

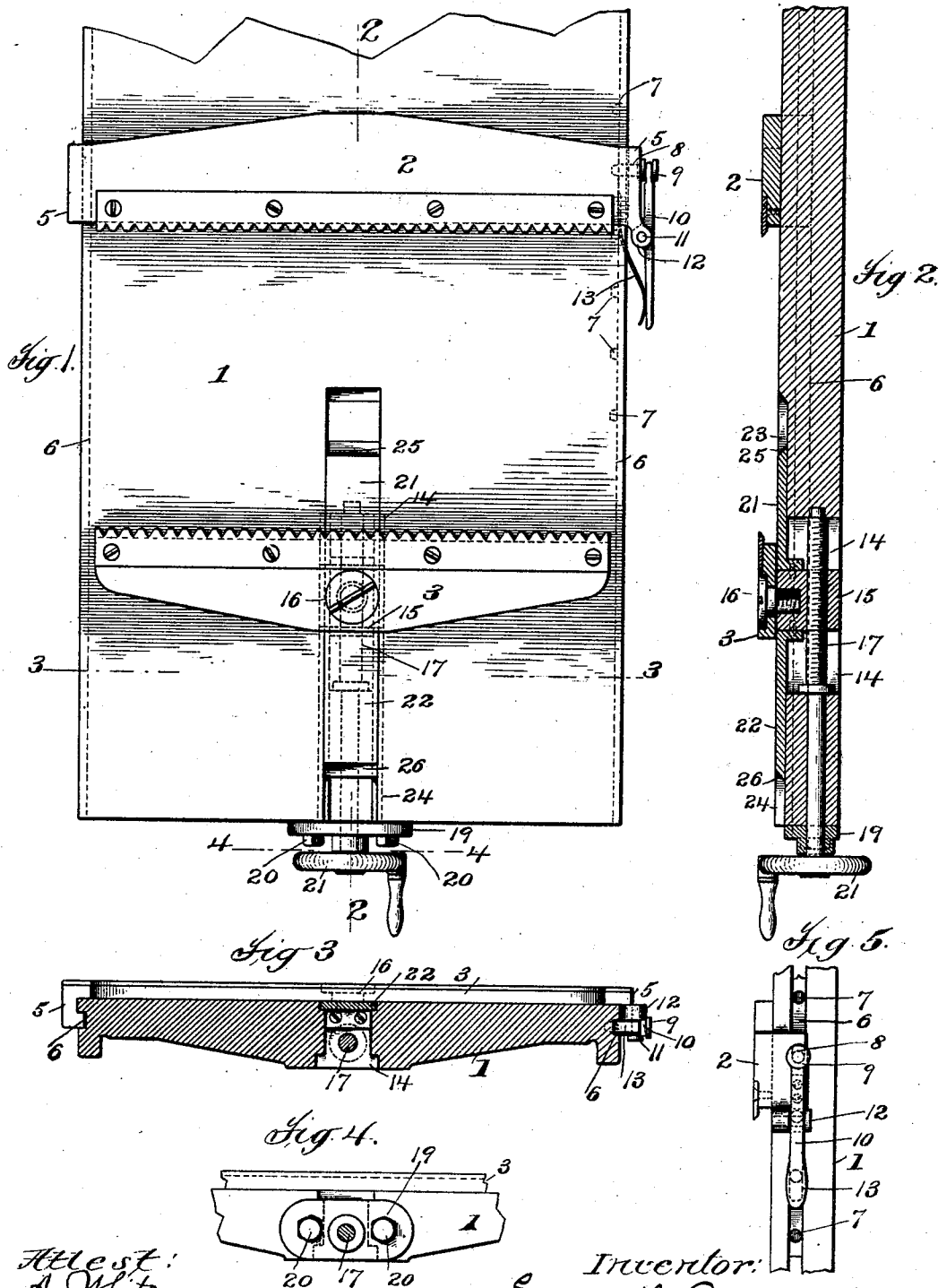
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E. D. TUCKER.
MACHINE CLAMP.

APPLICATION FILED JULY 28, 1900.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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MACHINE-CLAMP.

SPECIFICATION forming part of Letters Patent No. 773,172, dated October 25, 1904.

Application filed July 28, 1900. Serial No. 25,135. (No model.)

To all whom it may concern:

Be it known that I, EDWIN D. TUCKER, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Machine-Clamps, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in work-clamps, and more particularly to such clamps as are used for holding the work on the reciprocating beds of rotary planing-machines.

In many planing-machines the table is provided with a long central groove in which works a block which is connected, by means of a screw, to the fore clamp of the machine, the block being caused to jam in the groove by tightening the screw, thus locking the clamp in position. The cooperating clamp is adjusted toward and from the fore clamp in various ways, but usually by means of a screw which engages a nut stationarily mounted at some point in the groove before referred to. With this construction it is necessary in the first place to employ a wrench to loosen the jamming-bolt of the fore clamp whenever it is desired to adjust the same, and, further, the groove fills up with the shavings produced by the cutter and becomes clogged. It is frequently necessary, therefore, to stop and clear out the central groove before either clamp can be adjusted.

It is the object of this invention to so arrange work-clamps of planing-machines and other analogous machines as to make it unnecessary to employ a wrench in their adjustment and, furthermore, to produce a construction which will avoid the clogging in the groove, thereby producing a clamp which can be readily and quickly adjusted.

With this and other objects in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter fully described and then specifically pointed out in the claims hereunto appended.

Referring to the drawings, which form a

part of this specification, and in which like characters of reference indicate the same parts, Figure 1 is a plan view of a part of the bed of a planing-machine, said bed being provided with clamps constructed in accordance with the invention. Fig. 2 is a longitudinal vertical sectional view on the line 2 2 of Fig. 1. Fig. 3 is a cross-section on the line 3 3 of Fig. 1. Fig. 4 is a similar section on the line 4 4 of Fig. 1. Fig. 5 is a detail view illustrating the construction of the locking devices.

Referring to the drawings, which illustrate one embodiment of the invention, 1 represents a portion of the bed of an ordinary rotary planing-machine. This bed is to be mounted and reciprocated in any usual manner. Inasmuch, however, as the construction for mounting and reciprocating the bed is common and well known and has no connection with the present invention, it is not illustrated. The bed is provided with work-clamps 2 and 3.

The work-clamp 2, which is the fore clamp, is adjustably mounted on the bed, said clamp being provided with guiding projections 5, which take over the edges of the bed and engage grooves 6 formed therein. Suitable means are provided for locking this clamp 2 in adjusted position, which means may be varied widely in construction. Preferably, however, they will be arranged as shown, so as to leave the top of the bed free. Preferably, furthermore, these locking devices will be so arranged as to lock the clamp at successive separated points along the bed, the construction being such that a rough adjustment is given by shifting the fore clamp, means being provided for moving the cooperating clamp 3 to give the fine adjustment. While, as has been indicated, the locking devices may be widely varied in construction in the form shown, one of the edges of the work-table is provided with a series of perforations 7, said perforations being preferably located in one of the grooves 6. Arranged to cooperate with any one of these perforations 7 is a reciprocating pin 8, said pin being located in a perforation in one of the projections 5. The pin 8 may be operated in any desired manner. In the construction shown its outer end is pro-

vided with a collar 9, which is engaged by a fork on the end of a lever 10, said lever being pivoted on a pin 11, which is mounted in ears 12, extending from one of the corners of the clamp. A spring 13 is arranged to bear against the under side of the lever 10, and thus normally hold the pin in engagement with one of the perforations. When it is desired to adjust the clamp, it is only necessary to press down the outer end of the lever 10 and slip the clamp along, releasing the lever when the clamp is opposite the perforation which is nearest the point where it is desired to adjust the clamp.

The cooperating work-clamp 3 may be adjusted in any suitable or desired manner. Preferably, however, the table will be provided with an opening 14, in which is located a threaded block 15, said block being secured to the clamp 3 by means of a screw 16 or in any other desired manner. The threaded block or nut 15 is engaged by a screw 17, said screw being suitably mounted in the bed. In the construction shown a bearing 19, secured to the bed by screws 20, is provided, through which the outer end of the screw 17 passes, and mounted on the screw is a hand-wheel 21, by which it is operated. In order that the opening in which the block 15 moves may not become clogged, the clamp has connected to it a shield which covers said opening. Said shield may be variously constructed. As shown, however, it consists of two plates 21 and 22, said plates being secured to the threaded block 15 by means of screws or in any other suitable manner and being preferably arranged to work in recesses 23 24, formed in the surface of the bed. The plates 21 and 22 preferably have their forward edges beveled, as indicated at 25 26, so that they will automatically operate to clear the recesses from any shavings or chips which may become deposited therein.

As has been indicated in the specification, the details of construction by which the invention is carried into effect may be varied. The invention is not, therefore, to be limited to the precise construction which has been before described.

What is claimed is—

1. The combination with a work-carrying bed for planers and analogous machines having guiding-grooves along its edges, of a work-clamp having guides engaging both grooves, a spring-controlled locking-pin, means located in the groove with which the pin cooperates, a cooperating clamp, and means for adjusting it toward and away from the other clamp, substantially as described.

2. The combination with a work-carrying bed for planers and analogous machines having grooves along its edges and a series of perforations in one of the grooves, of a work-clamp having guides which engage both grooves, a locking-pin extending through one

of the projections and arranged to engage any one of the perforations, a cooperating clamp, and means for adjusting it toward and away from the other clamp, substantially as described.

3. The combination with a work-carrying bed for planers and analogous machines having grooves in its edges and a series of perforations arranged in one of the grooves, of a work-clamp mounted on the bed and having guides engaging both grooves, a locking-pin extending through one of the projections, a spring-controlled handle for operating the pin, a cooperating clamp, and means for adjusting it toward and away from the other clamp, substantially as described.

4. The combination with a work-carrying bed having an opening, of a work-clamp mounted thereon, means located in the opening in the bed for adjusting the clamp, a shield moving with the clamp serving to close the opening in the bed, a cooperating clamp, and means for adjusting it toward and away from the other clamp, substantially as described.

5. The combination with a work-carrying bed having an opening, of a work-clamp, means located in the opening in the bed for adjusting the clamp, a shield moving with the clamp and working in a recess in the bed, said shield being arranged to cover the opening in the bed, a cooperating clamp, and means for adjusting it toward and away from the other clamp, substantially as described.

6. The combination with a work-carrying bed having an opening, of a clamp mounted thereon, a nut connected to the clamp and working in the opening, a screw for adjusting the nut and clamp, plates connected to each side of the nut and forming a shield, said plates working in recesses in the bed, a cooperating clamp, and means for adjusting it toward and away from the other clamp, substantially as described.

7. The combination with a work-carrying bed having an opening, of a clamp mounted thereon, a nut connected to the clamp and working in the opening, a screw for adjusting the nut and clamp, plates connected to each side of the nut and forming a shield, said plates working in recesses in the bed and having beveled edges, a cooperating clamp, and means for adjusting it toward and away from the other clamp, substantially as described.

8. The combination with a work-carrying bed, of a work-clamp adjustably mounted thereon, means cooperating with the edges of the bed for locking the clamp to the bed, a cooperating clamp, means for adjusting the clamp located in an opening in the bed, and a shield moving with the clamp and working in a recess in the bed, said shield being arranged to cover the opening in the bed, substantially as described.

9. The combination with a work-carrying bed, of a work-clamp adjustably mounted

thereon, means coöperating with the edges of the bed for locking the clamp to the bed, a co-operating clamp, a nut connected to the clamp and working in an opening in the bed, a screw
5 for adjusting the nut and clamp, and plates connected to each side of the nut forming a shield, said plates working in recesses in the bed and being arranged to cover the opening in which the nut is located, substantially as described.
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10. The combination with a work-carrying bed having a series of holes arranged along its length, of a work-clamp adjustably mounted thereon, a locking device carried by the

clamp and arranged to engage any one of the 15 holes, a coöperating clamp, a nut connected to the clamp and working in an opening in the bed, a screw for adjusting the nut and clamp, and plates connected to each side of the nut and forming a shield which covers the 20 opening, substantially as described.

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

EDWIN D. TUCKER.

Witnesses:

F. W. H. CRANE,
S. ROEHM.