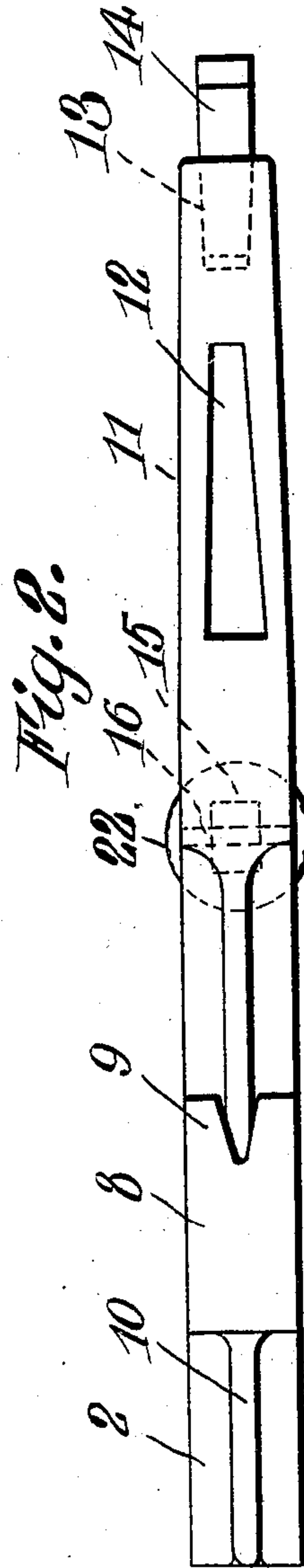
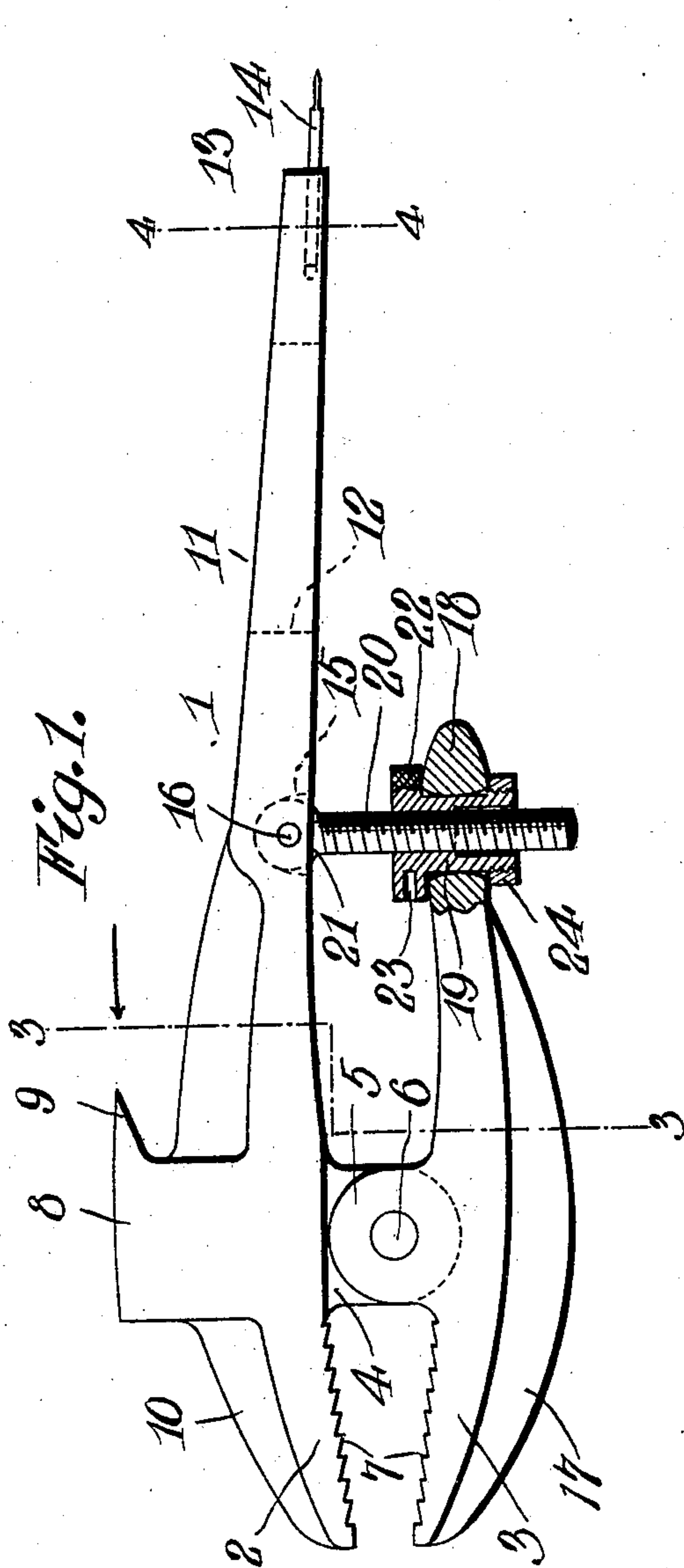


No. 878,049.

PATENTED FEB. 4, 1908.

E. B. DIKEMAN.
COMBINATION TOOL.
APPLICATION FILED AUG. 1, 1907.

2 SHEETS—SHEET 1.



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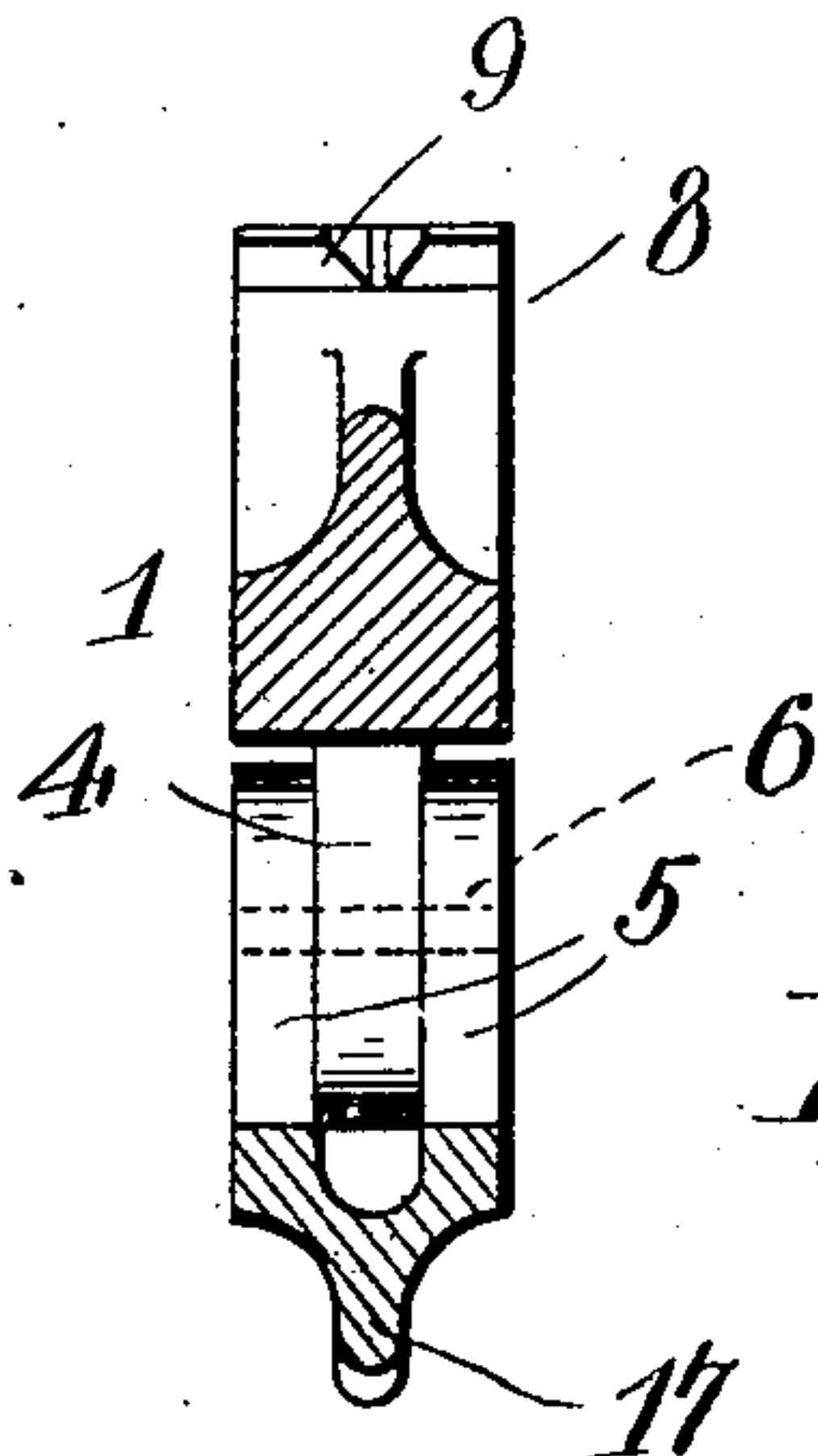


Fig. 3.

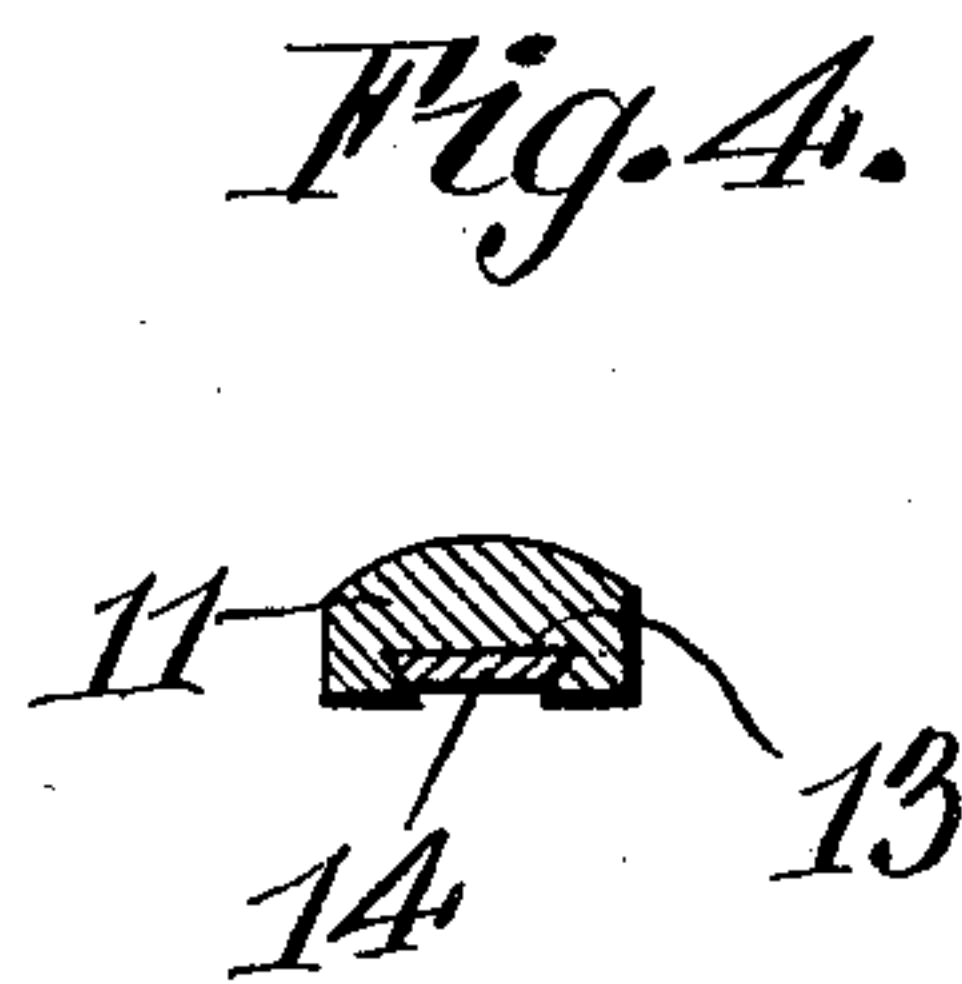


Fig. 4.

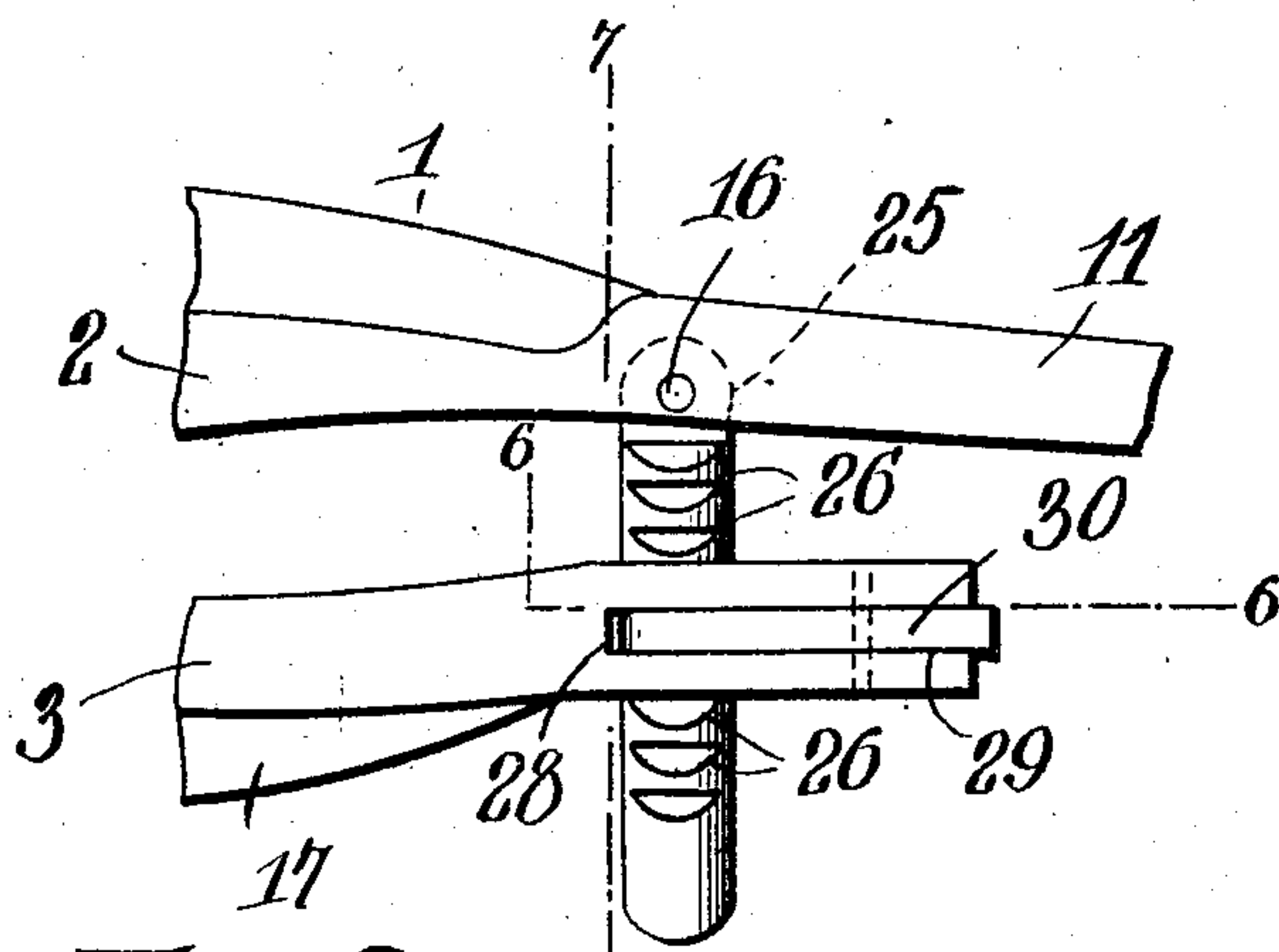


Fig. 5.

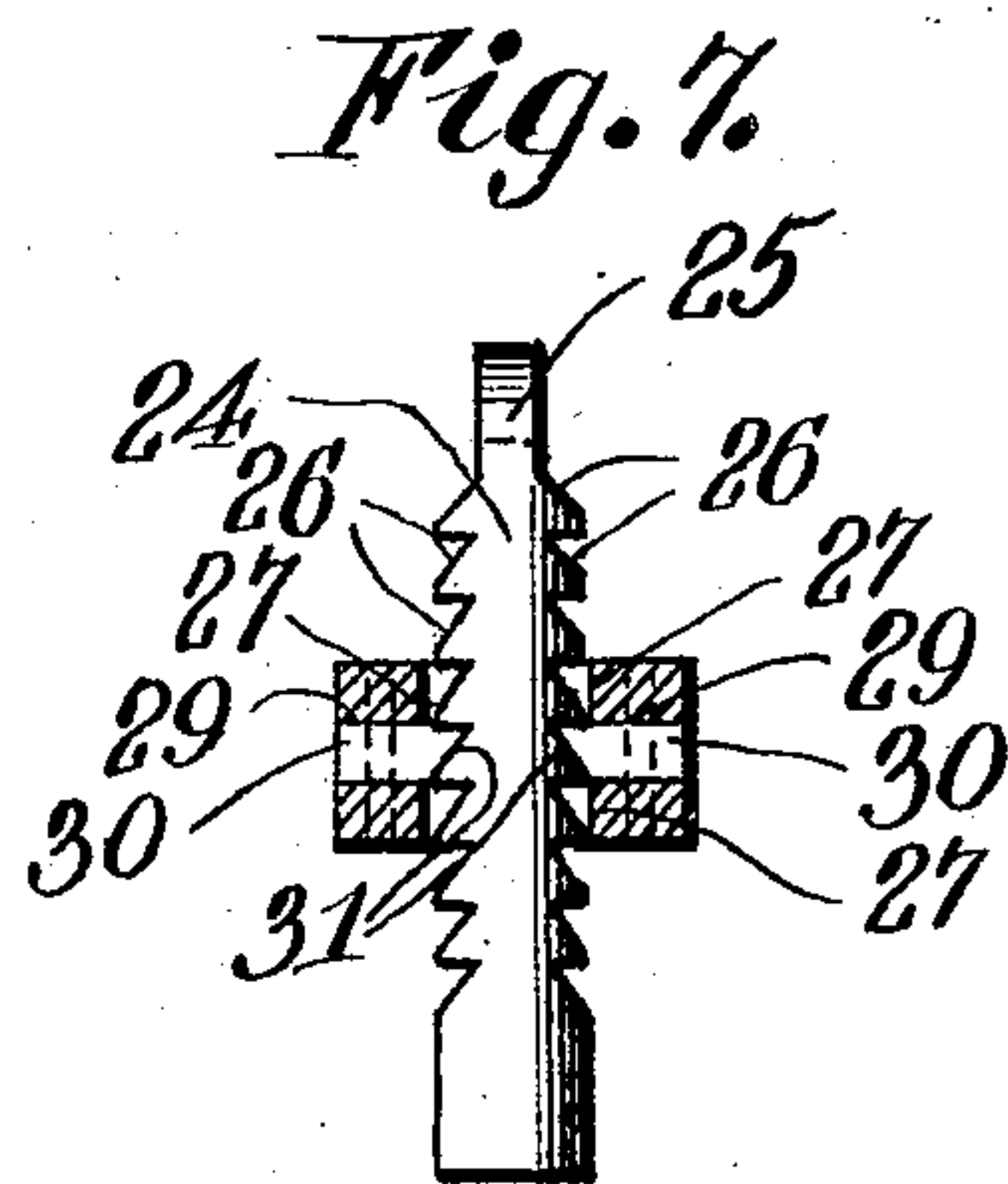


Fig. 7.

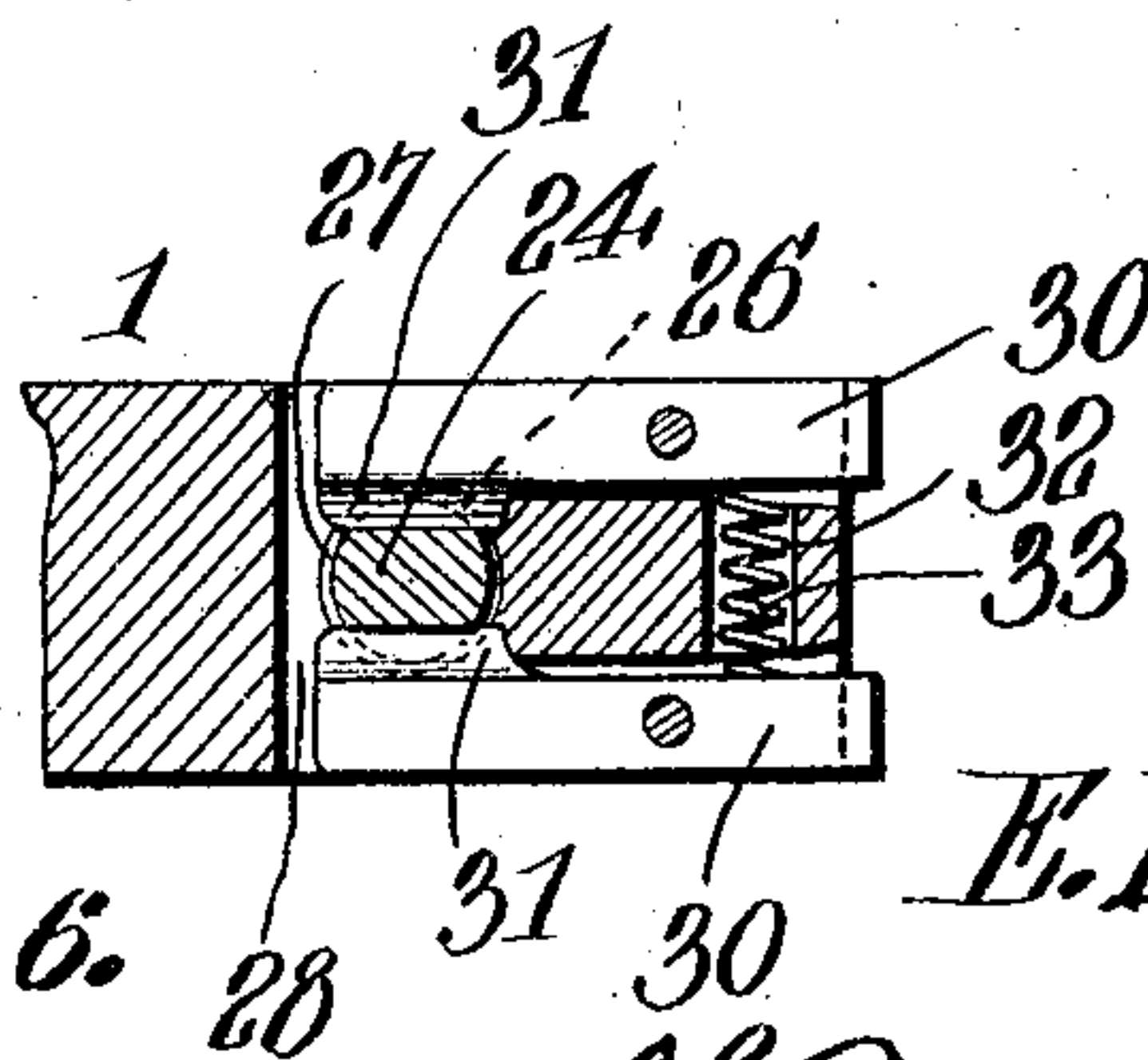


Fig. 6.

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COMBINATION-TOOL.

No. 878,049.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed August 1, 1907. Serial No. 386,630.

To all whom it may concern:

Be it known that I, EDMUND B. DIKEMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Combination-Tools; and I do 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.

This invention relates to improvements in combination tools.

The object of the invention is to provide a useful combination tool which will be simple, strong and durable, and which embodies in its construction a wrench, hand-vise, hammer and screw driver.

With this object in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side view of a tool constructed in accordance with the invention, parts of the same being shown in section; Fig. 2 is a view of one edge of the tool; Fig. 3 is a vertical cross sectional view on the line 3—3 of Fig. 1, looking in the direction of the arrow; Fig. 4 is a detail sectional view on the line 4—4 of Fig. 1; Fig. 5 is a side view of the tool showing a modified form of adjusting mechanism for the jaws; Fig. 6 is a detail sectional view on the line 6—6 of Fig. 5; and Fig. 7 is a detail sectional view on the line 7—7 of Fig. 5.

Referring more particularly to the drawing, 1 denotes the tool, which consists of a pair of jaws, 2 and 3. The jaw 2 has on its inner side an apertured lug, 4, which is adapted to be engaged with a pair of apertured lugs, or ears, 5, formed on the inner side of the jaw, 3. Through the apertures of the lugs 4 and 5 is arranged a pivot pin, 6, whereby the jaws 2 and 3 are pivotally connected together. On the opposing inner faces of the outer ends of the jaws, 2 and 3, is formed a series of teeth, 7, whereby said jaws may be engaged with a nut or other object.

On the outer side of the jaw, 2, and preferably diametrically opposite to its pivotal connection, is a hammer head, 8, on which is formed a claw, 9. The jaw 2 has formed on its outer side or edge a strengthening rib, 10.

The inner end of the jaw 2 is extended to

form a handle 11, in which adjacent to its end, is formed a tapered slot, 12. In the inner side of the end of the handle 11 is formed a tapered, dovetailed recess, 13, with which is adapted to be engaged a screw driver bit, 14. In the inner side of the jaw 2, between the handle portion and the pivotal connection of said jaw, is formed a recess, 15, in which is arranged a transverse pivot pin, 16, which extends through the jaw, as shown.

The jaw 3 is provided on its outer edge with a strengthening rib, 17, and on the inner end of the jaw is formed a flat, apertured extension, 18, in which is loosely mounted a thimble nut, 19, which is adapted to be engaged with an adjusting screw or bolt, 20, on the inner end of which is formed a flat, circular head, 21, having an aperture through which the pin 16 is passed, thereby pivotally connecting the bolt 20 with the jaw 2. The thimble nut 19 is provided on its inner end with a milled head, 22, in the edge of which is formed a series of radially disposed sockets or recesses, 23, adapted to receive a suitable instrument to assist in the turning of the nut. The outer end of the thimble nut 19 is reduced and threaded to receive a securing nut 24, by means of which the thimble nut 19 is retained in proper position in the aperture of the extended end of the jaw, 3, and which is adapted to be loosely turned to screw or unscrew the same on or off the bolt 20, which operation opens or closes the toothed ends of the jaws 2 and 3, and holds the same in any desired position, thus providing for the use of the same as an adjustable wrench or as a hand-vise.

In Fig. 5 of the drawings is shown a modified form of jaw adjusting mechanism, said mechanism being shown in this instance as consisting of an adjusting bar, 24, having on its inner end a flattened aperture, 25, which is adapted to be pivotally connected to the jaw 2 by means of the pivot pin, 16, in the same manner as described in connection with the bolt, 20. The adjusting bar, 24, is provided on two of its opposite sides with a series of ratchet teeth 26.

In the inner end of the jaw 3 as shown in Figs. 5, 6 and 7 of the drawings, is formed a transversely disposed hole, 27, which is intersected by a transversely disposed slot or passage, 28, the opposite ends of which connect with longitudinally disposed grooves or

channels, 29, formed in the opposite side edges of the end of the jaw, as clearly shown in Figs. 5 and 7 of the drawings.

Pivotally mounted in the grooves or channels 29 are pawls or dogs 30, on the inner ends of which is formed a beveled tooth, 31. The teeth 31 are adapted to engage the teeth 26 of the adjusting bar, 24, which is adapted to work through the hole 27 in the jaw and serve to lock said bar and thus hold the jaws 2 and 3 in their adjusted position. In the outer end of the jaw 3 is formed a transversely disposed hole 32, which communicates at its outer ends with the channels 29, in which are pivoted the pawls, 30. In the passage 32 is disposed a coiled spring 33, the opposite ends of which are adapted to bear against the inner sides of the outer ends of the pawls 30, thereby yieldingly holding the inner ends of the same in engagement with the teeth of the adjusting bar, 24.

The holding mechanism shown in connection with Figs. 5, 6 and 7 of the drawings, provides for the quick adjustment of the jaw.

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

1. In a combination tool of the character described, a main or stationary jaw having a handle, a strengthening rib on the outer side of said jaw, an adjustable jaw pivotally connected to said main jaw and co-acting therewith to form a vise, a strengthening rib on the outer side of said adjustable jaw, an adjustable bar pivotally mounted in said main jaw, an adjustable mechanism carried by said adjustable jaw to engage said adjusting bar, and means to removably secure said adjusting mechanism in operative position, substantially as described.

2. A combination tool comprising a pair of jaws having on their inner sides apertured

connecting lugs, a pivot pin arranged through said lugs whereby said jaws are pivotally connected together, an adjusting bolt pivotally mounted on the inner side of one of said jaws, a thimble nut loosely mounted in the adjacent end of the opposite jaw, an operating head formed on the inner end of said thimble nut, a securing nut adapted to be screwed onto the outer end of said thimble nut to hold the same in place when the latter is screwed on or off said adjusting bolt to open or close the jaws of the wrench, substantially as described.

3. In combination with a tool of the character described, a main or stationary jaw having an integral handle, a strengthening rib on the outer side of said jaw, an apertured pivot lug on the inner side of the same, an adjustable jaw, a strengthening rib on the outer side of said jaw, an apertured pivot lug on the inner side of the same to engage the pivot lug on said main jaw, a pivot pin arranged through said lugs whereby said jaws are pivotally connected together, a threaded adjusting bolt pivotally mounted in said main jaw, a thimble nut loosely mounted in said adjustable jaw, interior threads formed in one end of said nut to engage the threads on said bolt, exterior screw threads on the outer end of said nut, and a securing nut adapted to be screwed onto the threaded outer end of said thimble nut whereby the same is held in an operative position in said adjustable jaw, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDMUND B. DIKEMAN.

Witnesses:

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E. L. HESS.