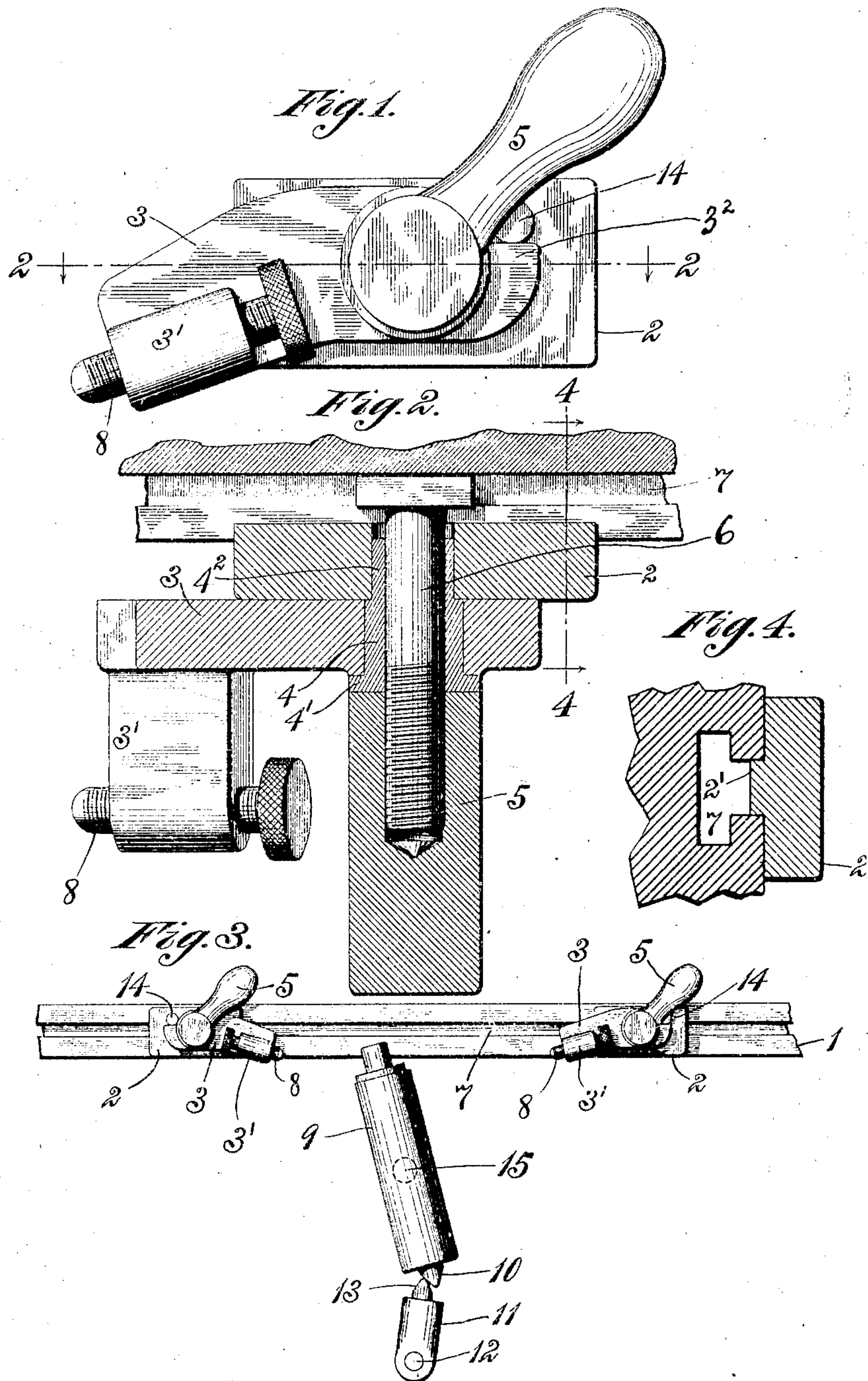


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F. O. HOAGLAND.
STOP DEVICE FOR REVERSING MECHANISMS.
APPLICATION FILED AUG. 9, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

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STOP DEVICE FOR REVERSING MECHANISMS.

No. 827,016.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed August 9, 1905. Serial No. 273,473.

To all whom it may concern:

Be it known that I, FRANCIS OSCAR HOAGLAND, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Stop Devices for Reversing Mechanisms, of which the following is a specification.

This invention relates to improved means for actuating the reversing mechanism in a class of machines in which the work-table has a reciprocatory automatic motion.

The object of the invention is to provide convenient parts readily adjustable for placing the table movements under the control of the operator.

Other objects of the invention will be hereinafter set forth.

In the accompanying drawings, Figure 1 is a front view of the improved stop device. Fig. 2 is a top sectional view on line 2 2 of Fig. 1, showing the construction of the stop device and the means for clamping it in the T-slot of a reciprocatory table. Fig. 3 is a front view showing the adjustable stop devices and part of the table-reversing mechanism acted upon by said devices, and Fig. 4 is a sectional view on line 4 4 of Fig. 2 of a block carrying the stop.

Referring to the drawings, the numeral 2 designates a block provided with a tongue 2', adapted to slide in the throat of the T-slot. In a hole bored in the center of this block is fitted a stepped bushing 4, flanged at its outer end at 4' and on which the plate-base 3, having an arm 3', carrying the adjustable striking-screw 8, is mounted, so as to swing freely. This bushing is reduced at 4" to enter the bore of block 2. Designated by 5 is a lever-nut threaded on a T-bolt 6, which upon a small angular movement of said lever-nut 5 serves to clamp firmly the combined construction at any location along the T-slot 7 in the edge of the carriage 1. By swinging the plate or base 3 around the bushing 4 the striking-point 8 may be elevated at any time to clear the element with which it cooperates; but it is normally held by gravity in its normal position by contact with a shoulder 3" against a stop-pin 14 on the block 2, as shown in Figs. 1 and 3.

In Fig. 3 the numeral 12 designates the end of the clutch-reversing shaft, the oscilla-

tion of which at the completion of the table travel in either direction is the work to be accomplished through the device under consideration. An arm 11, fast upon the shaft 12, is provided with a wedge-shaped terminal 13, which is acted upon by the similarly-shaped plunger 10, backed up by a spring (not shown) in the swinging lever 9, pivoted at 15.

At its upper extremity the arm 9 is normally in the path of the striking-points of the stops 8. Owing to the arrangement of construction, the position of the arm 9 inclines in the direction opposite to that of the movement of the table, this condition insuring a contact of the striking-point of stop 8 with the end of lever 9, and thus throwing said lever over through a small arc of travel, the table being then stopped in its movement and the stop device remaining on the same side of lever 9. Should it be desired at any time to give greater movement of the table than that given by the setting of the screw-stops 8, the plate or base 3 may be lifted out of the path of the lever; but on the return of the table the stop requires no attention, as it readily swings upward and rides over the lever.

Preferably the striking-point or stop 8 is given the form of a screw, so that small adjustments may be made after the clamping of the appliance in the T-slot of the table; but this, while useful, is not necessarily employed, for other devices may be substituted therefor without departure from the invention.

In the operation of the invention the blocks 2 are secured by the bolts 6 at the desired distance apart in the T-slot of the reciprocatory table, and as said table moves in either direction the striking-points of the screw-stops 8, threaded into the arms 3' of the plates 3, alternately come into contact with the element 9 of the reversing mechanism to shift the same.

As above stated, should it be desired to obtain a longer stroke of the table in either direction the plate 3 is swung upon the bushing 4 out of the way and then allowed to drop to normal position with its stop-shoulder 3" in engagement with the pin 14. Now on the return of the table the swinging stop-arm will ride freely over the end of the element 9, will not interfere with the same, and then will drop automatically to its normal position

in readiness to accomplish the work for which it is designed on the next movement of the table.

Changes may be made in the form and proportions of the various parts in the improved stop device, and many of its details may be variously modified without departure from the invention.

Having thus described the invention, what I claim is—

1. A stop device for reversing mechanism, comprising a support having a guideway; a perforated block; a bushing inserted in the perforation of the block; and having a bearing-surface exterior to the block; a bolt within the bushing, and having a head fitted in said guideway of the support; a stop mounted for swinging movement on said portion of the bushing exterior to the support; and means applied to the bolt for clamping the head of said bolt in any adjusted position along the support, said means bearing against the end of the bushing.

2. The combination, with a support having a guideway, of a perforated block overlapping said guideway; a stepped bushing inserted in the perforation of the block; a stop swinging upon said bushing exterior to the block; a bolt inserted in the bushing, and having a head fitting said guideway; and a nut threaded upon the bolt, and bearing against the end of the bushing.

3. The combination, with a reciprocatory support having a guideway, of a perforated block overlapping said guideway; a stepped bushing inserted in the bore of the block, said bushing having a flange at its outer extremity; a bolt within the bushing, and having a head fitted in the guideway; a stop mounted for swinging movement upon the step of the bushing exterior to the block, and between the end flange thereof and said block; and a nut threaded upon the bolt, and serving to clamp the head thereof in the guideway.

4. A stop device for reversing mechanism, comprising a perforated block; a stepped bushing flanged at its outer end, inserted in the bore of the block, and projecting from said block; a plate swinging on the bushing, said plate having an arm; a bolt passing through the bushing; a stop proper adjust-

able on said arm; and means applied to the stem of the bolt for clamping the device at any point along a table.

5. A stop device for reversing mechanism comprising a block; a bushing inserted in a bore of the block; a plate mounted for swinging movement upon said bushing, said plate having an arm; a stop proper carried by said arm; and means passing through the bushing, and whereby the plate may be secured to a support.

6. The combination, with a reciprocatory table having a T-slot, of a bolt provided with a head mounted in said slot; a block having a bore; a flanged bushing through which the stem of the bolt passes, projecting from said block, and mounted in the bore thereof; a stop proper mounted for swinging movement upon the bushing; and a clamp cooperative with the bolt for securing the device to the table.

7. The combination, with a reciprocatory table having a longitudinal slot, of a T-headed bolt mounted in said slot; a block having a bore; a bushing fitted in said bore, and through which the stem of the bolt passes; a plate mounted for swinging movement upon the bushing, said plate having an arm; a screw-stop adjustable in the arm; and means applied to the stem of the bolt for clamping the device at any point along the T-slot of the table.

8. The combination, with a support having a guideway, of a perforated block fitted to said support, and having a stop-pin; a flanged bushing inserted in said block; a stop mounted on the bushing between the flange thereof and the block, said stop having a shoulder at its end to engage the stop-pin; a bolt having a head shaped to fit the guideway of the support, said bolt passing through the bushing; and a lever-nut threaded upon the bolt, and bearing against the flanged end of said bushing.

In testimony whereof I affix my signature in presence of two witnesses.

F. O. HOAGLAND.

Witnesses:

KATH. F. M. O'CONNELL,
 SOLON E. DAVIS.