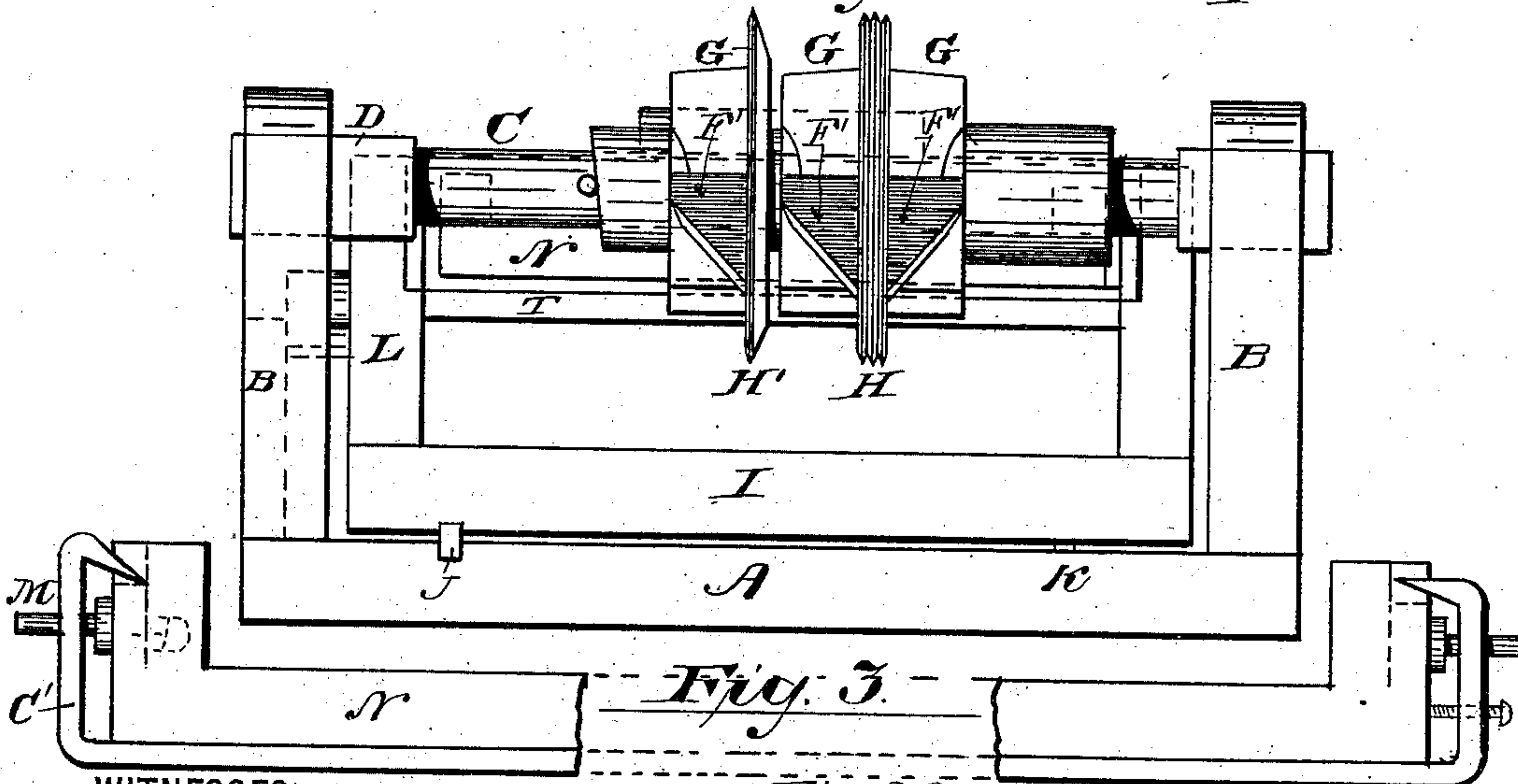
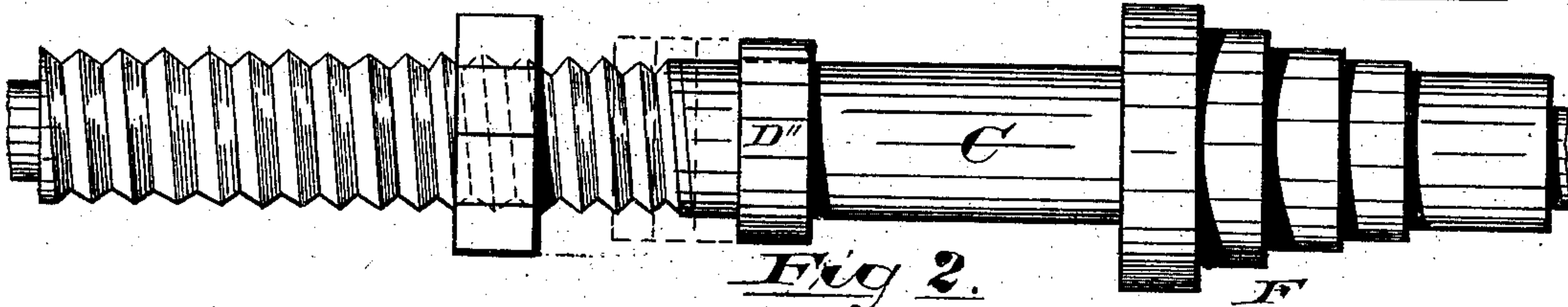
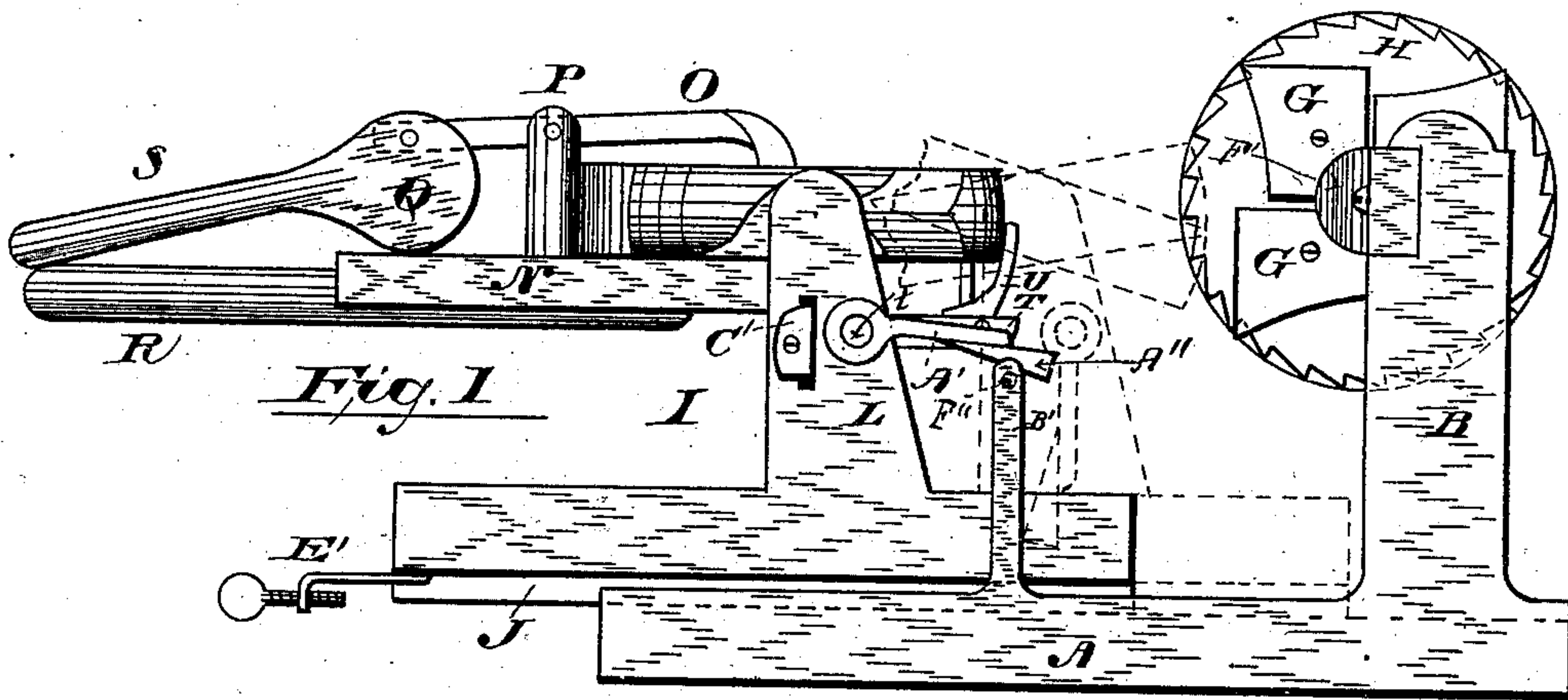


4 Sheets—Sheet 1.

MACHINE FOR FORMING SAW HANDLES.

Patented May 1, 1888.



WITNESSES:

Fig. 22

INVENTOR:

Jos. C. Farr.
 Wm. S. Corwin,

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(No Model.)

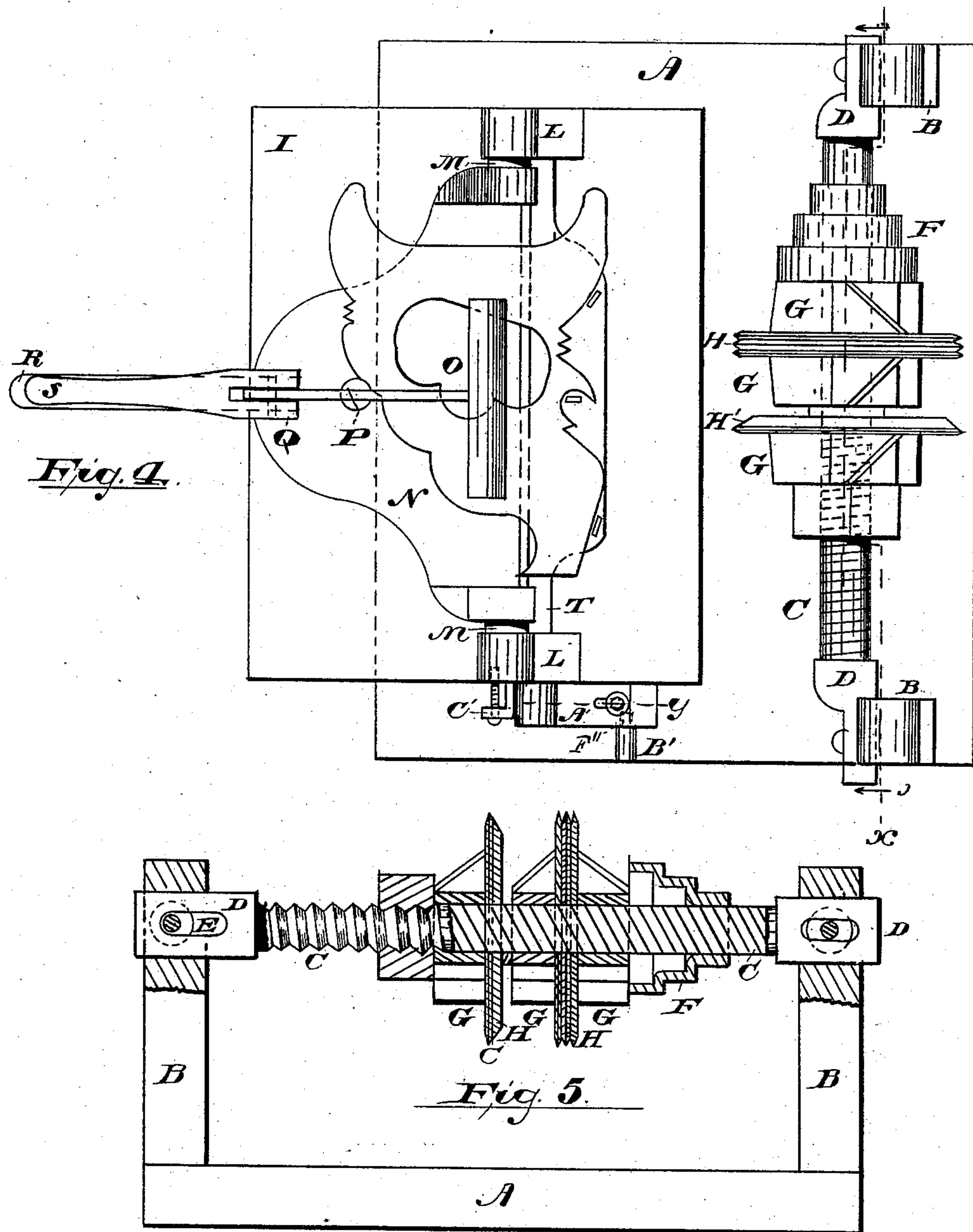
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C. L. S. WALKER.

MACHINE FOR FORMING SAW HANDLES.

No. 382,064.

Patented May 1, 1888.



WITNESSES:

Jos. C. Farr.
H. S. Corwin.

INVENTOR:

Chauncey L. S. Walker,

BY Drake & Co. ATT'YS

(No Model.)

4 Sheets—Sheet 3.

C. L. S. WALKER.

MACHINE FOR FORMING SAW HANDLES.

No. 382,064.

Patented May 1, 1888.

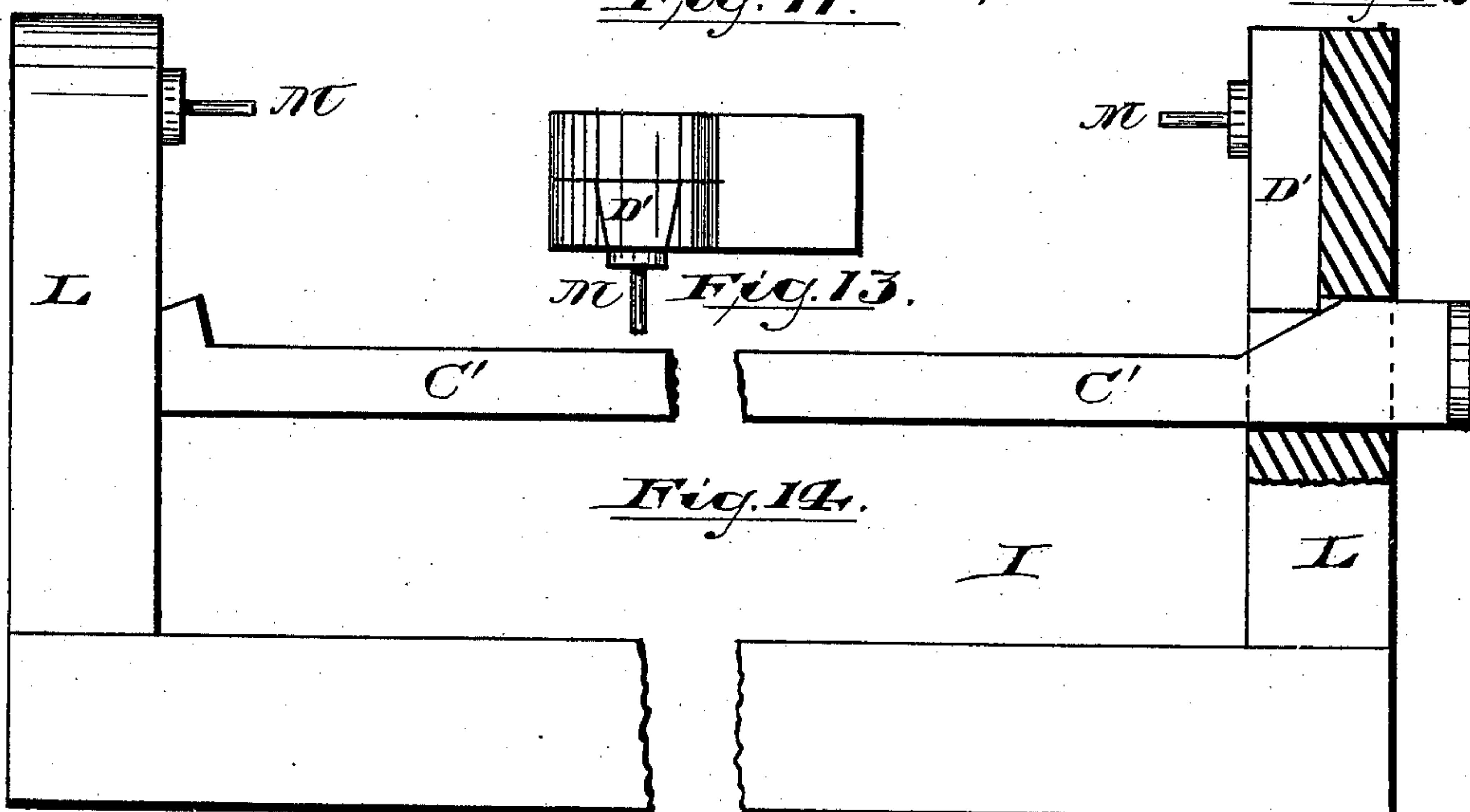
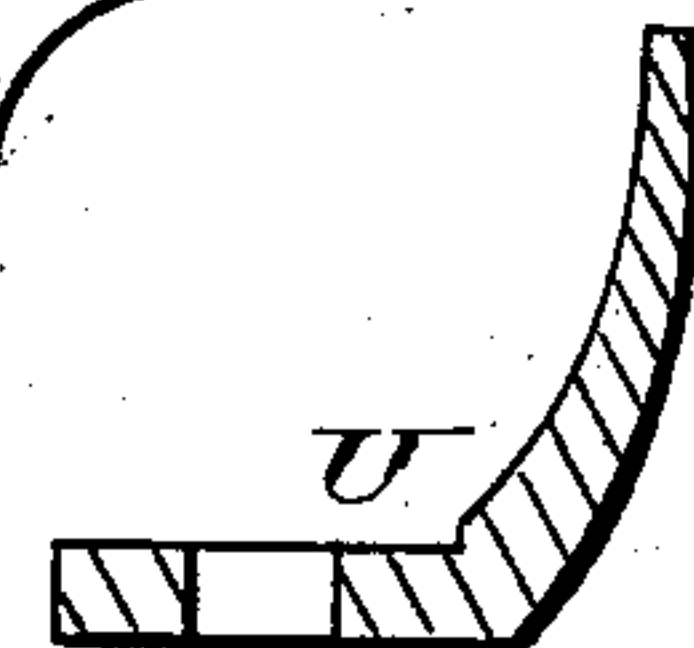
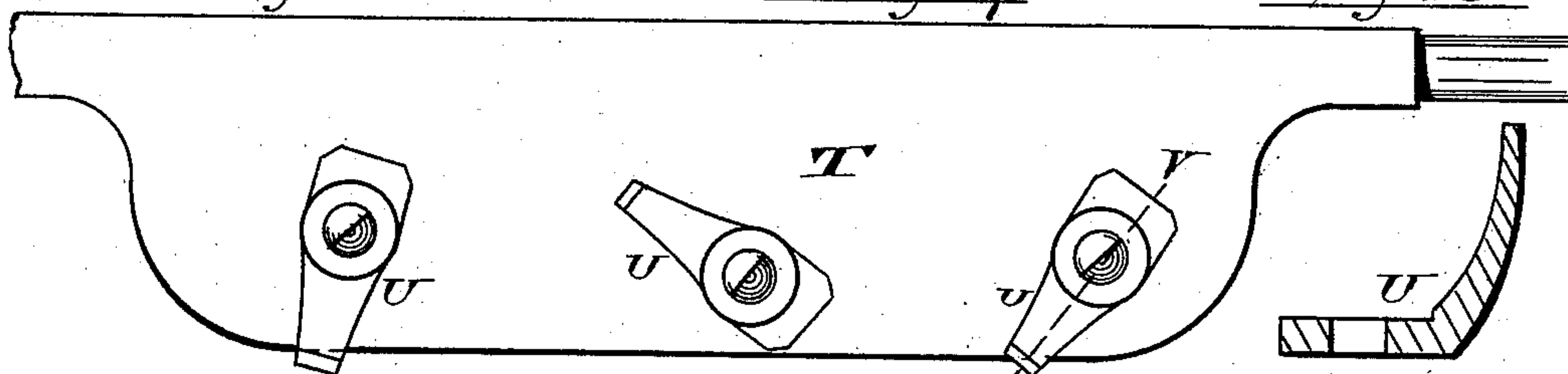
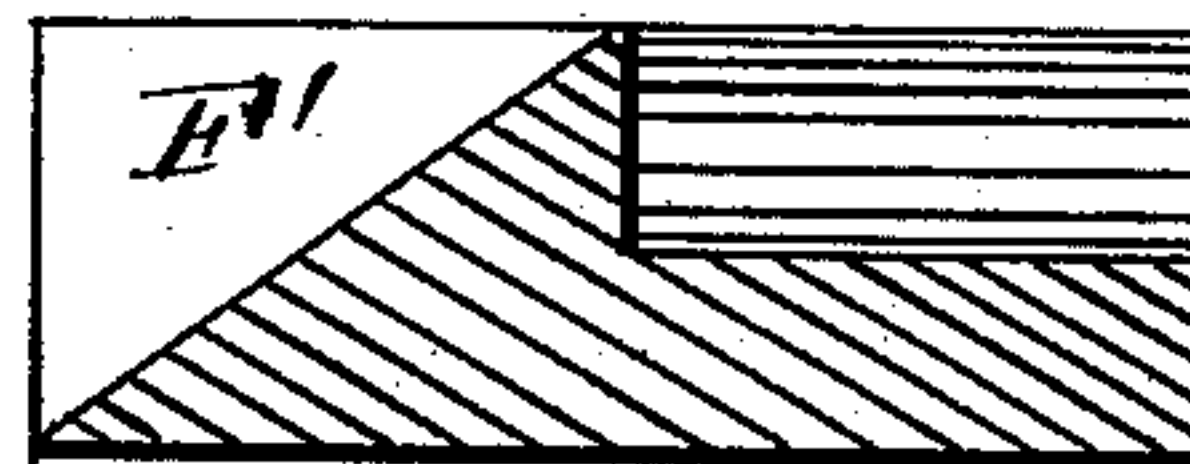
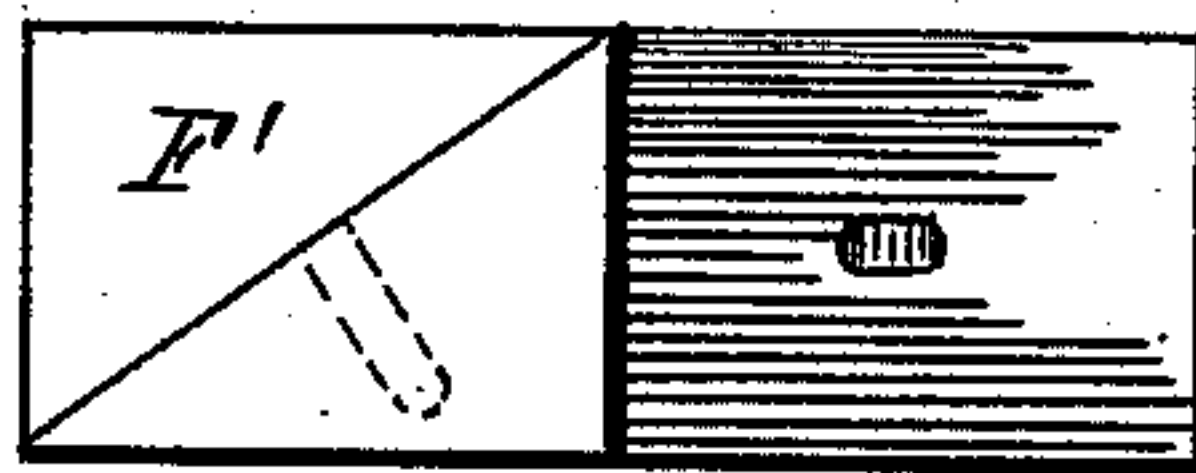
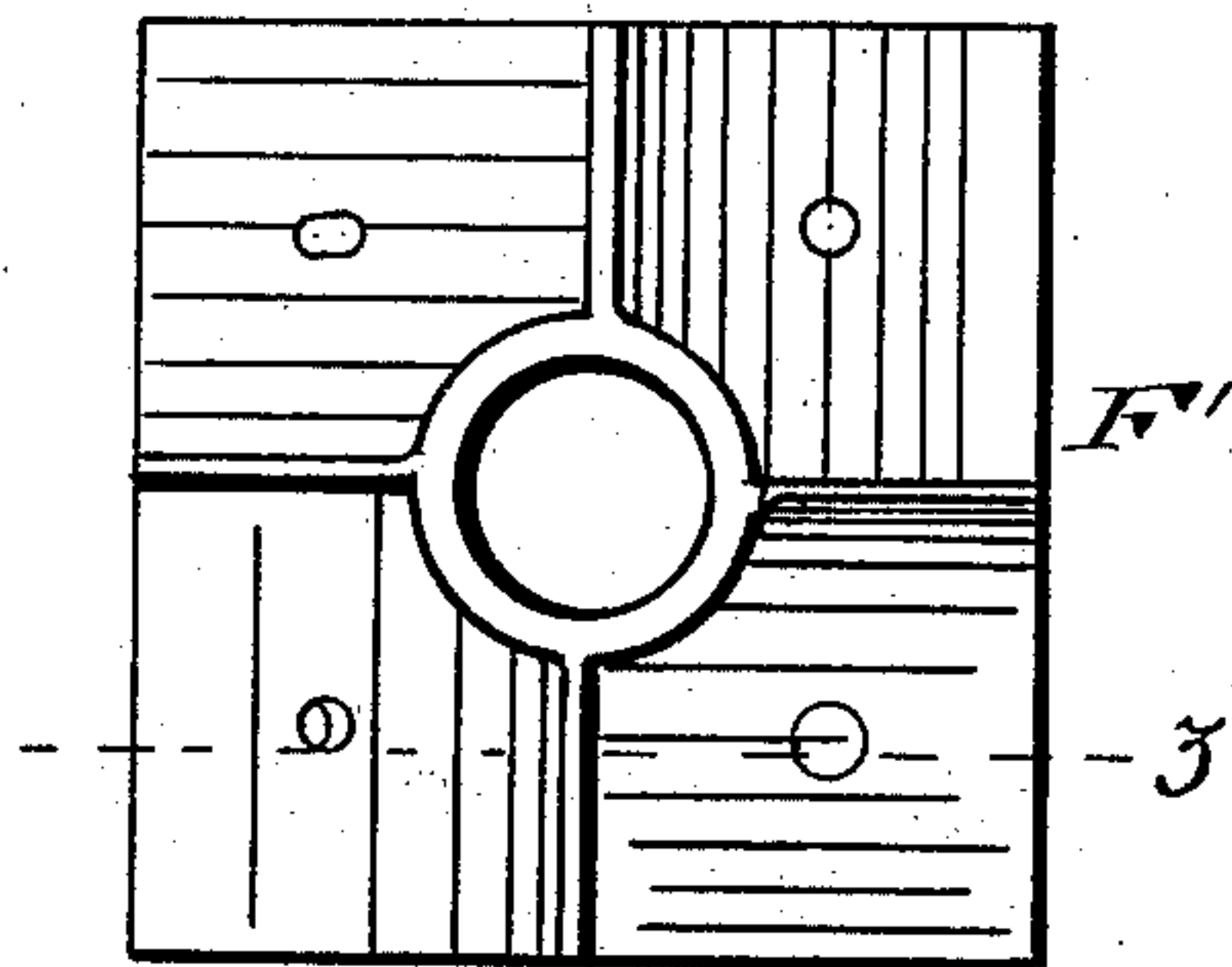
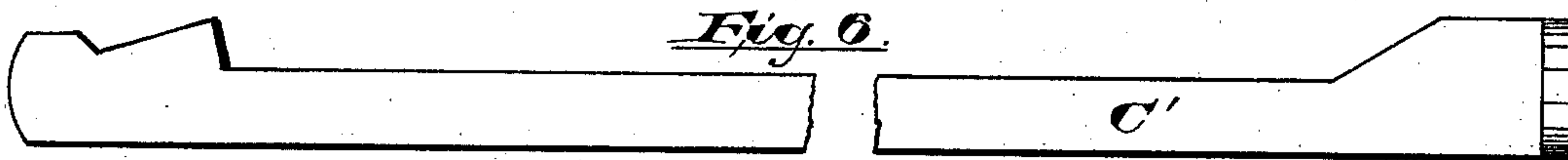


Fig. 14.

WITNESSES:

INVENTOR:

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(No Model.)

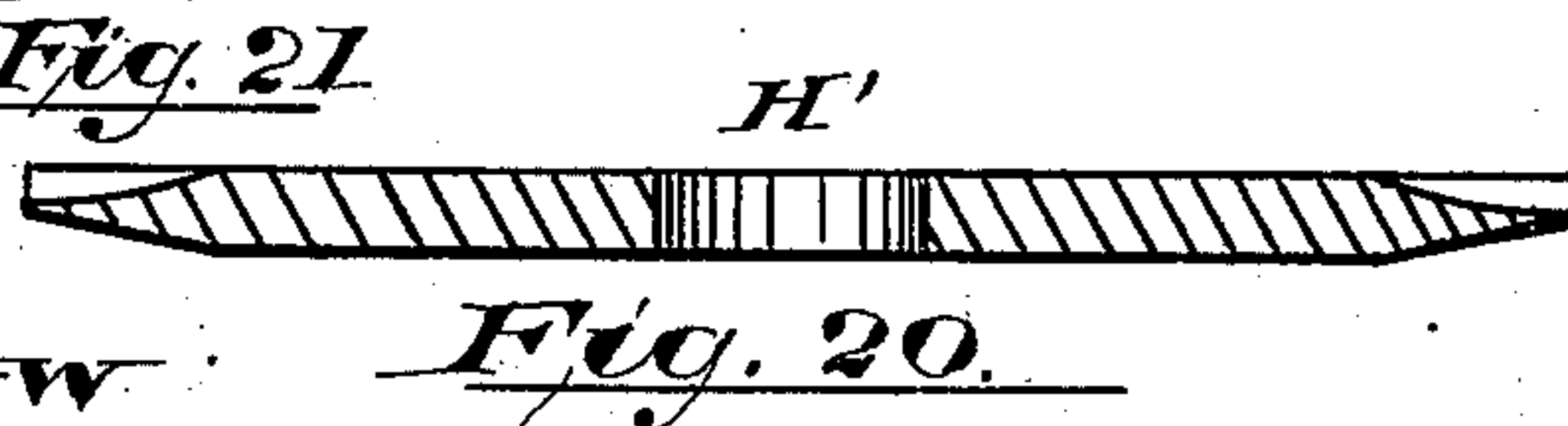
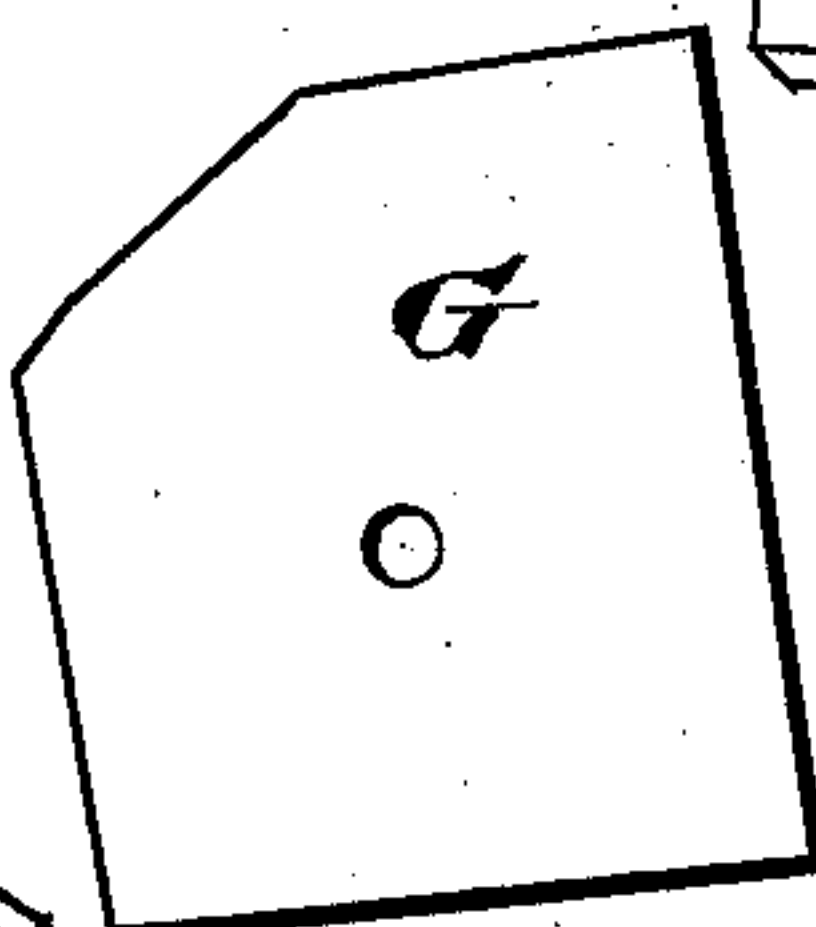
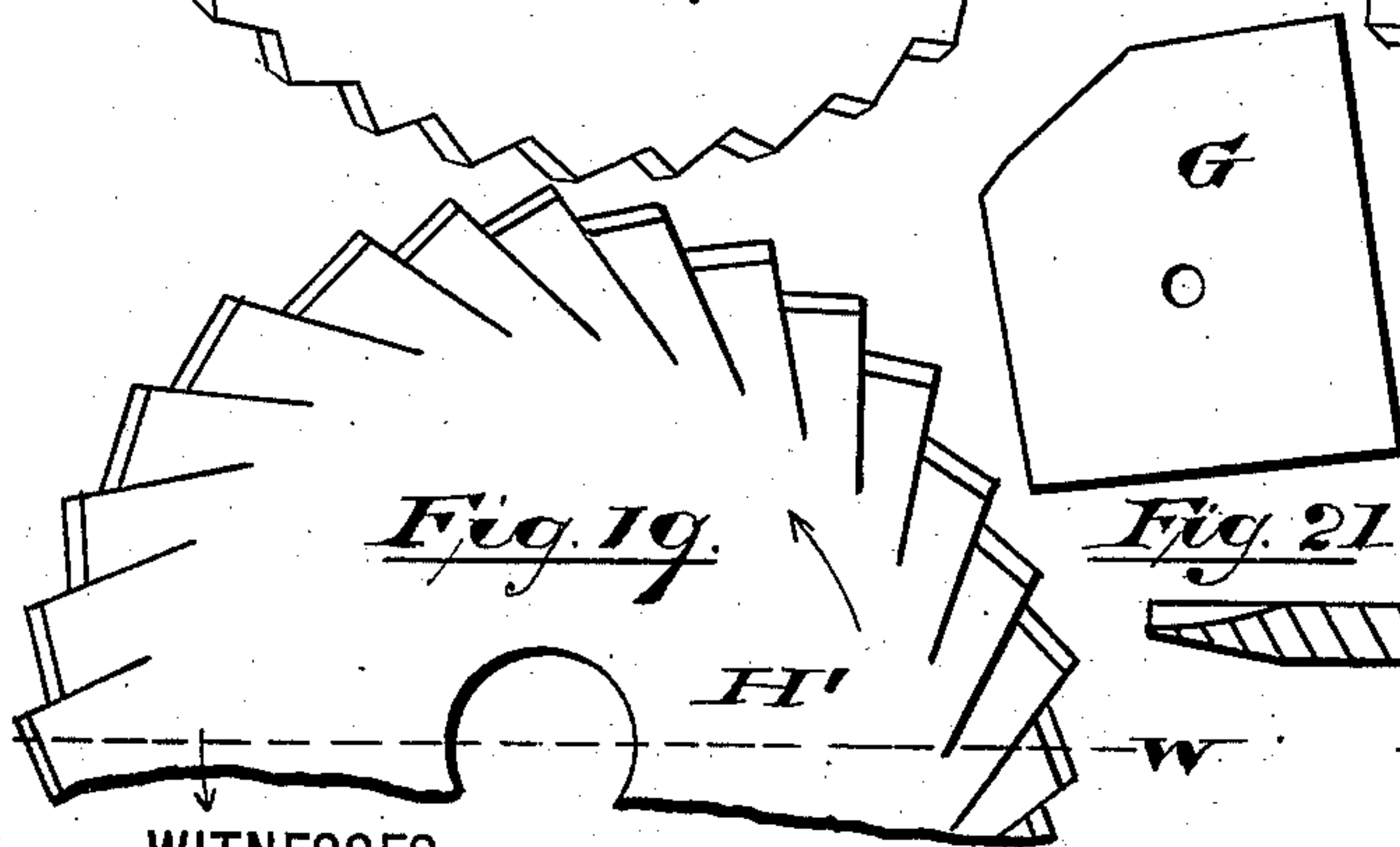
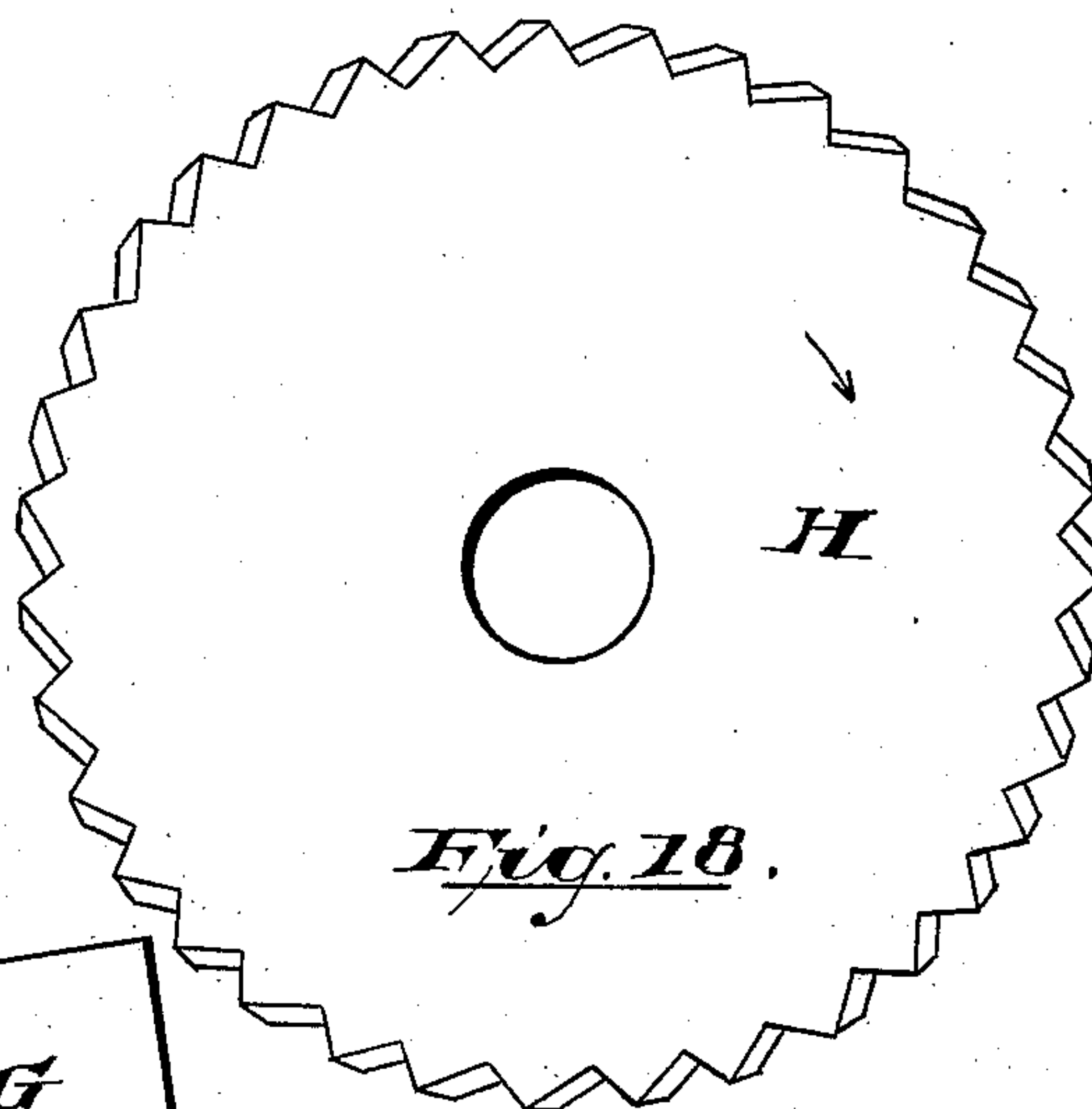
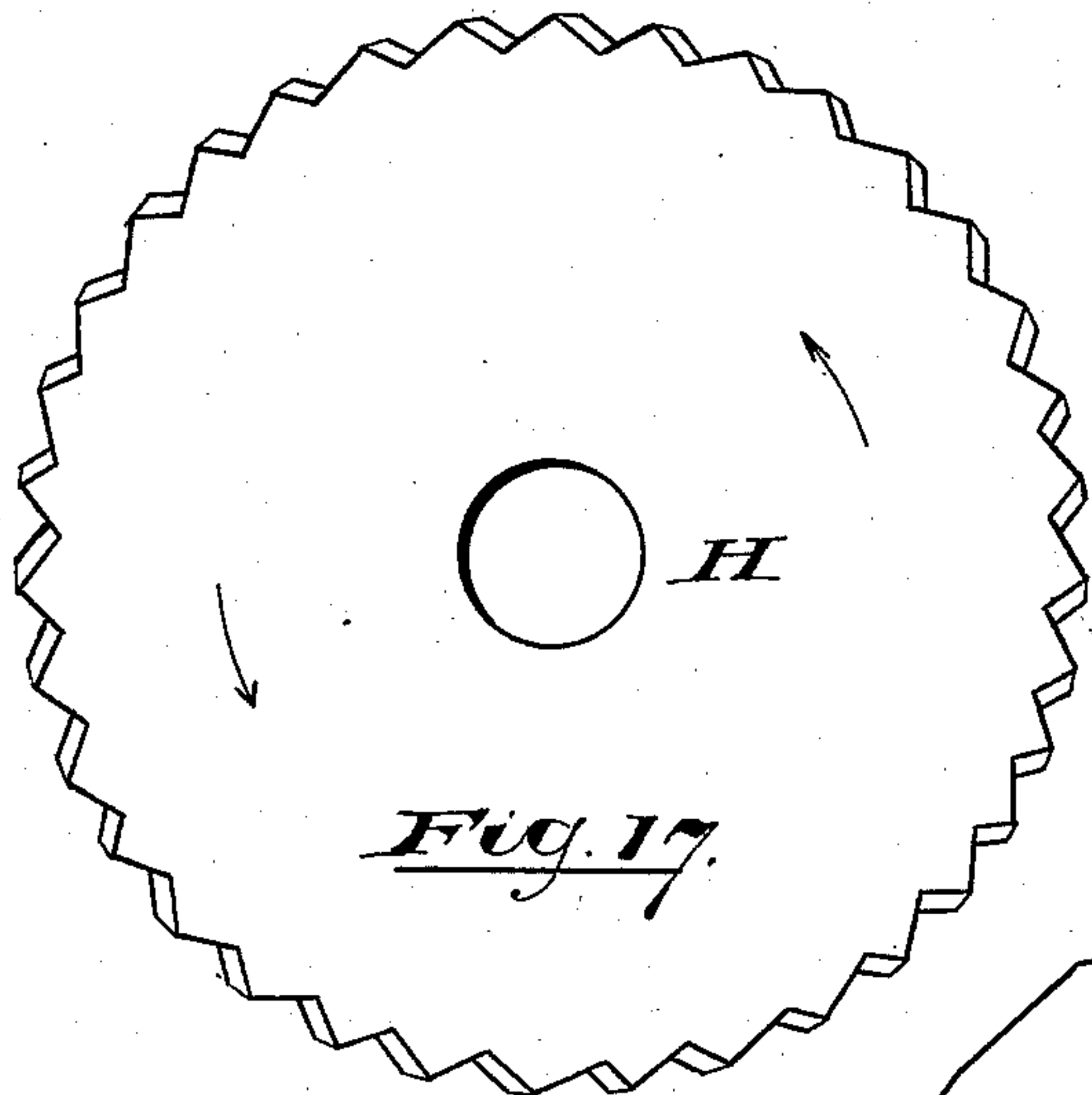
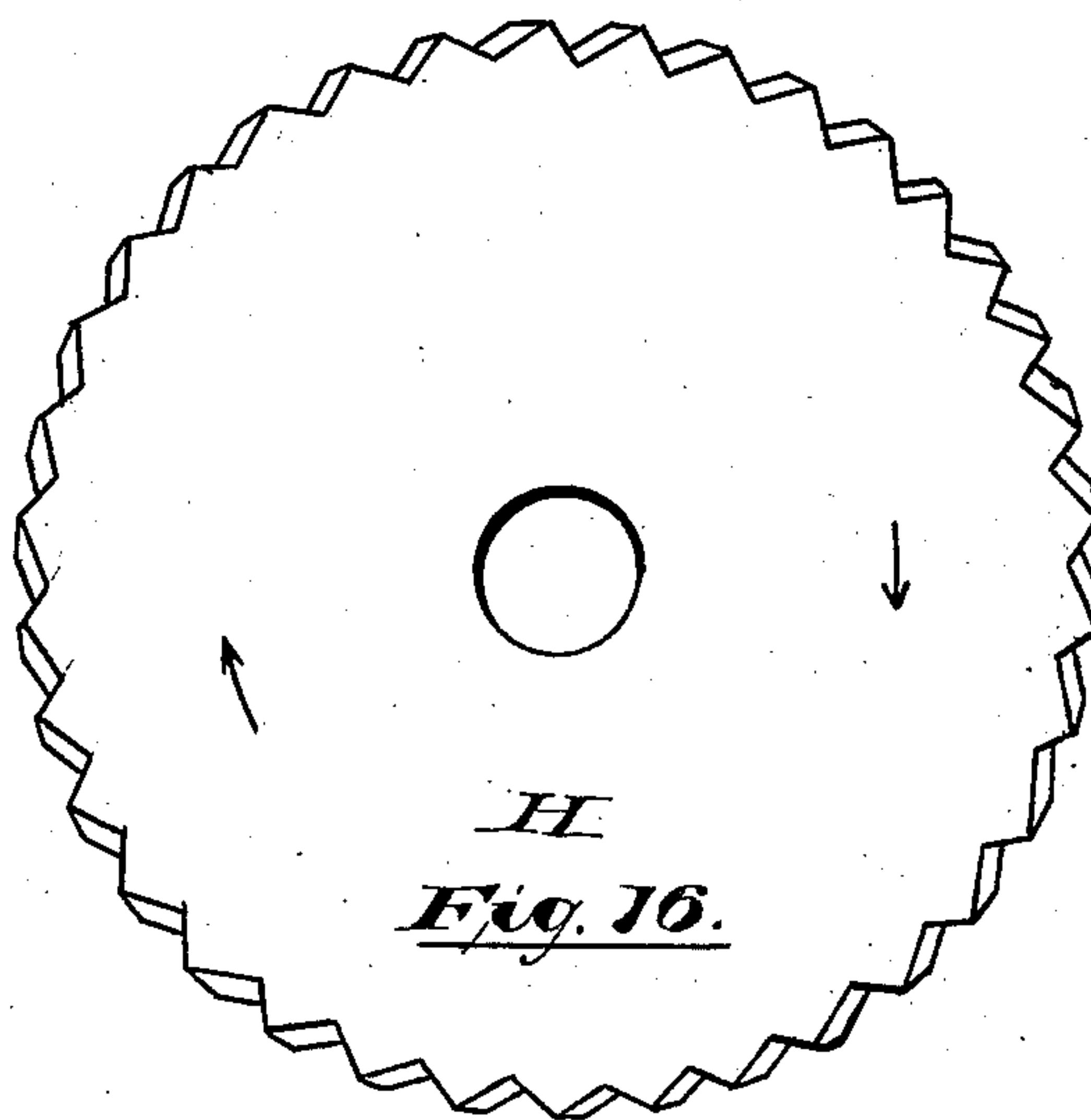
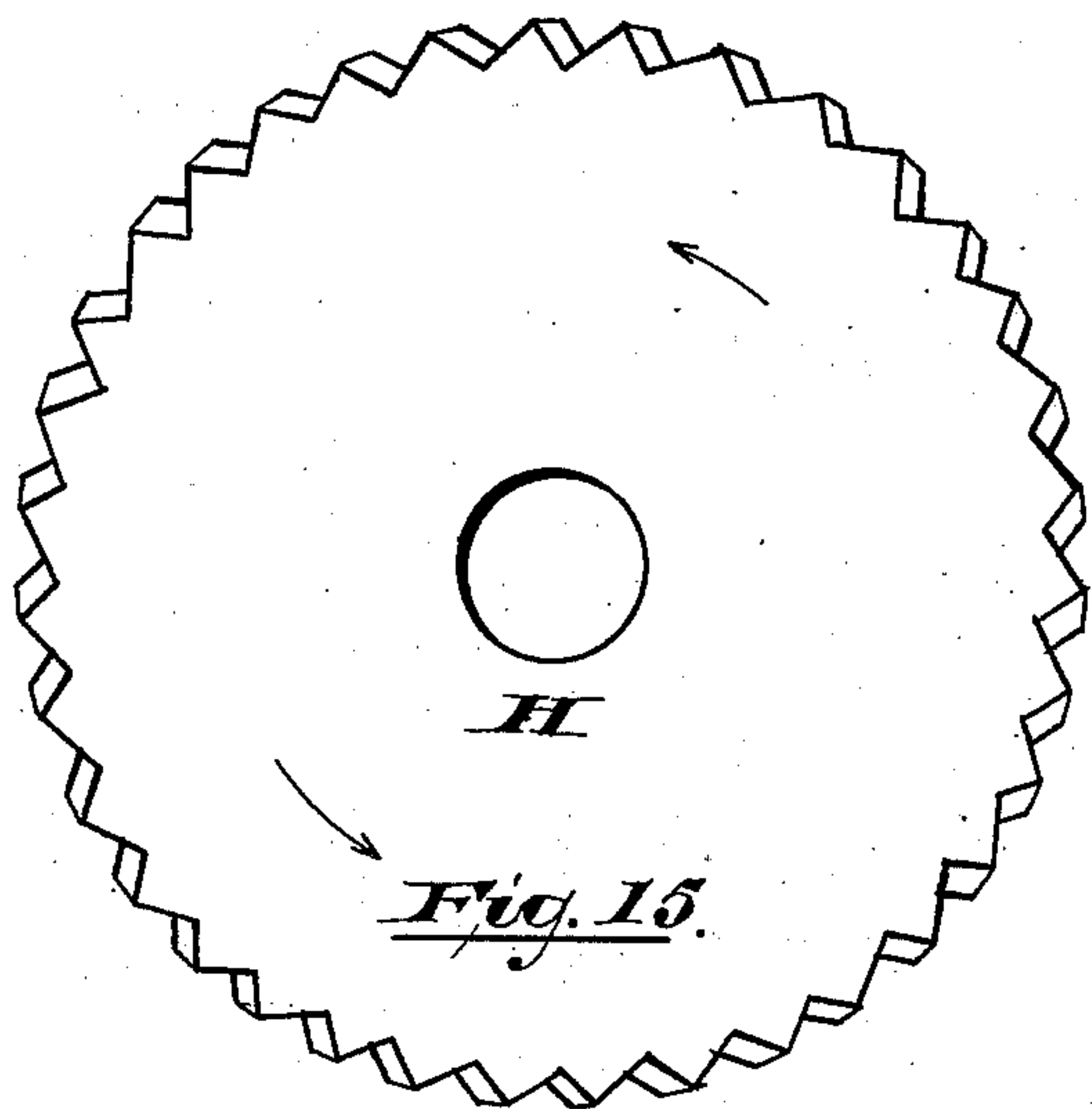
4 Sheets—Sheet 4.

C. L. S. WALKER.

MACHINE FOR FORMING SAW HANDLES.

No. 382,064.

Patented May 1, 1888.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHAUNSEY L. S. WALKER, OF NEWARK, NEW JERSEY.

MACHINE FOR FORMING SAW-HANDLES.

SPECIFICATION forming part of Letters Patent No. 382,064, dated May 1, 1888.

Application filed December 15, 1886. Serial No. 221,626. (No model.)

To all whom it may concern:

Be it known that I, CHAUNSEY L. S. WALKER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Machines for Forming Saw-Handles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a machine for forming certain portions of a saw-handle, whereby the grooves and beads on the top of said handle may be cut by improved knives and cutters in one operation, and to provide automatic guiding, holding, and feeding devices, whereby the handle may be placed in proper position, fed and cut accurately, and more quickly than heretofore, thereby reducing the cost of manufacture.

The invention consists in an improved machine for forming saw-handles and in the arrangements and combinations of parts thereof, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters indicate corresponding parts in each of the several figures of the four sheets thereof, Figure 1, Sheet 1, is a side elevation of my improved machine, showing in dotted outline the different positions of a saw-handle and slide-rest in the operation of forming a portion of said saw-handle. Fig. 2 is an enlarged detail of an arbor, shaft, or mandrel provided with a cone-pulley and adapted to hold the cutters. Fig. 3 is an end view of my improved machine, showing the cutters mounted in position on said arbor, shaft, or mandrel. Fig. 4, Sheet 2, is a plan of the same; and Fig. 5 is a section through line X, Fig. 4, the slide-rest being removed. Fig. 6, Sheet 3, is an enlarged detail of a certain cam-rod for raising or lowering the center of pivotal motion of said slide-rest. Fig. 7 is an enlarged detail sectional view through line Y, Fig. 4, Sheet 2. Fig. 8 is a plan view of a blank or cutter car-

rier to which are attached the cutters for forming certain parts of said handle. Fig. 9 is a side elevation of the same; and Fig. 10 is a section through line Z, Fig. 8. Fig. 11 is a plan of certain guides attached to a pivotally-arranged rest or plate; and Fig. 12 is a section through line V, Fig. 11. Fig. 13 is a plan view of one of the pivotal centers of the slide-rest; and Fig. 14 is an end view, partly in section, showing the said centers in connection with said cam-rod, whereby said centers can be adjusted to any desired height. Figs. 15, 16, 17, 18, and 19, Sheet 4, are side elevations of certain cutters for forming the beads on said saw-handle. Fig. 20 is a section through line W, Fig. 19; and Fig. 21 is a side elevation of a cutter or knife to be used in connection with the form of cutter-carrier shown in Figs. 8, 9, and 10, Sheet 3. Fig. 22, Sheet 1, is a side elevation of a modification of the pivotal centers shown in Figs. 13 and 14, Sheet 3.

In said drawings, A represents the bed of my improved machine, which may be of any convenient form and may be provided with arms or supports B B near one end to receive an arbor, shaft, or mandrel, as C. Said arms or supports may be and preferably are slotted near the top thereof to receive adjustable bearings D for said shaft C. Said bearings, as here illustrated, are slotted, as at E, Fig. 5, and secured to said arms or supports B by a screw passed through said slot in the ordinary manner, thus allowing said arbor, mandrel, or shaft C to be moved horizontally a limited distance in either direction. Said arbor, shaft, or mandrel is adapted to receive a pulley, as F, and cutters, as G G and H H, and may be provided with a screw-thread and nut at one end thereof, as indicated in Figs. 2 and 5, or a wedge-shaped collar and pin, as in Fig. 3. Thus by tightening said nut or wedge-shaped collar the cutters are held firmly to the shaft, so as to be turned thereby when said shaft is driven by said pulley. Said bed A provides a bearing for a slide-rest, I, and a guide, J, the latter working in a suitable groove in said bed A, and said rest I is also provided with a bushing or strip, K, Fig. 3, to support the opposite side of said rest. Thus said rest is guided in a straight backward and forward motion at or approximately at right angles to the cen-

tral line of the shaft, arbor, or mandrel carrying the cutters. Said slide-rest I is provided with supports L at the sides thereof, which serve to carry the bearings M of a pivotally-
 5 arranged plate or carrier for the saw-handle. Said plate or carrier N is designed to act as a rest for the saw-handle, which is held in close relation to said plate N by means of a clamping device consisting of a lever, as O, fulcrum,
 10 as P, and cam or eccentric, as Q, the latter being operated by a handle, as S. By this construction when the handle S is raised the saw-handle may be inserted. Then by pressing the handle downward the said saw-handle is
 15 held in a fixed relation to said pivotally-arranged plate or carrier N. Said plate N is provided with a handle, as R, in order that it may be more easily turned on its pivot and made to operate, as will be hereinafter referred
 20 to. Said supports L also provide pivotal bearings for a guide-plate, as T, provided with guides U, as indicated in Figs. 1, 4, 11, and 12. Said guides (in this case three in number) may be secured to said plate T by means
 25 of set-screws passing through a slot in said guide, thus allowing them to be adjusted to serve as guides for saw-handles of different sizes. One of the pivotal centers of the guide-plate T extends beyond its bearing in said
 30 support L, as shown at t, (see Fig. 1,) and is provided with an arm, A', having an adjustable wedge-shaped extension, A". Said arm A' is rigidly attached to one of said pivoted centers and is provided with a set-screw,
 35 whereby said wedge-shaped extension A" may be adjusted, and is adapted to engage a pin or other projection on a standard, as B', attached to the bed A, Figs. 1, 4, and 7. Said supports
 40 L are suitably slotted to receive a cam-rod, C', as indicated in Fig. 14. The pivotal center of the plate N is fixed to vertically-movable dovetailed pieces D', which rest on said cam-rod, and may be raised or lowered by moving said
 45 cam-rod horizontally or longitudinally, as is evident by reference to Figs. 6 and 14; or the distance between the plate N and its pivotal center may be changed by securing the bearing M to the support L and having the movable sliding piece D' and cam-rod C' attached
 50 to the plate N, as shown in Fig. 22, Sheet 1. Thus any height of pivotal motion may be secured within certain limits of the plate N by adjusting said cam-rod C' with a set-screw or other means, as will be understood.
 55 The cutters G, as shown in detail in Fig. 21, Sheet 4, may be and preferably are twelve in number, arranged in sets of four and secured by means of screws or otherwise to a cutter carrier or form, as F'. (Shown in detail in
 60 Figs. 8, 9, and 10, also shown with the knives attached in Figs. 1, 3, and 4.) Said cutter-carrier has the inclination or each quarter of it is tapered, as indicated in Figs. 9 and 10, in order to give the knives the best cutting position in relation to the saw-handle when attached thereto. Said cutter carrier or form is also provided with a perforation to allow it to

be mounted upon a shaft, arbor, or mandrel, as shown in Figs. 1, 3, 4, and 5.

The cutters H are five in number and are 70 circular and provided with teeth or cutting-edges similar to the teeth of a saw, except that they are all on one side of said cutter instead of alternating, as in a saw. Said cutters H are adapted to fit on said arbor, shaft, or mandrel 75 C by being suitably perforated. All said cutters are arranged on said arbor, shaft, or mandrel in the order shown in Figs. 3, 4, and 5, and are adapted to cut the beads and form portions of the saw-handle contiguous thereto, 80 as indicated in Fig. 4, it being preferable to have the periphery of said beads curved; hence the pivotal motion of the plate or carrier N on said slide-rest I is used to give the proper contour to said beads, as is indicated in Fig. 1. 85

When the slide-rest is drawn back, the arm A' is automatically raised by coming in contact with a lug or pin on the post B', (said lug or pin is at or near the top of said post B', and is indicated by a dotted line and lettered F" 90 in Figs. 4,) thus raising the guide-plate T to the position shown in Fig. 1, and by raising the handle S, which operates the lever O, a saw-handle blank may be inserted under said lever O and in the proper position by allowing 95 it to come in contact with the guides U, which are so placed as to insure such result. Then said handle S may be lowered, thus clamping said saw-handle, and the slide-rest pressed forward, with the handle R lowered, so as to 100 bring the saw-handle into the position shown in dotted outline in Fig. 1. The guide-plate drops out of the way automatically after the arm A' passes the post B', and the cutters being revolved by means of a belt and pulley, as 105 F, the slide-rest is pressed forward until the stop E' engages the edge of the plate A. Then the handle R is raised, which brings the saw-handle into the second position shown in dotted outline in Fig. 1, thus completing the cut, 110 as will be readily manifest. When the rest I is drawn back, the guide-plate T and guides U are brought again into position, as shown in Fig. 1. The finished handle may then be removed and a handle-blank be inserted and 115 put through the same operation.

Suitable adjustable stops, as E', Fig. 1, are, as here indicated, arranged at the ends of the slide-rest, in order that the feed movement may be adjusted so that the cutters will make 120 the depth of cut desired; or other suitable means may be employed to limit the depth of cut or forward motion of the slide-rest, as will be understood.

The cutters may be separated any desired 125 distance on the shaft, arbor, or mandrel C by means of washers, as D'', or a number of washers, as shown in dotted outline in Fig. 2, thus separating the cutters, so that the beads may be cut at the proper place in saw-handles 130 of different sizes.

I do not wish to be understood as limiting myself to the exact form and proportion of parts as herein shown, as it is evident that

changes may be made in those particulars without departing from the spirit or scope of my invention.

Having thus fully described my invention, what I claim as new is—

1. A machine for forming a certain portion of a saw-handle, as herein set forth, consisting of cutters arranged on a horizontally-adjustable shaft or arbor, as C, and adapted to form beads on the edge of said saw-handle, and a suitable sliding rest or carrier having a pivoted holding device for holding and guiding said saw-handle to said cutters, substantially as and for the purposes set forth.

2. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable slide-rest, as I, having a pivoted support for the work, a bed, as A, in which said parts slide, and cutters, as G and H, and a shaft or arbor, as C, on which the cutters are hung, of arms or supports, as B, and adjustable bearings, as D, on arms B for said shaft or arbor, substantially as and for the purpose described.

3. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable bed provided with supports and bearings for a shaft or arbor, cutters, as G and H, and a slide-rest, as I, of a pivotally-arranged plate or carrier, as N, provided with a handle, as R, and suitable holding device for said saw-handle, substantially as and for the purposes set forth.

4. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable bed provided with supports and bearings for a shaft or arbor, cutters, as G and H, and slide-rest, as I, provided with a pivotally-arranged plate or carrier, as N, of a lever, as O, fulcrum, as P, and cam or eccentric, as Q, adapted to operate said lever and clamp said saw-handle, substantially as and for the purposes set forth.

5. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable bed provided with supports and bearings for a shaft or arbor, cutters, as G and H, slide-rest, as I, and pivotally-arranged plate or carrier, as N, of arms or supports, as L, provided with vertically-adjustable bearings, as M, and cam rod, as C', for adjusting said bearings, substantially as and for the purposes set forth.

6. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable bed provided with supports and bearings for a shaft or arbor, cutters, as G and H, slide-rest, as I, provided with a pivotally-arranged plate or carrier, as N, and arms or supports, as L, of a guide-plate, as T, provided with guides, as U, and mechanism, substantially as described, for raising said plate automatically when said slide-rest is drawn back and to drop out of

the way of said cutters automatically when said slide-rest is fed forward, substantially as and for the purposes set forth.

7. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable bed provided with supports and bearings, a shaft or arbor, as C, held in bearings in the bed, cutters, as G and H, slide-rest, as I, provided with a pivotally-arranged plate or carrier, as N, and suitable clamping device, of a guide-plate, as T, provided with guides, as U, having bearings in suitable supports, as L, one pivot, *t*, extending entirely through said support L, an arm, as A', secured upon the extended pivot of plate T, and a post, as B', attached to the bed A, which the arm A' engages, substantially as and for the purposes set forth.

8. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable bed, slide-rest, a pivoted device for holding said saw-handle, and shaft or arbor, as C, of cutters G, cutter-carrier F', and washers, as D'', and cutters, as H, said cutters G adapted to be secured to said cutter-carrier F' and to co-operate with said cutters H in forming certain portions of said saw-handle, substantially as and for the purposes set forth.

9. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable bed provided with supports and bearings, a shaft or arbor, as C, provided with cutters, as G and H, and a slide-rest, as I, provided with a suitable clamping device, and pivotally-arranged plate or carrier N, for holding said saw-handle, of adjustable stops, as E', adapted to limit the feed to the depth of cut desired, substantially as and for the purposes set forth.

10. In a machine for forming certain portions of a saw-handle, as described, the combination, with a suitable bed provided with supports and bearings, a shaft or arbor, as C, provided with cutters, as G and H, and a slide-rest, as I, pivotally-arranged plate or carrier, as N, provided with a suitable clamping device for holding said saw-handle, suitable supports, as L, guide-plate, as T, provided with guides, as U, and a post, as B', of an arm, as A', adapted to co operate with said post B' to raise said guide-plate T, and an adjustable wedge shaped projection, A'', at the end of said arm A', whereby the throw of said arm may be adjusted, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of November, 1886.

CHAUNSEY L. S. WALKER.

Witnesses:

OLIVER DRAKE,
JOS. C. FARR.