

No. 640,530.

Patented Jan. 2, 1900.

J. L. BRAUN.
WRENCH.

(Application filed May 31, 1899.)

(No Model.)

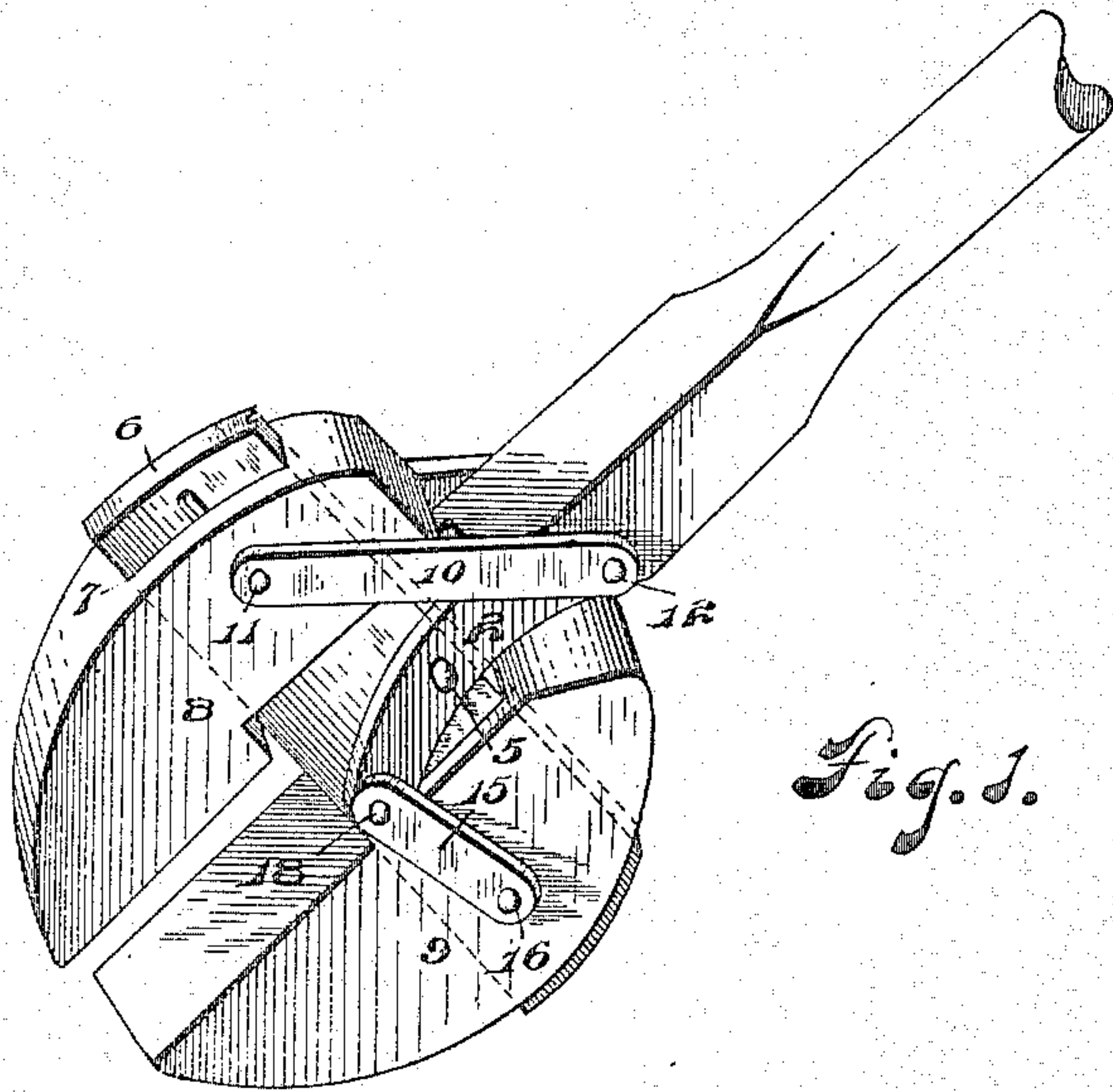


Fig. 1.

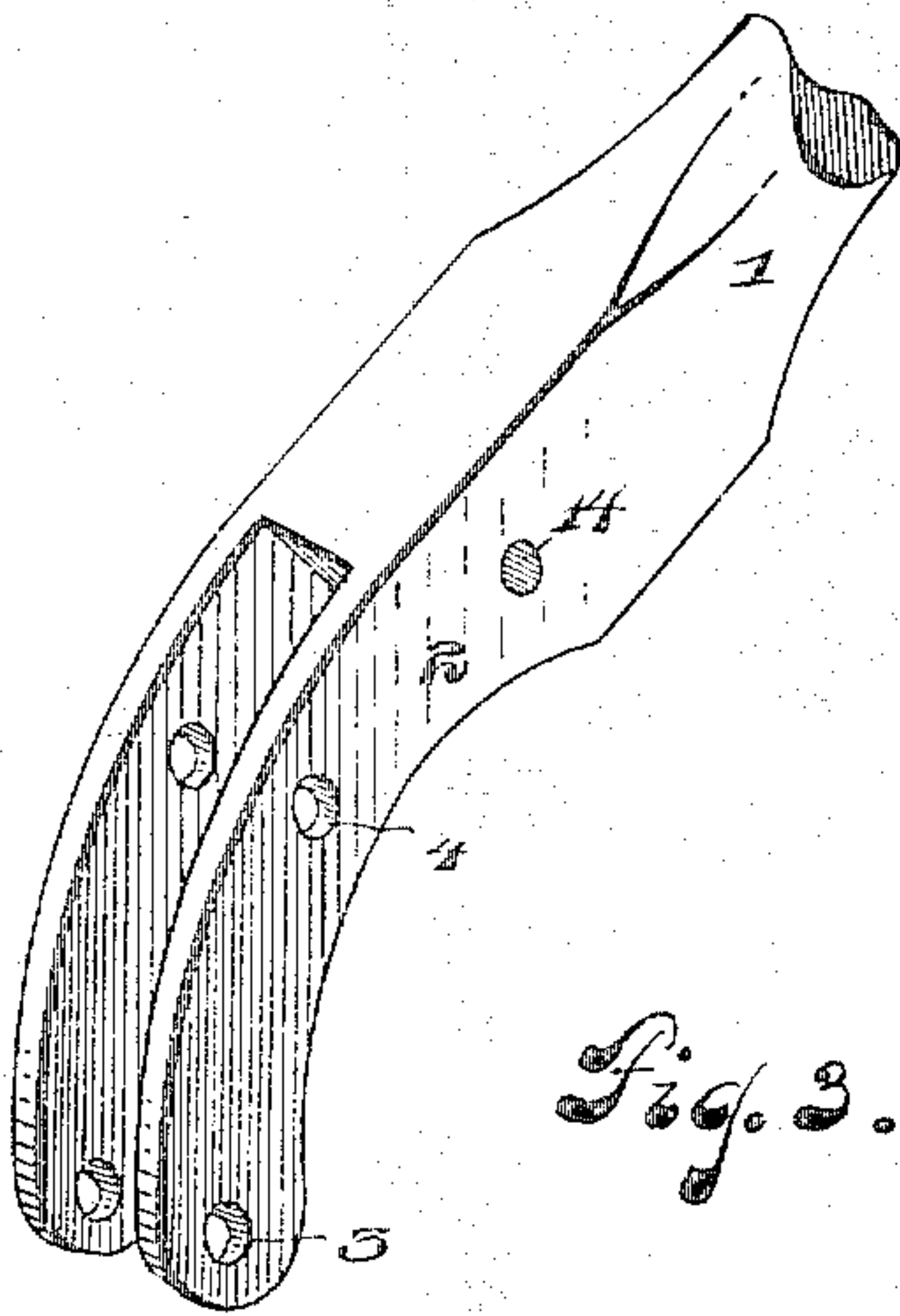


Fig. 3.

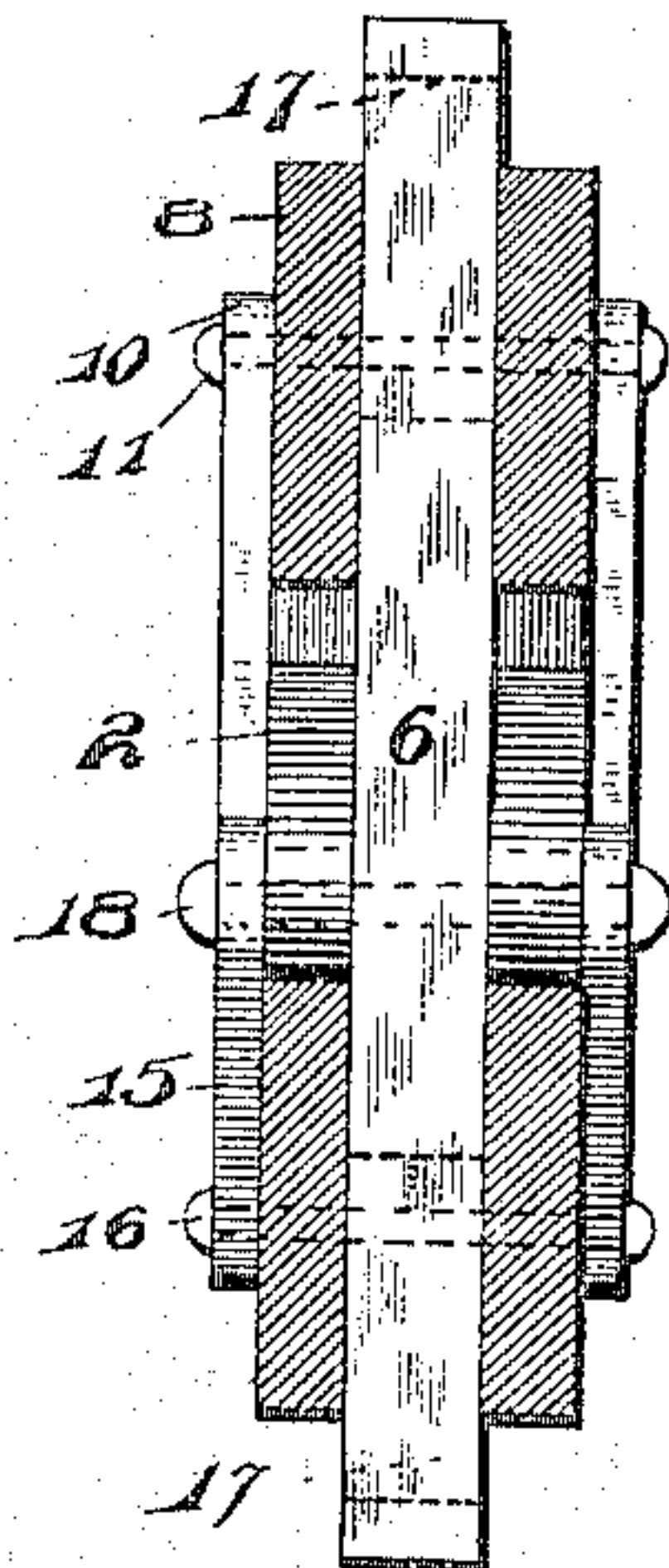


Fig. 2.

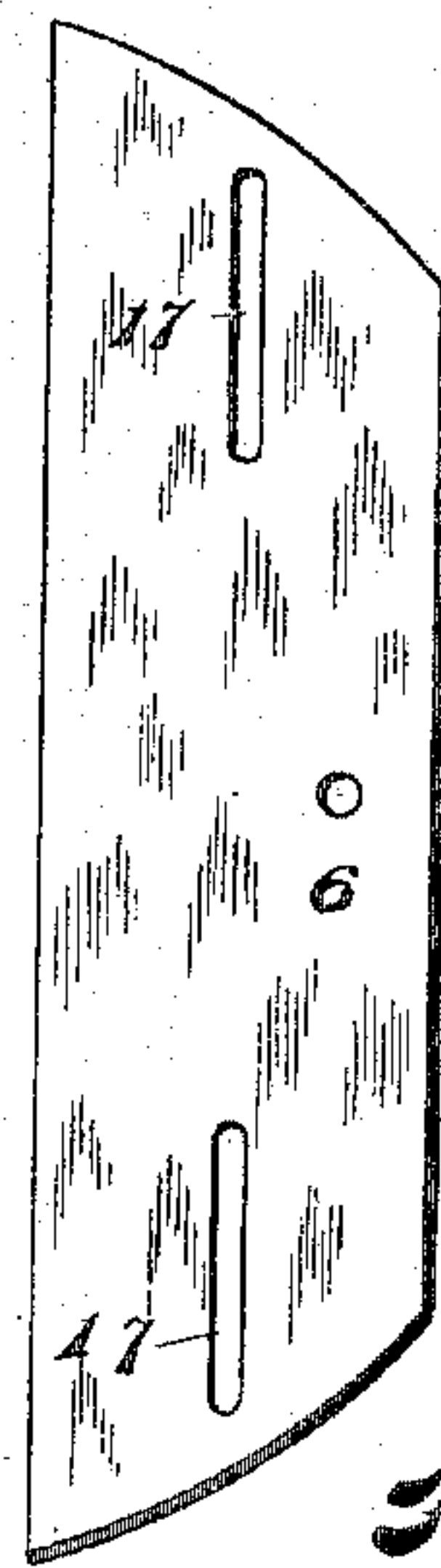


Fig. 4.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 640,530, dated January 2, 1900.

Application filed May 31, 1899. Serial No. 718,827. (No model.)

To all whom it may concern:

Be it known that I, JOHANN L. BRAUN, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in wrenches.

Briefly described, my invention consists of two substantially similar-shaped jaws which are connected to a common handle by links and which move outwardly away from each other or inwardly toward each other upon a slide plate or guide extending through the said jaws.

In the application of the wrench the lower jaw is adapted to act as a fulcrum, so that when the lever-pressure is applied to the handle the lower jaw is moved upwardly and the upper jaw is drawn downwardly through the medium of the connecting-links, and as the leverage upon the handle is increased the jaws are consequently forced into firmer engagement with the object which they grip.

The primary object of my invention is to construct a wrench, as above described, in which the jaws will be automatically adjusted to conform to the diameter of any-sized nut, bar, pipe, or like object by the leverage applied to the operating-handle.

Other objects of my invention consist in the novel features of construction, combination, and arrangement of the parts, as will be hereinafter more specifically described and then particularly pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification and wherein like numerals of reference indicate similar parts throughout the different views, in which—

45 Figure 1 is a perspective view of my improved wrench with the handle thereof partly broken away. Fig. 2 is a transverse vertical sectional view of the same. Fig. 3 is a perspective view of a portion of the handle. 50 Fig. 4 is a side view of the guide-plate for the jaw.

Referring now to the drawings by reference-numerals, 1 indicates the handle, which may be of any desired length, and is provided with the bifurcated end forming the jaws 2, 55 which are slightly curved downwardly, and are provided with apertures 3 3 and 4 4, to receive pivot-pins, as will be hereinafter more fully explained and described. The curved jaws 2 of the handle are pivotally connected 60 by a pin 5, engaging in the apertures 4 4 to a guide-plate 6, which operates in apertures 7, conforming thereto and provided therefor in the two gripping-jaws 8 and 9. These gripping-jaws are substantially similar, being 65 somewhat segment-shaped in their outline, the periphery being curved, as shown, and the ends of the guide-plate 6 being curved on the same degree as the peripheries of the jaws. The upper jaw 8 is pivotally connected on 70 each side by links 10, the pivot-pin 11 of which is adapted to operate in an oblong aperture provided therefor in the upper end of the guide-plate 6. At their rear ends these links 10 are pivotally connected to the handle 1, 75 the pivot-pin 12 engaging through an aperture 14 provided therefor in said handle. The lower gripping-jaw 9 is pivotally connected on each side by links 15 15, the lower pivot-pin 16 of which operates through an 80 oblong aperture 17, provided therefor near the lower end of the guide-plate 6. At their upper ends these links 15 15 are pivotally connected by pivot-pins 18 to the two members of the jaws 2 of the handle. 85

The operation of my improved wrench is as follows: The underneath face of the gripping-jaw 9 acts as the fulcrum-point, and when pressure is applied to the handle 1 the upper gripping-jaw 8 is moved upwardly away 90 from the lower jaw, and when the object is placed between the gripping-jaws the handle is pressed downwardly, causing the links 15 to draw the lower jaw 9 upwardly and also causing the links 10 to draw the upper jaw 8 95 downwardly, the grip of the jaws 8 and 9 being increased as the pressure upon the end of the operating-handle is increased.

In order to permit the engagement of the gripping-faces of the jaws 8 and 9, I cut away 100 these jaws on the rear portion of their underneath face, as shown at 19, permitting their

closing without obstruction being offered by the jaws 2 of the handle.

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

1. In a wrench, the combination with an operating-handle, a guide-plate to which said handle is pivotally secured, a pair of jaws provided with apertures to receive said guide-plate, a pair of links connecting the upper of said jaws to the handle, and a pair of links connecting the lower of said jaws to the pivoted end of the handle, substantially as described.

2. In a wrench, the combination of a handle having jaws formed integral with its one end, a guide-plate to which said jaws are pivotally secured, an upper and a lower gripping-jaw provided with registering apertures to receive said guide-plate, and means connected to said jaws and to the handle whereby the jaws are moved together when downward pressure is applied to the handle, substantially as described.

3. In a wrench, the combination of a handle having curved jaws formed integral with

its one end, a guide-plate to which said jaws are pivotally secured, said guide-plate being provided with apertures, a pair of gripping-jaws provided with apertures to receive said guide-plate, a pair of links connecting the upper of said jaws with the handle at the rear of the jaws, and a separate pair of links pivotally connecting the free end of said jaws with the lower of the gripping-jaws, substantially as described.

4. In a wrench, the combination of a handle, a guide-plate to which said handle is pivotally secured, an upper gripping-jaw, a lower gripping-jaw adapted to act as a fulcrum, each of said jaws being provided with registering apertures to receive the guide-plate, and means connected to said gripping-jaws and to the handle for operating the said jaws by the movement of the handle, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHANN L. BRAUN.

Witnesses:

JOHN NOLAND,

WILLIAM E. MINOR.