

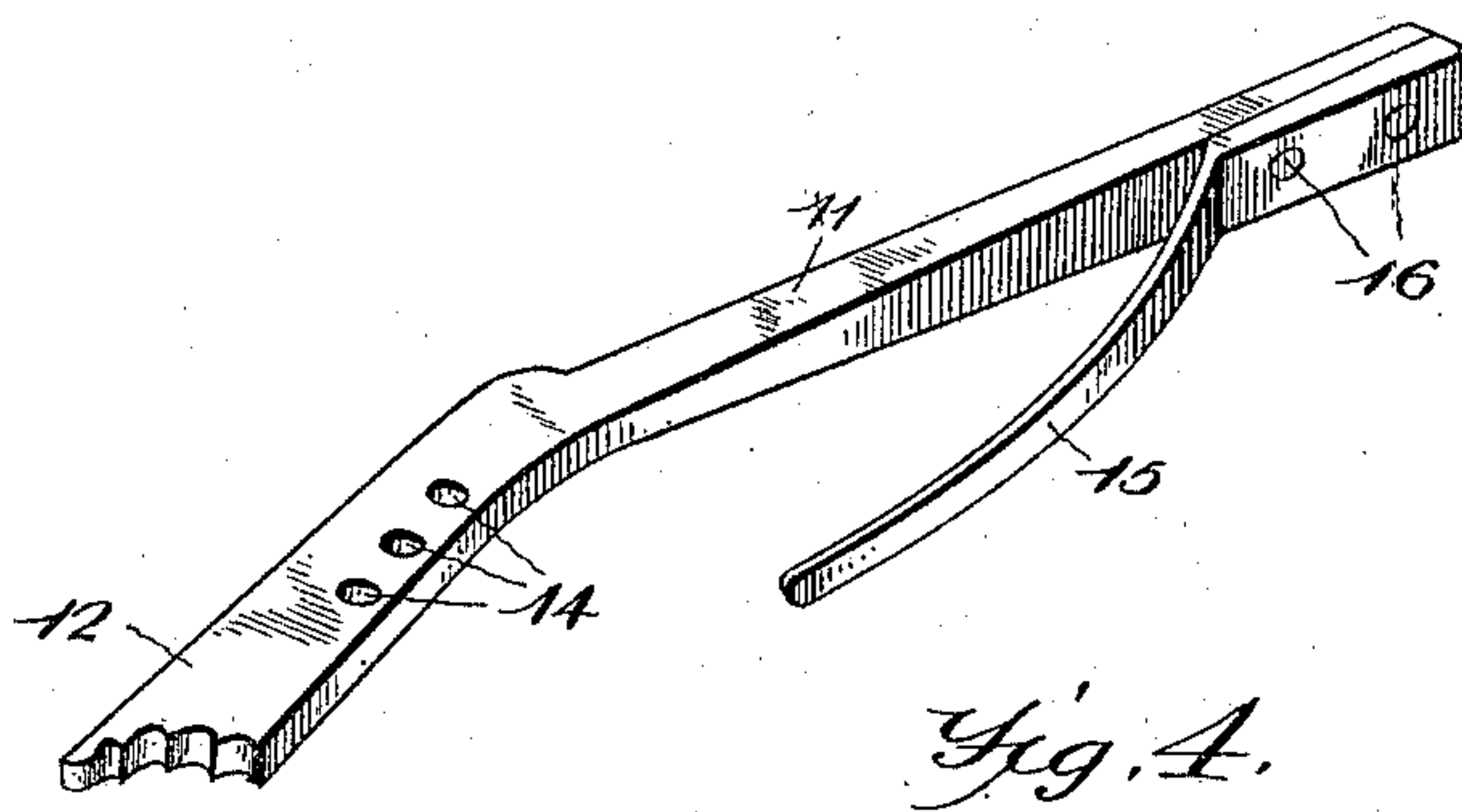
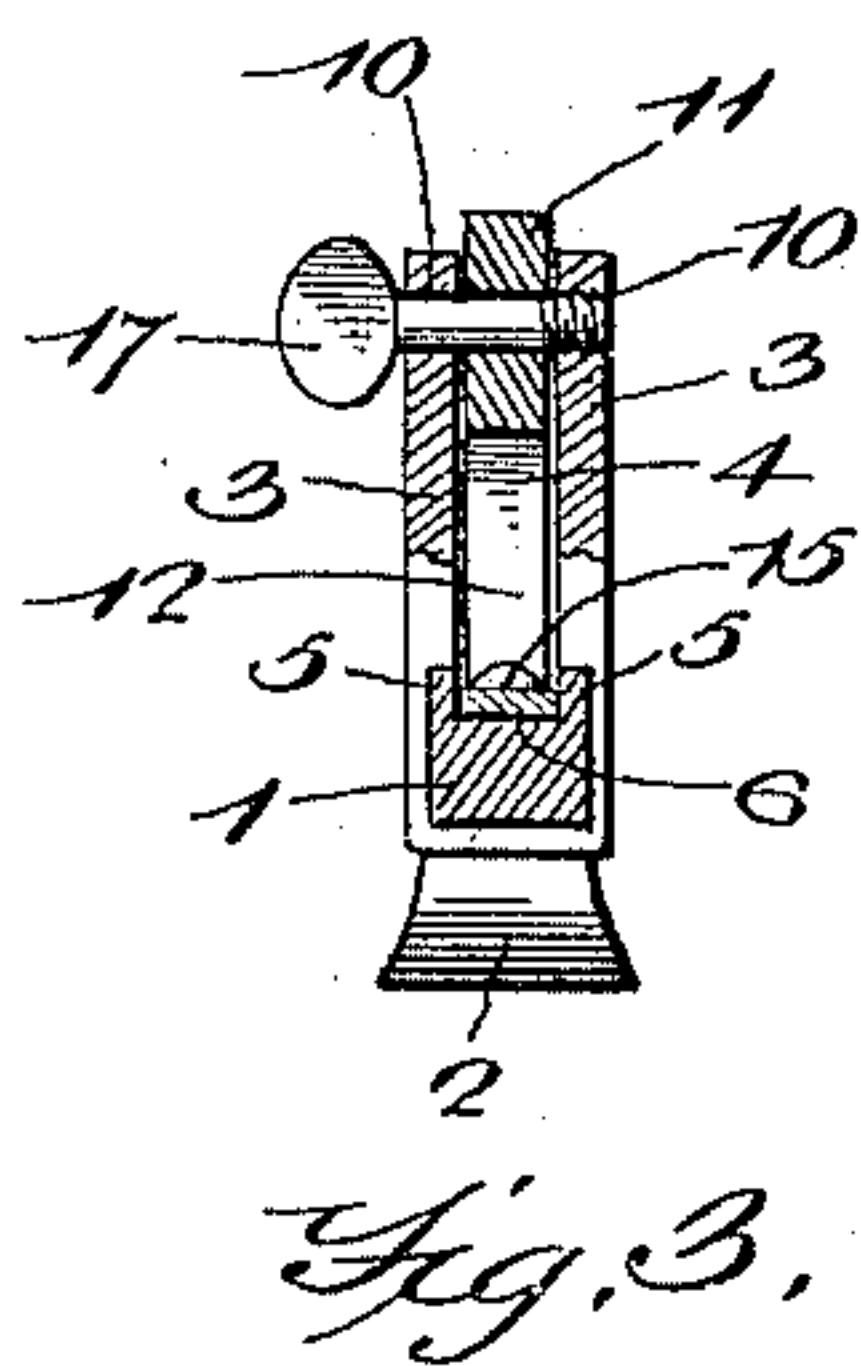
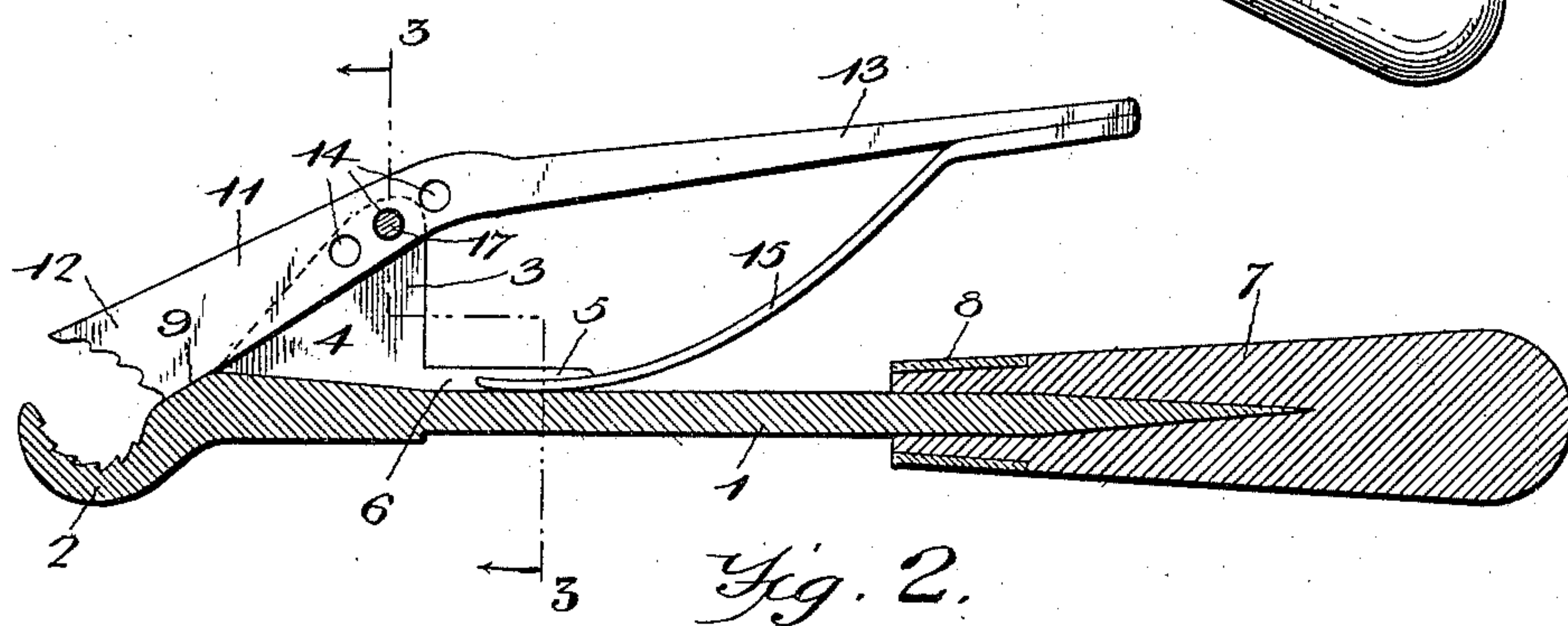
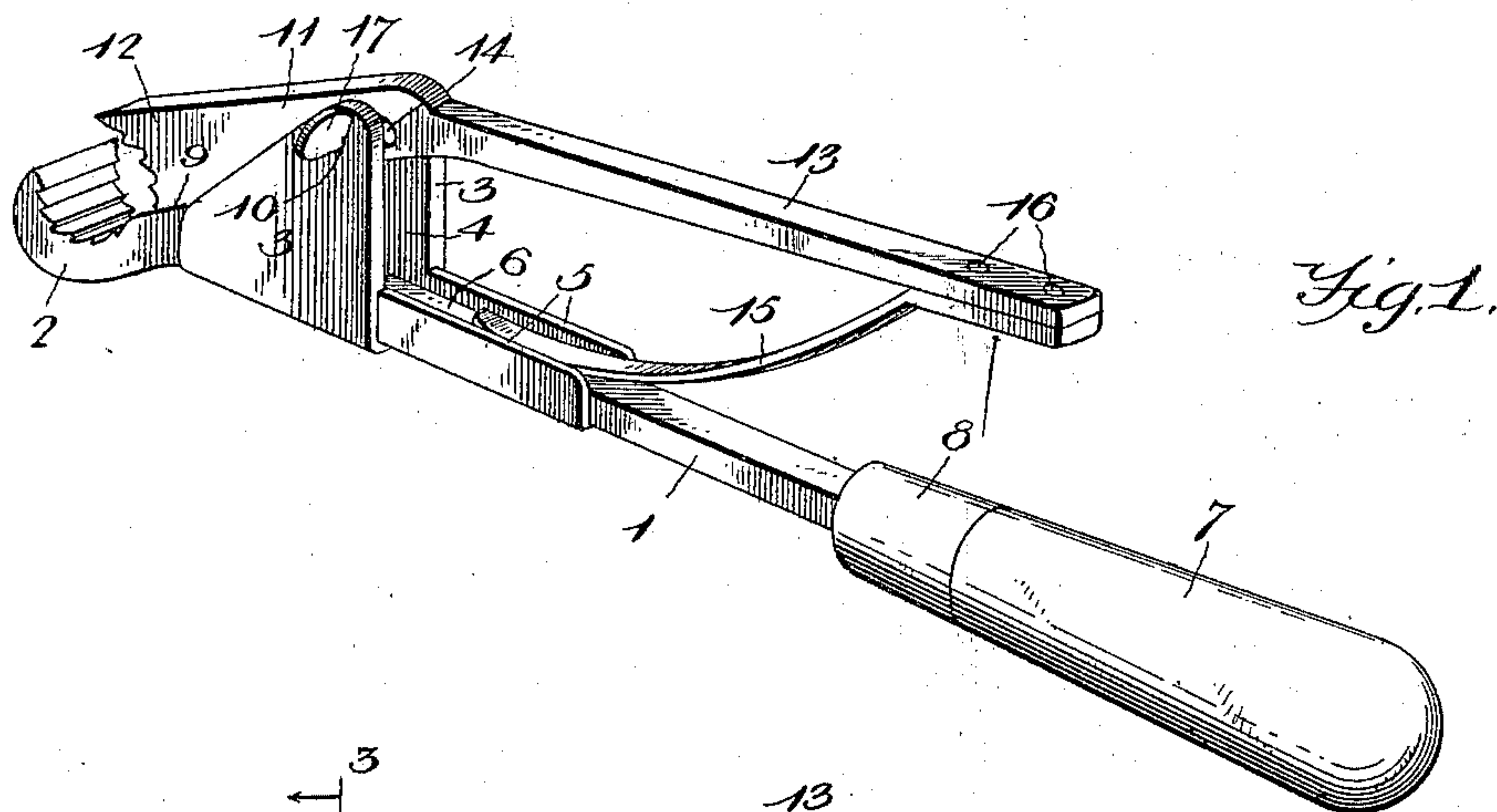
No. 612,454.

Patented Oct. 18, 1898.

M. BLACKWELL.
PIPE WRENCH.

(Application filed Feb. 21, 1898.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

MAT BLACKWELL, OF LEBANON, VIRGINIA, ASSIGNOR OF ONE-HALF TO
WILLIAM E. BURNS AND O. S. BURNS, OF SAME PLACE.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 612,454, dated October 18, 1898.

Application filed February 21, 1898. Serial No. 671,140. (No model.)

To all whom it may concern:

Be it known that I, MAT BLACKWELL, a citizen of the United States, residing at Lebanon, in the county of Russell and State of Virginia, have invented a new and useful Pipe-Wrench, of which the following is a specification.

My invention relates to improvements in pipe-wrenches; and the object that I have in view is to provide a simple, cheap, efficient, and durable implement which is adapted to grip the pipe firmly, is adjustable to accommodate itself to pipes of different diameters, has its spring arranged compactly between the bars or shanks of the two jaws, so as to be entirely out of the way of the operator, and in which the movable jaw of the lever is normally pressed toward the rigid jaw, so that the inward movement of the movable jaw is arrested by contact with the rigid jaw.

With these ends in view my invention consists in the novel construction, arrangement, and combination of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification and in which—

Figure 1 is a perspective view of a pipe-wrench constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse sectional view on the plane indicated by the dotted line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of the lever, one end of which forms the movable jaw.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

1 designates the bar of my improved wrench. This bar is peculiarly constructed to produce the rigid jaw, the support for the lever of the movable jaw, and a seat for the spring which normally presses the lever toward the rigid jaw. The extremity of the bar 1 is made quite broad and is curved longitudinally, so as to form the rigid jaw 2. The working face of the rigid jaw is concave, substantially as shown more clearly by Fig. 2, and said concave face is provided with transverse corrugations or teeth to adapt the movable jaw for grip-

ping the pipe firmly, and below its concave serrated face said jaw is provided with a flat face 9, against which one edge of the movable jaw is adapted to bear, as will hereinafter appear. The bar 1 is furthermore provided at a point below or within its rigid jaw with the bearing-plates 3, which are made integral with or rigidly united to said bar and are parallel to each other, so as to form between said plates a space to receive the lever 11. The bearing-plates 4 project from one side of the bar 1, and on the same side as the bearing-plates said bar is further provided with the longitudinal flanges 5, which project a short distance beyond one side or face of the bar and are parallel to each other to form the longitudinal channel 6, which is in alinement with the space between the bearing-plates. To one end of the bar 1 is rigidly secured the handle 7, the inner end of which is reinforced by the ferrule 8.

I prefer to taper the upper edges of the bearing-plates 4, as shown by Figs. 1 and 2, and in the bearing-plates, at or near the free ends thereof, are formed the coincident openings 10, one of which is preferably threaded.

The lever 11 is a single continuous piece of metal which is bent at an intermediate point of its length to give to the lever the angular form represented by Figs. 2 and 4, and one end of the lever from its angle outwardly is enlarged or widened. The widened end of the lever is slightly concave and formed with a series of transverse corrugations or teeth to produce the movable jaw 12, while the other end of the lever forms the shank 13, that lies at a suitable distance from the bar 1 and its handle 7, so that the free end or shank 13 of the lever 11 is adapted to be grasped by the hand of the operator. Adjacent to the angular or bent part of the lever 11 is provided a series of transverse openings 14, which are spaced at suitable intervals apart to provide for the adjustment of the lever lengthwise of the implement, so that the movable jaw may be brought closer to or moved farther away from the rigid jaw to adapt the implement to pipes of different diameters. To the free end or shank of the lever 11 is attached one end of the pressure-spring 15, which is in the form of a curved or bent leaf-spring. One end of

said spring is bent to lie against the shank or extremity of the lever 11, and it is rigidly fastened thereto by a transverse rivet or rivets 16. The other end of the spring is curved or
 5 deflected to bear against one face of the bar 1 in the channel 6 and be held against lateral displacement by the parallel flanges 5. The spring is thus attached to the lever to be movable therewith, and the free end of said spring
 10 has traveling contact with the bar 1 in the channel 6, so that when the shank of the lever is pressed inwardly against the tension of the spring the free end of the spring slides or moves along the bar 1 to permit the inward
 15 movement of the lever to take place.

The lever is fitted between the bearing-plates 3 to have one or the other of its openings 14 register with the openings 10 in the bearing-plates, and through the coincident
 20 openings in the bearing-plate and the lever passes the pivotal screw 17. One end of this screw engages with the threads in one of the openings 10, formed in the bearing-plates 3, and the other end of the screw is provided
 25 with a head or thumb-piece by which the screw may be conveniently rotated for the purpose of detaching the same when it is desired to adjust the lever to bring the movable jaw to variable positions with relation to the
 30 rigid jaw.

From the foregoing description it will be apparent that I have provided a simple construction of pipe-wrench in which the spring normally presses against the lever to force
 35 one edge of the lever against the stop-face 9 on the rigid jaw. The spring is compactly arranged between the bar and the lever of the wrench, entirely out of the way of the operator, and it is so attached to the lever and
 40 fitted against the bar 1 of the implement that it cannot become displaced accidentally. The pivotal screw may be detached to permit longitudinal adjustment of the lever, and said screw may be passed through either of the
 45 openings in the lever, whereby the lever may be adjusted to vary the width of the space or throat between the movable jaw and the rigid jaw of the wrench.

The implement is adapted for service by
 50 pressing the shank or free end of the lever inwardly toward the bar, thus opening the space between the two jaws of the wrench, after which the wrench may be fitted around a pipe and the lever released for the purpose
 55 of allowing the spring to move the lever and force the movable jaw tightly into engagement with the pipe.

My improved implement is exceedingly sim-

ple and durable in construction, easily operated by one hand, and cheap of manufacture.

It is evident that changes in the form and
 60 proportion of parts may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of the invention.

Having thus described the invention, what I claim is—

1. In a pipe-wrench, a bar provided at one end with the curved rigid jaw, the longitudinal channel on one edge of the bar, and the bearing-plates arranged on the bar between the channeled portion thereof and said jaw,
 70 the height of said bearing-plates exceeding the thickness of the bar, in combination with an angular lever fulcrumed at its bent portion in said plates to lie a short distance away from the bar and provided at its free end
 75 with a serrated portion forming a jaw adapted to coact with the rigid jaw, and a spring fastened to the lever and having its free end confined in the channeled face of the bar, substantially as described. 80

2. In a pipe-wrench, the combination of a bar provided with the rigid jaw and the bearing-plates within said jaw, an angular lever fitted between said bearing-plates and provided with a series of transverse openings, a
 85 pivotal bolt or screw supported by the bearing-plates and fitting in one of the series of openings in said lever, and a leaf-spring attached at one end to said lever and having traveling contact with the bar, whereby the
 90 spring is adjustable with the lever, substantially as described.

3. A pipe-wrench consisting of a bar provided at its extremity with a rigid jaw, the parallel bearing-plates, and the flanges spaced
 95 to form a longitudinal channel; the angular lever fitted between said bearing-plates and provided at one end with a movable jaw and with a series of transverse openings; a pivotal bolt or screw fitted in said bearing-plates
 100 and in one of the openings of the lever; and a leaf-spring fastened to the lever and having its free end fitted in the channel of the bar to be held against edgewise displacement by the flanges, substantially as described. 105

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

his
 MAT X BLACKWELL.
 mark

Witnesses:

WM. E. BURNS,
 C. C. BURNS.