

## Case No. 11,702.

RENWICK ET AL. V. POND.

{10 Blatchf. 39; 5 Fish. Pat. Cas. 569; 2 O. G. 392;  
Merw. Pat. Inv. 128.}<sup>1</sup>

Circuit Court, S. D. New York.

June 8, 1872.

PATENTS—COMBINATION—FUNCTION—RESULT—BREECH-  
LOADING FIRE-ARMS.

1. The reissued letters patent granted to William C. Hicks, March 1st, 1870, for an “improvement in breech-loading fire-arms,” the original patent having been granted to Hicks, as inventor, March 10th, 1857, are valid.

{Cited in [Renwick v. Cooper, Case No. 11,701.](#)}

2. Hicks was the first person who devised a practical mechanism for certainly withdrawing a loaded cartridge from its chamber, in a breech-loading fire-arm, under all conditions, as well when its rim or flange has not been expanded by the blow of a striking instrument, as when it has been so expanded, by effecting such withdrawal, through the engagement, within the periphery of such chamber, of a hook, actuated automatically, with a metallic flange forming part of the cartridge.
3. Although the patent describes the invention as applied to a cartridge, the flange of which radiates inwardly towards the longitudinal axis of the cartridge, and describes the hook as a rigid hook, and the flange as springing, to engage with the hook, yet an arm in which a cartridge is used, the flange of which radiates outwardly from the longitudinal axis of the cartridge, and is rigid, and in which the hook springs, to engage with the flange, infringes the first three claims of such patent, provided such arm has a breech-closing piece moving longitudinally with the barrel, a cartridge chamber at the butt of the barrel, and a reciprocating extracting hook, arranged in such manner that, when the breech is closed by the forward movement of the closing piece, the bill of the hook is within the periphery of such chamber, and, being in its most forward position, is in advance of the rear of the space in which the cartridge is received, so as to engage with the unexpanded front side of the flange of the cartridge, and only one side of the flange is engaged with the bill of the hook, avoiding any difficulty in disengaging the cartridge.

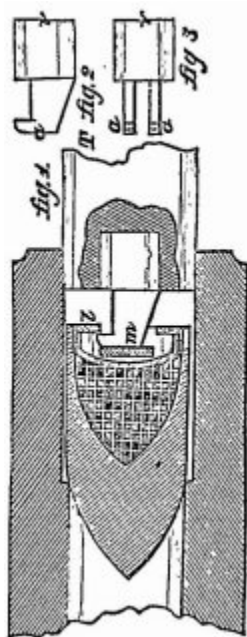
[Cited in *Rumford Chemical Works v. Hecker*, Case No. 12,133; *Morse Arms Co. v. Winchester Arms Co.*, 33 Fed. 178.]

4. Claiming the arrangement of a combination, when the arrangement is such as to produce a given mechanical result of the combination, is not a claim to a function, nor is it a claim to a result, irrespective of the means of producing it, but it is a claim to the means alone, and only when specially arranged to produce a given result.
5. In order to infringe the patent, it is not necessary to use a cartridge, if an arm be sold, capable of being, and designed to be, used to effect the result of the patent, by the means specified in its claims, and requiring only the addition of the cartridge by the purchaser.

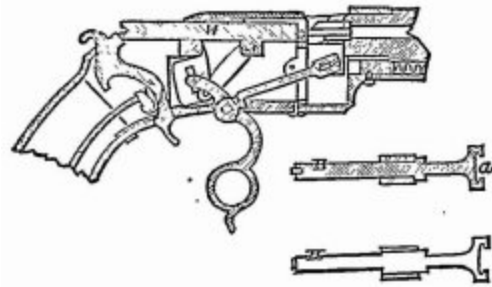
In equity.

{Final hearing on pleadings and proofs. Suit brought [by Edward S. Renwick and others against Charles H. Pond] upon letters patent for “improvement in breech-loading fire-arms, granted to William C. Hicks, March 10, 1857 [No. 16,797], reissued May 9, 1865 [No. 3,798], again January 18, 1870, and again March 1, 1870. The patent was extended for seven years from March 10, 1871, but the bill was not founded on the extension.

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{In the foregoing engraving, which represents the invention of Hicks, the extracting hook is shown at m, fig. 1, and at a, figs. 2 and 3. In fig. 3 the hook is double. This hook is so constructed as to slip by the flange of the cartridge, shown at 1, fig. 1, When pressed against it, and to engage with the flange in such manner that when the hook is withdrawn the cartridge is also extracted. The hook likewise serves as the striking instrument for firing the cartridge.



{The above engraving represents the Smith & Wesson pistol of 1854. The retractor consisted of the branched rod, H, constructed as shown at a, so that the head of the cartridge would pass within the catches without engaging with them. When, however, the piece was fired, the blow of the striking instrument caused the head of the cartridge, which was spherical, to expand, so as to fill the space between the catches, by which it could then be extracted. The extractor of the Morse gun, as well as that of defendant's, engaged the cartridge on the periphery of the flange, which was turned outward from the body, by means of a spring catch or catches, which slipped over the flange and permitted the withdrawal of the cartridge.}]<sup>2</sup>

E. W. Stoughton and George Gifford, for complainants.

F. S. Beach and C. M. Keller, for defendant.

BLATCHFORD, District Judge. This suit is founded on reissued letters patent granted to William O. Hicks, March 1st, 1870, for an "improvement in breech-loading fire-arms." The original patent was

granted to Hicks, an inventor, March 10th, 1857, and was reissued to him May 9th, 1865, and again January 18th, 1870. On the 27th of February, 1871, the patent was extended for seven years from the 10th of March, 1871. This bill was filed in May, 1870, and is not founded on the extension.

The specification states, that the object of the invention "is, primarily, to extract from the breech of a fire-arm, the cartridge, or the remnant thereof which remains after firing, and, secondarily, to secure the explosion of the percussion primer"; that, to this end, the invention "consists of certain combinations and arrangements of one or more extracting hooks, the reciprocating breech-pin or breech-closer of a fire-arm, and the chamber in the breech of a fire-arm, in which the cartridge is received"; that the invention is "applicable to breech-loading fire-arms of various constructions," and reference is made, "in order that it may be fully understood," to a pistol manufactured, at the time of the invention, by the Volcanic Repeating Arms Company, with Hicks' improvements applied thereto, "said pistol being, in other respects, substantially the same as that described in the patent granted to Horace Smith and D. B. Wesson, the 14th day of February, A. D. 1854." The specification then describes, with references to the drawings, the parts of such pistol which are important to an understanding of the invention. The pistol has a barrel constructed to be loaded, at the breech, with a cartridge which has at its butt an internal brass flange, which flange, being elastic, yields when pushed forward by an inclined instrument, and tends to regain its original form when the instrument has passed by it. The powder is in a cavity in the ball. Next the powder is a steel disk, and the percussion primer is placed against such disk and between it and a thin disk of cork. The barrel of the pistol has an enlarged chamber at its rear end, for the reception of the cartridge, the chamber being

deep enough to receive within it the entire cartridge, including the flange. The cartridge is pushed into the chamber by means of the breech-pin, operated by a lever which moves the breech-pin and its connections to and fro. The pistol is fired by a hammer, which operates, through the intervention of the breech-pin and its appurtenances, 538 on the primer in the cartridge. The forward end of the breech-pin carries the extracting hook or hooks. Where two are used, they are side by side, each arranged to act at one side only of the flange of the cartridge, their bills both pointing in the same direction, so that, when the cartridge is withdrawn from the chamber, it may be readily disengaged from the bills of the hooks, by moving the cartridge in the plane of the profiles of the hooks, which could not be readily done if two hooks, when used, were arranged at opposite sides of the cartridge flange, so as to hold the cartridge between them. The specification states, that the application of the extracting hook to the forward end of the breech-pin constitutes no part of the invention, and that the hook is used as the striking instrument, for striking the percussion primer, in addition to performing its function of extracting the cartridge. As the flange of the cartridge used with the pistol is made of elastic metal, which will yield to permit the hooks to pass by it, they are made rigid by being formed upon a cylindrical plug or stock, and are connected with the breech-pin by driving said stock into a socket formed in the front end of the breech-pin. As the breech-pin is connected with a lever, the extracting hooks, being connected with the breech-pin, are combined with the said lever, so that, when the lever is turned in one direction, the extracting hooks are moved forward, and, when the lever is moved in the opposite direction, the extracting hooks are withdrawn. Each extracting hook is so arranged, relatively to the cartridge chamber, that the bill of the hook, when advanced, enters within the

periphery of the cartridge chamber, so as to be sure to engage with the flange of the cartridge therein. Each hook, also, is so arranged, relatively to the cartridge chamber, that the bill of the hook, when moved to its most forward position, is in advance of the rear of the space occupied by the cartridge, at least as far as the thickness of the flange thereof, so that the shoulder of the hook may engage with certainty with the forward side of the cartridge flange. When the pistol is to be loaded, the movement of the lever opens the breech, by moving the breech-pin or breech-closer backward, in the longitudinal line of the barrel, or thereabouts, and withdraws the extracting hooks, while the movement of the lever in the opposite direction first impels the cartridge into the chamber of the breech. When, however, the cartridge reaches a shoulder at the front end of the chamber, its forward movement is stopped, and then the continued movement of the lever impels the extracting hooks forward past the edge of the flange of the cartridge, and, as the point of each is inclined, or sloped off, in advance of its shoulder, the bill of the hook readily passes over the edge of the flange, which, being of thin metal, yields to the pressure of the hook. When the shoulder of the hook has passed by the edge of the flange, the latter, being elastic, tends to resume its original position, and the shoulder of the hook engages with the flange, so that, if the lever be then moved to open the breech, the hooks will extract the cartridge, by reason of their engagement with its flange. The first movement of the breech-pin, in opening the breech of barrel, and its last movement, in closing the breech, take place in the longitudinal line of the barrel, or thereabouts. In the fire-arm before referred to, the construction of the cartridge with a thin flexible flange permits the extracting hook to be rigidly secured to the breech-pin, but that feature is not claimed as a peculiarity of the invention. The

construction of the cartridge, with the primer arranged in its interior, in the line of movement of the point of the extracting hook, after passing the flange, enables the hook to be used as the striking instrument, for transmitting the blow of the hammer to the primer, although such use of the hook does not affect its operation in extracting a cartridge, and is not essential to it. But, the movement of the breech-pin or closing piece longitudinally with the barrel, or thereabouts, at the time of opening and closing the cartridge chamber, is important, and is a distinguishing feature of the invention. The reason why two striking instruments are used, and are an improvement upon one, is stated to be, that, when a single striking instrument is used, the cake of percussion powder forming the primer, being struck at about its centre, frequently splits into parts, and allows the striking instrument to pass forward between the parts, without striking them against the disc-support of the primer, and hence the fire-arm frequently fails to discharge, whereas two striking instruments will hold some portion of the cake between their points, so that it cannot escape, and some portion of it is certain to be struck between the points of the striking instruments and the disc-support, and the fire-arm is sure to fire. The specification states, that, in the fire-arm described in the said patent to Smith and Wesson, two extracting hooks were used, but, they were so arranged, that, when advanced, their bills were outside of the periphery of the cartridge and of the chamber in which it was received; that, consequently, they could not engage with the cartridge-case unless its butt were first expanded by the blow of the striking instrument; and that, hence, the loaded cartridge could not be withdrawn by the hooks, and they could be used only to extract an expanded and empty cartridge-case. The specification concludes: "As the bill of my extracting hook, when moved forward, is within the periphery of the cartridge chamber, and

within the space occupied by the cartridge-flange, it must, of necessity, engage with the cartridge-flange, whether the cartridge has been fired or not, and, consequently, can be used to withdraw a loaded cartridge." The claims of the patent, four in number, are as follows: (1.) "The combination, substantially as set forth, of the 539 breech-closing piece, moving longitudinally with the barrel, the cartridge chamber at the butt of the barrel, and the reciprocating extracting hook, arranged in such manner that its bill enters within the periphery of the said chamber, so that it may engage with the flange of the cartridge therein, when the breech is closed by the forward movement of the closing piece, even though the cartridge be not expanded." (2.) "The combination, substantially as set forth, of the breech-closing piece, moving longitudinally with the barrel, the cartridge chamber at the butt of the barrel, and the reciprocating extracting hook, arranged in such manner that, when the barrel is closed by the forward movement of the closing piece, and when the bill of said hook is in its most forward position, the said bill is both within the periphery of said chamber, and in advance of the rear of the space in which the cartridge is received, so that said bill may engage with the unexpanded front side of the flange of the cartridge, when the latter is within the said space." (3.) "The combination, substantially as set forth, of the breech-closing piece, moving longitudinally with the barrel, the cartridge chamber at the butt of the barrel, and the extracting hook described, arranged in such manner that but one side only of the flange of the cartridge is engaged with the bill of a hook inside of the cartridge chamber, thereby enabling the cartridge remnant to be readily disengaged from the extracting hook." (4.) "The combination and arrangement, substantially as set forth, of the hook, with the breech-closing piece, moving in the line of the barrel, in such manner that the said hook performs the two functions



of transmitting a blow to the primer, and of extracting the cartridge remnant from the breech of the fire-arm.”

The answer sets up a prior description of the invention in the said patent to Smith and Wesson, of the 14th of February, 1834, and in a patent granted by the United States to George W. Morse, October 28th, 1836; and, also, prior knowledge and use of the invention by various persons named. It also sets up, that the invention had been, with the knowledge and consent of Hicks, in public use and on sale more than two years prior to the application by him for a patent therefor. It also sets up, that the reissue of March 1st, 1870, was obtained by Hicks for the fraudulent purpose of enabling him to include therein matters of which he was not the original and first inventor, and that it includes such matters, and that they, on the face of the patent, (especially in connection with the state of the art as it existed at the date of the original patent, and subsequently,) clearly appear to be different from the invention described and claimed in the original patent, and that the reissue is, therefore, void.

It is insisted, that the defendant has infringed the first three claims of the patent, by selling fire-arms manufactured by the Winchester Repeating Arms Company, of New Haven, Connecticut, containing the inventions covered by those claims. The defendant's fire-arm cannot be used with a cartridge like that described in the plaintiff's patent, having a central hole in the metal cap at the rear, and no flange at the rear projecting beyond the outer diameter of the body of the cartridge in a direction at right angles to its longitudinal axis, but can be used only with a cartridge which has such a flange. To fire the cartridge, in the defendant's arm, two points, carried by a rod in the breech-piece, strike the rear end of the cartridge, near its outer circumference, and explode the fulminate within. In the upper surface of the breech-piece there is a groove, into which is fitted a spring, the forward

end of which is formed into a hook, which projects beyond the front face of the breech-piece, so that, when the cartridge is pushed into the chamber of the barrel, the hook springs over the outer flange of the cartridge, and engages with the flange, and, when the breech-piece is retracted, the hook draws the cartridge out of its chamber.

There can be no doubt, on the evidence, that Hicks was the first person who devised a practical mechanism for certainly withdrawing a loaded cartridge from its chamber, in a breech-loading fire-arm, under all conditions, as well when its rim or flange has not been expanded by the blow of a striking instrument, as when it has been so expanded, by effecting such withdrawal through the engagement, within the periphery of such chamber, of a hook, actuated automatically, with a metallic flange forming part of the cartridge. In devising such mechanism, he made an important invention. Sometimes, it is desired to withdraw the loaded cartridge without attempting to fire it. Before the invention of Hicks, the only certain means of doing so was to insert a rammer in the muzzle of the barrel of the fire-arm, and push the cartridge out through the breech end. This was dangerous, because liable to cause the cartridge to explode by striking its fulminate end against the breech closing piece. The mechanism described in the patent issued to Horace Smith and Daniel B. Wesson, February 14th, 1834, and reissued to them October 10th, 1854, would withdraw the cartridge only after its rim had been forced, by expansion caused through the blow of the striking instrument, to engage with recesses provided to receive it, and would not withdraw a loaded cartridge before any attempt had been made to fire it. Although the application by Hicks for his original patent of March 10th, 1857, was not made until the 20th of February, 1857, yet his invention dates back to a period shortly after the

14th of August, 1855, and anterior to the date of the invention shown in the patent of October 28th, 1856, granted to George W. Morse. No such combination and arrangement as that described 540 in the patent to Hicks, and covered by his first three claims, to effect the result of withdrawing an unexpanded loaded cartridge, existed before his invention. The same combination and arrangement, operating in substantially the same way, to effect the same result, is found in the defendant's fire-arm. It can make no difference, that the flange of the defendant's cartridge radiates outwardly from the longitudinal axis of the cartridge, and that the flange of the plaintiff's cartridge radiates inwardly towards the longitudinal axis of the cartridge. Nor can it make any difference, that the defendant has a rigid flange in the cartridge, and causes the hook to spring to engage with the flange, while the plaintiffs have a rigid hook, and cause the flange to spring, to engage with the hook. Each has the breech-closing piece moving longitudinally with the barrel, the cartridge chamber at the butt of the barrel, and the reciprocating extracting hook, arranged in such manner that, when the breech is closed by the forward movement of the closing-piece, the bill of the hook is within the periphery of such chamber, and, being in its most forward position, is in advance of the rear of the space in which the cartridge is received, so as to engage with the unexpanded front side of the flange of the cartridge, and only one side of the flange is engaged with the bill of the hook, avoiding any difficulty in disengaging the cartridge.

It is shown, that, to reach the invention made by Hicks, it was necessary for him, taking the cartridge and nipple or firing instrument which he used, to make a properly shaped hook on the nipple, to change the location of the nipple relatively to the breech-pin and to the cartridge chamber, and to bring the flange of the metal cap on the cartridge within reach

of the hook, by reducing the size of the central hole in such cap. Although the cartridge and its flange are not made part of the combination, in any one of the first three claims, yet, the combination is required to be so arranged as to effect and ensure an engagement between the bill of the hook and the flange of the cartridge, by merely closing the breech by the forward movement of the closing piece. Such engagement is the purpose of the combination and arrangement. If the combination exists, yet, if it is not so arranged as to effect such engagement, there is no infringement. So, the prior existence of the combination of a breech-closing piece moving longitudinally with the barrel, a cartridge chamber at the butt of the barrel, and a reciprocating hook, the whole arranged so that the hook would extract something from the chamber, by means of the motion of the breech-closing piece, is of no avail to impeach the patent, so long as such combination was not so arranged as to extract an unexpanded loaded cartridge, through the engagement of the hook with the flange of the cartridge by the forward movement of the closing-piece, and the sequent action of the closing-piece in its backward movement.

It is contended, that the patent shows but a single arrangement of the three elements of the combination named; that three claims on such single arrangement cannot be sustained; that each claim rests on a portion of the result to be accomplished by working the arrangement; that, thus, each claim claims a function; that such functions are not patentable; that, to perform the functions, requires that the cartridge be used; and that defendant has not used the cartridge, and so has not infringed. I do not think the patent is open to these objections. The first claim is the same it would be if it claimed causing the bill of the reciprocating extracting book to enter within the periphery of the cartridge chamber, by means of the combination specified, when

so arranged as to enable the bill to engage, in such chamber, with the flange of the cartridge when the breech is closed by the forward movement of the closing-piece, even though the cartridge be not expanded. The second claim is the same it would be if it claimed causing the bill not only to enter within the periphery of the cartridge chamber, but to be, when in its most forward position, in advance of the rear of the space in which the cartridge is received, by means of the combination specified, when so arranged as to enable the bill to engage with the unexpanded front side of the flange of the cartridge, when the latter is within the said space and the breech is closed by the forward movement of the closing-piece. The third claim is the same it would be, if it claimed so arranging the hook or hooks, in the combination specified, as to act at one side only of the flange of the cartridge in the chamber, thus enabling what is withdrawn by the hook or hooks to be readily disengaged therefrom. It cannot be doubted that the claims, thus presented, would not be open to criticism. The first and second would be different from each other, in substance, and the third would be wholly distinct from either. The patentee would be entitled to make such claims, because they are embraced in what is shown in his original specification and drawings; and he really invented what each would cover. It could not be said, a priori, that the first claim would necessarily cover the position of the bill of the hook in advance of the rear of the space in which the cartridge is received, or the ability of such bill to engage with the unexpanded front side of the flange of the cartridge, when the latter is within the said space. Nor could it be said that the first claim would necessarily cover anything more than the entrance of the bill of the hook within the periphery of the cartridge chamber, and its ability to engage therein with the flange of the cartridge.

Claiming the arrangement of a combination, 541 when the arrangement is such as to produce a given mechanical result of the combination, is not a claim to a function. The result is not claimed irrespective of the means producing it. The means alone are claimed, and claimed only when specially arranged to produce a given result. This is very far from claiming a function.

The defendant may not have himself used a cartridge in the fire-arms sold by him, so that it can be said he has caused the hook to engage with the flange of the cartridge, and he may never have withdrawn a loaded ball and disengaged it from the hook. But, even if the cartridge were to be regarded as a part of the arrangement and combination, the defendant would, within the principle of the case of Wallace v. Holmes [Case No. 17, 100], be an infringer, by selling an arm capable of being, and designed to be, used to effect the result of the patent by the means specified in its claims, and requiring only the addition of the cartridge by the purchaser.

It is contended, by the defendant, that the first three claims of the plaintiffs' patent must be limited to an arrangement by which the hook shall bodily enter within the cartridge chamber, so that its bill may enter the rear end of a cartridge, when one is in the chamber, and engage with the inner edge of an inner flange of the cartridge; that the reissue is enlarged beyond the invention actually made and presented in the original patent, so as to cover inventions subsequently made by others; that, in the defendant's aim, the instrument for extracting the cartridge never enters any portion of the cartridge, and no portion of it ever enters the cartridge chamber proper; and that the defendant's device could not operate with a loaded cartridge of the character shown in the plaintiff's patent, and the plaintiff's hook could not operate with such a cartridge as is used in the defendant's arm.

These views are pressed with great earnestness, but they seem to me to be without real strength. The invention of Hicks involved only slight changes in what existed before, but those slight changes brought success. When the idea of Hicks was once embodied in practice, it was easy to adapt it to any form of flange. When a cartridge with a flange on the exterior rim was used, it required only ordinary mechanical skill, to take Hicks' invention and apply it to such flange, making the spring in the hook instead of in the flange. The change embodies Hicks' invention, although it may contain some patentable improvements. In respect to the cartridge described in the plaintiffs' patent, its chamber is the entire space which it, and its cap, and the flange, and all its component parts occupy in the arm, the chamber being formed by the walls enclosing such space. Into that space the bill of the plaintiffs' hook enters, because of the central hole in the cap. So, in the defendant's arm, the cartridge chamber is the entire space occupied by the cartridge and its flange, the flange being as much a part of the cartridge as any other part, and the chamber is formed by the walls enclosing such space. Into such space the bill of the defendant's hook enters, provision being made to allow the hook room to ride over the flange.

The fact, that no arms are now made in which the hook on the nipple in the breech-pin enters within the diameter of the body of the loaded cartridge, is due to the fact that such form of cartridge as is shown in the plaintiffs' patent has been superseded in practice, because of the preference given to cartridges with a flange on the exterior rim.

There is nothing to impeach the validity of the plaintiffs' patent, and it is established that the defendant's arm infringes its first three claims. There must be a decree for the plaintiffs, for an account, in respect of such infringement, with costs. As the bill is

not based on the extension, there can be no injunction in this suit.

<sup>1</sup> [Reported by Hon. Samuel Blatchford, District Judge, and by Samuel S. Fisher, Esq., and here compiled and reprinted by permission. The syllabus and opinion are from 10 Blatchf. 39, and the statement is from 5 Fish. Pat. Cas. 569. Merw. Pat. Inv. 128, contains only a partial report.]

<sup>2</sup> [From 5 Fish. Pat, Cas. 569.]

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