(No Model.)

F. P. HISH.

BENCH CLAMP.

No. 324,555. Patented Aug. 18, 1885.

Fig. 3.

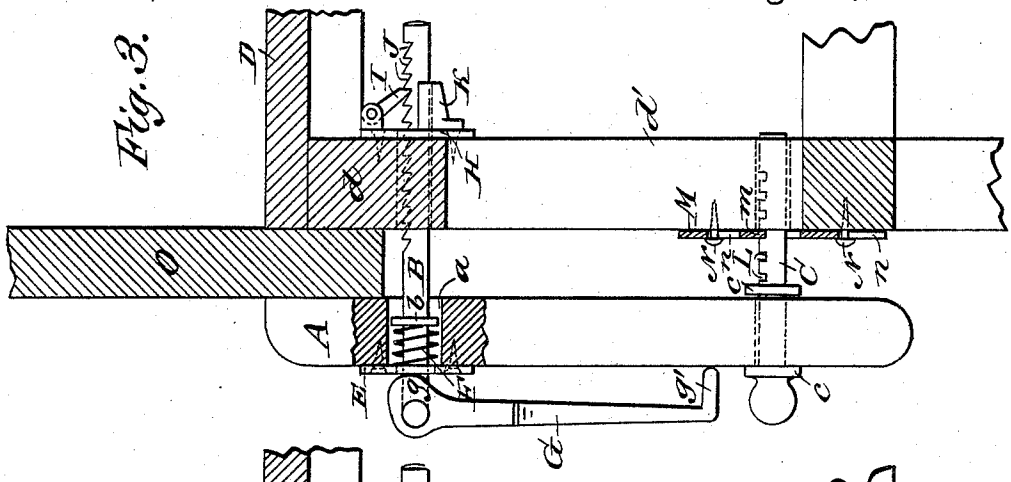


Fig. 2.

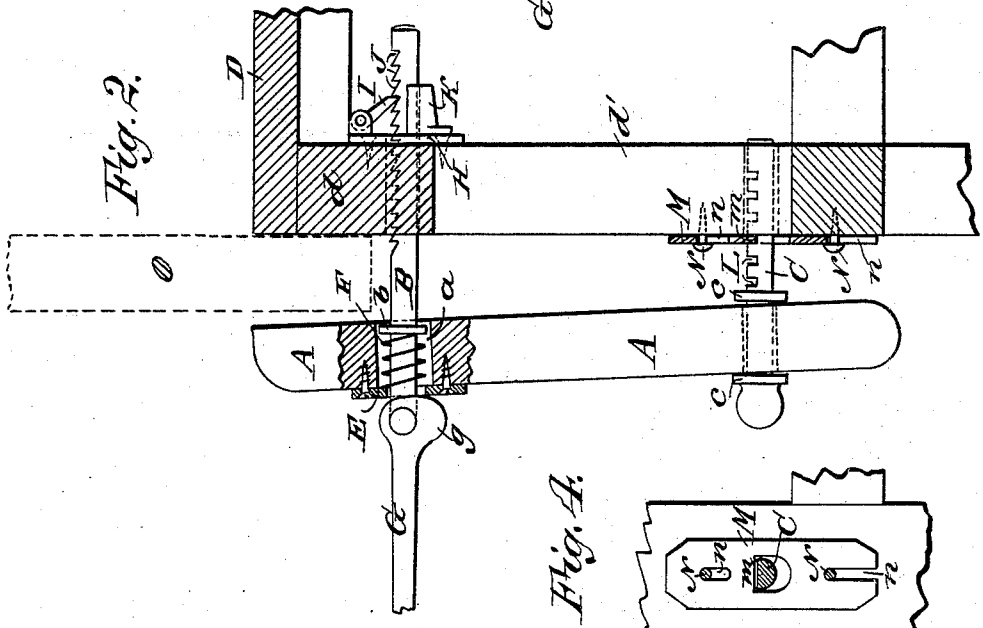
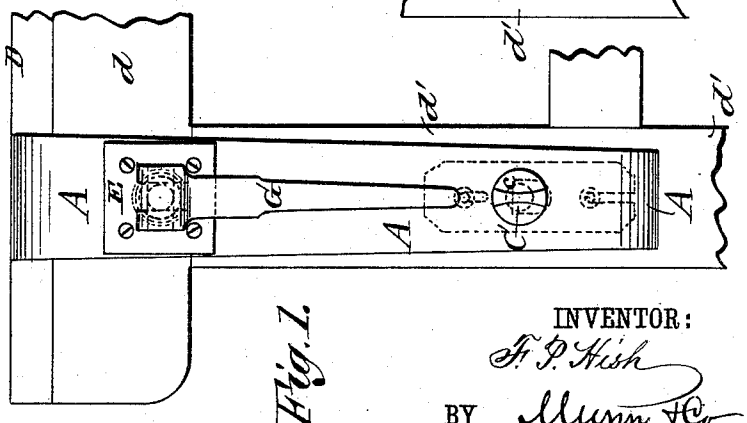


Fig. 4.

Fig. 1.



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UNITED STATES PATENT OFFICE.

FRANKLIN PIERCE HISH, OF SHELBYVILLE, ILLINOIS.

BENCH-CLAMP.

SPECIFICATION forming part of Letters Patent No. 324,555, dated August 18, 1885.

Application filed January 13, 1885. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN PIERCE HISH, of Shelbyville, in the county of Shelby and State of Illinois, have invented a new and Improved Bench-Clamp, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, effective, inexpensive, and easily-handled bench-clamp for use in holding the work to the bench while being jointed or otherwise finished for use.

The invention consists in particular constructions and combinations of parts of the bench-clamp, all as hereinafter fully described and claimed.

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.

Figure 1 is a front view of my improved bench-clamp as attached to the bench, which is shown in part. Fig. 2 is a side elevation of the clamp with the clamp-jaw partly broken away and the bench and lower fastening-plate of the clamp-jaw in vertical section. Fig. 3 is a like view showing a board held to the bench by the clamp, and Fig. 4 is a detail face view of the lower fastening-plate of the clamp-jaw with the fastening-pin in section.

The letter A indicates the jaw of the bench-clamp, which is supported by its upper bar, B, and lower rod, C, by and at one side of the bench D. As shown, the bar B passes through the upper part, *d*, of the bench-frame, and the rod C passes through the forward leg, *d'*, of the bench.

On the bar B is fixed or formed a collar, *b*, which is adapted to slide in the opening *a* of the clamp-jaw A, and to the front or outer face of the jaw is or may be fixed a metal plate, E, which has an aperture through which the bar B may slide, and between the plate E and collar *b* is placed on the bar B the spiral spring F, which tends to force the jaw outward.

To the outer end of the bar B is pivoted the lever G, which has cam-faces *g* adapted to press on the plate E for forcing the jaw A inward or toward the bench, and has also the bent end *g'*, which holds the body of the lever away from the face of the jaw, when the lever is lowered, to allow the lever to be grasped more readily in operating the bench-clamp.

To the inside of the bench-frame I fix the plate H, through which the bar B passes, and above the bar a pawl or dog, I, is hung to lugs of the plate, so as to fall into any one of a series of notches, J, formed along one side of the bar, and on the plate H is formed a lug, K, which serves to support the bar against being bent by the thrust of the pawl I when the clamp-jaw is tightened on the work. The lower supporting rod or pin, C, has fixed collars *c c*, which stand at opposite faces of the clamp-jaw A, and along one side the rod C has a series of notches, L, into any one of which the part *m* of a plate, M, held to the bench-leg *d'*, may be entered, said plate M being attached to the bench by headed screws N passing through slots *n* of the plate to permit lifting of the plate to shift the rod C, as required.

The operation is as follows: The lower end of the jaw A will be set at a distance from the side of the bench approximating the thickness of the lumber O to be held and jointed, which setting may be done by turning the rod C axially to lift the plate M from one notch L, when the rod may be pushed in or pulled out, and then turned around until the plate M falls into the proper notch L; or the plate M may be lifted by one hand while the jaw and rod are shifted by the other hand and the plate M let fall into another notch L and without turning the rod C.

It will be understood that to permit the free adjustment of the foot of the jaw A for a considerable distance either way by setting the rod C, as last above described, the bar B will be turned sufficiently to carry its teeth J around from under the pawl I, thus leaving the head or top of the jaw A free to move; but in making a slight change of position of the foot-rod C the bar B need not be turned to disengage the pawl I from the bar.

To set the bar B and clamp the work, the cam-lever G will be raised about to a horizontal position, as indicated in Fig. 2. The heel of the cam *g* of the lever will face the plate E, and the spring F will expand to force back the jaw A a distance equaling the throw or eccentricity of the cam-head of the lever. The lever,

while held up about in line with the bar B, may conveniently be turned axially to give like movement to the bar for carrying its teeth J under or away from the pawl I, so that the bar B, lever G, and the head of the clamp-jaw A may together be moved freely in or out to stand from the side of the bench for a distance approximating the thickness of the board O, and the lever and bar then will be turned to bring the teeth J again under the pawl, which locks into one of them, which is the position of the parts represented in Fig. 2, and to clamp the board it only is necessary to bring the lever G down to the vertical position, so that its cam-head *g* may force the jaw A inward against the board O, while the bar B is held against endwise movement by the pawl I, the spring F being compressed as the jaw is forced in by the lever.

To release the work the lever G is raised again to the position shown in Fig. 2, and the spring F expands and forces the jaw A outward, ready for the clamping action on the next board, as will readily be understood.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the bench, the jaw, the bar B, connected at one end with the jaw and having its other end inserted through the bench and provided on part of its periphery with notches, and a pawl supported on the bench in position to engage said notches, the said bar B being axially rotatable, whereby its teeth may be adjusted out of engagement with the pawl, substantially as set forth.

2. In a bench-clamp, the device for holding and operating the head of the clamp-jaw, comprising a rotatable bar, B, passed through the jaw and bench, and provided with a series of notches, J, along one side, a pawl, I, hung to the bench and adapted to engage one of these notches, and a lever, G, pivoted to the outer end of the bar B, and having a cam-head, *g*, adapted to force the clamp-jaw inward, substantially as herein set forth.

3. In a bench-clamp, the device for holding and operating the head of the clamp-jaw, comprising a rotatable bar, B, passed through the jaw and bench and provided with notches J, a pawl, I, hung to the bench and adapted to these notches, a lever, G, pivoted to the outer end of bar B, and having a cam-head, *g*, and a spring interposed between a collar or shoulder on the bar B and a shoulder or plate of the clamp-jaw, and tending to force the jaw outward when the pressure of the cam is relaxed, substantially as herein set forth.

4. In a bench-clamp, the combination, with the clamp-jaw A, axially rotatable bar B, having notches J, and a pawl, I, fixed to the bench, of an elongated bearing, K, held to the bench below the pawl, substantially as herein set forth.

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Witnesses:
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