

No. 608,494.

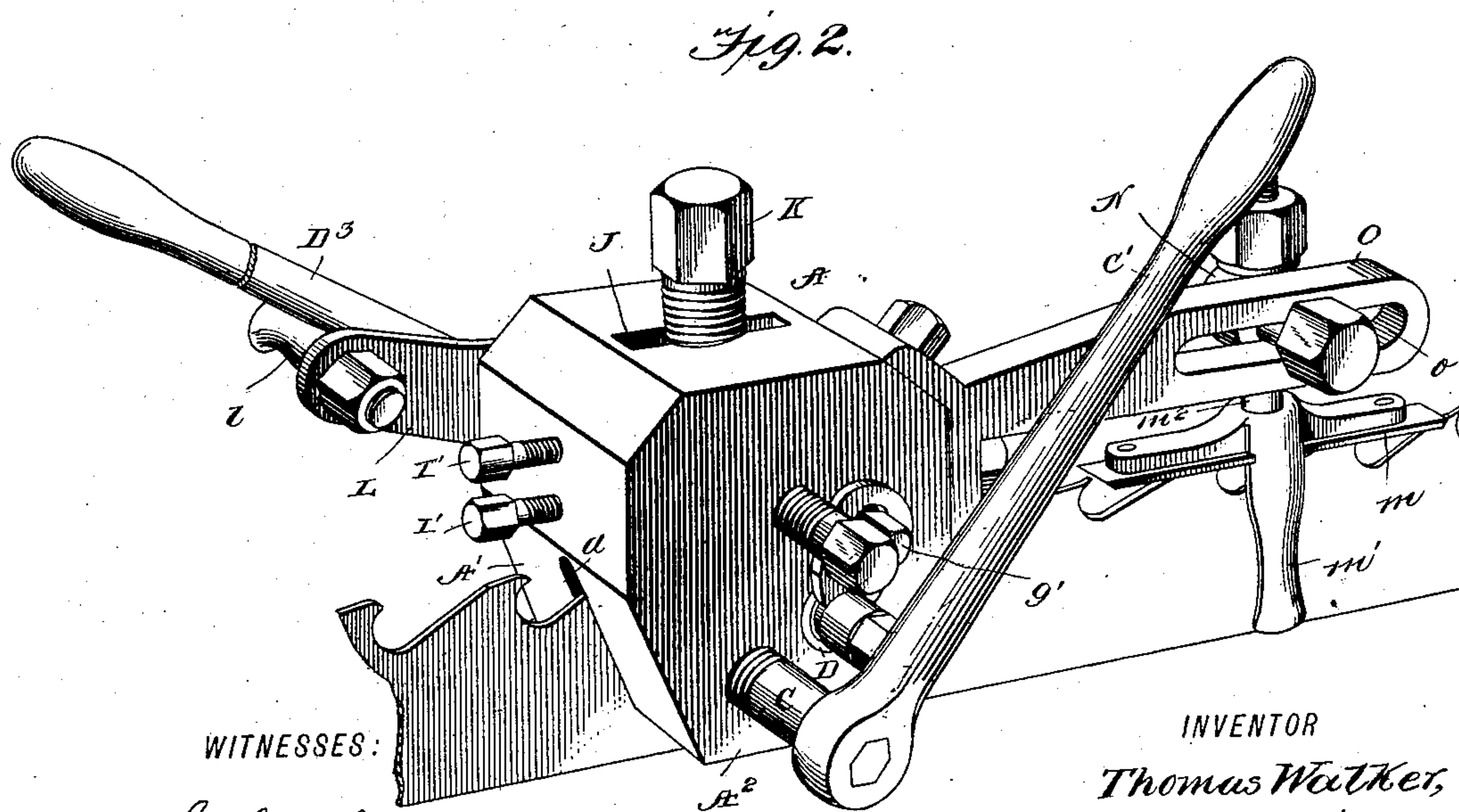
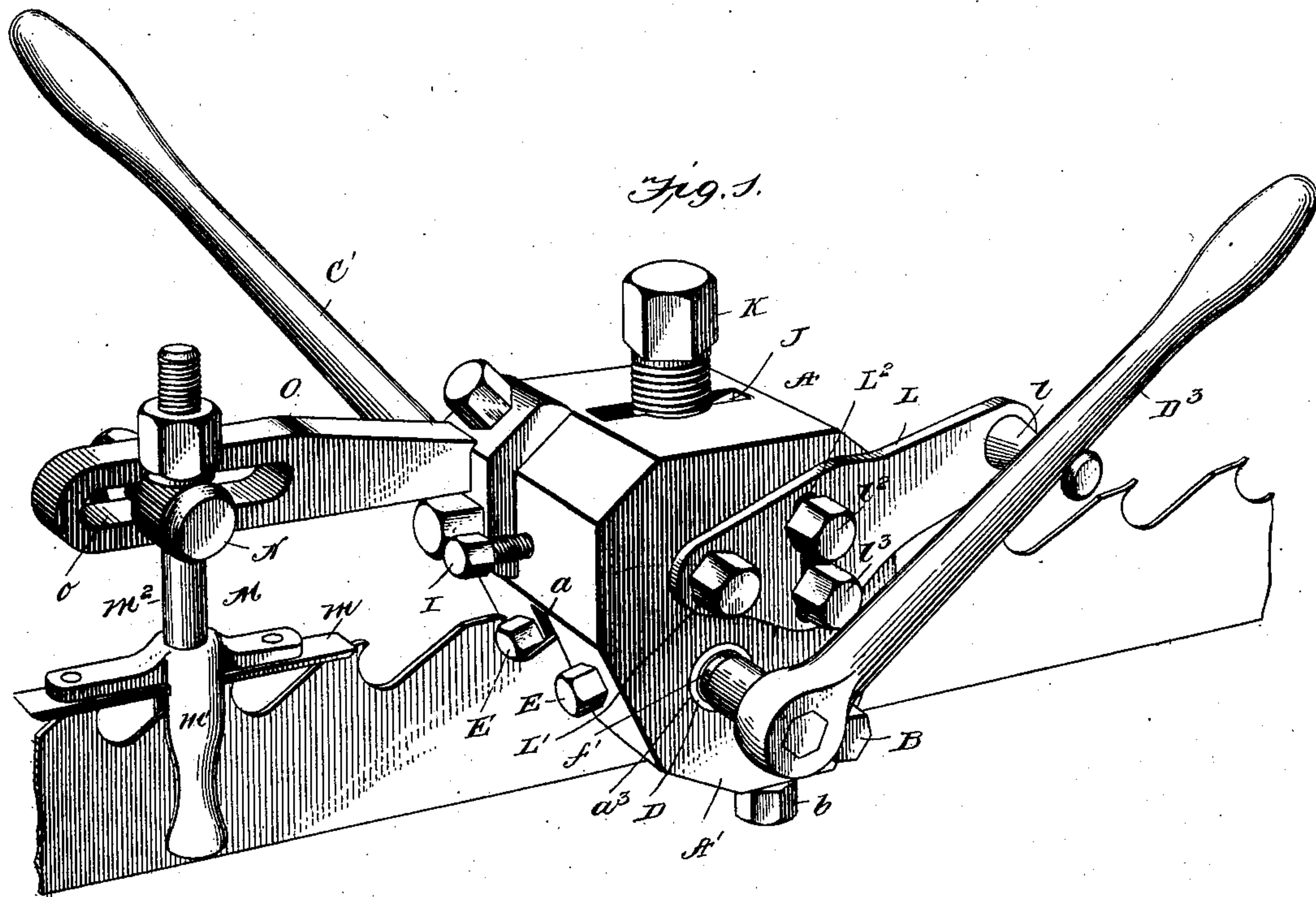
Patented Aug. 2, 1898.

T. WALKER.
SAW SWAGE.

(Application filed Mar. 18, 1896. Renewed Jan. 8, 1898.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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INVENTOR

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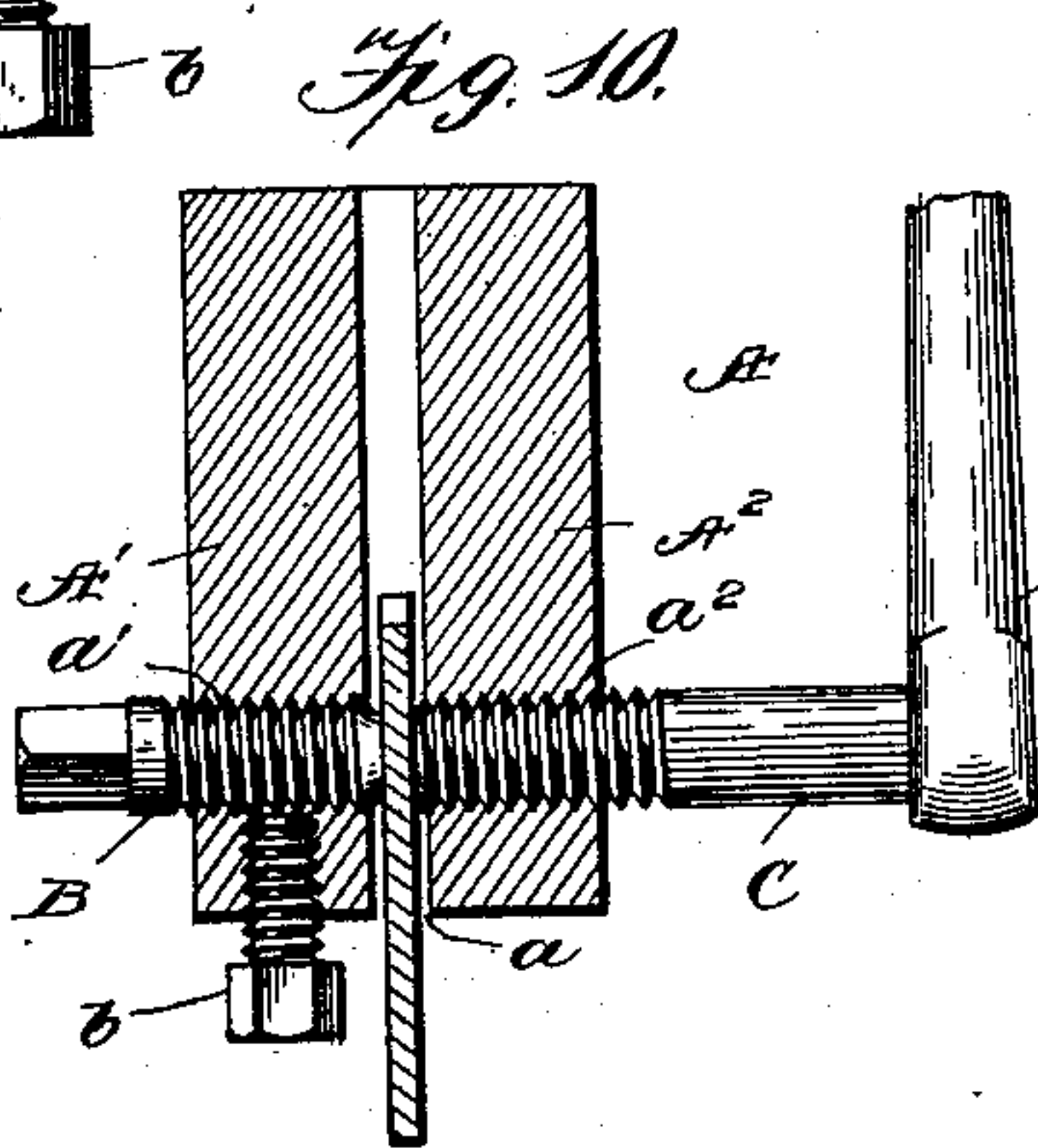
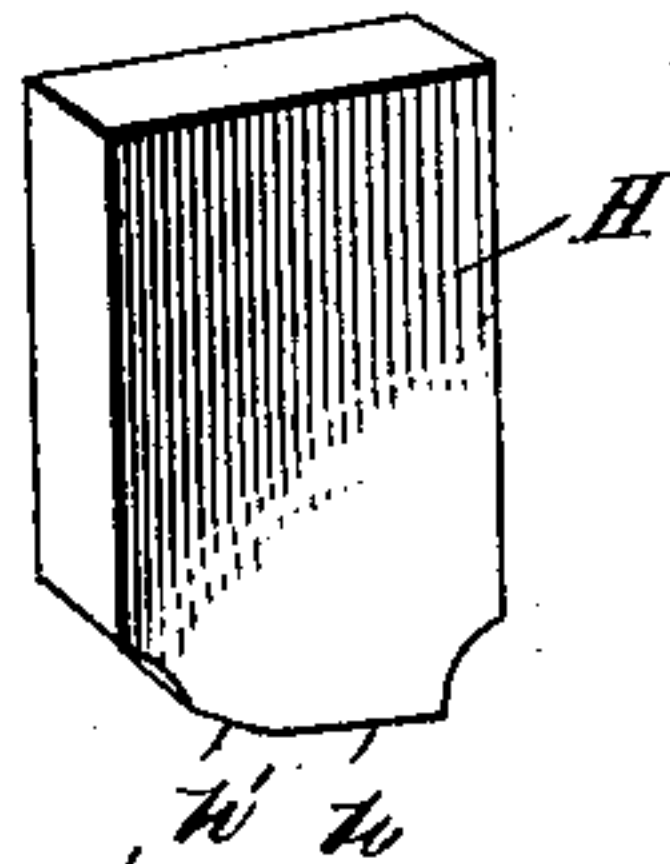
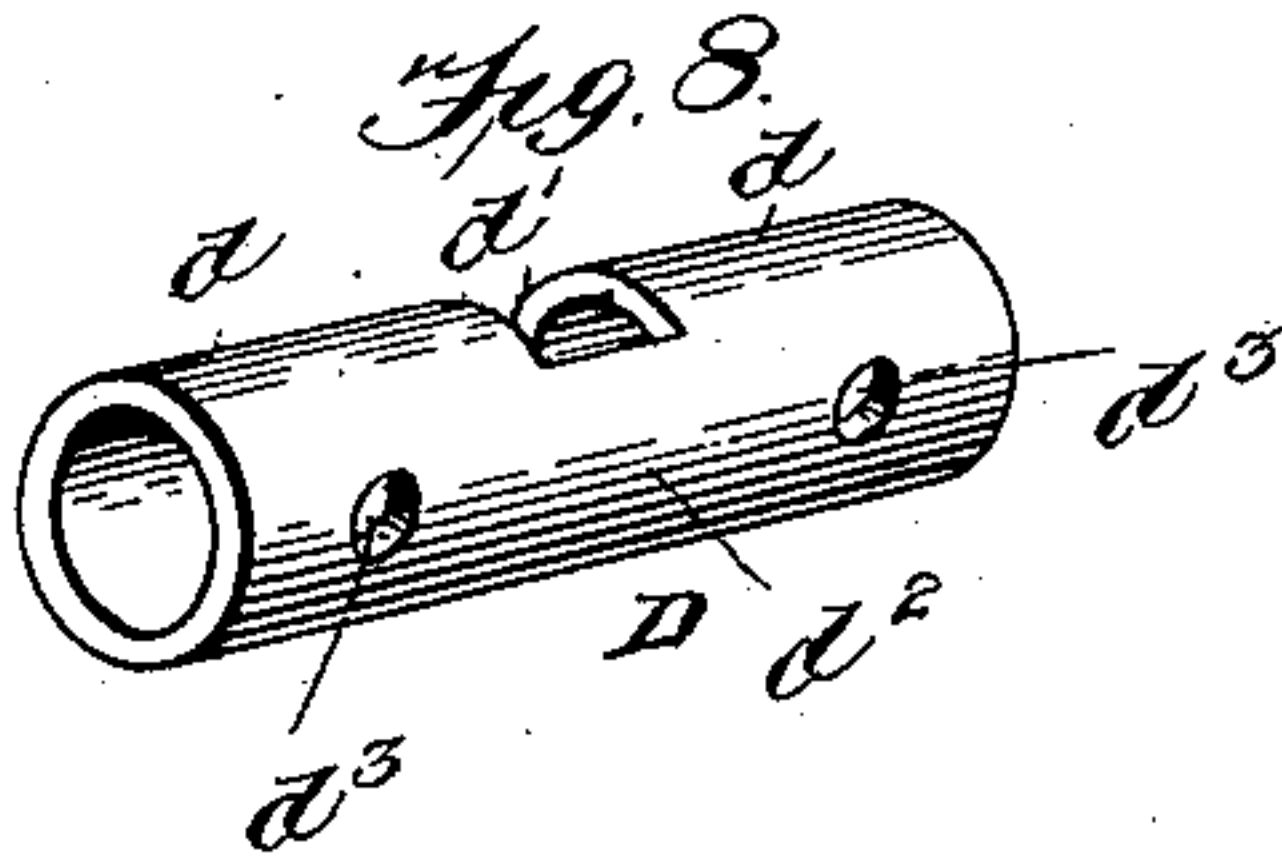
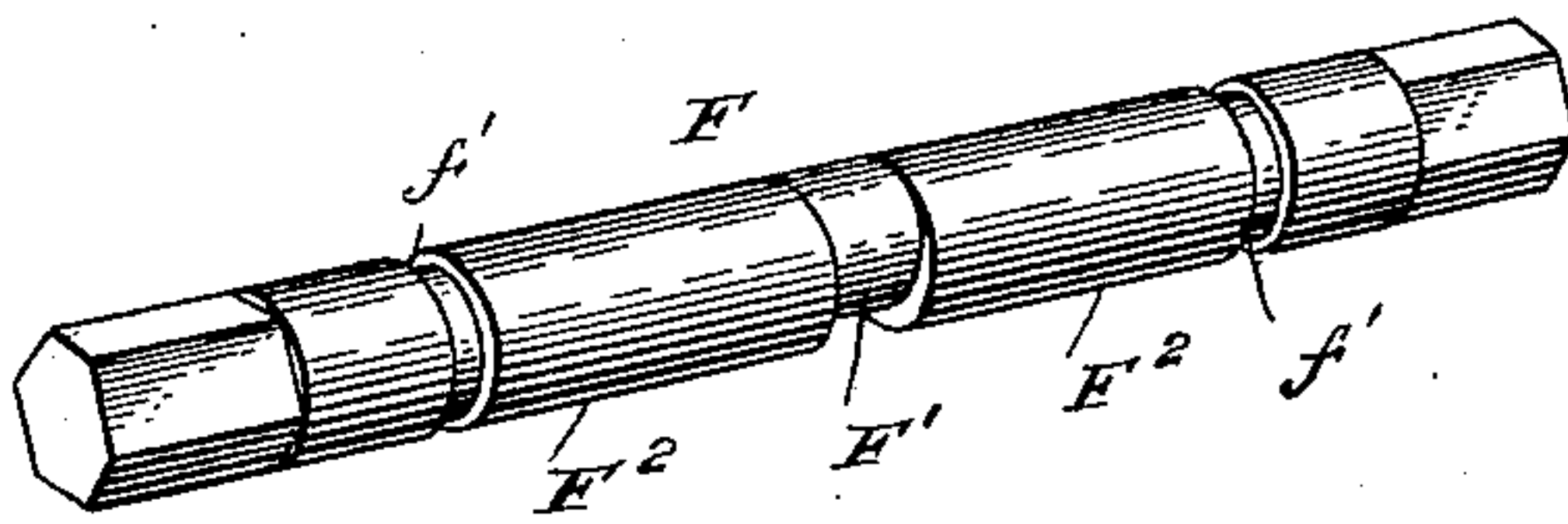
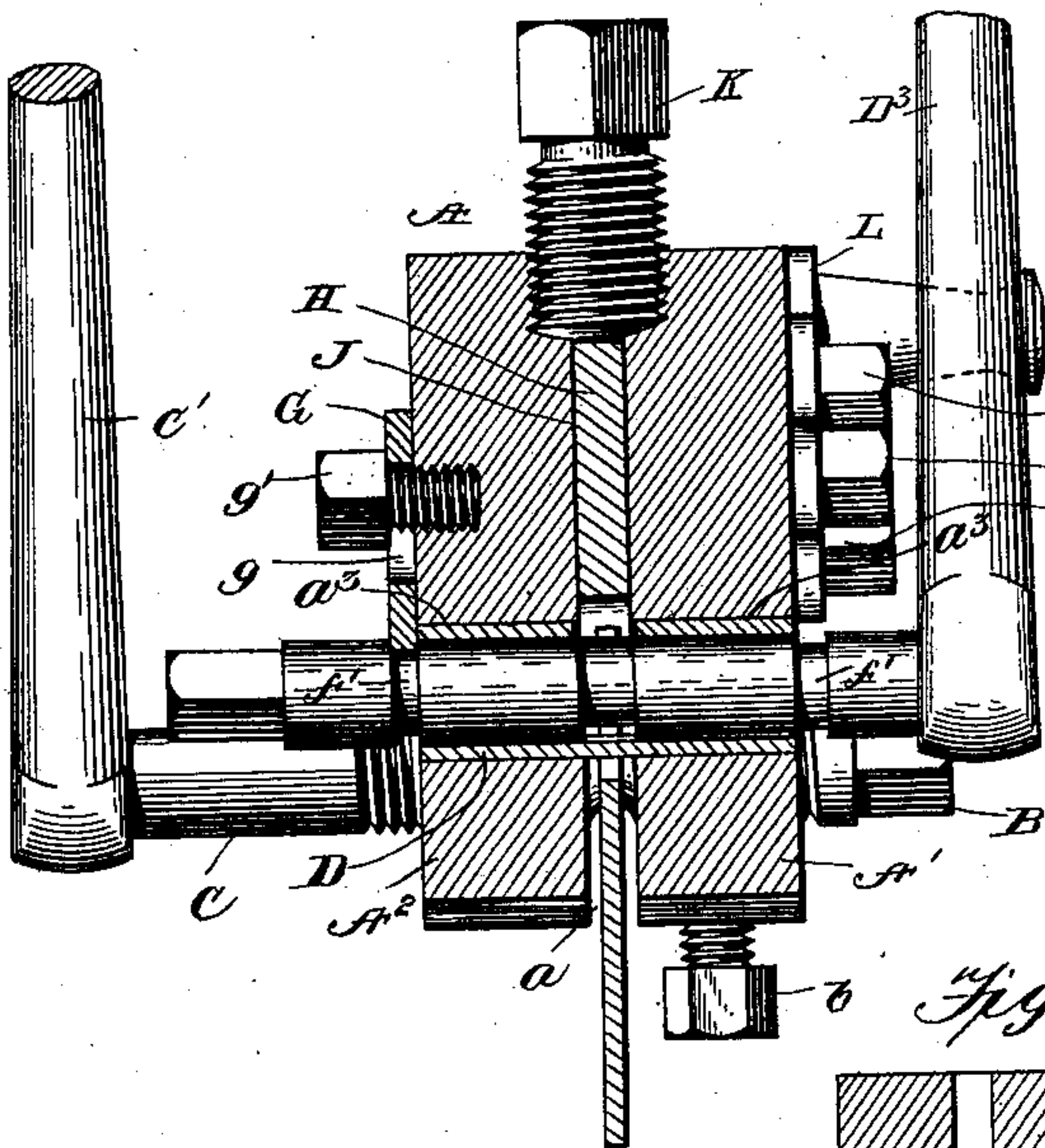
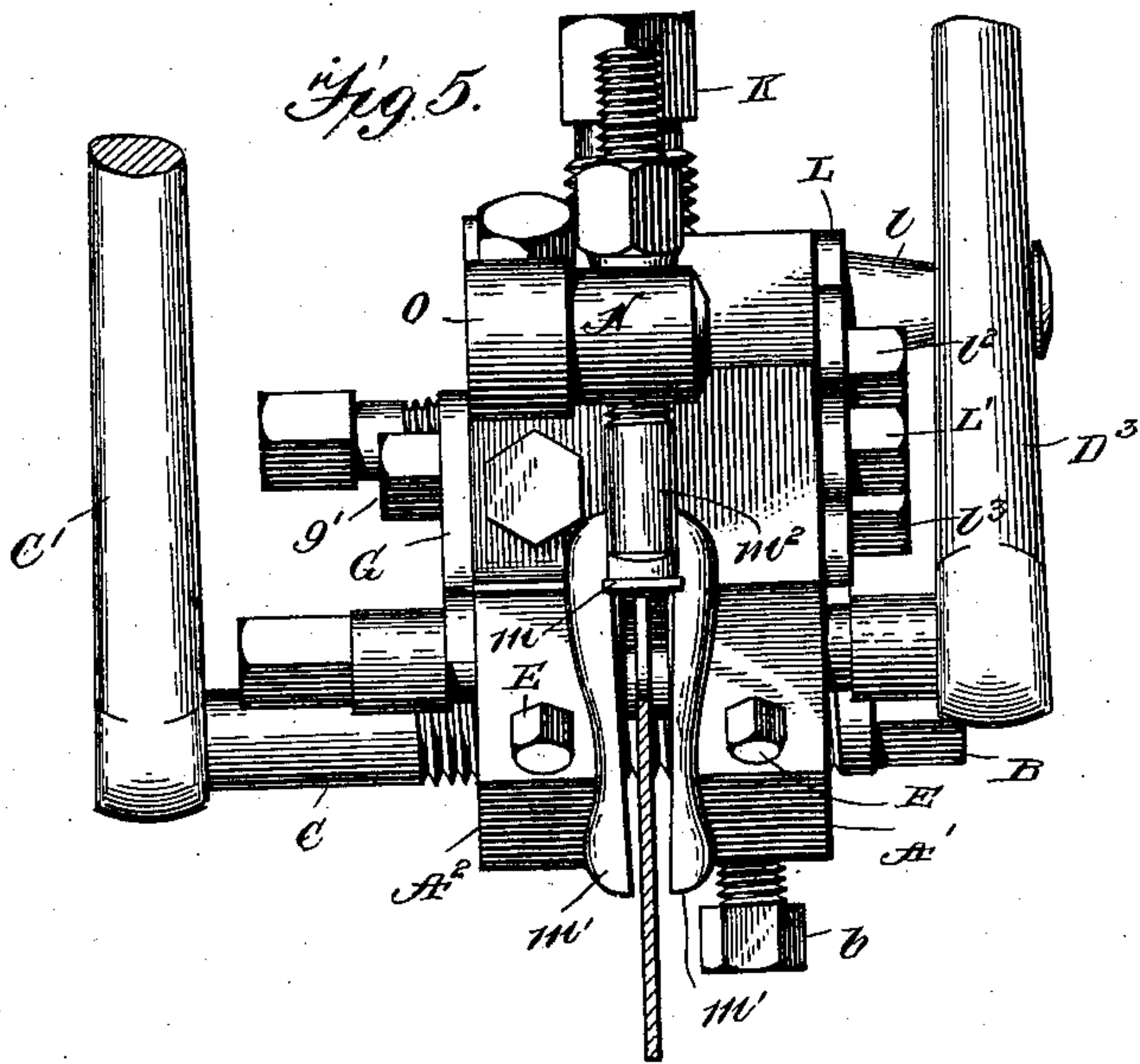
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3 Sheets—Sheet 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS WALKER, OF SIDNAW, MICHIGAN.

SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 608,494, dated August 2, 1898.

Application filed March 18, 1896. Renewed January 8, 1898. Serial No. 666,100. (No model.)

To all whom it may concern:

Be it known that I, THOMAS WALKER, residing at Sidnaw, in the county of Houghton and State of Michigan, have invented a new and Improved Saw-Swage, of which the following is a specification.

My invention relates to certain improvements in saw-swaging devices; and it primarily seeks to provide a device of this character of a simple and economical construction which can be easily manipulated and which will effectively serve for its intended purposes.

My invention also seeks to provide a saw-swaging means having peculiarly constructed and arranged die devices which can be so adjusted without changing the angle thereof to the hook of the teeth as to swage the back as well as the face uniformly and positively.

With other objects in view, which hereinafter will be referred to, my invention consists in the peculiar combination and novel arrangement of parts, such as will be first described in detail and then be specifically pointed out in the appended claim, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved saw-swaging device as applied for use. Fig. 2 is a similar view showing the opposite side of the swager from that shown in Fig. 1. Fig. 3 is a longitudinal section of the same, partly in side elevation. Fig. 4 is a top plan view thereof. Fig. 5 is an end elevation. Fig. 6 is a transverse section taken on the line 6 6 of Fig. 3. Fig. 7 is a detail view of the eccentric shaft hereinafter referred to. Fig. 8 is a detail view of the reversible bearing sleeve or bushing. Fig. 9 is a detail view of the anvil-die, and Fig. 10 is a detail cross-section taken through the said clamp portion hereinafter referred to.

In its practical construction my improved swage comprises a body portion A, having a saw-receiving channel-way a formed between the depending portions A' A^2 , between which the saw-blade is adapted to be clamped in the manner best illustrated in Fig. 10, by reference to which it will be seen the depending portion A' of the body has a threaded open-

ing a' , in which is fitted the adjustable clamp-screw B, and which is adapted to be held to any of its adjusted positions by the bearing-screw b , which passes upward through a threaded opening in the said member A' , as shown. In the portion A^2 , preferably opposite the opening a' , is a similar threaded opening a^2 , in which is fitted a bearing-screw C, the outer end of which has a handle member C' , whereby the said screw C can be conveniently moved in or out, as required.

By providing clamping means as above described it is manifest the screw B can be first adjusted to bear against one face of the saw and held fixed to its position, after which the screw C can be moved against the opposite face of the blade, and thereby securely clamp it in position during the swaging operation.

In the bifurcated portion of the swage-body is formed suitable openings a^3 a^3 , in which is held the double bushing member D, the detailed construction of which is best illustrated in Fig. 8, and which comprises the circular end bearing members d d , the central cut-away portion d' , and the joining portion d^2 , the end members d d being provided with apertures d^3 to receive the ends of the binding or set screws E E, which pass up into the pendent portion $A' A^2$, as shown.

In the practical construction the cut-away portion, the apertures d^3 , and set-screws E are so arranged relatively that the cut-away portion d' will be so disposed as to admit of the free engagement of the saw-teeth with the anvil, as most clearly shown in Fig. 3.

The object in providing the double or connected bushing members is to admit of the said bushing member being withdrawn, reversed, and reinserted when one side becomes worn, so as to bring the unworn or opposite face in place to receive the pressure or wear of the eccentric shaft, the half-ring or connecting-piece in center being also so disposed as to keep the eccentric die from wearing on the working part when moving from tooth to tooth when in use.

By providing bushing members joined as described the same bushings can be used for double wear. Furthermore, by making the bushings removable new bushings can be em-

ployed, which bushings can be of different diameters to admit of eccentrics being employed having a larger diameter than their bearings.

F indicates the eccentric shaft, which is journaled in the bushing D and has a central eccentric part F' formed between the enlargements F² F² in such a manner as to provide a guide *f* for the upper edge of the saw-tooth. The shaft F also has annular grooves *f' f'* to receive the lock-plate G, secured on the outer face of the swage-body, (see Fig. 2,) which plate has a slot *g*, through which passes a set-screw *g'*, that serves to retain the said plate G in position to insure the holding of the eccentric shaft within its bearings and against danger of longitudinal movement.

The swage-body A has a suitable slotway J in the top, in which is held a vertically and laterally adjustable anvil II, the lower end of which is preferably provided with highly-tempered bearing-faces *h h'*, one of which, *h*, is made straight, while the other, *h'*, is made at an angle or curve to fit the hook of the tooth.

It will be observed by reference to Fig. 3 the anvil or die II is made smaller than the slot or mortise in which it is fitted, and such die is made laterally adjustable by means of the set-screws I I' I', so that it can be set so its face *h* can be made to fit the back of any length of tooth and with its face *h'* to engage the back or hook end of the tooth, such adjustment also admitting the setting of the hook-face *h'* over the center of the eccentric, and thereby admitting of swaging the back of the tooth, as well as the throat or front.

The anvil II is held down by means of a large set-screw K, which engages threaded portions *k k* in the side walls of the slotway J.

By making the anvil laterally adjustable it is manifest that the same anvil can be set to operate on different sizes of teeth, it being manifest, however, that for different shapes of saw-teeth different-angled anvil or die members may be used.

By giving the desired angle to the working face of the anvil the swage can be maintained at a vertical position for any form of tooth and the necessity of tipping the swage in order to modify the shape to be given to the tooth entirely avoided. Furthermore, the anvil can have the tips or wearing-faces ground to a templet, thereby insuring exactness of shape and enabling all the teeth to be swaged the same.

In order to determine with exactness the position of the eccentric D at the beginning of the swaging operation, I provide an adjustable stop L, the extension *l* of which serves to limit the backward movement of the handle D³, whereby the eccentric is operated. This stop L is preferably made adjustable by being pivotally mounted at L' on a stud-bolt and provided with a slot L², in which works an adjusting-screw *l²* and jam-screw *l³*. Thus it will be seen as the handle D³ is swung backward it will contact with the extension

l of the stop, and consequently determine with exactness the position of the eccentric D and the space of clearance between this eccentric and the anvil.

To the body of the swage is adjustably connected a guide or saddle M, the purpose of which is to prevent the swage from tipping and insures that the eccentric and the anvil shall always maintain the same position when operating to swage the saw-teeth alike. By adjusting the saddle or guide M either upward or downward the position of the body A of the swage, and consequently the position of the eccentric D and anvil II with respect to the saw-teeth, can be varied as desired to suit saws of different kinds. Preferably a hardened steel plate *m* is secured to the saddle M between its depending arms *m'*, such plate being replaceable and serving to avoid wear upon the saddle M.

The preferred manner of adjustably supporting the guide or saddle M is that shown in the drawings and most clearly in Figs. 1 and 2, by reference to which it will be seen the saddle M has a shank *m²*, which is vertically adjustable in a stud member N, longitudinally adjustable in the slot *o* in the bracket-arm O, detachably connected to the swage-body at one side, as clearly shown.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete operation of my improved saw-swage will be readily understood by those skilled in the art to which it appertains. The saw to be swaged will be placed in the channel *a* and held between the set-screws B and C, the operator by means of the handle C' turning the screw C sufficient to firmly hold the blade in position with one of the teeth between the eccentric and the anvil or die. At such time the guide or saddle M rests on the tops of the saw-teeth, as shown. The operator then moves the handle D³, so as to cause the eccentric to bear upon that part of the saw-tooth between the eccentric and the adjacent working faces of the anvil, it being understood that the handle D³ at this time will be turned in the direction from the throat toward the point of the tooth, thus drawing and spreading the tooth-point in order to give thereto the desired shape. By this means an impression is made on the tip, as well as the toothed side of the tooth-point, which in practice is found to be of material advantage, as it gives better clearance to the back of the saw-tooth points.

While I prefer to arrange the several parts of my invention as illustrated in the accompanying drawings, it is manifest that the precise details of construction above described and shown in the drawings may be varied or modified by the skilled mechanic without departing from the broad idea of my invention.

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

In a saw-swage, the combination of a slot-

ted body, with an anvil therein, a double-
ended reversible shaft having an eccentric
portion, and an annular groove near each end
flush with the side of the body, a reversible
5 bushing adapted to surround the shaft and
flush at each end with the side of the body,
a locking-plate secured to the body and adapt-
ed to engage in either of the annular grooves

of said shaft, so as to lock it and the bushing
against endwise displacement, all substan- 10
tially as set forth.

THOMAS WALKER.

Witnesses:

ESTHER HOUSER,
GEORGE H. HOUSER.