

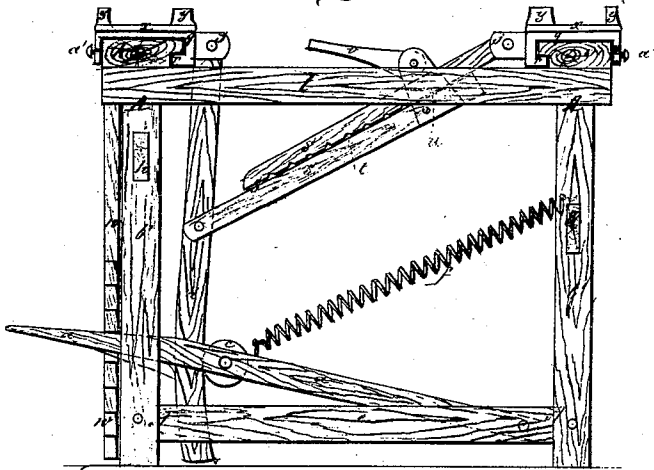
*B. Moore,*

*Claujt.*

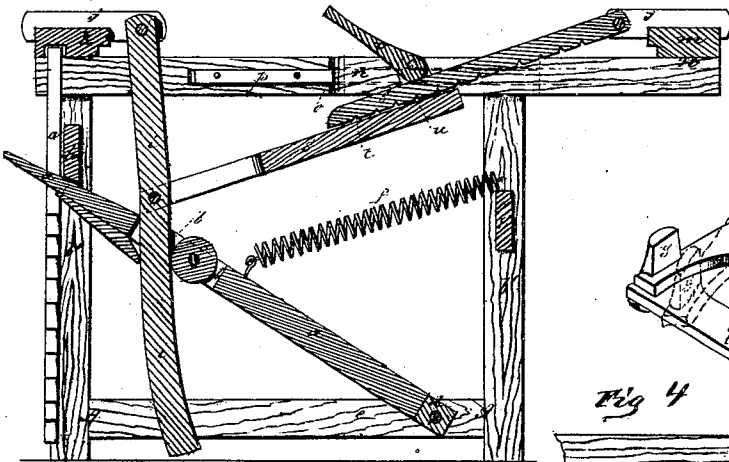
*No. 102,574.*

*Patented May 3, 1870.*

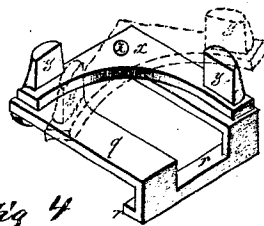
*Fig. 1*



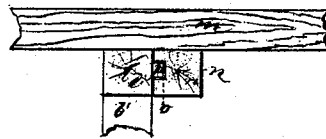
*Fig. 2*



*Fig. 3*



*Fig. 4*



*Witnesses*  
*Henry J. Smith,*  
*Harry Walker*

*B. Moore, Invention*  
*by Theodore Mungen,*  
*his Attorney*

# United States Patent Office.

BENJAMIN MOORE, OF HART, MICHIGAN.

Letters Patent No. 102,574, dated May 3, 1870.

## IMPROVEMENT IN SASH-CLAMP.

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, BENJAMIN MOORE, of Hart, county of Oceana and State of Michigan, have invented certain new and useful Improvements in Machines for Clamping Window-Sash, preparatory to boring and pinning them, of which the following is a specification.

### Nature and Object of the Invention.

The first part of my invention relates to the combination of two levers with two cross-pieces, provided with clamps, arranged in such a manner that the depression of one of the levers causes the other one to draw a movable cross-piece at one end of a frame toward a stationary cross-piece at the opposite end of the frame, the object of the invention being to clamp or compress the sides of a window-sash preparatory to boring and pinning it.

The second part of my invention relates to the combination of a clamp and a rectangular plate provided with two studs, the object of this part of my invention being to receive the corners of the sash, and to distribute the pressure equally on all sides of it.

### Description of the Drawings.

Figure 1 is a side elevation of a machine embodying my invention.

Figure 2 is a transverse section of the machine.

Figure 3 is a perspective view of one of the clamps which receive the corners of the sash for compression.

Figure 4 is a sectional view of the end of the machine, showing the mode of attaching the movable cross-piece to the frame.

### General Description.

The lever *a* has a mortise, *b*, in which the wheel *c* is set.

The lever *a* has its fulcrum in the roller *d*, which works in the bars *e* of the frame.

The spring *f*, fastened to the lever *a* and the bar *g*, holds the upper end of the lever *a* against the bar *h*.

The perpendicular lever *i* passes through the mortise *b* in the lever *a*.

Its upper end is held between the pieces *j*, by a bolt or pin on which it works or has its fulcrum.

The cross-piece *k* is stationary, being fastened to the beams *l*.

The cross-piece *m* is fastened to the pieces *n*, which have the grooves *o* to receive the tongues *p* on the beams *l*.

The cross-piece *m* also has pieces *j*, between which one end of the upper half of the double connecting-rod *s* is pinned.

One end of the lower half of the connecting-rod *s* receives the perpendicular lever *i* and is pinned to it.

The upper half of the connecting-rod *s* has notches *t* to receive the projections *u* near the upper end of the lower half of the rod.

The projections *u* are held in the notches *t* by the

eccentric clamp *v*, which is fastened near the end of the lower half of the connecting-rod *s*.

The rod *s* can be lengthened or shortened at pleasure, and the distance between the cross-pieces *k* and *m* is regulated by it. The cross-pieces *k* and *m* have rabbets cut in their inner edges.

The toe of the clamp *q* is provided with the flange *r*, which fits the rabbet cut in the cross-piece *k* or *m*, and the heel has the thumb-screw *a'*, by which the clamp is held in place.

The plate *x*, provided with studs *y*, is pivoted near the outer corner of the clamp *q*. Each of the cross-pieces *k* and *m* is provided with two of the clamps.

A perpendicular gauge, *w*, having a handle fastened near its top, in a position horizontal to the gauge and parallel with the bar *h*, has its upper end working in a mortise on the under side of the cross-piece *k*, and is fastened to the bar *h* near the lever *a*.

The uprights *b'*, bars *e*, cross-bars *g* and *h*, and beams *l*, constitute the frame *A*.

Fig. 1 shows the connecting-rod *s* shortened, and the lever *a* depressed and held by the gauge *w*.

Fig. 2 shows the lever *a* in its place against the bar *h*, and the connecting-rod *s* lengthened, causing the cross-piece *m* to be projected beyond the end of the frame *A*.

### Operation of the Invention.

Adjust the connecting-rod *s* so as to place the cross-pieces *k* and *m* the desired distance apart. Slide the clamps *q* on the cross-pieces *k* and *m* so they will fit the sash, and tighten the thumb-screws *a'* to hold them in position. Place the sash upon the machine, permitting the corners to rest upon the plates *x* between the studs *y*. Depress the lever *a* with the foot until the sash is compressed effectually, and push the lever *a* into a notch in the gauge *w*.

The plates *x* being on pivots, the pressure of the studs *y* is equal on all sides of the sash, and the studs *y* hold the sash perfectly square. While held in this manner the sash may be readily bored and pinned.

### Claims.

I claim as my invention—

1. The combination of the frame *A*, levers *a* and *i*, spring *f*, gauge *w*, connecting-rod *s*, and eccentric clamp *q*, cross-pieces *k* and *m*, pieces *j*, and clamps *q*, substantially as and for the purposes hereinbefore specified.

2. The clamp *q*, provided with the flange *r*, and thumb-screw *a'*, in combination with the plate *x*, provided with the studs *y*, substantially as and for the purpose hereinbefore specified.

In testimony that I claim the foregoing improvement in machines for clamping window-sash, as above described, I have hereunto set my hand and seal this 11th day of February, 1870.

Witnesses: BENJAMIN MOORE. [L. s.]  
DAVID BONHAM,  
J. C. PIERCE.