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sideration whereof, it is the opinion of this court, that the Circuit Court had no jurisdiction of the case, and on that ground the bill was properly dismissed; there was, therefore, no error in the decree of said court. Whereupon it is now here ordered, adjudged, and decreed, by this court, that the decree of the said Circuit Court in this cause be, and the same is hereby, affirmed, with costs.

ERASTUS CORNING AND JOHN F. WINSLOW, PLAINTIFFS
IN ERROR, *v.* PETER A. BURDEN.

In a suit brought for an infringement of a patent-right, the defendant ought to be allowed to give in evidence the patent under which he claims, although junior to the plaintiff's patent.

Burden's patent for "a new and useful machine for rolling puddler's balls and other masses of iron, in the manufacture of iron," was a patent for a machine, and not a process, although the language of the claim was equivocal.

The difference explained between a process and a machine.¹

Hence, it was erroneous for the Circuit Court to exclude evidence offered to show that the practical manner of giving effect to the principle embodied in the machine of the defendants was different from that of Burden, the plaintiff; that the machine of the defendants produced a different mechanical result from the other; and that the mechanical structure and mechanical action of the two machines were different.²

Evidence offered as to the opinion of the witness upon the construction of the patent, whether it was for a process or a machine, was properly rejected.³

¹ "A machine is a concrete thing, consisting of parts, or of certain devices and combination of devices. The principal of a machine is properly defined to be 'its mode of operation,' or that peculiar combination of devices which distinguish it from other machines. A machine is not a principle or an idea. The use of ill-defined abstract phraseology is the frequent source of error. It requires no great ingenuity to mystify a subject by the use of abstract terms of indefinite or equivocal meaning. Because the law requires a patentee to explain the mode of operation of his peculiar machine which distinguishes it from others, it does not authorize a patent for a 'mode of operation as exhibited in a machine,'" *Burr v. Duryee*, 1 Wall., 531, 570.

² CITED. *Rubber Co. v. Goodyear*, 9 Wall., 795. See also *Blanchard v. Utman*, 8 Wall., 425; *MacRay v. Jackman*, 12 Fed. Rep., 618.

³ "Experts may be examined to explain terms of art, and the state of the art, at any given time. They may explain to the court and jury the machines, models, or drawings, exhibited. They may point out the difference or identity of the mechanical devices involved in their construction. The maxim of '*cuicunque in sua arte credendum*' permits them to be examined to questions of art or science peculiar to their trade or profession; but professors or mechanics cannot be received to prove to the court or jury what is the proper legal construction of any instrument of writing. A judge may obtain information from them, if he desires it, on matters of which he does not clearly comprehend, but cannot be compelled to receive their opinions as matter of evidence." *Winans v. New York & Erie R. R. Co.*, 21 How., 88, 100. *S. P. Bischoff v. Wethered*, 9 Wall., 815.

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THIS case was brought up, by writ of error, from the Circuit Court of the United States for the Northern District of New York.

Peter A. Burden, as assignee of Henry Burden, brought his action against Corning and Winslow, for a violation of a patent granted to Henry, as the original and first inventor and discoverer of a new and useful machine for rolling puddle balls or other masses of iron, in the manufacture of iron.

What took place at the trial is set forth in the opinion of the court. Under the instructions of the Circuit Court, the *253] jury *found a verdict for the plaintiffs, with one hundred dollars damages; upon which the defendants brought the case up to this court by a writ of error.

It was argued by *Mr. Seymour* and *Mr. Keller*, for the plaintiffs in error, and by *Mr. Fitzgerald* and *Mr. Stevens*, for the defendants in error.

Each one of the four counsel filed a separate brief. The points presented on the part of the plaintiffs in error are taken from the brief of *Mr. Seymour*, and those on the part of the defendant in error from the brief of *Mr. Stevens*.

Points and Authorities submitted on the part of the Plaintiffs in Error.

First exception to the charge.—The court erred in charging the jury that “the letters-patent which have been given in evidence by the plaintiff are for a new process, mode, or method of converting puddlers’ balls into blooms by continuous pressure and rotation of the balls between converging surfaces, thereby dispensing with the hammer, alligator jaws, and rollers, accompanied by manual labor, previously in use to accomplish the same purpose; and the said letters-patent secure to the patentee the exclusive right to construct, use, and vend any machine adapted to accomplish the objects of his invention, as above specified, by the process, mode, or method above-mentioned.”

I. The court erred in charging the jury that Burden’s patent was for a new process, mode, or method.

A process or mode may be patented. *Curtis*, p. 65, 66, 67, 68, 69, 70, 71, 73, and cases there cited, from § 77 to § 83.

1. Burden did not patent a process, but a machine.

What he designed to cover by his patent is to be gathered

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from the patent itself, the specification, and its summing up. Webster on Subject-Matter, p. 18, and note Z; *Davoll v. Brown*, 1 Woodb. & M., 59; *Russell v. Crowley et al.*, 1 Cromp. M. & R., 864; *Moody v. Fiske*, 2 Mason, 112; *Rex v. Cutler*, 1 Stark., 283; *Leroy v. Tatham*, 14 How., 156, 171; *Wyeth v. Stone*, 1 Story, 285; *Gray v. James*, Pet. C. C., 394, 400; Mr. Justice Nelson's Opinion, in Appendix A, annexed.

2. Burden's patent claims that he has invented a new and useful machine, &c., not a process.

3. The specification, which purports to be a part of the letters-patent, states the invention to consist in a "machine," not in a process.

*4. The summing up of the specification, or the claim, is substantially for a "machine." [*254]

And he specifies three modes of applying the principle of his invention; thus complying with the requisition of the sixth section of the act of 1836, in reference to all patents for machines, and for machines only.

The preparing of puddlers' balls is not claimed as an invention, nor could it be, for it is as old as the art of making iron by the process of puddling. See *Encyclopædia Americana*, Vol. 7, Art. Iron, p. 72. The preparing puddlers' balls by pressure is not claimed, for that, too, is old. *Ib.* But the claim is for the invention of the new mechanism for preparing puddlers' balls.

II. An invention, such as Burden's is described to be in the patent and specification, is, upon the authority of elementary works, and the decision of our courts, a machine, and not a process.

The distinction between a patent for a machine and a patent for a process is well known.

1. A patent for a machine is defined by Curtis, § 93, as follows: "If the subject of the invention or discovery is not a mere function, but a function embodied in some particular mechanism, whose mode of operation and general structure are pointed out, and which is designed to accomplish a particular purpose, function, or effect, it will be a machine in the sense of the patent law."

If the specification describes "not a mere function, but a machine of a particular structure, whose modes of operation are pointed out to accomplish a particular purpose or end, the patent is for a machine, and not for a principle or function detached from machinery." *Blanchard v. Sprague*, 3 Sumn., 540.

A method or process may be the subject of a patent. See *Phillips*, pp. 93, 94; *Curtis*, § 80, 81.

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Among the cases cited (see Curtis, § 79) of patents for a method, or, as the writer expresses it, "for the practical application of a known thing to produce a particular effect," are

Hartley's invention to protect buildings from fire by the application of plates of metal. See also 1 Webs. Pat. Cas., pp. 54, 55, 56; and note, pp. 55, 56.

Forsyth's patent for the application of detonating powder, which he did not invent, to the discharge of artillery, mines, &c.

In this case the patentee succeeded in an action against the party using a lock of different construction from any shown in the drawing annexed to his specification, and, as Curtis says, "thus established his right to the exclusive use and application of detonating powder as priming, whatever the construction of the lock by which it was discharged." 1 Webs. Pat. Cas., pp. 95, 97, n.

*255] *Hall's patent for the application of the flame of gas to singe off the superfluous fibres of lace, and other goods, is another of this class. 1 Webs. Pat. Cas., p. 99.

The plaintiff had a verdict founded on his sole right to use gas-flame for the clearing of fibres from lace. Curtis, p. 67, n. 1; 1 Webs. Pat. Cas., pp. 100, 103; *Neilson v. Harford*, Id., 191, &c.; *Neilson v. Thompson*, Id., 275; *The Househill Co. v. Neilson*, Id., 673; *Boulton v. Bull*, 2 H. Bl., 492; Clegg's Patent, 1 Webs. Pat. Cas., 103; Morse's Patents; *McClurg v. Kingsland*, 1 How., 202; *Russell v. Cowley*, 1 Webs. Pat. Cas., 459.

2. The preparing a puddler's ball is reducing and compacting it by pressure into the form of a bloom. See *Encyclopædia Americana*, vol. 7, article Iron, p. 72; *Nicholson's Op. Mechanic*, pp. 334-5; *Ure's Dic. of Arts and Manufactures*, p. 703.

If Burden's claim, then, is for the reducing and compacting the ball by pressure into the form of a bloom, it is a claim for a process long before known in the manufacture of iron, and would therefore be void for want of novelty.

To avoid this difficulty, the statement of the claim goes on to say that he claims the preparing these balls by causing them to pass between curved or plane surfaces, in the manner described in his drawings and in the specification of the several parts of the machine.

If the words "the particular method of the application" were correctly held in *Wyeth v. Stone*, before cited, to mean the particular apparatus and machinery described in the

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specification, is not the claim for preparing puddlers' balls, by causing them to pass through a certain machine, as clearly a claim for the invention of the machine?

Wyeth claimed not only the art or principle of cutting ice of a uniform size, but "the particular method of the application of the principle"; and this last part of the claim was held to be the only valid part of it, and to be a claim of the particular apparatus and machinery, described in the specification to effect the purpose of cutting ice.

So Burden's patent, if it be sustained at all, must be held to be a patent for the particular apparatus and machinery, described in the specification to effect the "preparing the puddlers' balls." See also the case of *Blanchard v. Sprague*, 3 Sumn., 535.

It was objected, on the trial in this last case, "that the plaintiff's specification was defective; that he claimed the functions of the machine, and not the machine itself."

Mr. Justice Story, at p. 540, says: "Looking at the present specification, and construing all its terms together, I am clearly *of opinion that it is not a patent claimed for a function, but it is claimed for the machine specially described in the specification; that it is not for a mere function, but for a function as embodied in a particular machine, whose mode of operation and general structure are pointed out."

If to claim a "method" or mode of operation in the abstract, explained in the description of certain machinery, be a claim for a machine, as was adjudged in *Blanchard v. Sprague*, is not the claim of preparing puddlers' balls, by the operation of certain machinery, much more a claim of a machine? In other words, is the claim of a particular result before known, from the operation of a machine claimed to be new, any thing else than a claim for the peculiar construction of the machine itself, by which that result is effected?

3. Again, the result claimed by Burden is to produce a bloom from a puddle ball by pressure, welding together the particles of iron, and expressing in part the impurities, and partly shaping the mass for the after operation of converting it into bars, also by pressure.

It cannot be pretended that Burden invented this, or any part of it. This was all done before his invention, under the hammer and the alligator jaws. But it may be said that he invented an improvement in this process. This cannot be; for he only compresses the mass to cement the particles, express the impurities, and give shape; all this was done before

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by the hammer and the jaws, and, in the opinion of many, better done than he does it.

4. Again, it may be said that he made an improvement in the operation by making it continuous. This brings the matter to a true test, and shows that it is the invention of a machine to render the operation continuous which before had been intermittent.

5. It may be claimed that he has invented or introduced the element of self-action. This establishes the defendant's proposition that Burden's patent is only for a machine. For the meaning of this is, as the term self-action must be predicated of material substances, that he has substituted an organization of machinery to perform automatically what was before performed partly by hand and partly by machinery. Machines for nail-cutting, making hook-head spikes, carding and spinning, weaving, felting, are self-acting machines, which have been invented to carry on known processes; all have the element of self-action, and yet all of them have been recognized as machines, and not processes.

III. The plaintiff in his declaration counts upon his patent as a patent for a machine only, and not for a process.

*257] *He ought to be permitted to recover only *secundum allegata et probata.*

IV. But suppose the patent be for a process, and not for a machine: then we submit that the court erred in sustaining the patent as a patent for a new process of preparing puddlers' balls, by continuous pressure and rotation of the balls between converging surfaces.

1. For this process itself is a well known and common process in the arts, and therefore could not be patented at the time of the alleged invention.

The operation to which the puddler's ball is subjected, that is, the process, produces common results necessarily arising from pressure on all soft and porous substances, to wit: condensation, expression of matter, and change of form.

2. All the experts testify that Burden's invention consists in carrying on the old process of reducing a puddler's ball to a bloom, by pressure created and continued by his machinery.

That the machinery by which such pressure may be applied is patentable, is obvious. But aside from the peculiar construction of Burden's machinery, there is nothing new in its application. It is merely the application of a known mode of operation in the arts, to produce a known result, that is, mechanical pressure, to produce a bloom out of a puddler's ball. See Curtis, p. 78, § 88.

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That this form of applying mechanical pressure is not new, was proved by, &c., &c.

Notwithstanding the condition embodied in the second proposition contained in the charge of the court, as follows: "The machines for milling buttons, milling coin, and rolling shot, which have been given in evidence by the defendants, do not show a want of novelty in the invention of the said patentee, as already described, if the processes used in them, the purposes for which they were used, and the objects accomplished by them, were substantially different from those of the said letters-patent;" yet taken in connection with the construction given by the court to the patent, in the first proposition contained in the charge, the defendants were deprived of the defence to which they were entitled, to wit: That the reducing puddlers' ball to blooms, by their rotation and pressure between converging and continually approximating surfaces, was but a double use of a process or machine, long before used in milling buttons, milling coins, and rolling shot.

For the court had decided, in the first proposition of the charge, that Burden's patent was "for a new process of converting puddlers' balls into blooms, by continuous pressure and rotation of the ball between converging surfaces."

*In other words, that the application by the plaintiff's machine to the puddler's ball, of the old method [*258 of reducing and compacting metals by the continuous pressure of converging surfaces, constituted such a novel process in the manufacture of iron, that (its utility not being questioned) the plaintiff's patent was good, notwithstanding the previous use of the milling machine on copper, silver, and gold, and of the shot machine on lead, in compacting and reducing those metals by the rotation of the metals and the continuous pressure of converging faces.

4. Burden's patent is clearly a case of double use. See *Curtis on Pat.*, §§ 85 to 89, and notes and cases therein cited; *Losh v. Hague*, 1 *Webs. Pat. Cas.*, 207; *Howe v. Abbott*, 2 *Story*, 190-193.

To this defence the defendants were clearly entitled. The processes of milling the coin, finishing the edges of the buttons, making the shot or balls, and making the blooms, are strictly identical.

V. The court erred in charging the jury as they did in the latter clause of the first proposition contained in the charge, to wit: "And the said letters-patent secure to the patentee the exclusive right to construct, use, and vend any machine adapted to accomplish the objects of his invention as above specified, by the process, mode, or method above mentioned."

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Also in laying down the third proposition in his charge, to wit: "That the machine used by the defendants is an infringement of the said letters-patent, if it converts puddlers' balls into blooms by the continuous pressure and rotation of the balls between converging surfaces, although its mechanical construction and action may be different from that of the machines described in the said letters-patent."

Also in excluding the testimony offered by the following question, to wit: by changing the form of the rolling surfaces in Mr. Winslow's machine, can it be made to roll a sphere?

Also the testimony offered as follows: "The counsel for the defendants then offered to prove by this witness that the machine used by the defendants differed, in point of mechanical construction and mechanical action, from the machines described in Burden's specification."

All these propositions were thus erroneously adjudged against the defendants, as a sequence or corollary following from the first main proposition which the court had laid down against the defendants, to wit, that the plaintiff's patent was for a process and not for a machine. The court in substance held, that although the mechanical construction and action of the defendants' machine might be different from that of the plaintiff's, it was still an infringement if it reduced the

[*259] balls to blooms by continuous pressure and rotation.

This was an erroneous position. For one thing was certain. We had the right to reduce puddlers' balls to blooms by any machine having a different action from that of the plaintiff. *Curtis, § 96, n. 2; Whittemore v. Cutter, 1 Gall., 478-491; Barrett v. Hall, 1 Mason, 470.*

In the light of these authorities, proof of different mechanical construction and different action was competent and highly pertinent to establish "a peculiar structure," and the production of a new effect.

VI. The court erred in excluding the evidence offered to be given by the witness, Hibbard, to wit: "That the practical manner of giving effect to the principle embodied in the machine used by the defendants was entirely different from the practical manner of giving effect to the principle embodied in Mr. Burden's machine—that the principle of the two machines, as well as the practical manner of carrying out those principles, was different; and that the machine used by the defendant produced by its action on the iron a different mechanical result, on a different mechanical principle, from that produced in Burden's machine."

The witness was an *expert*, and no objection was urged on

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that score, or to the form of the question. *Silsby v. Foote*, 14 How., 218, 225.

This offer embraced legitimate proof tending to establish a general proposition material to the issue, to wit :

That the defendant's machine was constructed on a different principle, or had a different mode of operation from the plaintiff's.

Proof that the principle of one machine was different from that of the other, was tantamount to proof that their mode of operation was different; for two machines, different in principle, cannot well have the same mode of operation, although they may produce the same result.

But the defendant not only offered to prove that the machines were different, but also that they produced on the iron a different mechanical result. See *Curtis on Pat.*, p. 264, § 222; also p. 285; also p. 286, § 241.

In conclusion, the court in this case should have held that the plaintiff's patent was for a machine. And on the question of novelty the court should have left it to the jury as a question of fact, to find upon the testimony whether the plaintiff's machine was the same in its principle or *modus operandi* as the milling, button, or shot machines. And on the question of infringement, the court should have left it to the jury, upon the *testimony, to find whether the defendants' machine was the same in its distinctive character or principle as the plaintiff's. [*260]

Brief on the part of defendant in error.

First. The whole question in this cause depends upon the correctness of the construction contended for by the counsel for the defendant in error, and which the judge gave to the patent on the trial. If this construction be correct, the other two instructions given by the learned judge to the jury are also correct and follow as necessary corollaries. *Curtis on Patents*, § 146-7-8.

Second. The construction of the patent given by the court on the trial, by the first instruction to the jury, was correct.

I. The *patent* (that is the parchment) made out at the patent office, by the proper officer in that department, does not in any case, according to the patent law of this country, describe the thing patented. To ascertain the thing patented, the specification, which is filed before the patent is issued, is the test in all cases, as to what the patent secures to the patentee; and to ascertain that, the whole specification must be consulted; and the modern decisions have declared, that a

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liberal construction must be given to it in favor of the patentee. Patent Act of 1836, § 5; Curtis on Pat., § 122, 123, 126, 127; *Ames v. Howard*, 1 Sumn., 482, 485; *Hogg v. Emerson*, 6 How., 437, 482; *Davoll v. Brown*, 1 Woodb. & M., 53, 57.

It is undoubtedly true, if the description or title of the invention, as stated in the patent, is irreconcilably repugnant to the description of the invention contained in the specification, as if the description in the patent be a machine for making nails, and the invention described in the specification is of a machine for carding wool, the patent would be void, upon the ground that the government had not given to the patentee a legal exclusive title to his invention. But nothing can be deduced from this principle of law to sustain the position that the invention is only what it is stated to be in the title stated in the patent, but on the contrary, the very reverse of that position is what renders the patent void in such cases.

In this case there is no such repugnancy. True, the patent states the invention to be of a new and useful machine for rolling puddle balls, &c., but this is not so repugnant to the description of the invention contained in the specification, as would preclude the court from adjudging that the government intended to and did grant the patent, for the invention described in the specification, to wit,—for an improvement in the process, &c. Unless the title of the invention described in the patent is clearly repugnant to the description ^{*261]} of the invention in the specification, the patent will be deemed to be a grant of the exclusive right to the invention described in the specification, but it cannot diminish the extent of the invention described, and claimed in the specification.

In short, the description of the invention in the specification is the act of the inventor, for which, if it be new and useful, the government is bound to grant him a patent. The granting of the patent is the act of the government, and if the description in that grant be not clearly repugnant to that which the inventor claimed and was entitled to, it will be deemed to be a grant of the thing to which he was entitled.

II. By any just or legal construction of the specification forming a part of the patent in question, and giving the only description of the invention for which the patent issued, said patent is for a new process, mode, or method, of converting puddlers' balls into blooms, by continuous pressure and rotation of the ball between converging surfaces; thereby dispensing with the hammer, alligator jaws, and rollers accompanied with manual labor, previously in use to accomplish

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the same purpose, and is not confined to the particular machines described in the specifications and drawings.

The specification commences in these words: "To all whom it may concern, be it known, that I, Henry Burden, of the city of Troy, in the county of Rensselaer, and State of New York, have invented an improvement in the process of manufacturing iron." Now let us here pause, for an instant, to inquire if the patentee really intended to represent his invention as one consisting in a new or improved machine, to be used in the manufacture of iron; why, with his thoughts upon the subject, did he not say so, instead of calling it an "improvement in the process of manufacturing iron"? I confess my utter inability to divine any reasonable answer to this question. The improbability of such a wilful misnomer is greatly enhanced by the conceded and well-known fact, that a new or improved process is patentable, no less than a new or improved machine: process or method, which, in the patent law, are said to be synonymous, are among the few words in familiar use, machine being another of these words, expressive of the few proper subjects of a patent; so that to hold this to be a patent for a machine, is to impute to the patentee the absurdity not only of omitting to call his invention by its proper name, but of substituting, at the outset, another name of well-known signification in law, expressly appropriated to another and widely different subject of a patent.

But the specifications contain other expressions which are in strict accordance with the language already quoted, and require the same interpretation. After particularly and clearly *describing the process in question, and the means by which it is accomplished, the patentee proceeds as follows: "It will be readily perceived also, by the skilful machinist, that the principle upon which I proceed may be carried out under various modifications, of which I have given two examples; and these might be easily multiplied, but this is not necessary, as I believe that those which have been given must suffice to show, in the clearest manner, the nature of my invention, and point out fully what I desire to have secured to me under letters-patent of the United States." Does this look like only claiming to be the inventor of a specific machine? On the contrary, the patentee refers to the descriptions he has given of the mechanical contrivances by which his process may be carried on, as illustrative only of the "principle" on which he "proceeds"; and, referring to the two machines thus described, he adds, "and these might be easily multiplied." Does this language import an

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intention to limit his claim to them? But an equally decisive test of the patentee's claim remains yet to be considered. His specification concludes with a summary. "In order to ascertain the true construction of the specification in this respect, we must look to the summing up of the invention, and the claim thereof asserted in the specification; for it is the duty of the patentee to sum up his invention, in clear and determinate terms; and his summing up is conclusive upon his right and title." *Wyeth v. Stone*, 1 Story, 273, 285.

The patentee's summary is as follows: "Having thus fully made known the nature of my said improvement, and explained and exemplified the manner in which I construct the machinery for carrying the same into operation, what I claim as constituting my invention, and desire to secure by letters-patent, is the preparing of the puddlers' balls as they are delivered from the puddling furnace, or of other similar masses of iron, by causing them to pass between a revolving cylinder and a curved segmental trough adapted thereto, constructed and operating substantially in the manner of that herein described and represented in figures 2 and 3, of the accompanying drawings, or by causing the said balls to pass between vibratory or reciprocating curved surfaces, operating upon the same principle, and producing a like result by analogous means."

Now by his "improvement," mentioned at the commencement of this summary, it is indisputable that the patentee means his invention; and this he describes as being carried into operation by means of machinery constructed for the purpose. With what propriety, then, can it be said that the invention claimed is of the machinery itself? "What I claim," he adds, as "constituting my invention, is the preparing of the puddlers' *balls," &c. Is the process of preparing puddlers' balls a machine? If not, is it not a flat contradiction of the language of the patentee to say that he claims to be the inventor of a machine and not of a process? And what is there in the other parts of the specification to neutralize this explicit and unequivocal language? It is said that the patentee describes and has furnished drawings representing two several machines used by him, the one in his first essays and the other subsequently. This is true, and it is also true, that the two are wholly different, not only in form, but in mechanical construction, having, in fact, nothing in common except their mutual adaptation to a like process and effect.

Besides, the court will please to observe that the specification claims no particular form of apparatus for carrying his

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mode or method of converting puddlers' balls into blooms, into effect. The patent cannot, therefore, be construed as confining the invention to the two particular machines which he has described, that would accomplish that mode, method, or process. *Curtis on Pat.*, § 80, 81; *Minter v. Wells*, 1 Webs. Pat. Cas., 130.

The specification should be so construed as to make the claim coextensive with the actual discovery, if the fair import of the language used will admit of it. *Curtis on Pat.*, § 132.

III. The patent is not for a principle merely, but for a mode, method, or process, giving two practical means for accomplishing it.

The patentee shows, by his specification, that he had succeeded in embodying the principle by inventing some mode of carrying it into effect, and thus converting it into a process. "You cannot," said Alderson, B., in *Jupe v. Pratt*, 1 Webs. Pat. Cas., 146, "you cannot take out a patent for a principle; you may take out a patent for a principle coupled with a mode of carrying the principle into effect. If you have done that, you are entitled to protect yourself from all other modes of carrying the same principle into effect, that being treated by the jury as a piracy of your original invention."

"A mere principle," says Mr. Curtis, "is an abstract discovery; but a principle, so far embodied and connected with corporeal substances as to be in a condition to act and produce effects in any art, trade, mystery, or manual occupation, becomes the practical manner of doing a practical thing. It is no longer a principle, but a process." *Curtis on Pat.*, § 72; see also § 77, 78, and notes, p. 59, 66.

With the requirements of the law in this respect, the patentee has complied in a manner perfectly unexceptionable, and perfectly consistent with the construction of his patent, insisted on by the plaintiff. There is not, in the specification, a single *expression indicative of an intention to limit [*264 his claim as a inventor to one or both of the machines described by him, while, on the contrary, the language plainly infers a fixed purpose to guard against such an interpretation. *Curtis on Patents*, § 148, and note 1.

IV. If this construction of the patent is correct, it necessarily follows, that the patent protects the patentee from all other modes of carrying the same mode, process, or method into effect, which is in substance and effect the principle held by the judge in the last clause of his first instruction to the jury. *Jupe v. Pratt*, 1 Webs. Pat. Cas., 146; *Curtis on Pat.*, § 148, and note 1.

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Third. The rejection of the evidence offered on page 84 of the record, constitutes no ground of error.

I. The decision, if wrong, was cured by the evidence of the same facts afterwards elicited from the witnesses.

II. If the construction of the patent contended for by plaintiff below, and held by the court, is correct, the testimony was properly excluded. *Jupe v. Pratt*, 1 Webs. Pat. Cas., 146, *supra*; Curtis on Pat., § 148, and *n. 1*.

Fourth. The decision, excluding the evidence of Winslow's patents, was clearly right.

If the machine used by defendant was an infringement of plaintiff's patent, the fact that Winslow had obtained a patent for it would be no defence, and if it was not an infringement of plaintiff's patent, it was not material in this suit whether it had or had not been patented.

Fifth. In the argument in the court below, on the motion for a new trial on this bill of exceptions, the counsel for the defendants objected that there was a variance between the declaration and the patent given in evidence, unless the court held the patent was for a particular machine or machines. That objection was, however, justly and legally disregarded by both members of the court in their decision of the motion.

The objection is technical, and it is entirely settled by the practice of the State of New York, that such objection cannot avail the party unless taken when the evidence is offered.

No such objection was taken on the trial of this cause, nor was there any decision of the court, or any exception on any such question raised on the trial. *Watson's Executors v. McLaren*, 19 Wend. (N. Y.), 563.

Many other authorities might be cited, but it is unnecessary. The member of this court from the State of New York knows this to be the rule, and both the judges of the court below disregarded the objection.

Besides, if the objection had been made at the trial, that *265] the *patent given in evidence varied from that described in the declaration, the court would have directed the declaration to be amended by substituting the word process in the place of machine. The defendants could not have been misled or prejudiced by such inaccuracy of description. 2d Rev. Stat. of New York, 3d ed., p. 504, § 98, p. 520, § 7, subd. 14, and § 8; 2d Rev. Stat. of New York, 4th ed., p. 510, § 169, 170.

Sixth. No question as to the novelty of the invention for which this patent was issued, is presented by the record in this cause, except that contained in the 2d instruction of the

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judge to the jury. That instruction was right in point of law, and the jury found the fact with the plaintiff below (defendant in error).

Mr. Justice GRIER delivered the opinion of the court.

Peter A. Burden, who is assignee of a patent granted to Henry Burden, brought this suit against the plaintiffs in error for infringement of his patent. The declaration avers that Henry Burden was "the first inventor of a new and useful machine for rolling puddle balls," for which a patent was granted to him in 1840, and that the defendants, Corning and Winslow, "made, used, &c., this said new and useful machine in violation and infringement of the exclusive right so secured to plaintiff."

The defendants below, under plea of the general issue, gave notice that they would prove, on the trial, that Henry Burden "was not the first and original inventor of the supposed new and useful machine for rolling puddle balls, &c."; that the machine of the plaintiff, and the principle of its operation was not new, and that the common and well-known machines called nobbling rolls, which were in use long before the application of Burden for a patent, embraced the same invention and improvements used for substantially the same purpose. And after setting forth many other matters to be given in evidence, affecting the novelty of plaintiff's machine, the notice denies that the machine used by the defendant was an infringement of that patented by plaintiff, and avers that the machine used by them was described in a patent issued to the defendant, Winslow, in December, 1847, "for rolling and compressing puddlers' balls," differing in principle and mode of operation from that described in the plaintiff's patent.

To support the issue, in his behalf, the plaintiff gave in evidence a patent to Henry Burden, dated 10th of December, 1840, for "a new and useful machine for rolling puddlers' balls and other masses of iron in the manufacture of iron"; and followed it by testimony tending to show the novelty and utility of his *machine, and that the machine used by [*266 the defendants was constructed on the same principles, and there rested his case.

The defendants then offered to read in evidence the patent of Winslow for his "new and useful improvement in rolling and compressing puddlers' balls." The plaintiff objected to this evidence as irrelevant, and the court sustained the objection and overruled the evidence. This ruling of

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the court formed the subject of defendant's first bill of exceptions.

The defendants then proceeded to introduce testimony tending to show want of originality in the plaintiff's machine; and also that the principle and mode of operation of the defendant's machine was different from that described in the plaintiff's patent; and finally called a witness named Hibbard. This witness gave a history of the various processes and machines used in the art of converting cast iron into blooms or malleable iron. He spoke of the processes of puddling, shingling, and rolling, and attempted to define the difference between a process and a machine. The introduction of this philological discussion seems at once to have changed the whole course of investigation, to the entire neglect of the allegations of the declaration and of the issues set forth in the pleadings, in support of which all the previous testimony had been submitted to the jury. The defendant's counsel then proposed the following question to the witness: "Do you consider the invention of Mr. Burden, as set forth in his specification, to be for a process or a machine?" This question was objected to, overruled by the court, and a bill of exceptions sealed.

The counsel for the defendants then offered to prove, by this witness, "that the practical manner of giving effect to the principle embodied in the machine used by the defendants, was entirely different from the practical manner of giving effect to the principle embodied in Mr. Burden's machine; that the principles of the two machines, as well as the practical manner of carrying out those principles, were different; and that the machine used by the defendants produced, by its action on the iron, a different mechanical result on a different mechanical principle from that produced in Mr. Burden's machine." To the introduction of this testimony the plaintiff's counsel objected, and it was overruled by the court, and, at the defendant's instance, a bill of exceptions sealed.

The defendant's counsel then proposed to prove "that the machine used by the defendants differed in point of mechanical structure and mechanical action from the machines described in the plaintiff's specification." This testimony was also overruled and exceptions taken.

After some further examination of witnesses, the learned *267] judge announced his intention of instructing the jury, in the three following propositions, upon which the defendant's counsel declined to give further testimony, and excepted to his instructions.

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“1. The letters-patent to Henry Burden, which have been given in evidence by the plaintiff, are for a new process, mode, or method of converting puddlers' balls into blooms, by continuous pressure and rotation of the ball between converging surfaces; thereby dispensing with the hammer, alligator jaws, and rollers accompanied with manual labor, previously in use to accomplish the same purpose. And the said letters-patent secure to the patentee the exclusive use to construct, use, and vend any machine adapted to accomplish the objects of his invention as above specified, by the process, mode, or method above mentioned.”

“2. The machines for milling buttons, milling coin, and rolling shot, which have been given in evidence by the defendants, do not show a want of novelty in the invention of the said patentee, as already described, if the processes used in them, the purposes for which they were used, and the objects accomplished by them, were substantially different from those of the said letters-patent.”

“3. That the machine used by the defendants is an infringement of the said letters-patent, if it converts puddlers' balls into blooms by the continuous pressure and rotation of the balls between converging surfaces, although its mechanical construction and action may be different from those of the machines described in the said letters-patent.”

As the first instruction of the court contains the most important point in the case, and a decision of it will dispose of most of the others, we shall consider it first in order.

Is the plaintiff's patent for a process or a machine?

A process, *eo nomine*, is not made the subject of a patent in our act of Congress. It is included under the general term “useful art.” An art may require one or more processes or machines in order to produce a certain result or manufacture. The term machine includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result. But where the result or effect is produced by chemical action, by the operation or application of some element or power of nature, or of one substance to another, such modes, methods, or operations, are called processes. A new process is usually the result of a discovery; a machine, of invention. The arts of tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores, and numerous others, are usually carried on by processes, as distinguished from machines. One may discover a new and useful *improvement in the process of tanning, dyeing, &c., irrespective of any particular form of machinery or mechanical

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device. And another may invent a labor-saving machine by which this operation or process may be performed, and each may be entitled to his patent. As, for instance, A has discovered that by exposing India rubber to a certain degree of heat, in mixture or connection with certain metallic salts, he can produce a valuable product or manufacture; he is entitled to a patent for his discovery, as a process or improvement in the art, irrespective of any machine or mechanical device. B, on the contrary, may invent a new furnace or stove, or steam apparatus, by which this process may be carried on with much saving of labor, and expense of fuel; and he will be entitled to a patent for his machine, as an improvement in the art.¹ Yet A could not have a patent for a machine, or B for a process; but each would have a patent for the means or method of producing a certain result, or effect, and not for the result or effect produced. It is for the discovery or invention of some practicable method or means of producing a beneficial result or effect, that a patent is granted, and not for the result or effect itself. It is when the term process is used to represent the means or method of producing a result that it is patentable, and it will include all methods or means which are not effected by mechanism or mechanical combinations.

But the term process is often used in a more vague sense, in which it cannot be the subject of a patent. Thus we say that a board is undergoing the process of being planed, grain of being ground, iron of being hammered, or rolled. Here the term is used subjectively or passively as applied to the material operated on, and not to the method or mode of producing that operation, which is by mechanical means, or the use of a machine, as distinguished from a process.

In this use of the term it represents the function of a machine, or the effect produced by it on the material subjected to the action of the machine. But it is well settled that a man cannot have a patent for the function or abstract effect of a machine, but only for the machine which produces it.

It is by not distinguishing between the primary and secondary sense of the term "process," that the learned judge below appears to have fallen into an error. It is clear that Burden does not pretend to have discovered any new process by which cast iron is converted into malleable iron, but a new machine or combination of mechanical devices by which the slag or impurities of the cast iron may be expelled or pressed out of the metal, when reduced to the shape of pud-

¹ QUOTED. *Tilghman v. Proctor*, 12 Otto, 722; s. c., 2 Morr. Tr., 180.

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dlers' balls. The machines used before to effect this compression were tilt hammers *and alligator's jaws, acting by [*269 percussion and pressure, and by nobbling rolls with eccentric grooves, which compressed the metal by use of the inclined plane in the shape of a cyclovolute or snail cam. In subjecting the metal to this operation, by the action of these machines, more time and manual labor is required than when the same function is performed by the machine of Burden. It saved labor, and thus produced the result in a cheaper, if not a better manner, and was, therefore, the proper subject of a patent.

In either case the iron may be said, in the secondary sense of the term, to undergo a process in order to change its qualities by pressing out its impurities, but the agent which effects the pressure is a machine or combination of mechanical devices.

The patent of Burden alleges no discovery of a new process, but only that he has invented a machine, and, therefore, correctly states the nature of his invention.

The patent law requires that "every patent shall contain a short description or title of the invention or discovery, indicating its nature and design," &c. The patent in question recites that,

"Whereas Henry Burden, of Troy, New York, has alleged that he has invented a new and useful machine for rolling puddle balls, or other masses of iron, in the manufacture of iron, which he states has not been known or used before his application; has made oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said machine, &c."

The specification declares that his improvement consists in "the employment of a new and useful machine for rolling of puddlers' balls;" again he calls it "my rolling machine," and describes his "machine as consisting of a cast iron cylinder," &c. In fine, his specification sets forth the "particulars" of his invention, in exact accordance with its title in the patent, and in clear, distinct, unequivocal, and proper phraseology.

It is true that the patentee, after describing his machine, has set forth his claim in rather ambiguous and equivocal terms, which might be construed to mean either a process or machine. In such case the construction should be that which is most favorable to the patentee, "*ut res magis valeat quam pereat.*"¹ His patent having a title which claims a machine, and his specification describing a machine, to construe his

¹ CITED. *Winans v. Denmead, post, *342.*

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claim as for the function, effect, or result of his machine, would certainly endanger, if not destroy, its validity. His claim cannot change or nullify his previous specification with safety to his patent. He cannot describe a machine which will perform a certain function, and then claim the function itself, and all other machines that may be invented to perform the same function.

*270] *We are of opinion, therefore, that the learned judge of the court below erred in the construction of the patent, and in his first proposition or instruction to the jury. And as the second and third instructions are based on the first, they must fall with it. Taking the bills of exception to rejection of evidence in the inverse order, it is clear that the last two rulings being founded on the erroneous construction of the patent, are, of course, erroneous. The testimony offered was directly relevant to the issues trying, and should have been received.

The refusal of the court to hear the opinion of experts, as to the construction of the patent, was proper. Experts may be examined as to the meaning of terms of art on the principle of, "*cuique in sua arte credendum*," but not as to the construction of written instruments.

It remains only to notice the first bill of exceptions, which was to the rejection of the defendant's patent.

This is a question on which there may be some difference of opinion. In some circuits it has been the practice, when the defendant has a patent for his invention, to read it to the jury without objection; in others, it is not received, on the ground that it is irrelevant to the issue, which is a contest between the machine of the defendant and the patent of the plaintiff, and that a posterior patent could not justify an infringement of a prior one for the same invention.

By the patent act of 1793, any person desirous of obtaining a patent for an alleged invention, made application to the Secretary of State, and received his patent on payment of the fees, and on a certificate of the Attorney-General that his application "was conformable to the act." No examination was made by persons qualified to judge whether the alleged invention was new or useful, or had been patented before. That rested wholly on the oath of the applicant. The patent act of 1790 had made a patent *prima facie* evidence; but this act was repealed by that of 1793, and this provision was not reenacted in it. Hence a patent was not received in courts of justice as even *prima facie* evidence that the invention patented was new or useful, and the plaintiff was bound to prove these facts in order to make out his case. But the act

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of 4th of July, 1836, introduced a new system, and an entire change in the mode of granting patents. It provided for a new officer, styled a commissioner of patents, to "superintend, execute, and perform all acts and things touching and respecting the granting and issuing of patents, &c." The commissioner was authorized to appoint a chief clerk, and three examining clerks, machinist, and other officers.

On the filing of an application the commissioner is required *to make, or cause to be made, an examination of the [*271 alleged invention, in order to ascertain whether the same had been invented or discovered by any other person in this country, prior to the application; or whether it had been patented in this or any foreign country, or had been on public use or sale, with the applicant's consent, prior to his application; and if the commissioner shall find that the invention is new and useful, or important, he is authorized to grant a patent for the same. In case the decision of the commissioner and his examiner is against the applicant, and he shall persist in his claim, he may have an appeal to a board of examiners, to consist of three persons, appointed for that purpose by the Secretary of State, who, after a hearing, may reverse the decision of the commissioner in whole or in part. By the act of 1839, the Chief Justice of the District of Columbia was substituted to the board of examiners.

It is evident that a patent, thus issued after an inquisition or examination, made by skilful and sworn public officers, appointed for the purpose of protecting the public against false claims or useless inventions, is entitled to much more respect, as evidence of novelty and utility, than those formerly issued without any such investigation. Consequently such a patent may be, and generally is, received as *prima facie* evidence of the truth of the facts asserted in it. And in cases where the evidence is nicely balanced, it may have weight with a jury in making up their decision as to the plaintiff's right; and if so, it is not easy to perceive why the defendant who uses a patented machine should not have the benefit of a like presumption in his favor, arising from a like investigation of the originality of his invention, and the judgment of the public officers, that his machine is new, and not an infringement of the patent previously granted to the plaintiff. It shows, at least, that the defendant has acted in good faith, and is not a wanton infringer of the plaintiff's rights, and ought not, therefore, to be subjected to the same stringent and harsh rule of damages which might be justly inflicted on a mere pirate. It is true the mere question of originality or infringement generally turns on the testimony of the wit-

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nesses produced on the trial; but if the plaintiff's patent in a doubtful case may have some weight in turning the scale in his favor, it is but just that the defendant should have the same benefit from his; *valeat quantum valeat*. The parties should contend on an equal field, and be allowed to use the same weapons.

We are of opinion, therefore, that the court erred in refusing to permit the defendants' patent to be read to the jury.

The judgment of the Circuit Court is, therefore, reversed, and a *venire de novo* awarded.

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*ORDER.

This cause came on to be heard on the transcript of the record from the Circuit Court of the United States for the Northern District of New York, and was argued by counsel. On consideration whereof, it is now here ordered and adjudged by this court, that the judgment of the said Circuit Court, in this cause, be, and the same is hereby, reversed, with costs, and that this cause be, and the same is hereby, remanded to the said Circuit Court, with directions to award a *venire facias de novo*.

JOHN GARROW, THOMAS Y. HOW, JR., JAMES SEYMOUR, AND GEORGE MILLER, APPELLANTS, *v.* AMOS DAVIS, GEORGE M. PICKERING, WILLIAM MCCRILLIS, AND EPHRAIM PAULK.

Black, as agent for the owners, contracted to sell a large quantity of land in Maine, which contract was assigned by the vendee, until it came, through mesne assignments, into the hands of Miller and others.

Payments were made from time to time on account; but at length, in consequence of a failure to make the payments stipulated in the contract, and by virtue of a clause contained in it, the contract became void.

In this state of things Miller employed one Paulk to ascertain from Black the lowest price that he would take for the land, and then to sell to others for the highest price that he could get.

Paulk sold and assigned the contract to Davis for \$1,050.

Upon the theory that Paulk and Davis entered into a fraudulent combination, still, Miller and others are not entitled to demand that a court of equity should consider Davis as a trustee of the lands for their use. They had no interest in them, legal or equitable, nor anything but a good will, which alone was the subject-matter of the fraud, if there was any.

But the evidence shows that this good will did not exist; for Black was not willing to sell to Miller and others for a less price than to any other person. Although Paulk represented himself to be acting for Miller and others, when