

No. 720,530.

PATENTED FEB. 10, 1903.

N. LARSEN.
WRENCH.

APPLICATION FILED JULY 2, 1902.

NO. MODEL.

Fig. 1.

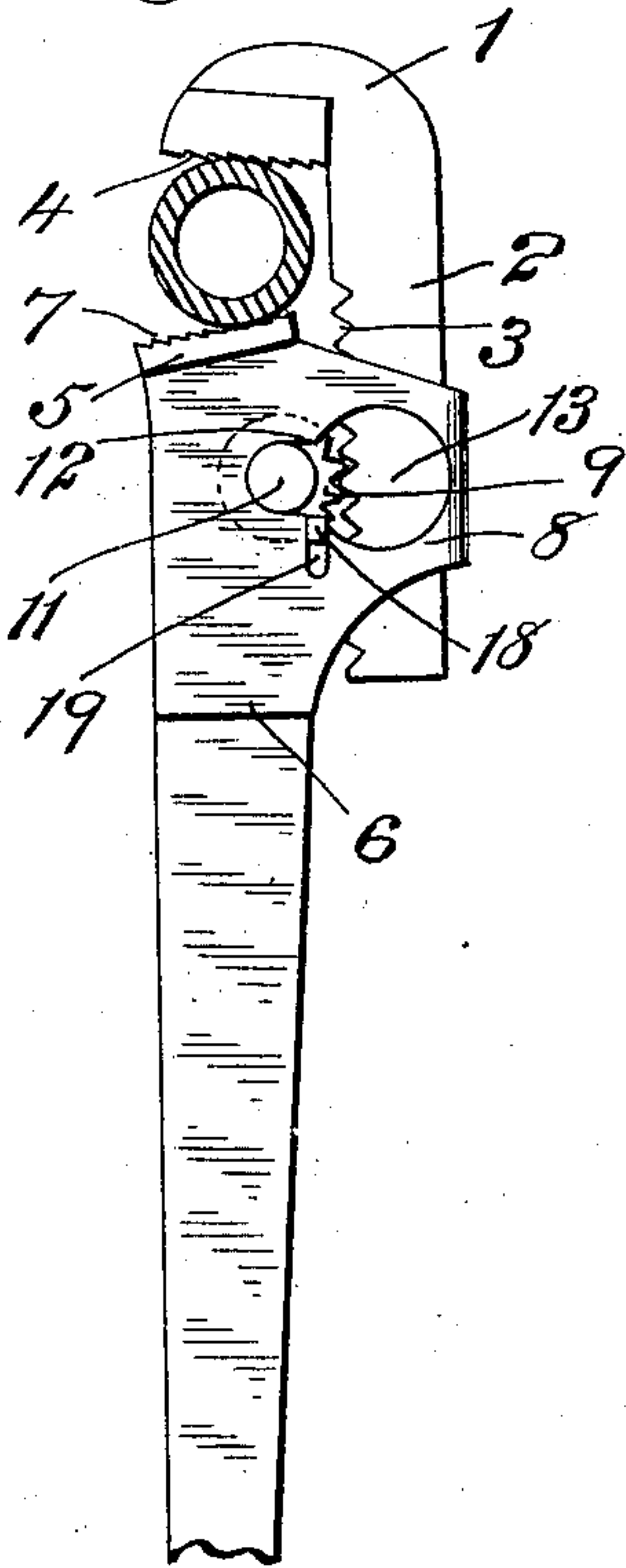


Fig. 2.

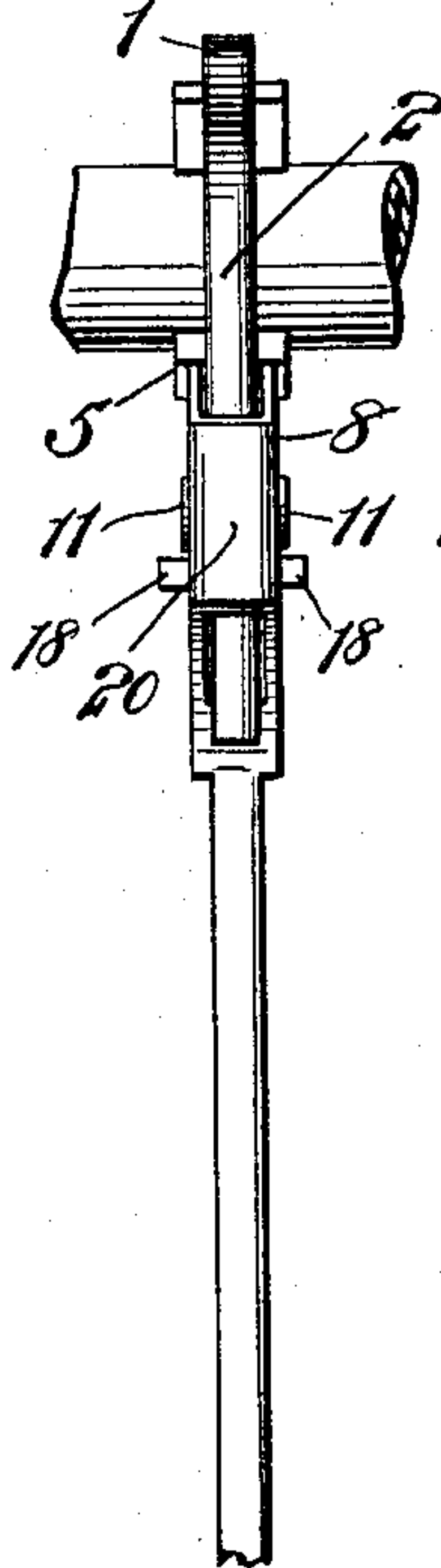


Fig. 3.

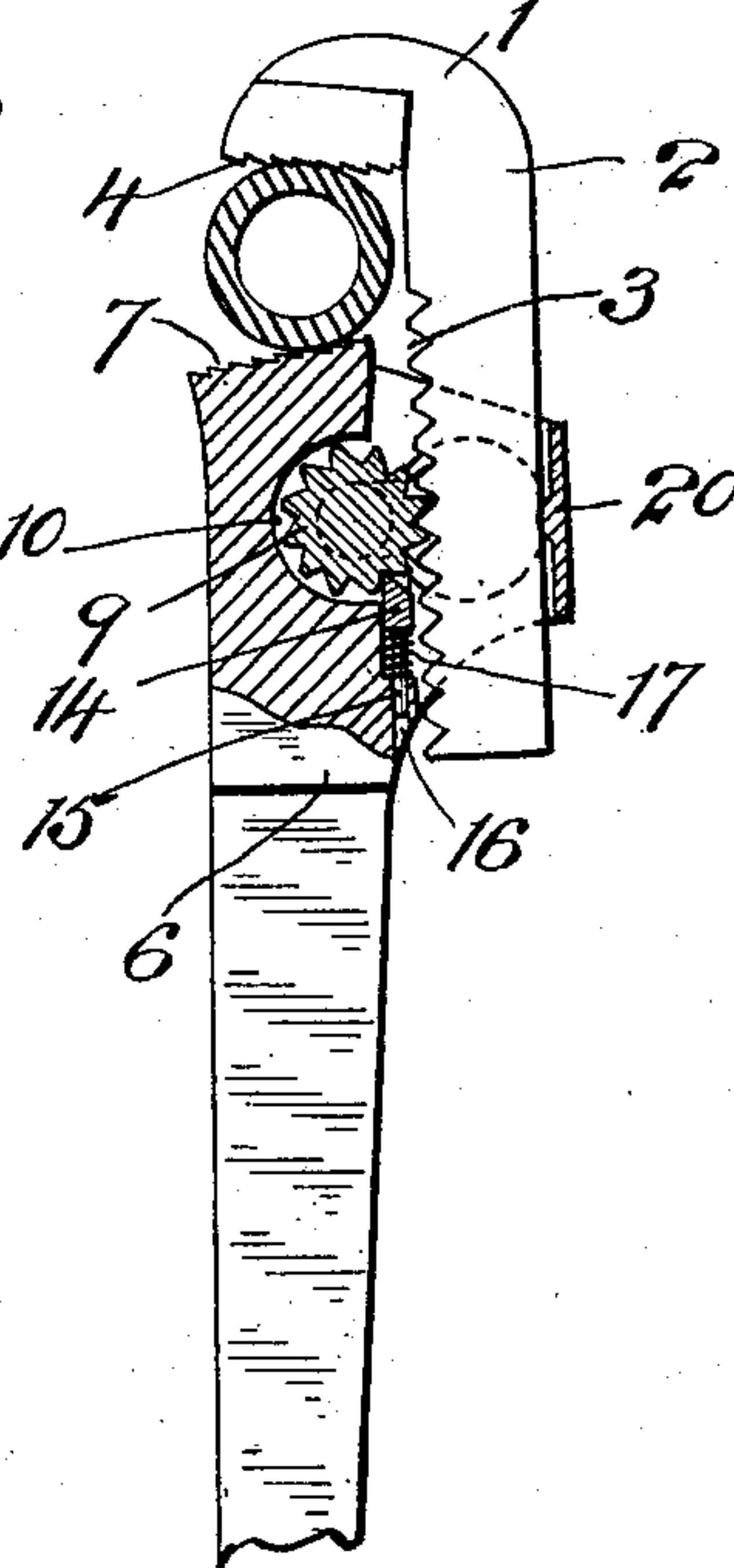


Fig. 6.

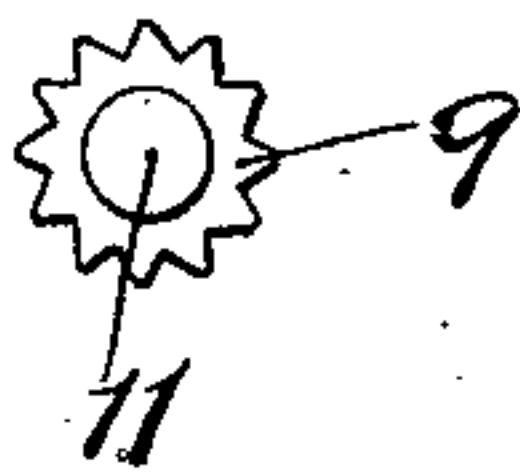


Fig. 4.

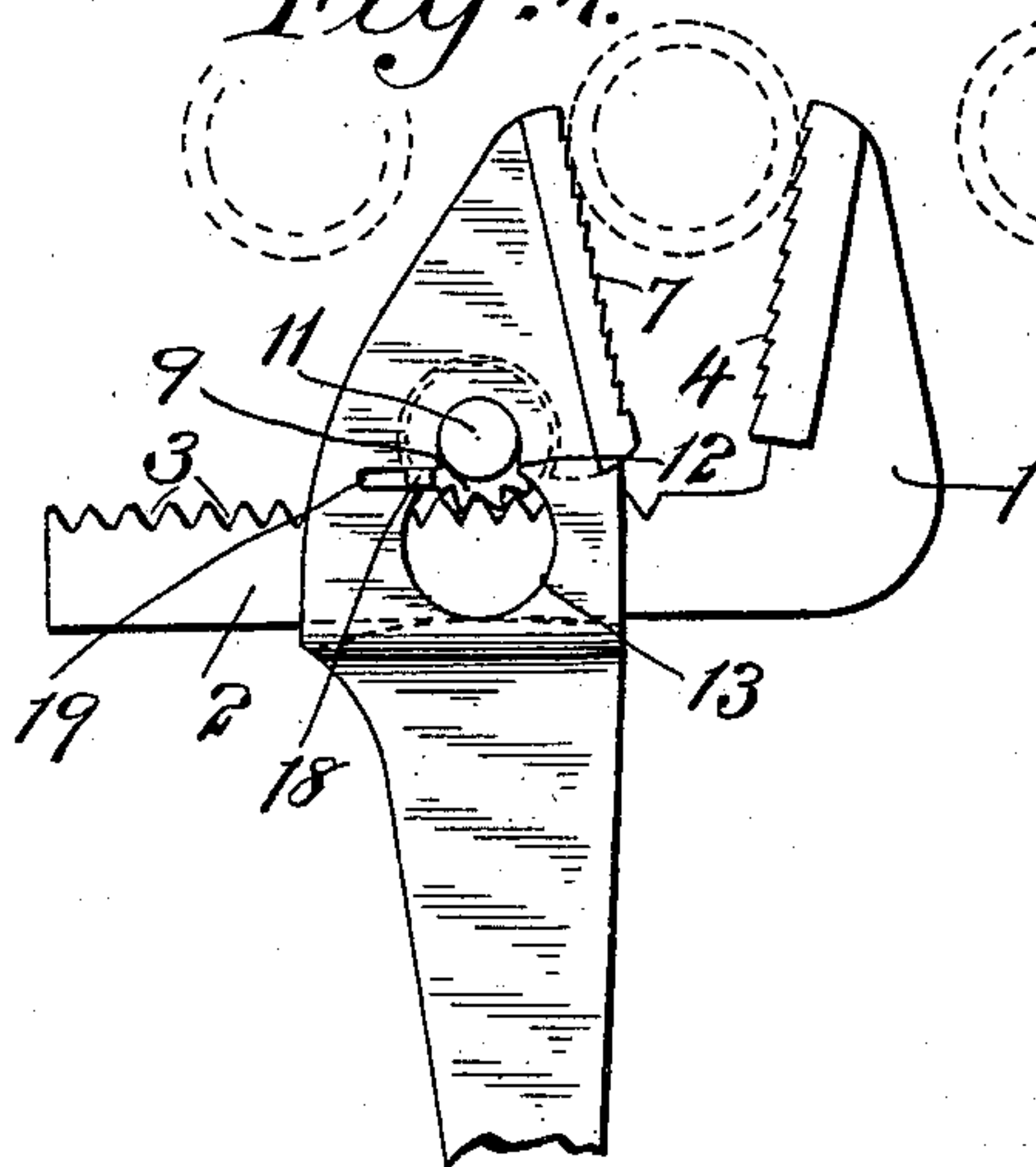


Fig. 7.

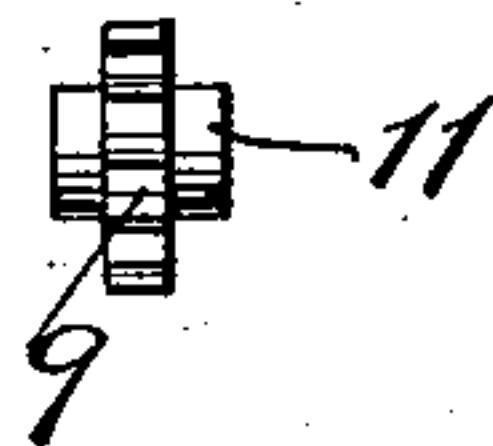
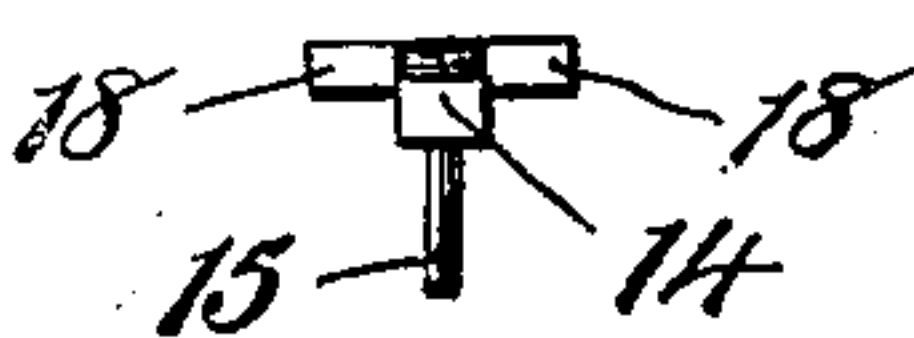


Fig. 5.



Witnesses:

George Barry Jr.
Henry J. Henne

Inventor:

Nils Larsen
by attorney
Brown & Howard

UNITED STATES PATENT OFFICE.

NILS LARSEN, OF PARKRIDGE, NEW JERSEY, ASSIGNOR TO THE WIDNESS MANUFACTURING COMPANY, OF PARKRIDGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 720,530, dated February 10, 1903.

Application filed July 2, 1902. Serial No. 114,066. (No model.)

To all whom it may concern:

Be it known that I, NILS LARSEN, a citizen of the United States, and a resident of Parkridge, in the county of Bergen and State of New Jersey, have invented a new and useful Improvement in Wrenches, of which the following is a specification.

My invention relates to an improvement in wrenches, and has for its object to provide a wrench which is suitable for use on nuts, bolt-heads, or other objects of polygonal or flat-sided form or on pipes or other objects of round form.

A further object is to provide a wrench of the above character which may be very quickly adjusted to the article which it is intended to engage and which may be easily disengaged from the said article when so desired.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a view in side elevation of my improved wrench, showing it applied to a pipe, a portion of the handle of the wrench being broken away. Fig. 2 is a rear view of the same. Fig. 3 is a partial sectional view showing the interior arrangement of the parts. Fig. 4 is a partial side view of a modified form in which the handle is substantially in line with the jaws. Fig. 5 is a detail view of the spring-actuated pawl; and Figs. 6 and 7 are side and edge views, respectively, of the pinion which engages the movable jaw and is engaged by the spring-actuated pawl.

The movable jaw is denoted by 1, and it is provided with a shank 2, having a toothed rack 3 along the front edge thereof. The gripping-surface of the movable jaw may be provided with serrations 4 for insuring a firm grip upon the article which may be engaged by the wrench.

The stationary jaw is denoted by 5, and it is provided with a stock 6, from which the handle projects. The gripping-surface of the stationary jaw 5 may be provided with serrations 7 for insuring a firm grip upon the article engaged by the wrench. The stock 6 of the stationary jaw is provided with a loop 8, through which the shank 2 of the movable jaw is fitted to freely slide.

A ratchet-pinion 9 is located within a recess 10, formed in the stock of the stationary jaw, which pinion meshes with the rack 3 on the shank of the movable jaw. The journals 11 of the pinion 9 are mounted in the side walls of the stock 6 in half-bearings 12, which open into holes 13 in the cheeks of the loop 8. These holes 13 are of sufficient size to permit the insertion and removal of the pinion 9 when the shank of the movable jaw has been withdrawn from the loop.

A spring-actuated pawl 14 is mounted in the stock of the stationary jaw in position to engage the ratchet-pinion 9. The arrangement between the pawl and ratchet-pinion is such that the movable jaw may be freely moved inwardly toward the stationary jaw, but will be locked against outward movement. This spring-actuated pawl 14 is fitted to slide longitudinally by means of a shank 15, which slides in a socket 16 in the stock of the stationary jaw, and the pawl is held yieldingly in engagement with the ratchet-pinion by means of a spring 17. The spring-actuated pawl 14 is provided with means for permitting the pawl to be positively withdrawn from engagement with the pinion when so desired for permitting the free outward movement of the movable jaw. The means which I have shown herein comprises two ears or lugs 18, which extend laterally from the pawl 14 through the side walls of the stock of the stationary jaw, which ears or lugs are guided in elongated recesses 19 in the said side walls.

The back edge of the shank of the movable member bears at a single point against the inner face of the back wall 20 of the loop 8, so as to permit a slight rocking movement of the two jaws with respect to each other as they are gripped to the article, the rocking motion being sufficient to account for the distance between two teeth in the rack 3.

In Figs. 1, 2, and 3 I have shown a wrench in which the handle extends at substantially right angles to the gripping-faces of the jaws, while in Fig. 4 I have shown the handle as extended substantially in the same line as the said gripping-faces of the jaws. This last form is more particularly applicable for use where a number of pipes are in such close proxim-

ity to each other as to prevent the insertion of the movable jaw between them.

It is evident that changes might be resorted to in the form, construction, and arrangement 5 of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

10 1. A wrench comprising a stock on which is a fixed jaw, a movable jaw having a toothed rack which works through the said stock, a ratchet-pinion located in said stock and engaged with the said rack, a spring-actuated 15 pawl engaging the said pinion, and means for disengaging the said pawl from the pinion comprising lugs or ears projected laterally through the opposite side walls of the stock, substantially as set forth.

20 2. A wrench comprising a stock carrying

the stationary jaw and provided with a loop, a movable jaw having a shank fitted to slide through the loop and having a toothed rack, holes in the cheeks of the loop, half-bearings 25 opening into the holes and a ratchet-pinion mounted in said half-bearings in engagement with the said toothed rack, the said ratchet-pinion being removable through one of the said holes when the shank of the movable jaw is removed from the loop, substantially as set 30 forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 12th day of June, 1902.

NILS LARSEN.

Witnesses:

FREDK. HAYNES,
C. S. SUNDGREN.