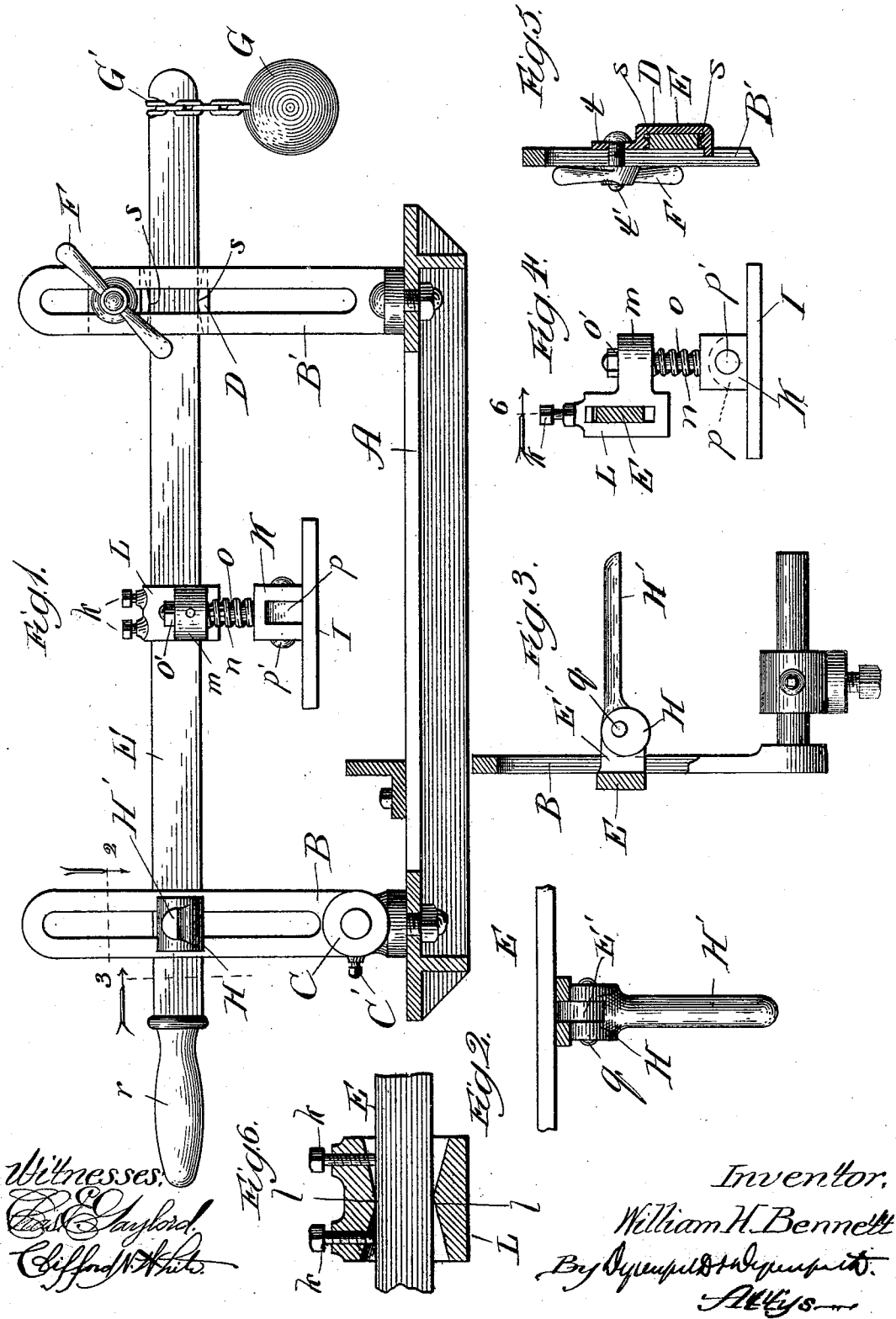


(No Model.)

W. H. BENNETT.
TENONING MACHINE.

No. 517,599.

Patented Apr. 3, 1894.



UNITED STATES PATENT OFFICE.

WILLIAM H. BENNETT, OF CHICAGO, ILLINOIS.

TENONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 517,599, dated April 3, 1894.

Application filed December 30, 1892. Serial No. 456,812. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BENNETT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Tenoning-Machines, of which the following is a specification.

My invention relates to an improvement in tenoning machines, and is more particularly directed to an improvement in the clamping mechanism for clamping the timber to the carriage while the tenoning operation is taking place.

The object of my invention is to produce a clamp which may be operated from one side of the machine, and which shall be capable of clamping timber of various thicknesses and of various inclinations.

To this end, my invention consists in a clamp for use on a tenoning machine comprising a cross bar in the form of a pivoted lever, supported above the carriage and carrying a clamp which engages the timber upon the carriage, and holds it during the tenoning operation.

My invention consists further in a clamp comprising a pivoted lever supported above the carriage, and provided with a counterpoise to facilitate its movement, said lever carrying the clamp plate, which operates to hold the timber upon the carriage.

My invention consists further in a preferred construction, wherein a universal pivot is given to the lever, and in connection therewith a binding cam for holding the lever in adjusted position.

My invention consists further in a clamp comprising a pivoted lever carrying a presser plate having a universal pivot, whereby it may adapt itself to the different inclinations in the timber.

My invention consists further in the general and specific details of construction and combination of parts, all as hereinafter more fully set forth.

In the drawings—Figure 1 is a view in elevation, partly in section, of a clamp embodying my preferred construction. Fig. 2 is a detail view of the binding cam. Fig. 3 is a side view of the same. Fig. 4 is a view in side elevation of the presser plate and its connections which hold it to the lever. Fig.

5 is a view in side elevation, partly in section, of one of the standards and the pivot therein which affords the pivot for the lever; and Fig. 6 is a longitudinal vertical section through the presser plate support, taken on the line 6 of Fig. 4.

Sectional views are to be taken as indicated by the arrows in the drawings.

A is the carriage, which is of the usual construction for use in tenoning machines. On each side of the carriage there is supported a vertically projecting standard B B'. These standards are slotted, and one of them, as shown at B Fig. 1, is provided with a hinge C and screw-pin C', whereby an inclination therein from the vertical may be permitted. The standards are bolted to the carriage in the proper position. The standard B' carries the knife edged pivot D for the lever E constituting the cross bar, which pivot is in the form of a flanged box secured through the medium of the flange *t* and screw bolt *t'*, in the slot of the standard B'. The inner end of the screw bolt *t'* receives the handle F, which permits the connection between the pivot box and standard to be tightened or loosened, and hence enables the pivot to be raised or lowered. It is preferred to cast on the interior of the pivot box D the knife points *s*, the inclination laterally from which marks the limit of oscillation possible in the lever. The lever E is provided at end one with a handle *r*, and at the other receives the counterweight G, which is shown as supported by a chain G'. Toward its handle end the lever E is provided with an inward projecting stud E', which is transversely bored and receives the bolt *g*, which affords a pivot for the cam H having the handle H'. The relation of the cam H with the lever E is such that it serves to bind the lever in its adjusted position in the standard B, while at the same time it affords a ready release to permit the lever to be raised or lowered. The presser plate I is provided with a central stud *p*, bored to receive a bolt *p'*, through the medium of which it is pivotally connected with the head K, from which extends upward the bolt *o* carrying the spring *n*. The bolt passes through a lug *m* cast upon, to extend laterally from, the square collar L. The spring *n* extends between lug *m* and the head K, and its tension is adjusted by the ad-

justing nut o' . The collar L is of a dimension to adapt it to slide freely upon the lever E, which it embraces. On the interior the upper and lower inner faces of the collar are formed to produce opposite knife points l Fig. 6, and the collar is also bored through its upper wall to receive screw bolts k .

The operation is as follows:—The lever pivot, D, having been adjusted at the proper point on the standard B', the lever E is then introduced into its pivot bearings, having previously received the collar L carrying the presser plate. The opposite end of the lever slides freely in the slot of the standard B, which latter is capable of movement on its pivot C to accommodate itself to the required conditions. The counterpoise G, by counterbalancing the presser plate, causes the manipulation of the lever to be easier and holds it normally in an elevated position. Timber having been placed upon the carriage for tenoning, and the binding cam H lifted to release the lever E and permit it to be lowered, the presser plate is firmly applied to the timber, to the configuration of which it accommodates itself by reason of the universal bearings afforded by the tilting at knife points l and the pivot at p' , and the binding cam is then turned down to hold the lever firmly in this position. The handle of the lever may be used to assist in drawing the carriage back after tenoning.

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

1. In combination with a lever, having pivot

bearings above the carriage, a collar having internal knife bearings mounted upon said lever, and a presser plate pivotally connected to and supported by said collar, substantially as described.

2. In a clamp of the character described, in combination with the presser-plate carrying-lever and with the standard extending upward from the carriage, the pivot bearing D, comprising a box having knife bearings to receive the lever, said box having a screw and slot connection with the standard, whereby it is adjustable thereon, substantially as described.

3. The means for supporting the presser plate upon a pivoted lever in a clamp of the character described, comprising a collar L, having the knife bearing, and provided with the set screws k , substantially as and for the purpose set forth.

4. A clamp comprising slotted standards extending vertically upward from the carriage, one having a vertically adjustable knife bearing, a lever having its pivot in said knife bearing, a binding cam holding said lever in engagement with the other standard, a collar L upon the lever and having the inner knife bearing, a spring encircled bolt supported on said collar, and a presser plate pivotally connected with said bolt, the parts being arranged to operate substantially as described.

WILLIAM H. BENNETT.

In presence of—

M. J. FROST,
J. N. HANSON.