ILLINOIS WATCH CO. v. ROBBINS *et al.*

(Circuit Court of Appeals, Seventh Circuit. October 1, 1892.)

No. 32.

1. PATENTS FOR INVENTIONS—CONSTRUCTION OF CLAIMS—STEM-WINDING WATCHES.
In reissued letters patent No. 10,631, granted August 4, 1885, to Duane H. Church, for an improvement in stem-winding watches, consisting in a combination of a short stem arbor, and a winding and hands-setting train, having no positive connection therewith, each claim, being couched in general terms, and concluding with the words, "as and for the purposes specified," is to be construed as including such devices and combination shown in the specifications as are necessary to meet the requirements of its general terms, and the claims must be limited to this extent. *Corn Planter Patent*, 23 Wall. 181, applied.

2. SAME—INVENTION—PRIOR ART.
In view of the prior state of the art as shown by the patent of February 9, 1883, to Charles F. Woerd, and patent No. 206,674, to Hoyt, there was no invention in the mere introduction of springs in the mechanism for effecting the winding and hands-setting engagement, in order to avoid liability of injuring the wheels by the force of the push or pull upon the short stem arbor; but the claims are valid as covering a new and useful combination, the peculiar usefulness consisting principally in rendering watches and cases interchangeable. 50 Fed. Rep. 542, modified.

3. SAME—INFRINGEMENT—MECHANICAL ADAPTATION.
The Church patent is infringed by watches made under the patent of January 3, 1888, to Thomas F. Sheridan, No. 376,015, and reissued August 5, 1890, No. 11,100; for, although there is a plain difference in the operation of the springs which produce the winding and hands-setting engagement in each watch, that difference is produced by a simple mechanical change, and the other differences arise from the use of mechanical equivalents.

4. SAME.
A certain lever in defendant's watch movement could, when the works were out of the watch case, be adjusted to produce normal winding engagement, but in a stem-set watch, when the works are in the case, it is always held adjusted in such manner as to produce normal setting engagement. *Held*, that such a construction, when used in stem-set watches, is to be regarded as operating on the principle of normal setting engagement, and as not different in that respect from the construction of the Church watch.

Appeal from the Circuit Court of the United States for the Northern Division of the Northern District of Illinois.

In Equity. Bill by Royal E. Robbins and Thomas M. Avery against the Illinois Watch Company for infringement of patent. Decree for complainants. 50 Fed. Rep. 542. Defendant appeals. Affirmed.

Statement by WOODS, Circuit Judge:

By the decree of the circuit court the appellant was held to have infringed the 1st, 3d, 4th, 5th, and 6th claims of reissued patent No. 10,631, issued August 4, 1885, to the appellees, as assignees of the original letters No. 280,709, granted July 3, 1883, to Duane H. Church. Here, as in the court below, the appellant, besides denying infringement, disputes both the validity of the reissue and the novelty of the claims. Only the first and second claims of the original patent are relevant to the question of the validity of the reissue, and they are as follows:

"(1) In a pendant winding and setting watch, a movement having winding and setting mechanism, adapted to be operated by the endwise movement of a winding bar or key, and normally in position to operate the hands, whereby a positive connection between the movement and the winding bar

is avoided, as set forth. (2) In a pendant winding and setting watch, a movement having winding and setting mechanism normally in position to operate the hands, a winding bar or key having no positive connection with said mechanism, and a loose or sliding device, adapted to communicate the inward end thrust of the winding bar to the devices for engaging the winding portion of said mechanism with the main winding-wheel, as set forth."

The following are the reissued claims:

"(1) As an improvement in stem winding and setting watches, a winding and hands-setting train, which is adapted to be placed in engagement with the winding wheel or the dial wheels by the longitudinal movement of a stem arbor that has no positive connection with said train, substantially as and for the purpose specified. * * * (3) As an improvement in stem winding and setting watches, a winding and hands-setting train, which is adapted to be placed in engagement with the winding wheel or the dial wheels by the longitudinal movement of a stem arbor, and is normally in engagement with said dial wheels, substantially as and for the purpose set forth. (4) As an improvement in stem winding and setting watches, a winding and hands-setting train, which is normally in engagement with the dial wheels, in combination with a rotatable stem arbor that has no positive connection with said train, and is adapted to be moved longitudinally within the case stem, to cause said winding and hands-setting train to engage with the winding wheel, and to be simultaneously disengaged from said dial wheels, substantially as and for the purpose shown and described. (5) As an improvement in stem winding and setting watches, a winding and hands-setting train, which is normally in engagement with the dial wheels, in combination with a rotatable longitudinally movable stem arbor that has no positive connection with the watch movement, and, when moved longitudinally to the inner limit of its motion, will cause said winding and setting train to be disengaged from said dial wheels, and engaged with the winding wheel, and, when moved longitudinally to the outer limit of its motion, will permit said train to be disengaged from said winding wheel and engaged with said dial wheels, substantially as and for the purpose specified. (6) As an improvement in stem winding and setting watches, the combination of a winding and hands-setting train, which is normally in engagement with the dial wheels, a stem arbor having no positive connection with said train, and an intermediate device which is adapted to communicate the longitudinal inner movement of said stem arbor to said winding train, and cause the same to engage with the winding wheel, substantially as and for the purpose shown and described."

The original letters contained this statement:

"My invention has for its object to obviate a positive connection between the winding bar and the intermediate mechanism in a watch of the class above named, and thereby make the movements and cases freely interchangeable, without special adaptation of any movement to any case. To this end, my invention consists in making the intermediate mechanism above referred to normally in position to operate the hands, so that only an inward movement of the winding bar will be required to change the connection of said intermediate mechanism, the winding bar having only to exert a pushing pressure against said mechanism, and requiring no positive connection therewith."

The reissue contains the following:

"The object of my invention is to render watch movements and cases readily interchangeable, to which end said invention consists principally as an improvement in stem winding and setting watches, in a winding and hands-setting train, which is adapted to be placed in engagement with the winding

wheel or the dial wheels by the longitudinal movement of a stem arbor that has no positive connection with said train, substantially as and for the purpose hereinafter specified."

And besides this there are added statements of what the invention consists in, substantially in the language of the several claims respectively. The illustrative cuts, letters indicating parts, and the explanations of the respective uses of the parts are not essentially different in the two instruments.

In deciding this case the judge below reaffirmed his own ruling and opinion in the case of *Same Plaintiffs* against *Aurora Watch Co.*, 43 Fed. Rep. 521; and as a convenient mode of presenting clearly and comprehensively the questions to be considered we quote at length from that opinion:

"The improvement covered by the Church patent is applicable to the class of watches where the watch is wound and the hands set by means of the stem, and consists of an oscillating yoke, carrying upon its under side, pivoted at or near its longitudinal center, a pinion, which is so set as to engage with smaller pinions carried at each end of the yoke; this central wheel or pinion having beveled cogs on the under side thereof, which engage with the beveled pinion, which is set in the line of the stem, and into which the inner end of the stem arbor enters a short distance, by a square or octagonal opening, so that this beveled pinion can be rotated by the stem arbor. By rotating the stem arbor, motion is imparted to the central pinion of the yoke, whereby such motion is communicated to the two pinions at the end of the yoke. Passing the small beveled pinion with which the stem arbor engages is a loose sliding block or bar, which meets the inner end of the stem arbor, for the purpose of a thrust or push motion of the stem arbor, and acts as an extension or prolongation of the stem arbor. By pressing the stem arbor inward, this sliding bar acts upon a spring, which throws the stem winding and setting train into engagement with the winding wheel, which is done by swinging the yoke so as to bring the pinion on one end of it into contact with the winding wheel, when, by rotating the stem arbor, the watch can be wound up, there being a latch in the sheath or case of the stem, which is arranged to hold the stem arbor at the extreme of its inward movement, whereby the winding wheels are kept in winding engagement; while, when it is desired to set the hands, the stem is drawn outwardly, which allows a spring arranged for that purpose to swing the yoke out of winding and into setting engagement. It will be seen that a latch or catch in the stem, which shall hold the stem arbor safely at the points of its extreme inward and outward movement, is necessary to the stem-winding and stem hands-setting device, and the patent shows a latch or retaining device in the stem to lock the arbor in either the winding or setting position, of which Church claimed to be the inventor, and for which claims were allowed him in his original patent; but on the application for a reissue an interference was declared between himself and Colby as to these claims, on the hearing of which Colby was decided to be the prior inventor of the locking device in the stem, and Church's claims for that part of his device were disallowed, and the patent for that feature awarded to Colby. The Church patent, therefore, while it contains a description of the latch or retaining device in the stem sheath, has no claims covering it, but the stem-winding and stem-setting devices of his patent are adapted to be used only with some device for locking the stem arbor in its inward and outward positions; and perhaps this comment will hold true as to all practical stem-winding and stem-setting watches. Infringement is charged in this case of the first, third, fourth, fifth, and sixth claims of the reissued patent, which are as follows, [given above:]

"* * * The defenses insisted upon are (1) that the patent is void for want of novelty; (2) that the claims sued upon are too general, and do not describe with sufficient certainty the device by which the results are effected; (3) that defendant does not infringe.

"The distinctive characteristic of the Church device is that the winding and hands-setting engagements are not effected by the direct force of the push and pull upon the stem arbor, which is objectionable, because the force of the hand of the operator directly applied is liable to injure the delicate cogwheel mechanisms which are thus forced into contact with each other. These winding and hand-setting engagements are brought about by longitudinal movements of the stem arbor, which bring into action certain light springs, arranged to swing the yoke which carries the winding and setting trains. For instance, the watch, as ordinarily carried in the pocket, is always in winding engagement, and this is effected by pushing the stem arbor inwardly, to the limit of its movement in that direction, when it is caught and held by the latch in the sheath of the stem. This inward movement of the stem arbor carries inward the loose sliding bar or block, N, as it is called in the specifications, which by such inward movement comes in contact with and swings inwardly an arm, which by such inward movement causes a spring to bear upon the end of the yoke which carries the winding train, and thereby brings the winding pinion in contact with the winding wheel of the mainspring. This spring being light, if the cogs of these wheels meet on end, or do not mesh, they rest in contact until the winding pinion has revolved, when its cogs come at once into engagement with the cogs of the winding wheel, when they are kept in winding engagement so long as the stem arbor is held at its inward limit. When the stem arbor is released from its inward movement, and drawn outwardly, it releases the arm upon which the bar, N, has been pressing, and another spring is brought into action, which swings the yoke out of the winding engagement, and brings the end carrying the hands-setting pinion into contact with the dial wheels, and the cogs of the respective wheels mesh, if they happen to meet in the proper relation, and, if not, they are retained in contact until the rotation of the pinions bring the cogs into engagement.

"It will be seen from this description, if I have made it clear, that the engagements of the pinions of this yoke with the winding and dial wheels are effected by the operation of springs, which are brought into operation by the inward and outward movements of the stem arbor. It is because these springs are in their natural positions, and not constrained, when the parts are in the hand-setting engagements, that the inventor says 'that the hands-setting engagement is the normal condition of the mechanism.' It is not claimed that Church was the first to make a stem-winding and stem hands-setting device for a watch. The English patent shown in this case, granted in 1844, to Adolphe Nicole, shows a device for winding a watch and setting its hands by the stem arbor, the winding and hands-setting train consisting in a V-shaped metal plate with a pinion pivoted near its center, having cogs or teeth on its outer periphery, and beveled cogs on the under side of its rim. The beveled cogs engage with the beveled pinion attached to the inner end of the stem arbor, which has an endwise movement. This V-shaped metal plate carries upon its point a small pinion, which gears with the large central pinion, so that by rotating the stem arbor motion is transmitted to this small pinion on the end of the plate. This V-shaped metal plate is pivoted to the rim, which holds the movement at its right-hand corner in such a position that the small pinion on its point rests between the winding wheel and dial wheels of the watch, and by pressing on the stem arbor this small pinion is swung into contact with the winding wheel, while, when the stem arbor is drawn outwardly, it brings the pinion into engagement with the dial wheels.

Here, then, is shown a device for winding and setting the hands of the watch by a longitudinal movement of the stem arbor, and the V-shaped plate shown operates substantially in the same manner as the oscillating yoke in the Church patent. But the stem arbor was positively connected with the winding and setting train, and these two engagements for winding and setting were brought about by the direct pull and push of the operator upon the stem arbor, which was liable to injure the delicate structure of the small wheels, if they happened to come in contact in such a way as not to directly engage or mesh into each other. In the Lehman American patent of July, 1866, a stem-winding and stem hands-setting device is shown, in which a rotating and longitudinally moving stem arbor is made to work the winding and hands-setting mechanism without the oscillating yoke or plate; the winding and hands-setting engagements being brought about by clutches arranged upon the stem arbor within a movement, so that this stem arbor has a positive connection with the movement or works of the watch, and with the hands-setting and winding train. The engagements of the winding and hands-setting train are also effected by the pull and push of the stem arbor, which makes the mechanism liable to be injured in bringing about these engagements, as I have already described. These two patents seem to me to be fair representative types of the different classes of stem-setting and stem-winding watches, which are shown in the art, from the proofs in the case. The Carnahan patent of October, 1881, shows an oscillating yoke, carrying the wheels at each end, which are respectively brought into engagement with the winding and setting wheels by longitudinal movements of the stem arbor. The patent granted to Charles V. Woerd, February 9, 1883, also shows an oscillating yoke, carrying a winding pinion at one end, and the hands-setting pinion at the other end, by means of which the winding and hands-setting engagements are obtained through the instrumentality of a longitudinally moving stem arbor; but in both the latter devices, as in the Nicole patent, the force of the pull or push to effect these engagements is expended upon the wheels, and is therefore liable to injure the wheels in the manner which has been described; so that Church seems to have been first in the art to obtain the winding and setting engagements by means of springs, which were brought into action by the inward and outward movements of the stem arbor, thereby avoiding the liability to injure the wheels.

"It is true there is but little difference, mechanically speaking, between the operations of the Carnahan and Woerd devices and the device of Church. Both Carnahan and Woerd show the winding engagement as the normal condition of their watch, and the hands-setting engagement to be the exceptional or constrained condition. But, as I have already said, their mechanism and arrangement of operative parts are such that the pull and push upon the stem arbor is transmitted directly to the wheels which are to be brought into engagement, and therein they differ from the Church device. The advantages claimed for the Church device are (1) that the movement can be removed from the case of the watch without taking the movement apart so as to remove the stem arbor; (2) that there is no liability to injure the wheels in effecting either the setting or winding engagements.

"As to the first advantage insisted upon, it appears clearly from the proof that Church was by no means the first to show a device whereby the movement could be taken from the watch without removing the stem arbor or disturbing the same. It is shown in the Brez patent of July, 1875, in the Fitch patent of April, 1879, in the Eisen patent of December, 1880, and in the Woerd patent, which I have already cited, besides in several other patents which appear in evidence in the case, and which it is unnecessary to refer to. But I find in none of the patents cited any mechanism which effects the winding and setting engagements by means of springs which are brought

into action in such a manner as to relieve the wheels from the direct force of the pull and push upon the stem arbor. As I have said, Church did not invent the short stem arbor, which allowed of the removal of the movement from the case of the watch, nor did he invent the latch or lock, in the sheath of the stem arbor, by means of which the stem arbor is retained at the limit of its inward and outward movement; but he has adjusted and attached what he did invent to be used with such a stem arbor, and I therefore think he has the right to claim that his winding and hands-setting train has no positive connection with the stem arbor, as he has, by means of his sliding block, N, within the movement, secured all the results which would be accomplished by a longer stem arbor; this sliding block or bar, while it has no positive connection with the stem arbor, being so arranged in connection with the stem arbor that it is pushed inwardly by the inward movement of the stem, and follows the stem arbor outwardly when the stem is withdrawn to (from) its inward limit, by reason of the action of the springs belonging to the winding and hands-setting trains.

"As to the criticism that the claims of the plaintiff's patent are too broad, and include results rather than devices, I will merely say it is one of the settled canons for the construction of the claims of a patent that they must be so construed, if possible, as to uphold the patent; and in the light of this rule, when the first claim is, in terms, for a winding and hand-setting train that is adapted to be placed in engagement with the winding and dial wheels of the watch by a longitudinal movement of the stem arbor that has no positive connection with the train, the claim cannot be held to mean any kind of a winding and hands-setting train, but such a one as is shown in the specifications and drawings of the patent. If the claim is held to mean any winding and setting train adapted to be put into winding and setting engagement by a longitudinal movement of the stem arbor, which has no positive connection with the train, then it would manifestly be anticipated by the Woerd and Carnahan patents, and perhaps other inventors who show winding and setting trains adapted to be placed in winding and setting engagements by endwise movements of stem arbors that have no positive connection with such trains. And this explanation applies to all the claims. If they are to be read in the broadest sense of which their language is capable of being understood, then they are obnoxious to the criticism that they are claims for results and not devices. But the words 'substantially as and for the purpose shown,' take us back to the specifications and drawings, and bring the devices there shown into the claims, and I construe the claims as for the devices there shown. Therefore, while these claims are broad, I think they can be sustained as for the devices which are described. *Corn Planter Patent*, 23 Wall. 218. * * *"

In respect to infringement in this case, the court below, after giving a list of patents in proof, which had not been adduced in the *Aurora Company Case*, said:

"A careful study of these additional patents, as well as a re-examination of those considered in the former case, has failed to change the conclusion announced in that case as to the novelty and validity of the device covered by the Church patent as reissued. There is therefore no question left in this case but that of infringement. A comparison of the Church patent with the defendants' watches, shown in evidence, and a consideration of the expert testimony in the case, satisfies me that the defendants' watches embody all the essential elements of the Church watch, as covered by this reissued patent. Both use a pivoted yoke to effect the engagement of the winding and setting wheels. In each case this yoke is acted upon by two opposing springs, one to obtain the winding, and the other the setting, engagement. In both the

spring producing the setting engagement is the stronger of the two; hence, when they are equally free to act, this stronger spring controls the action of the train,—automatically puts it into setting engagement. In other words, the watch would normally be in setting engagement if these two springs were left to the operation of their respective forces. In each watch the winding engagement is effected by restraining the action of the stronger spring, and allowing the weaker one only to act without restraint. In both watches this stronger spring is held out of action by pressing the stem arbor inward, and locking it at the innermost position. In both the restraining force upon the stronger spring is applied by means of a short pin or nib upon the sliding stem arbor, and in each the inward movement of the stem arbor bends and holds the strong spring from its normal work, and the withdrawal of the stem arbor releases this spring, so that it at once brings the train into setting engagement. It is true that in defendants' watch there are some slight changes in the shape and location of the operative parts, and by reason of these changes intermediate levers and pins are interposed at some points and dispensed with at others, to effect the connections and movements of the operative parts, which, as I think, is quite tersely stated by the complainants in their brief: 'The operative parts of each watch receive power from the same source, under the same conditions, transmit it to the same destination for the same purpose, and with the same result.'"

The Church patent has been upheld by Judge SAGE of the sixth circuit in a case of *Same Plaintiffs* against *Columbus Watch Company*, reported in 50 Fed. Rep. 545.

In respect to the question of infringement the appellant insists that the evidence establishes the following propositions: *First*, that the normal engagement of appellant's shifting train is with the winding wheels, instead of with the dial wheels, as in Church's; *second*, that the stem arbor has no thrust operation in effecting a winding connection, as the Church has; *third*, that it has the improvement for preserving the teeth on both sides of the watch, as stated by Hoyt to be the object of his improvement, which Church does not mention, and has only on one side; *fourth*, appellant overcomes a weak spring by a stronger one, while Church overcomes a strong spring by a hand thrust on the knob or crown of the stem; *fifth*, that appellant's shifting spring acts directly on the yoke, while the single Church spring acts on one arm of the four-pronged rock shaft; *sixth*, that appellant's train has no block, N, as the Church has; *seventh*, that appellant does not have the four-armed rock shaft that Church has; *eighth*, that appellant does not have the three-wheeled yoke which is essential to the Church combinations; *ninth*, that appellant's combinations are new, and radically different from the Church.

Bond, *Adams & Pickard*, for appellant.

Geo. S. Prindle and *Lysander Hill*, for appellees.

Before HARLAN, Circuit Justice, WOODS, Circuit Judge, and JENKINS, District Judge.

WOODS, Circuit Judge, (*after making the foregoing statement.*) In conformity with the ruling of the supreme court in the case of *Corn Planter Patent*, 23 Wall. 181, 218, it was right, we think, to construe the claims of the patent in question as embracing the devices shown in the specifications, each claim being regarded as including such devices

and combination as are necessary to meet the requirements of the general terms in which it is expressed. When the claims are so construed, it may be said of each of them, in the language of that case: "The claim thus limited is considerably narrowed in its operation. It is substantially for a combination of the material parts of the entire machine, and no one can be said to infringe it who does not use the entire combination." This, of course, does not exclude the doctrine of equivalents, of which Church was careful in explicit terms to reserve the benefit. How far, when properly construed, the several claims may be distinguished from each other, the court below did not indicate, and we do not deem it necessary now to consider. It may be that there is no essential difference, since the reference in all is to the same devices as arranged in a single combination.

The devices and combination described in the reissued letters are not different from those of the original patent, and as the corresponding claims of both must be regarded as limited by the devices, we do not perceive that in any of the reissued claims there appears or is asserted an invention different from or which is expanded beyond what was originally claimed. There is therefore no reason for pronouncing the reissue invalid.

In respect to Church's invention and its advantages, the court below declared its "distinctive characteristic" to be "that the winding and hands-setting engagements are not effected by the direct force of the push and pull upon the stem arbor;" "that Church seems to have been the first in the art to obtain the winding and setting engagements by means of springs, which were brought into action by the inward and outward movements of the stem arbor, thereby avoiding the liability to injure the wheels;" that, while Church did not invent the short stem arbor, with its latch or lock, "he has adjusted and attached [adapted] what he did invent to be used with such stem arbor, and * * * has the right to claim that his winding and hands-setting train has no positive connection with the stem arbor, as he has by means of his sliding block, N, within the movement, secured all the results which would be accomplished by a longer stem arbor."

After a careful examination of the patents exhibited in proof of the prior art, and especially in view of the Woerd patent, which, it is conceded, differs but little, mechanically, from the Church, we are not able to see that in the broad sense stated Church was the first to obtain the winding and setting engagements by means of springs, or so as to avoid liability of injury to the wheels. In the Woerd watch the winding or normal engagement is effected by the operation of a spring, *e*, and the same spring is in some measure effective, manifestly, to prevent injury to the wheels when the opposite engagement is accomplished, as it must be, by an outward pull of the stem arbor, whereby the lever, T, is pressed upon the arm, *f*, of the plate, *b*, pushing it inwardly, and swinging the yoke, V, so as to effect the setting engagement. As it is here used, the spring plays an important part in respect to both engagements, being the active force that produces one, and a resisting force which tends to

prevent undue and sudden violence to the injury of the wheels in the production of the other. Besides, there being one spring in the device, whereby one of the engagements is effected, with all the advantages of that mode of operation, it requires no invention to introduce into that device another spring to subserve the same ends in respect to the other engagement. Such a spring might be located at some point between the end of the lever, T, and the yoke, V, in connection with, or perhaps without, some of the parts shown; but, what is simpler still, the lever itself might be so reduced in thickness as to become a spring, more or less strong, but not so strong but that with the resisting force of the spring, *e*, the meshing of the hand-setting wheels would occur without shock or injury. Turning to Hoyt's patent No. 206,674, we find two springs in use for effecting the respective engagements, one of which acts automatically, and the other under the pressure of a lever. There is, therefore, as it seems to us, no element of invention in the mere introduction of springs into the Church device, nor was any new use or new kind of advantage in watch construction obtained thereby.

Church's invention, however, has superiority over Woerd's, Hoyt's, Carnahan's, or any other which has come under our notice, resulting, not from any particular part or element of the device, but rather from the combination and arrangement of the parts as a whole. That combination is new and useful, and its peculiar usefulness consists, as we think, not so much in the springs and consequent protection of the wheels, as in the fact that the declared object of the invention, namely, "to render watch movements and cases readily interchangeable," is better accomplished than by any preceding construction. By transferring Carnahan's lever from the works to the case, Woerd achieved a short stem arbor, and made the movements and cases interchangeable; but, to say nothing of other differences, the placing of the lever, which is one of the movement devices, in the case, is a marked disadvantage, since it requires a special form of case, and that, too, of awkward and unmechanical arrangement. One of the features of the Church patent, expressly mentioned in all the claims but the first, and implied, perhaps, in that, is that the winding and setting train is normally in engagement with the dial wheel; and it is to be observed that in the patents of Woerd, Carnahan, and others, which show the closest approximation in construction to Church's device, the normal engagement is with the winding wheel. It is, of course, easy, and does not involve invention, to change such engagements, if nothing more than the change is sought, and in some of the designs in evidence normal setting engagements are found, but they are in lever-set watches, of which the Wheeler is an example, and which, as the evidence shows, may readily be constructed with the normal engagement in one wheel or the other; but in stem-winding and stem-setting watches it is not so, and as an element in the combination shown in Church's claims the normal hands-setting engagement plays an important and indispensable part.

In respect to the question of infringement, a number of propositions are pressed upon our consideration. In the comparison made of the two devices by the court below it is asserted or assumed that of the two

springs in each the stronger produces the setting engagement, and resulting similarities of construction and operation are pointed out. It is now insisted that Church's patent does not show or describe a weaker and a stronger spring; that there is only one spring in his device; and that the restraining of the action of a stronger spring, and thereby allowing the weaker one only to act without restraint, are shown in the Hoyt and Wheeler patents, which both belong to the appellant, and are older than the appellees' patent. In this respect the court fell into verbal inaccuracy, but not, we think, into material error. There are certainly two springs in Church's device, which are brought into action in producing the respective engagements. They are described as springs, and designated "K" and "i^3;" K, when unrestrained, effecting the setting engagement, and the other, when brought into action, as it must be, by the inward thrust of the stem arbor, effecting the winding engagement. They were not improperly called "opposing springs," because K resists the movement of the stem arbor, which brings i^3 into operation. But, on the other hand, i^3 does not resist the counter action of K when the stem arbor is drawn out. Whether or not one of these springs is stronger than the other is not stated, and need not be considered, because the normal operation of K is not resisted by the other spring. In the defendant's watch, it is true, the two springs are in constant and direct opposition, and consequently the one producing normal engagement is and must be the stronger. It would therefore be more accurate, instead of the corresponding expressions in the opinion quoted, to say that in "both watches the spring producing the setting engagement is not controlled in its action by the other spring, and, when otherwise unrestrained, puts the train into that engagement;" and that "in each watch the winding engagement is effected by restraining the action of one spring and allowing or causing the other alone to act; the spring so restrained in both watches being held out of action by force of the stem arbor, locked at its innermost position."

There is, as stated, a plain difference in the operation of the two springs which effect the winding engagements in the respective devices. In Church's watch that spring is forced into operation by the pressure of the stem arbor on an arm of the rock shaft of which the spring itself is another arm, while in the defendant's watch the corresponding spring is automatic, effecting the engagement by its own force whenever the opposing strength of the other spring is overcome by the pressure of the stem arbor. Is this an essential difference in construction or operation? We think not. Starting with the Church device, it requires only ordinary skill, and certainly not invention, to effect the change. It is necessary only to sever the spring, i^3, from the rock shaft, and attach it to the plate, A, in such position as that it shall constantly press on the same end of the yoke, E, as now, in order to produce a complete correspondence between the two devices in respect to the location, character, and operation of their springs. This simple mechanical change, requiring no other alteration whatever in the Church device to make it operative, would entirely eliminate the differences, whether of construction or operation, mentioned in appellant's 2d, 3d, 4th, 5th, and 7th proposi-

tions; and with that alteration there would remain of the mechanism between the stem arbor and the winding and hands-setting train in the Church construction a three-pronged rock shaft, which, for all its functions, finds a full equivalent in the defendant's slide bar, *i*, with its projecting arm and pin, as they are shown in the Sheridan patent, under which the defendant's watch is made. Another projection or end, as it is called, of that slide bar, is a plain substitute for the movable block, N, of the Church combination. Instead of the three-wheeled yoke of Church, the defendant employs a yoke with two wheels, one of which meshes with either the winding or setting wheels as the yoke oscillates. It is one of "the well-known forms of intermediate mechanism," which Church said might be substituted for the mechanism shown in his patent.

But the first and chief difference insisted upon is that the normal engagement of appellant's shifting train is with the winding wheels, and not with the dial wheels, as in Church's patent. There is only a semblance of truth in this. In the defendant's stem-setting and stem-winding watch the normal engagement is really with the dial wheels. The assertion to the contrary is specious. It is based on the fact that in the Sheridan patent there is introduced a setting lever, l^1, so arranged that it may be put in engagement with the end of the spring, *l*, which is thereby placed under tension, and by reason of its greater strength overcomes the opposing spring, and produces the setting engagement; but when the lever, l^1, is thrown out of engagement, the spring, *l*, swings freely upon its pivot, without tension, and leaves the opposing spring to produce the winding engagement, which is described as normal. But when the device is placed in a stem-winding and stem-setting case, the lever, l^1, cannot be shifted, but is kept unchangeably in engagement with the spring, *l*, holding it firmly in the position of tension, and causing it to act exactly as does the spring, K, in Church's watch. Whatever, therefore, may be the uses and effect of that lever in other forms of construction, in a stem-winding and stem-setting watch it serves no purpose except to fix the spring in the position of tension, and that spring, when left to act as freely as it can act in that position, produces the stem-setting engagement. In that form of construction, therefore, that is the normal engagement, and the two devices are not different in that respect.

The necessary conclusion is that the appellant's watch, though made in conformity with the Sheridan patent, is modeled after the device of Church, and contains substantially the same combination of parts or well-known equivalents, arranged to accomplish the same result by the same mode of operation.

The decree of the circuit court is therefore affirmed.

BLAIR *et al.* *v.* LIPPINCOTT GLASS CO.

(*Circuit Court, D. Indiana.* September 13, 1892.)

No. 8,763.

1. PATENTS FOR INVENTIONS—ACTION FOR INFRINGEMENT BY PATENTEE AND LICENSEE.
A joint suit for infringement of a patent cannot be maintained by the patentee and the licensee whose license conveys no exclusive monopoly.
2. SAME—LICENSE—ESTOPPEL.
A license to manufacture lime glass chimneys under a patent, granted by the patentee with others, does not estop the licensee from objecting that such other parties cannot be joined with the patentee in an action against the licensee for infringement by manufacturing lead glass chimneys without a license.
3. PLEADING—DEMURRER—FACTS NOT SUFFICIENT FOR JOINT CAUSE OF ACTION.
Where, in a joint complaint by two or more parties, the facts stated do not show a joint cause of action in them, a demurrer, on the ground that the complaint does not state facts sufficient to constitute a cause of action, must be sustained.

In Equity. Suit by George W. Blair and said Blair associated with Paul Zimmerman, partners as Dithridge & Co., against the Lippincott Glass Company, for infringement of a patent. Heard on demurrer to bill. Demurrer sustained.

W. Bakewell & Sons and *W. A. Van Buren*, for complainants.

Frank O. Loveland, for defendants.

BAKER, District Judge. The demurrer of the respondent to the complainants' bill of complaint presents the sole question in this case. The sufficiency of the complaint hinges on the question whether a suit in equity for the infringement of a patent right is maintainable jointly by the patentee and a licensee, whose license confers no exclusive monopoly. An exclusive license, to the extent of the interest granted, is construed to be an equitable assignment, and clothes the licensee with an interest, *sub modo*, in the monopoly. "The only alienation which can carry the monopoly is that of an exclusive right, or of an undivided interest in the exclusive right to practice the invention, including the exclusive right to make, the exclusive right to use, and the exclusive right to sell, the patented invention." Rob. Pat. § 807. The inventor of a new and useful improvement has no exclusive right to it until he obtains a patent. This right is created by the statute and secured by the patent, and no suit can be maintained by the inventor against any one for using it before the patent is issued. The discoverer has a mere inchoate statutory right, which he may perfect and make absolute by proceeding in the manner which the law prescribes. *Reeves* v. *Corning*, 51 Fed. Rep. 774. The monopoly secured to the patentee is for one entire thing. It is the right of making, using, and vending to others to be used, the improvement he has invented, and for which the patent is granted, to the exclusion of all others. The monopoly did not exist at common law, and the rights which may be exercised under it must be regulated by the law of its creation. It is created by the act of congress, and no rights can be acquired in it unless authorized by statute, and in the manner therein prescribed. *Gayler* v. *Wilder*, 10 How. 477. The stat-