

H. U. KISTNER.

SAW SET.

APPLICATION FILED APR. 5, 1904.

968,771.

Patented Aug. 30, 1910.

Fig. 1.

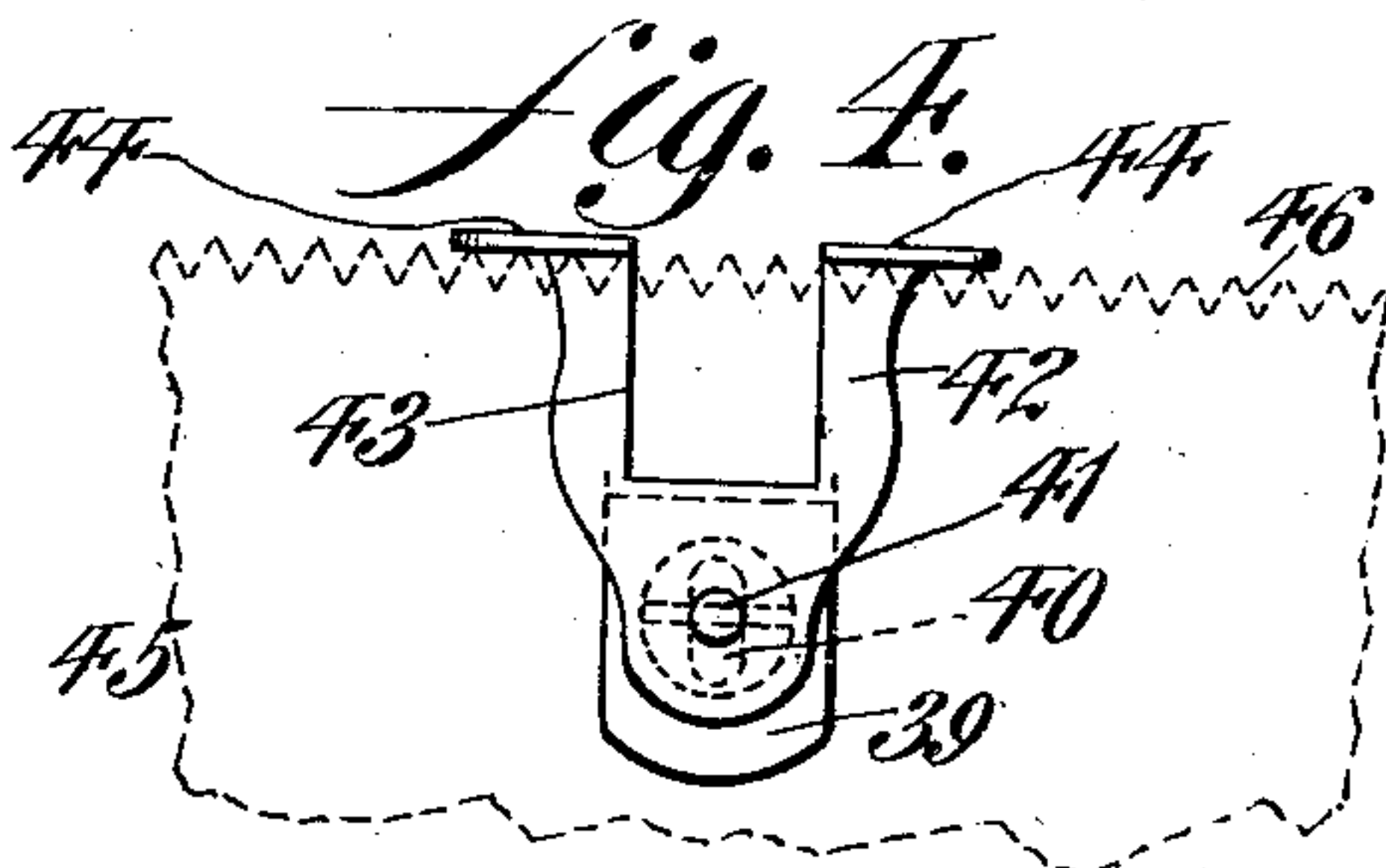
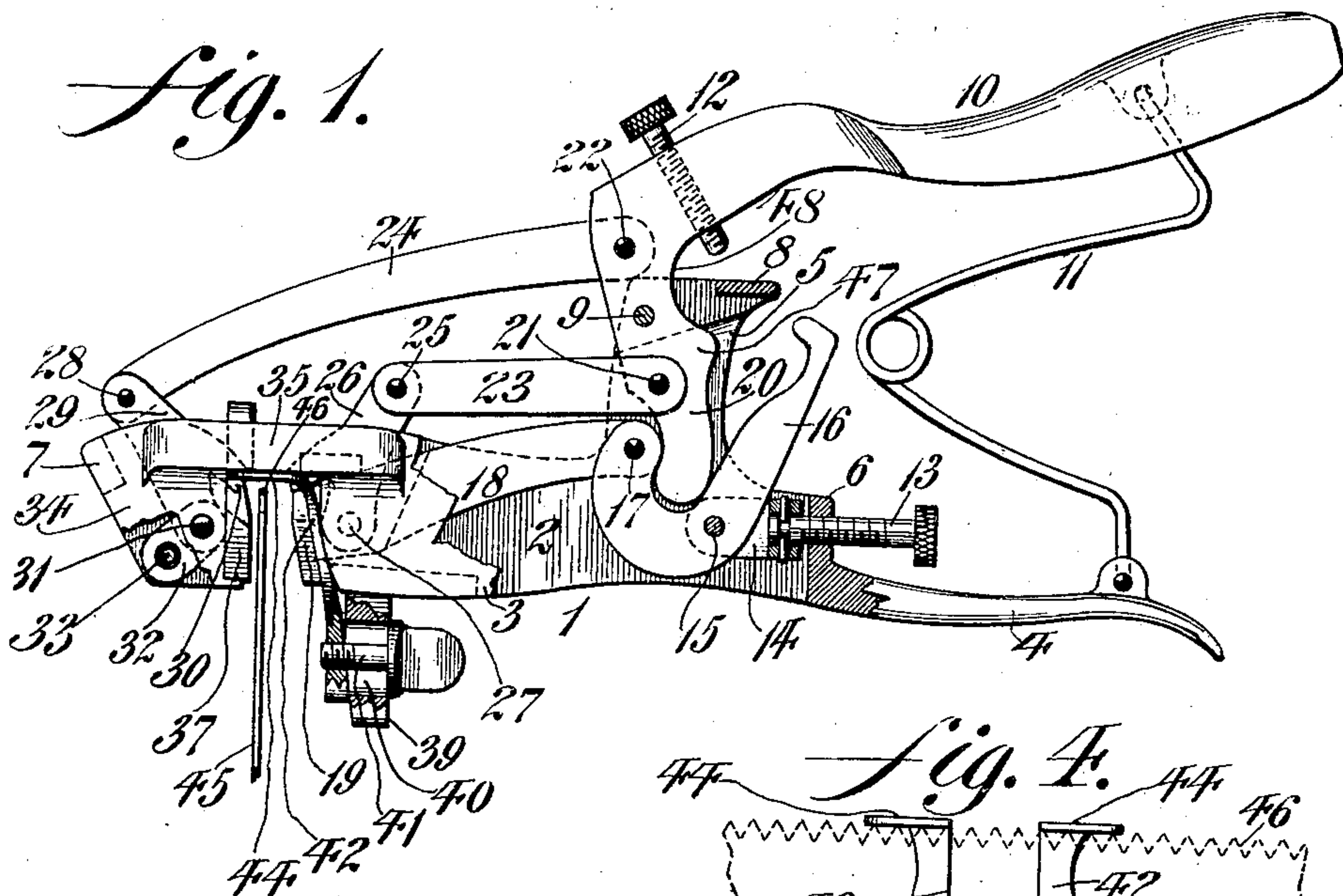


Fig. 2.

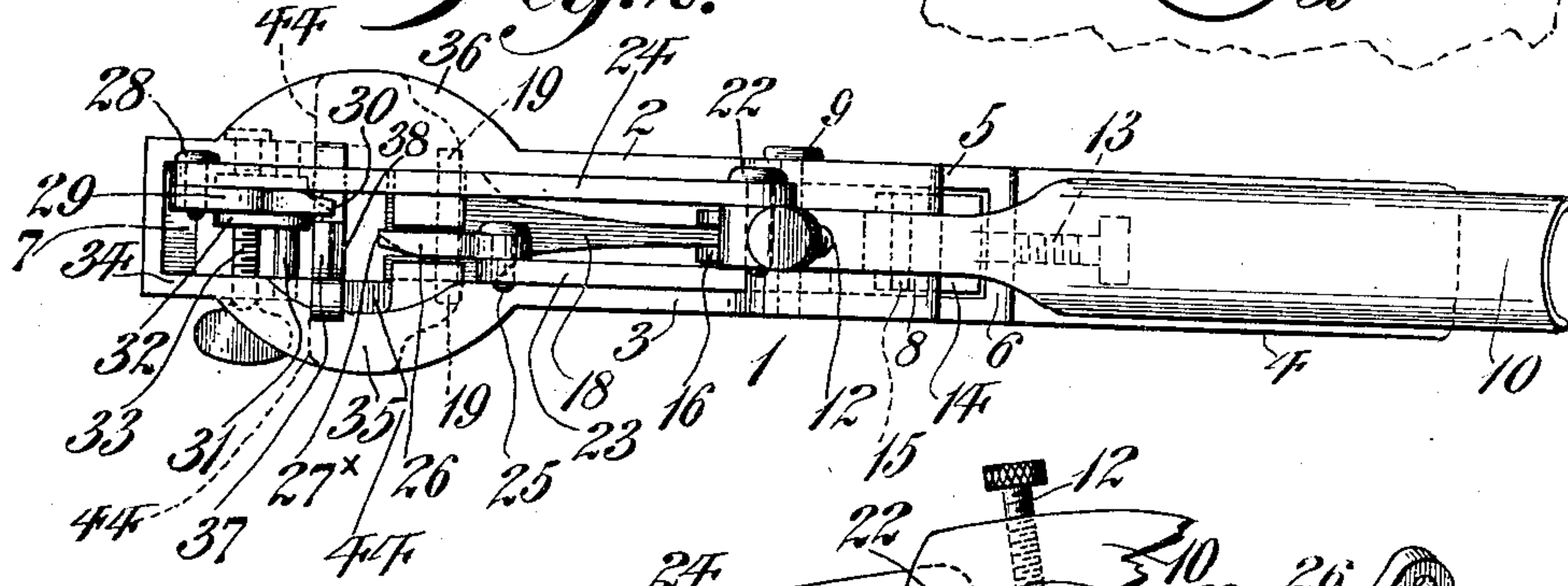


Fig. 3.

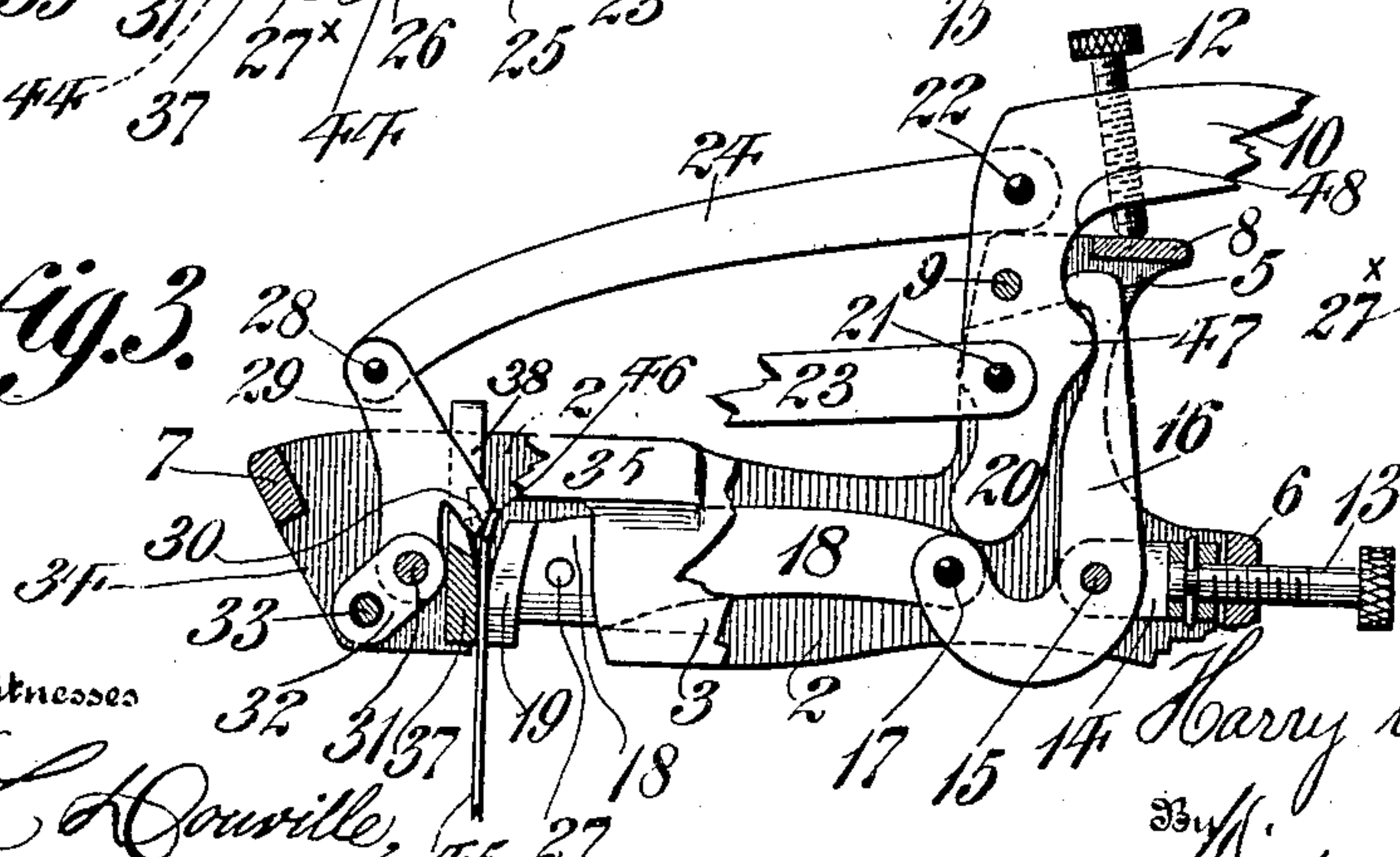
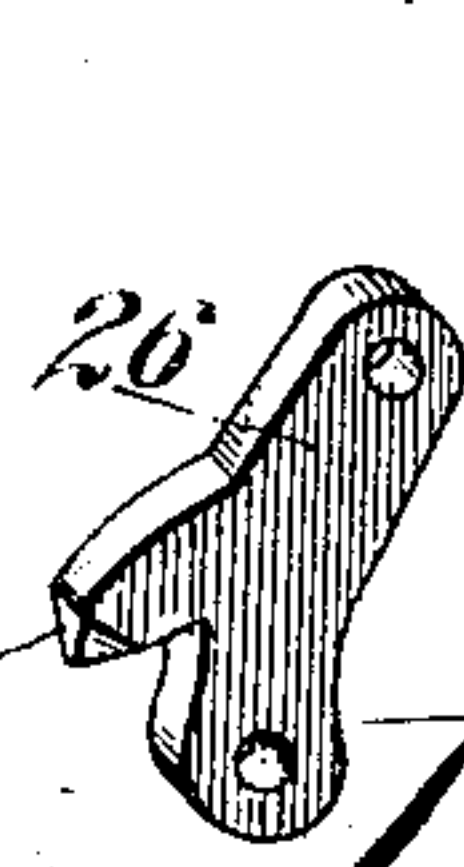


Fig. 5.



Witnesses
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SAW-SET.

968,771.

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Application filed April 5, 1904. Serial No. 201,660.

To all whom it may concern:

Be it known that I, HARRY U. KISTNER, a citizen of the United States, residing at Sunbury, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Improvement in Saw-Sets, of which the following is a specification.

My invention relates to saw sets such as are used on hand saws, band saws and the like.

It comprises means adjustable both to the height of the tooth and the thickness of the saw for setting saws at any desired rake.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a side elevation, partly broken away, of a saw set embodying my invention. Fig. 2 represents the same in top plan view. Fig. 3 represents in fragmentary elevation, a portion of the device in operative position. Fig. 4 represents a gage portion of the device detached from the remainder. Fig. 5 represents one of the setting jaws, detached.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates the body of my device shown as divided into parallel sides 2 and 3, having a rearwardly extending handle 4 and an upwardly extending abutment 5 and connected by bridges 6, 7 and 8. Pivoted at 9 to the abutment 5 is an upper handle 10. The handles 4 and 10 are normally separated by a thrust spring 11. A set screw 12 in the handle 10 bears against the bridge 8 and serves to limit the movement of the handles toward each other. Extending forwardly through the bridge 6 in the body 1 is a set screw 13, to the inner end of which is attached a yoke 14, at the forward bifurcate end of which is a pivot 15, on which moves a bent lever 16. Pivoted at 17 to the lever 16 is a link 18 on the forward end of which is formed a laterally extending head 19. Pivoted to the bent forward end 20 of the handle 10 at 21 and 22, respectively, below and above the pivot 9 are links 23 and 24. The forward end of the link 23 is pivoted at 25 to the upper end of a jaw 26, the lower end of which is pivoted at 27 to the link 18 just behind the head 19. As shown, the jaw 26 is provided at its forward side with a triangular nose 27^x adapted to contact with the teeth of the saw. The up-

per link 24 is pivoted at 28 to a jaw 29 similar to the jaw 26 but with its nose 30 facing the nose 27^x on the first named jaw. The lower end of the jaw 29 has lateral movement on the rod 31. A bifurcate link 32 also moves laterally on the rod 31 at each side of the jaw 29 and is actuated in such movement by a screw 33 mounted transversely of the head 34 which as shown is integral with and attached by longitudinal bridges 35 and 36 to the body 1. A plate 37 attached to or forming part of the inner end of the head 34 is slotted at 38 to pass the nose 30 of the jaw 29. Depending from the forward end of the body 1 is a lug 39 having a vertical slot 40 through which passes a set screw 41, the forward end of which is attached to a guide plate 42 having a recess 43 at its upper end, adapted to pass the head 19 of the link 18 and the nose 27^x of the jaw 26 and having horizontal plates 44 at each side of said recess.

The operation is as follows:—A saw being properly held in a vise or the like with its teeth 46 projecting upwardly, the set is applied thereto with the jaw 19 and plate 37 at opposite sides of the saw and so that the noses 27^x and 30 of the jaws 26 and 29, respectively, will engage with the adjacent teeth thereof. To provide for differences in the size of the teeth, the depth gage 42 may be vertically adjusted and the jaw 29 moved transversely on the screw 33 as will be clearly understood from Fig. 2 of the drawings. It is evident that the grip of the operator on the handles 4 and 10, acting to bring these together against the force of the spring 11, will grip the saw between the head 19 and plate 37, after which the noses 27^x and 30 on the jaws act on adjacent teeth 46 of the saw to bend them in the opposite direction so as to give the saw the set required.

It will be seen that the movement of the teeth is limited by the set screw 12 in the handle 10 by which the rearward motion of the link 24 and the forward motion of the link 23 are equally and simultaneously altered. To provide for a difference in the thickness of the saw the plate 19 may be moved forward or retracted by means of the set screw 13 which acts to move the pivot 15 in either direction, the lever 16 and link 18 being moved therewith.

It will be seen that the upper rear end of

the lever 16 is adapted to strike against the rear side of the lever 10, as shown in Fig. 3, whereby the forward movement of the plate 19 is limited. It will also be seen by reference to Fig. 3 that the depression of the handle acts through the lower end of the portion 20 to force forward and depress the forward end of the lever 16. This brings the pivot points 15 and 17 in practically a straight line with the engaging jaw 19 so that the saw 45 is securely held between the clamping jaws before the tooth engaging noses begin to act. When the handle 10 is released the projection 47 at the rear of the portion 20 strikes against the upper rear end of the lever 16 and releases the pivot 17 from its "dead center" position so that the lower end of the part 20 acts to return the lever 16 and link 18 to the position shown in Fig. 1 of the drawings.

Fig. 3 of the drawings clearly shows the relation of the parts of the handle 10 and the lever 16 by which the clamping jaw 19 is brought to its engaging position before the noses 27* and 30 have engaged the teeth of the saw and retained in that position during the setting operation. The forward end of the handle 10 is shown as engaging with the lever 16 in two places, the lower end 20 bearing against the forward lower end of the lever 16 while the upper rear end of the lever 16 strikes against the rear of the handle. By reason of the recess 48 above the boss 47 in the handle 10 and by reason of the rounded lower end of the portion 20, the lever 16, link 18 and jaw 19 "dwell" during the final movement of the saw setting jaws.

It will be apparent that by pivoting one tooth engaging jaw to the movable clamping jaw, the adjustment of the clamping members and the tooth engaging jaws will be performed simultaneously. I find in practice that this construction gives a much more powerful action and renders the device much more efficient and enables me to produce a saw set in which a more powerful leverage may be obtained in proportion to the size of the device.

It is evident that various changes may be made by those skilled in the art which will come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

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

1. A saw-set comprising a body having a saw receiving recess, a handle pivoted to said body, a yoke longitudinally movable in said body, a lever pivoted in said yoke, a clamping jaw secured to said lever and operatively connected with said handle to engage the saw, and tooth engaging jaws operatively

connected with said handle and adapted to be moved toward each other thereby.

2. A saw-set comprising a body having a saw receiving recess, a handle pivoted to said body, a clamping portion adjustable longitudinally of said body, operatively connected with said handle, and adapted to engage the saw blade, and tooth engaging jaws operatively connected to said handle, one of said jaws being directly connected to said clamping portion and longitudinally adjustable therewith.

3. A saw-set comprising a body having a saw receiving recess, a handle pivoted to said body, saw setting jaws operatively connected to said handle, a bent lever pivotally connected to said body, a link secured to one arm of said lever, a saw clamping head at the forward end of said link, and a tooth engaging jaw pivotally mounted in said link, and co-acting recesses and projecting portions on said handle and lever for bringing said clamping head into operation before the engagement of said setting jaws with the teeth.

4. A saw-set comprising a body having a saw receiving recess, a clamping jaw, a tooth engaging jaw pivotally mounted therein, a bent lever mounted in said body, a link pivoted to said lever and connected with said inner clamping jaw, a handle pivoted in said body, a link pivoted to said handle and to said inner tooth engaging jaw, an outer tooth engaging jaw pivotally supported, a link pivoted to said handle and to said outer tooth engaging jaw, and means for bringing the pivotal points of the link connected with said bent lever and said clamping jaw in alinement during the clamping operation, and maintaining said pivotal points in alinement during the operation of said tooth engaging jaws.

5. A saw-set comprising a body having a saw receiving recess, a handle pivoted to said body, a yoke longitudinally movable in said body, a lever pivoted in said yoke, a clamping jaw secured to said lever and operatively connected to said handle to engage the saw blade, and tooth engaging jaws operated by said handle, one of said jaws being pivotally connected to said clamping jaw and longitudinally adjustable therewith.

6. A saw set comprising a body having a saw receiving recess a handle pivoted to said body, links pivotally connecting said handle with tooth engaging jaws, a rod transverse to the line of movement of said jaws, on which one of said jaws is loosely mounted and means to laterally adjust the jaw on said rod.

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Witnesses:

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