

WILLIAM H. GOODCHILD.
Improvement in Joiners Clamps.

No. 114,801.

Patented May 16, 1871.

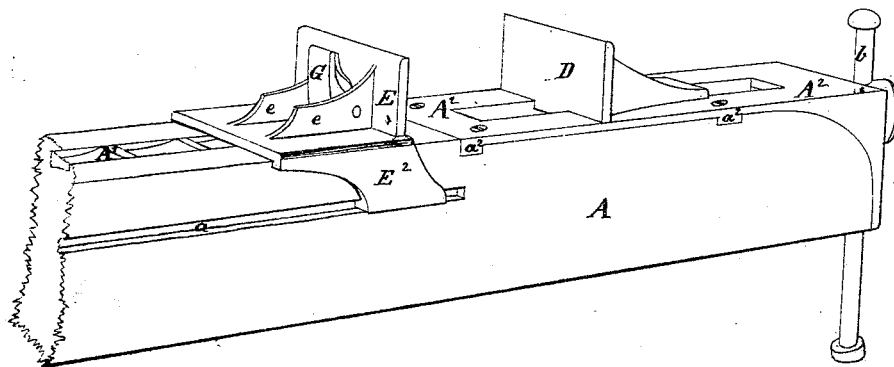


Fig. 1.

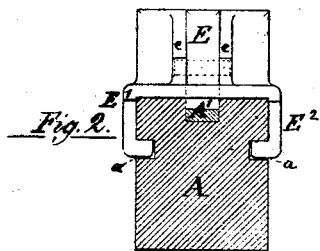


Fig. 2.

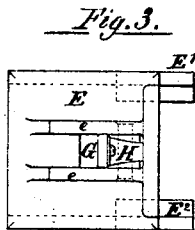


Fig. 3.

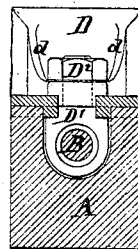


Fig. 4.

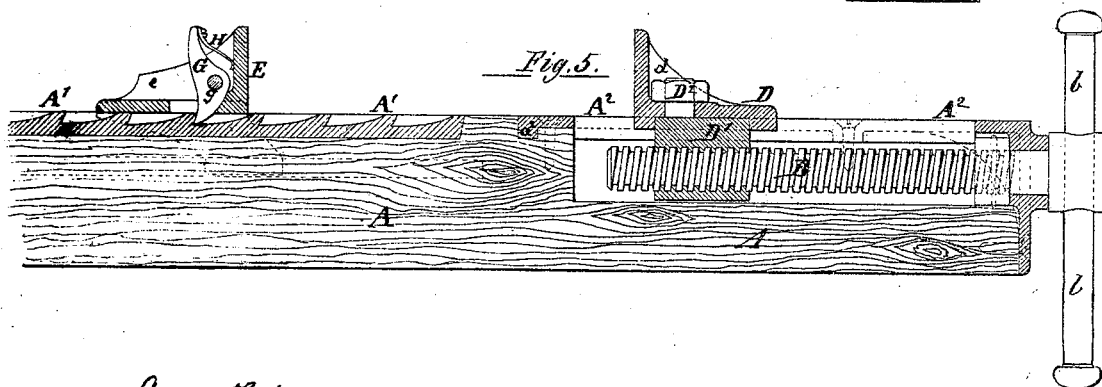


Fig. 5.

Saml. F. Hay

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM H. GOODCHILD, OF CENTREVILLE, NEW JERSEY.

IMPROVEMENT IN JOINERS' CLAMPS.

Specification forming part of Letters Patent No. 114,801, dated May 16, 1871.

To all whom it may concern:

Be it known that I, WILLIAM H. GOODCHILD, of Centreville, county of Hudson, and State of New Jersey, joiner, have invented certain new and useful Improvements in Joiners' Clamps.

The object of my invention is to render more perfect the device long in common use for drawing firmly together the parts of doors and other articles in the process of manufacture.

My improved clamp is, like those before known, composed of two principal parts, a head-block and a tail-block, working in connection with a long piece of wood, which I will designate as the "clamp-stick."

The tail-block is not capable of being moved forcibly, but may be adjusted in position on various parts of the length of the stick. The head-block exerts the pressure on the object by means of a screw.

In previous joiners' clamps the screw traversed backward and forward, and was subject, when much drawn back, to be readily bent or otherwise injured by reason of its extending beyond the clamp-stick. It was, furthermore, mounted in an unprotected position above the surface of the stick. The changing of the position of the tail-block also required much labor.

My invention overcomes these difficulties, and the parts, while more effective and convenient, may be made much lighter than in the joiners' clamps before used.

The following is a description of what I consider the best form of carrying out the invention.

The accompanying drawing forms a part of this specification.

Figure 1 is a perspective view. Fig. 2 is a cross-section through the tail-block. Fig. 3 is a plan view of the tail-block. Fig. 4 is a cross-section just behind the head-block; and Fig. 5 is a longitudinal section.

The drawing represents the novel parts with so much of the clamp-stick as is necessary to indicate their relations thereto.

A is the clamp-stick, and *a a* are grooves extending along on opposite faces thereof. A¹ is a rack of metal let into the upper face, and A² is a cap-casting, in which the screw B and

the head-block D are supported. This casting A² is held to the stick A by screws, as indicated, and is also strongly locked by cross-ridges *a*², which are let into corresponding recesses formed in the wood and defend it against any end movement.

The upper face of the cap-casting A² has a long rectangular opening, in which the head-block traverses. The wood is recessed under it to a width greater than the opening in the casting, as indicated clearly in Fig. 4, and to a length a little greater than the length of the screw B, as shown in Fig. 5. The screw has a plain cylindrical bearing in the end of the cap-piece A², and the turning of the screw B by means of the lever *b* moves the head-block D slowly forward or backward.

The screw may be made as represented, with the head or end collar welded or forged in one therewith, and with the other collar made separate and screwed on and confined with a pin; or the inside collar, here shown as made separate, may be forged in one therewith, and the end collar may be made separate, and the form and arrangement of the operating-handle *b* may have various forms, as will be obvious.

I shall designate the head-block, when necessary, by the single letter D; but it is formed, in fact, of two separate and distinct pieces, or, including the small nut which locks them together, of three pieces.

The large nut D¹ receives the screw B, which is preferably a left-handed screw, as represented, and this portion D¹ performs several distinct functions. It is held to the main part D by the nut D², which turns on the stout threaded part projecting up from the part D¹. The main part D rests fairly on the upper surface of the cap-casting A², and traverses backward and forward thereon, but with two stout portions projecting down into the opening in the cap-casting before and behind the large nut D¹, and receiving the strain thereof. The main body of the latter is made wider than the aperture in the casting A², and is finished with smooth shoulders, as represented, which apply against the under face of the cap-casting A², and hold the entire head-block down to its proper position.

The head-block is braced by webs *d d*, which approach each other as they extend backward,

and thus allow greater freedom of movement for the joiner's hammer in operating on the work which is clamped.

The tail-block E bears fairly on the upper surface of the clamp-stick, with wings E¹ E² reaching down each side of the stick and locking inward in the grooves *a a*, before referred to. These wings hold it down, but allow it to be moved forward and backward on the stick at pleasure.

The braces *c c* may converge like the braces *d* on the head-block, if preferred; but I esteem them better capable of performing another function by placing them exactly parallel. This additional function is the supporting of the pin *g*, which carries a stout finger-lever, G, which is operated by a spring, H, and stands ready to engage at any moment with the teeth of the rack A¹. This rack is preferably metal.

When it is desired to adjust the tail-block in any new position it is grasped by the thumb and fingers, so as to draw forward the upper end of the lever G. This movement tilts it sufficiently to lift the lower end of the lever out of the rack A¹, and in this condition the entire tail-block may be moved with perfect ease in either direction. So soon as it is liberated the lever G engages with the rack A¹ in the new position.

The acting faces of the head-block D and

tail-block E are exactly similar in width and height. They are, by preference, of the same width as the clamp-stick A, and of a height nearly equal to the width. This gives so great area that the interposition of a shield-block is rarely necessary in the most forcible clamping, even of the most delicately-surfaced work.

It will be observed that although the pawl-lever G is centered at a high point, *g*, it bears, when in action, against a surface at the very base of the tail-block. It does not exert its strain on the center-pin *g* except to a very small extent; but its force is mainly applied to transmit the strain in an almost straight line parallel to the surface of the clamp-stick.

I claim as my invention—

1. The cap casting or iron A², holding the screw B and head-block D D¹, as shown, and adapted to operate relatively thereto and to the tail-block E as specified.

2. The lever G and its operating-spring H, adapted to operate, as shown, relatively to the block A¹ and to head-block D D¹ and its operating means, as herein set forth.

In testimony whereof I have hereunto set my name in presence of two subscribing witnesses.

W. H. GOODCHILD.

Witnesses:

C. C. LIVINGS,

J. A. SURFLEET.