

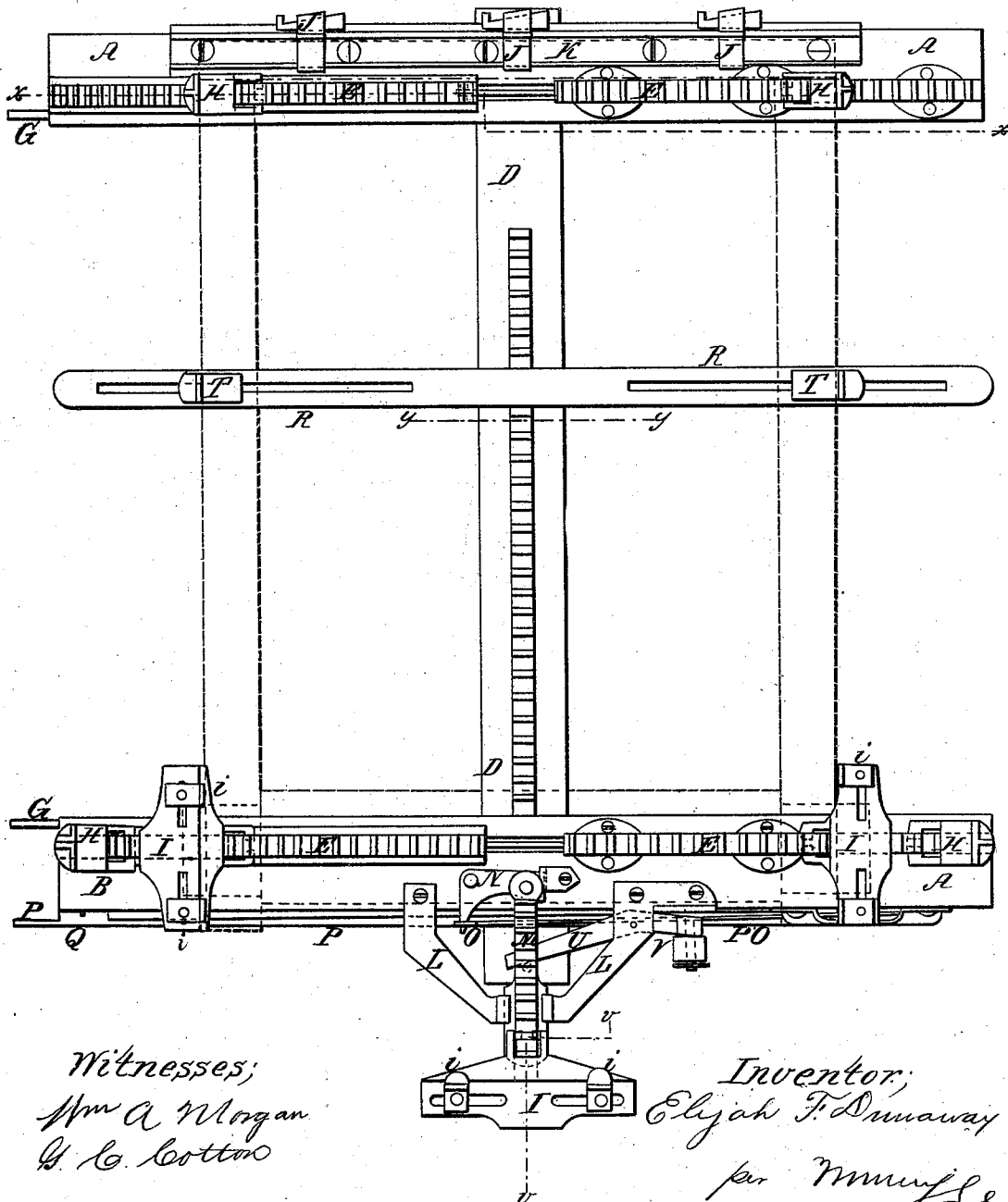
E. F. Dunaway,

Snash Clamp.

No. 86,740.

Patented Feb. 9, 1869.

Fig. 1.



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Fig. 2.

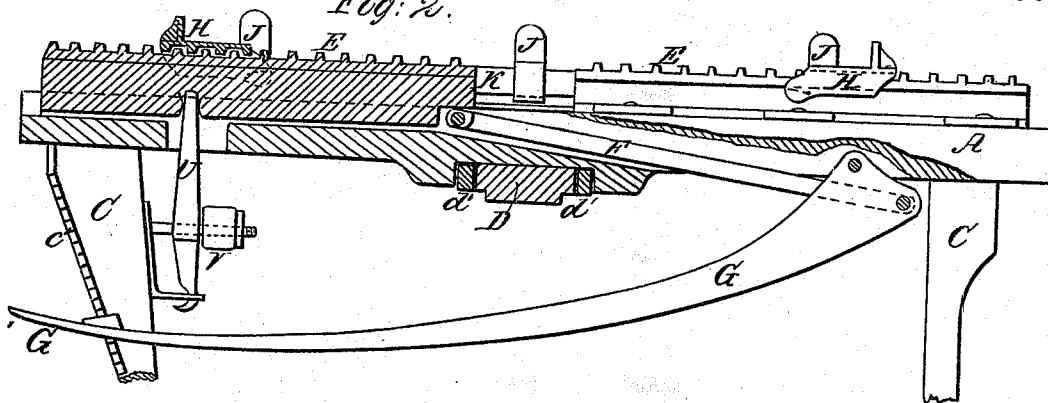


Fig. 3.

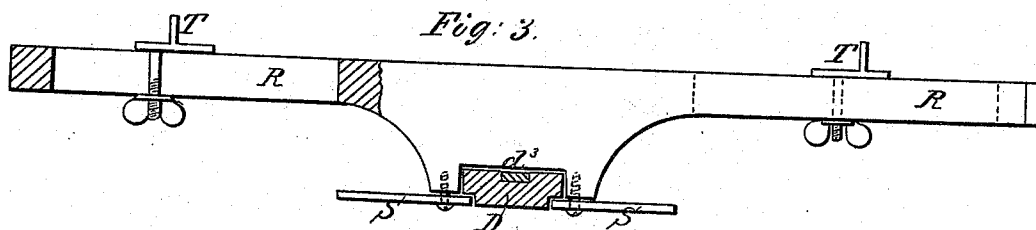


Fig. 4.

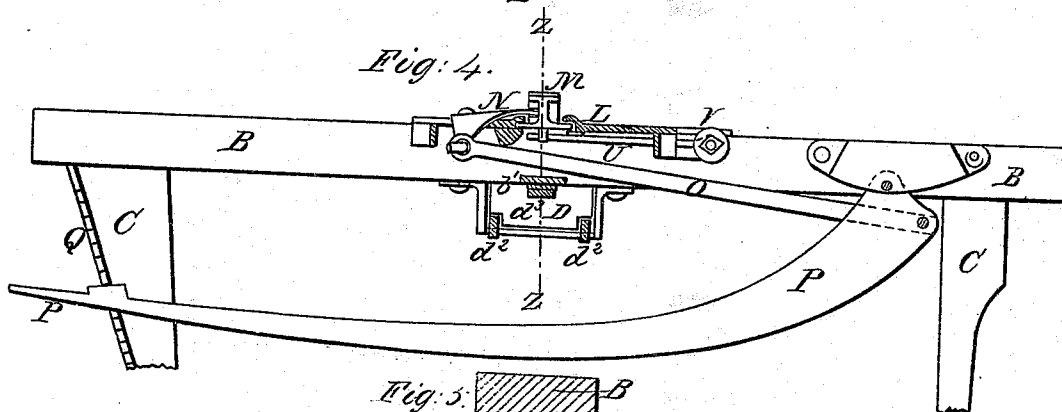


Fig. 5.

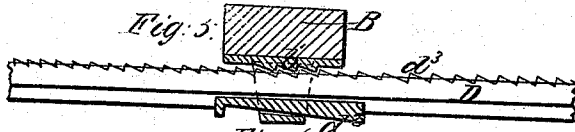


Fig. 6.



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ELIJAH F. DUNAWAY, OF CINCINNATI, OHIO.

Letters Patent No. 86,740, dated February 9, 1869.

IMPROVEMENT IN SASH-CLAMPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ELIJAH F. DUNAWAY, of Cincinnati, in the county of Hamilton, and State of Ohio, have invented a new and improved Sash-Clamp; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a top or plan view of my improved sash-clamp.

Figure 2 is a detail sectional view of the same, taken through the line *x x*, fig. 1.

Figure 3 is a detail sectional view of the same, taken through the line *y y*, fig. 1, part being broken away, to show the construction.

Figure 4 is an end view of the same, part being broken away, to show the construction.

Figure 5 is a detail sectional view of the same, taken through the line *z z*, fig. 4.

Figure 6 is a detail sectional view of the same, taken through the line *v v*, fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine, by means of which sashes may be quickly, conveniently, and accurately shaped, and the joints tightened and squared, ready to be pinned; and

It consists in the construction and combination of the various parts, as hereinafter more fully described.

A and B are the two end bents of the machine, to the ends of which are securely attached legs C, of such a length as to raise the machine to a convenient height.

D is a central longitudinal beam, one end of which passes through a slide, or keeper, attached to the under side of the middle part of the bent, A, where it is secured in place by wedges *d'*, as shown in fig. 2.

The other end of the beam D passes through a slide, or keeper, attached to the middle part of the under side of the bent, B, where it is adjustably secured in place by the wedges *d''*, and by the pawl, or teeth, *b'*, attached to the under side of the bent, B, and which take hold of the teeth of the rack *d''*, attached to or let into the upper side of the beam D, as shown in figs. 1 and 4, so that, when the wedges *d''* are tightened, the bent, B, and beam D will be securely connected together, but when the wedges *d''* are loosened, the said bent may be slid back and forth upon the said beam, to adjust the length of the machine to the length of the sash to be operated upon.

To the upper sides of the ends of the bents A and B are attached racks E, the rear ones of which are stationary, and the front ones of which move back and forth in grooves, or slides, in the upper sides of the forward ends of the bents A and B.

To the inner ends of the front racks E are pivoted

the inner ends of the connecting-bars F, the outer ends of which are pivoted to the levers G, which are pivoted to the bents A and B.

The levers G extend forward beneath the machine, and their forward ends project, so that they may be conveniently reached and operated, and which are held in any position into which they may be moved, by catching upon the teeth of the racks *e'* attached to the legs C, as shown in fig. 2.

H are dogs, sliding upon the racks E, and provided with ratchet-teeth, which take hold of the teeth of the racks E, and hold the said dogs securely in any position in which they may be placed. The dogs H are provided with upwardly-projecting flanges, or shoulders, against which the outer edges of the sashes rest, so that, as the levers G are operated to draw the movable racks E inward, the joints of the sash will be pressed closely together.

I are dogs, the plate, or body, of which is extended out at the sides, so as to form arms, which are slotted to receive the adjustable rests *i*, which are adjustably secured in place by set-screws, as shown in figs. 1 and 6. The dogs I are designed to be used when the sash-frame is made with broad tenons, the rests *i* being so adjusted as to press against the edges of the sash upon the opposite edges of said tenons, as shown in fig. 1.

J are rests, sliding upon the slide K, formed upon or attached to the bent, A, and which are adjustably secured in place upon said slide by wedges, as shown in fig. 1, and which are designed to firmly support the end of the sash.

L is a slide, securely attached to the outer side of the middle part of the bent, B, and upon which slides the rack M, provided with a dog, I, constructed as hereinbefore described.

To the inner end of the rack M is pivoted the end of one arm of the bent, or elbow-lever, N, which is pivoted at its angle to the bent, B, and to the end of the other arm of which is pivoted the end of the connecting-rod O, the other end of which is pivoted to the lever P, which is pivoted to the bent, B, and the forward end of which extends forward into such a position as to be conveniently operated.

The forward end of the lever P is held in position, clamping the end of the sash with any desired force, by the rack Q, attached to the forward leg C of the bent, B, as shown in figs. 1 and 4.

U are levers, the ends of which are connected with the sliding racks E and M, which are pivoted to the bents A and B, or to the legs C, and which are provided with rubber or equivalent springs V, by the elasticity of which the sliding racks E and M are moved back, automatically releasing the sash from the dogs H or I as soon as the levers G and P have been released.

R is a cross-beam, or bent, sliding laterally upon the centre beam D, to which it is secured, when adjusted in

place, by means of the cam-levers S, pivoted to the said beam R, and entering grooves in the sides of the said beam D, as shown in fig. 3.

T are rests, formed with upwardly-projecting flanges, or shoulders, and with downwardly-projecting stems, or bolts, which pass through long vertical slots in the ends of the beam R, where they are adjustably secured in place by hand-nuts, as shown in fig. 3.

The cross-beam R is only used when round-topped sash are to be operated upon, in which case the top joint of the rounded part of the sash is placed between the rests *t* of the end dog I; and the beam R is so adjusted that the rests T may bear against the side pieces of the sash at or just below the joints where the curved pieces join said side pieces, so that, by operating the levers G and P, all the parts of the sash may be brought into proper position, and all the joints tightened, ready for pinning.

It should be observed that the rests upon the same side or end of the machine should all be brought into a line with each other, and those upon the sides and ends should be made exactly at right angles with each other, so that the sash may be squared and the joints tightened at one and the same operation.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. Adjustably securing the centre beam D to the

bents A and B by means of the wedges *d'* and *d''*, rack *d'*, and stationary teeth, or pawl, *b'*, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the stationary and movable racks E, dogs H and I, either or both, connecting-rods F, and levers G, with each other and with the bents A and B, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the levers U and rubber or equivalent springs V with the movable racks E and M, either or both, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the slide L, sliding rack M, bent lever N, connecting-rod O, lever P, and dog I, with each other and with the bent, B, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the adjustable cross-beam R, cam-levers S, and adjustable rests T, with the centre beam D, substantially as herein shown and described, and for the purpose set forth.

The above specification of my invention signed by me, this 14th day of July, 1868.

ELIJAH F. DUNAWAY.

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