

## MULLER v. LODGE &amp; DAVIS MACHINE TOOL CO.

(Circuit Court of Appeals, Sixth Circuit. December 8, 1896.)

No. 392.

**1. PATENTS—INVENTION—COMBINATIONS—IMPROVEMENTS.**

If an inventor has greatly increased the effectiveness of the mechanism he claims, his patent may be sustained, though his elements are old, and no original result is accomplished. *Loom Co. v. Higgins*, 105 U. S. 580; *The Barbed-Wire Patent*, 12 Sup. Ct. 443, 450, 143 U. S. 275; and *Topliff v. Topliff*, 12 Sup. Ct. 825, 145 U. S. 156, applied.

**2. SAME—LIMITATION OF CLAIMS—REFERENCE LETTERS.**

Where each claim of a patent covers a combination of old elements, definitely specifying the elements entering into it, and by reference letters carrying into the combination each element specified, and the only operation described in the patent involves every one of the elements and their conjoint use, each element then becomes material, and the courts cannot enlarge the claims by dispensing with any one of them.

**3. SAME—BROAD INVENTION.**

If an invention is of a broad and meritorious character, such as to work a decided advance in the art, it will require something more than the use of reference letters in his claims to limit him to the exact form of device he has described.

**4. SAME—TOOL HOLDERS FOR LATHES.**

The Muller patent, No. 272,304, for an improved tool holder for lathes, must be limited, as regards claims 2 and 4, which consist of combinations of old elements, by reason of the prior state of the art, and in order to avoid anticipation, to the precise structure described and claimed by reference letters; and the patentee is not entitled to invoke a liberal application of the doctrine of mechanical equivalents. These claims are therefore not infringed by any device which omits any of their elements, or departs from the precise form described. 69 Fed. 738, affirmed.

Appeal from the Circuit Court of the United States for the Western Division of the Southern District of Ohio.

This is a bill in equity alleging infringement of patent No. 272,304, issued February 13, 1883, to the complainant, Conrad Muller, for what the inventor describes as a new and improved tool holder for lathes. The application states that the object of the invention is "to provide a new and improved device for holding and adjusting the cutting tool of a lathe in such a manner that it will be held firmly, and can be adjusted very nicely and accurately, without being affected by the inaccuracies and lost motion of the screw-spindle for moving the tool-holding block." The patentee then proceeds to say in what his invention consists, in the following words:

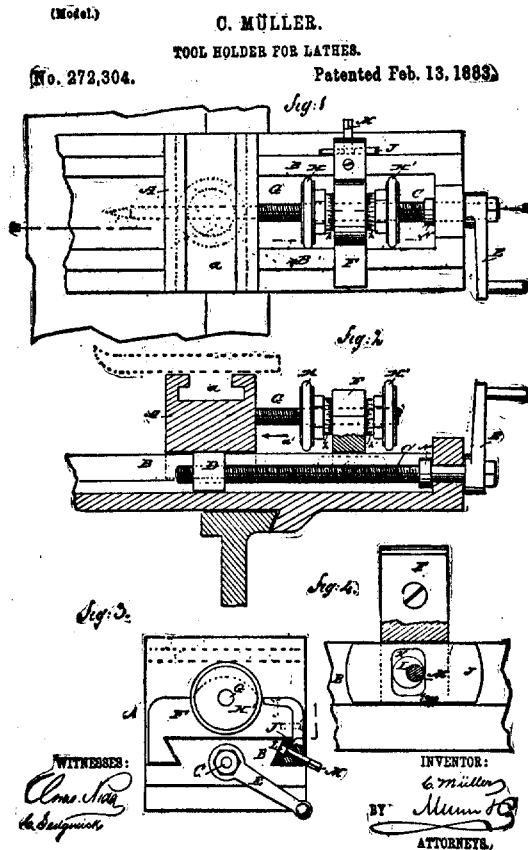
"The invention consists in a screw and nuts mounted thereon for adjusting the tool-holding block or slide of a lathe within the limits of the lost motion of the main spindle, which nuts have graduated collars to facilitate their accurate adjustment. The invention further consists in a crosspiece in which this adjusting screw is journaled, which crosspiece is provided with devices for locking it in position. The invention also consists in a wedge provided with a squared aperture, combined with an eccentric disk for moving the wedge to lock or unlock the crosspiece. Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures."

The drawings referred to, and made part of the specifications, are shown on next page.

These drawings, and the operation of the mechanism described, are thus explained by the patent:

"Figure 1 is a plan view of a tool holder for a lathe provided with my improvement. Fig. 2 is a longitudinal, sectional elevation of the same on the line, x x, Fig. 1. Fig. 3 is an end elevation of the same, parts being shown

in section. Fig. 4 is an inside elevation of the wedge for locking the tool-holding block or slide in place. A sliding block, A, provided in its bottom with a transverse dovetailed recess, rests on the dovetailed tracks, B, of the frame, which tracks pass into the dovetailed groove in the bottom of the block or slide, A. A screw-spindle, C, passing into a nut, D, in the bottom of the block or slide, A, is journaled in the end of the frame, and is provided with a crank-handle, E, or a hand-wheel for turning it, and thereby moving the slide or block, A, forward or backward. The block, A, is provided in its top with a longitudinal groove, a, for receiving the bottom of the tool holder. (Shown in dotted lines in Fig. 1.) A crosspiece, F, provided in its bottom



with a dovetailed recess, rests on the tracks, B. A screw-spindle, G, which is held to turn in the block, A, but cannot move longitudinally in the same, passes through the crosspiece, F, and on it nuts, H and H', are mounted on opposite sides, which nuts have graduated collars, h, h'. A wedge, J, is placed between one of the shanks of the crosspiece, F, and the outer surface of one of the tracks, B, and this wedge is provided with a square or oblong aperture, K, in which a disk, L, is located, which is eccentrically mounted on the inner end of pin, M, passing through this shank of the crosspiece, F, and having its outer end square, so that a key will fit thereon. The spindle, C, is provided with a rigidly-mounted collar, N, to prevent a movement of this spindle in the direction of its length."

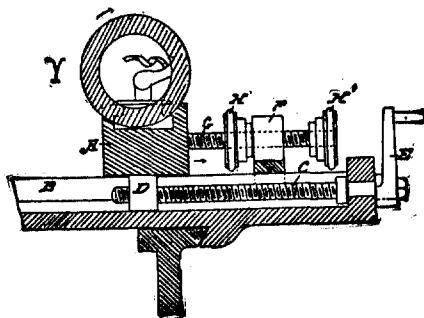
Complainant rests his case alone on the second and fourth claims of the patent, which are in these words:

"(2) In a lathe, the combination, with the slide or block, A, and the screw-spindle, C, of the crosspiece, F, the screw, G, and the nuts, H, H', thereon, substantially as herein shown and described, and for the purposes set forth.

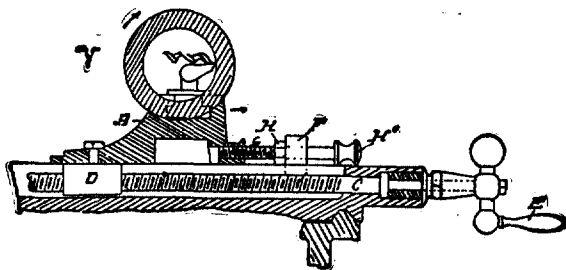
"(4) In a lathe, the combination, with the slide or block, A, and the screw-spindle, C, of the crosspiece, F, the screw, G, the nuts, H, H', and a device for locking the cross-piece, F, in position on the tracks, substantially as herein shown and described, and for the purposes set forth."

The defenses are noninfringement, anticipation by reason of prior and public use in this country for more than two years prior to complainant's invention, and absence of patentable novelty. The general resemblance between the structures of complainant and defendant and their mode of operation is very well illustrated by drawings taken from the brief of Mr. Geo. M. Finckel, counsel for complainant. These drawings are set out on following pages.

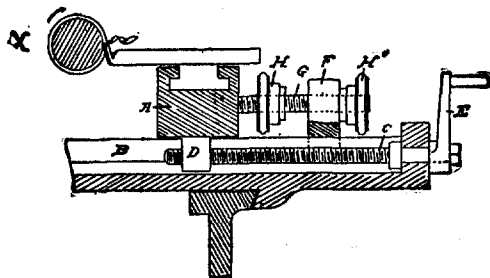
*Complainant's Device  
cutting inside thread,*



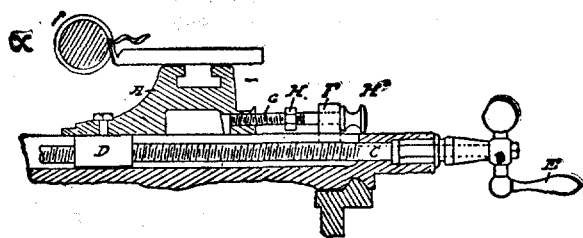
*Defendant's Device  
cutting inside thread*



*Complainant's Device  
cutting outside thread*



*Defendant's Device  
cutting outside thread*



The cause was heard in the circuit court by the Hon. George R. Sage (69 Fed. 738), who dismissed the bill upon the ground that the claims in issue could only be sustained by limiting them to the precise structure described in the specifications, and specifically referred to by reference letters, and, when thus limited, the defendant's structure did not infringe.

Geo. M. Fink, for appellant.

Geo. Murray, for appellee.

Before TAFT and LURTON, Circuit Judges, and HAMMOND, J.

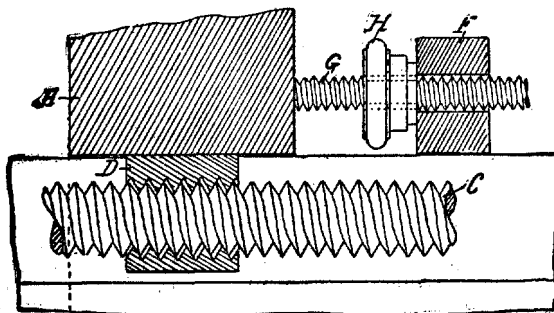
After making the foregoing statement of facts the opinion of the court was delivered by LURTON, Circuit Judge.

The sliding tool-holder block, A, the dovetailed track of the frame, B, and the screw-spindle, C, of the patent, are all old and well-known forms of lathes. The novelty claimed consists in the attachment consisting of the crosspiece, F, the cross-piece screw, G, the nuts, H and H', and means for locking the crosspiece in its place on the track of the frame. The second claim does not include any locking device as an element, and the fourth claim includes any device suitable for locking, and does not confine the patentee to the particular device included as an element in other claims of the same patent. The attachment which is claimed as novel is a device known better in the art as a stop or screw gauge. The primary object of all such gauges, and the only purpose expressly referred to by the patent, is to overcome what is called "lost motion." Lost motion is due to a looseness between the screw-spindle, C, and the nut, D, which is engaged by the spindle, C. This looseness is

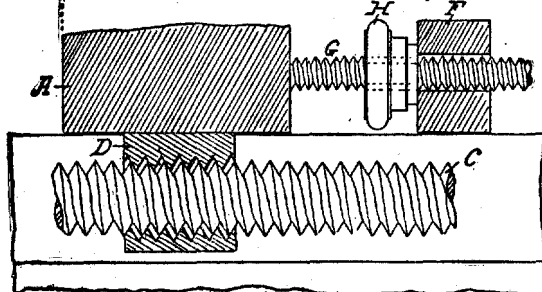
due most generally to the wear of the thread of the engaged nut or of the thread of the screw-spindle. If there exists such looseness of thread contact, the screw may be slightly turned in one or the other direction without a corresponding movement of the tool block, or the tool block may be slightly moved on the thread of the screw-spindle without any rotation of the screw. If the object be to cut a very fine and accurate thread, any accidental movement of the block, or nonmovement of the block, holding the cutting tool, is objectionable as likely to result in imperfections in the thread cut, and sometimes in fractures of the tool. To take up this lost motion, and regulate accurately the cutting tool, was the object of several other devices well known to the public before the invention of Muller, and was the object of his invention, as he more than once declares on the face of his patent. It would seem that whatever device is found to operate so as to crowd block A upon the thread of the screw-spindle, and hold it rigidly in that position, would take up the lost motion by insuring steady and close contact between the threads of the nut and of the screw, and thus overcoming any looseness. The operation resulting from so crowding the tool-holding slide upon the threads of the spindle engaged by it is well illustrated by drawings taken from the brief of complainant's counsel, which are shown below.

*Illustration of Lost Motion*  
*X = Lost Motion*

*Lost Motion not taken up*



*Lost Motion taken up*



The instrumentalities with which this result was to be accomplished by complainant are fully described in his specifications, and the mode of their operation is set out with unusual definiteness. But it is said that the defendant's structure does the same thing in substantially the same way, and therefore infringes. The correspondences between the structure of Muller and that of defendant are said by Muller's counsel to be these: They both have (1) the block, A; (2) the screw-spindle, C; (3) the crosspiece, F; (4) tool-block screw, G; (5) the nut, H; (6) the nut H'; (7) means for locking the crosspiece in place. These claims of identity of these elements are not borne out as to some of them unless the complainant's invention is of such a primary character as to entitle him to a very liberal application of the doctrine of mechanical equivalents. The differences observable are these: First. The block screw, G, shown in the patent, is swiveled into the block, A, and is a swivel screw, and is not longitudinally movable in said block. The defendant's screw, G, is not a swivel screw, but, on the contrary, is threaded in the tool block, and is longitudinally movable therein. Muller's screw, G, is threaded its entire length. This is not the case with defendant's screw. It is not threaded at all where it passes through the crosspiece, F. Second. The movable nut, H', of the patent, is not found on the defendant's structure. That which is said to be its equivalent is a fixed head or collar integral with the screw, G. These differences in the two structures are such as that the only operation of Muller's invention described in his patent cannot be thus accomplished by defendant's structure. That operation as described by him in the patent is as follows:

"The block or slide, A, is moved on the tracks, B, by turning the spindle, C; but, as this spindle has some lost motion, the cutting tool cannot be adjusted very nicely and accurately, especially in cutting screw threads. To accomplish this I have provided the screw, G, and the nuts, H, H'. When the tool has been adjusted by means of the spindle, C, the crosspiece, F, is locked in place on the tracks by turning the pintle, M, in such a manner that the eccentric disk, L, will push the wedge, J, in between the shank of the crosspiece and the outer surface of the track. If the block, A, is then to be moved slightly in the direction of the arrow, a', the nut, H', is so adjusted that its inner end will be from the corresponding side of the crosspiece the distance the block, A, is to be moved. Then the nut, H, is turned, whereby the block, A, will be moved in the direction of the arrow, a', until the inner end of the nut, H', rests against the crosspiece, F. In a similar manner the block, A, can be moved in the inverse direction of the arrow, a'. Before the block, A, can be moved by the screw-spindle, C, the crosspiece, F, must be loosened, which is accomplished by turning the pintle, M, in such a manner that the eccentric disk, L, loosens the wedge, I. It is evident that the adjustment of the block, A, by means of the screw, G, and the nuts, H, H', can only be very minute, as it must remain within the limits of the lost motion of the spindle, C. To facilitate these minute adjustments I have provided the nuts, H, H', with the graduations."

This operation cannot be performed on defendant's structure, because the inner nut, H, cannot be moved so that it will come in contact with the inner surface of the crosspiece, and this crosspiece cannot therefore be clamped between the nut, H, and the fixed head of the screw, G. This is admitted by complainant's expert. But it is urged that this mode of using Muller's structure is only necessary to facilitate "very minute adjustments," not ordinarily required,

and that an adjustment within the limits of the lost motion can be effected by the manipulation of the adjusting screw, C, and either nut, H, or H', according as the cutting tool is to be adjusted for cutting inside or outside threads, a distance less than equal to that of the lost motion, and then turn the screw, C, until the nut moved is against the crosspiece. It is also said that the inventor's object was to make an attachment having a broader purpose than the mere obtaining of the very minute adjustment resulting from the conjoint use of both nuts, and that this latter purpose or use is also a use of which defendant's structure is capable. The structure of defendant is undoubtedly adapted to both take up lost motion and adjust the cutting tool accurately, and hold it rigid when so adjusted. The nut, H, of the defendant's structure, may be used as a jam to prevent the spindle, G, from being turned accidentally. Complainant's expert, Arthur L. Williston, a very fair and clear-headed mechanical engineer, thinks that there is no substantial difference between the function of defendant's structure in insuring against lost motion or in their mode of operation, though he is of opinion that Muller's mechanism is capable of accomplishing more accurate results through the conjoint use of both nuts. He says that the fixed head on a movable spindle, such as H on defendant's structure, is mechanically the equivalent for the movable nut, H', and the fixed spindle of complainant's device; that the object in either case is to provide a collar or shoulder which may be accurately adjusted by slightly turning it. In other words, it is contended that the screw, G, threaded into the tool block and not threaded where it passes through the crossbridge, F, and provided with a fixed head outside the crosspiece and a movable nut inside, is the mechanical equivalent for the block screw and nuts, H and H', of Muller. This may be conceded without determining the question of infringement upon the facts of this case, for it only serves to bring us to a consideration of the question as to whether Muller is entitled to discard any element which he has described and claimed, or to so liberal application of the doctrine of mechanical equivalents, by reason of the meritorious character of his invention. Undoubtedly, it is true that an inventor is entitled to all the uses of which his invention is capable, whether he then knew of all such uses or not. It is not necessary that he shall state all the beneficial results, effects, uses, or advantages of the mechanism which he has devised. *Goshen Sweeper Co. v. Bissell Carpet-Sweeper Co.*, 19 C. C. A. 13, 72 Fed. 67. The difficulty with complainant lies not in that direction. If complainant's patent be construed so broadly as to cover a structure performing the function of the defendant's attachment in the way, and by the mechanical devices, provided, then very serious doubt exists as to whether Muller's patent can be sustained at all. The evidence in this case makes it clear that, for more than two years before Muller's invention, devices for taking up lost motion and adjusting the tool holder firmly and accurately were well known in mechanics, and were in common use. Some of these attachments for screw-threading lathes accomplished, in substantially the same

way, the same results obtained by the defendant's structure. "That which infringes if later, anticipates if earlier." *Peters v. Manufacturing Co.*, 21 Fed. 319; *Id.*, 129 U. S. 537, 9 Sup. Ct. 389; *Knapp v. Morss*, 150 U. S. 221-228, 14 Sup. Ct. 81; *Miller v. Manufacturing Co.*, 151 U. S. 186, 14 Sup. Ct. 310.

Several old devices are exhibited for doing substantially the same work in substantially the same way as that done by the structure in controversy. Three of these devices, being defendant's Exhibits E, G, and H, have the crosspiece of complainant's structure, and a locking device for locking it firmly against the track or frame upon which the tool block slides. One of them, Exhibit C, has not this crosspiece, but is provided with a latch or hook for fastening it to an old form of lathe known as a "weight rest lathe." Several of them are provided with a tool-block screw, passing through the crosspiece and threaded into the tool block. This screw-spindle is threaded throughout, and provided with a movable collar or nut by which the screw-spindle may be firmly adjusted. In some of them this movable nut could be transferred from one side of the bridge piece to the other, according as threading was to be done inside or outside. Exhibit E is provided with a second screw, passing through one end of the bridge piece, and having a fixed head on the outside. This screw is engaged by the crosspiece, and was used as a stop gauge, by screwing tightly against the tool block, and thus crowding it forward upon the threads of the adjusting spindle, C. The block screw of Exhibit G, is provided with nuts H and H'. Defendant's expert admits that although Exhibit C has not the crosspiece nor means for locking, yet it is adapted for fastening or hanging upon an old form of lathe, and that, when fastened, the hook performed the same function as that performed by the crosspiece and means for locking same which are elements of Muller's fourth claim; and that all of the other elements of that claim, as well as of the second claim, are found in that device, and that it will do the work of complainant's device, so far as taking up lost motion, but not so accurately. He admits that in Exhibit G no element of either claim 2 or 4 of Muller's patent is absent. He admits that the shoulder of the center screw of Exhibit E, which passes through an unthreaded hole, will act as a stop, and will take up the lost motion of the screw-spindle, and that the nut of the other screw, which screw passes through a threaded hole, will act also as a stop, and take up lost motion. Thus, these two screws longitudinally movable are clearly the mechanical equivalent of the screw and nuts, H and H', of the patent, and perform the same function as the two nuts of the patent. We have carefully examined the evidence touching the common use of these devices before Muller's invention, and have no reasonable doubt but that these devices, and others similar, were common property, and well known in mechanics for more than two years before Muller made his invention. A mere aggregation of old elements performing no new function, and accomplishing no new results, presents no patentable novelty. *Hailes v. Van Wormer*, 20 Wall. 353-368; *Lock Co. v. Mosler*, 127 U. S. 354-361, 8 Sup. Ct. 1148; *Knapp v. Morss*, 150 U. S. 221-227, 14 Sup. Ct. 81. But "if a new combination and arrangement of known elements



produce a new and beneficial result, never obtained before, it is evidence of invention." *Loom Co. v. Higgins*, 105 U. S. 580-591. Now, if Muller has greatly increased the effectiveness of the mechanism he claims, his patent may be sustained, although his elements are old and no original result is accomplished, under the principle of *Loom Co. v. Higgins*, cited above; *The Barbed-Wire Patent*, 143 U. S. 275, 12 Sup. Ct. 443, 450; and *Topliff v. Topliff*, 145 U. S. 156, 12 Sup. Ct. 825. The most that can be claimed for his combination is not that he is a pioneer, but that he has arranged old elements in such a way as that by the conjoint use of the nuts, H and H', he has much improved the effectiveness and accuracy of the old devices serving the same object. This principle will allow Muller, not only the purpose claimed by him in his patent, whereby, through the conjoint use of the nuts, H and H', a very minute adjustment of the tool-carrying block may be obtained for doing work requiring an unusual degree of delicacy, but will also give him the benefit of every suggested conjoint use of these nuts which adds to the effectiveness of his mechanism, although not claimed as within the purpose of his invention; such as in predetermining the distance between two interior surfaces to be cut, and also when employed for cutting inside threads, by adjusting the outer nut in such manner as to prevent the cutting tool, when withdrawn from one side of the work, from striking or injuring the threads at the opposite side, both of which uses are explained by Muller's expert. It is evident, in view of the state of the art, that Muller's claims 1 and 4 cannot be sustained at all, unless he be confined to the precise structure which he has described and claimed by reference letters. This rule will prevent him from invoking the doctrine of mechanical equivalents, and will exclude all forms of devices which operate to perform the same functions, and accomplish the same result, though in a less efficient and accurate way, which omit any of the elements of his combination, or depart from the precise form to which he has confined himself by the reference letters of his claims. Having described the screw, G, and the nuts, H and H', he cannot now claim that the description is immaterial, and that a screw unthreaded in part, or threaded in block A, instead of a fixed or swiveled screw, will answer the same purpose, or that one nut on a different screw will answer the purposes of the two nuts upon a screw differently threaded and differently attached to the tool slide. The claims of the patent are for a combination of old elements. Each claim in issue definitely specifies the elements entering into it, and by reference letters to the specifications carries into the combination the element thus described. The only operation described in the patent involves every one of the elements and their conjoint use, and requires their form and construction to be that specifically shown by the descriptive parts of the patent. Every element becomes, therefore, material, and it is not for the courts to say, when a patentee has thus limited his claim, that any element is immaterial. *Water-Meter Co. v. Desper*, 101 U. S. 332; *Sargent v. Lock Co.*, 114 U. S. 63-86, 5 Sup. Ct. 1021; *Fay v. Cordesman*, 109 U. S. 408-420, 3 Sup. Ct. 236, 244; *Hendy v. Iron Works*, 127 U. S. 370-375, 8 Sup. Ct. 1275. As observed by Justice Blatchford in *Fay v.*

Cordesman, cited above, "it is the inventor's province to make his own claim, and his privilege to restrict it. If it be a claim to a combination, and be restricted to specified elements, all must be regarded as material, leaving open only the question whether an omitted part is supplied by an equivalent device or instrumentality." Although the mere fact that the claims of the Muller patent are expressed by reference to particular parts of his drawings and specifications, this would not necessarily confine and limit him to the literal mode of construction described and exhibited, and deprive him of the benefits of the doctrine of equivalents. If his invention is of a broad and meritorious character, such as to work a decided advance in the art, it will require something more than the use of reference letters in his claims to limit him to the exact form of device he has described. This question was fully considered, and the views entertained by this court announced, in the case of the McCormick Harvesting Mach. Co. v. C. Aultman & Co., 37 U. S. App. 299-343, 16 C. C. A. 259, and 69 Fed. 371. The doctrine of the cases of Weir v. Morden, 125 U. S. 98, 8 Sup. Ct. 869, and Hendy v. Iron Works, 127 U. S. 370, 8 Sup. Ct. 1275, is, as we think, applicable only to mere improvements on well-known devices,—a doctrine which is therefore applicable to the case in hand. Upon the evidence in this case concerning the earlier devices employed publicly for more than two years, it is clear that Muller's invention is a mere improvement of a narrow character upon well-known devices for accomplishing the same purpose. To avoid the defense of anticipation it is necessary that this patent be limited to the precise device which he has described and claimed by reference letters. He is therefore not entitled to a liberal application of the doctrine of equivalents which he invokes in this case. *Miller v. Manufacturing Co.*, 151 U. S. 186, 207, 14 Sup. Ct. 310; *Wright v. Yuengling*, 155 U. S. 47, 15 Sup. Ct. 1; *Wells v. Curtis*, 31 U. S. App. 123, 13 C. C. A. 494, and 66 Fed. 318. This patent, thus construed and limited, is not infringed by the device of the defendants. They do not use the screw, G, nor the nuts H or H'. The decree of the circuit court must therefore be affirmed.

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**STANDARD CARTRIDGE CO. et al. v. PETERS CARTRIDGE CO.†**

(Circuit Court of Appeals, Sixth Circuit. December 8, 1896.)

No. 398.

**1. PATENTS—INTERFERENCE PROCEEDINGS—PROCEEDINGS UNDER REV. ST. § 4915—BURDEN OF PROOF.**

In proceedings, under Rev. St. § 4915, by a defeated contestant in interference proceedings to establish a right to a patent, the decision of the patent office on the question of priority is to be taken as presumptively correct, and the burden is on the complainant to establish his case by testimony of a character which carries thorough conviction. 69 Fed. 408, affirmed. *Morgan v. Daniels*, 14 Sup. Ct. 772, 153 U. S. 120, followed.

**2. SAME—PRIORITY OF CONCEPTION—REDUCTION TO PRACTICE.**

If, in such proceedings, it appear that the complainant was the first to conceive the idea of the invention, and to give it such substantial expression as that, without further exercise of inventive faculty, one familiar with the

† Rehearing denied February 8, 1897.