

No. 668,678.

Patented Feb. 26, 1901.

E. CHAINEY.

SAW SWAGE.

(Application filed Oct. 25, 1900.)

(No Model.)

Fig. 1.

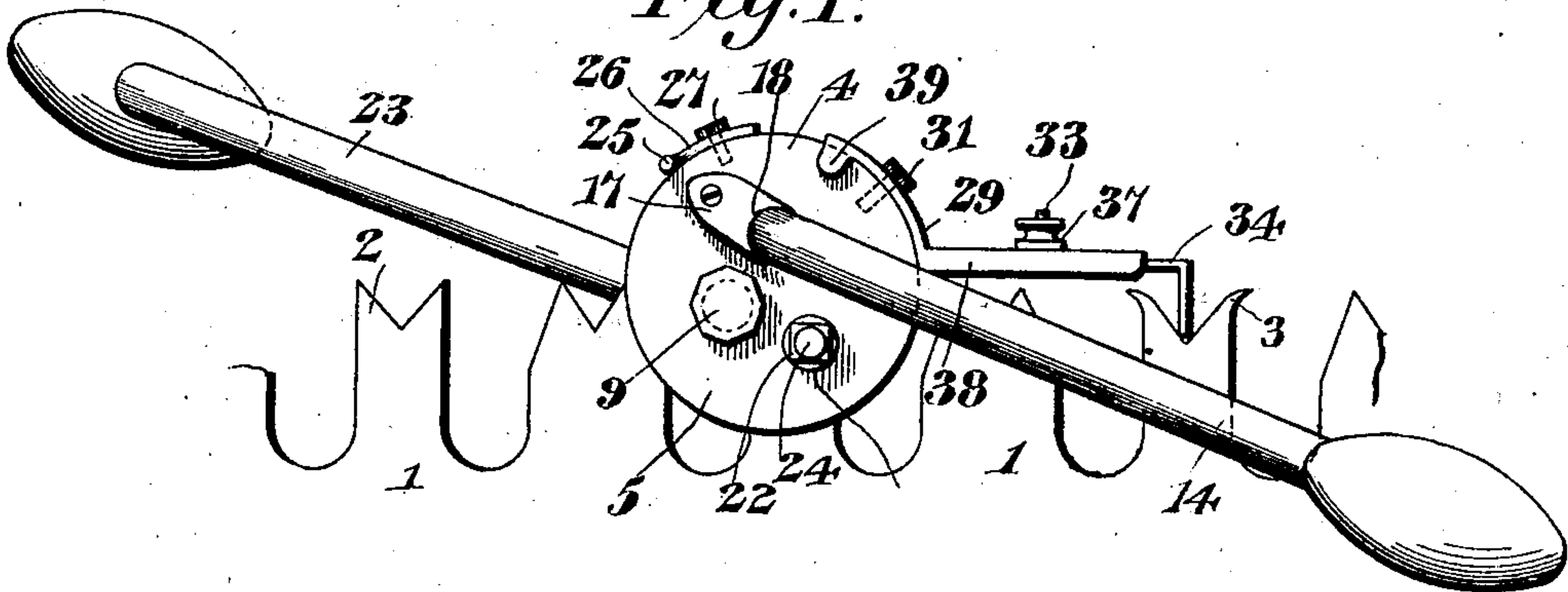


Fig. 2.

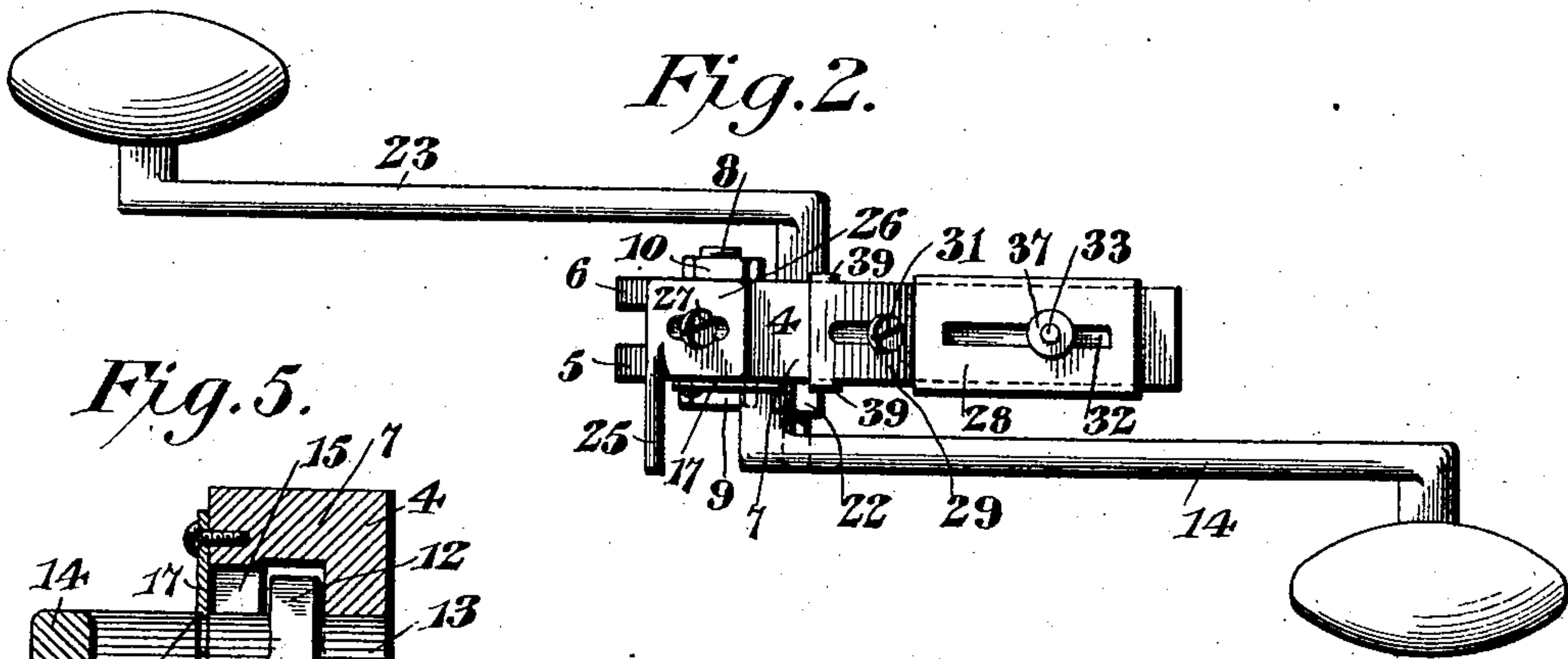


Fig. 5.

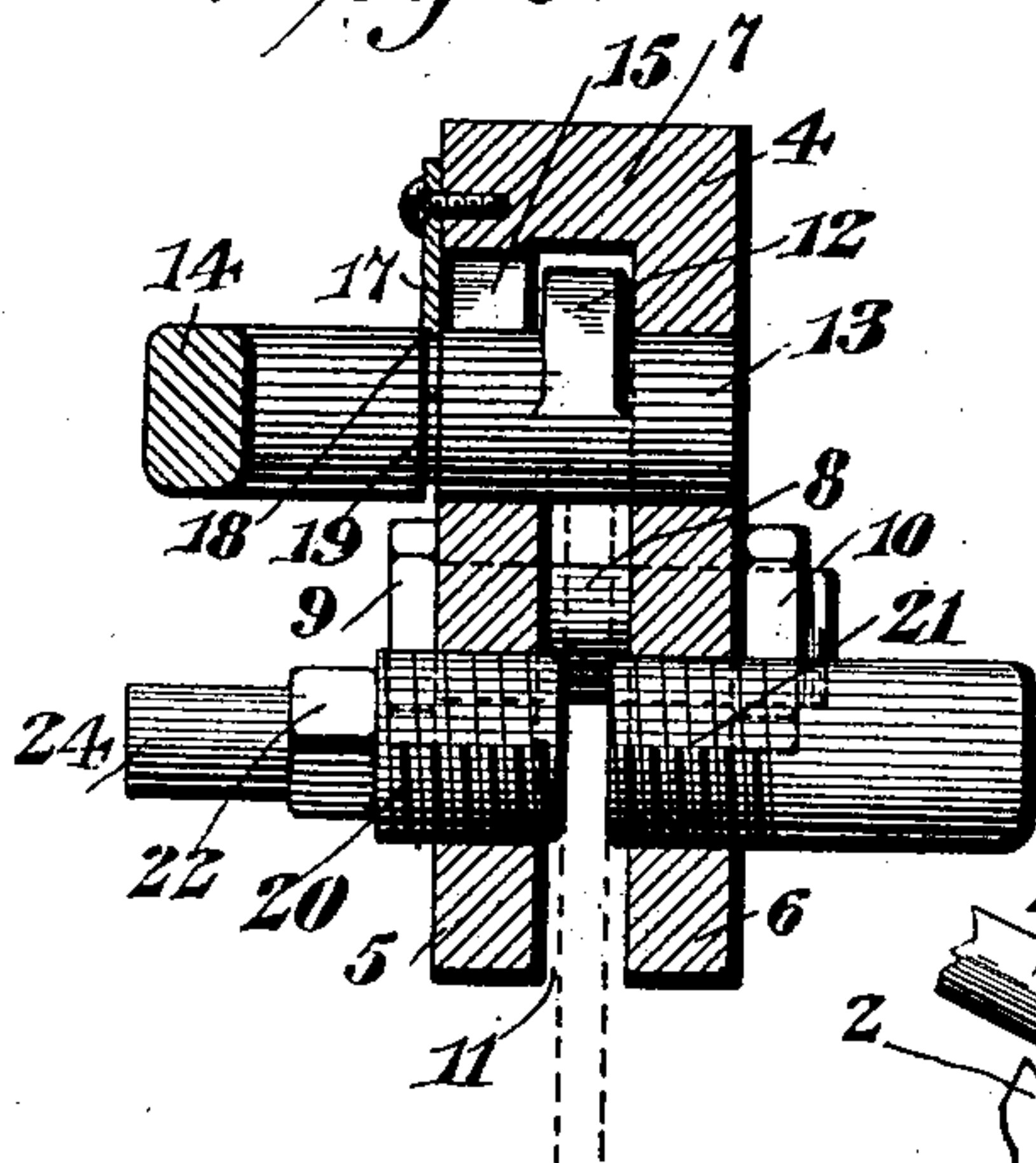


Fig. 3.

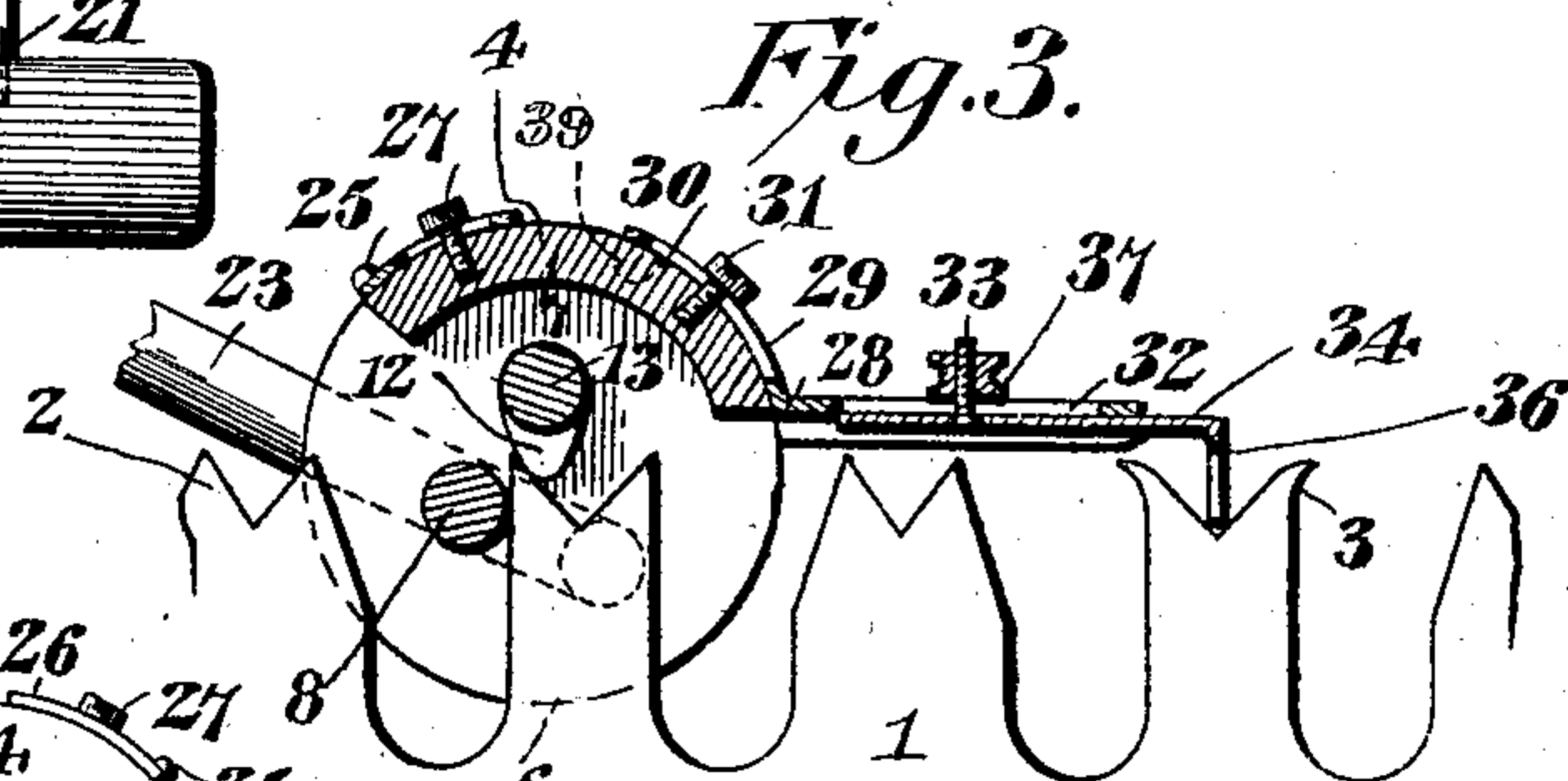
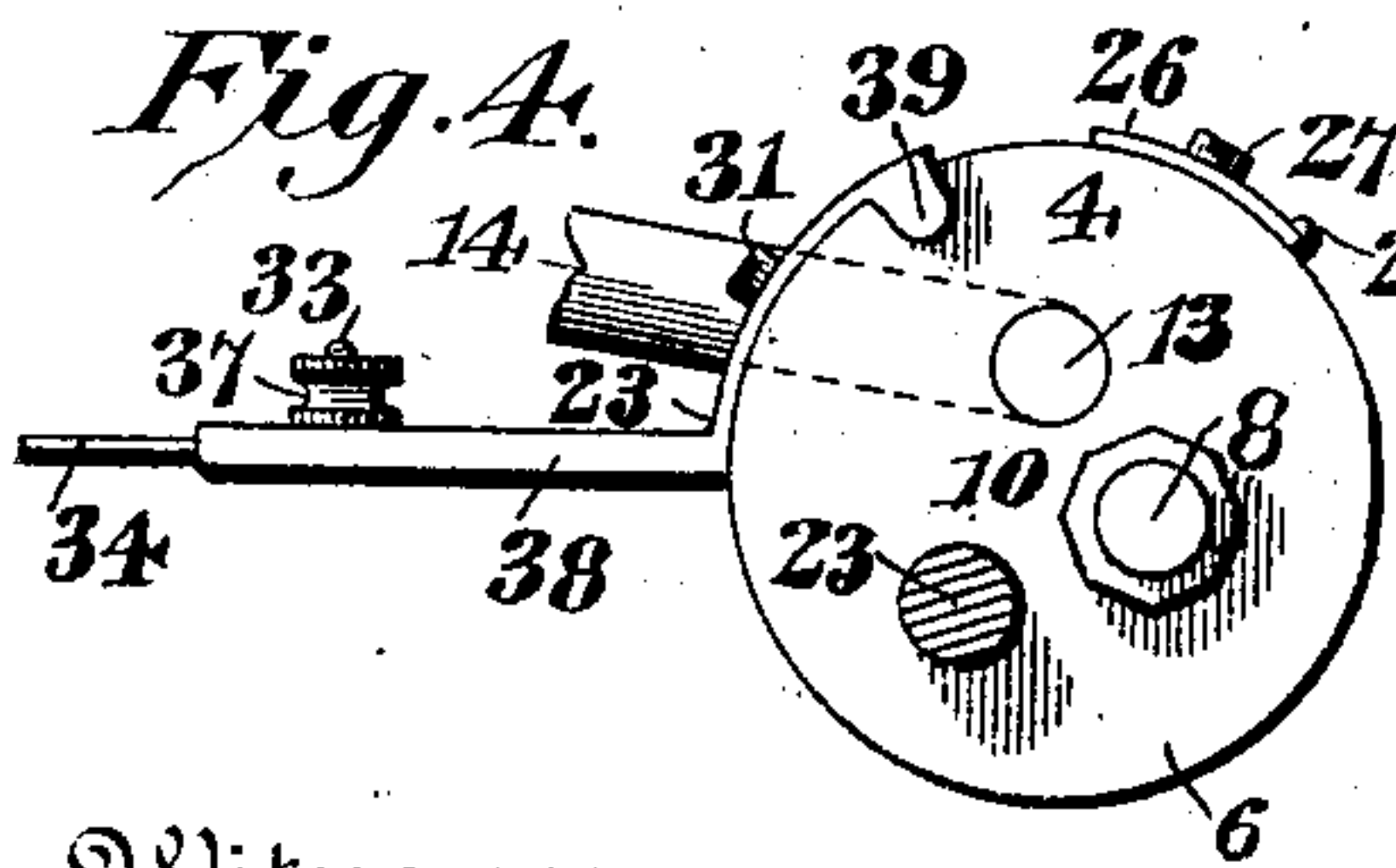


Fig. 4.



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EMANUEL CHAINEY, OF FLORENCE, WISCONSIN.

SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 668,678, dated February 26, 1901.

Application filed October 25, 1900. Serial No. 34,351. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL CHAINEY, a citizen of the United States, residing at Florence, in the county of Florence and State of Wisconsin, have invented a new and useful Saw-Swage, of which the following is a specification.

My present invention relates to a novel saw-swage, designed to be employed for swaging or bending the tooth-points of a crosscut-saw to form what are known in the art as "rackers" or "drags." As a clear understanding of these terms will facilitate the comprehension of the utility underlying my device, it may be stated that the rackers or drags are formed by bending the point of the tooth to produce an angular relation between the point or drag and the tooth proper, the idea being to impart to each tooth an angular chisel end, which will facilitate the cutting of the fibers by what are known as "crosscut-saws."

The object of the invention is to produce a swage of simple and durable construction and embodying, in combination with a suitable frame or body, suitable swaging mechanism, the anvil member of which constitutes a tie-rod for the frame, clamping mechanism for holding the swage firmly upon the saw, one of the clamping members being located to act as a rest or stop for the die-operating lever, and a bodily adjustable and extensible gage designed to effect the proper set of the swage upon saws of different sizes and to protect the points of the teeth from injury.

To the accomplishment of this object and others which will hereinafter more fully appear, the invention consists in the construction and arrangement of parts to be described, illustrated in the accompanying drawings, and defined in the appended claims.

In said drawings, Figure 1 is an elevation of my swage applied as in use. Fig. 2 is a top plan view of the subject-matter of Fig. 1. Fig. 3 is a central vertical section of the swage applied to a saw. Fig. 4 is an elevation looking toward the side opposite that shown in Fig. 1, with certain of the parts broken away; and Fig. 5 is an enlarged sectional elevation in a transverse plane.

Referring to the numerals employed to designate corresponding parts throughout the views, 1 indicates a saw of the crosscut vari-

ety provided with teeth 2, the points of which are designed to be swaged down to form rackers or drags 3. My swaging device, which I employ for the purpose of producing the drags or rackers 3, comprises a frame or body 4, preferably of circular form and divided, as shown, to define a pair of separated side walls 5 and 6, connected by an arcuate intermediate peripheral wall 7, which latter may or may not be formed integral with the side walls, but is preferably so constructed, as shown in the drawings. At a point a considerable distance below the wall 7 the side walls 5 and 6 are pierced by what may be termed an "anvil-bolt" 8, provided upon one end with a head 9, opposed to one side of the frame and having its opposite end threaded for the reception of a nut 10, designed to be screwed against the opposite side of the frame for the purpose of retaining the anvil-bolt in place and for the further purpose of constituting said bolt as a tie or brace serving to strengthen the frame and to maintain the proper relative positions of the side walls thereof. The anvil-bolt is so called because that portion which passes across the recess 11, defined between the walls of the frame, constitutes an anvil which is passed under the overhanging point of a saw-tooth and is designed to constitute a support and former therefor when the point is swaged down by the swaging-die 12. The die 12 is preferably in the form of an eccentric projection upon the die-shaft 13, passed into and journaled within the frame to locate the die 12 within the recess 11, where it may have free movement for the purpose of bending down or swaging the saw-teeth as the shaft 13 is rotated through the medium of a die-operating lever 14, extending at right angles thereto.

It will be evident that in order to effect the introduction of the die-shaft 13 to the position shown in Fig. 5 one of the side walls must be recessed to permit the passage therethrough of the die 12. Accordingly the wall 5 of the frame is provided with a recess 15, extending radially from the opening 16, provided for the reception of the shaft 13, and after the shaft and its die have been positioned within the frame when the device is assembled the recess 15 is closed by what may be termed a "combination" cover-plate and

detent 17, retained, as by a screw, upon the face of the frame 4 and having a concave end 18, designed for reception within a shallow annular groove 19, formed in the face of the shaft 13. The purpose of this construction will be evident, since it will be noted that the plate 17 covers the recess or opening 15 to present a neat appearance and to exclude dust from the bearings of the parts, and also serves when in engagement with the groove or channel 19 to lock the shaft 13 against end-wise movement, and thereby insure the retention of the die 12 in its proper position intermediate of the walls 5 and 6.

It will now be evident that provision must be made for the secure retention of the device upon the saw, and I therefore equip the frame with a pair of clamping members 20 and 21, disposed coaxially and externally screw-threaded, as indicated in Fig. 5, for engagement with internally-threaded openings in the walls 5 and 6. These clamping members are arranged to protrude beyond the inner faces of the frame-walls for engagement with the opposite faces of the saw, the turning of the member 20 being facilitated by a squared head 22 and the adjustment of the member 21 being effected through the medium of a clamping-lever 23, extending from the outer end of said member and corresponding in general proportions to the operating-lever 14 of the die-shaft. The member 20 is designed to be adjusted only to arrange the device for use in connection with saw-blades of varying thicknesses; but the member 21 is intended to be employed for the purpose of clamping the device securely upon the saw in position to swage the individual teeth thereof, and for this reason the member 21 is provided with the operating-lever, while the member 20 is merely equipped with the squared head for the reception of a wrench.

As shown in Fig. 5 of the drawings, the clamping member 20 also serves an additional function—namely, that of a limiting device or rest for the operating-lever 14. Said lever is arranged to swing in a path obstructed in one direction by a stud or rest 24, extending outwardly from the head 21. The movement of the lever 14 in the opposite direction is limited by an adjustable stop or gage 25, extending laterally from a slotted plate 26, resting upon the peripheral wall 7 of the frame and retained in its adjusted position by a set-screw 27. The stop or gage 25, like the stud 24, obstructs the path of movement of the lever 14 and by its adjustment gages or regulates the movement of said lever in one direction.

As heretofore stated, one of the primary objects of my invention is to equip a swage of the character specified with an extensible and adjustable guard or gage plate which will protect the points of the saw-teeth immediately adjacent to the device and which will insure the proper positioning of the anvil under the overhanging portion of the tooth and at such

distance from the extremity thereof as may be necessary in each individual instance. This combined gage and guard comprises a plate 28, extending horizontally or in a direction substantially radial to the circular frame and having a curved extension 29, disposed flat upon the wall 7 and having a slot 30 for the accommodation of an adjustment-screw 31. The horizontal or radial portion of the plate 28 is likewise provided with an elongated slot 32 for the reception of an adjusting-screw 33, extending from what may be termed a "guide-plate" 34, provided at its outer end with a bifurcated guide 36, within which one tooth of the saw is located when the device is in use. Upon the screw 33 is disposed a thumb-nut 37, which may be screwed down upon the plate 32 to effect the retention of the guide-plate 34 in its proper adjusted position. To facilitate the proper sliding relation of the plate 34 with respect to the plate 32, the latter is preferably formed with longitudinal flanges 38 at its opposite edges, and the curved extension 29 is provided at its upper end with a pair of clamping-ears 39, engaging the opposite sides of the frame for the purpose of preventing accidental lateral movement of the gage upon the latter. It will now appear that as the device is moved along the saw from tooth to tooth it will be guided and its proper relation will be maintained by reason of the fact that the guide 36 will engage each tooth successively, and in order to accommodate the guide to the teeth of different saws the adjustment of the guide-plate with respect to the gage 32 is provided. It will also appear that by reason of the adjustable mounting of the gage-plate upon the frame said plate may be raised or lowered to accommodate saw-teeth of different lengths, and the frame may be moved axially to present the anvil and die in proper relation to saw-teeth disposed at various angles.

From the foregoing it will appear that I have produced a simple, inexpensive, and highly-efficient saw-swage embodying a construction best calculated to effect the accomplishment of the several objects stated; but while the present embodiment of the invention appears at this time to be preferable I wish to reserve the right to effect such changes, modifications, and variations as may be properly comprehended within the scope of the protection prayed.

What I claim is—

1. In a saw-swage, the combination with a divided frame, of a bolt constituting an anvil passed through the frame and provided upon its opposite ends with a head and nut to secure the sides of the frame in proper relative positions, a die-shaft journaled in the frame and provided with a die in operative relation with the anvil, and means for operating said die-shaft.

2. In a swage, the combination with a divided frame, of a bolt passed transversely through said frame and provided upon its op-

posite end with a head and nut, respectively, whereby said bolt constitutes an anvil and also serves to rigidly retain the sides of the frame, a die-shaft journaled in the frame and
 5 provided with a die designed to swage the end of a saw-tooth supported upon the anvil, a lever extending from the end of the die-shaft, and a pair of adjustable clamping members passed through the opposite side walls
 10 of the frame, one of said members being extended into the path of movement of the lever to constitute a stop therefor.

3. In a saw-swage, the combination with a frame, clamping members carried thereby and
 15 an anvil mounted therein, of a die-shaft journaled in the opposite sides of the frame and provided with a die, one of said side walls being recessed at one side of the die-shaft to permit the passage of the die to a position intermediate of the side walls, and a cover-plate
 20 secured upon the exterior of the frame and extended over the recess therein.

4. In a saw-swage, the combination with a divided frame provided with an anvil and
 25 clamping device, the side walls of said frame being apertured for the reception of a die-shaft and one of said walls being provided with a recess extending from the opening, of a die-shaft journaled in the openings in the
 30 frame-walls and provided with a die designed to be passed through the recess, and a cover and detent-plate secured upon the face of the frame and closing the recess therein, said die-shaft being provided with a groove engaged
 35 by one end of the plate, and means for operating the die-shaft.

5. In a saw-swage, the combination with a divided frame, of an anvil-bolt passed through the frame and provided upon its opposite ends
 40 with a head and nut engaging the opposite sides of said frame, a pair of clamping members screwed through the side walls of the frame, one of said members being provided with an actuating-lever and the other with an

extension, a die-shaft journaled in the frame 45 and provided with a die in coöperative relation with the anvil, one side wall of the frame being provided with a recess permitting the introduction of the die, a cover-plate closing
 50 said recess and engaging the shaft to prevent endwise movement thereof, and a lever extending from the die-shaft and movable in a path obstructed by the extension of the clamping member.

6. In a saw-swage, the combination with a 55 circular frame, of an anvil and die mounted therein, a die-operating lever disposed upon the exterior of the frame, an adjustable stop mounted upon the periphery of the frame and extending into the path of the lever to regu- 60 late the extent of the swaging operation, and adjustable clamping members piercing the opposite sides of the frame, one of said members being disposed in the path of movement of the lever. 65

7. In a saw-swage, the combination with a circular frame, and an anvil and die mounted therein, of a slotted gage-plate extending in a direction substantially radial with respect to the frame and provided with side flanges 70 and with a slotted curved extension disposed upon the periphery of the frame, an adjusting-screw passed through the slot of the curved extension for effecting the vertical adjustment of the gage-plate, a guide-plate 75 located between the flanges of the gage-plate and provided with a terminal bifurcated guide and with a screw extending through the slot in the gage-plate, and a nut upon said screw for securing the guide-plate in its proper rela- 80 tive position.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EMANUEL CHAINEY.

Witnesses:

ALBERT M. PARMENTER,
 A. A. BRADLEY.