

No. 659,902.

Patented Oct. 16, 1900.

C. I., I. F. & E. L. STILL.

COMBINATION TOOL.

(Application filed Aug. 12, 1899.)

(No Model.)

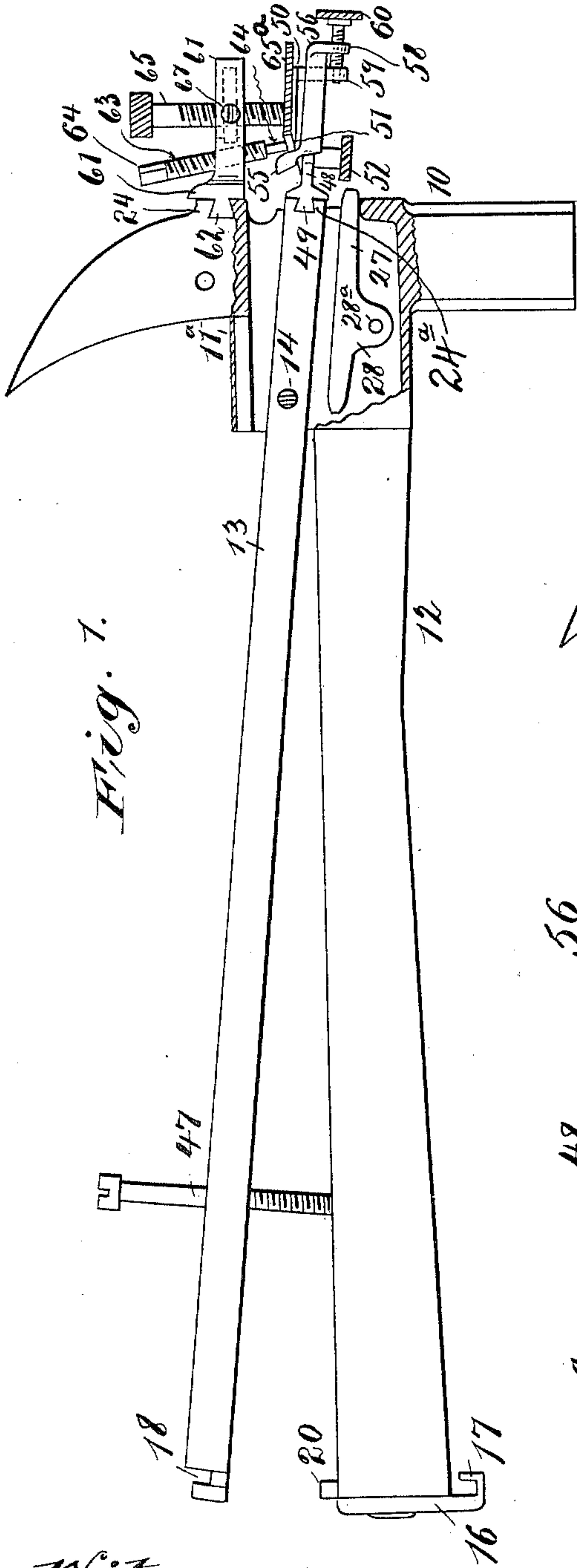


Fig. 1.

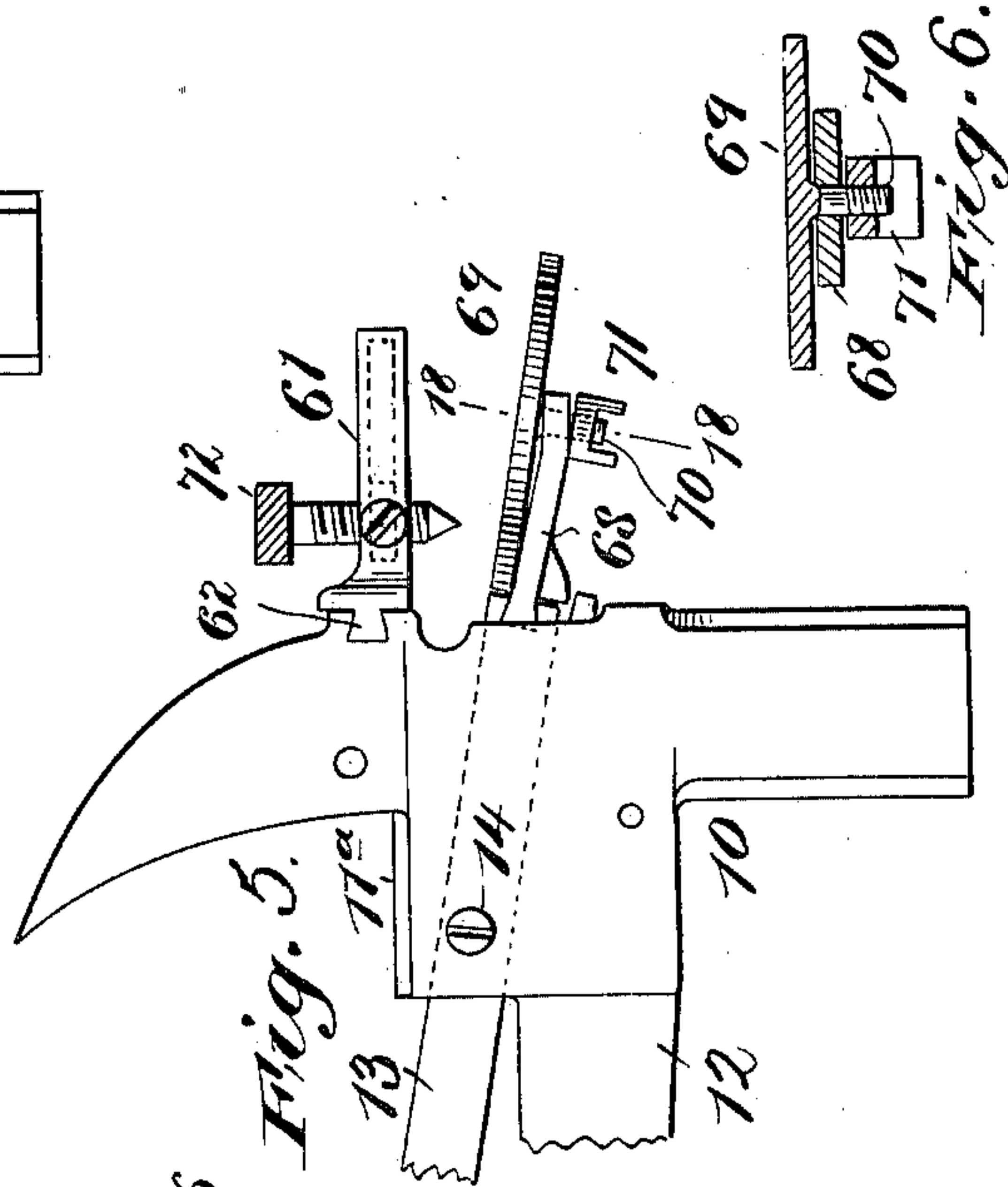


Fig. 5.

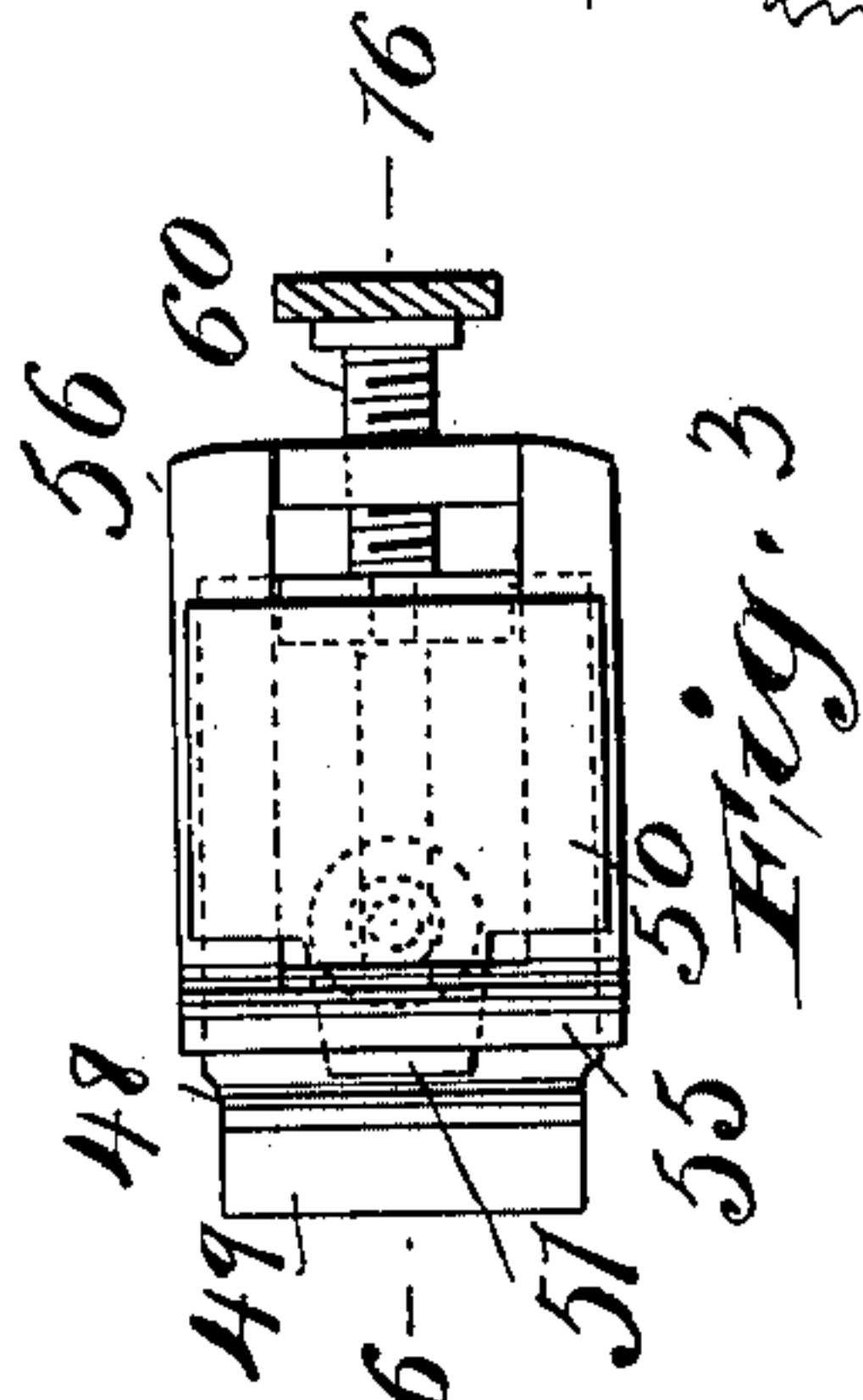


Fig. 3.

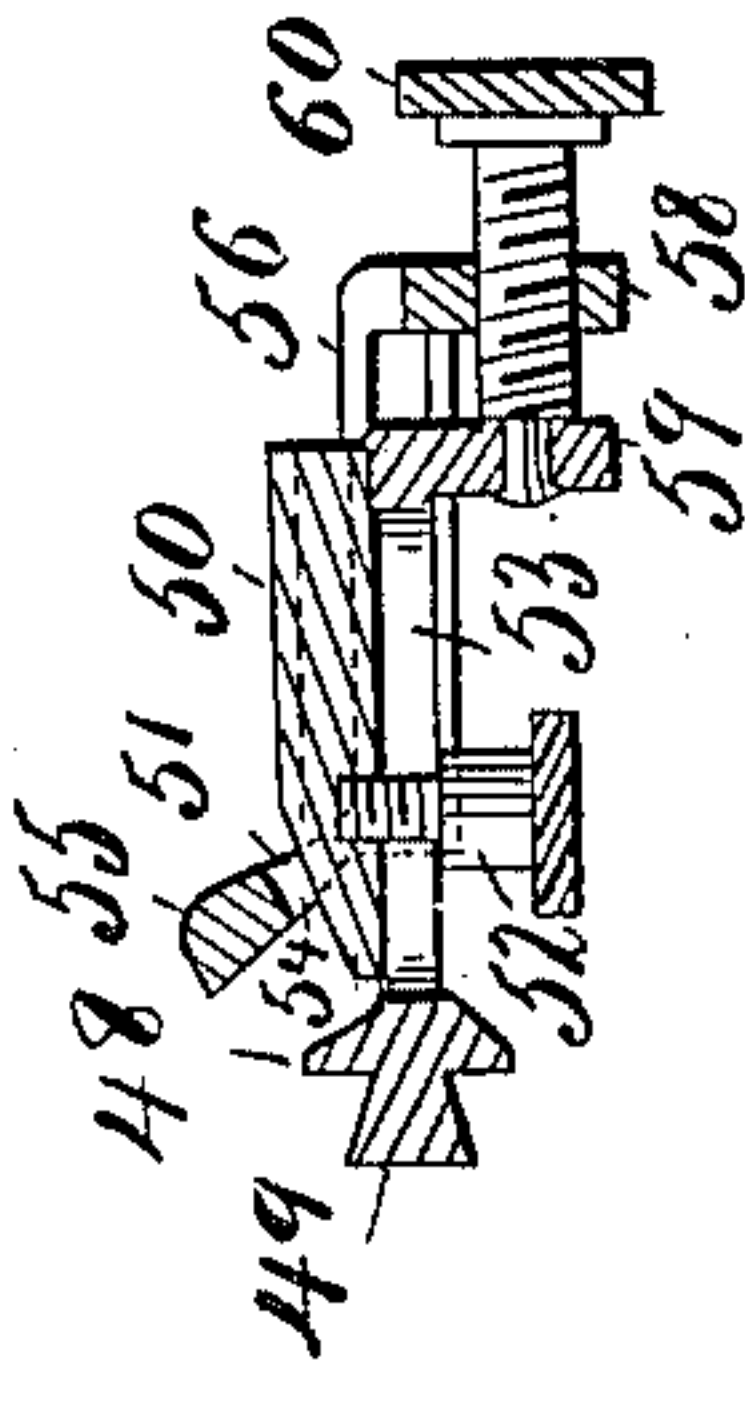


Fig. 4.

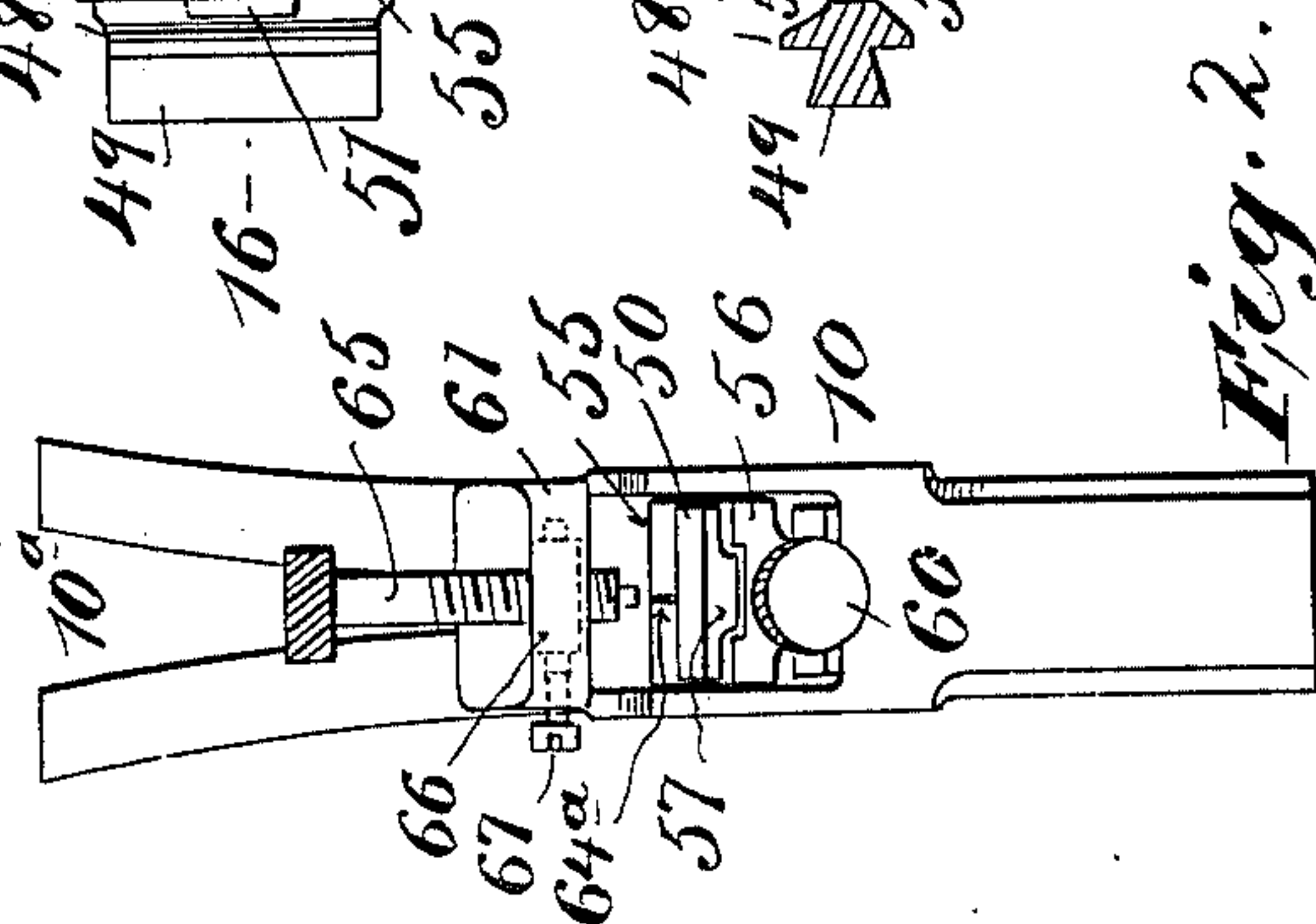


Fig. 2.

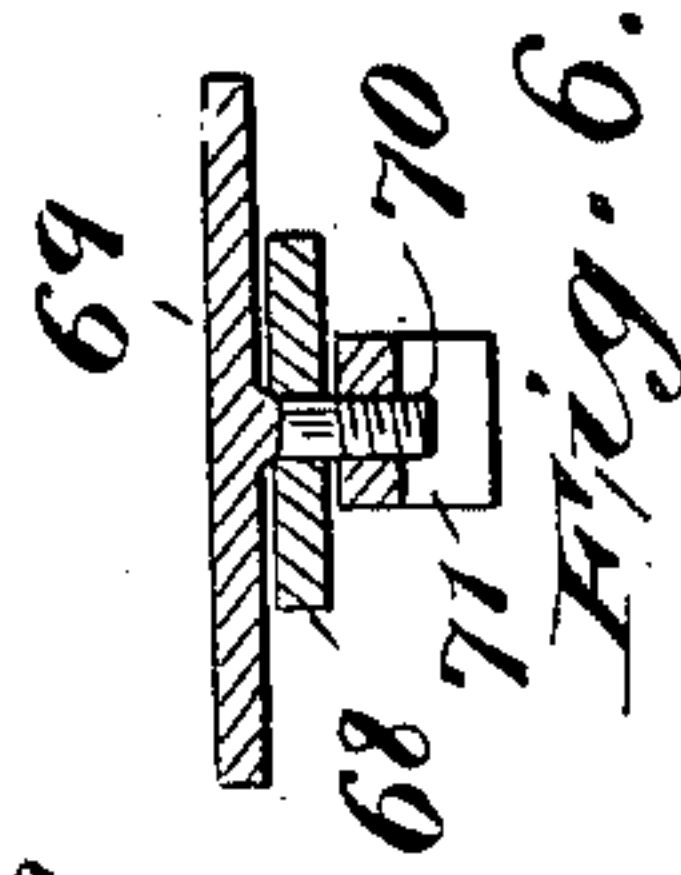


Fig. 6.

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# UNITED STATES PATENT OFFICE.

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## COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 659,902, dated October 16, 1900.

Application filed August 12, 1899. Serial No. 726,993. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES I. STILL and ISAAC F. STILL, of Sing Sing, county of Westchester, and EDWARD L. STILL, of the city of New York, county of New York, State of New York, have invented certain new and useful Improvements in Combination-Tools, of which the following is a full, clear, and exact description.

Our invention relates to improvements in combination-tools, and especially to saw-sets.

The object of our invention is to produce an improved saw-set and punch which is very simple in construction, very efficient in operation, and which is conveniently combined with a head-tool, such as a hammer having a movable handle member, so that the saw-setting and punching parts can be easily attached or detached.

With these ends in view our invention consists of certain features of construction and combination of parts which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar figures of reference refer to similar parts throughout the several views.

Figure 1 is a side elevation of a device embodying our invention, showing the split hammer-handle partly open and the saw-set in position for use, the said set and the hammer-head being shown in section. Fig. 2 is an end view of the hammer and saw-set attached. Fig. 3 is a detail plan view of the saw-set. Fig. 4 is a longitudinal section on the line 16 16 of Fig. 3. Fig. 5 is a detail side elevation of a modification of the device, showing some of the characteristics of the saw-set, but adapted to perform the functions of a punch; and Fig. 6 is a cross-section on the line 18 18 of Fig. 5.

The hammer-head 10 is of the usual form, but obviously this may be of any approved style, and it has substantially the usual eye, which, however, is elongated to form a shank 11, from which extends a handle, the latter comprising the relatively-fixed portion 12 and the movable portion 13, the hammer-handle being separable longitudinally to provide for the various functions hereinafter described,

and, as illustrated, the member 12 of the hammer-handle is integral with the shank 11, though it is not necessarily so. On the upper side of the shank 11 is a raised guide 11<sup>a</sup>, through which a wire may be passed longitudinally when necessary; but this needs no particular description, as it has reference to other attachments which may be used with the hammer and which form no part of our present invention. The movable member 13 of the handle is pivoted in the shank 11, as shown at 14, and its front end projects forward through the eye of the hammer, as best shown in Fig. 1, so as to carry certain attachments to be hereinafter described.

Pivoted to the end of the relatively-fixed member 12 of the handle is a button 16, which has at one end a locking arm or flange 17, adapted to turn over and engage a groove 18 in the reduced free end of the member 13 of the handle, and so lock the two members together. Any lateral shifting or strain on the movable part of the handle is also prevented by the lug 20, which extends upward from the member 12 and is adapted to enter a suitable slot in the member 13, this being an ordinary expedient for holding two abutting parts from shifting.

At the front end of the hammer, just above the eye, is a transverse dovetailed groove 24, and a similar groove 24<sup>a</sup> is made in the corresponding end of the handle member 13, so that the two grooves can receive the dovetailed tongues of the tools or attachments to be presently referred to and which are thus held rigidly to the hammer members, but are also capable of movement in relation to each other.

In the eye of the hammer, (see Fig. 1,) below the pivoted end of the handle member 13, is a jaw 27, having a relatively-long face, and this has preferably a boss 28 on the under side, which is pivoted to the hammer-head, as shown at 28<sup>a</sup>, and it will be seen that the jaw can rock on its pivot and will remain parallel with the handle member 13, so that the device serves as a parallel-jawed nipper or vise and any small article can be conveniently grasped and held between the jaw 27 and the front end of the handle member 13.



It will be noticed that the pivots of the member 13 and jaw 27 are in different vertical planes, so that when the member 13 of the handle is thrown open its forward end is moved toward the jaw, and if the article is held between the two said parts the jaw 27 and member 13 will of course assume parallel relation. For convenience a block or other article can be wedged between the two handle members, so that the grip on the thing held between the jaw and handle member can be maintained.

The saw-setting attachment has a bracket 48, which is adapted to have its tongue 49 fastened in the groove 24<sup>a</sup> of the member 13, and the bracket carries the anvil 50, which has its inner end 51 inclined, as shown in Fig. 4. The anvil is movable in and out on the bracket and is held in place by a set-screw 52, which slides in a slot 53 of the bracket 48. The inclined end 51 of the anvil is reduced (see Fig. 3) and extends through a slot 54 in the guide-flange 55 of the slide-frame 56, which frame is movable in and out on the bracket 48 and is guided by a rod 57 on the under side of the anvil 50, which enters a corresponding slot in the frame 56. The frame 56 has a depending flange 58, in which is fitted a screw 60, and the latter is journaled in the flange 59 of the anvil 50. It will be seen, therefore, that when the anvil is bound in place by the screw 52 the screw 60 may be turned and the frame 56 moved in or out, thus moving the flange 55 in or out, and as the saw-blade lies on the anvil with its teeth over the inclined part 51 thereof the amount of set given the saw may be thus regulated, as will be more fully understood from the further description to follow. To complete the saw-set, a bracket 61 and its attachments are fastened opposite the bracket 48, the bracket 61 having a tongue 62 to enter the groove 24. (See Fig. 1.) This bracket carries a screw 63, having its ends 64 triangular in cross-section, so as to fit the saw-tooth, and in practice several screws with different-size ends are used, so that teeth of various sizes can be fitted, and it will be seen that, if desired, the device can be made to accommodate several screws at once or several triangular ends may be provided, so that a plurality of teeth may be set at a stroke. As this is simply a duplication of the screw shown, it is not illustrated. The setting end 64 is guided accurately by having one edge register with a groove 64<sup>a</sup> (see Fig. 2) in the guide-flange 55 beneath. The screw 63 is set to the desired place, and in order that the action may be permanent and alike on each tooth a guide-screw 65 is used, which extends downward through a slide-box in the bracket 61, as shown by dotted lines in Fig. 1, and is held in place by a set-screw 67, which goes from the bracket 61 and impinges on the slide-box. This is not shown in great detail, because it is an ordinary means of holding the slide-box in place. The screw 65, it will

be seen, impinges on the saw 65<sup>a</sup> below, and so serves as a guide. The principal object, however, in having a slide-block adjustable in and out is to provide for the punch, which will be presently described and which is held in the same block when the screw 65 is removed. When the saw-set is used, the saw-blade 65<sup>a</sup> is laid flat on the anvil 50 and advanced as usual with saw-sets, every other tooth being set, and the handle member 13 is opened and closed, so as to bring the setting end 64 of the screw 63 upon the successive teeth, which are pressed down against the beveled end 51 of the anvil. After the saw is set on one side it is turned over and set on the other in the customary manner. The guide-flange 55 can be adjusted, as already described, to regulate the set and to assist in regulating the throw of the saw-set, and to prevent coming down too hard on the saw the screw 47 (see Fig. 1) may be screwed down through the member 13, so that its inner end will impinge on the member 12.

Only a slight modification is necessary to change the device into a punch, and this is shown in Figs. 5 and 6. Here a bracket 68 is held in the groove 24<sup>a</sup>, and the bracket carries a rotatable table 69, on the under side of which near the center is a threaded shank 70, which extends through the bracket 68 and is fitted with a nut 71, by which the table can be held fixed. The slide-block of the bracket 61 is provided with a punch 72, and obviously this screw-punch 72 may be given any desired end configuration—that is, a series of screw-punches can be used and one taken out when another is to be inserted. It will be noticed that the action of the punch is like that of an ordinary punch and substantially like that of the saw-set described, but is not carried out to the extent of adapting it to punch saw-teeth first one way and then the other.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A combination-tool comprising a head, a movable handle member pivoted in the head, and a two-part saw-set attached to the said head and movable member, the first part carrying a setting-screw to fit a saw-tooth, and the second part comprising a bracket, an anvil slidable on the bracket and having means for fixing it in position, the inner end of the anvil being inclined, a guide-flange sliding in and out on the inclined end of the anvil, and an adjusting-screw connecting the anvil and flange so that by turning the screw the anvil and flange may be adjusted in relation to each other.

2. The combination with a tool having a head and a movable handle member pivoted in the head of a two-part saw-set, the parts being carried respectively by the head and the handle member, one part carrying a setting-screw and the other part carrying an anvil having a reduced and inclined inner end,



a guide-flange straddling said reduced end of the anvil and means for adjusting the flange on the anvil.

5 3. The combination with the tool having a head and a separable handle, the members of which are movable in relation to each other, and opposed brackets detachably secured to the head and the movable member of the handle, one bracket carrying an abutment, and

the other being longitudinally slotted and having adjustably secured in the slot an impinging tool, substantially as described.

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