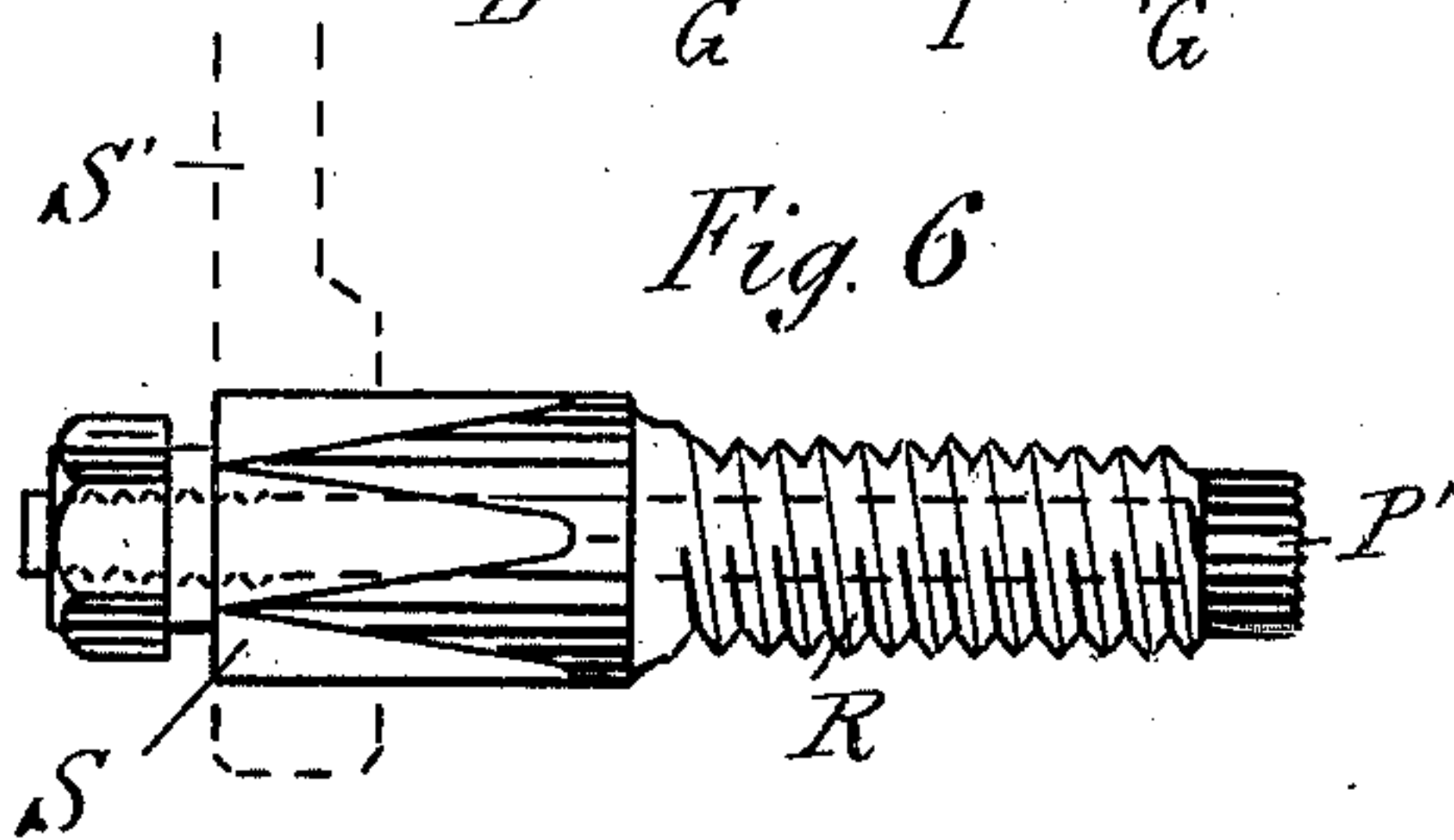
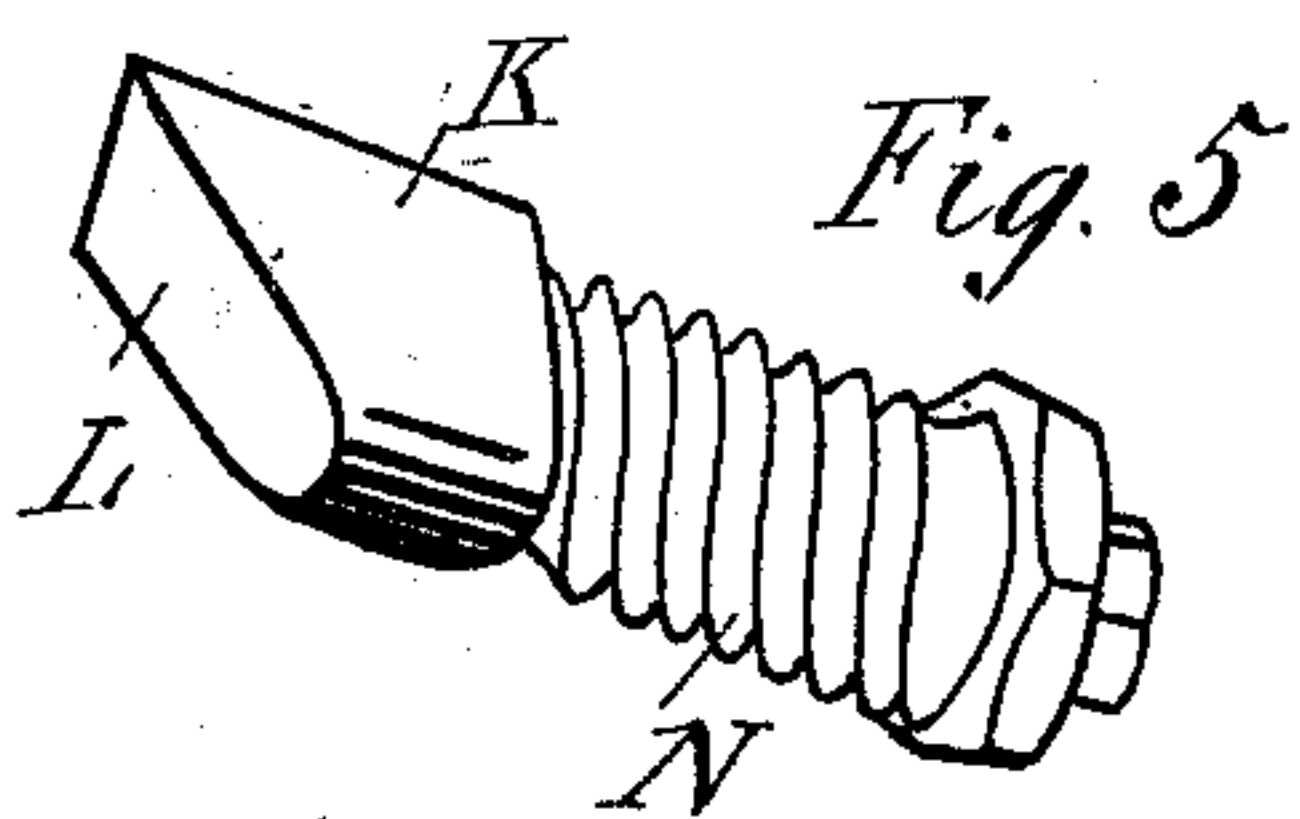
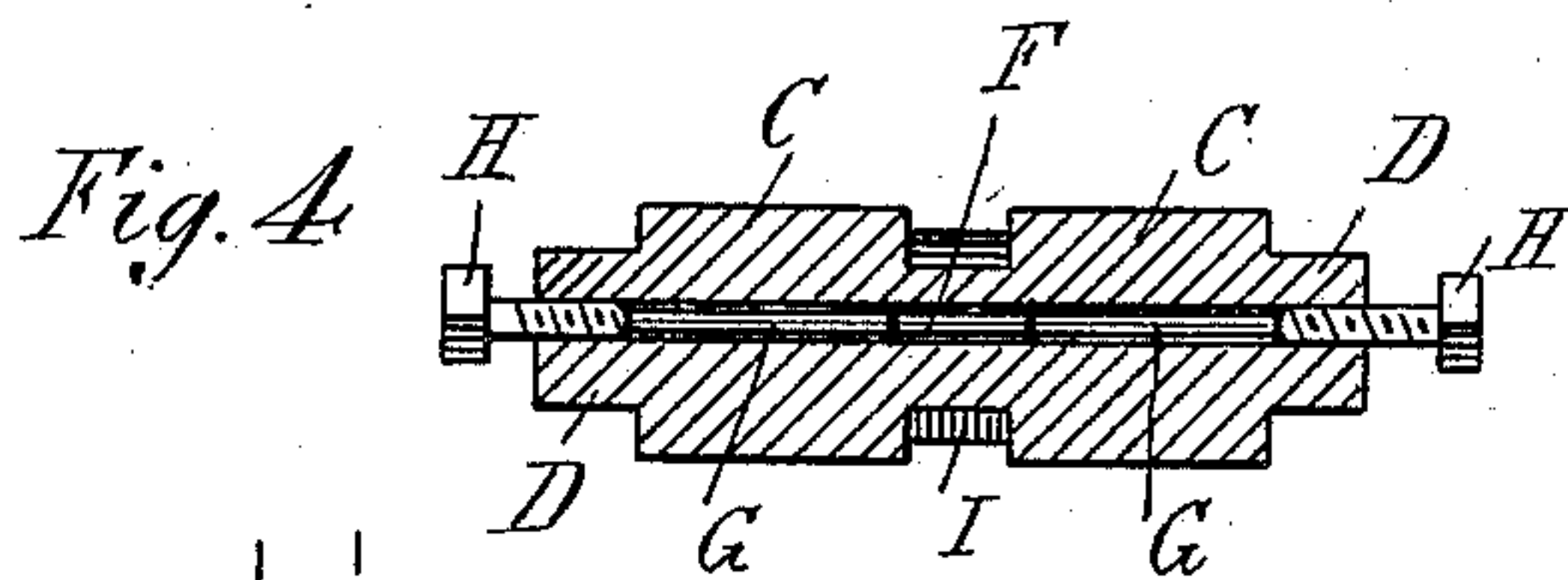
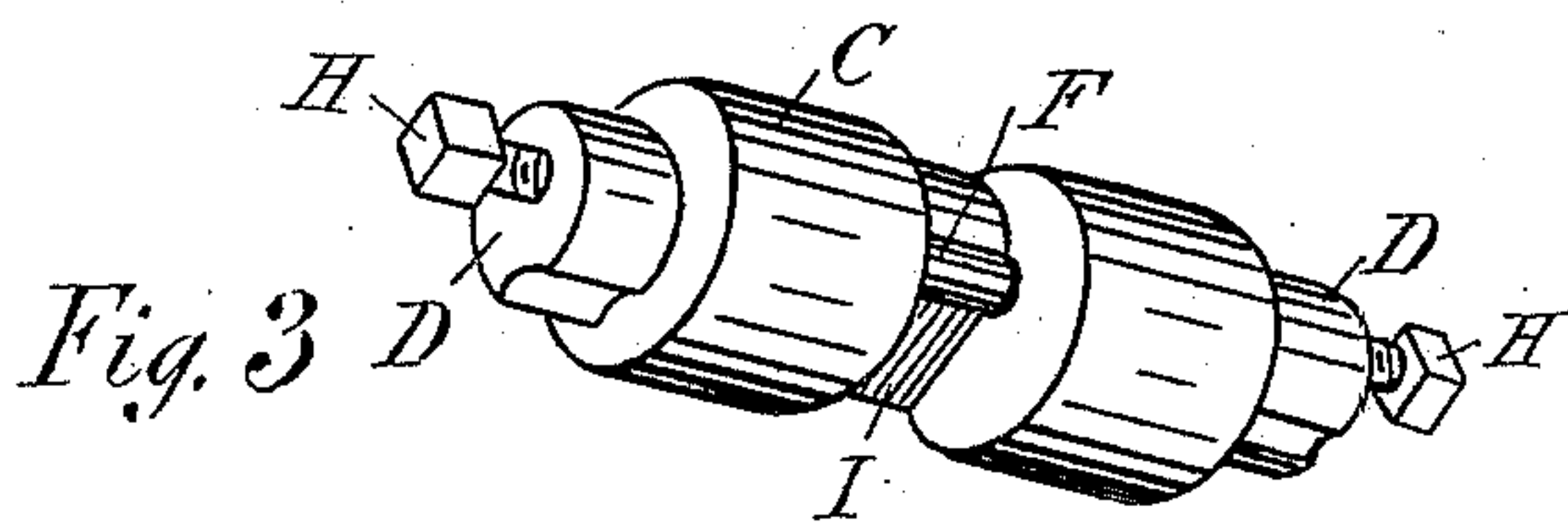
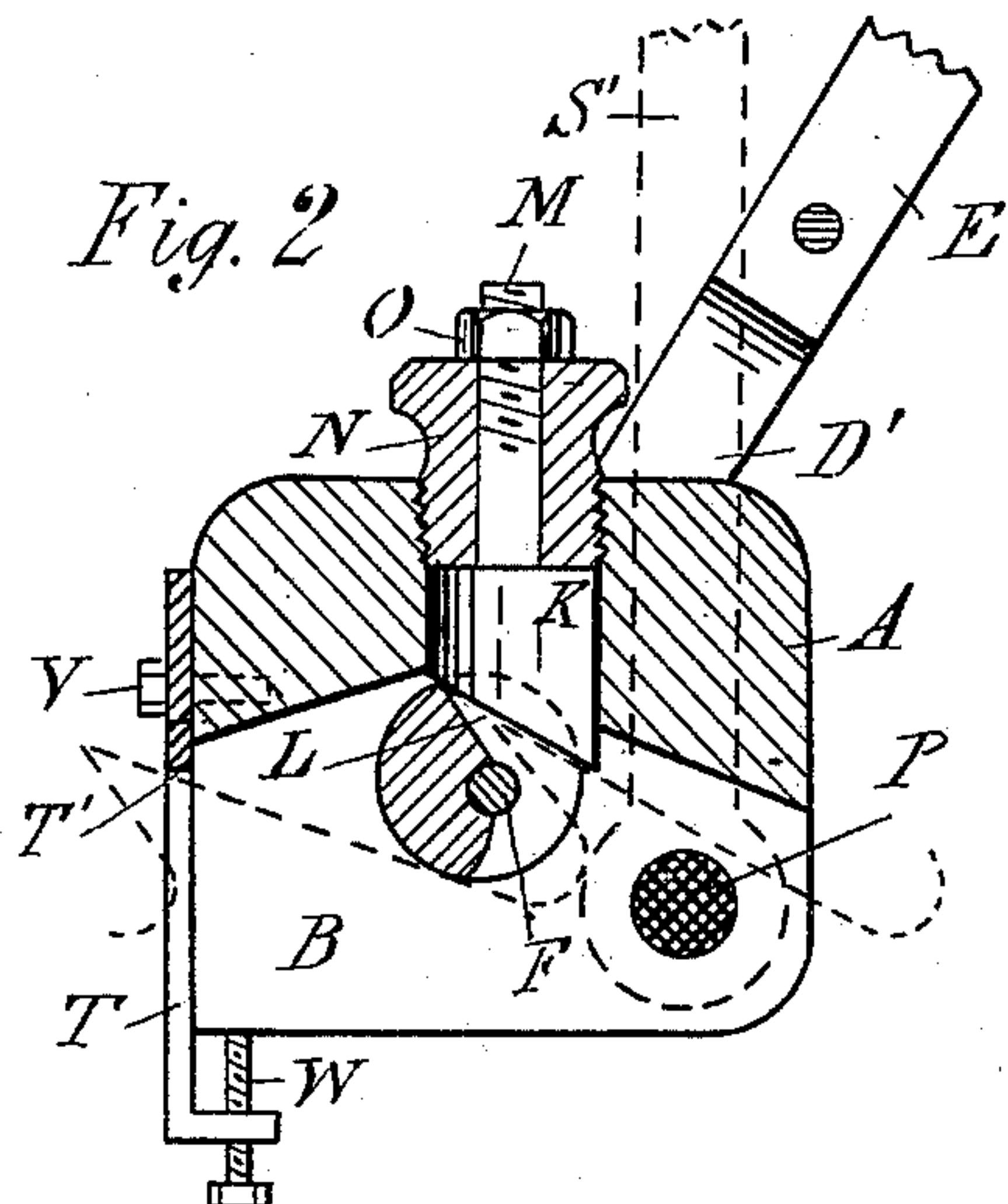
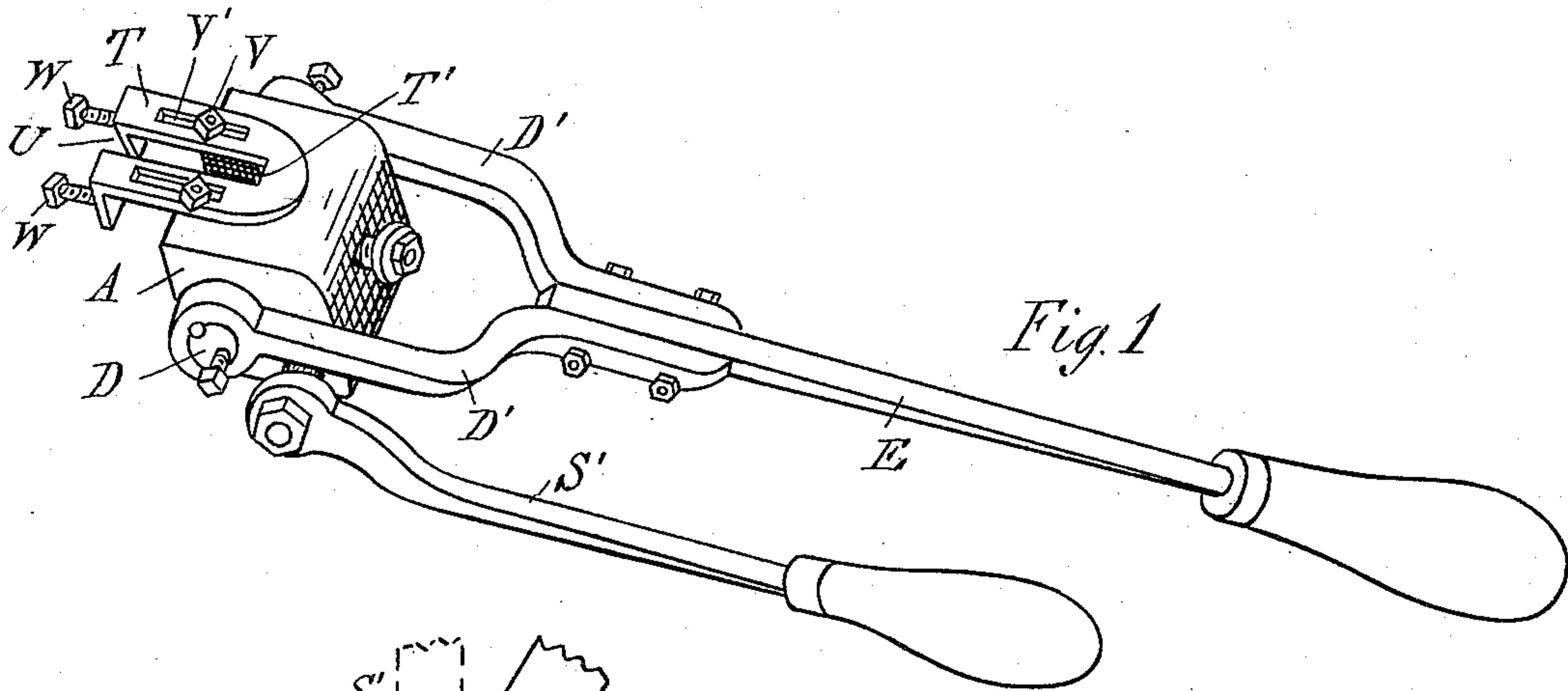


(No Model.)

C. CAMPBELL.
SAW SWAGING DEVICE.

No. 415,614.

Patented Nov. 19, 1889.



Witnesses:
J. Paul Mayer
P. M. Hulbert

Inventor:
Collingwood Campbell
by Thos. S. Sprague & Son

Atty

UNITED STATES PATENT OFFICE.

COLLINGWOOD CAMPBELL, OF WEST BAY CITY, MICHIGAN.

SAW-SWAGING DEVICE.

SPECIFICATION forming part of Letters Patent No. 415,614, dated November 19, 1889.

Application filed February 7, 1889. Serial No. 298,969. (No model.)

To all whom it may concern:

Be it known that I, COLLINGWOOD CAMPBELL, a citizen of the United States, residing at West Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Saw-Swaging Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in saw-swaging machines, and the invention is designed to form an improvement on Letters Patent No. 355,379, dated January 4, 1887; and the invention consists in the improved construction and arrangement of different parts, as described and claimed in said Letters Patent, and in the addition of a guide, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved machine. Fig. 2 is a vertical central cross-section in the plane of the handle actuating the die, and showing in dotted lines its operation on a saw-tooth. Fig. 3 is a detached perspective view of the improved die-holder and die screwed therein. Fig. 4 is a vertical central longitudinal section through said die-holder in the axis of the die. Fig. 5 is a detached perspective view of the stationary die. Fig. 6 is a detached elevation of the movable clamp-jaw.

A is the stationary die-holder, formed substantially of a solid block of cast-iron of rectangular shape and provided with a recess B upon its under side.

C is a movable cylindrical die-holder, journaled in the stationary die-holder A transversely through the recess B therein. This die-holder is provided upon opposite ends with the studs D, formed concentrically with the parts C, projecting sufficiently to conveniently attach thereto the bifurcated ends D' of the actuating handle or lever E of the movable die-holder. The cylindrical die-holder C is provided with a longitudinal opening extending through it parallel to its axis, but to one side of it, and in the center of this opening is loosely secured the cylindrical die F, free to revolve on its axis. Upon these ends this die is confined in its position by the cylindrical cheek-pieces G, which in their turn are con-

finied by the set-screws H, adjustably secured into the outer ends of the opening. The cylindrical die-holder C is partially cut away in the center to form a transverse slot I, corresponding with the slot B in the die-holder A, to expose a portion of the face of the die F across the slot I and with the ends of the die remaining in the solid portion thereof.

K is an anvil or bed die secured in the top of the holder and projecting with its inclined face L into proximity to the die F. This anvil-die is provided with a shank M, which passes through an adjusting-nut N, secured in the holder, and is secured therein by means of a screw O. This anvil-die is compressed upon its sides to play freely into the slot I of the cylindrical die-holder into proximity with the die F, and it may be adjusted in relation thereto by means of the nut N. If the cylindrical die-holder C is removed, the anvil K may be removed also by unscrewing the nut O. The holder A is provided with devices for clamping it to the saw, and these consist of a stationary jaw P and a movable jaw P', projecting from opposite sides into the recess B. The movable jaw P' is secured free to revolve on its axis upon the clamping-screw R, the head S of which projects to one side of the holder A and is provided with an actuating-lever S', set out sufficiently to clear the lever E.

T is a detachable saw-guide secured to the front face of the handle. This saw-guide is provided with a vertical slot U, which corresponds with the slot B in the handle, and it is adjustably secured to the front face of the handle by means of the set-screws V, engaging into sockets V', and adjusting-screws W are arranged to bear against the under side of the handle upon opposite sides of the slot B to hold the slot-guide in its adjustable position.

In practice the machine is placed upon the saw in the relation shown in Fig. 2, with the saw-tooth to be operated upon projecting between the removable die F and the anvil-die K, the face of which bears against the back of the tooth. To obtain this relation of the anvil-die to the tooth for the different saws to which my machine may be applied, the saw-guide T has to be adjusted up and down to bear with the top T' of its vertical slot on the back of the preceding saw-tooth, as shown in Fig. 2. To prevent any accidental displace-

ment during the operation of swaging which necessarily tends to displace the saw-guide T, the adjusting-nuts W have to be screwed up firmly against the under side of the holder A.

5 To effect the swaging, the operator takes hold with one hand of the lever S' and with the other hand of the lever E and pushes them in opposite directions to each other. By applying suitable power the lever S' tightens the

10 clamp, while the lever E carries the die F in a circular path (owing to its eccentric position in the die-holder) toward the point of the saw-tooth, producing thereby the swaging of the tooth, provided the dies are properly adjusted.

15 It will be seen at the same time that the die F, being loosely secured to the die-holder, will revolve therein and thereby be prevented from wearing out under the operation of swaging. Furthermore, by means of the end ad-

20 justments provided for it in the die-holder its working position in relation to the saw-tooth may be changed. By confining it between cheeks G it is rapidly adjusted longitudinally, readily removed for the purpose of replacing

25 it, and adapted to revolve more freely in its bearings.

What I claim as my invention is—

1. In a saw-swage, the adjustable swage-guide T, provided with slot U and set-screws

30 W, substantially as and for the purpose specified.

2. In a saw-swage, a cylindrical die-holder provided with a longitudinal opening on one side of its center and a transverse slot in the middle of its length corresponding with a

3 transverse slot in the holder, a cylindrical die loosely secured in said opening and extending across the transverse slot in said die-holder, cheek-pieces on opposite sides of said die, and adjusting-screws in the ends of said longi-

4 tudinal opening, substantially as described, and for the purpose set forth.

3. In a saw-swage, a clamping device consisting of the stationary jaw P and the movable jaw P', and the movable jaw being provided with a spindle, the actuating-screw R, in which said spindle is journaled, and the actuating-lever S', secured to that screw, substantially as described.

4. In a saw-swage, a swage-guide T, provided

5 with a vertical slot U, sockets V', set-screws V, and adjusting-screws W, substantially as shown and described, and for the purpose specified.

In testimony whereof I affix my signature, in

5 presence of two witnesses, this 15th day of December, 1888.

COLLINGWOOD CAMPBELL.

Witnesses:

J. PAUL MAYER,
P. M. HURLBERT.