upper end of it, which is moved by the power which moves the mills. The arm, with the flights, operates as it turns upon the meal placed below it, and its use is, in a degree, to cool the meal and to conduct it to the bolt.

It will now be proper to compare this machine with the plaintiff's. They agree in the following particulars. They each consist of a shaft, or log, to turn it by the power of the mill, and an arm *with flights on the under side of it. They each operate on the meal below the arm, to cool, dry [*361 and conduct it to the bolt. In what do they differ? The plaintiff's shaft is round, and consequently, could not turn the arm, into which it is loosely inserted, if it were not for the cords which connect the extremities of the arm to those of the leader. The shaft of the Stouffer hopperboy is square, and therefore turns the arm, without the aid of a leader or of cords. It has neither a weight nor pulley, nor are the flights arranged in the manner the plaintiff's are, and consequently, it does not, in the opinion of most of the witnesses, cool or prepare the flour for packing as well as the plaintiff's.

The question of law now arises, which is, are the two machines, up to the point where the difference commences, the same in principle, so as to invalidate the plaintiff's claim to the hopperboy, as the original inventor of it? I take the rule to be, and so it has been settled in this, and in other courts,

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that if the two machines be substantially the same, and operate in the same manner, to produce the same result, though they may differ in form, proportions and utility, they are the same in principle; and the one last discovered has no other merit than that of being an improved imitation of the one before discovered and in use, for which no valid patent can be granted, because he cannot be considered as the original inventor of the machine. If the alleged inventor of a machine, which differs from another previously *362] patented, merely in form and proportion, *but not in principle, is not entitled to a patent for an improvement, which he cannot be, by the 2d section of the law, he certainly cannot, in a like case, claim a patent for the machine itself.

The question for the jury then is, are the two hopperboys substantially the same in principle? not whether the plaintiff's hopperboy is preferable to the other. Because, if that superiority amounts to an improvement, he is entitled to a patent only for an improvement, and not for the whole machine. In the latter case, the patent would be too broad, and therefore, void, when the patent is single. If you are of opinion, that the plaintiff is not the original inventor of the hopperboy, he cannot obtain a verdict on that claim, unless his is an excepted case. The 1st, 2d, 3d and 6th sections of the general patent law conclusively support this opinion.

But the judgment of the supreme court in this case (3 Wheat. 519), is relied upon by the plaintiff's counsel to prove that this is an excepted case; insomuch that the plaintiff is entitled to a verdict, although you should be satisfied that he is not the original inventor of the hopperboy. But we are perfectly satisfied, that the interpretation put upon the last clause of the judgment by the plaintiff's counsel is incorrect; and that for the following reasons. 1. The question of priority of invention was not before the supreme court; and it is, therefore, incredible, that any opinion, much less a judgment, would have been given upon that point. The error in the charge, *363] which *this part of the judgment was obviously intended to correct, is stated by the chief justice in the following words: "The second error alleged in the charge, is, in directing the jury to find for the defendant, if they should be of opinion, that the hopperboy was in use prior to the improvement alleged to be made thereon by Oliver Evans. This part of the charge seems to be founded on the opinion, that if the patent is to be considered as a grant of the exclusive use of distinct improvements, it is a grant for the hopperboy itself, and not for an improvement on the hopperboy" (p. 512). It contradicts what is stated in p. 517, where it is said, that the plaintiff's claim is to the machine "which he has invented," &c. Now, if he did not invent the hopperboy, he has no claim to it; and if so, could the court mean to say, that he was nevertheless entitled to recover under that claim? Such a decision was certainly not called for by the terms of the "act for the relief of Oliver Evans," but would seem to be in direct violation of it. The act directs a patent to issue to Oliver Evans, not for his hopperboy, elevator, &c., but "for his invention, discovery and improvement in the art, &c., and on the several machines which he has discovered, invented and improved." Now, if the hopperboy was not invented, &c., by Oliver Evans, this act, without which Oliver Evans could not have obtained *364] a patent, did not authorize the secretary of state to grant him one for that machine; or if granted, it is clear, that it was *improvi-

dently done. If, indeed, the supreme court had been of opinion, that the fact of Oliver Evans's prior invention was decided, and could constitutionally have been decided by congress, there might have been more difficulty in the case ; but the argument of counsel, which pressed that point upon the court, was distinctly repudiated. We conceive, that the meaning of that part of the opinion is, that this court erred in stating to the jury that O. Evans was not entitled to recover, if the hopperboy (that is the original hopperboy) had been in use prior to the plaintiff's alleged discovery of it ; because, if the plaintiff was entitled to claim an improvement on the hopperboy, which this court had denied, and which the supreme court affirmed, this court was clearly wrong, in saying to the jury, that the plaintiff could not recover for his improvement, which, in effect, was said. Upon the whole, then, the court is of opinion, that O. Evans is not entitled to a verdict in his favor, as the inventor of the hopperboy, if you should be of opinion, that another hopperboy, substantially the same as his in principle, as before explained, up to the point, where any alteration or improvement exists in his hopperboy, was invented, and in use, prior to the plaintiff's invention or discovery, however they may differ in mere form, proportions and utility.

2d. The plaintiff's next claim is to an improvement on a hopperboy, which claim, we were of opinion, in another case, has received the sanction of the supreme court. His counsel contend, that his improvement is, (1) on the original method of supplying the *bolt, by manual labor ; (2) on his own hopperboy ; and (3) on some hopperboy, invented by some other person. Let this position be analyzed.

1. It is said to be an improvement on the original method by manual labor. But it is obvious, that if this be the invention, it is of an original machine, because wherever the patent law speaks of an improvement, it is on some art, machine or manufacture, &c., and not on manual labor, which was applied to the various arts long before the invention of machinery to supply its place.

2. An improvement on his own discovery. But where is the evidence of such invention ? It is true, that Joseph Evans has stated that the plaintiff constructed, in 1784, a rude model of a hopperboy ; but it was no substitute for manual labor, because without the cords or leading lines, the arm could not move, and it was, therefore, turned by hand. It was, in fact, in an incomplete state ; in progress to its completion, but not given out, or prepared to be given out, to the world, as a machine, before 1785, when the cords to turn the arm were added.

3. An improvement on a former machine. This is a fair subject for a patent ; and the plaintiff has laid before you strong evidence, to prove that his hopperboy is a more useful machine than the one which is alleged to have been previously discovered and in use. If, then, you are satisfied of this fact, the point of law which has been raised by the defendant's counsel, remains to be considered, which is that the plaintiff's patent for an improvement is void, because *the nature and extent of his improvements are not stated in his specification.

The patent is for an improved hopperboy, as described in his specification which is referred to, and made part of the patent. Now, does the specification express in what his improvement consists ? It states all and each of the parts of the entire machine, its use and mode of operating, and claims

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as his invention, the machine, the peculiar properties or principles of it, viz., the spreading, turning and gathering the meal, and the rising and lowering of its arm, by its motion, to accommodate itself to the meal under it. But does this description designate the improvement, or in what it consists? Where shall we find the original hopperboy described, either as to its construction, operation or use; or by reference to anything, by which a knowledge of it may be obtained? Where are the improvements on such original stated? The undoubted truth is, that the specification communicates no information whatever upon any of these parts. This being so, the law, as to ordinary cases, is clear, that the plaintiff cannot recover for an improvement. The 1st section of the general patent law speaks of an improvement as an invention, and directs the patent to issue for this said invention. The 3d section requires the applicant to swear or affirm, that he believes himself to be the true inventor of the art, machine or improvement, for which he asks a patent; and further, that he shall deliver a written description of his invention, in such full, clear and exact terms, that any person acquainted with the art, may know how to construct and use *the same, &c. That it is necessary to the validity of a patent, that

*367] the specification should describe in what the improvement consists, is decided by Mr. Justice STORY in the cases referred to in the appendix to 3 Wheaton's reports, and in the cases of *Boulton v. Bull*, *Boville v. Poor*, *McFarlane v. Price*, *Harmer v. Playne*, and perhaps, some others. What are the reasons upon which this doctrine is founded? They are to guard the public against an unintentional infringement of the patent, during its continuance, and to enable an artist to make the improvement, by a reference to some known and certain authority, to be found among the records of the office of the secretary of state, after the patent has run out. But it is contended by the plaintiff's counsel, that the law would be unreasonable, to require, and that it does not require, this to be done, unless the improvement is upon a patented machine, a description of which can be obtained by a reference to the records of the secretary of state's office; that it might often be impossible for the patentee to discover, and consequently, to describe, the parts of a machine in use, perhaps, only in some obscure part of the world. The answer to this is, that an improvement necessarily implies an original, and unless the patentee is acquainted with the original which he supposes he has improved, he must talk idly, when he calls his invention an improvement.

If he knows nothing of an original, then his invention is an original, or nothing: and the subsequent appearance of an original to defeat his patent, is one of the risks which every patentee is exposed to, under

*368] our law. As to the supposed distinction between an improvement on a machine patented, and one not so, there is nothing in it. In both cases, the improvement must be described, but with this difference: that in the former case, it may be sufficient to refer to the patent and specification, for a description of the original machine, and then to state, in what the improvements, or such original consists: whereas, in the latter case, it would be necessary to describe the original machine, and also the improvement. The reason for this distinction is too obvious to need explanation.

If the general law upon this subject has been correctly stated, the next question is, is this an excepted case? It is contended by the plaintiff, that

it is so. 1st. In virtue of the act for the relief of Oliver Evans; and 2d, by the decision of the supreme court.

1. Under the private act: That declares, that the patent is to be granted in the manner and form prescribed by the general patent law. What constitutes the manner and form in which a patent is granted by the law? The obvious answer is, the petition; the patent, with the signature of the president and the seal of the United States affixed to it; the oath or affirmation; the specification, or description of the invention, as required by the 3d section; the drawings and models, if required. Will it be contended, that a patent would be granted, in the manner and form prescribed by this law, if there were no description whatever of the invention? and if it would not, which is taken for granted, where is the difference between the total absence of a specification, and one which has no reference *at all to the invention for which the patent is granted? This is not the case of an [369 imperfect or obscure description; but of one which relates exclusively to the whole machine; whereas, the invention for which the patent is granted, is for an improvement.

2. The opinion of the supreme court, which states, "that it will be incumbent on the plaintiff, where he claims for an improvement, to show the extent of his improvement, so that a person understanding the subject may comprehend distinctly in what it consists." 3 Wheat. 518. But how is it to be shown? The court has not pointed out the manner, and we, therefore, think, the only fair implication is, that it must be shown as the statute of the United States and the general principles of law require, *i. e.*, by the patent and specification. If it may be shown by parol evidence to the jury, as the plaintiff's counsel contend it may, then it may be fairly asked, *cui bono*? what sort of a showing would that be, so far as it would be productive of any useful purpose? As to the defendant, the evidence comes too late, to save him from the consequences of an error innocently committed. As to the public at large, with a view to caution, during the continuance of the patent, and to information of the nature of the improvement, after its termination, the evidence given in this cause must be evanescent and totally useless.

We feel perfectly convinced, that the meaning of the supreme court, as to this point, is again misunderstood by the plaintiff's counsel, not only for the reasons above mentioned, but because the extent and *construction [370 of the plaintiff's patent, and not the validity of it, in relation to any one of the machines, were the questions before that court; and none others (in reference to the charge) were argued at the bar, or reasoned upon by the chief justice, in delivering the opinion. Upon the whole, we are of opinion, that the plaintiff is not entitled to a verdict for the alleged infringement of his patent, for an improvement of the hopperboy.

Whereupon, a verdict and judgment thereon were rendered for the defendant in the circuit court, and the cause was again brought by writ of error to this court.

March 4th. *C. J. Ingersoll*, (a) for the plaintiff, premised a review of

(a) Some part of his argument is applicable to the points of evidence in the subsequent case of *Evans v. Hettich*.

Evans's inventions and improvements as in proof in the cause, originating in 1783, and perfected, as regards the hopperboy, in 1785, the grants from the legislatures of Delaware, Maryland and Pennsylvania, in 1787; the first patent of the plaintiff, under the federal government, in 1790, and the second in 1808, by virtue of the special act of congress for the relief of Oliver Evans. The great utility of those improvements was now universally acknowledged, while the patentee was deprived of all their advantages. It was a singular misfortune for him, among others, to be under the necessity of bringing his patent a second time before this court, for revision, in the same case, in which much of the matter in dispute was the construction of the opinion formerly pronounced, reversing that of the *circuit court *371] of Pennsylvania, which that court had occasion to review. It was the earnest hope of the plaintiff that a full and final decision would now take place, so as to put the subject at rest. With respect to the matters of evidence, he contended :

1. That David Aby was incompetent as a witness, because he was sued *in pari delicto*, and of course, disposed to vacate the patent he had himself infringed. Interest in such a question is equivalent to interest in the cause. Perhaps, even the verdict might be given in evidence, under the 6th section of the act of 1793, c. 11, which enjoins it on the court to declare the patent void, in the event of a verdict for the defendant. The plaintiff's answer to this objection is, that as the patent is for several machines and improvements, the court could not annul such a patent, but on the foundation of a verdict against all the claims. But why not? Why not declare it void *pro tanto*? Every principle applicable to common cases applies to this. Nay, it is even more necessary, in so complicated a monopoly, to guard the public against imposition or vexation, by demands founded on any part of it, tried and abrogated.

2. It was objected to David Aby, as a witness, that he and six others, including the defendants in these cases, as was ascertained on his *voir dire*, combined to defeat the suits, and for that purpose contributed a common purse to bear the expenses of defending them. If any surplus remained, it was to be returned by the witness, who acted as treasurer—if any deficiencies, it was to be raised by further levies from the contributors. This was breaking down all distinction *between bias and interest. It amounted, *372] perhaps, to maintenance. 5 Burr. 2730; Phil. on Ev., ch. 5, p. 49.

3. David Aby was suffered to prove the existence of the Stouffer original hopperboy, when the notice was that evidence would be given of the existence of the improved hopperboy. The notice is in 3 Wheat. 470. By this, a complete surprise was inflicted on the plaintiff. The defendant's position was, that for this purpose, he waived the notice of special matter, and gave the evidence, under the general issue, as proof of non-user. But as the notice is equivalent to a special plea, was it competent to the defendant, after putting it in, to abandon it on the trial? There, no doubt, are cases when the defendant might avail himself of the general issue. 3 Wheat. app'x, 27. But this was a case of special matter, tending to prove that the specification does not contain the whole truth, or that the thing was not originally discovered by the patentee. The decisive proof of this position is, that the defendant was allowed to use the same evidence, to show that the plaintiff was not original with his hopperboy, which he used to show

that the defendant did not use the hopperboy. It was an evasion of the wholesome provisions of the sixth section of the act of 1793,^(a) calculated to destroy a patent by means which a patentee never could possibly controvert. It was an aggravation of these objections, that the court charged the jury, that after a witness was ruled by the court to be competent, the jury could not *disqualify him, on the ground of discredit, but must believe him, unless otherwise contradicted. By this course of proceeding, the defendants were their own witnesses, and the plaintiff was not allowed to discredit them. [*373]

4. The court should have suffered the plaintiff to prove that the son of one of the Stouffers, and the executors of another, purchased Evans's improvements. On the former occasion, similar evidence was sanctioned as to the Stouffers themselves, the alleged originators of the hopperboy. 3 Wheat. 495, 505. And why not the acknowledgment of their descendants and legal representatives? It was treated before, as evidence of opinion. If so, why not the opinion of one generation as well as another? But it was more than opinion. It was traditionary history of the invention and improvements.

5. The court should have suffered the defendant's witness, Philip Frederick, to be asked whether Daniel Stouffer was subject to fits of mental derangement. Stouffer was the defendant's principal witness; and that was a most material circumstance in his faculty to bear credible testimony as to remote periods and obscure circumstances. Besides, the witness, Philip Frederick, if he had denied the fact, might have been contradicted by other testimony; in which respect, it was a very important inquiry to be made of him, with a view to Frederick's credit.

6. The deposition of Michael Forner was overruled, after that of John Shetter had been received, under precisely the same circumstances. Neither of them was taken according to the act of congress, which is inconvenient and *unfair in its operation. Rules for depositions were entered by both parties; both parties took depositions under these rules. When the defendant offered to read Shetter's deposition, no objection was made, and it was laid before the jury. But when the plaintiff offered to read Forner's, taken in the same manner, and under the same rules, it was objected to, and overruled. The clerk testified, that for 20 years, the practice had been, to take depositions by rule, on notice, instead of taking them under the act of congress, which requires no notice, where the witness lives more than 100 miles from the place of trial. There was, therefore, evidence of mutual consent and understanding between the parties, deducible both from the invariable practice, and from the rules entered and acted on in these cases. Yet the court rejected the plaintiff's proof, and suffered the defendant's to remain, as received, in force. Thus, the plaintiff was most unexpectedly deprived of some of his most material testimony, while the defendants themselves were their own witnesses. [*374]

The main matter in dispute was on the court's construction of the word improvement, which it imputed to the patent. This radical difficulty escaped notice, when these cases were before discussed in the circuit and supreme courts.

1. It was a misapprehension, to suppose, that the word exists at all in

(a) Act of 1793, c. 11, § 6; 3 Wheat. 504.

the patent or specification, in connection with the hopperboy. The patent is for improvements in the art of manufacturing flour, and for certain other machines, one of which is denominated an improved hopperboy. But the *375] distinction is obvious, between *something patented as an improvement of a hopperboy, and something patented as an improved hopperboy. The latter was so called, as substituting mere machinery for manual labor. It might be so called, as a *caveat* against unknown but possibly existing originals, which, in the strong illustration of the court, would avail a defendant, if he could prove their existence in the mountains of China. It might be so called, as meaning nothing more than a melioration of the inventor's own original essays. Evans's hopperboy was a great and most beneficial improvement, which he called an improved hopperboy. But it had no original. Even the bolt-filler, ascribed to Stouffer, alleged to be of earlier origin, was as different in principle, as it was inferior in practice, to the plaintiff's machine.

2. It was a second error of the court, to take it for granted, that the improved hopperboy was not so described in the specification, as to distinguish it from all things before known or used, and to enable a person skilled in the art to make it. It is so described. [Here the counsel went into a specification of the peculiar structure and properties of the hopperboy.] No one skilled in the art could misapprehend this description, or be misled by it. The error of the court was, in condescending to consider itself skilled in the art of which this is a branch. The law does not require of patentees to describe new and old, but merely to distinguish new from old. Otherwise, a patent would be more complex and voluminous than a Welsh pedigree. Take a boat, for instance ; must every species, from the ark down- *376] wards, *be described? The peculiar properties of the improved hopperboy are perfectly explained. It is not a mere change of form and proportions, but a combination of well-known materials, on new principles, essentially set forth in the specification, so as to prevent all interfering claims, during the exclusive term, and to impart the rights to the public afterwards. The authorities were misunderstood by the court in this respect. They all require, to be sure, a discrimination, when the subject-matter is an improvement : but they require only an essential improvement ; not a recapitulation of the particulars of both the old rudiments, and the new combinations, in detail, distinguishing them in terms.

3. This, however, was a question of fact to have been submitted to the jury, instead of being, as it was, exclusively assumed and determined by the court. How can a court decide, whether a person skilled in the art could understand a description, and copy a machine? The cases are uniformly so. 8 T. R. 95 ; 11 East 101 ; 2 Marsh. 211 ; Starkie 199 ; 3 Meriv. 622 ; 1 Gallis. 438 ; 2 Ibid. 51 ; 1 Mass. 182, 452 ; 3 Wheat. 514, app'x, 17. In all these cases, the court left this inquiry as a fact to the jury. Indeed, the 6th section of the act of 1793, c. 11, treats it not only as matter of fact, but of fraud. It must appear, that the specification is untrue, either deficient or redundant, in order to deceive the public. It is matter of concealment. Can the court infer this *scienter*?

4. Indeed, it may well be doubted, whether any discrimination is necessary, where, as in this case, *there is but one patent in existence. The *377] second section of the law speaks of the case of a prior patented

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machine. The court would have the third section to be substantive, without association with the second and sixth. But how can a patentee describe what he never saw? If not before patented, how could he see or know? If he knew, but concealed his knowledge, is it not matter of fraud? The cases, when examined, will be found to have most of them referred their reasoning to the point of conflicting patents. Such is the fact in *Harmer v. Playne*, *Bovill v. Moore*, and *Lowell v. Lewis*. Which explanation is all-important to a correct understanding of those cases.

5. The special act of congress for the relief of Oliver Evans, vouchsafes him from all technical obstacles. His improvements, by that time, were universally acknowledged. Congress did not mean to forestall the ascertainment of their originality, which any citizen might try, if he chose, nor their utility. But the relieving act dispenses with specification, oath, fee, and all the other pre-requisites of common cases. It was not designed merely to prolong the term of monopoly, but to relieve it from vexations and frivolous embarrassments. Accordingly, it uses the term improvements, in addition to the terms applied to such subjects by the act of 1793; and confers on Oliver Evans an exclusive right in his discoveries, inventions, machines and improvements, in general, and specifically. The obvious design of this act of grace, was to relieve the grantee from all the formalities to which patentees in common are subjected, *leaving the question of [*378 priority or originality alone open to inquiry by the country.

6. But even this inquiry was not competent to these defendants, who are citizens of Pennsylvania. The act of assembly of that commonwealth, in 1787 (P. L. 312), confers on Evans the exclusive right in his hopperboy, and inflicts penalties on all infractors of it. To this act, the defendants directly acceded and contributed by their representatives: and it is a well-settled principle, that they are bound by their legislation. 10 East 536; 3 Johns. Ch. 598. Nor is this position at all affected by the 7th section of the act of 1793, c. 11.

Sergeant, contra.—A patent is intended to secure to an inventor the exclusive right, for a limited time, to his invention. At the expiration of the period, the thing thus secured is to become public property, which any one is at liberty to use. In the meantime, every one is to abstain from using the thing patented, at the peril of a severe responsibility in damages. The provisions of the patent law have a view to these several objects, all of which are to be promoted so far as possible, and reconciled with each other, the public security and the benefit being protected, as well the interests of the inventor. He is to enjoy the fruits of his ingenuity, upon terms and conditions, which are compatible with the safety, the peace and the interests of other citizens.

A patent, therefore, in the first place, can only be *for an original [*379 invention. It is of no importance, that a man really believes himself to be the inventor, or is the true inventor, having made the discovery himself, without even the knowledge, that the thing he supposes himself to have invented, was known or used before, or described in some public work. However honest he may be, he has no merit, as respects the rest of the community, in discovering what was already known and open to common use, nor will he be allowed to appropriate the thing to himself, because he has

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made a mistake. The truth of his invention, though not an original one, will protect him against a summary proceeding to set aside his patent under the 10th section of the act of 1793, c. 11 ; but it will not avail him to enforce his claim, in an action against an individual. The want of originality, proved by showing that the thing was used or known before, or described in some public work, is, in every case, a valid and conclusive defence.

Again, an invention may be of a machine, or of an improvement on a machine ; of something that was entirely unknown before, or of an addition to, or alteration in, what was previously known, so as to make it more useful. Each of these is a patentable object ; but the patent, as to both, is to be for the invention only, and the laws that govern it, thus understood, will be found to be exactly the same. Novelty is an essential part of the merit, and it is only what is new, that is to be secured by the patent. A mistake is just as fatal to the patentee, in the one case as in the other ; and if he should *380] really believe *himself to have invented an improvement, when in truth it was known, used or described before, he could not give legal effect to his patent. There is, however, one peculiarity in the case of patents for improvements. Improvement being a relative term, presupposes the existence of something to which it refers, known to the inventor at the time of making the supposed improvement. If he does not know of it, he cannot know he has improved upon it ; and if he does know of it, he can readily describe the improvement he has made, that is, his own invention. A man who has never heard of a time-keeper, might suppose himself the inventor of one ; but it is impossible to conceive, that a man who has never heard of such a thing, should believe himself to be the inventor of an improvement upon the time-keeper.

A patent for an entire machine covers the whole—a patent for an improvement, on the contrary, covers only the improvement, and necessarily supposes there are parts which are not patented. It is the line between these, and the parts which are patented, that defines the respective pretensions of the patentee and the public ; and unless that line be somehow marked, it is impossible to say, where the one terminates, and the other begins. Confusion, uncertainty, extortion, fraud and litigation would be the inevitable consequence.

It is the business and duty of the inventor, then, at the time of applying for his patent, and before he can receive a patent, to deliver a “ written description of his invention, and of the manner of using, or process of com- *381] pounding the same, in such full, clear *and exact terms, as to distinguish the same from all other things before known, and to enable any person skilled in the art or science of which it is a branch, or with which it is most nearly connected, to make, compound and use the same,” &c., § 3. This specification is to remain in the office of the secretary of state, and a copy of it is everywhere made evidence. The design of this provision is manifest ; it is to secure to the public the use of the invention, after the expiration of the period for which the patent is granted ; and to enable individuals, in the meantime, to know what it is that is intended to be secured, so that they may avoid interference, or, if they think proper, dispute the claim of originality. For both these purposes, it was necessary that there should be authentic and recorded evidence, accessible to all, and

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remaining unchangeable and unchanged. Without a specification, the patent would be void. A specification which does not comply with the requirements of the act of congress, is to all legal intents, no specification, and the patent would be equally void, as if there were literally no specification.

In the present case, the patent is to be regarded, either : 1. As a patent for the whole machine : or, 2. As a patent for an improvement on an old and known machine. The utmost that can be contended, is, that the patentee has an election to consider it as the one or the other : and that is a very liberal concession, inasmuch as it is founded upon the ambiguity of his own specification, from which, generally, a man ought not to be permitted to derive an advantage. *But it is clear, that it cannot be a patent for both ; that would be a legal absurdity, involving a plain contradiction in terms. [*382

1. As a patent for the whole machine, including the plaintiff's alleged improvement, it is void, because the plaintiff was not the original inventor of the machine. The fact, that a hopperboy, known by the name of an S. or Stouffer hopperboy, having all the essential parts of the plaintiff's machine, and applied to the same uses and purposes (whether more or less perfectly, is not material to inquire), existed, and was in use, before the date of the plaintiff's earliest alleged discovery, has twice been proved to the satisfaction of intelligent juries, in each of these cases, and is now to be taken for granted, as conclusively established. At the former trial, the learned judge who presided (Mr. Justice WASHINGTON) instructed the jury, if they should be of opinion, that Oliver Evans was not the original inventor, to find for the defendant ; which they did accordingly, being fully satisfied of the fact. Upon error to this court, the judgment was reversed, on the ground that the patent was not for the machine, but for an improvement ; the phrase "improved hopperboy," being, after much hesitation, deemed equivalent to "improvement" on a hopperboy. But the opinion of the court distinctly admits, what indeed cannot be questioned, that if, as respects the hopperboy, the patent had been for the whole machine, the direction of the learned judge would have been right.

In giving to the plaintiff the benefit of the alternative, the case was put in the most favorable view *for him. He might claim as inventor of the whole machine, or he might claim as inventor of the improvement ; [*383 but, under this patent, he could not claim for both : and in claiming for either, he must, of course, abide by the settled principles of law, applicable to the construction of the patent thus adopted. Each must be taken singly. The two could not be confounded, so as to entitle him, upon the one, to the benefit of principles belonging to the other. If the patent be for the whole machine, it is void, if he is not the original inventor ; and that he is not, has been fully established.

It is intimated, however, and will probably be insisted upon hereafter, that admitting the S. or Stouffer hopperboy to have been previously known and used, the two machines are so entirely different, that Mr. Evans might well be entitled to a patent for the whole. As a question of fact, that has been decided by the verdict of the jury, and the identity of the machine must now be taken for granted, unless the jury were led to the conclusion by an erroneous charge from the court. What constitutes identity, and what diversity, is frequently a question of great difficulty. It was the right

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and the duty of the judge, to inform the jury what were the principles to guide their deliberations in deciding it, and this he has done with admirable clearness, and in conformity with the best authority upon this abstruse part of the law. "Where a specific machine already exists" (says Mr. Justice STORY), "producing certain effects, if a mere addition is made to such
 *384] machine, to produce the same effects in a better manner, *a patent cannot be taken for the whole machine, but for an improvement only."

Whittemore v. Cutter, 1 Gallis. 450. And the same learned judge says, "the material question, therefore, is not whether the same elements of motion, or the same component parts are used, but whether the given effect is produced substantially by the same mode of operation, and the same combination of powers, in both machines." *Odiorne v. Winkley*, 2 Gallis. 54. The identity here is perfectly apparent upon the description, and still more so, upon inspection of the models. The object of both is the same—to dispense with manual labor, and supply the hopper—to supply it gradually, in small, successive, regular portions, by means of the power that moves the mill; substituting mechanical contrivances for human agency. The effect is the same—to turn, stir and cool the flour, and thus prepare it for bolting, before it is delivered. The construction of the machines, as to "the mode of operation," and "the combination of powers," is the same. In both, there is an upright shaft, with a cog, turned by the power that moves the mill; an arm, resting lightly on the meal, and turned by the upright shaft; something on the under part of the arm, whether flights or sweepers, to gather in the meal to the hopper. So far, they are the same. Now, for the differences. The plaintiff's machine has a round shaft, instead of a square one; it has leading lines, which are necessary, in consequence of the shaft being round, and a weight to balance the arm. These may all be improvements, but they are only improvements, and do not make a different machine. The name itself
 *385] bespeaks *identity: the old machine was called a bolt-filler, or hopper-boy; and the plaintiff's is called an improved hopperboy."

But if the machines be so entirely different, as to entitle the plaintiff to a patent for the whole, though the S. hopperboy was previously known and used, then it would necessarily follow, that even if the plaintiff were the original inventor of the improved machine, and that was the first invention, yet any one might, with impunity, make and use such a machine as the S. hopperboy; that is to say, by stripping off some of the parts, he might entitle himself to use the residue. This is a proposition too monstrous to be maintained. If it be sound, it decides this case, without any regard to the question of original invention, for the defendant Eaton used only the S. hopperboy.

A sure test, however, of the identity, is to consider what parts are indispensable to both machines. They are, the upright shaft, with a cog in it, the arm, and the sweeps. With these, the machine will work; without them, it will not. These parts are common to both machines. What is it that the plaintiff has added? What is not indispensable, but perhaps better. That is exactly the definition of an improvement. Can he, in his improved machine, dispense with any one of the parts that belong to the old machine? The answer is clear—he cannot. Can we dispense with any of his additions? Yes, with all of them. The machine is complete, an efficient agent for its purpose, without them; the evidence even leaves it doubtful whether, apart

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from the elevator, it is not the better of the two. It is certainly *in use, and is the very machine for the use of which Mr. Eaton is sued. There can be no serious doubt, that if the plaintiff has any claim, it is only for an improvement.

2. As a patent for an improvement, it is void, because the specification does not show in what the improvement consists, or, in other words, what it is that the plaintiff claims as his invention: "the nature and extent of the improvement are not stated in his specification." This was the precise ground of the decision below. The counsel for the plaintiff who opened the argument, was understood to concede, that if the patent be for an improvement, and there be nothing in the circumstances of this particular case, to make it an exception from the general rule, the law was correctly laid down. And certainly, there can be no doubt of this, whether we consider the spirit and terms of the act of congress, the decisions in England, or the adjudged cases in the United States.

The current of authority, of every sort, is uniform, to establish, that the invention to be patented must be described in such full and exact terms as to "distinguish the same from all things before known." The 2d section of the act has no relation to this question. That provides for the case, where one man has a patent for a machine, and another for an improvement, declaring that the one shall not be at liberty to use the invention of the other, and thus precisely limiting their respective rights. Does it follow, that if a machine has not been patented, he who improves upon it has a right to appropriate the whole to himself, and withdraw *what was before public property from the public use? That no one can after- [*387 wards make use of the old and known machine, without the license of the patentee? The section was made with a different view, and leaves what is not provided for upon the same footing on which it before stood. What was common property remains so; the patentee of the improvement is at liberty to use it, because it is common, and no legislation was necessary to enable him; but he is not allowed to appropriate it to himself, to the exclusion of others, any more than to appropriate the invention of prior patentee. The 6th section, which makes it a good defence, that the patentee has stated more or less than the truth in his specification, "for the purpose of deceiving the public," has no relation to the question. There is no allegation here, that the machine will not produce the described effect, or that more or less has been stated, for the purpose of deceiving or misleading the public. Nor is this, the court will recollect, a summary proceeding to set aside the patent under the 10th section.

But the question, and the only question, is, whether in an action by a patentee, against a person charged with infringing his patent, it is not necessary for the plaintiff to show in what his invention consists. In the former argument of this case, this court have laid it down expressly, that "in all cases where his claim is for an improvement, it will be incumbent on him to show the extent of his improvement, so that a person understanding the subject may comprehend distinctly in what it consists. 3 Wheat. 518. How is this to be *shown? The answer is obvious—it is to be shown [*388 from the specification. That such was the meaning of the court is evident, from their adopting almost the very words of the act of congress, which are employed to describe the office of the specification, "so that a

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person understanding," &c. That nothing else could be their meaning is evident, for such, it cannot be denied, is the clear design of the act of congress, and such is the established law as collected from authoritative decisions. The patent must not be more extensive than the invention; therefore, if the invention consists of an addition or improvement only, and the patent is for the whole machine or manufacture, it is void. *Bull. N. P. 76*; *Boulton v. Bull*, 1 H. Bl. 463. In England, the specification is not annexed to the patent, but is enrolled in chancery. Yet the specification is a part of the patent, for the purpose of ascertaining the nature and extent of the alleged invention, *Boulton v. Bull*; *Hornblower v. Boulton*, 3 T. R. 95. In this country, it is filed in the department of state. An authenticated copy of it is always annexed to the patent, and forms a part of the patent, absolutely essential, because the patent, properly so called, in fact, gives no description, referring for that to the specification. The established *formula* used in all patents, and to be found in the present patent, is, "the said improvement, a description whereof is given in the words of the said Oliver Evans himself, in the schedule hereto annexed, and is made a part of these presents."

*389] Now, what should the patent *comprehend? Where the combination of a certain number of the parts has existed, up to a certain point, in former machines, the patentee merely adding other combinations, the patent should comprehend such improvements only. *Boville v. Moore*, 2 Marsh. 211. And the cases that have been already referred to, clearly decide, that if the invention be of an improvement only, it is indispensable, that the patent should not be broader than the invention; and the specification should not be drawn up in terms that do not include anything but the improvement. It is essential, to point out what is new and what is old, so as to show precisely the extent of the alleged improvement. "The patentee ought, in his specification, to inform the person who consults it, what is new and what is old. He should say, my improvement consists in this, describing it by words, if he can, or, if not, by reference to figures. But here, the improvement is neither described in words nor figures; and it would not be in the wit of man, unless he were previously acquainted with the construction of the instrument, to say what was old and what was new. A person ought to be warned by the specification against the use of a particular invention. *Per Lord ELLENBOROUGH, McFarlane v. Price*, 1 Stark. 199. It need not be denied, that this description might be sufficiently given by reference; as to some other patented machine, or to some well-known machine in familiar use. For instance, to use the illustration employed by Lord ELLENBOROUGH, *390] *if we should say, take a common watch, and add or alter such and such parts, describing them. All that is contended, and that is fully supported by authority, and by the reason of the case, is, that the specification must, in some way or other, distinguish the new from the old, the improvement from what was known before, so as to show what the patented invention is, or else the patent is broader than the invention, and void. The decided cases in the United States are to the same effect. If the inventor of an improvement obtain a patent for the whole machine, the patent being more extensive than the invention, is void. *Woodworth v. Parker*, 1 Gallis. 439; *Whittemore v. Cutter*, *Ibid.* 475; *Odiorne v. Winkley*, 2 *Ibid.* 51. The cases are brought together, well digested, and the principle stated in the Appendix to 3 Wheat. 13.

How else can the extent of the improvement be shown? Shall it be by evidence at the trial? Then, the design of the act would be entirely defeated, and the specification useless. The argument of the court below, upon this point, is perfectly conclusive. To say that the patent may be for the whole machine, and the claim for as much as the plaintiff can prove to be original, or rather the defendant cannot disprove, is to make the right depend, not upon the patent, nor even upon the fact of originality, but upon the evidence the party may have it in his power to produce, and his intelligence and skill in applying it. The right, instead of being uniform everywhere, might be one thing in one state, another in another. In different courts of the same state, it might be different. And even in the same court, at different times, as the particular evidence happened to vary, it would be more or less extensive. The patent would, in effect, be nothing but an outline, large enough, of course, to be filled up as occasion might serve. This is an absurdity, and what is worse, a great temptation to fraud. Besides, under this supposition, how is any man to inform himself, what it is that is patented, so that he may avoid the danger of infringement? It is too late, at the time of trial, to answer any good purpose to the defendant. And how are the public to be informed, at the expiration of the time, or how is a person of skill to be able to make the improvement; in short of what use is the specification, unless it be to define, with precision, the extent and nature of the improvement? The act of congress emphatically refers to the specification, and to that alone, as furnishing everything, without extrinsic aid, and so it must do. If it be broader than the invention, the patent is void.

But it is objected here, that this was a question for the jury, and not for the court. Whether the specification is broader than the invention, may, perhaps, in some cases, be a question of fact, or a mixed question of fact and of law, the construction of the written instrument of specification being for the court, and the other evidence in the case for the jury. But if it be "incumbent upon the plaintiff to show the extent and nature of his improvement," and that is to be shown from the specification, then it is plainly incumbent upon him, to show from the specification, *where he claims for an improvement, that he has described an improvement, as distinguished from a known machine. And that, it is submitted, being exclusively a question arising upon the face of the instrument, is a question for the court. Let us examine the specification. Is there anything in it, which even professes to describe an improvement, as distinguished from a machine known or used before? Does it not, plainly, and in terms, include the whole machine? That is evidently a question of law, upon the face of the instrument, and it may be confidently pronounced, that it does include the whole, and that no man can so read the specification, as to ascertain which parts are claimed by the plaintiff, and which are not; or that there are any parts which are not claimed by him. But it is due to the court, further to say, that the charge in this respect, must, as in all other cases, be understood with reference to the allegations and to the evidence. If there had been an attempt to prove, or even an assertion, the most distant intimation, that men of skill in mechanics, bringing to the study of this difficult specification, the aid of peculiar knowledge, could discern in it a line between new and old, or any defined limits of improvement, that would, doubtless, have

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been fit to be heard, and whatever matter proper for the consideration of a jury might have arisen, would have been submitted to the jury. But no such evidence was offered—the record shows it. No such suggestion even was made; it was not pretended—the charge shows it; for the part excepted to was itself a reply by the court to an argument of the plaintiff's counsel, *which admitted that the specification did not show in what *393] the improvement consisted, by contending for the extravagant position, that it was competent to show it by evidence at the trial, which is, in effect, to say, that the plaintiff was entitled to whatever the defendant had not disproved.

It has been said, however, and to our very great surprise, that the court below erred, in dealing with this patent as a patent for an improvement; that it is not for an improvement, but for an improved hopperboy. When this case was formerly before the circuit court, that court dealt with the patent as a patent for a hopperboy, and not for an improvement. Upon error to this court, one error principally relied upon was, that the court below had thus construed it to be a patent for the machine. 3 Wheat. 486, 502. And it was contended, that an "improved hopperboy," and an "improvement on a hopperboy," were one and the same. "This," says one of the counsel, "was a patent for an improvement on the particular machine in question, and not for its original invention." And of that opinion were the court, after much deliberation. 3 Wheat. 517. And can it now be contended, in the same court, and by the same party, that this is not to be dealt with as a patent for an improvement? But the truth is, it has been treated in this case as a patent for both the machine and the improvement, so as to give the plaintiff the full benefit of either construction. The real aim of the argument is, to maintain, *that a patent for the whole may *394] be expounded as a patent for each of the parts, and legally covering as many as the patentee may be able to prove he has invented; that it may be a patent, in words, for one thing, and in law, for another; that it may have a sort of elastic ambiguity, capable of contraction, if not of expansion, so as to adapt itself to whatever it may be found convenient, at any given time, to embrace. This is against all settled principles; it is against good policy; and it is against the words and the spirit of the act of congress.

Such being, unquestionably, the established law upon the subject of patents in general, it remains only to inquire, whether the case of Oliver Evans is, on any account, an exception. And it is insisted here, that the special act for his relief makes it an exception. The history of that act is sufficient to show, that its only object was, to authorize a new patent to be issued, by reason of the first having been declared void for irregularity of form, attributable to the officers of the government. This gave an equitable title to relief. The appropriate relief was an extension of the time, so that the inventor might enjoy the privileges of a patent, for the same time that he would have enjoyed them, if the irregularity had not occurred, that is to say, the same privileges. This was sufficiently liberal, for the first patent had actually expired, before the new one was granted. The new patent, too, was made retrospective, and gave to Oliver Evans an exclusive right for eight and twenty years, double the usual period; yet it was contended, formerly, that this special act, liberal as it *confessedly was, went the *395] further length of dispensing altogether with the necessity of proving

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he was the inventor, and even precluded all right to question the invention, which was, in effect, to say, that the exclusive privilege was secured to him, whether he was the inventor or not. That was overruled by this court, upon the plainest grounds. 3 Wheat. 513. And the whole scope of the opinion then delivered distinctly establishes, that except the extension of time, and the union of different inventions in the same patent, which otherwise, perhaps, could not be regularly joined, the patent to be issued, was to be, in all respects, conformable to the general law, and subject to the same regulations as other patents. Such was the interpretation of the plaintiff himself : he applied in the usual manner, by petition, with a specification and oath. Such was the interpretation of the officers of government : the patent underwent the usual examination, and is in the usual form. Such is, at this moment, the interpretation : for it is upon the adoption of the general law, by reference, that the jurisdiction of the federal courts, in cases growing out of this patent, entirely rests. If that law be not applicable, this court has no power to adjudicate the cause. It is needless to pursue this further, being already decided by the former decision of this court. For the terms and conditions upon which the patent was to be granted, the jurisdiction to attach to it, the rules to govern it, the special act makes no provision, but by reference to the existing laws ; and *but for this reference, we could not advance a single step in the inquiry. [*396

All that has been said of the act of the legislature of Pennsylvania passed in the year 1787 (P. L. 312), may be disposed of in a single word. What its provisions were, does not appear, and if it did, the right they conferred, whatever it may have been, was surrendered, by accepting a patent under the law of the United States. The seventh section of the act of congress is express.

In conclusion, then, it is confidently submitted, that the patent of Oliver Evans must be considered as a patent, either for the machine or for the improvement. That if it be for the machine, it is void, because it is fully proved that he was not the original inventor, but the machine was known and used before. That if it be for an improvement, it is void, because it is broader than his invention, and does not specify in what his improvement consists, so as to distinguish it from what was known and used before.

The learned counsel also argued the points of evidence in this and the next following case (*Evans v. Hettich*), but as they are so fully noticed in the opinion of the court, it is not thought necessary to report that part of his argument.

Harper, in reply, observed, that in the opinion of the circuit court, two propositions were distinctly affirmed : 1. That Evans's patent of the hopperboy was a patent for an improvement, and not for an original invention or discovery : and 2. *That being for an improvement, it was void, [*397 because the specification did not in terms distinguish the improvements from the original machine, called the Stouffer hopperboy. Both these propositions were indispensable for supporting the judgment below. He denied them both, and should endeavor to show, that they were equally void of foundation. If he could succeed in overthrowing either, the judgment of the circuit court must be reversed, and the patent-right of the

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plaintiff supported; but he believed, and should endeavor to show, that both were wholly unfounded.

And first, is the patent of Oliver Evans a patent for an improvement, or for an original invention? The decisions of the circuit court maintained the former. He should endeavor to demonstrate the latter. In the outset of this investigation, it would be proper to remark, that the specification makes part of the patent; and he had the authority of this court, in the former decision in this case (3 Wheat. 507), for saying, that in order to ascertain what Oliver Evans obtained by his patent, one of the proper points of inquiry was, what did he ask for? what was it his wish and intention to obtain? This question may be satisfactorily answered, by referring to that part of his specification which relates to the hopperboy. This specification is printed at length in a note to 3 Wheat. and the part of it now in question is found at p. 468. The description of the machine is very full, *398] "minute and clear; and it concludes with this declaration: "I claim as my invention the peculiar properties or principles which this machine possesses: viz., the spreading, turning, and gathering the meal, at one operation, and the using and lowering its arms by its motion, to accommodate itself to any quantity of meal it has to operate on." This was what he claimed as his invention. For this he asked a patent. Not for the machine which he had thus improved, but for the principle on which it was made to operate. He has not very accurately expressed himself, or distinguished between the object to be obtained, and the mode of proceeding for its attainment; between the end and the means; the result and the *modus operandi* by which it is produced. But still, his meaning is obvious. The object, the end to be obtained, the result, was the "spreading, turning and gathering the meal, at one operation." The principle of the machine, the *modus operandi*, by which the object was to be accomplished, in a new and better way, was the power of the machine to raise and lower its arms by its own motion, so as to accommodate itself to any greater or less quantity of flour on which it may have to operate. This, then, is his invention or discovery, which he claims as his own, and for which he demands a patent. His demand is complied with: he gets what he asked. This is what the grantors intended to give him; and I appeal again to the former decision, for the doctrine, that in order to ascertain what is given, we must look to the request of the receiver, and the intention of the giver.

*399] "It is, then, a patent for the peculiar principle of his machine, for for its new mode of operating, that Oliver Evans asked for and received. That a new *modus operandi*, by a new combination of old instruments or machines, so as to produce either a new effect, or an old effect in a new way, is the proper subject matter of a patent, appears from numerous authorities, and may be considered as a settled principle of the patent law. It was on this principle, that Watt's patent for his improvements on the steam-engine, which made so much noise in Westminster Hall, and produced such important effects, was finally supported and established.

The English law of patents, though different from ours in its origin, was, probably, the same in its principles. Indeed, our act of congress was a mere enactment of the principles and system which the English courts had established. That system grew out of the ancient prerogative of the crown, in England, to grant monopolies. This power, long and often most oppres-

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sively exercised, was abolished in the early part of James the first's reign, by an act of parliament, which was one of the earliest fruits of the increase of knowledge, the progress of correct ideas, and the improvement in the condition of society, which, at that time, had begun to appear. But, for the encouragement of industry and ingenuity, a proviso was introduced into the statute, that the king might still grant a monopoly "of any manner of new manufactures," to the first inventors, for any term not exceeding fourteen years.^(a) Upon this short proviso, this apparently *scanty foundation, the whole structure of the English patent law, [*400 was raised by the English government and courts. The system which they thus established was adopted by our act of congress. This system required a specification. Nothing is said of it by the statute; but the government required it, by an express clause of every patent. The principle on which it was required, was this: the statute conferred a benefit on the inventor, by giving him a monopoly of his invention, for a limited time. For this benefit conferred on the patentee by the community, it was thought just, that he should make a return. That return consisted in the knowledge and free use of his invention, which, by his specification, he should enable the community to obtain, after the expiration of his monopoly. This principle enables us not only to understand the origin and object of the specification, but also its nature and character, as its object was to put the public in possession of the invention, after the monopoly had ceased, so as to enable all persons to use it beneficially; it was indispensable, that the invention should be so fully and clearly explained, as to enable persons skilled in the same art to make and use it. This was all that was to be effected by the specification, and consequently, all that it was required to contain. The very same certainty of description which would enable persons skilled in the art to make and use the invention, after the monopoly should expired, would enable them to avoid making and using it, so as to subject themselves to penalties or loss, during the continuance of the monopoly.

*In the same manner, it was established, that improvements in [*401 old machines or processes, might be combined as "new manufactures," and become the subject of patents. This principle was also incorporated into our act of congress, in express terms. And here, the same rule was adopted with respect to the specification. The "new manufacture," whether it consisted in a machine or process entirely new, or in the improvement of an old one, was to be described with such certainty, as to enable persons skilled in the art, to make and use the invention, after the monopoly should expire, and to avoid it, while the monopoly should exist. The principle and object were the same in both cases, and the same rule was adopted in both, by our act of congress, as well as by the English decisions.

We shall now be able to perceive the application of the case of Watt's patent (8 T. R. 95), to the point under consideration; which, let it be considered, is to ascertain how far the discovery of a new *modus operandi*, so as to produce a new effect, or an old one, in a new way, is the proper subject of a patent, as a useful invention, and not as an improvement. The expansive power of steam had been many years before discovered by the

(a) See the case of *Hornblower v. Boulton*, 8 T. R. 105, Opinion of Mr. Justice LAWRENCE.

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Marquis of Worcester, who applied it, though very imperfectly, to various mechanical purposes. Among the rest, he employed it to put machines in motion, by communicating to them the movement which the steam was made to produce on beams and levers. Thus was laid the foundation of that
 *402] wonderful invention, the steam-engine. *Various machines of this kind, more or less perfect, were, from time to time, brought into use ; and at length, Newcomen made a steam-engine, which was long considered as having attained the utmost point of perfection. It consisted of a cylinder or large tube or iron, made perfectly smooth and uniform within, and completely closed at the bottom, but open at the top. Inside of this cylinder was placed, horizontally, a thick strong plate of iron, so fitted at the edges to the inner surface of the cylinder, as to be air-tight, and yet to play easily up and down. Into the centre of this plate was fitted a strong upright stem of iron, of the length required ; and the stem and plate together made what is called the piston. The upper end of the piston stem was fastened by a joint to a horizontal beam, which was made fast by a joint, near the centre or at the farthest end, so as to allow its near end to play up and down with the piston to which it is attached. At the bottom of the cylinder, under the piston, was introduced a pipe or tube, leading from the boiler, where the steam was generated, into the cylinder, and furnished with a valve. When this valve was opened, it let the steam, through the pipe, into the lower part of the cylinder, under the piston, which was thus raised up by the explosive power of the steam, and raised with it the end of the horizontal beam to which it was attached. When the piston, and with it the beam, had been raised as high as was intended, the valve in the steam pipe was shut, by the motion of the machine, and at the same moment, a valve was opened, by the same means, in a pipe, which connected the
 *403] *cylinder with a vessel of cold water. A quantity of this water was then introduced into the cylinder, under the piston, where it condensed the steam, more or less completely, and created a vacuum more or less perfect ; in consequence of which, the piston was pressed down by the weight of the atmospheric air resting upon it, and carried down with it the end of the horizontal beam to which it was attached. When it had subsided as low as was desired, it opened the steam valve, and let in the steam under the piston, which was raised as before, and again pressed down by the weight of the air, on the steam being again condensed by the introduction of cold water. This operation went on continually, and thus an ascending and descending motion was produced, which was communicated by the horizontal beam to the whole machinery.

The defect of this engine at length began to be observed. It consisted in the cooling of the cylinder by the cold water let in to condense the steam. The cylinder being thus rendered colder than steam, a considerable portion of the steam introduced was condensed by this coldness, while the piston was rising ; and was thus destroyed, before it had done its office. This rendered a greater generation of steam necessary, and of course, a greater consumption of fuel. The steam, too, was not suddenly or perfectly condensed, so as to let the piston descend with sufficient rapidity or force ; by which the power and effect of the machine were diminished. The water also,
 *404] into which the steam had been converted by condensation, remained in the bottom of the *cylinder, and further impeded the descent of

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the piston. These defects were seriously felt, in a country where fuel was dear, and became continually more and more so. At length, they threatened to render the engine entirely useless, by creating a greater expense in fuel, than could be compensated by the labor-saving power of the machine.

Then Watt arose, who, after long reflection and many experiments, conceived the happy idea of condensing the steam in a vessel different from that in which it was to perform its office. This he effected, by connecting with the machine another vessel called a connector, which was connected with the cylinder by a pipe with a valve in it. This valve being opened by the motion of the machine, at the same moment when the piston had ascended to its greatest height, the steam rushed through it into the conductor, where it met a stream of cold water, introduced by the same means which had been before employed for letting it into the cylinder. This cold water condensed it as fast as it came in; and a pump was also contrived, to work by the motion of the machine, and drew out of the conductor all the steam that remained uncondensed, and all the water produced by the condensation. Thus, a most perfect vacuum was created in the condenser, and consequently, in the cylinder connected with it; the piston descended with freedom, rapidity and force; and the cylinder, not being touched or affected by the cold water, retained a heat equal to that of steam: so that no portion of the steam introduced into it, was condensed too soon.

This was the great improvement; but others were *employed to increase its effect. The cylinder was surrounded by a case the best [*405 calculated to retain heat, and the space between this case and the cylinder was kept full of steam or boiling water. Thus the cylinder was kept in the hottest possible state; the state best adapted to the preservation of the steam, while performing its office: and as steam thus preserved was found to be more effectual than atmospheric air in bringing down the piston, the top of the cylinder was closed, and steam was introduced above the piston as well as below it. The steam was conducted into the condenser, and there condensed and pumped out, in the same manner with that introduced below: and thus, the piston being alternately pressed up and down, by the elastic power of steam, in its most efficacious condition, gave a most powerful, steady and uniform motion to the engine. Oily substances were employed instead of water, in keeping the vessels air-tight; especially, the top of the cylinder, where the steam of the piston played through it. Thus the machine was rendered as perfect as it seems capable of becoming.

Now, in what does this machine differ from the steam-engine of Newcomen, which was in use before? Both had a boiler to produce the steam, and a cylinder to receive it. The piston was the same in both, and connected in the same manner with the horizontal beam, for the purpose of communicating the motion to the rest of the machinery. In both, the piston was raised by the expansive power of the steam; this steam, after its office had been performed, was condensed by cold water, so as to create a *vacuum in the cylinder, and permit the piston to descend; and in [*406 both, pipes and valves of the same construction was used, for introducing alternately the steam and the cold water. In what, then, did they differ? Merely in a new *modus operandi*, by which, with the addition of

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another vessel, the cold water was prevented from cooling the cylinder, while it condensed the steam ; and the steam was made to operate in forcing the piston down, as well as in forcing it up. In this new *modus operandi*, produced by a different arrangement and construction of the old machines, with the addition of one new vessel, to receive and condense the steam, consisted the great invention of Watt ; for which he obtained his patent, avowedly as for a new invention, or in the language of the British statute, a "new manufacture," and not for an improvement. His specification is inserted at length in 8 T. R. 96, note *a*, where it will appear, that he speaks of his discovery as a new invention, and not as an improvement, and never once mentions or alludes to the old machine.

In what did this new discovery consist? I answer, with the two judges of the common pleas in England, who were in favor of this patent, and one of whom was Lord Chief Justice EYRE, *Boulton v. Bull*, 2 H. Bl. 463, and with the four judges of the king's bench, who were unanimous on the point, 8 T. R. 95, that it consisted in the new principle on which the steam was condensed, and which was carried into effect, by a new combination of the *407] old machinery, with the addition of one new instrument. *The word "principle," as used in relation to this subject, is not taken in its general philosophical sense, where it means a law of motion, or a property of matter ; but in what may be termed its mechanical sense, in which it signifies a method of doing a thing, or of effecting a purpose, in other words, a *modus operandi*. It is, therefore, established, by this solemn and elaborate decision of six English judges against two, after repeated arguments and great consideration, that a new principle, or *modus operandi* carried into practical and useful effect, by the use of new instruments, or by a new combination of old ones, with or without the addition of one or more new ones, is an original invention for which a patent may be supported, without reference to any former invention or machine, for performing the same or a similar operation. This may be taken as a maxim which the cases referred to will be found fully to support.

Let us now apply this maxim to the patent of Oliver Evans. We shall soon see, that according to the doctrine thus established, his discovery was not a mere "improvement," as the court below pronounced it to be, but an original invention. The learned counsel here produced two models, one of Evans's hopperboy, and one of Stouffer's, and explained minutely the difference between their principles, or *modus operandi*, which consisted in this : that in Stouffer's hopperboy, the arms, through a square mortice in which the square upright post was made to pass, were carried round by means of the upright post, pressing upon the sides of the square *408] *mortice, which renders it impossible for the arms to rise and fall of themselves, as the meal under them might increase or diminish ; while in the hopperboy of Evans, the upright post is round, and it passes loosely through a round hole in the arms, which are carried round, by two pieces of timber of the proper length, called leaders, which are inserted firmly⁴ into the upper part of the post, and attached, at their ends, by lines or small cords, to the corresponding ends of the arms. These lines and leaders being put in motion by the upright post, trail round the arms, which, at the same time, play loosely on the post, and rise and fall of themselves, as

the meal under them increases or diminishes in quantity. And to make them press more lightly on the meal, and rise and fall with more facility, as occasion may require, a weight, a little lighter than themselves, is attached to them, by a cord, which passes over a pulley in the upper part of the post. This weight nearly balances the arms, and enables them to play up and down much more easily and effectually. The counsel also produced a drawing of Evans's machine, from the patent-office, to show that his model was correct, and referred to the facts of the evidence in the record, where the machine of Stouffer is described, and is properties and defects explained. He then proceeded to remark, that the machine of Evans was obviously constructed upon a new principle, that the *modus operandi* was entirely new. The great object of both machines was to conduct the meal into the bolting chest, and to stir, turn, *dry and cool it, on its way thither. The essential agents in this operation were the arms, which, if they re- [409 maintained stationary on the post, as they must, of necessity, do, in Stouffer's machine, could not possibly perform this operation to advantage. They might sink down on the meal, as its quantity decreased, but could not possibly rise, when it was increased; consequently, when new meal was placed on the floor, the machine must be stopped, and the arms lifted up. Hence, its motion was unequal, and its operation necessarily very irregular and imperfect. It also required a hand, constantly, or frequently, to be present, and thus increased the expense. Thus, the condensation of the steam within the cylinder itself, in Newcomen's steam-engine, cooled the cylinder improperly, wasted steam, made more fuel necessary, and rendered the operation of the machine imperfect, and too expensive. Here, the similarity of imperfection is complete.

Evans removed the imperfection of the hopperboy, not by merely adding to its parts, but by introducing a totally new principle and *modus operandi*. He detached the arms from the upright post entirely, and carried them round, by means of the leaders and lines which have been described, leaving them to play freely up and down on the post, so as to accommodate themselves to the decreasing or increasing quantity of meal under them; and their movement up and down, he facilitated, regulated and rendered perfect, by means of the weight and pulley. The *modus operandi* of the two machines, consisted in the manner of carrying round the arms. This was *the principle of both machines. That of Evans was new, and infinitely superior. So, Watt remedied the defects of Newcomen's [410 steam-engine, by condensing the steam in a different vessel from the cylinder, and increased the effect, by introducing the steam above the piston, as well as below it. This was a new principle; and here again the resemblance between the two cases is complete.

It being then clear, that Evans had made a new invention as to the hopperboy, and not merely what the law on this subject calls an improvement, and the cases showing that such an invention is the subject matter of a patent for an original invention, it follows, that he might have obtained a patent for his invention, as an original invention, and not merely as an improvement. This leads to the inquiry, for what was this patent granted? Was it for an original invention of his own, or for an improvement on Stouffer's invention? We have the authority of this court, in its former decision

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in this case (3 Wheat. 454), for saying, that when we inquire what was granted, it is proper, in the first place, to ascertain what the grantee wished to obtain, and next, what the grantor had the intention and the power to give. What Evans wished to obtain, is fully and most explicitly stated in the concluding sentence of his specification. 3 Wheat. 468, note. After describing, most fully and clearly, the structure, principle, and operation of his hopperboy, he concludes thus, "I claim as my *invention, the peculiar properties which this machine possesses, viz., the spreading, turning and gathering the meal at one operation; and the rising and lowering its arms by the motion, to accommodate itself to any quantity of meal it has to operate on." Here, it is manifest, that he describes the effect intended to be produced, which was the same in both machines; viz., the spreading, turning and gathering the meal at one operation; and his *modus operandi*, for producing this effect, which was entirely new, viz., the rising and lowering the arms of the machine, by its own motion, so as to accommodate itself to the increasing or diminishing quantity of meal. For this *modus operandi*, this property or principle, he claims a patent. It is equally clear, that the grantor of the patent intended to give what he thus asked for; that is, a patent for this new principle. This appears from the special act of congress, on which the patent is founded, and to which it refers; from the terms of the patent itself; and from the specification which is expressly incorporated into it, as one of its constituent parts.

As a further illustration of this position, the most celebrated and important invention of modern times may be referred to, an invention which was destined to produce more important effects than any other single effort of the human mind. He alluded to the steam-boat; that sublime conception, which had conferred so much glory on its author and his country. What was a steam-boat, but a new combination of these well-known machines, a boat, a steam-engine, *and a flutter-wheel—machines most familiar to all who knew anything of such subjects. But they were so combined as to produce a new and most surprising effect, by a new *modus operandi*. This method consisted in attaching a steam-engine and two flutter-wheels to a boat of proper dimensions and strength, and arranging them in such a manner, that the flutter-wheels were set in motion by the steam-engine, and struck against the water, instead of being struck by it, as they are in a common saw-mill. Thus, striking against the water, they act as oars, or rather as paddles, and propel the boat forward. Now, what was there new in this machine? Not the instruments, but the manner of combining them, and their manner of operating produced by this combination; and yet, no one has denied to the author of this beautiful and sublime idea, the merit of an original invention, or called in question his patent, as a patent for an original invention. He, however, merely combined old machines, changing their forms and proportions so as to suit his new purpose. Evans not only combined old machines, but added new and essential parts, and by means of both produced a *modus operandi* altogether new, and highly useful. Upon what ground, then, can it be said, that he is not an original inventor, when Watt was solemnly adjudged, and Fulton unanimously allowed to be so?

I therefore contend, that Evans was an original inventor, and not an improver merely; and that his patent is for an original invention, and not

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for an improvement. If so, the decision of the circuit *court in these two cases (a) must be reversed, and the patent of my client is established.

But if it be not a patent for an original invention, but merely for an improvement, the decision below was erroneous, in declaring that the specification is defective. This defect consists, according to the decision below, in the omission to state particularly, in what the improvement consists, and to distinguish it in terms from the pre-existent machine. Here, a very familiar maxim is applicable: *quod neminem ad vana aut ad impossibilia lex cogit*. The law requires nobody to do that which would be useless, if done, or it is impossible to do. And *cui bono* make this discrimination? how can it be made? and by what provision of the law is it required? On the answer to these three questions, the case must depend. If it can be shown, that such a discrimination would be useless, if made, or is impracticable, and that it is not expressly and positively required by the act of congress, it will follow, that the judgment below must be reversed.

1. And *cui bono* make the discrimination? What good would it, or could it do, to anybody? In order to answer these questions, we must revert again to the object and uses of the specification. The patent law confers a benefit on the discoverer of any artful invention, which consists in a monopoly of his invention for a limited time. The consideration which it requires him to pay for this benefit, is, to put the public in possession of his invention; so as to enable all to use it, after his monopoly shall *expire; and all to avoid involving themselves in controversies and difficulties, [*414 by inadvertently infringing it, while it continues. Hence, the necessity of a specification; and here we find its uses, its extent and its limitations. The British statute said nothing of a specification; but it was introduced by the executive government, as a condition of every patent, and its character, objects and properties have been accurately settled by judicial decisions in England. From those decisions, it was borrowed by our act of congress, and incorporated into its positive enactments. In both systems, its objects and uses, and consequently, its nature and properties, are the same. Its object and use is, to enable the public to enjoy the invention beneficially and fully, after the monopoly shall have expired, and to avoid interference with it, while it shall continue. Now, what is necessary for attaining this object? certainly, nothing more than this, that the invention should be so described in the specification, by writing, and where the nature of the subject will permit, by drawings and models, as that any one competently skilled in the art or science to which it relates, may be enabled to understand, make and use it. This is what the English decisions have established as the necessary properties of the specification; and what our statute expressly, and in terms, requires.

Now, it is obvious, that in the case of an improvement, the principle is exactly the same as in that of an original invention. The invention, that is, the thing in its improved state, must be accurately and fully described; by writing always, and by drawings and models, where the nature of the case will *permit. When this is done, it is manifest, that any one who can understand the improved thing, so as to make and use it, may, in [*415 every possible case, distinguish the improvement from any and every

(a) The present case, and the subsequent case of Evans v. Hettich.

original or antecedent thing of the same sort. Take these two hopperboys as an example, and inspect the models which I hold in my hands. Cannot any man, who has sufficient mechanical skill to make a hopperboy, and understand its use, see at one glance, in what these two machines differ from each other? Does not the court see it? Cannot any such mechanic, therefore, make and use the hopperboy of Stouffer, if he should think proper, and avoid all interference with the improvement of Evans? It cannot be doubted, that he may. And so may a person sufficiently skilled in the art or science to which an improvement relates, in every possible case. When he has the improvement, or the improved thing sufficiently described, as the hopperboy of Evans is admitted to be, and is informed of any pre-existing machine, or thing of the same general nature, which he wishes to make, sell or use, he can look at that thing, compare it with the improved machine, or with the description, drawings and models in the patent-office; see the difference, and make and use the original or old one, without the least danger of interfering with the improvement. Where, then, is the use of describing the original, or old invention, in the specification of the improvement; and of discriminating, in terms, between them? It is manifest, that such a description would be perfectly useless and vain; and *neminem ad vana lex cogit*.

*2. But admitting that it might be of some use, would it be possible? This is the next head of inquiry: and I contend that it would not. And here let it be remembered, that this doctrine of discrimination is not confine to such inventions as are express or avowed improvements, on particular inventions. It extends necessarily to all inventions, which improve anything that existed before. In the present case, there happened, so far, at least, as is now known, to be but one hopperboy, that of Stouffer, in use before Evans's. But suppose, there had been twenty, of as many different kinds? would they not all have been original with respect to Evans's, or antecedent to it? Undoubtedly: and every man, notwithstanding Evans's patent would have had a right to use them all, or any of them. What reason or principle could require the description of one, in the specification of Evans, which would not equally apply to all? There certainly is none. Let us take the example of a patent for an improved stove for increasing the heat, or for any other object. How many millions of stoves, of what an endless variety of constructions, are used in the world. Must the patentee of this improved stove, or of this improvement on stoves, describe them all in his specification, and point out, in terms, the different between each of them, and his invention? It is manifest, that he must, according to the doctrine of the circuit court: and it is equally manifest, that he could not possibly do it. His specification would constitute a library of itself, which no man would or could read, and which the patent-office could hardly contain. So also, improved *chimneys, improved carriages, and all the multitude of other
*417] improvements, real or imaginary, on things in general use, for which patents are obtained, having pre-existent things of the same nature, and used for the same general purpose, must be described in each specification; which if it were possible to write it, as it would very seldom be, would be far too voluminous to be understood or read.

Thus, it is manifest, that the discrimination contended for, would be impossible, as well as useless, in relation to improvements on unpatented

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machines. Where, indeed, a machine is already patented, it is very easy to describe it, in the specification of the improvement, and point out all the particulars in which they differ from each other. The original specification is in the patent-office, and may be referred to : the drawings and model are there, and may be seen. Here, the rule requiring a discrimination, in terms between the original invention, and the improvement would not be unreasonable ; and it might be useful ; by tending to prevent disputes between the different patentees. The mistake of which we complain, has probably arisen from not discriminating between improvements on patented and unpatented inventions. In the latter, the discrimination is manifestly impossible, as well as useless. In the former, it would be easy, and might be of some use. It might be proper to require it, in one case, whether the law positively enjoins it or not ; to require it, in the other, would be to make the law require what is both useless and impossible. This can never be done, by the construction merely of a statute, which must *always be [*418 reasonable. But it may be said, that the statute positively enjoins it. If so, we must submit. When the legislature has clearly express its will, the court have no duty but to obey. This brings us to the question, what has the legislature enjoined on this subject ?

3. All that can be supposed to relate to it, is contained in the 2d and 3d sections. The second speaks of improvements ; the third, of specifications. It points out the object of the specification, and directs what shall be done for its attainment. The object is, to put the public in complete possession of the invention, whether an improvement or an original discovery ; so that interference with it may be avoided, while the patent continues, and its benefits may be fully enjoyed by the public, after the patent expires. To this end, it enjoins that the applicant for a patent “shall deliver a written description of his invention, and of the manner of using, or process of compounding, the same ; in such full, clear and exact terms, as to distinguish the same from all other things before known ; and to enable any person skilled in the art or science of which it is a branch, or with which it is most nearly connected, to make, compound and use the same.” This is the directory part. The thing is to be described, “so as to distinguish it from all other things before known.” How distinguish it ? By describing all the things before known, and pointing out in terms in what it differs from them all ? Certainly not ; but by giving a description of it, so complete and accurate, as “to enable any person skilled in the art, &c., to make, compound and use *the same.” Is the discrimination contended for, but not mentioned in the statute, necessary for this purpose ? By no [*419 means. Any person skilled in the art or science, in order to make, compound and use the new invention, has but to look to the description of the invention itself. He need not know how nearly it resembles, or how widely it differs, from any other thing before known. With these he has no concern. And if, on the other hand, he wishes to use nothing before used and known, and to avoid interfering with the patented invention or improvement, he has only to compare the thing which he so wishes to make or use, with the description of the patented invention or improvement, contained in the specification ; and he will immediately see wherein they differ, and be enabled to avoid the latter, while he uses the former.

This section (the 3d) further directs, with a view to the same objects, that

the applicant, the inventor, "in case of any machine," shall "fully explain the principle, and the several modes in which he has contemplated the application of that principle or character, by which it may be distinguished from other inventions." Here, as in the rest of the section, nothing is said about improvements, as distinguished from original discoveries. They are all treated equally as "inventions," and are placed precisely on the same ground. They are all to be so described, as that they may be distinguished in their principles and *modus operandi*, as well as in their construction and composition, from other inventions: and this is to be effected by means, not of a formal discrimination, in terms, between them, and any *other thing
*420] or things of the same general nature; but of a full and accurate verbal description, aided by drawings, models and specimens; where the matter is of such a nature as to admit their use. In all this, nothing is said or hinted about "improvements," as contradistinguished from "original discoveries." All are treated alike as "inventions," and the same means of enabling all concerned, to distinguish them from things before used or known, are provided in relation to both.

In fact, what is an "improvement," but a new invention? Everything that is made better is improved; and everything that makes another thing better, or does it in a better way, is an improvement. If it be new, it is an invention, so far as it goes. The greater the improvement, the greater is the invention: and any improvement differs from any other, or from an original discovery, if there be any such thing, not in nature, but in degree. They may be greater inventions or less; more or less ingenious, or more or less useful; but so far as they are, so they are all inventions, and are treated precisely alike, by this portion of the patent law; which I again repeat, makes no mention, and gives no hint of a discrimination, in the specification of an improvement, between the improvement, or the thing as improved, and the original thing on which the improvement is made. Treating them all alike as "inventions," it requires, with respect to all, that they shall be so described, as clearly to distinguish them, that is, as to enable all concerned to distinguish them, from all other
*421] things of the same nature, *before in use or known. To construe the statute, so as to make it require a description not only of the new invention, but of all things of the same general nature, before known, and a discrimination in terms between them, would be as unreasonable in the case of an improvement, as of an original discovery, and would be perfectly unreasonable in either. It would make the statute do that which its terms do not indicate, and which the law can never be presumed to intend. It would make it require, what it is not only impossible, in a great variety of cases, to do, but what, if done, would, in every case, be wholly useless and vain. This it cannot be so construed as to require: for *neminem ad vana aut ad impossibilia lex cogit*.

The counsel then adverted to the 2d section, where it was supposed, he said, that something might be found to support this doctrine of discrimination. That section spoke particularly of improvements, as to which the third was wholly silent. It said nothing whatever of the specification, its objects or motive. It made two provisions, both useful as declarations of the law, to put persons on their guard and prevent mistakes, but both undoubtedly law, without any such declarations. The first was

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that the discoverer and patentee of an improvement in anything before patented, should not be entitled to make, use or vend the original; nor the inventor and patentee of the original to make, use or vend the improvement. Here again, they were both considered as inventors, and both put on the same footing. It was declared, for general information, and to prevent *doubts and mistakes, that one should not be entitled to the invention of the other: but nothing was said about [*422 the manner of distinguishing these inventions one from the other. That was left to the third section; where it was done, without the least mention or hint of the formal discrimination, in terms, contended for in the judgment below. It was manifest, that this discrimination could derive no countenance from this branch of the second section. It obviously could derive none from the other branch, which merely, for giving information to the public, and preventing mistakes, declared, "that simply changing the form or proportions of any machine or composition of matter, in any degree, shall not be deemed a discovery." This merely amounts to saying, what would clearly have been the construction of law, without any such declaration, that to constitute a patentable discovery, either original or by improvement, there must be a new principle or *modus operandi*, and not merely a change of form or proportion. If the change of form or proportion should be such as to produce a new principle or *modus operandi*, then it would be a discovery or invention, whether it amounts to an original or an improvement only: and here again, improvements were treated as inventions, equally with original discoveries; the distinction between them being not in nature, but merely in degree.

But the point under consideration has been expressly settled, by the former decision in this case: the same objection, for want of this discrimination, was made in the court below, on the first trial; and the same doctrine on the subject expressly laid down *by the circuit court: this [*423 doctrine formed one of the grounds of objection, distinctly stated in the argument of the former case in this court, and was distinctly noticed by the court: and with this part of the opinion below, and the objection to it, distinctly in view, this court decided this patent, on this same specification, to be valid, notwithstanding its want of a discrimination in terms, between the improvement and the original invention; which was an express decision on this point, in favor of the plaintiff in error. He referred to various parts of the report of the former case of *Evans v. Eaton*, 3 Wheat. 454, to support these positions; remarking, that although the court certainly was not bound absolutely by its own decisions, and ought to overrule them, when satisfied of their incorrectness; yet they were the great landmarks of the law, and ought not to be overturned or shaken, without the strongest and clearest reasons.

The learned counsel also cited the authorities cited in the margin, as to the objection to the charge of the court below, upon the ground, that it had invaded the proper province of the jury, in respect to the sufficiency of the specification, and to the nature of the patentee's invention, as an improvement or an original discovery. (a)

(a) 2 H. Bl. 478, 484, 497; 8 T. R. 99, 101, 103; 1 Gallis. 481; 1 Mason 189, 191.

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March 20th, 1822. STORY, Justice, delivered the opinion of the court.—

*424] This is the same case which was formerly before *this court, and is reported in 3 Wheat. 454, and by a reference to that report, the form of the patent, the nature of the action, and the subsequent proceedings, will fully appear. The cause now comes before us upon a writ of error to the judgment of the circuit court, rendered upon the new trial, had in pursuance of the mandate of this court.

Upon the new trial, several exceptions were taken by the counsel for the plaintiff. The first was to the admission of a Mr. Frederick, as a witness for the defendant. It is to be observed, that the sole controversy between the parties at the new trial was, whether the plaintiff was entitled to recover for an alleged breach of his patent by the defendant, in using the improved hopperboy. Frederick, in his examination on the *voir dire*, denied that he had any interest in the cause, or that he was bound to contribute to the expenses of it. He said, he had not a hopperboy in his mill at present, it being then in court ; that it was in his mill, about three weeks ago, when he gave it to a person to bring down to Philadelphia ; and that his hopperboy spreads and turns the meal, cools it some, dries it and gathers it to the bolting-chest. Upon this evidence, the plaintiff's counsel contended, that Frederick was not a competent witness, but the objection was overruled by the court. It does not appear from this examination, whether the hopperboy used by Frederick was that improved by the plaintiff, or not ; but assuming *425] it was, we are of opinion, that the witness was *rightly admitted. It is perfectly clear, that a person having an interest only in the question, and not in the event of the suit, is a competent witness ; and in general, the liability of a witness to a like action, or his standing in the same predicament with the party sued, if the verdict cannot be given in evidence for or against him, is an interest in the question, and does not exclude him. If nothing had been in controversy in this case, as to the validity of the patent itself, and the general issue only had been pleaded, the present objection would have fallen within the general rule. But the special notice in this case asserts matter, which if true, and found specially by the jury, might authorize the court to adjudge the patent void, and it is supposed, that this constitutes such an interest in Frederick, in the event of the cause, that he is thereby rendered incompetent. But in this respect, Frederick stands in the same situation as every other person in the community. If the patent is declared void, the invention may be used by the whole community, and all persons may be said to have an interest in making it public property. But this results from a general principle of law, that a party can take nothing by a void patent ; and so far as such an interest goes, we think, it is to the credit and not to the competency of the witness. It is clear, that the verdict in this case, if given for Evans, would not be evidence in a suit against Frederick, but Frederick would be entitled to contest every step in the cause, in the same manner as if no such suit had existed. *Non constat*, that *426] Frederick himself will ever be sued by the plaintiff, or that if *sued, any recovery can be had against him, even if the plaintiff's patent should not be avoided in this suit. It, therefore, rests in remote contingencies, whether Frederick will, under any circumstances, have an interest in the event of this suit, and the law adjudges the party incompetent, only when he has a certain, and not a contingent interest. It has been the inclination

of courts of law, in modern times, generally, to lean against exceptions to testimony. This is a case which may be considered somewhat anomalous; and we think it safest to admit the testimony, leaving its credibility to the jury.

Another exception was, to the refusal of the court to allow a deposition to be read by the plaintiff, which had been taken according to a prevalent practice of the state courts. It is not pretended, that the deposition was admissible, according to the positive rules of law, or the rules of the circuit court; and it is not now produced, so that we can see what were the circumstances under which it was taken. No practice, however convenient, can give validity to depositions which are not taken according to law, or the rules of the circuit court, unless the parties expressly waive the objection, or, by previous consent, agree to have them taken and made evidence. This objection, therefore, may at once be dismissed.

The principal arguments, however, at the bar have been urged against the charge given by the circuit court, in summing up the cause to the jury. The charge is spread *in extenso* upon the record, a practice which is unnecessary and inconvenient, and may give rise to minute criticisms and observations *upon points incidentally introduced, for purposes of argument or illustration, and by no means essential to the merits of the cause. [*427 In causes of this nature, we think, the substance only of the charge is to be examined; and if it appears, upon the whole, that the law was justly expounded to the jury, general expressions, which may need and would receive qualification, if they were the direct point in judgment, are to be understood in such restricted sense.

It has been already stated, that the whole controversy at the trial, turned upon the use of the plaintiff's hopperboy; and no other of the inventions, included in his patent, was asserted or supposed to be pirated by the defendant. The plaintiff, with a view to the maintenance of his suit, contended, that his patent, so far as respected the hopperboy, had a double aspect. 1. That it was to be as a patent for the whole of the improved hopperboy, that is, of the whole machine as his own invention. 2. That if not susceptible of this construction, it was for an improvement upon the hopperboy, and he was entitled to recover against the defendant for using his improvement. The defendant admitted that he used the improved hopperboy, and put his defence upon two grounds: 1. That if the patent was for the whole machine, *i. e.*, the improved hopperboy, the plaintiff was not the inventor of the improved hopperboy so patented. 2. That if the patent was for an improvement only upon the hopperboy, the specification did not describe the nature and extent of the improvement; *and if it did, still the patent comprehended the whole machine, and [*428 was broader than the invention. To the examination of these points, and summing up the evidence, the attention of the circuit court was exclusively directed; and the question is, whether the charge, in respect to the matters of law involved in these points, was erroneous, to the injury of the plaintiff.

We will consider the points in the same order in which they were reviewed by the circuit court. Was the patent of the plaintiff, so far as respects his improved hopperboy, a patent for the whole machine, as his own invention? It is not disputed, that the specification does contain a good

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and sufficient description of the improved hopperboy, and of the manner of constructing it ; and if there had been any dispute on this subject, it would have been matter of fact for the jury, and not of law for the decision of the court. The plaintiff, in his specification, after describing his hopperboy, its structure and use, sums up his invention as follows: "I claim as my invention, the peculiar properties or principles which this machine possesses, in the spreading, turning and gathering the meal, at one operation, and the rising and lowering of its arms, by its motion, to accommodate itself to any quantity of meal it has to operate upon." From this manner of stating his invention, without any other qualification, it is apparent, that it is just such a claim as would be made use of by the plaintiff, if the whole machine was, substantially, in its structure and combinations, new. The plaintiff does not
*429] state *it to be a specific improvement upon an existing machine, confining his claim to that improvement, but as an invention substantially original. In short, he claims the machine as substantially new in its properties and principles, that is to say, in the *modus operandi*.

If this be true, and this has been the construction strongly and earnestly pressed upon this court by the plaintiff's counsel, in the argument at the present term, what are the legal principles that flow from this doctrine? The patent act of the 21st of February 1793, ch. 11, upon which the validity of our patents generally depends, authorizes a patent to the inventor, for his invention or improvement in any new and useful art, machine, manufacture or composition of matter, not known or used before the application. It also gives to any inventor of an improvement in the principle of any machine, or in the process of any composition of matter which has been patented, an exclusive right to a patent for his improvement ; but he is not to be at liberty to use the original discovery, nor is the first inventor at liberty to use the improvement. It also declares, that simply changing the form or the proportion of any machine or composition of matter, in any degree, shall not be deemed a discovery. It further provides, that on any trial for a violation of the patent, the party may give in evidence, having given due notice thereof, any special matter tending to prove that the plaintiff's specification does not contain the whole truth relative to his discovery, or contains more than is necessary to produce the effect (where the addition
*430] or concealment shall appear to have been to *deceive the public), or that the thing secured by the patent was not originally discovered by the patentee, but had been in use, or had been described in some public work, anterior to the supposed discovery of the patentee, or that he had surreptitiously obtained a person's invention ; and provides that in either of these cases, judgment shall be rendered for the plaintiff, with costs, and the patent shall be declared void. It further requires, that every inventor, before he can receive a patent, shall swear or affirm to the truth of his invention "and shall deliver a written description of his invention, and of the manner of using, or process of compounding, the same, in such full, clear and exact terms, as to distinguish the same from all things before known, and to enable any person skilled in the art or science of which it is a branch, or with which it is most nearly connected, to make, compound and use the same ; and in the case of any machine, he shall fully explain the several modes in which he has contemplated the application of the principle, or character by which it may be distinguished from other inventions."

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From this enumeration of the provisions of the act, it is clear, that the party cannot entitle himself to a patent for more than his own invention ; and if his patent includes things before known, or before in use, as his invention, he is not entitled to recover, for his patent is broader than his invention. If, therefore, the patent be for the whole of a machine, the party can maintain a title to it, only by establishing that it is substantially new in its structure and mode of operation. If the same combinations existed before, *in machines of the same nature, up to a certain point, and the party's invention consists in adding some new machinery, or some improved mode of operation, to the old, the patent should be limited to such improvement, for, if it includes the whole machinery, it includes more than his invention, and therefore, cannot be supported. This is the view of the law on this point, which was taken by the circuit court. That court went into a full examination of the testimony, and also of the structure of Evans's hopperboy, and Stouffer's hobberboy, and left it to the jury to decide, whether, up to a certain point, the two machines were or were not the same in principle. If they were the same in principle, and merely differed in form and proportion, then it was declared, that the plaintiff was not entitled to recover ; or, to use the language of the court, if the jury were of opinion, that the plaintiff was not the inventor of the hopperboy, he was not entitled to recover, unless his was a case excepted from the general operation of the act. We perceive no reason to be dissatisfied with this part of the charge ; it left the fact open for the jury, and instructed them correctly as to the law. And the verdict of the jury negatived the right of the plaintiff, as the inventor of the whole machine. The next inquiry before the circuit court was, whether the plaintiff's case was excepted from the general operation of the act. Upon that, it is unnecessary to say more, than that the point was expressly decided by this court in the negative, upon the former writ of error. And we think the opinion of this court, delivered on that occasion, is correctly understood *and expounded by the circuit court. It could never have been intended by this court, to declare, in direct opposition to the very terms of the patent act, that a party was entitled to recover, although he should be proved not to have been the inventor of the machine patented ; or that he should be entitled to recover, notwithstanding the machine patented was in use prior to his alleged discovery. There is undoubtedly a slight error in drawing up the judgment of the court upon the former writ of error ; but it is immediately corrected, by an attentive perusal of the opinion itself. And we do not think that it can be better stated or explained, than in the manner in which the circuit court has expounded it.

We are then led to the examination of the other point of view in which the plaintiff's counsel have attempted to maintain this patent. That is, by considering it, not as a patent for the whole of the machine or improved hopperboy, but as an improvement of the hopperboy. Considered under this aspect, the point presents itself, which was urged by the defendant's counsel, viz., that if it be a patent for an improvement, it is void, because the nature and extent of the improvement is not stated in the specification. The circuit court went into an elaborate examination of the law applicable to this point, and into a construction of the terms of the patent itself, and came to the conclusion, that no distinct improvement was specified in the

patent ; that such specification was necessary, in a patent for an improvement, and that for this defect, the plaintiff was not entitled to recover, sup-
 *433] posing his patent to be for an improvement *only of an existing machine. It may be justly doubted, whether this point at all arises in the cause ; for the very terms of the patent, as they have been already considered, and as they have been construed at the bar by the plaintiff's counsel, at the present argument, seem almost conclusively to establish, that the patent is for the whole machine, that is, for the whole of the improved hopperboy, and not for a mere improvement upon the old hopperboy. But, waiving this point, can the doctrine asserted at the bar be maintained, that no specification of an improvement is necessary in the patent ; and that it is sufficient, if it be made out and shown at the trial, or may be established by comparing the machine specified in the patent with former machines in use ? That there is no specification of any distinct improvement in the present patent, is not denied ; that the patent is good without it, is the subject of inquiry. Let this be decided by reference to the patent act.

The third section of the patent act requires, as has been already stated, that the party "shall deliver a written description of his invention, in such full, clear and exact terms, as to distinguish the same from all other things before known, and to enable any person skilled in the art or science, &c., to make, compound and use the same." The specification, then, has two objects : one is to make known the manner of constructing the machine (if the invention is of a machine), so as to enable artizans to make and use it, and thus to give the public the full benefit of the discovery, after the ex-
 *434] piration *of the patent. It is not pretended, that the plaintiff's patent is not, in this respect, sufficiently exact and minute in the description. But whether it be so or not, is not material to the present inquiry. The other object of the specification is, to put the public in possession of what the party claims as his own invention, so as to ascertain if he claims anything that is in common use, or is already known, and to guard against prejudice or injury from the use of an invention which the party may otherwise innocently suppose not to be patented. It is, therefore, for the purpose of warning an innocent purchaser, or other person using a machine, of his infringement of the patent ; and at the same time, of taking from the inventor the means of practising upon the credulity or the fears of other persons, by pretending that his invention is more than what it really is, or different from its ostensible objects, that the patentee is required to distinguish his invention in his specification. Nothing can be more direct than the very words of the act. The specification must describe the invention, "in such full, clear and distinct terms, as to distinguish the same from all other things before known." How can that be a sufficient specification of an improvement in a machine, which does not distinguish what the improvement is, nor state in what it consists, nor how far the invention extends ? Which describes the machine fully and accurately, as a whole, mixing up the new and old, but does not, in the slightest degree, explain, what is the nature or limit of the improvement which the party
 *435] claims as his own ? It seems to us perfectly clear, that such a specification *is indispensable. We do not say, that the party is bound to

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describe the old machine ; but we are of opinion, that he ought to describe what his own improvement is, and to limit his patent to such improvement. For another purpose, indeed, with the view of enabling artizans to construct the machine, it may become necessary for him to state so much of the old machine as will make his specification of the structure intelligible. But the law is sufficiently complied with, in relation to the other point, by distinguishing, in full, clear and exact terms, the nature and extent of his improvement only.

We do not consider that the opinion of the circuit court differs, in any material respect, from this exposition of the patent act on this point ; and if the plaintiff's patent is to be considered as a patent for an improvement, upon an existing hopperboy, it is defective, in not specifying that improvement, and therefore, the plaintiff ought not to recover.

Upon the whole, it is the opinion of the majority of the court, that the judgment of the circuit court ought to be affirmed, with costs.

LIVINGSTON, Justice. (*Dissenting.*)—At this late period, when the patentee is in his grave, and his patent has expired a natural death, we are called on to say, whether his patent ever had a legal existence, and it may seem not very important to the representatives of the patentee, what may be the decision of this court. But understanding that many other actions are pending for a violation of this part of the patent-right, and that infractions have taken place for which actions may yet be commenced, and believing *that the decision we are about to make will have a very extensive, [*436 if not a disastrous bearing on many other patents for improvements, and will, in fact, amount to a repeal of many of them, I have thought proper to assign my reasons from dissenting from the opinion just delivered. In doing this, my remarks will be confined principally to the charge of the court, so far as it applies to the claim of Evans for an improvement on a hopperboy.

I was much struck with the argument of the plaintiff's counsel, in favor of the patent being for an original invention, and not for an improvement ; nor would it, in my opinion, be a forced construction, to regard it as a patent for a combination of machines, to produce certain results, and not for any of the machines, nor the different parts of which the whole is composed. But considering it as a patent for an improvement on a hopperboy, in which light it had been regarded, as well by the circuit as by this court, when this cause was here before, I proceed to examine the charge, so far as it relates to this part of the subject.

The court, after stating in what particulars the plaintiff's counsel contended that his improvement consists, which is unnecessary to repeat here, proceeds—"The plaintiff has laid before you strong evidence to prove that his hopperboy is a more useful machine than the one which is alleged to have been previously discovered and in use. If, then, you are satisfied of this fact, the point of law which has been *raised by the defendant's [*437 counsel remains to be considered, which is, that the plaintiff's patent for an improvement is void, because the nature and extent of his improvement is not stated in the specification. The patent is for an improved hopperboy, as described in the specification, which is referred to and made part of the patent. How does the specification express in what his improvement

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consists? It states all and each of the parts of the entire machine, its use and mode of operating; and claims, as his invention, the peculiar properties or principles of the machine, viz., the spreading, turning and gathering the meal, and the raising and lowering of its arms, by its motion, to accommodate itself to the meal under it. But does this description designate the improvement, or in what it consists? Where shall we find the original hopperboy described, either as to its construction, operation or use, or by reference to anything by which a knowledge of it may be obtained? Where are the improvements on such originals stated? The undoubted truth is, that the specification communicates no information whatever upon any of these points." After some further reasoning on the subject, and showing that the plaintiff's case is not excepted from the general rule of law, by the act which was passed for his relief, the court declares, that for this imperfection or omission in the specification, the "plaintiff is not entitled to recover for an alleged infringement of his patent for the improvement on the hopperboy." This was equivalent to saying, that for this defect in the specification, the

*438] patent for the improved hopperboy was void, and *of course, that no action at all, whatever might be the state of the evidence, could be maintained for the use of it. It left nothing, as it regarded the improved hopperboy, for the jury to decide. Such is the charge, and it is delivered in terms too plain to be misunderstood.

The objections to it are now to be considered. In doing this, it will be shown, 1st. That the specification is not defective, and that although it does not discriminate in what particulars the machine in question does differ from other hopperboys in use, yet, if from the whole of the description, taken together, the machine is specified so minutely, and so accurately, as to be directly and easily distinguished from all other hopperboys antecedently known, everything has been done which the law requires, and the patent is good. 2d. That if the specification be vicious in the points mentioned, the patent ought not to be considered as absolutely void; but it is enough, and the public interest is sufficiently guarded, if care be taken that it shall not be extended to create a monopoly in any other machine, which may or may not be mentioned in the patent, which was previously known or in use. And 3d. That if a patent must be set aside for such defect in the specification, it should be left to the jury, on the evidence before them, to decide whether the improvement patented be not set forth with all necessary precision.

1. I have said, the specification is not defective. In determining this

*439] question, it would seem but *natural and just, that the validity of a patent, granted under a particular act of congress, should be tested by the terms there used, and by the decisions of our own courts, so far as they are of authority, and that we should be extremely cautious in adopting the rules which have been introduced into other countries, and under laws not in every respect like our own, however respectable the tribunals may be which may have prescribed those rules; and this, the more especially, as most of the decisions in England, which are generally cited, and seem to have been implicitly followed in this country, are of a date long subsequent to the revolution, and many of them posterior to the passage of the patent laws in this country, and which could not, therefore, have been in the contemplation of congress at the time. Besides, there is somewhat of

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hardship in constantly applying to a patentee in this country, adjudications made on a British act of parliament very unlike our own, and with which decisions he has no means of becoming acquainted, until long after a knowledge of them can be of any service. Already have we extended to patents for improvements on old machines, several recent decisions in England, although it was long doubted in that country, and as late as the year 1776, whether by the act of the 21 James I., c. 3, there could be a patent for an addition only. When the English courts decided in favor of such patents, they also made rules for their construction, as cases arose; there being no direct provisions in the statute on the subject. As we have provided by law, not only for the security of inventions entirely new, but also for the *protection of those who may discover any new and useful improve- [440 ment on any art, machine, &c., not known or used before, and have prescribed the terms on which patents under it may be obtained, it would seem, if all those terms are complied with, and the invention be really new and useful, that no court can have a right to add any other terms, or to require of a patentee anything more than what the law has enjoined on him.

Let us now try the patent before us by this rule: The act of the 21st February 1793, c. 11, after stating in what cases letters-patent for inventions may issue, and how they are to be obtained, requires, *inter alia*, that the inventor, before he receives his patent, shall take a certain oath, and shall deliver a written description of his invention, and of the manner of using the same, in such full, clear and exact terms, as to distinguish the same from all other things before known, and to enable any person skilled in the art or science of which it is a branch, or with which it is most nearly connected, to make and use the same. And in the case of a machine, he shall fully explain the principle, and the several modes in which he has contemplated the application of that principle, or character by which it may be distinguished from other inventions; and he is to accompany the whole with drawings and written references, where the nature of the case admits it; and a model of his machine, if required by the secretary of state, is also to be delivered.

In the present case, the patent is for an improved hopperboy; a particular description of which, and its uses, will be found in 3 Wheat. 466. It is *not pretended, that this machine, if made in conformity with the description given by Mr. Evans, could not, in fact, be distin- [441 guished from everything else before known, when brought into comparison with it, nor that a skillful person, from its description, would not be able to make one like it; which would seem to satisfy every requisition of the law. But the defendant's counsel say, this is not enough. It should not only, in its organization and aggregate, be different from everything else, but every respect in which it differs in its construction or operation from other machines, should be minutely stated in the specification; or, in other words, that other machines heretofore used for similar purposes, should be either described or referred to therein, and the differences between the patented machines and those in former use, be carefully designated. The answer to this is, that the law does not require it—that it is impracticable, and would be of no use.

We have seen already, that the law prescribes no precise form of specification, which would have been impracticable, and imposes no obligation to

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describe, in any particular mode, the machine in question. Not a word is said as to showing in what particulars the improvement patented differs from all other machines for the same purpose then in use. If, on the whole description, taken together, the machine of the plaintiff can be distinguished from other machines, when compared with his, the words and the objects of the law are satisfied. The law appears to have nothing else in view, in *442] requiring a specification, than the instruction *of the public; that is, to guard them against a violation of the patented improvement, and to enable them, when the letters-patent expire, from the specification filed, to make a machine similar to the one which had been patented. The only inquiry, therefore, ought to be, whether this obvious intention of the legislature has been answered, by the particular specification which may be the subject of litigation; and if enough appears, either to prevent a person from encroaching on the right of the patentee, or to enable a skilful person to make a machine which shall not only resemble the one patented, but produce the like effect, more ought not to be required. Whether these ends be attained by a particular description of every part of the improved machine, or by describing in what respect it differs from other machines, can make no difference. The information to the public is as valuable and intelligible, if not more so, in the former case, than in the latter. If it be, taken altogether, an improved machine, for the purpose of producing certain results, and so described, that it may be distinguished from other machines, and that others may be made on the same model, it is a literal compliance with all that the law requires. If the different parts of the machine, and their combination or connection, be accurately described or intelligibly set forth, why should it not be supported, although no reference be made to other machines, dissimilar in construction, and which, although applied for the same purpose, are inferior in the beneficial results produced by them.

To the objection, that it does not precisely appear in *what the *443] patent hopperboy differs from those antecedently in use, the answer is, and it ought to be conclusive, that the patentee does not mean to abridge or restrain the public from using those or any other machines, so that they differ from the one described by him; and that any mechanic, on having his specification before him, can avoid an interference with his invention. To confine our examination to the only hopperboy which was produced on this trial, and which was called Stouffer's hopperboy, and of which a model has been exhibited to the court, together with a model of Evans's improved hopperboy, can a doubt be entertained, for an instant, that they are very dissimilar, and that any mechanic would not, in a moment, point out the distinctions between them, either from the specification or the model—or that he would not be able to make a Stouffer hopperboy, or the improved hopperboy of Evans, as he might be directed; and in like manner, he would be able, when brought together, to discriminate between any other hopperboy and that of Evans, provided they were different, so that those who were desirous of having a hopperboy, on an old construction, and of not interfering with the rights of Mr. Evans, would labor under no difficulty whatever.

But inasmuch as Evans himself has not discriminated, or exhibited in his specification, all the points of difference between his and other hopperboys,

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it is supposed, that his patent is for some hopperboy already in use, as well as for his improvement thereon. The very terms of his specification precluded every supposition of that kind. If there *were a thousand of those machines, on different constructions, in use before the date [444 of his patent, he leaves to the public the undisturbed enjoyment of them. He meddles not, nor does he pretend to interfere, with any of them, until they make or use one constructed, in all its parts, upon his model. That form, and that form alone, he claims as his invention or improvement. It would not have been difficult, even from British authorities, to show that this specification was sufficient ; but I prefer recurring to our own law, as the only proper criterion of the validity or invalidity of the specification in question. My opinion is, that it has all the certainty which is required by law.

Such a specification as is required by the circuit court, is not only not prescribed by law, but, to me, it appears to be one extremely difficult, if not impracticable. If the inventor of an improved hopperboy is to discriminate in his specification between his improvements and any particular hopperboy, which may be produced on the trial, and is to be nonsuited for not having done so, however correct and distinguishing it may be, in every other respect, he must do the like as to all other hopperboys ; and if he must describe any, he must describe all others with which he may be acquainted ; and after all, some one may be introduced at the trial, of which he had never heard, or which he had never seen ; and inasmuch as he had not stated in what respects it was improved by his machine, although this would immediately be seen on inspection, he must not *only fail of recovering damages for a manifest violation of his right, but must have his patent declared void by [445 the court, without a trial by jury, and be deprived of the fruits of a most valuable improvement, not because he was not the *bona fide* inventor—not because he had not described his improvement with sufficient certainty according to the act of congress—but because something more was required of him, of which he had no means of information. The only hopperboy which made its appearance on this trial, except the plaintiff's, was that known by the name of the Stouffer hopperboy ; but *non constat*, that there may not have been a hundred different kinds in use, and some entirely unknown to the plaintiff. If he could have described them all, which would not have been an easy task, and stated in what particulars his hopperboy differed from them all, his specification would have extended to an immoderate length, and after all, have been less intelligible and satisfactory, than a full description, such as is given here, of all the parts of which his consisted, and of the manner in which they were put together. There may be cases in which an improvement may be so simple as to describe it at once, by reference to the thing or machine improved, as in the case of an improvement of this kind on a common watch. But even in the case of a watch, if the improvement pervades the whole machine, it would be a compliance with the terms of the law, if the patentee described every part of his improved watch, with its principle, without discriminating particularly in what respect his different wheels, &c., varied from all other watches *then in use. Many patents have been obtained for improvements on stoves, locks, &c. ; but [446 has it ever been required of the patentee, in such cases, not only to describe in what manner his stove or lock is constructed, and the benefits resulting

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from such construction, but to point out every particular in which they differ from those already in use? This, to say the least, would be a work of great labor, and of little or no use to the public, who would be at liberty to use a stove or lock of any construction, not interfering with the one described in the specification of the patentee.

A few observations will show that such a description as the defendant's counsel contend for, would be of no greater use than the one which Mr. Evans has adopted. After all the pains to discriminate had been taken, the question would still recur, how is the improved hopperboy to be constructed? and if, from the specification, that could not be ascertained, then, and then only, ought it to be pronounced defective. But if, from the description, the improved hopperboy could be made by a skilful mechanic, then, the public is informed, not only of what has been patented, but of what still remains common as before, and if an action be brought for a violation of the patented right, and it should appear, that the hopperboy used is not of such construction, the plaintiff must fail in his suit. It cannot be said, with any justice, that if the discrimination be not made, the patent includes not only the improvement, but the old machine on which the improvement is *447] engrafted. *The old machine still remains public property; may be used by every one; nor can any person be considered as infringing on the patent-right, until he adds to the machine already in use, the improvements of the patentee, or in other words, until he makes a machine resembling, in all its parts, the one which is described in the specification.

2. But if the specification be defective in the points which have been mentioned, is the patent, therefore, necessarily void? This is a question of vital importance to every patentee. I am aware, that it has been said, in England, that the patent must not be more extensive than the invention; therefore, if the invention consists in an improvement only, and the patent is for the whole machine, it is void. But I am not aware, that it has ever been decided there, that when a patent is for an "improved machine," and is taken out only for the machine thus improved, and not for the machine as before used, that such patent is void. But whatever may have been some of the late decisions in that country, I prefer, and think it the better course, to consider this question also under our own act, which, in this respect, is different from the English statute, and will, therefore, afford us more light, and be a safer guide than either that statute or the judgment on it. In what part, then, of our act, may it be asked, is an authority given to the federal courts to declare a patent void, for a defective specification, however innocently made, and which, in its consequences, can injure no one? I state the question in this way, not because I think it necessary to show, that *448] if injurious consequences *might flow from an imperfect specification, a patent must necessarily be declared void, but because I think it must be admitted, that there is no evidence whatever in this cause, to induce any one to believe, that Mr. Evans either intended to take, or that he did receive a patent for anything beyond his invention, which was the hopperboy in the improved condition in which he describes it. To declare a patent for a highly useful improvement absolutely void, merely for a defective specification, if this be one, is a very high penalty, and should not be lightly inflicted, unless rendered absolutely necessary by law; the more especially, as without recurring to so harsh a measure, a court and jury will always be

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able to confine a remedy on the patent, to violations of the improvement actually secured, and if the patentee should be so foolish, or ill-advised, as to attempt to bring within its reach the machine in its unimproved state, or any other machine before common, he would do it, not only with no prospect of success, but with the certainty of a defeat, attended with a very heavy expense. So long, therefore, as he could maintain no action, but for his improvement, it is not perceived, why he should be visited with so heavy a denunciation, as the forfeiture of his improvement, merely because, by some construction of his specification, which might, after all, be a mistaken one, he had included in his invention, something of ever so trifling a nature, which was already known.

But if such be the law, and such the frail tenure on which these rights are held, however hard it may apply in particular cases, it must have its course. But *I cannot think it our duty, or that we have any right to pronounce a patent void on this account; but that this important [*449 office is exclusively confided to a jury. Whether we have this right or not, will now be examined. If such summary authority were intended to have been conferred on the federal courts, the patent law ought to have been, and would have been, explicit. This is so far from being the case, that in the patent law, a provision, but of a different kind, is inserted on this very subject, which is not the case in the statute of James. It was foreseen, that it must sometimes happen, either from the imperfection of language, or the ignorance of a patentee, that defective specifications would be made; it was also foreseen, that an imperfect specification might be made from design, and with a view of deceiving the public. We accordingly find it provided by law, that among other matters which the defendant may rely on, in an action for infringing a patent-right, is, "that the specification filed does not contain the whole truth relative to his discovery, or that it contains more than is necessary to produce the described effect, which concealment or addition, must fully appear to have been made for the purpose of deceiving the public." If judgment is rendered for the defendant on this ground, the patent is to be declared void. This section applies as well to patents for an improvement on an existing machine, as for an invention entirely new; and was intended to protect the patent, in either case, against an avoidance for an imperfect and innocent specification of the invention patented. If, therefore, the defect which is alleged, *really exists in the specification of the patented improvement, the court is not authorized, on its mere [*450 inspection, to declare it imperfect, and the patent, on that account, void. Both questions are clearly questions of fact, and are so treated by the legislature. The party has a right to insist with the jury, not only that his specification is perfect, but that if it be otherwise, no deception was intended on the public; and on either ground, they may find a verdict in his favor. So, if, on the allegation, that the thing secured by patent was not originally discovered by the patentee, a verdict passes against the plaintiff, he loses his patent. In like manner, in this case, if it had appeared that the "improved hopperboy," which was the thing secured by patent, had not been originally discovered by Mr. Evans, and a verdict had passed against him on that ground, there would have been an end of his patent. From the tenth section also, an argument may be drawn against the right of a court to declare a patent void, on mere inspection, for redundancy or deficiency

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in a specification. This section provides a mode of proceeding before the district court, where there may be reason to believe a patent was obtained surreptitiously, or upon false suggestions ; and if, on such proceeding, it shall appear, that the patentee was not the true inventor, judgment shall be rendered by such court for a repeal of the patent. This is the only case in which a power is conferred on a court, to vacate a patent, without the intervention of a jury. If a proceeding of this kind had been instituted, before *451] the proper tribunal, against Mr. Evans, the court would *have examined witnesses, and have formed its opinion on their testimony ; and it is not clear, that even in this case, a jury might not have been called in. This section has been taken notice of, to show that it could never have been the intention of the legislature, that a patent should be avoided, on any account whatever, on the opinion of the court alone, without some examination other than that of the specification, whatever might be its excess or poverty of description. If it had been intended to vest so important a power in the court, it would not have been left to mere implication, but would have been conferred in terms admitting of no doubt. My opinion, therefore, on this part of the charge, is, that the court erred, in taking upon itself to pronounce the patent void, even if the specification had been defective or imperfect, in not particularly describing what the improvements of the patentee were ; this being a power expressly delegated to a jury, who, under all the circumstances of the case, are to decide both questions of fact ; that is, whether the specification be deficient, or superfluous, and the intention with which it was made so. I repeat once more, that whatever may have been the decisions in England, which are not admitted to be contrary to the view which has here been taken of the subject, they are not of authority, and are upon an act so very different in its structure from our own, as to afford little or no useful information on the subject. One great and important difference in the two laws is—that the statute of James I. has not prescribed a mode in which a patent for a *452] vicious specification is to be set aside. *The patent is granted on condition that a specification be enrolled.

I give no opinion on the questions which arise from the admission of certain witnesses, who were supposed to be disqualified, on the score of being interested ; for if the patent for the hopperboy be void, for a defect in its specification, and that question is not to be referred to the jury, and such I understand to be the opinion of four of the judges, it is very unimportant, whether any error was committed in this respect by the court, before which the cause was tried ; as a verdict must ever be rendered against the representatives of the patentee, on this ground, whatever may be the state of the evidence.

JOHNSON and DUVALL, Justices, also dissented.

Judgment affirmed, with costs.