

## SICKLES V. EVANS ET AL.

{2 Fish. Pat. Cas. 417; 2 Cliff. 203.}<sup>1</sup>

Circuit Court, D. Massachusetts.

Oct., 1863.

PATENTS—RESULT—MEANS—STEAM CUT-  
OFF—REISSUE—DIFFERENT INVENTION.

1. Where proper reference is made, in each claim, to the specification, the claim will be construed not to be for a result, but for the means by which the result is accomplished.
2. The invention of Sickles under his patent dated October 19, 1844, plainly is, as he describes it, a new and useful method of tripping-cut-off valves, by a motion independent of the lifter, and, as there described, it has nothing whatever to do with any improvement in the working of valve catches or valve rods, as is evident from a perusal of the entire specification, which contains no reference to any such improvement, but declares that the inventor contemplated no change in valve gear.
3. In Sickles' reissued patent of January 21, 1862, in expanding the invention described in his original patent of September 19, 1845, what was a new and useful method of tripping the drop cut-off valves of steam engines and regulating and adjusting the same, has become a new and useful improvement in steam engines; and what was an improvement in tripping cut-off valves by a motion independent of the lifter, has become an improvement in the co-existing movement of two reciprocating catching-pieces.
4. Comparing the language of the claim of the reissue with the claims of the original, it is clear that they are foreign to each other, and strangers. If the claim in the former were inserted in lieu of those in the latter, there would be nothing in the original specification to justify such a claim.
5. Sickles' reissued patent, dated January 21, 1862, is void, because it is not for the same invention as the original patent.
6. Where the original and reissued specifications are consistent, or where there is no positive conflict or absolute inconsistency, the rule that in the absence of fraud, the reissued patent is evidence of the identity of the inventions, may be applied; but where it appears on the

face of the respective specifications, as matter of law, that the specification and claim of the reissued patent are for a different invention from that secured in the original, the rule can not be sustained.

[Cited in *Cahart v. Austin*, Case No. 2,288; *Seymour v. Osborne*, Id. No. 12,688; *Chicago Fruit-House Co. v. Busch*, Id. 2,669; *Milligan & Higgins Glue Co. v. Upton*, Id. 9,607; *Stevens v. Pritchard*, Id. No. 13,407; *Tucker v. Tucker Manuf'g Co.*, Id. 14,227.]

7. Wherever it appears, upon a comparison of the two specifications and claims, as matter of law arising on their construction, that the reissued patent is for a different invention from that secured in the original patent, then the reissued patent is void and of no effect.

[Cited in *Seymour v. Osborne*, 11 Wall. (78 U. S.) 546; *Bridge v. Brown*, Case No. 1,857.]

8. Engines constructed under the reissues of an original patent granted to George H. Corliss, March 10, 1849, do not infringe the reissues of the original patents granted to Frederick E. Sickles, October 19, 1844, or September 19, 1845.

This was a bill in equity [by Frederick E. Sickles against Bailey W. Evans and Caleb <sup>83</sup> Seagrave] filed to restrain defendants from infringing letters patent [No. 3,802], for an "improvement in the method of opening and closing the valves of steam engines," granted to complainant October 19, 1844; extended for seven years from October 19, 1858; reissued January 1, 1861, in two divisions, numbered 1112 and 1113, one of which, reissue 1113, was again reissued January 28, 1862. Also, letters patent for "an improvement in the mode of tripping cut-off valves," granted to complainant September 19, 1845, extended for seven years from September 19, 1859; reissued February 21, 1860, in six divisions, one of which (No. 910) was again reissued January 21, 1862. The invention is sufficiently described in the subjoined claims and in the opinion of the court.

The claims of the original patent of October 19, 1844, were as follows:

“I claim, first, my improvement in the periods of the movements of the valves, by which they are opened and closed, relatively to each other, and to the movement of the piston, by means of which the piston completes each stroke in equilibrium, or nearly so, without admitting steam against the movement of the piston by a lead to the steam valve; which is effected, as before stated, by opening the lower exhaust valve before the end of the upward stroke of the piston, and before the upper exhaust valve is closed, and opening the upper exhaust valve before the end of the downward stroke of the piston, and before the lower exhaust valve is closed, the movement of the steam valves being so regulated as to admit steam to the cylinder only after the exhaust valve on the corresponding end of the cylinder has been closed. I also claim as my next improvement, and as a means of carrying into effect my first and essential improvement, the arrangement of the toes of the rock-shaft in such manner, relatively to the location and form of the feet of the lifting rods, that at the middle, or nearly so, of the rocking motion of the rock-shaft, both lifting rods, with their exhaust valves, shall be partly up, as herein described; and I also claim, in combination with this arrangement, the slip of the lifters on the steam valve stems, as described, to insure the closing of the exhaust valves before the opening of the steam valves on the corresponding ends of the cylinder, as herein described.”

The claims of reissue No. 1113, dated January 1, 1861, were as follows:

“Giving to each exhaust valve, alternately, while the piston is at or near the end of the cylinder furthest from it, a large amount of motion, as compared with the motion of the other exhaust valve, at that time, so as to move freely, exhaust the cylinder with less extent and greater ease of motion to the valves than has been done heretofore, substantially as described.

Also, imparting these motions to the exhaust valves by means of a rocker interposed between the first motion from the engine and the valves, so that it will increase and diminish its leverage relative to each valve while moving them, and thereby impart my improved motion.”

The claims of the reissue of January 28, 1862, were identical with those of reissue 1113.

The claims of the original patent of September 19, 1845, were as follows:

“I claim tripping the drop valve of the cut-off by a motion independent of the lifters, substantially in the manner and for the purpose herein described. I also claim combining the wiper that drops the valve of the cut-off, whether working horizontally or vertically, with any of the moving parts of the engine, other than the lifters, or their rocking-shaft, by means of the sector and arm or arms, by means of which the extent of the cut-off can be regulated at pleasure, during the action of the engine from the full to the least portion of the stroke, as herein described.”

The claim of reissue No. 910, dated February 21, 1860, was as follows:

“I claim imparting a co-existing movement to two reciprocating catch-pieces in the operation of trip cut-off valves.”

The claim of the reissue of January 21, 1862, was as follows:

“Imparting a co-existing movement to two reciprocating catch-pieces in the operation of the trip of cut-off valves, substantially as described.”

E. N. Dickerson, for complainant.

E. W. Stoughton and B. R. Curtis, for defendants.

CLIFFORD, Circuit Justice. This is a bill in equity brought by the complainant to restrain the respondents from using a certain steam engine which they purchased of George H. Corliss, and which was constructed by the vendor under the reissue of an

original patent granted to him March 10, 1849. Relief is sought by the complainant upon the ground that the steam engine in question is an infringement of the exclusive rights secured to him in the respective reissued letters patent described in the bill of complaint, and on which the suit is founded. Letters patent were granted to the complainant May 20, 1842, for a new and useful improvement in the manner of constructing the apparatus for lifting, tripping, and regulating the closing of the valves of steam engines. Whether any application for the extension of the patent was ever made does not appear, but it is conceded that the invention had imperfections; that the patent never was extended, and that it expired by its own limitation, in fourteen years from the time it was granted. Efforts, however, were made on the part of the complainant to remedy the defects of the invention, and he alleges that he afterward completed a set of improvements for that purpose, and 84 commenced to make a model of what he supposed was a perfect valve gear for a steam engine, and on February 28, 1844, filed a caveat to protect himself in his invention, which is now on file in the patent office of the United States. Steam engines, with few exceptions, as the complainant alleges, were operated at that time by the use of a cut-off valve, independent of the steam valves; that a part of the improvements made by him, on exhaust valves, were adapted to engines of that description; that in the hope of inducing persons who would not incur the expense of changing their cut-off gear to use that improvement, he made a model of a detached part of his invention, and before he completed the model of the perfect valve gear, applied for a patent for the same, as an improvement in the method of working exhaust valves, and that letters patent, according to the application, were granted to him October 19, 1844, under the title of "a new and useful improvement in the method

of opening and closing the valves of steam engines.” Extension of that patent was duly obtained at its expiration, on October 19, 1858, for the further term of seven years, and the extended patent was afterwards surrendered, and on January 1, 1861, the same was reissued in two parts, numbered seven and eight, with amended descriptions and specifications. Defects, however, still existing in the respective specifications, both of the reissued letters patent were subsequently surrendered, and on January 28, 1862, the original patent of October 19, 1844, as extended, was again reissued to the complainant, with additional amendments in the specifications, and the same, as last reissued, is one of the letters patent on which the suit is brought. After the original patent of October 19, 1844, was granted, the complainant, as he alleges, proceeded to perfect the model he had commenced before he made the application for that patent; that when it was completed he deposited it in the patent office, made application for a patent for the invention, and that a patent was duly granted to him for the same September 19, 1845, but that the claims of the specifications of the patent as issued covered only certain parts of his improvements. He further alleges that on September 19, 1859, he also obtained an extension of the last named patent for the further term of seven years, and that he afterward surrendered the extended patent, and that on February 21, 1860, the same was reissued to him in six parts, which were intended to cover the whole of the improvements of his invention, as exhibited in his completed model of a perfect valve gear. Doubts having arisen, however, whether the specifications of one or more of the reissued patents were sufficient, the several patents were subsequently surrendered, and on January 21, 1862, the original patent of September 19, 1845, as extended, was again reissued to the complainant, which is the other reissued patent on which the suit

is founded. Considering that the first patent granted to the complainant has long since expired, it will only be necessary to refer to it as showing the state of the art at the time his later improvements were made. Complainant therein described that invention, as “certain improvements in the manner of constructing and arranging the apparatus for lifting and tripping the valves of steam engines, and by which the steam can be more readily cut off, at any desired part of the stroke, than by the means heretofore adopted; and also an improved water reservoir and plunger, which serve to prevent the slamming of the valves in closing, and consequently to preserve them in good working order for a great length of time.” His patent contained two claims in substance and effect as follows:

First. The manner in which he had combined and arranged the valve stem, the spring on the lifter, the adjustable sliding piece with its wedges or inclined planes, and their immediate appendages, so as to cooperate with each other and to effect the tripping of the valves and the cutting off of the steam substantially as therein described.

Secondly. He also claimed the manner described of regulating the closing of the valves, and of effectually preventing them from slamming by means of a water reservoir furnished with a piston or plunger attached at the lower end of the valve-stem, and operating within an adjustable cup or secondary reservoir, so as to accomplish the described effect. Suits were instituted by the inventor alleging the infringement of the exclusive rights therein secured to him, and in the course of the investigations consequent thereon it became necessary for the courts to construe the respective claims of the patent. Their construction was directly involved in *Sickles v. Gloucester Manuf'g Co.* [Case No. 12,841], heard before Justice Grier, at Trenton, N. J., September term, 1856, as appears by an opinion subsequently delivered by him in that case,

in which he held, in respect to the first claim, that the combination and arrangement of all the parts of the invention as described in the patent, had reference to the new manner, method, or arrangement of machinery therein described for tripping puppet valves, and that the specification did not set forth any general principle or any other mode in which the inventor proposed to apply that principle to valves of a different character and of a totally different mechanical action. Thorough examination also was made, at the same time, of the second claim of the patent, and in respect to that claim the learned judge held that it was apparent that the apparatus described in the first claim for tripping the valves, and that described in the second, must be combined to effect the purpose intended, and he deduced that conclusion from the fact that if the valves, when 85 tripped, should be suffered to fall to their seats without being checked by the device described in the second claim, the whole apparatus would be practically useless. Hence he held that the two things constituted one whole invention, having for its subject the valves known as puppet or lifting valves. Description is given, in the first place, of the devices for operating those valves, and then follows the description of the water reservoir, whose object and purpose are “to prevent them from slamming in closing, which would otherwise destroy the machinery.” Although the specification mentioned “oil or other fluid,” as well as water, still the learned judge held that it was plain that the word “fluid” was used in its popular sense as a synonym for “liquid.” Patentee insisted, on that occasion, that the second claim of his patent covered the use of air as well as water for the described reservoir, but the same learned judge, after explaining very satisfactorily the difference in the action of the one from that of the other, as respected the invention under consideration, held that the claim was for regulating the closing of the valves



and preventing them from slamming, by means of a “water reservoir,” and that there was no intimation that an elastic fluid could be used for the same purpose or “how it should be used.” Patent of October 19, 1844, is also for “a new and useful improvement in the method of opening and closing the valves of steam engines,” or, as more fully described in the specification, it is for a new and useful improvement in the apparatus for opening and closing the steam and exhaust valves of steam engines, so that the steam will act with greater practical efficiency than it would without the improvement. Inventor first describes the various parts of the apparatus which, prior to that time, had generally been used to work both the steam and exhaust valves, and the usual combination and arrangement of those parts which had previously been employed, in order, as he states, to show the difference “between the usual mode and his mode of, and improvement in, arranging and combining those parts so as to produce new and useful results.” Superadded to the details given in respect to the usual mode employed prior to his invention, the patentee states that while one lifting rod, with its feet, lifters, and valves attached, was in motion, the other lifting rod with its attachments remained stationary. Having explained the state of the art at the date of his invention, he then proceeds to describe the improvement for which he claimed a patent. Referring to the general description, it consists in effect in so regulating the period of the movements of the valves as to leave the piston free to complete each stroke and also to give any desirable lead to the exhaust valves. While it accomplishes those objects, it also, as the patentee states, causes the piston to be in “equilibrio” near the completion of its stroke, which is effected in the first instance by opening the lower exhaust valve before the piston finishes its upward stroke, and before the upward exhaust valve is closed, and

secondly, by opening the upper, exhaust valve before the piston finishes its downward stroke, and before the lower exhaust valve is closed, but in both cases the steam valve is opened without a lead and after the closing of the exhaust valve on the corresponding end. To that general description, the patentee also adds that his invention further consists in a peculiar arrangement of the toes on the rock-shaft, the feet on the lifting rods, and the connection of the lifters with the valve stems to carry the before mentioned improvement into effect; and he then gives a very minute description of the several devices of what he calls his improved combination, and the arrangement of the relative position of the toes and feet, together with a description of the effect which such combination has upon the motion of the toes and feet during the revolution of the engine. Special mention is also made of the fact that the nuts attached to the stems of the steam valves are so arranged as to be adjustable, and allow a slip of the lifters thereon, of an inch more or less, and equal, or nearly so, to the rise of the toes above the upper surface of the rock-shaft. Extended explanation is then given of the connection which the preceding combination has with the steam and exhaust valves, and of the improved effect which the whole combination and arrangement have upon the operation of the valves, and the more efficient working of the engine. Modifications of the combination and arrangement of the apparatus are then suggested, but they all, as the patentee well states, involve the same mechanical principles and manifestly were not intended to accomplish any different result, or to change the mode of operation. Certain results are then described as effected by the combination and improvement in the relative position of the toes on the rock-shaft with the nuts on the valve stems, and their relative position to the valves.

First. Any desirable "lead," it is said, may be given to the exhaust valves, without the piston of the steam cylinder being subjected to any opposing force or difficulty in consequence of such movement.

Secondly. That both exhaust valves may be open momentarily at the same time, so that the piston shall be in equilibrio, as before described.

Thirdly. That the result is, or may be, that a portion of the steam which is being exhausted, is shut into the steam chest nearest the piston, so that it may be used in combination with steam emitted from the boiler to drive the return stroke. Complying with the requirement of the patent act, the inventor then specifies and points out what he claims 86 therein as new, and desires to secure by letters patent. He first claims what he denominates as his improvement in the periods of the movements of the valves, by which they are opened and closed relatively to each other and to the movement of the piston, by means of which the piston completes each stroke in equilibrio, or nearly so, without admitting steam against the movement of the piston by a lead to the steam valve. Such is the substance of the first claim; but it is accompanied by a repetition of the description of the means by which the described result is accomplished, and to that description the patentee adds, that the movement of the steam valves is so regulated as to admit steam to the cylinder only after the exhaust valve on the corresponding end of the cylinder has been closed. His next improvement he claims as a means to carry the first, which he characterizes as the essential improvement, into effect; and such undoubtedly is the true nature and character of the improvement. Taking it as described in the claim, it is the arrangement of the toes and the rock-shaft in such a manner relatively to the location and form of the feet on the lifting rods, that at the middle, or nearly so, of the rocking motion of the rock-shaft, both lifting rods, with their

exhaust valves, shall be partly up, as described in the specification. Incident to that arrangement, and in combination with it, the patentee also claims the slip of the lifters on the steam valve stems, to insure the closing of the exhaust valves before the opening of the steam valves on the corresponding ends of the cylinder. Proper reference is made in each claim to the specification, so that the several claims are not for a result, but for the means by which the result is accomplished. Assignees held the title to the patent from August 5, 1848, to the expiration of the original term, but the invention became revested in the complainant October 19, 1858, when the patent was extended for the further term of seven years. Surrender of the extended patent was afterward made, and on January 1, 1861, the same was reissued in two parts, as alleged in the bill of complaint. Comment on the reissued patents of that date is unnecessary, as the original patent was again surrendered and reissued, as already explained. Parties concede that the description of the invention, as contained in the last reissue, is substantially the same as that in the original patent, except in one or two particulars. Those particulars consist of certain additions to the description in the reissued patent, which, when properly considered in connection with the other parts of the instrument, can not be regarded as affecting the questions involved in this suit. Direct reference is made in both patents to the alleged improvement, as one consisting, among other things, in the combination of the toes attached to the rock-shaft, with the nuts attached to the stems of the steam valves, and the relative rise of the toes above the upper surface of the rock-shaft, starting at the connecting point even with the upper surface. All must agree that in these respects the description in the two patents is identical; and they both also speak of the combination as including the slip of the lifters upon the steam valve stems, with the peculiar

operation of the valves for admitting steam to and exhausting the same from the cylinder, giving thereby greater efficiency to the engine, and increasing speed or saving steam or fuel. Complete identity in the devices also, as well as in the several combinations and arrangement of the parts, is shown throughout, as is obvious from the entire comparison. Having copied the entire substance of the original specification into the reissued patent, and adopted the same, the patentee then proceeds, to use his own language, "to point out the improvement herein patented," which, as he in effect states, is particularly shown in the second sheet of the drawings, and by the use of which, very high motion in opening the exhaust valves is secured, without moving the valve a long distance previously to its opening, as must be done in all other methods known before in which both valves were moving at the same time.

Special reference is also made to the same sheet of the drawings, as the foundation of the explanations given in respect to the alleged differential motions of the exhaust valves, and the manner in which the same are accomplished. When describing the operation, the patentee states that the exhaust valve which for the moment is farthest from the piston, receives the largest amount of motion, and that the effect is that a free escape of the steam is given from that end of the cylinder without compelling the other exhaust valve to move an equal distance with it. Two claims are made by the patentee, and it will be seen that they are widely different from those made in the original patent. He here claims, in the first place, "giving to each exhaust valve, alternately, while the piston is at or near the end of the cylinder farthest from it, a large amount of motion, as compared with the motion of the other exhaust valve at that time, so as to more freely exhaust the cylinder with less extent and greater ease of motion to the valves than has heretofore been

done.” Secondly, he claims—”imparting these motions to the exhaust valves by means of a rocker interposed between the first motion from the engine and the valves, so that it will increase and diminish its leverage relative to each valve while moving them, and thereby impart my improved motion.” Separately considered, that part of the description here referred to, as an addition or amendment to the specification of the original patent, would seem to indicate that the patentee contemplated, not only that the exhaust valves should move together, but that one of them should move while it was closed. Mechanism, however, to move the exhaust valves after they are closed, or before they commence to open, is certainly 87 not described in the original patent, and it is equally clear that the additions or amendments made to the specifications, as exhibited in the reissued patent, neither describe nor suggest any new mechanism to accomplish any such function. Recurrence to the specification will show that the patentee first states what the usual mode of working steam engines was, prior to the date of his invention, and then describes his own improvement. His general description of the usual mode prior to that time is, that while one lifting rod, with its feet, lifters, and valves attached, is in motion, the other lifting rod, with its attachments, remains stationary, or, in other words, that while the piston was running up, the exhaust valve at the upper end of the cylinder was open to let the steam run out, but that the lower exhaust valve was closed to prevent the steam from escaping, as it entered from the boiler, through the steam valve to drive the piston up, and so, on the other hand, as the piston was running down, the exhaust valve at the lower end of the cylinder was open to let the steam below the piston run out, but the upper exhaust valve was kept closed for the same reason as that given in respect to the lower exhaust valve when the piston was running the other way.

Taken as a general remark, therefore, it is correct to say that both exhaust valves were never open at the same time, and the same may be said of the steam valves, as then operated, except that one of them was usually opened just before the piston reached it, giving it a "lead," as it was called, in order to slow the piston as it was driven home. Such was the state of the art, as substantially described by the complainant himself, when he invented what he very properly calls his "new and useful improvement on the apparatus for opening and closing the steam and exhaust valves of steam engines." Starting upon the basis of his own prior invention, then duly secured by letters patent, but which have since expired, he devised the improvement afterward embodied by him in the original patent under consideration. Observing that the exhaust valve at the upper end of the cylinder was open as the piston was running up, but that both exhaust valves were never open at the same time, he conceived the idea, among other things, that if he should also open the lower exhaust valve just before the upward stroke of the piston was completed, keeping the steam valve at that end closed, the steam at the lower end of the cylinder would begin to escape as the piston completed its ascent, or at least before it commenced to return, so that when the steam should be let in to drive the piston down, or on the return stroke, the opposing force, as it is called in the patent, or the back pressure from the steam that drove the piston up, might be removed.

Prior to that time the ordinary mode of working steam engines had been, that one exhaust valve was opened and shut before the other was opened, each moving only during a stroke of the piston or half revolution of the engine—that is, one exhaust valve opened at the beginning of a stroke and was shut at the end of the same, and then the other opened at the

beginning or the subsequent stroke, and was closed when the stroke was completed.

Knowing that such was the ordinary operation of the exhaust valves, the patentee saw that alterations must be made in the mechanism for moving them, as compared with the apparatus usually employed for that purpose, or with that embodied in his old patent, in order to carry the new idea into effect, as it would obviously require that both exhaust valves should be open, for a limited period, at the same time, instead of one being opened and shut before the other was opened, as in the ordinary mode of working steam engines. Difficulties, however, attended the adjustment of the apparatus to accomplish that object on account of the conflicting mechanical principles which the plan involved. Means could easily be devised and arranged to cause both exhaust valves to be open, for a limited period, at the same time, but it would not do to have the steam valve open at the end of the cylinder toward which the piston was running, while the exhaust valve at that end was also open, because, if such was the arrangement, the steam would run in at the steam valve, and run out at the exhaust valve, which would occasion a waste, if it did not defeat the operation. Unless, therefore, the steam valve could be kept closed until the exhaust valve at the corresponding end should also be closed, the new idea could not be successfully carried into effect. Lifting rods were employed in the old patent of the complainant to move both the steam and exhaust valves, and the same devices, with a certain modification in the attachments, are also employed to accomplish the same purpose in the original patent under consideration in this case. Remark should also be made that each lifting rod had an exhaust valve at one end and a steam valve at the other, and the arrangement was such, in the old patent, that when the rod moved the exhaust valve, it also moved the steam valve, and could not move the one



without moving the other also at the same time; but the rods themselves did not move together, and hence, it was true, as already stated, that one exhaust valve was opened and shut before the other was opened, and the corresponding operation of the steam valves was also in the same way. Complainant's new plan required that both exhaust valves should be kept moving, for a limited period, at the same time, but, in order to do that, he must move both rods at the same time, because one exhaust valve was upon one rod and the other upon the other rod, and, consequently, if he did not move both rods at the same time, he could not move both the exhaust valves, as the 88 new plan required. Conclusive reasons, therefore, existed why he should move both rods at the same time; but another difficulty then arose, which was, that if he did so, he would necessarily move the steam valves also, unless he could devise some means to obviate that difficulty, while the two rods were moving together, to carry the two exhaust valves. All that was required was, that the rods should move at the same time for a limited period, but he could not let the steam valve and the exhaust valve at the same end of the cylinder be open at the same time, because if he did, the steam, as before explained, while it would run in from the boiler, would run out at the exhaust valve. Nothing would overcome this difficulty unless the inventor could contrive some means by which the steam valve should be kept closed, until the two exhaust valves had ceased to be open at the same time. Provision was accordingly made by the patentee for the slip of the steam valve upon its lifter, or, as particularly described in the patent, for the slip of the lifter upon the steam valve stem, until the lifter carrying the exhaust valve at that end of the cylinder should come to a state of rest. Consequently both exhaust valves are kept open, for a limited period, at the same time, by a coexisting motion of the lifting rods, while the steam valve at

the end of the cylinder toward which the piston is running is, by the means described, kept closed until the two exhaust valves cease to move together, as required in the patent. Coexisting motion of the rods which carry the valves is certainly described in the original patent, but it is specially described, and must be understood as continuing only during the limited period that both exhaust valves move at the same time. Desiring to keep both exhaust valves open together for a limited period, he devised the coexisting motion of the lifting rods to accomplish that function, and he described it as intended for that purpose and no other. Confirmation of that view is derived from the fact that the patentee describes an apparatus for suspending this peculiar combination altogether, and for so adjusting the movement of the two exhaust valves that they will not both be open together, when of course there would be no coexisting motion of the lifting rods.

Resting the case here, the conclusion would be entirely satisfactory that the patentee never intended to move the exhaust valves or either of them after they were closed, or before they commenced to open; but further confirmation of that view is derived from other parts of the patent. No one, I think, can read the specification of the original patent and fail to see that the complainant, when he framed it, intended to accomplish three things: First. To describe the apparatus usually employed for opening and closing the steam and exhaust valves of steam engines, and its mode of operation. Secondly. To give a full description of his own improvement on such apparatus, and its mode or modes of operation for accomplishing the same objects. Thirdly. To point out clearly the difference between the usual mode and his improved mode, so as to show that his improvement would produce new and useful results. Under the first head he describes every device usually employed for that

purpose prior to the date of his invention, but it will be sufficient to say that the description includes the lifters, the lifting rods, the feet on the lifting rods, and the rock-shafts, as well as the toes on the rock-shafts, and the valve stems and rock-shaft pin, and the general statement is, as before remarked, that while one lifting rod, with its feet, lifters and valves attached, is in motion, the other lifting rod, with its attachments, remains stationary. Argument to show that reference is there made to the use of puppet or lifting valves is unnecessary, as the decision of the court in the case of *Sickels v. Gloucester Manuf'g Co.* [Case No. 12,841] is conclusive upon that subject. Slide valves move all the time, but the puppet valve can not move after it has reached its seat, and as the description is to the effect, that one lifting rod, with its feet, lifters, and valves attached, remained stationary while the other, with its attachments, was in motion, it is clear to a demonstration that the reference is to puppet valves, and not to slide valves. Reasonable doubt can not arise upon that subject, and it is also proper to remark in this connection, that an examination of the complainant's description of his improvement and of the several combinations therein mentioned, will fail to furnish the slightest indication that he intended, in any one of them, to make any change in that device. Describing the nature of his general improvement, he says it consists in so regulating the period of the movements of the valves as to leave the piston free to complete each stroke, also to give any desirable lead to the exhaust valves, and allow the piston to be in "equilibrio" near the completion of its stroke, it not being absolutely necessary, if desirable, to give a lead to the steam valves, as heretofore. Careful attention to the manner in which the function is accomplished, as represented in the specification and heretofore explained, will show beyond doubt that it is the exhaust valve, away from which the

piston is running, that is here required to be opened. Suspension or diminution of the motion of the piston is accomplished by allowing the steam admitted to the cylinder to drive it, or some portion of it, to escape through the proper exhaust valve, just before the piston completes its stroke, and, of course, when the exhaust valve is opened for that purpose, the steam valve at that end of the cylinder must be kept closed, else the object of the movement would be defeated.

**89** None of the combinations of the old expired patent would meet this latter requirement, but the patentee, in his improved plan, accomplishes it without any difficulty by means of the contrivance for the slip of the valve upon its lifter, and the manner of its accomplishment affords additional evidence that the patentee never contemplated that the exhaust valves, or either of them, should move after they were closed, or before they commenced to open. Means are also described in the specification for carrying the improvement into effect which consist, as stated by the patentee, in a peculiar arrangement of the toes on the rock-shaft, the feet on the lifting rods, and the connection of the lifters with the valve stems, showing conclusively that the patentee contemplated the use of the same description of valves as those he had employed in the old patent, and that he regarded his new invention as an improvement upon the one which that patent secured. Passing from that subject for the present, it becomes necessary to examine the other patent, on which the suit is founded. Referring to the statement of the case, it will be seen that an original patent was also granted to the complainant on September 19, 1845, and it will be sufficient to say, in addition to the explanations already given, that the other patent in controversy, is the last reissue of that patent, and bears date January 21, 1862. As described in the original patent, the invention was for a new and useful method of tripping the drop cut-off valves of

steam engines, and regulating and adjusting the same. Motion for operating the valves of that description, as the patentee states, was derived, prior to the date of his invention, from the lifter, which approached the state of rest as the piston of the engine approached the middle of the stroke or its maximum velocity, and the valve was tripped by the same motion as that which lifted it, and, consequently, very great nicety was required in the adjustment, so as to regulate the extent of the cut-off at about half stroke. His invention in this patent was designed to remedy that difficulty, and its principle or character, as the inventor represents, consists in tripping the valve by a motion independent of the lifting rod, or rods, and also in combining the various parts in such a manner as to regulate the cut-off with accuracy, during the action of the engine.

Description is then given of the means by which those functions are accomplished, and that description is also accompanied by the suggestion of a certain modification, whereby the spring arms may be shifted in the teeth of the sector, and be brought near to, or be removed farther from, each other, "and thus cut off at a less or greater portion of the stroke." Reference is then made to one of the drawings, as representing his first invention, which, it will be recollected, was secured to him by the old expired patent. He there refers to it as his improved drop cut-off, with the lifter A<sup>1</sup>, projecting from the lifting rod A<sup>11</sup>, and operated by the toes of the rock-shaft C, in a manner, as he states, "not necessary to describe." Instead of disengaging the spring of the lifter, however, from the stem to the drop valve, by causing it to strike a permanent cam, as it rises, he employs, as he therein represents, a long spring projecting from the lifter, and fitting in a notch in the stem of the drop valve, as heretofore made, but extending beyond that, and having a curved projection on one of its faces and

at the extreme end, against which the outer face of an arm or wiper strikes as it vibrates on its vertical axis. According to the description, the outer face of that arm or wiper is parallel with its shaft, and of greater length than the motion of the lifter, so that it can act on the curved projection of the spring, as it is carried up and down by the lifter, and thus causes it to drop the valve. Suggestion is also made that, instead of the horizontal vibrating motion of the arm or wiper, the spring may be disengaged from the stem of the valve by a vertical, descending motion, as the lifter rises, which motion may be derived from any moving part of the engine. Based upon these representations the patentee claims, first, "tripping the drop valve of the cut-off by a motion independent of the lifters;" and secondly, "combining the wiper that drops the valve of the cut-off, whether working horizontally or vertically, with any of the moving parts of the engine, other than the lifters or their rocking shaft, by means of the sector and arm or arms, by the instrumentality of which the extent of the cut-off can be regulated at pleasure during the action of the engine, from the full to the least portion of the stroke." Taking the statement of the patentee as correct, the valve was tripped in the method practiced prior to the invention under consideration, by the same motion that lifted it, and the motion was derived from the lifter which approached a state of rest as the piston of the engine approached the middle of its stroke. When the piston of the engine approached the middle of its stroke, it was then at its maximum velocity and as the lifter actuated a spring which alternately took hold and let go of the valve stem, very great nicety was acquired in the adjustment of the apparatus so as to regulate the extent of the cut-off at about half stroke. Patentee expressly states that the object of his invention was to remedy that difficulty, and he also states that the principle or character of his improvement consists in

tripping the valve by a motion independent of the lifting rod or rods. Plainly his invention is, as he describes it, a new and useful method of tripping cut-off valves, by a motion independent of the lifter, and, as there described, it has nothing to do whatever with any improvement in the working of valve catches or valve rods, as is evident from a perusal of the entire specification. Entire want of reference, 90 in the specification, to any such improvement, would seem to be a sufficient answer to every such pretense; but the specification itself furnishes even a better answer than that, and one which is entirely conclusive, because it amounts to an express declaration that he, the inventor, did not contemplate any change whatever in valve gear, or in the means of working the valves. Had he intended to make any alterations in the valve gear, as shown in his old patent, or if he had designed to give a coexisting motion to the valve rods as now claimed, it is reasonable to suppose that he would have referred to those matters, as material parts of his improvement, and would have described the nature of the contemplated alterations in the valve gear, and the means of giving the coexisting motion to the valve rods; but he did neither, nor is there any thing in the specification from which any such inference can reasonably be drawn. On the contrary, he refers to his former invention secured to him in the old patent, and characterizes it as his improved drop cut-off with the lifter projecting from the lifting rod and operated by the toes of the rock-shaft in a manner not necessary to describe. Valve gear apparatus was fully described in the old patent to which he referred, and it will be remembered that it embraced no means whatever, to give a coexisting motion to the valve rods; but the complainant himself concedes that whenever one lifting rod, with its attachments, was in motion, the other remained stationary. Mistake could not be made by him upon this subject, as it was his own invention,

and when he spoke of the apparatus as being of a character not necessary to describe, he evidently meant to be understood as adopting it as the valve gear of his new improvement. Examination will now be made of the reissued patent of January 21, 1862, which is the only other patent of the complainant that remains to be considered. Improvements secured by reissued patents are very apt to be expanded, but the change in that behalf in this case is so great that in comparing the original patent with the reissue under consideration, it is difficult to find sufficient similarity to establish the identity. What was a new and useful method of tripping the drop cut-off valves of steam engines and regulating and adjusting the same, has become a new and useful improvement in steam engines; and what was an improvement in tripping cut-off valves, by a motion independent of the lifter, has become an improvement in the coexisting movement of two reciprocating catching-pieces. Another feature of the improvement, as described in the reissued patent, is, that each of the two reciprocating catching-pieces moves during a longer time than half a revolution of the main shaft of the engine, whereby, it is said, a greater capacity for adjustment in opening the valve, and a greater certainty in connecting with the catch are secured, than if one catching-piece should come to a state of rest before the other moves, and each catching-piece should move only during one-half the revolution of the engine. Complainant then refers to a certain valve rod or stem which has; as he states, a piston or plunger attached to its upper end, and operating within a reservoir, shaped smaller at the bottom, which may confine the fluid contained therein as the plunger descends, substantially as described in his old patent, so as to regulate the velocity of a falling weight, connected to the stem, that is sufficient to overcome all friction in closing the valve. To this rod or stem, as the patentee states, the valve must



be attached, and he also adds in this connection, that either single, double, or slide valves may be used. Certain other representations of the specification must also be briefly noticed. Speaking of the catch-pieces, the patentee states, that they derive a reciprocating opening and closing motion from the valve gear, and operate to determine the admission of steam, when their acting surfaces are in contact with the catches. He also states that the shape of the toes on the rock-shaft C, and the feet on the lifting rods is such, that one rod is moved before the other comes to a state of rest, thereby imparting a coexisting movement to the catch-pieces, permitting them to pass beyond the engaging points, and to return to them to open the valve. And, lastly, he states that the coexisting movement of the catch-pieces can be communicated to them by other sort of valve gear than that shown, and that any valve motion, having a proper coexisting movement in any of its parts, can be used to move the catch-pieces. Such is the substance of the representations upon which the claim is based, so far as it is material to consider them in this case, and the claim is—"Imparting a coexisting movement to two reciprocating catch-pieces in the operation of the trip cut-off valves, substantially as described." Compare the language of this claim with the claims of the original patent, and it is clear that they are foreign to each other and strangers. Strike out the claims of the original patent, and insert the claim here made in their place, and no one can doubt that the claim would be void, because there are no means whatever described in the specification of the original patent, to justify any such claim. Two fatal objections would arise to this claim, if, instead of occupying the place it now does, it were presented as the claim of the original patent. First, it would appear to be a claim for what the patentee had not invented; and secondly, it would be a claim for a new motion, without the description of any means to

accomplish the described result. Sufficient description of the alleged improvement, and of the means to accomplish the described result, have been imported into the reissued patent, and the complainant contends that the interpolation of these passages entirely overcomes both of the objections that would have arisen to the claim if it had been 91 made in the outset, as the claim of the original patent.

Judging from the course of the argument, the proposition is, that in the absence of fraud, the allegations in the specification of reissued letters patent, however different they may be from the description in the specification of the original patent, are, nevertheless, conclusive evidence that the invention was made, and the means to accomplish the result invented, as therein described. Where the two specifications are consistent, or where there is no positive conflict or absolute inconsistency, the proposition may be correct, but where it appears on the face of the respective specifications, as matter of law, that the specification and claim of the reissued patent are for a different invention from that secured in the original letters patent, the rule assumed can not be sustained. Whenever it appears, upon a comparison of the two specifications and claims, as matters of law, arising on their construction, that the reissued patent is for a different invention from that secured in the original patent, then the original patent is void and of no effect. Beyond doubt, whenever any patent, as issued, is inoperative or invalid by reason of a defective or insufficient description, or specification, or by reason of the patentee claiming, in his specification, as his own invention, more than he has a right to claim as new, if the error has arisen by inadvertency or mistake, and without any fraudulent or deceptive intention, the thirteenth section of the patent act authorizes the commissioner, upon the surrender to him of such patent, and the payment of the prescribed

duty, to cause a new patent to issue to the said inventor, for the same invention, for the residue of the period then unexpired for which the original patent was granted, in accordance with the patentee's corrected description and specification. 5 Stat. 122. Such reissue, however, must, by the express words of the section authorizing the same, be for the same invention, and, consequently, where it appears, on a comparison of the two instruments, as matter of law, that the reissued patent is not for the same invention as that embraced and secured in the original patent, the reissued patent is invalid, because that state of the case shows that the commissioner has exceeded his jurisdiction. *Batten v. Taggart*, 17 How. [58 U. S.] 83; *O'Reilly v. Morse*, 15 How. [56 U. S.] 111, 112; *Potter v. Holland* [Case No. 11,330]; *Allen v. Blunt* [Id. 216]; *French v. Rogers* [Id. No. 5,103]. Applying that rule to the present case, I am of the opinion that the reissued letters patent, under consideration, must be deemed invalid for the reason that the patent is not for the same invention as that embodied and secured in the original patent, which fully appears, as matter of law, from a comparison of the two instruments. In view of the conclusion announced as to the construction of the respective patents of the complainant, very little need be said upon the subject of infringement. Respondents purchased their engine of one George H. Corliss, who constructed it under the reissues of an original patent granted to him March 10, 1849. Parties and their counsel have proceeded, throughout the hearing and trial, upon the ground that the engine was constructed according to the patent, and there is no evidence in the case to raise any doubt upon that subject. Assuming that to be so, then the only question is, whether the patented invention of the vendor of the engine in question conflicts with one or both of the reissued patents of the complainant. Nothing need be added to what has been said respecting the

inventions of the complainant, so that it only remains to explain the patented invention of the vendor of the respondents. He invented new and useful improvements in steam engines, as represented in his patent. They are divided into three parts, but it will only be necessary to refer to the second and third, because the other is entirely disconnected from the particular controversy in this case. Among other things, he contrived the means of using slide valves and introduced into the steam engine a new motion of working them, which consisted in communicating motion to the two valves from one rock-shaft, by connecting each valve with a separate arm or crank-wrist of the rocker, and he so connected that method of working with the governor, so called, that the steam valves should be disengaged at such a point in the stroke of the piston as the governor should indicate, so that as the arms of the governor rise and fall, an unfailing indication was given of the exact point where the cut-off should take place. He also combined liberating gear with slide valves, and devised means for operating the combination upon an entirely new plan, and he also contrived a wrist-plate which preserves a positive connection with the engine all the time, causing the catches to move, and is of itself sufficient to show, that the means employed in the engine of the respondent are substantially different from those employed by the complainant. As was well remarked by the court in the case already referred to, one has perfected one combination of devices to trip a puppet valve, and the other a different combination for a different sort of valve. Suffice it to say, without pursuing the subject further, that I am of the opinion that the respondents do not infringe either of the patents of the complainant.

The bill of complaint is, therefore, dismissed, with costs.

<sup>1</sup> [Reported by Samuel S. Fisher, Esq., and by William Henry Clifford, Esq., and here compiled and reprinted by permission.]

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