June 16, 1931. A. M. MASZCZYK 1,810,430

WORK STOP

Filed April 18, 1930

Fig. 1.

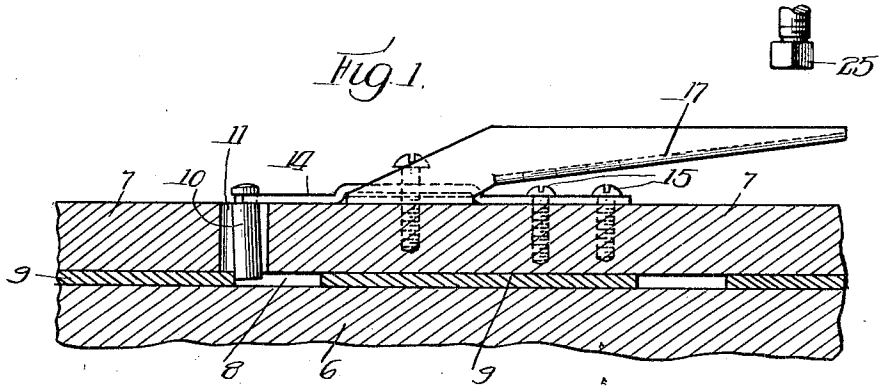


Fig. 2.

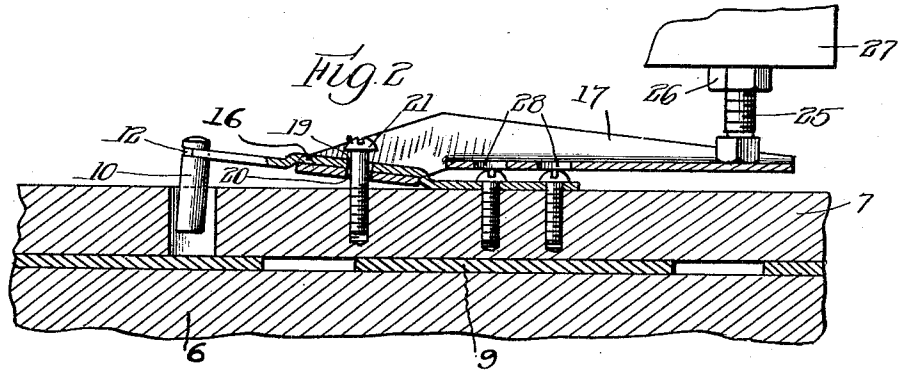


Fig. 3.

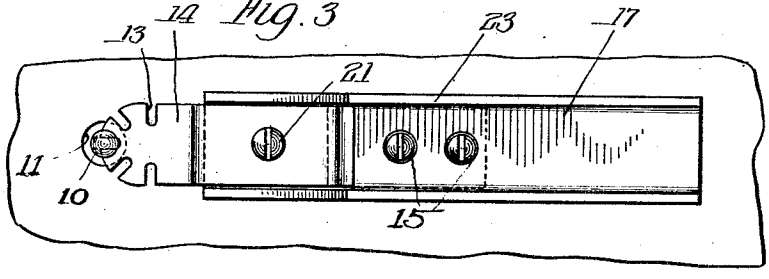


Fig. 4.

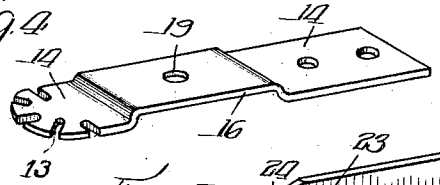
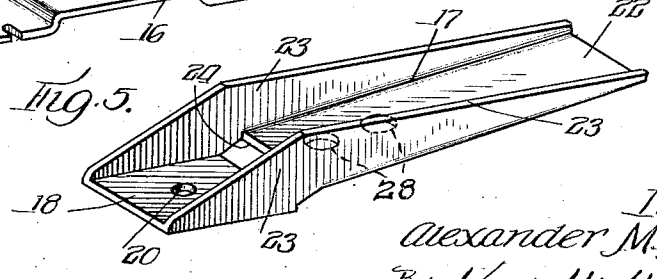


Fig. 5.



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UNITED STATES PATENT OFFICE

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WORK STOP

Application filed April 18, 1930. Serial No. 445,418.

This invention relates in general to an automatic stop mechanism for punch presses, and refers more particularly to a work stop adapted to engage, position or locate plate material or other stock, operated on after each successive operation of die or punching mechanism.

An important object of the invention is in the provision of a work stop which is simple in construction, easily applied, and not likely to get out of order.

A further object of the invention is in the provision of a resilient stop holder which is easily flexed for moving the stop member into and out of engaging position.

A further object of the invention is in the provision of a work stop of this kind made of easily separable parts, which may be assembled and taken apart for adjustment and repair with the greatest facility.

A further object of the invention is in the provision of an adjustable stop, in which the stop member may be set in a variety of different angular positions for engaging the work.

Other objects of the invention will appear hereinafter, the accompanying drawings illustrating a preferred embodiment of the invention.

In the drawings Fig. 1 is a side elevation of a work stop constructed in accordance with this invention, with its stop member in engaging position. Fig. 2 is a sectional view showing the work stop in raised position; Fig. 3 is a plan view of the work stop; Fig. 4 is a perspective of the resilient member of the work stop; and Fig. 5 is a perspective of the work stop operating member.

Referring more particularly to the drawings, a bed plate 6, of a punch press or any other suitable mechanism, has a stripper plate or support 7, raised above it to provide a space or passageway 8, in which the material or stock 9, is movable, to be acted upon by the punch press or other mechanism.

The work stop comprises a stop member 10, preferably in the form of a short bar or pin adapted to move freely in an opening 11, in plate 7, and into and out of position to engage the work 9 in the passageway 8.

At its upper end, the stop member 10 is provided with opposite grooves 12, adapted to be engaged in any one of a number of slots 13, provided in the edges or tip of a flat spring supporting member 14, which is free at the pin supporting end, but is secured to the plate 7 at the other end, by means of fastening screws 15, or other suitable fastening means. Intermediate the ends of the springs 14 it has an off-set portion 16 raised above the upper surface of the plate 7.

An operating member 17 has a flat portion 18 at one end, adapted to engage under the raised portion 16 of the spring 14, and these portions are provided with registering perforations 19 and 20, through which a fastening screw 21 is inserted loosely, and threaded into the plate 7 for holding the spring and operating member in position. The operating member 17 has an engaging portion 22, connected to the flat portion 18 by parallel strengthening sides 23, but spaced therefrom at their adjacent ends, and slightly off-set forming a slot 24, through which the connected end of the spring 14 extends.

Any suitable means may be provided for actuating the operating member, such as represented, for example by means of an adjusting screw 25, which has a lock nut 26 for accurately holding it in position with respect to an actuating member 27.

When the stop member 10 is in its ordinary stop position, the spring 14 lies flatly against the upper side of the plate 7, pressing the operating member 17 outwardly upon flat portion 18, and raising the operating end as shown in Fig. 1. The movement of the actuating member 25 to engage the operating member, as shown in Fig. 2, will flex the spring 14, raising the stop pin 10 out of position to engage the work, as shown in Fig. 2. The resilience of the spring 14 returns the parts and the pin 10 to normal stop position as soon as the actuating member 25 is moved out of engagement with the operating member.

In order to attach and remove the work stop without disengaging the parts, the operating member is provided with openings 28, which register with heads of the fasten-

ing screws 15, so that the screws may be inserted and removed through openings 28.

With this construction it is obvious that the stop member 10 may be set in different angular positions at the end of the spring; that the stop is easily attached and removed; that parts are simple in construction, easily applied and removed; and that the movement of the operating member will flex the spring, and cause the movement of the stop pin.

I claim:

1. A work stop comprising a resilient member attached at one end, a stop member at the other end, and operating means engaging the resilient member intermediate its ends and adapted to flex the free end of the resilient member to move the stop member.

2. A work stop comprising a flat spring member attached at one end, and slotted at the other, a stop member having opposite grooves adapting it to engage the slotted member, and a rocking operating member engaging the spring member intermediate its ends and movable to raise and lower the stop member.

3. A work stop comprising a flat spring attached at one end and free at the other, a stop member attached to the free end, an intermediate offset portion, and an operating member having a portion seated in the offset portion and a projecting portion to rock the seated portion thereby flexing the spring and moving the stop member.

4. In a work stop, a flat spring having an intermediate portion offset from the ends, means for attaching one end of the spring to a support, the other end being free, a stop member at the free end, and operating means having a flat portion adapted to be seated in the offset and a portion extending at an angle therefrom and movable to flex the spring and correspondingly move the stop member.

5. In a work stop, a resilient member fixed at one end and free at the other, the free end having slots at different angles therein, a stop member having opposite grooves adapting it to be seated in any one of the slots, and operating means to engage and flex the resilient member to move the stop member.

6. A work stop comprising a flat spring offset intermediate its ends, one end being fixed and the other free, a stop member at the free end, and operating means having a flat portion engaged by the offset in the spring with an operating portion extending at an angle therefrom and adapted to rock the said flat portion to flex the spring and correspondingly move the stop member.

7. A work stop comprising a resilient member, a stop member at one end, operating means having a slot through which the resilient member is inserted, the under end engaging the resilient member, and the upper end overlying the resilient member at the end opposite the stop member.

8. A work stop comprising a flat resilient member, means for attaching it to a support at one end, a stop at the other end, and an operating member having a slot through which the resilient member extends, one end resting upon a support and engaged by the intermediate portion of the resilient member, and the other end overlying the attached end of the resilient member and having openings through which the attaching means may be actuated without separating the parts.

9. A work stop comprising a flat spring with an intermediate offset, fastening means at one end for securing it to a flat support with the other end free to move, a removable stop pin at the free end, an operating member having a flat portion at one end adapted to be seated below the offset portion of the spring and against the spring support, the operating member having an engageable portion extending upwardly from the flat portion and separated therefrom by a slot through which the spring extends, the said portions of the operating member being connected at the sides by angular strengthening portions.

10. A work stop comprising a flat spring attached at one end and free at the other, a stop member at the free end, an operating member having a slot through which the spring extends, one end being positioned below the intermediate portion of the spring and the other end extending outwardly therefrom and adapted to flex the spring and move the stop, the spring and the operating member having corresponding openings through the engaging intermediate and end portions respectively, and a fastening member insertable therethrough for holding the spring and operating members together and limiting their relative movement.

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