

Hotchkiss et al. v. Greenwood et al.

ORDER.

This cause came on to be heard on the transcript of the record from the Circuit Court of the United States for the District of Louisiana, and was argued by counsel. On consideration whereof, 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.

JULIA P. HOTCHKISS, EXECUTRIX OF JOHN G. HOTCHKISS, DECEASED, JOHN A. DAVENPORT, AND JOHN W. QUINCY, PLAINTIFFS IN ERROR, *v.* MILES GREENWOOD AND THOMAS WOOD, PARTNERS IN TRADE UNDER THE NAME OF M. GREENWOOD & CO.

A patent granted for a "new and useful improvement in making door and other knobs, of all kinds of clay used in pottery, and of porcelain," by having the "cavity in which the screw or shank is inserted by which they are fastened largest at the bottom of its depth, in form of a dovetail, and a screw formed therein by pouring in metal in a fused state," was invalid.

The invention claimed in the schedule was manufacturing knobs as above described, of potter's clay, or any kind of clay used in pottery, and shaped and finished by moulding, turning, burning, and glazing; and also of porcelain.

The knob was not new, nor the metallic shank and spindle, nor the dovetail form of the cavity in the knob, nor the means by which the metallic shank was securely fastened therein. Knobs had also been used made of clay.¹

The only thing new was the substitution of a knob made out of clay in that peculiar form for a knob of metal or wood. This might have been a better or cheaper article, but is not the subject of a patent.²

The test was, that, if no more ingenuity and skill was necessary to construct the new knob than was possessed by an ordinary mechanic acquainted with the business, the patent was void; and this was a proper question for the jury.³

¹ APPLIED. *Brown v. Piper*, 1 Otto, 41. FOLLOWED. *Reckendorfer v. Faber*, 2 Otto, 352. CITED. *Collar Co. v. Van Dusen*, 23 Wall., 563.

² FOLLOWED. *Hicks v. Kelsey*, 18 Wall., 674; *Heald v. Rice*, 14 Otto, 755. CITED. *Packing Co. Cases*, 15 Otto, 572.

³ See also *Winans v. Denmead*, 15 How., 345; *Smith v. Goodyear Dental Vulcanite Co.*, 3 Otto, 492, 496; s. c., 1 Bann. & A., 211, 212; *Dunbar v. Myers*, 4 Otto, 197; *Union Paper Collar Co. v. Leland*, 1 Bann. & A., 493; *Miligan &c. Glue Co. v. Upton*, Id., 512; *Goodyear Vulcanite Co. v. Willes*, Id., 578; s. c., 1 Flipp., 400; *Putnam v. Weatherbee*, 2 Bann. & A., 80; *Com-*

stock v. Sandusky Seal Co., 3 Id., 190; *Simmons v. B'ackinton*, Id., 484; *Alcott v. Young*, 4 Id., 202; *Phillips v. City of Detroit*, Id., 350; *Scott v. Evans*, 11 Fed. Rep., 727. *S. P. Parkhurst v. Kinsman*, 1 Blatchf., 489; 18 How., 289; *Treadwell v. Parrott*, 5 Blatchf., 369; 3 Fish. Pat. Cas., 124; *Ransom v. New York*, 1 Fish. Pat. Cas., 252; *Teese v. Phelps*, McAll., 48; *Larrabee v. Corlran*, 5 Blatchf., 5; *Forbes v. Barstow Store Co.*, 2 Cliff., 379.

But the mechanic must be able to construct the article by means of his own ordinary knowledge, unaided by suggestion. *Woodman v. Stimpson*, 3 Fish. Pat. Cas., 98.

Hotchkiss et al. v. Greenwood et al.

THIS case was brought up, by writ of error, from the Circuit Court of the United States for the District of Ohio.⁴

It was a question involving the validity of a patent right, under the following circumstances.

The patent and specification were as follows:—

“The United States of America, to all to whom these letters patent shall come.

“Whereas John G. Hotchkiss, New Haven, Conn., John A. Davenport, and John W. Quincy, New York, have alleged that they have invented a new and useful improvement in making door and other knobs, of all kinds of clay used in pottery, and *of porcelain, which they state has not [249] been known or used before their application; have made oath that they are citizens of the United States, that they do verily believe that they are the original and first inventors or discoverers of the said improvement, and that the same hath not, to the best of their knowledge and belief, been previously known or used; have paid into the treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said improvement, and praying that a patent may be granted for that purpose: These are therefore to grant, according to law, to the said John G. Hotchkiss, John A. Davenport, and John W. Quincy, their heirs, administrators, or assigns, for the term of fourteen years from the 29th day of July, 1841, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said improvement, a description whereof is given in the words of the said Hotchkiss, Davenport, and Quincy, in the schedule hereunto annexed, and is made a part of these presents.

“In testimony, whereof, I have caused these letters to be made patent, and the seal of the Patent-Office has been hereunto affixed. Given under my hand at the city of Washington, this 29th day of July, A. D., 1841, and of the independence of the United States of America the sixty-sixth.

“DANIEL WEBSTER,
Secretary of State.

“Countersigned and sealed with the seal of the Patent-Office.

“HENRY L. ELLSWORTH,
Commissioner of Patents.

⁴ Reported below, 4 McLean, 456.

Hotchkiss et al. v. Greenwood et al.

“The schedule referred to in these letters patent, and making a part of the same.—To all whom it may concern:

“Be it known that we, John G. Hotchkiss, of the city and county of New Haven, and State of Connecticut, and John A. Davenport and John W. Quincy, both of the city, county, and State of New York, have invented an improved method of making knobs for locks, doors, cabinet furniture, and for all other purposes for which wood and metal, or other material knobs, are used. This improvement consists in making said knobs of potter’s clay, such as is used in any species of pottery; also of porcelain; the operation is the same as in pottery, by moulding, turning, and burning and glazing; they may be plain in surface and color, or ornamented to any degree in both; the modes of fitting them for their application to doors, locks, furniture, and other uses, will be as various as the uses to *which they may be applied, but chiefly [*250 predicated on one principle, that of having the cavity in which the screw or shank is inserted, by which they are fastened, largest at the bottom of its depth, in form of a dovetail, and a screw formed therein by pouring in metal in a fused state. In the annexed drawing, A represents a knob with a large screw inserted, for drawers and similar purposes; B represents a knob with a shank to pass through and receive a nut; C, the head of the knob calculated to receive a metallic neck; D, a knob with a shank calculated to receive a nut on the outside or front. What we claim as our invention, and desire to secure by letters patent, is the manufacturing of knobs, as stated in the foregoing specifications, of potter’s clay, or any kind of clay used in pottery, and shaped and finished by moulding, turning, burning, and glazing; and also of porcelain.

JOHN G. HOTCHKISS,
J. A. DAVENPORT,
JOHN W. QUINCY.

“Witnesses: ALPS. SHERMAN,
JAMES MONTGOMERY.”

In October, 1845, the plaintiffs in error brought an action in the Circuit Court of the United States for Ohio, against the defendants, for a violation of the patent right.

The defendants pleaded not guilty, and gave the following notice:—

“The plaintiffs will please take notice, that on the trial of the above cause the defendants will give in evidence to the jury, that the said John G. Hotchkiss, John A. Davenport, and John W. Quincy were not the original and first inventors

Hotchkiss et al. v. Greenwood et al.

and discoverers of making or manufacturing knobs of potter's clay or of porcelain. They will also prove that the making of knobs from potter's clay, and also from porcelain and other clays used by potters, was known and practised, and such knobs were made, used, and sold, in the cities of New York, Albany, Troy, and Brooklyn, in the State of New York; also in Jersey City, in the State of New Jersey; also in the city of Philadelphia, State of Pennsylvania; by John Mayer, Thomas Frere, William Lundy, Jr., and Charles W. Vernecker, residing in the city of New York; also by John Harrison, residing in Jersey City, in the State of New Jersey; and by Littlefield, Hattrick, & Shannon, of Philadelphia, in the State of Pennsylvania, long before the 29th day of July, in the year 1841, the date of the patent in the declaration mentioned. They will also prove that similar knobs were manufactured of potter's clay, and also of porcelain, and were also used and sold, long prior to the said 29th day of July, 1841, in the town
*251] of Burslem, in *Staffordshire, England; also in the town of Sandyford, near Tunstall; also in the town of Hanley, Staffordshire, England; also at Woodenbose village, in the county of Derbyshire, England. And the said defendants will prove the manufacture and use of said knobs, so made of clay and porcelain, by Godfrey Webster and John Webster, who now reside in East Liverpool, Columbiana County, Ohio; and also by Enoch Bulloch, who now resides in Wellsville, in the same county; also by Daniel Bennett, who now [resides] in the city of Pittsburg, Pennsylvania; all of whom formerly resided in Staffordshire, England. The defendants will also prove that the said patentees, John G. Hotchkiss, John A. Davenport, and John W. Quincy, at the time of making application for the said patent, well knew that the said knobs so patented had been previously made and sold in a foreign country, to wit, in the kingdom of Great Britain, and also in Germany, and did not believe themselves to be the first inventors or discoverers of manufacturing knobs from potter's clay or porcelain. All of which will be insisted upon in bar of the action. *CHAS. FOX,*
Attorney for the Defendants."

And in July, 1848, the following additional notice:—

"The plaintiffs in this cause will please take notice, that on the trial of the cause the defendants will give in evidence to the jury that the said John G. Hotchkiss, John A. Davenport, and John W. Quincy were not the original and first inventors and discoverers of making or manufacturing knobs

Hotchkiss et al. v. Greenwood et al.

of potter's clay, or of porcelain; they will also prove that knobs made of potter's clay, and of porcelain and other clays, had been previously publicly used and sold in the cities of New York, Albany, Troy, and Brooklyn, in the State of New York; also in Jersey City, in the State of New Jersey; also in New Haven and Middletown, in the State of Connecticut, long before and at the date of the patent under which the plaintiffs claim; the defendants will likewise prove, on said trial, that John Mayer, residing in Staten Island; Hoope & Lee, residing in the city of Brooklyn, in the State of New York; Edward H. Higgins, John Penfield, John Duntze, residing in New Haven, in the State of Connecticut; Matthew Fifo, William Fifo, Jane Fifo, John C. Smith, and certain persons doing business under the name of Smith, Fifo, and Co., residing in the city of Philadelphia, in the State of Pennsylvania, as early as the year 1831, and from that time on, and until, and at the time of obtaining the patent under which the plaintiffs claim, and before the alleged discovery and invention set forth in said patent, made, manufactured, and publicly sold and used, knobs made of potter's *clay, [*252 and of other clays, and of porcelain, in the several cities and places named."

The following bill of exceptions was taken during the trial:—

"The plaintiffs offered in evidence the patent specifications and drawings, and other evidence, tending to prove the originality, novelty, and usefulness of the inventions as described in said specifications; and other evidence, tending to show the violation of said patent by the defendant, and rested. Whereupon the defendants offered evidence tending to show that the said alleged invention was not originally invented by any one of the said patentees; and that if said invention was original with any of the said patentees, it was not the joint invention of all of said patentees; and other evidence, tending to show that the mode of fastening the shank or collet to the knob, adopted by the plaintiffs, and in said specification described, had been known and used in Middletown, Connecticut, prior to the alleged inventions of the plaintiffs, as a mode of fastening shanks or collets to metallic knobs. And the evidence being closed, the counsel for the plaintiffs insisted in the argument, that, although the knob, in the form in which it is patented, may have been known and used in the United States prior to their invention and patent; and although the shank and spindle, by which it is attached, may

Hotchkiss et al. v. Greenwood et al.

have been known and used in the United States prior to said invention and patent, yet if such shank and spindle had never before been attached to a knob made of potter's clay or porcelain, and if it required skill and thought and invention to attach the said knob of clay to the metal shank and spindle, so that the same would unite firmly, and make a solid and substantial article of manufacture, and if the said knob of clay or porcelain so attached were an article better and cheaper than the knob theretofore manufactured of metal or other materials, that the patent was valid, and asked the court so to instruct the jury, which the court refused to do; but, on the contrary thereof, instructed the jury, that, if knobs of the same form, and for the same purposes with that described by the plaintiffs in their specifications, made of metal or other material, had been known and used in the United States prior to the alleged invention and patent of the plaintiffs, and if the spindle and shank, in the form used by the plaintiffs, had before that time been publicly known and used in the United States, and had been theretofore attached to metallic knobs by means of the dovetail and the infusions of melted metal, as the same is directed in the specification of the plaintiffs to be attached to the knob of potter's clay or porcelain, so that if the knob of clay or *porcelain is *253] the mere substitution of one material for another, and the spindle and shank be such as were theretofore in common use, and the mode of connecting them to the knob by dovetail be the same that was theretofore in use in the United States, the material being in common use, and no other ingenuity or skill being necessary to construct the knob than that of an ordinary mechanic acquainted with the business, the patent is void, and the plaintiffs are not entitled to recover. The counsel for the defendants asked the court to instruct the jury, that, if they should be satisfied that any one of the patentees was the original inventor of the article in question, and that the same was new and useful, yet if they should be satisfied from the evidence that all the patentees did not participate in the invention, the patent is void, and the plaintiffs cannot recover. The court gave the above, modified by the remark, that the patent was *prima facie* evidence that the invention was joint, though the fact might be disproved on the trial; and the court remarked, there was no evidence except that of a slight presumption against the joint invention as proved by the patent; to which refusal of the court to instruct the jury as asked by the counsel for the plaintiffs, and to the instruc-

Hotchkiss et al. v. Greenwood et al.

tions given, the plaintiffs, by their counsel, except, and pray the court to sign this their bill of exceptions.

“JOHN MCLEAN. [SEAL.]”

Upon this exception, the case came up to this court, and was argued by *Mr. Ewing*, for the plaintiffs in error, and *Mr. Chase*, for the defendants in error.

Mr. Ewing, for the convenience of reference, divided the instructions of the court into paragraphs, as follows.

The court instructed the jury,—

1. That if knobs of the same form and for the same purposes with that described by the plaintiffs in their specifications, made of metal or other material, had been known or used in the United States prior to the alleged invention and patent of the plaintiffs :

2. And if the spindle and shank, in the form used by the plaintiffs, had before that time been publicly known in the United States, and had theretofore been attached to metallic knobs by means of the dovetail and infusions of melted metal, as the same is directed, in the specifications of the plaintiffs, to be attached to the knob of potter's clay or porcelain :

3. So that, if the knob of potter's clay or porcelain is the mere substitution of one material for another, and the spindle and shank be such as were theretofore in use in the United States :

4. The material being in common use, and no other ingenuity or skill being necessary to construct the [*254] knob than that of an ordinary mechanic acquainted with the business :

5. The patent is void, and the plaintiffs are not entitled to recover.

It will be seen that the court, in the paragraph of the instructions which I have numbered 4, take upon themselves to determine in the negative the question whether “it required skill and thought and invention to attach the knob of clay to the metal shank and spindle, so that they would unite firmly, and make a solid, substantial article of manufacture,” instead of submitting it to the jury. It was a question of fact, not arising upon the construction of a written or printed paper, but depending upon evidence, and ought to have been submitted to the jury if material in the case.

It will also be seen, that the court rejected entirely one clause of the instructions asked; namely, “whether the knob of clay or porcelain thus attached to the metallic shank and spindle were an article better and cheaper than the knob

Hotchkiss et al. v. Greenwood et al.

theretofore manufactured of metal or other materials," and gave nothing as a substitute for it, leaving the jury to understand that it was immaterial whether it were a better and cheaper article or not.

The court seem to have been of opinion, first, that it could not, in the nature of things, require skill and thought and invention so to unite the metal and clay as to make them, together, a firm and substantial article of manufacture; or, second, that the new manufacture produced by the substitution of one material for another in part of the article, and the uniting of the two materials, though of dissimilar qualities, and never before united for that purpose, was not patentable, even though it required skill and thought and invention to unite them; and though the new manufacture thus produced were cheaper and better than any like article ever before known.

1st. The first position, I respectfully contend, the court had no right to assume. The counsel had the same right to appeal from the court to the jury, on a question of fact, that they had to appeal from that tribunal to this on a question of law. The right to refer this question to the jury was distinctly insisted upon by counsel, and as distinctly denied by the court. For this, I contend, the judgment ought to be reversed.

But if the court had the right to settle this question of fact, as they would have to determine the effect of a written instrument, I think I am able to show that they erred in their opinion on the question.

Knobs had been in use many hundred years; potter's ware and porcelain, many thousand; but no one ever before *255] *succeeded in uniting the clay and the iron so as to make of the two a substantial and useful article. There are many difficulties in uniting them, which can be best explained by a careful examination of the new manufacture itself; and if it were proper for the court below to pronounce upon the question connected with it absolutely, on inspection, as a legal conclusion drawn from the article itself, it is equally so for the court here to inspect the article, and determine on inspection whether the decision below was right. *Curtis on Pat.*, §§ 10, 14 (note 2), 15, 16; *Webster on Pat.*, 29, 30.

2d. But the second alternative position is the one on which I understood the court to rest, namely, that the new manufacture produced by the substitution of one material for another, as in this case the substitution of clay or porcelain in the place of metal for the knob, using metal as theretofore

Hotchkiss et al. v. Greenwood et al.

for the collet and spindle, was not patentable, though the materials are dissimilar, and were never before united for that or a like purpose; and though it required skill and thought and invention to unite them, and though the new manufacture thus produced was cheaper and better than any like article ever before known.

This position cannot be maintained either by reason or authority. The clay or porcelain knob, connected with the metallic shank is a new and useful manufacture, according to the letter as well as the spirit and intent of our statute.

1st. "That it is 'a manufacture' can admit of no doubt; it is a vendible article, produced by the art and hand of man." Per C. J. Tindall, in *Cornish v. Keene*, Webs. on Pat., 517; *Boulton v. Bull*, 2 H. Bl., 492, 495, and *Id.*, 463, 464, note (a); and *Rex v. Wheeler*, 2 Barn. & Ald., 349, 350.

2d. As the court refused to submit to the jury the question whether the article produced by the substitution of clay or porcelain for metal, &c., in the manufacture of knobs, was better and cheaper than the old article, the charge must rest on the admission that it was better and cheaper. The manufacture which is the result of that combination is, therefore, by concession, "a useful manufacture."

And it is clear that it is in fact a very useful manufacture. The potter's ware and porcelain knobs are almost everywhere taking the place of the metal knob.

3d. It is also a new manufacture.

"The mere substitution of one metal for another in a particular manufacture might be the subject of a patent, if the new article were better, more useful, or cheaper than the old." *Curtis on Pat.*, § 8, note 3.

"No one can say that a silver and an earthen teapot are the same manufacture." *Webster on Patents*, p. 25 note.

*As little can any one say that a metal and an earthen knob are the same manufacture. [*256]

"If there be any thing material and new which is an improvement of the trade, that will be sufficient to support a patent." (Per Buller, J., in *Rex v. Arkwright*, 1 Webs. Pat. Cas., 71. See *Godson on Patents*, 63, 70, 124, 126; also *Hindemarch on Patents*, 124, 126. A list of cases sustaining this point are collected in *Curtis on Patents*, §§ 9, 10.) Lord Dudley's patent being the substitution of pit-coal for charcoal in the manufacture of iron (1 Webs. Pat. Cas., 14); Neilson's patent, the hot blast instead of the cold (*Id.*, 152); Crane's patent, the substitution of anthracite for soft coal in connection with the hot blast (*Id.*, 273). Durome's patent, the application of charcoal, long used in filtering, to the fil-

Hotchkiss et al. v. Greenwood et al.

tering of sugar (Id., 152.) In Ball's case, the use of the flame of gas instead of the flame of oil to singe off the superfluous fibres of lace (Id., 99, and note, in which many other similar cases are referred to).

Our invention is a combination of dissimilar materials (not a composition of matter) never before united, which produces a new manufacture. Tindall, C. J., in *Crane v. Price and others*, in speaking of the hot-air blast combined with anthracite coal in the production of iron, says:—

“We are of opinion, that, if the result produced by such combination is either a new article or a cheaper article to the public than that produced by the old method, such combination is an invention or manufacture intended by the statute, and may well become the subject of a patent.” “And it falls within the doctrine of Lord Eldon, that there may be a valid patent for a new combination of materials previously in use for the same purpose, or even for a new method of applying such materials.” 1 Webs. Pat. Cas., 409.

Mr. Curtis, after a review of the cases, says, § 14: “It appears, then, according to the English authorities, that the amount of the invention may be estimated from the result, although not capable of being directly estimated on a view of the invention itself.” And in § 15: “The utility of the change is the test to be applied for the purpose. As there cannot be a decidedly new result without some degree of invention to effect that result, where a real utility is seen to exist, a sufficiency of invention may be presumed.” And Mr. Webster, in his treatise on the subject-matter, says, that, “whenever the change and its consequences, taken together and viewed as a sum, are considerable, there must be a sufficiency of invention to support a patent.” (pp. 29, 30.)

Our courts have applied the same tests as the courts in England. Curtis on Patents, § 18.

*257] *As in the case of *Kneass v. The Schuylkill Bank*, 4 Wash. (Va.), 9-11, where steel plates were used instead of copper plates in printing bank-notes. The question left to the jury was, whether the substitute of steel for copper plates was an improvement. See Curtis on Pat., § 24 and note 1, citing *Ryan v. Godwin*, 3 Sumn., 514, 518.

In the case at bar, the question of skill and invention, and the question of utility, which are the universally acknowledged test questions in this class of cases, were withheld from the jury; the question of skill and invention determined by the court; the question of utility thrown out of the case.

We have, then, by all the rules heretofore recognized in this class of cases, “a new and useful manufacture.”

Hotchkiss et al. v. Greenwood et al.

The letter of the statute embraces it; so, clearly, does the spirit and intent of the act. It is indeed an invention of much more than common importance and merit. It is the combination of two materials, metal and earth, never before united in this manner, so as to give to the new manufacture the strength of iron with the durability and beauty of the clay or porcelain; its exemption from the corrosive action of acids and other chemical agents, and its consequent freedom from tarnish.

There are some cases of the application of old inventions to obvious new uses for which courts have refused to sustain a patent. They are referred to by Lord Abinger in *Lost v. Hagen*, 1 Webs. Pat. Cas., 208; Curtis, § 7, n. 2. Or the case of a double use, where no new manufacture or a cheapening of the old is the result. *Id.*, note 3.

In the case of *Rex v. Fussell*, the dampening of cloth by steam instead of hot water would have been held patentable had it been useful. It was frivolous. *Crane v. Price*, 1 Webs. Pat. Cas., 409.

And it is said by Mr. Webster, in a note to *Crane v. Price and others*, "that no case is reported or mentioned in any of the books in which a patent has failed simply on the ground of the invention not being the subject-matter of letters patent. Some other ground, as want of novelty or defective specification, having been the real cause of failure."

The counsel for the defendants in error made the following points.

The court now is called upon to decide whether this patent, or whether any patent, can be sustained merely for applying a common, well-known material to a use to which it had not before been applied, without any new mode of using the material, or any new mode of manufacturing the article sought to be covered by the patent.

*And here we will first ask the court for a construction of this patent. Does the patent and specification [*258 confine its claim to a mere right to use clay or porcelain for the purpose of making or manufacturing knobs, or does it claim to cover the manufacturing knobs of clay and porcelain in the manner or mode set forth in the specification?

The language of the claim, in the closing part of the specification, is as follows:—

"What we claim as our invention, and desire to secure by letters patent, is the manufacturing of knobs, as stated in the foregoing specification, of potter's clay, or any kind of clay used in pottery, and shaped and finished by moulding, turn-

Hotchkiss et al. v. Greenwood et al.

ing, burning, and glazing," &c. The patentees had previously stated in their specification that "the modes of fitting them for their application to doors, locks, and furniture, and other uses, will be as various as the uses to which they may be applied, but chiefly predicated on one principle, that of having the cavity in which the screw or shank is inserted, by which they are fastened, largest at the bottom of its depth, in form of a dovetail, and a screw formed therein by pouring in metal in a fused state."

The concluding clause of the specification then claims by the patent to cover the manufacture of knobs made of clay in the manner described in the specification, and the great principle of the manner of forming the knob is by a cavity which, with hot metal poured in, will make a dovetail-shaped fastening or holding of the knob on to the shaft.

We think it clear the claim is for manufacturing knobs of clay in the particular manner specified, so that, when manufactured, they shall be held to the shank by force of the dovetail.

We think it clear that, had not the defendants established the fact on the trial, that knobs for door-handles and for locks had been previously patented to a person in Middletown, which were made and fastened in the same identical way as the ones described in the plaintiffs' specification, the plaintiffs would have claimed the right to recover against us for making and fastening the knobs in that particular way. We suppose the plaintiffs, in the absence of such testimony, would have claimed that their specification covered the form and manner of fastening the knobs to the handle, as well as the material out of which the knob was made. Indeed, such was their claim made at the trial of the cause.

It is now well settled, that, in order fairly to construe a patent, the whole specification must be examined; and if we can gather from the whole paper the meaning of the inventor, and the extent of his claim, the object of the statute is attained. 2 Phillips on Pat., 169, 170; 3 Sumn., 520; Curtis on Pat., §§ 123, 130, 141; 1 Mason, 477.

*^{259]} This case is very similar to the case of *Barrett et al. v. Hall*, 1 Mason, 477, where Judge Story held, that, taking the whole specification, it was manifest the patentee claimed as his invention a mode of dyeing and finishing silks, and not a mode of dyeing alone; and the patent being too broad, the whole not being his invention, the patent was void.

It is also well settled, that whatever appears to be covered by the claim of the patentee as his own invention must be taken as part of the claim; for courts of law are not at liberty

Hotchkiss et al. v. Greenwood et al.

to reject any part of the claim; and therefore, if it turns out that any thing claimed is not new, the patent is void, however small or unimportant such asserted invention may be. *Curtis on Pat.*, § 131; 2 Story, 412.

We claim, therefore, that this is in fact a claim for making knobs of clay, combined with the particular manner of fastening the same to the shank by a dovetail fastening, and is in truth a claim for a combination.

If we are correct in this view of the case, then it is clear that the patent is void, as the jury have found that the claim of fastening knobs to handles by dovetail fastenings was not new, but was known and used before the plaintiffs' patent. *Winans v. Boston and Providence Railroad Co.*, 2 Story, 413; *Hill v. Thompson*, 1 Webs. Pat. Cas., 226, 228.

But suppose that the claim in the patent was the mere right to make knobs of clay or porcelain, without regard to any particular mode of making or fastening the knobs into the shaft, the question arises, Could such a patent be sustained?

The plaintiffs' claim that they have the right to the exclusive use of clay for fourteen years to come, in making knobs for doors, locks, and drawers, by making such a claim known at the Patent-Office. They don't even claim to be the discoverers of clay; but they claim the exclusive right to appropriate and use clay in making knobs.

It is a strange claim, to say the least of it. According to the principle of the claim, one man may claim a patent for making a stove of sheet-iron; another may claim a patent for making stoves of cast-iron; another may claim a patent for making stoves of copper; and each may claim, not the right to make a stove of a particular form and shape only, or by any peculiar process of making, but the exclusive right to make all sorts and shapes of stoves out of the particular material named.

So another man claims the exclusive right of using ice to cool water; another claims the exclusive right to use ice for cooling wine; another, to use the same article to cool brandy; and a physician claims the exclusive right to use the article of ice to cool a fevered patient's head.

*Again, one man has been long accustomed to make window-sashes of pine wood; another comes and says he can make window-sashes of cast-iron, and claims the exclusive right to make all the cast-iron sashes the country may want for the next fourteen years.

Another has discovered that he can make the whole of a house out of cast-iron; he therefore claims the exclusive right

Hotchkiss et al. v. Greenwood et al.

to make all the cast-iron houses that are wanted for fourteen years to come.

Another says he has discovered that he can build splendid railroad-cars for the conveyance of passengers out of sheet copper or tin; he therefore obtains a patent for the exclusive use of copper and tin in making such carriages.

Another discovers that teakettles have been made of cast-iron for years past, but tea and coffee pots have not as yet been made of that material, and he immediately obtains a patent for the exclusive right to make cast-iron tea and coffee pots for fourteen years.

We know that cast-iron has been extensively used for making machinery of different shapes and forms; for making columns, fences, floors, and indeed every thing whose shape can be impressed upon sand; and can it be pretended that any one at this day can claim the right to make some new thing out of cast-iron, and thereby exclude all other persons from making the same article out of the same material?

To allow such a claim, it appears to us, would be violating the spirit of the act of Congress. The object of the act of Congress is to encourage men to devote their time and talent in making new and useful discoveries in the arts, manufactures, and compositions of matter. Why does the act provide so carefully for new compositions of matter, if an individual could obtain a patent for a use of an element of matter without any composition at all?

The patentee in this case is endeavoring to add a new clause to the patent law. He is claiming the right to apply a common element of nature to a new purpose, without the aid of any new mode or process of working it, and without combining it with any other portions of matter so as to make it a composition.

The only causes authorizing the issuing of a patent are declared and set forth in the sixth section of the act of 1836. That section enacts, "that any person or persons, having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements of any art, machine, manufacture, or composition of matter, not before known or used, &c., may make application."

*²⁶¹To satisfy the terms of the statute, there must be some new art, machine, manufacture, or composition of matter discovered, or there can be no patent.

It is well settled, that a patent cannot be granted for a new use of the thing, or, as it is commonly stated, a double use. The application of an old machine to some new purpose is

not the foundation of a patent; but an improvement of an old machine, in order to apply it to the same purposes more advantageously, is the subject of a patent. But in this latter case, it is the particular improvement made in the machine which constitutes the basis of the patent, not the result.

If in the present case the patentees had invented an improvement in the mode of fastening the knobs to the handles, or if they had invented a new mode of making knobs out of clay or other materials, their patent might have been sustained; but we maintain they cannot obtain a patent for a new use, or double use, of the article of clay, any more than they could sustain a patent for a new use of an old machine.

It has been decided, that, where a certain description of wheels had been used on other than railway-carriages, a patent could not be sustained for the use of such wheels on railway-carriages. *Curtis*, note to § 87. The court distinguished between applying a new contrivance to an old object, and applying an old contrivance to a new object. *Losh v. Hague*, 1 Webs. Pat. Cas., 297. The learned judge stated that a patent cannot be had for applying a well-known thing, which might be applied to fifty thousand different purposes, to an operation which is exactly analogous to what was done before. 2 Story, 412.

So it has been held that a patent for curling palm-leaf for mattresses could not be sustained, where the same process had been long in use for curling hair. *Howe v. Abbott*, 2 Story, 190, 193.

In this latter case the judge remarked that it was the mere application of an old process and old machinery to a new use. The same as if a coffee-mill were employed to grind corn, or a flax-machine were employed to spin cotton. There must be some new mode or process to produce the result.

If new effects are produced by an old machine in its unaltered state, no patent can be supported for it, as such a patent would be for an effect only. 1 Gall., 478, 481.

So in the new use of medicines or compositions, as is said in *Boulton v. Hall*, 2 H. Bl., 487. Suppose the world were better informed than it is how to prepare Dr. Jayne's fever-powder, and an ingenious physician should find out that it was a specific cure for a consumption, if given in particular *quantities; could he have a patent for the sole use of [*262 Jayne's powders in consumption, or to be given in particular quantities? I think it must be conceded that such a patent would be void, and yet the use of the medicine would be new, and the effect of it as materially different from what is now known, as life is from death.

Hotchkiss et al. v. Greenwood et al.

So the same judge says the use of arsenic for curing agues could not be patented, because the medicine would not be new, and a new use of it is not the subject of a patent.

We claim, therefore, that this patent cannot be sustained as a patent for the exclusive privilege of using clay for the manufacture of knobs, instead of brass, silver, or metallic compositions. That such a claim does not rise to the dignity of an invention or discovery, but is a mere substitution of one material in place of another, for making the same common article. There is no change proposed in the manner of working the clay, no improvement in machinery used to produce the result, and no new result is obtained; the same identical knobs are produced and applied in the same way; the only change is in the material used, and we suppose that a mere change of one material for another cannot be the subject of a patent.

The case then comes within the principle laid down in Phillips on Patents, p. 113: "The use of the ordinary known materials cannot be monopolized by patent. We must understand this doctrine to be limited to known materials, and to such as naturally exist, whether known or not; for the discovery of a new elementary substance or material, by analysis or otherwise, does not give a right of a monopoly of it." 2 H. Bl., 487.

On the argument of this latter case the court put the question to counsel, "whether, if a man by science were to devise the means of making a double use of a thing known before, he could have a patent for that? It was rightly and candidly admitted that he could not." (p. 486.)

And Justice Eyre says of Hartley's patent: "He did not invent those means; the invention wholly consisted in the new manner of using, or, I would rather say, of disposing a thing in common use, and which thing every man might make at his pleasure; and which, therefore, I repeat, could not, in my judgment, be the subject of the patent."

We claim that there can be no patent in the United States founded upon the material used, unless where a new combination of materials is made use of, and then it comes under that clause of the patent law which authorizes a patent for any new composition of matter.

Without a new composition of matter, or a new mixture of *263] *the ingredients used, or a new proportion of ingredients used, there can be no patent for the material used in the production of the article. To hold otherwise would be to repeal this clause of the statute, or rather to add a new clause to it. The act has declared a man may obtain

Hotchkiss et al. v. Greenwood et al.

a patent for discovering a new composition, or mixing of substances, so as to produce a new substance; but it has not declared that any one can obtain a patent for the exclusive use of an element of matter, where no combination or mixture of different portions of matter is set forth.

Clay, and its suitability for being manufactured into articles of different shapes, and to be applied to different purposes, is well known. The mode of moistening and using it, and making it into knobs, teapots, plates, bowls, cups and saucers, &c., and of glazing, staining, and baking it, is also well known, and no change is proposed in these operations. The use of brass, iron, silver, and glass, for the manufacture of knobs for doors and drawers, is also well known. The particular mode of fastening claimed by the plaintiff's is shown not to be new; and, as before remarked, all that can be now claimed in this record is, the exclusive right to use clay instead of metal in making these knobs.

We know of no case in which such a claim has been sustained. We have shown, from the authorities, that the new use of an old machine to produce a new effect is not the subject of a patent.

We have shown that the new use of an old medicine or composition of matter cannot be patented; and surely, if a composition of matter (which requires mind and skill) could not be applied to a new use, the application of one of the substances of which the composition was made could not be applied to a new use, and thereby lay the foundation for a patent. And we have also shown that the substitution of one material for another is not a patentable subject.

We claim, therefore, in conclusion, that this patent is void,—

1st. Because it claims in its specification to have invented the mode of fastening the knob to the handle, which the verdict of the jury has shown to be untrue, and therefore the claim is larger than the invention.

2d. Because a patent for the substitution of one material for another, without any combination, or any new mode or process of manufacturing the article, cannot be sustained.

3d. Because no patent for the manufacture of an article can be sustained, unless the particular mode of manufacturing the article is specified and is new, and the difference between the old and new mode of manufacturing is pointed out.

*Mr. Justice NELSON delivered the opinion of the court. [*264]

Hotchkiss et al. v. Greenwood et al.

This is a writ of error to the Circuit Court of the United States for the District of Ohio.

The suit was brought against the defendants for the alleged infringement of a patent for a new and useful improvement in making door and other knobs of all kinds of clay used in pottery, and of porcelain.

The improvement consists in making the knobs of clay or porcelain, and in fitting them for their application to doors, locks, and furniture, and various other uses to which they may be adapted; but more especially in this, that of having the cavity in the knob in which the screw or shank is inserted, and by which it is fastened, largest at the bottom and in the form of dovetail, or wedge reversed, and a screw formed therein by pouring in metal in a fused state; and, after referring to drawings of the article thus made, the patentees conclude as follows:—

“What we claim as our invention, and desire to secure by letters patent, is the manufacturing of knobs, as stated in the foregoing specifications, of potter’s clay, or any kind of clay used in pottery, and shaped and finished by moulding, turning, burning, and glazing; and also of porcelain.”

On the trial evidence was given on the part of the plaintiffs tending to prove the originality and usefulness of the invention, and also the infringement by the defendants; and on the part of the defendants, tending to show the want of originality; and that the mode of fastening the shank to the knob, as claimed by the plaintiffs, had been known and used before, and had been used and applied to the fastening of the shanks to metallic knobs.

And upon the evidence being closed, the counsel for the plaintiffs prayed the court to instruct the jury that, although the clay knob, in the form in which it was patented, may have been before known and used, and also the shank and spindle by which it is attached may have been before known and used, yet if such shank and spindle had never before been attached in this mode to a knob of potter’s clay, and it required skill and invention to attach the same to a knob of this description, so that they would be firmly united, and make a strong and substantial article, and which, when thus made, would become an article much better and cheaper than the knobs made of metal or other materials, the patent was valid, and the plaintiffs would be entitled to recover.

The court refused to give the instruction, and charged the jury that, if knobs of the same form and for the same pur-

*265] poses as that claimed by the patentees, made of

Hotchkiss et al. v. Greenwood et al.

used; and if the spindle and shank, in the form used by them, had been before known and used, and had been attached to the metallic knob by means of a cavity in the form of dovetail and infusion of melted metal, the same as the mode claimed by the patentees, in the attachment of the shank and spindle to their knob; and the knob of clay was simply the substitution of one material for another, the spindle and shank being the same as before in common use, and also the mode of connecting them by dovetail to the knob the same as before in common use, and no more ingenuity or skill required to construct the knob in this way than that possessed by an ordinary mechanic acquainted with the business, the patent was invalid, and the plaintiffs were not entitled to a verdict.

This instruction, it is claimed, is erroneous, and one for which a new trial should be granted.

The instruction assumes, and, as was admitted on the argument, properly assumes, that knobs of metal, wood, &c., connected with a shank and spindle, in the mode and by the means used by the patentees in their manufacture, had been before known, and were in public use at the date of the patent; and hence the only novelty which could be claimed on their part was the adaptation of this old contrivance to knobs of potter's clay or porcelain; in other words, the novelty consisted in the substitution of the clay knob in the place of one made of metal or wood, as the case might be. And in order to appreciate still more clearly the extent of the novelty claimed, it is proper to add, that this knob of potter's clay is not new, and therefore constitutes no part of the discovery. If it was, a very different question would arise; as it might very well be urged, and successfully urged, that a knob of a new composition of matter, to which this old contrivance had been applied, and which resulted in a new and useful article, was the proper subject of a patent.

The novelty would consist in the new composition made practically useful for the purposes of life, by the means and contrivances mentioned. It would be a new manufacture, and none the less so, within the meaning of the patent law, because the means employed to adapt the new composition to a useful purpose was old, or well known.

But in the case before us, the knob is not new, nor the metallic shank and spindle, nor the dovetail form of the cavity in the knob, nor the means by which the metallic shank is securely fastened therein. All these were well known, and in common use; and the only thing new is the substitu-

Hotchkiss et al. v. Greenwood et al.

tion of a knob of a different material from that heretofore used in connection with this arrangement.

*266] Now it may very well be, that, by connecting the clay or porcelain knob with the metallic shank in this well-known mode, an article is produced better and cheaper than in the case of the metallic or wood knob; but this does not result from any new mechanical device or contrivance, but from the fact, that the material of which the knob is composed happens to be better adapted to the purpose for which it is made. The improvement consists in the superiority of the material, and which is not new, over that previously employed in making the knob.

But this, of itself, can never be the subject of a patent. No one will pretend that a machine, made, in whole or in part, of materials better adapted to the purpose for which it is used than the materials of which the old one is constructed, and for that reason better and cheaper, can be distinguished from the old one; or, in the sense of the patent law, can entitle the manufacturer to a patent.

The difference is formal, and destitute of ingenuity or invention. It may afford evidence of judgment and skill in the selection and adaptation of the materials in the manufacture of the instrument for the purposes intended, but nothing more.

I remember having tried an action in the Circuit in the District of Connecticut some years since, brought upon a patent for an improvement in manufacturing buttons. The foundation of the button was wood, and the improvement consisted in covering the face with tin, and which was bent over the rim so as to be firmly secured to the wood. Holes were perforated in the centre, by which the button could be fastened to the garment. It was a cheap and useful article for common wear, and in a good deal of demand.

On the trial, the defendant produced a button, which had been taken off a coat on which it had been worn before the Revolution, made precisely in the same way, except the foundation was bone. The case was given up on the part of the plaintiff. Now the new article was better and cheaper than the old one; but I did not then suppose, nor do I now, that this could make any difference, unless it was the result of some new contrivance or arrangement in the manufacture. Certainly it could not, for the reason that the materials with which it was made were of a superior quality, or better adapted to the uses to which the article is applied.

It seemed to be supposed, on the argument, that this mode of fastening the shank to the clay knob produced a new and

Hotchkiss et al. v. Greenwood et al.

peculiar effect upon the article, beyond that produced when applied to the metallic knob, inasmuch as the fused metal by which the shank was fastened to the knob prevented the shank *from acting immediately upon the knob, it being [*267 inclosed and firmly held by the metal; that for this reason the clay or porcelain knob was not so liable to crack or be broken, but was made firm and strong, and more durable.

This is doubtless true. But the peculiar effect thus referred to is not distinguishable from that which would exist in the case of the wood knob, or one of bone or ivory, or of other materials that might be mentioned.

Now if the foregoing view of the improvement claimed in this patent be correct, it is quite apparent that there was no error in the submission of the questions presented at the trial to the jury; for unless more ingenuity and skill in applying the old method of fastening the shank and the knob were required in the application of it to the clay or porcelain knob than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention. In other words, the improvement is the work of the skilful mechanic, not that of the inventor.

We think, therefore, that the judgment is, and must be, affirmed.

Mr. Justice WOODBURY dissented.

I feel obliged to dissent from my brethren in this case. It is chiefly, however, in regard to the manner in which some of the facts were submitted to the jury; but, involving as it does an important principle in the practice under our patent system, it may be useful to explain the grounds of my dissent.

It is agreed, that in July, 1841, John G. Hotchkiss and two others obtained a patent for what they described as "a new and useful improvement in making door and other knobs of all kinds of clay used in pottery, and of porcelain."

The first question of law which arises on the record is, whether the patent covered merely the knob, the bulbous handle, or included also the shank or spindle, and the mode of fastening it to the handle.

The charge of the judge at the trial, as drawn up in the exceptions, seems to have proceeded on the ground that the patent and invention covered both the knob and mode of fastening. Whether this was a correct construction does not, however, seem to be very material, when we consider the instructions given to the jury in other respects; and that they were equally applicable to the bulbous handle alone, or the

Hotchkiss et al. v. Greenwood et al.

handle with its dovetail hollow, or the handle and the shank combined.

If both parties acquiesced below in the idea that the patent *268] *was not only for such a knob, but the combination of such a knob with the shank in the mode described, and the charge was predicated on that view, it is, perhaps, not allowable here to take a different position.

In order to understand clearly what is deemed objectionable in the course pursued below, it may be noticed that the chief grounds of objection to the patent thus construed below seem to have been, that the invention was not original, nor of a character to be patentable.

The statement in the bill of exceptions is in some respects obscure. But the substance of the instruction on this, as set out there, is, that if the invention had been made before or was now confined, "so that the knob of clay or porcelain is the mere substitution of one material for another,"—"the material being in common use and no other ingenuity or skill being necessary to construct the knob than that of an ordinary mechanic acquainted with the business,—the patent is void," &c.

The counsel for the plaintiffs next requested the court to proceed further, and charge the jury, that, "if the said knob of clay or porcelain so attached were an article better and cheaper than the knob theretofore manufactured of metal or other materials, the patent was valid." But the court did not give any such instruction. In this, I think, was the chief error. From the record I feel bound to believe that evidence was offered on both sides as to the originality and utility of the knob, and its mode of combination with the shank. It would seem, then, to have been the duty of the court below to instruct the jury, that it was their province to decide not only on which side the evidence preponderated, but if the invention was cheaper and better than what preceded it, that protection should be given to it as patentable.

In either view, considered as an invention of the knob alone, or the knob and handle combined, the chief question is still the same, whether proper instructions as to its being patentable, and all the proper instructions which the circumstances required, were given.

Now, on the point as to the invention being patentable, the direction virtually was to consider it not so, if an ordinary mechanic could have made or devised it; whereas in my view the true test of its being patentable was, if the invention was new, and better and cheaper than what preceded it. This test, adopted by the Circuit Court, is one sometimes used to

Hotchkiss et al. v. Greenwood et al.

decide whether the invention for which a patent has been obtained is new enough or distinguished enough from a former invention to prevent it from being an infringement, and to justify a new *patent for it, and not, as here, whether [*269 it is valuable or material enough *per se* to be protected by any patent.

Whenever the kind of test adopted below is used otherwise than to see if there has been an infringement or not, it is to ascertain whether the invention is original or not, that is, whether it is a trifling change and merely colorable or not. Webster on Sub. Mat., 25; Curtis on Pat., §§ 6, 7; 2 Gall., 51; 1 Mason, 182. But it is impossible for an invention to be merely colorable, if, as claimed here, it was better and cheaper; and hence this last criterion should, as requested by the plaintiffs, have been suggested as a guide to the jury.

Then, if they became convinced that the knob in this case, by its material, or form inside, or combination with the shank, was in truth better and cheaper than what had preceded it for this purpose, it would surely be an improvement. It would be neither frivolous nor useless, and, under all the circumstances, it is manifest that the skill necessary to construct it, on which both the court below and the court here rely, is an immaterial inquiry, or it is entirely subordinate to the question, whether the invention was not cheaper and better. Thus, some valuable discoveries are accidental rather than the result of much ingenuity, and some happy ones are made without the exercise of great skill, which are still in themselves both novel and useful. Such are entitled to protection by a patent, because they improve or increase the power, convenience, and wealth of the community.

Chancellor Kent has truly said (2 Kent, Com., 371), "The law has no regard to the process of mind by which the invention was accomplished, whether the discovery be by accident or by sudden or by long and laborious thought." See also *Earle v. Sawyer*, 4 Mason, 1, 6; *Crane v. Price*, 1 Webs. Pat. Cas., 411.

In this last case, Chief Justice Tindall goes quite as far as Chancellor Kent, and says: "In point of law, the labor of thought or experiment and expenditure of money are not the essential grounds of consideration on which the question whether the invention is or is not the subject-matter of a patent ought to depend. For if the invention be new and useful to the public, it is not material whether it be the result of long experiments and profound research, or whether by some sudden and lucky thought or mere accidental discovery."

Hotchkiss et al. v. Greenwood et al.

So in *Earle v. Sawyer*, 4 Mason, 1, the doctrine settled is, that "a combination, if simple and obvious, yet if entirely new, is patentable. And it is no objection to it, that up to a certain point it makes use of old machinery." And Justice Story says, in so many words: "It is of no consequence whether *270] the thing be simple or complicated, whether it be by accident or by long, laborious thought, or by an instantaneous flash of the mind, that it was first done." "The law looks to the fact, and not the process by which it is accomplished." (p. 6.)

It is thus apparent to my mind that the test adopted below for the purpose to which it was applied, and which has just been sanctioned here, has not the countenance of precedent, either English or American; and, at the same time, it seems open to great looseness or uncertainty in practice.

But it has been urged here, that this invention was merely applying clay and porcelain to a new purpose, and that merely a new purpose, in our patent system, is not entitled to protection. 2 Story, 190, 412; *Losh v. Hague*, 1 Webs. Pat. Cas., 207; *Curtis on Patents*, 87. The meaning of this rule, however, as eviscerated from all the cases is, that the application of an old machine or old composition of matter before patented to a new object, or what is termed a double use, does not entitle one to a patent connected with this new object; because then there is no new machinery or new combination of old parts, as in merely applying a patent grist-mill to a new purpose of grinding plaster.

But it is entirely different if you apply an old earth, or old mechanical power, or old principle in physics, to a new object. There is then a new form adopted, or a new combination for the purpose. And though the elementary material be old, or the elementary principle operating be old, it being difficult to discover a new substance or new elementary principle, yet there is a new shape and consistency and use given, or a new *modus operandi*, which, if cheaper and better, benefits the world and deserves protection and encouragement.

If these are the effects, however small the skill or ingenuity required to imitate them, they are not excluded from the aid of the laws by either principles or precedents. They are not mere double uses of a previous machine or composition; but a double or additional form or composition of an article for a new purpose.

There is a new manufacture, as here of clay into knobs, or knobs with a dovetail hollow combined with a shank. The books are full of such slight changes in structure, composition, or mode of application, which were novel, and better in

their results, and therefore upheld, and were not and could not be regarded merely as the application of an old machine to new purposes. Beside the new material and the new mode of fastening, when the results as here are considerably improved, they suffice to make the invention patentable. (Webster on the Sub. Matter, 29, 30.) These are then all required by the *strictest law, viz. "diversity of method" and [*271 "diversity of effect." Phillips on Pat., 122.

Here, the new material for a knob, instead of former materials, was more durable than wood, was cheaper than iron, and very beautiful to the eye, instead of looking coarser. Its structure to receive a dovetailed shank and secure it by fused metal, rather than by a hole through and a screw at the end, appears to have been highly important; and if embraced in the patent, as was probably considered in the court below, furnished an additional reason for instructing the jury to consider whether the knob in controversy was not cheaper and better than what preceded it.

The precedents are quite full on this, and some of them in all respects nearly in point. Similar to this was the hot blast, substituted for the cold in making iron, and a patent for it upheld. Neilson's Case, 1 Webs. Pat. Cas., 14. The blast was still air, but in a different condition, leading to new and useful results. So the use of the flame of gas to finish cloth rather than the flame of oil. 1 Webs. Pat. Cas., 99. So steel plates used instead of copper in engraving. *Kneass v. Schuylkill Bank*, 4 Wash. C. C., 9, 11. That very closely resembles the present case.

So pit-coal, substituted for charcoal in making iron, has been deemed patentable (Webs. P. C., 14); and anthracite for bituminous coal (273). There are also some strong opinions beside these decisions in favor of a change in metal for an instrument being alone sufficient for a patent, if more useful or cheaper. See Webster on Sub. Mat., 25, *n.*, and Curtis on Pat., § 8. (Phillips on Pat., 134, if there be any contrivance connected with it.) Indeed, why should it not be sufficient? A new mode of operating or a new composition to produce better results is the daily ground for a patent. All which the act of Congress itself requires is that the invention be for "any new and useful improvement on any art, machine, manufacture, or composition of matter," &c. 5 Stat. at L., p. 119, § 6. Must it not then be considered such an improvement, if operating with new materials both cheaper and more durable?

Who cannot realize that, since the improved modes of cutting, boring, and shaping, the substitution of iron for wood

Reeside *v.* Walker.

in many manufactures might not often be a gain in strength and durability, quite beyond any difference in expense, and be justly patentable? Who, too, would not deem it material to gain by the use of wood or leather, or a cheap metal, instead of gold and silver, for some manufacture or mechanical purpose, when it can be done with increased benefit as well as cheapness. And why is not he a benefactor to the ^{*272]} community, and to be encouraged by protection, who invents a use of so cheap an earth as clay for knobs, or in a new form or combination, by which the community are largely gainers?

On the whole case, then, it seems to me that justice between these parties, as well as sound legal principle, requires another trial on instructions upon some points omitted, and instructions in some other respects different in law from what were given in this instance at the first trial.

ORDER.

This cause came on to be heard on the transcript of the record from the Circuit Court of the United States for the District of Ohio, 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, affirmed, with costs.

MARY REESIDE, EXECUTRIX OF JAMES REESIDE, PLAINTIFF IN ERROR, *v.* ROBERT J. WALKER, SECRETARY OF THE TREASURY OF THE UNITED STATES.

According to the practice in Pennsylvania, where a defendant pleads set-off, the jury are allowed to find in their verdict the amount that the plaintiff is indebted to the defendant, and according to their mode of keeping records this result is entered by way of note; e. g. "new trial refused and judgment on the verdict."

Although this may be a good record in the courts of Pennsylvania, it does not follow that it is so in the courts of the United States.

The effect of such a judgment, that the plaintiff is indebted to the defendant, is merely to lay the foundation for a *scire facias* to try this new cause of action.

Where the United States were the plaintiffs, and a verdict was rendered that they were indebted to the defendant, and an application was made for a mandamus to compel the Secretary of the Treasury to credit the defendant upon the books of the Treasury with the amount of the verdict, and to pay the same, the mandamus was properly refused by the Circuit Court. For a mandamus will only lie against a ministerial officer to do some ministe-