

No. 679,241.

Patented July 23, 1901.

H. W. OSTER.

LOCKING MECHANISM FOR DIE HEADS.

(Application filed Jan. 13, 1900.)

(No Model.)

2 Sheets—Sheet 1.

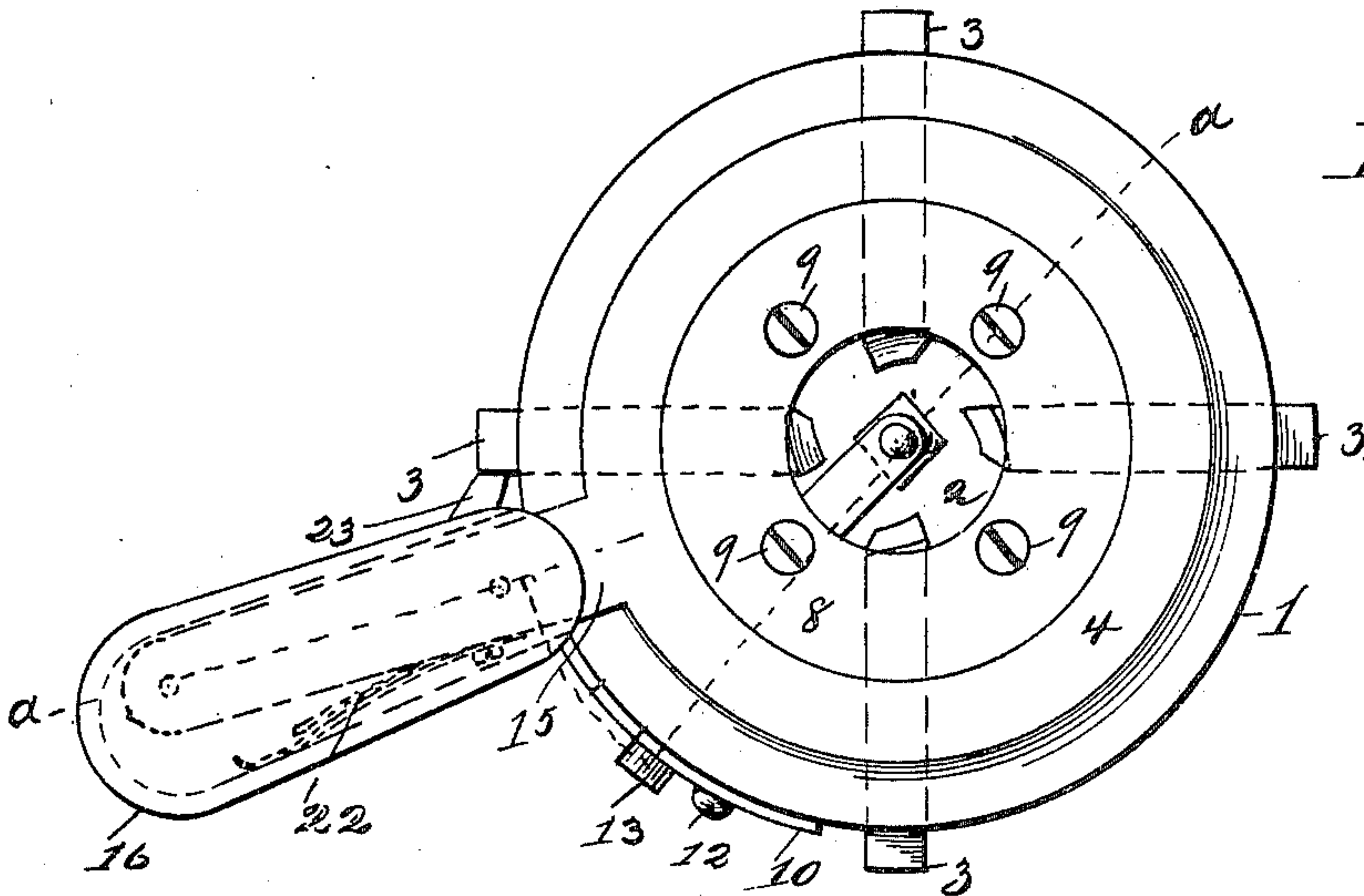


Fig. 1

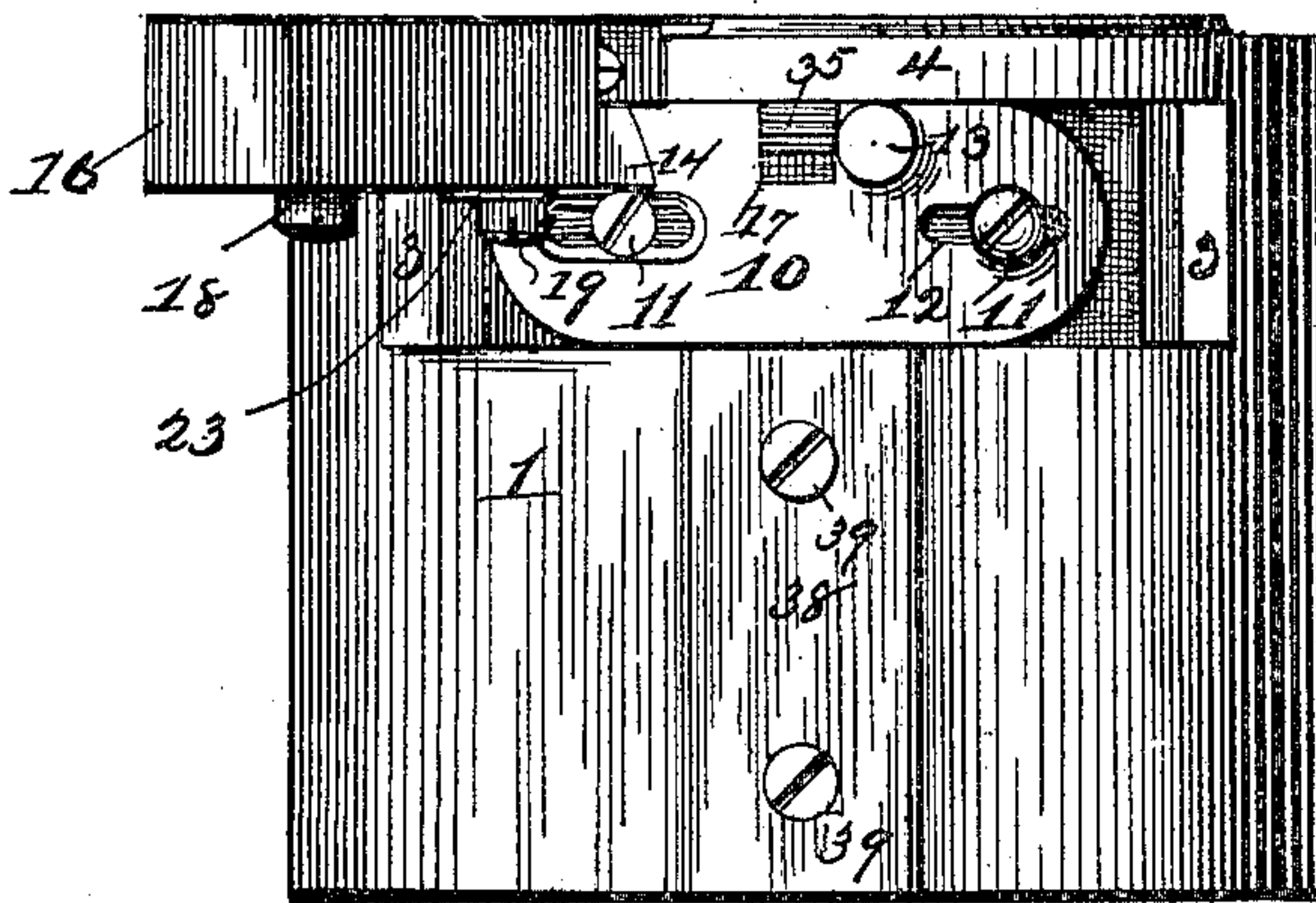


Fig. 2

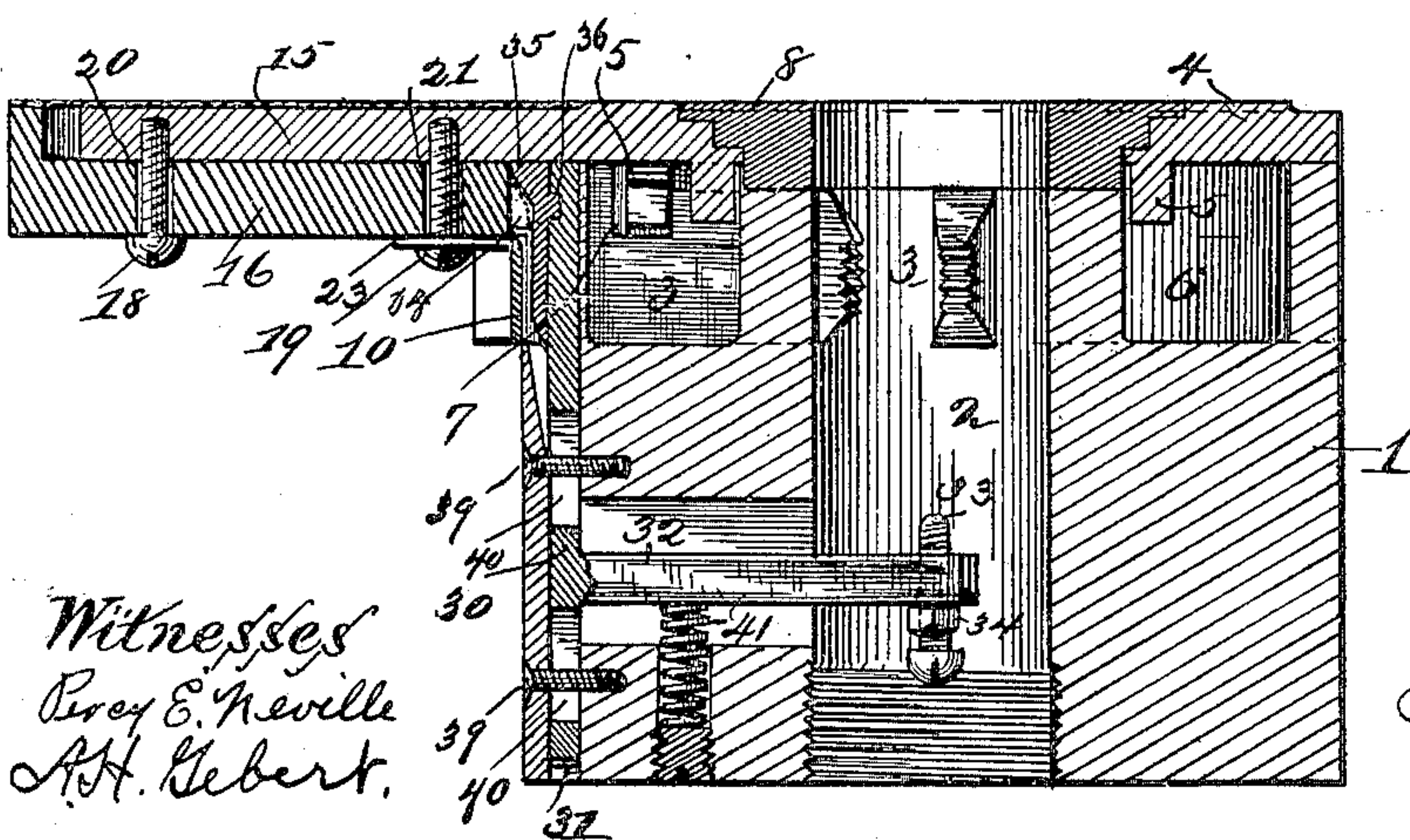


Fig. 3

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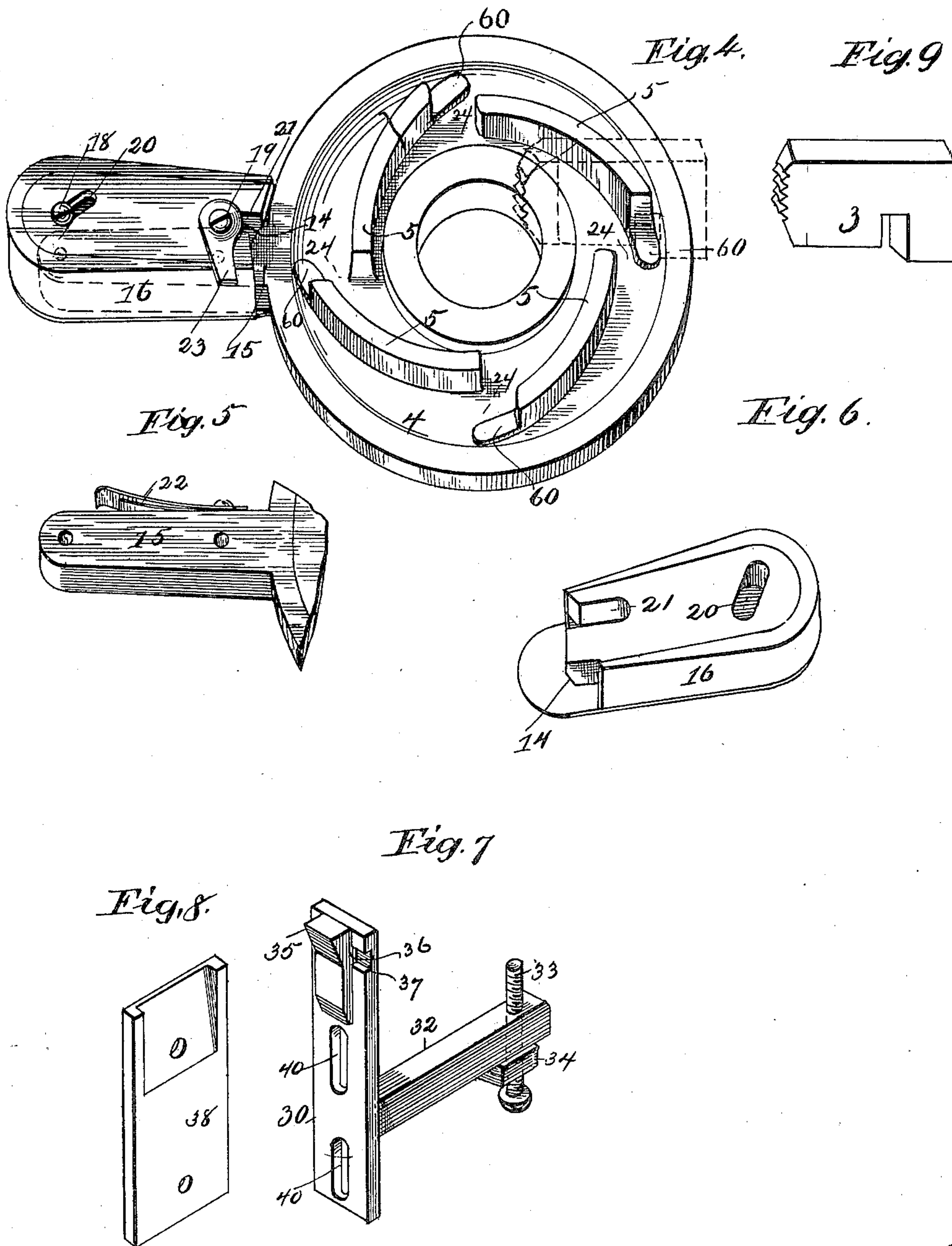
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UNITED STATES PATENT OFFICE.

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LOCKING MECHANISM FOR DIE-HEADS.

SPECIFICATION forming part of Letters Patent No. 679,241, dated July 23, 1901.

Application filed January 13, 1900. Serial No. 1,291. (No model.)

To all whom it may concern:

Be it known that I, HERMAN W. OSTER, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Locking Mechanism for Die-Heads, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to adjustable locking mechanism for the dies of a screw-cutting die-head and also has reference to automatic means for unlocking the same when a predetermined length of thread has been cut upon the work.

My invention consists in the combination and arrangement of various parts and construction of details, as hereinafter described, shown in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the die-head. Fig. 2 is a front view. Fig. 3 is a central longitudinal section on line *a a*, Fig. 1, showing a sectional view of the handle-cover, with dog 14 in position in the slot 17 and showing the handle of the cam-plate also in section. Fig. 4 is a detail view of the cam-plate bearing the curved cams by means of which the dies are moved in and out of the head. Fig. 5 is a detail view of the arm projecting from this plate. Fig. 6 is a detail view of the metal cover and locking-dog, and Figs. 7 and 8 are detail views of the automatic releasing device and its outer cover.

In the views, 1 is the body or head, which is eccentrically bored at 2 to receive a lathe-spindle and provided with the dies 3, which are radially disposed therein.

4 is the cam-plate provided with the curved cams 5, which depend within the annular space 6 in the extremity of the head and which engage the grooves 7 in the dies in the usual manner. The cam-plate is attached to the head by means of the clamping-ring 8 and screws 9.

Upon the exterior of the head 1 is movably attached the stop-plate 10 by means of screws 12, passing through the slots 11. Upon this plate is set the stop 13, against which the

dog 14 upon the handle of the cam-plate strikes to limit its movement when the dies have been drawn sufficiently far into the head to cut the screw-threads to the required depth in the work. The handle of the cam-plate will be seen to comprise the arm 15 and metal cover-plate 16, which is larger than the shank at the outer end, so as to give some play to the arm therein. Upon the cover-plate, at the inner end, is placed the dog 14, which is adapted to enter the slot 17 in the stop-plate and lock the cam-plate. The cover and arm are attached together by means of pins or screws 18 and 19, the one passing through the diagonal or cam slot 20 at the outer end of the cover and the other through the longitudinal slot 21 at the inner end of the cover. In order to withdraw the dog 14 from the slot 17, the cover is pressed backward, and the pin 18, moving in the cam-slot 20, will force the cover outward, when the handle and cam-plate will be turned back away from the locking-point. The spring 22 automatically restores the cover and dog to their former position. A small stop 23 is pivoted underneath the cover and strikes against one of the dies at the limit of the movement of the plate. When the stop 23 is removed, the handle and cam-plate can be rotated until the dies coincide with the openings 24 between the curved cams 5 and can be removed from the head.

A special device is provided to automatically release the locking-dog from the slot 17 when the desired depth of cut has been effected. This will be seen clearly by reference to Figs. 3, 7, and 8. Here 30 is a vertically-sliding plate sunk within a recess 31 in the front of the head and provided with an arm 32, radially extending into the opening 2 in the center of the head. A set-screw 33 and nut 34 in the end of this arm receives the extremity of the work entering the opening 2, and the screw 33 can be set to meet it at any desired depth. At the upper edge of the plate 30 is set the projecting cam 35, which moves in the slot 17 and will be forced downward with the plate 30, engaging the dog 14 and forcing it back out of the locking-slot 17. This releases the cam-plate, since the lock no longer holds it into engagement therewith.

The projecting cam 35 is detachable from the vertical plate 30 and has a projection 36, which moves laterally in a groove 37 therein. By this means the cam 35 can be moved from side to side to accommodate the movements of the adjustable stop-plate. A cover 38 is placed over the vertically-moving plate and is secured by means of screws 39, passing through slots 40 in the plate. A spring 41 returns the plate 30 when released by the work.

It will be seen that the pins 18 and 19 can be placed in the cover and the slots 20 and 21 can be placed in the handle without changing the movement.

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

1. In a locking device for the cam-plate of a die-head, the combination with the plate and head, of a radial arm or handle extending from the plate, a cover-plate therefor broader at the outer extremity than the arm, and provided with a locking-dog at its inner extremity and with a diagonal slot at its outer extremity and a longitudinal slot at its inner extremity, pins passing through said slots into the said handle, a return-spring between the cover and arm, and an adjustable plate upon the head provided with a slot adapted to engage said locking-dog when the cam-plate has been rotated to the required position, substantially as described.

2. In a locking device for the purpose specified, the combination with a die-head and cam-plate therefor, the said cam-plate provided with a projecting handle, of an adjustable plate upon the head, provided with a slot, a stop-pin on said plate, and a cover-plate upon the said handle provided with a locking-dog, the said cover-plate being wider than the arm at its outer extremity and provided with diagonal and longitudinal slots therein, pins passing through said slots into said handle, a return-spring for the said locking cover and dog, and means for automatically releasing the cam-plate and dies when

the required depth of screw has been accomplished, substantially as described.

3. A die-head in combination with an adjustable plate thereon, provided with a vertical slot and stop-pin located at the side of the slot, a movable cam-plate provided with a radial arm or handle, a cover for said handle provided with a dog constructed to enter said vertical slot in the stop-plate and lock the cam-plate, the said cover being of greater width at its outer extremity than the radial arm, means for moving said cover-plate outwardly upon the arm when pressed by the hand to disengage the dog from the vertical slot, consisting of a diagonal slot in the cover-plate and a pin in the handle, and a return-spring between the handle and cover, substantially as described.

4. In combination with a die-head and dies therein, a rotatable cam-plate and cams thereon, a radial handle for said plate, a cover thereon provided with a projecting dog at its inner extremity, constructed and arranged to move longitudinally of the handle when the handle is grasped to rotate the plate, a locking-slot in the die-head, arranged to engage said dog when the handle has rotated the cam-plate into the required position, and means for automatically pressing outward said dog, and releasing the cam-plate when the required depth has been cut upon the work, consisting of a radial arm extending into the center of the die-head, a set-screw in the extremity of said arm, an exterior plate to which said arm is secured, and a cam projection on said plate arranged to engage said dog on said cover, when the work in the head engages said screw in said radial arm, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMAN W. OSTER.

Witnesses:

WM. M. MONROE,
GEO. O. WILLET.