

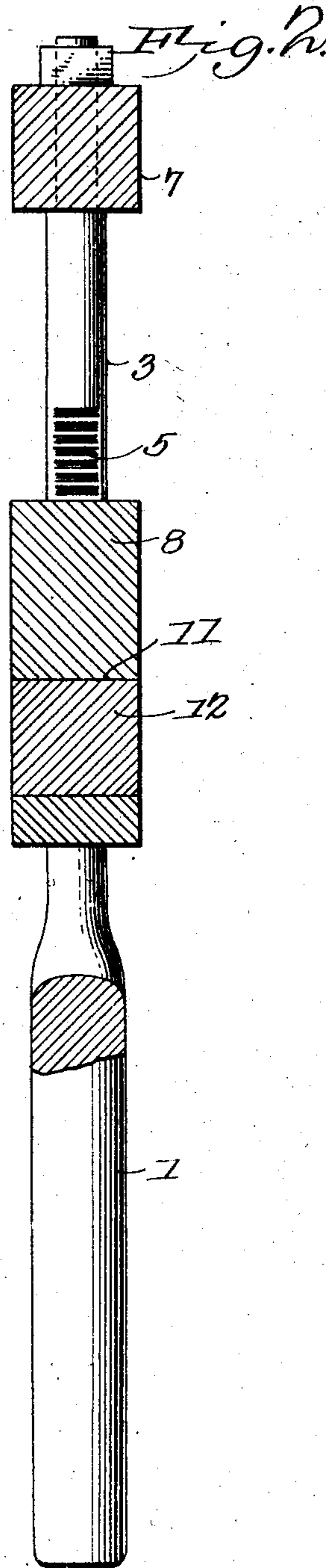
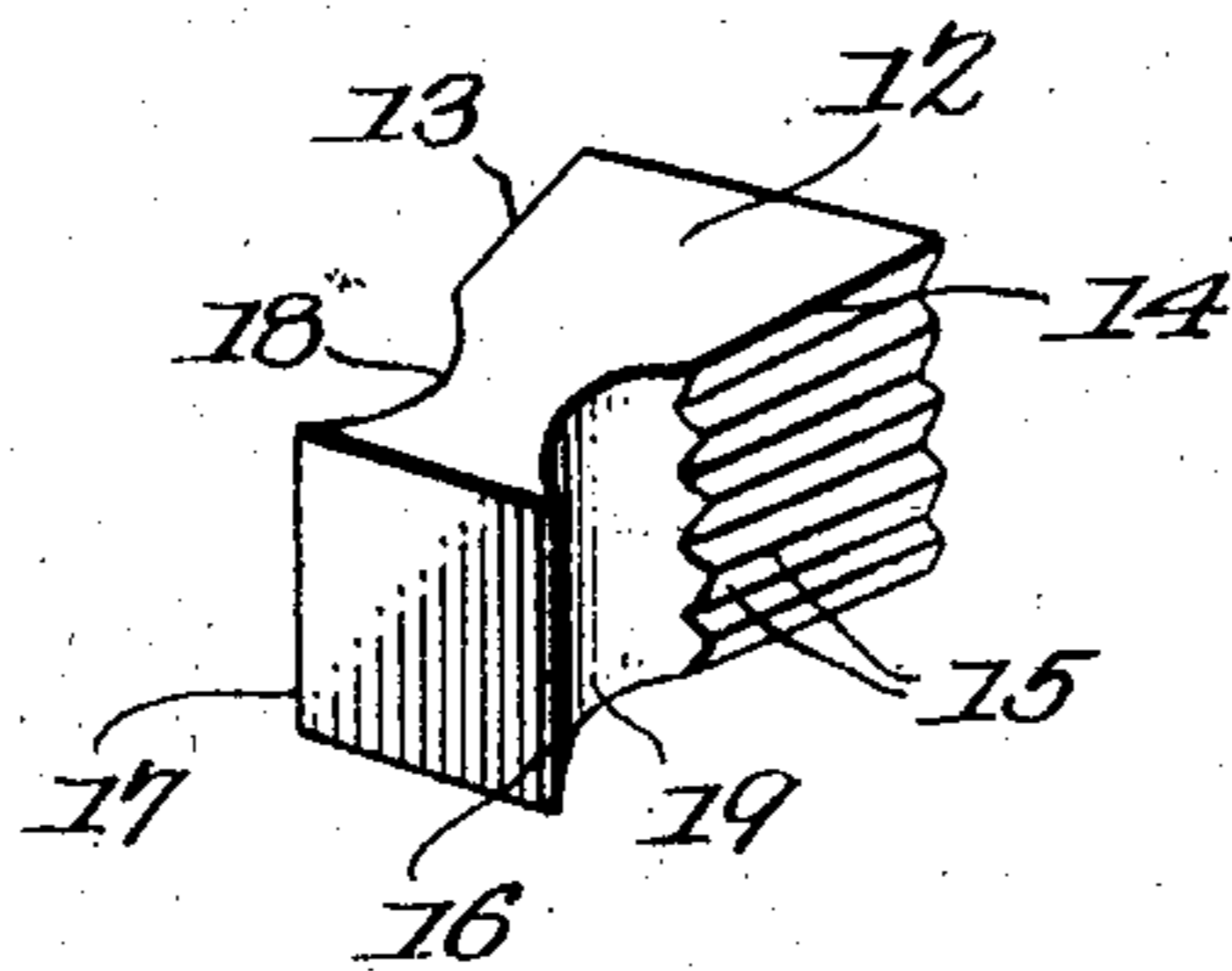
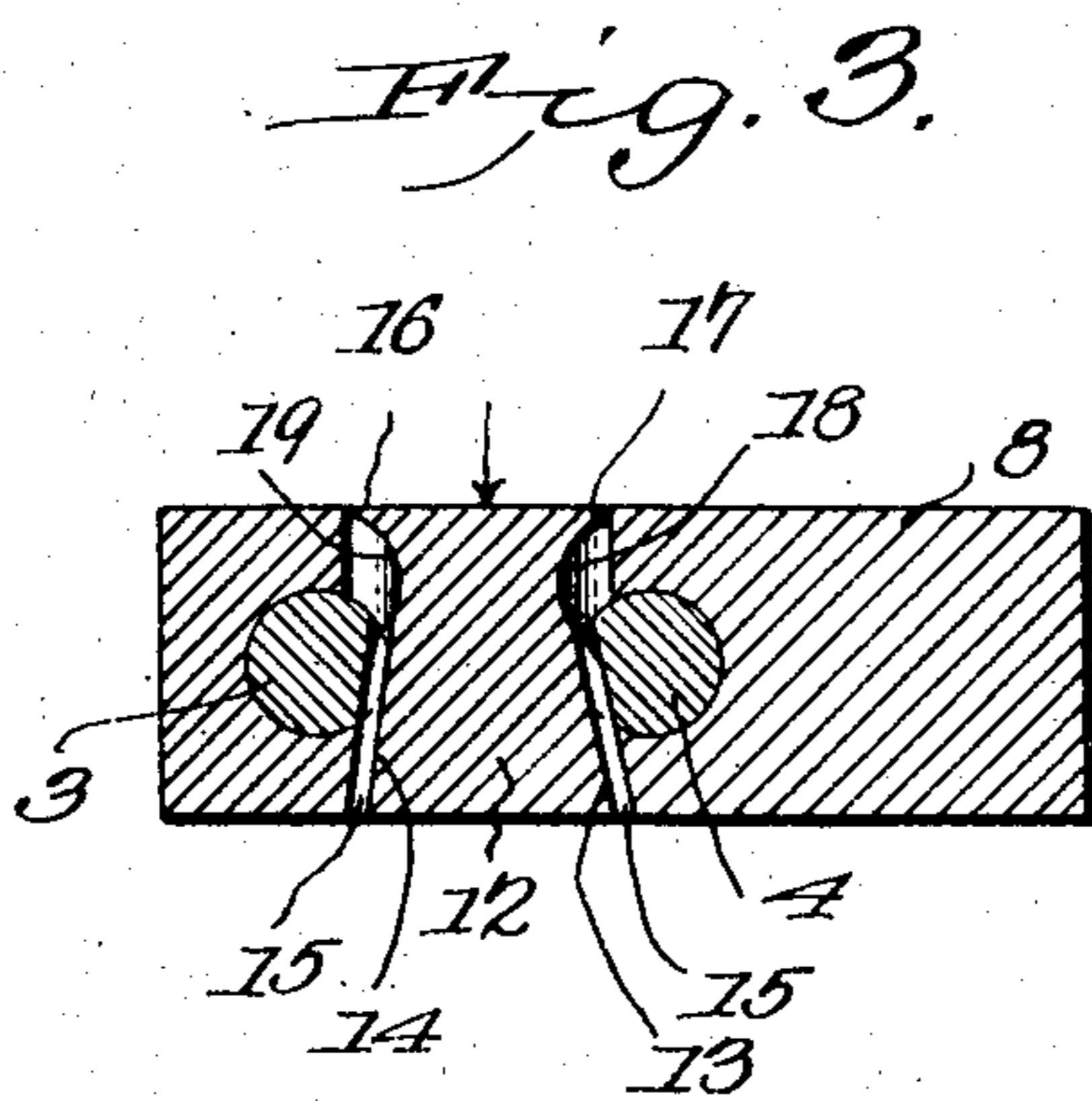
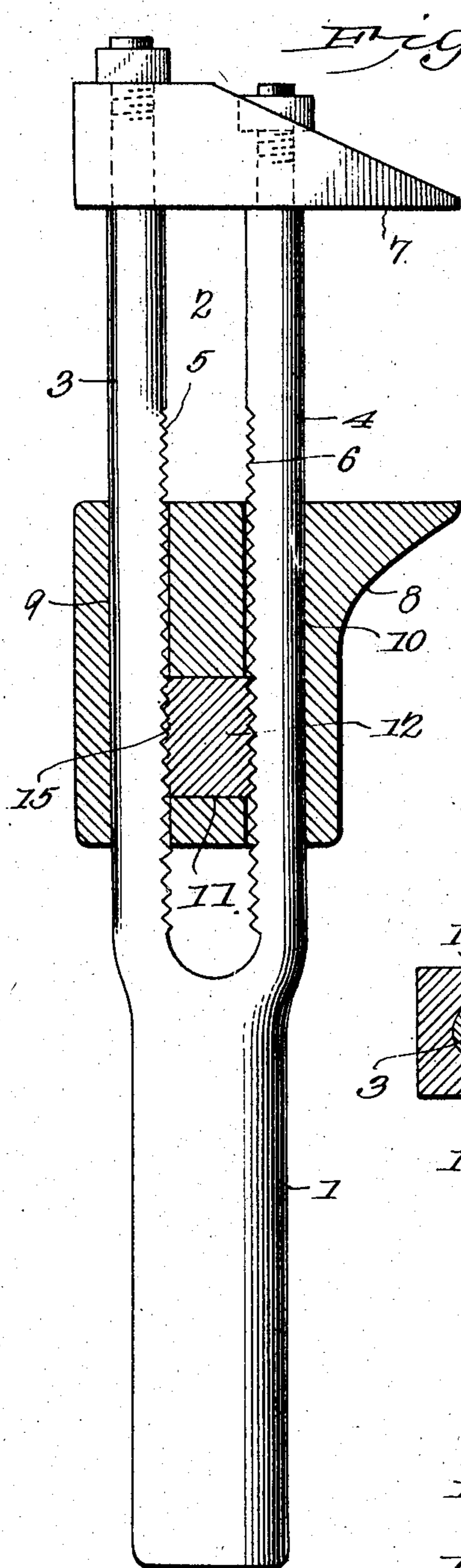
No. 778,302.

PATENTED DEC. 27, 1904.

R. BURNHAM.  
WRENCH.

APPLICATION FILED DEC. 14, 1903.

2 SHEETS—SHEET 1.



Witnesses  
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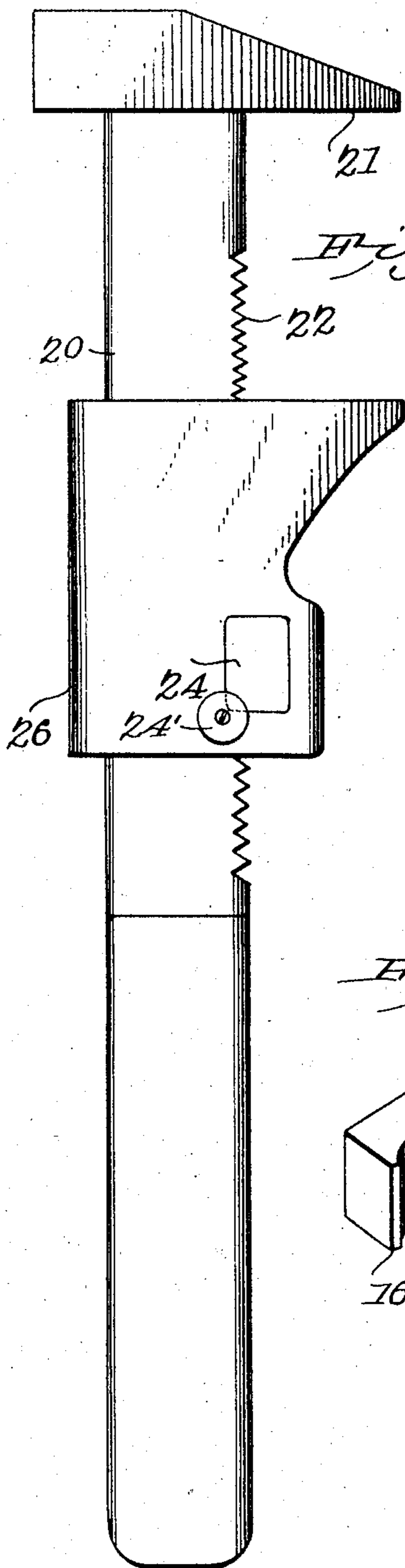


Fig. 5.

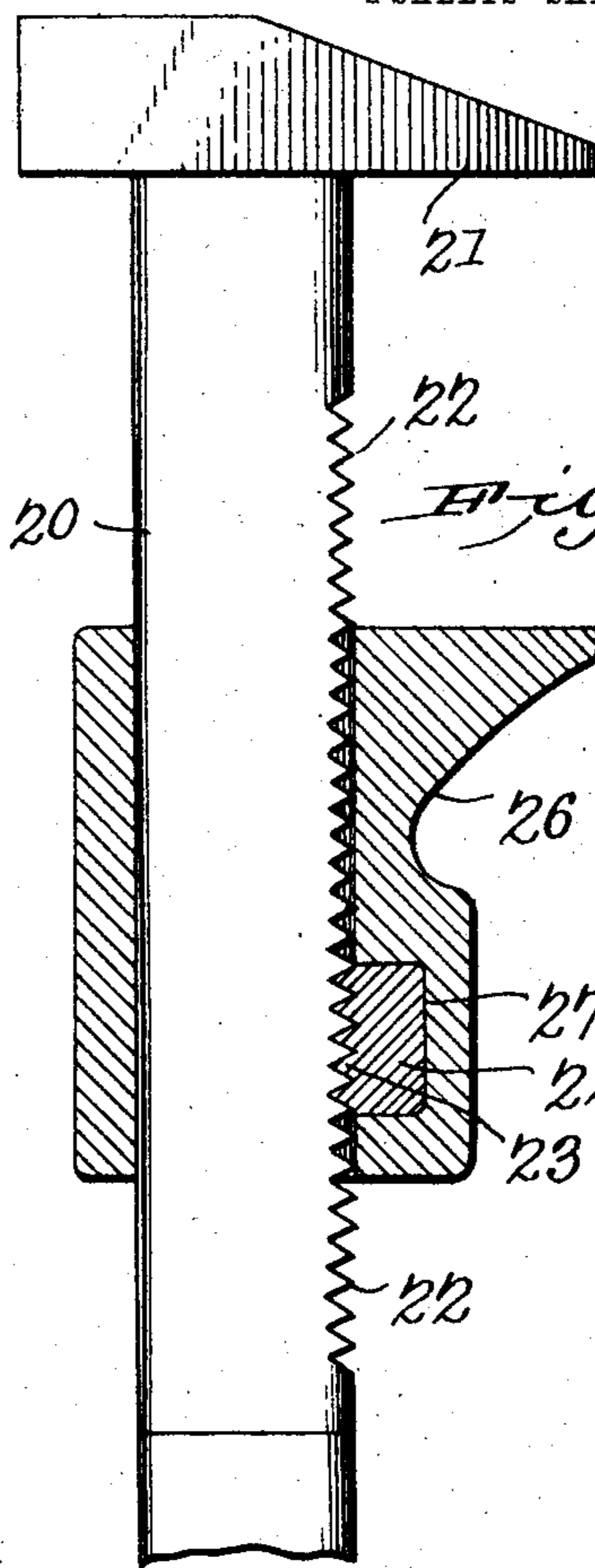


Fig. 6.

Fig. 7.

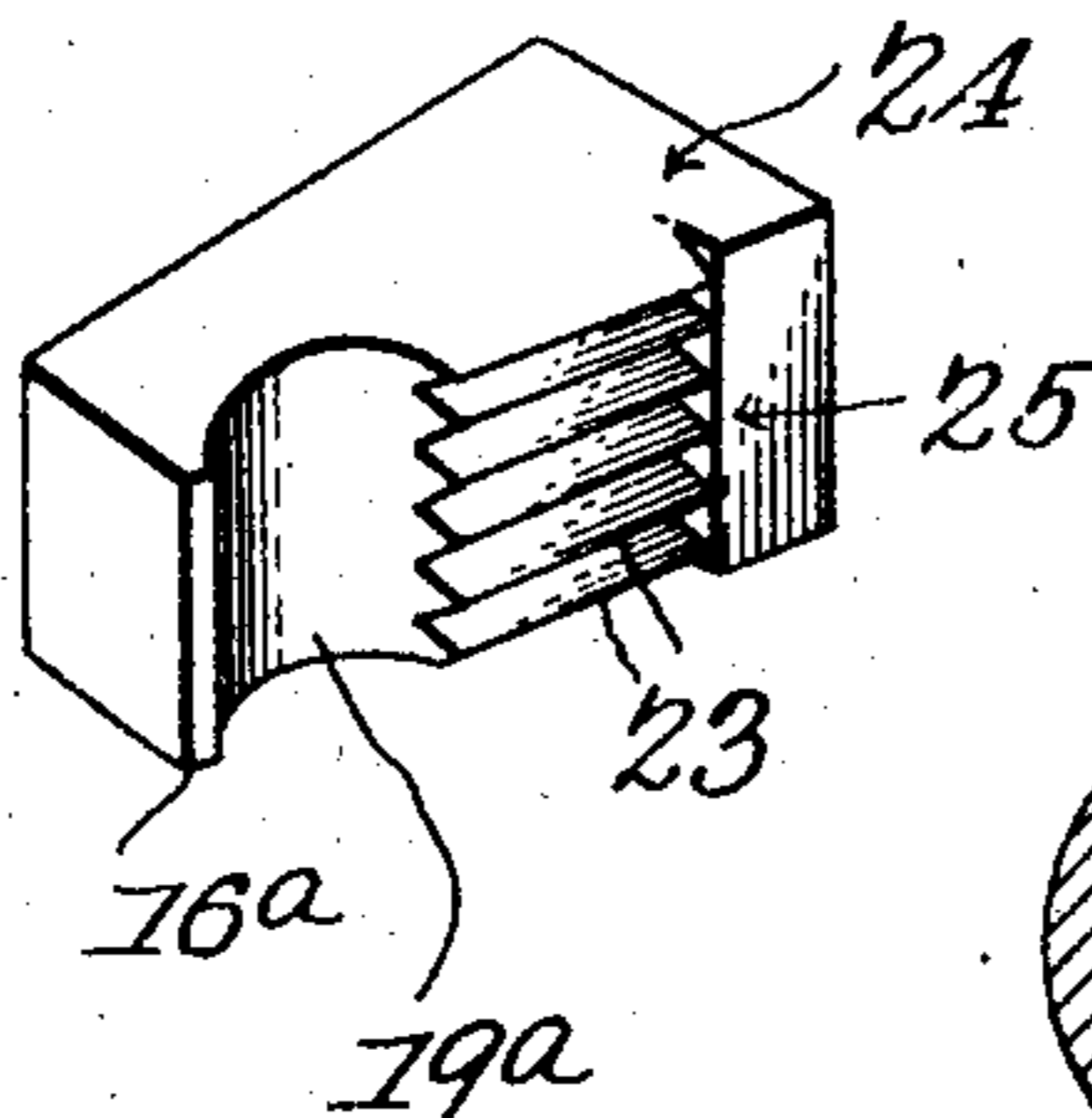
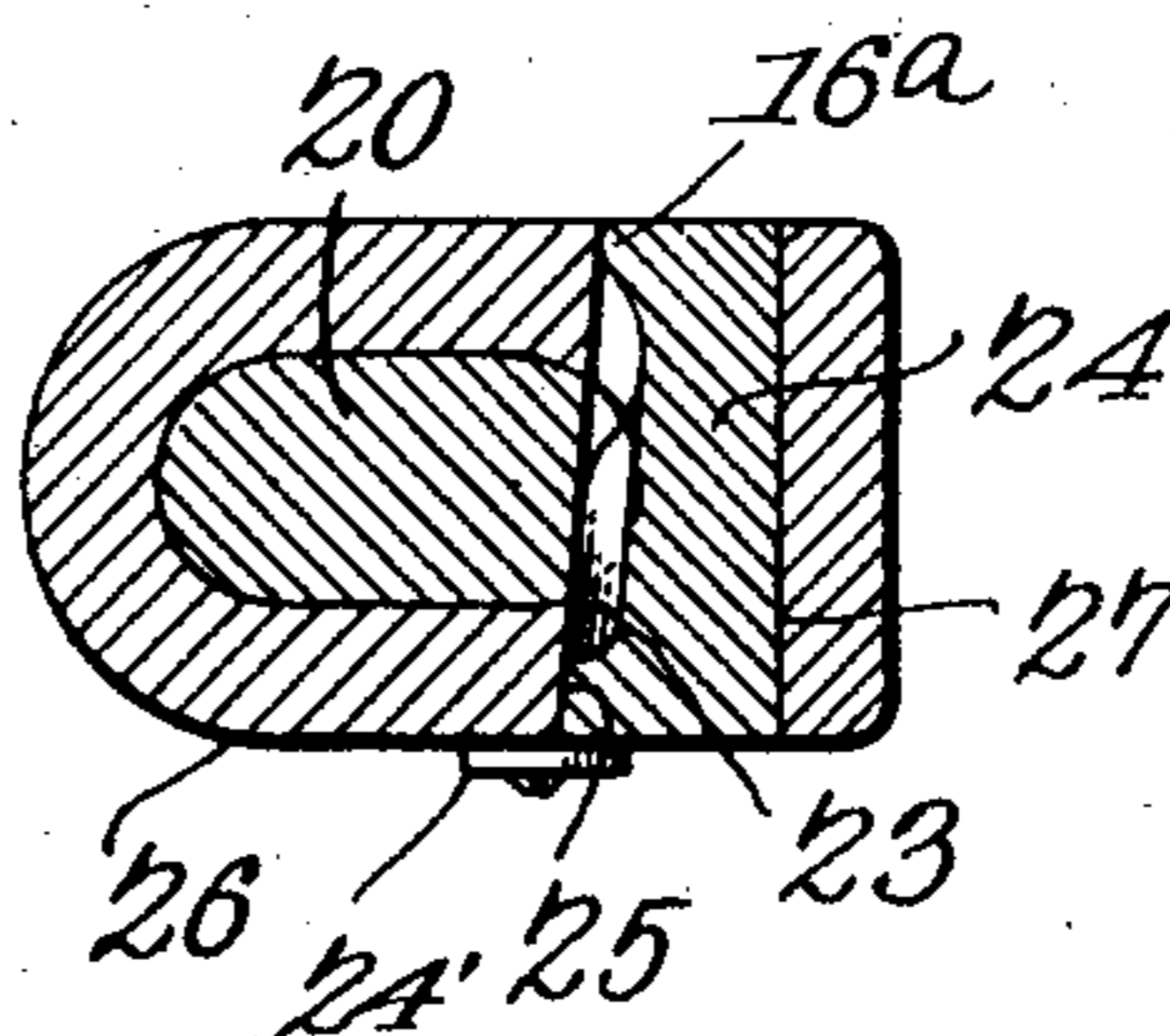


Fig. 8.



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# UNITED STATES PATENT OFFICE.

ROLLIN BURNHAM, OF STORM LAKE, IOWA.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 778,302, dated December 27, 1904.

Application filed December 14, 1903. Serial No. 185,150.

*To all whom it may concern:*

Be it known that I, ROLLIN BURNHAM, a citizen of the United States, residing at Storm Lake, in the county of Buena Vista and State of Iowa, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to wrenches; and one of the objects thereof is to provide a durable and efficient wrench capable of rapid and reliable adjustment.

A further object of the invention is to provide means for easily and efficiently assembling the parts.

A further object of the invention is to provide means for insuring the positive engagement of the locking part with the shank of the wrench.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims, it being understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

In the drawings, Figure 1 is a view in side elevation of the shank and rigid jaw, the sliding jaw and locking part being shown in elevation. Fig. 2 is a vertical longitudinal sectional view through the wrench. Fig. 3 is a transverse sectional view through the wrench, and Fig. 4 is a detail perspective view of the locking part. Fig. 5 is a view in side elevation of a slightly-modified form of wrench. Fig. 6 is a longitudinal sectional view through the sliding jaw and locking part. Fig. 7 is a detail perspective view of the modified form of locking part; and Fig. 8 is a cross-sectional view through the sliding jaw, shank, and the locking part.

The form of wrench shown in Figs. 1 to 4 is illustrated as having a shank provided with a terminal handle 1, said shank having a longitudinal slot 2 therein to form two spaced guide-bars 3 and 4, having oppositely-disposed rows of teeth (indicated by the numerals 5 and 6) at the edges of the slot. At one end of the shank and connecting the terminals of the bars is a rigid jaw 7, while a slid-

ing jaw 8 is sleeved upon the shank, said jaw being provided with longitudinal channels or openings 9 and 10, through which the bars 3 and 4 project. Interposed between the longitudinal openings 9 and 10 is a transverse slot 11, which communicates with opposite sides of the openings 9 and 10 at points adjacent to the rows of teeth 5 and 6. This slot carries a removable locking part comprising a wedge-shaped member 12, having converging sides 13 and 14 with longitudinally-arranged teeth 15 to coincide with and engage the teeth of the guide-bars, so that said locking part will be held against movement lengthwise of the shank, and thereby lock the jaw against movement.

The sliding movement of the locking part is limited by terminal stops 16 and 17 on the locking part and which interlock with the bars, portions 18 and 19 of the locking members on the respective sides of the locking part being cut away for the accommodation of the bars, so that when the bars are in the cut-away portions the jaw 8 will be free to slide. However, as soon as the teeth on the locking part are moved into engagement with the teeth on the bars the sliding jaw will be held against movement. The bars of the shank can be made to slightly yield, if desired, so that the wedging of the locking part will bind both bars of the shank against the sliding jaw to insure a perfect engagement of all the parts.

If the rigid jaw 7 is made separable from the shank, the parts can easily be assembled in an obvious manner.

In the modified form of wrench, as illustrated in Figs. 5 to 8, inclusive, 20 designates a shank having a rigid jaw 21 at one end thereof and edge teeth 22 for engagement with the teeth 23 of the locking part 24. This locking part 24 is provided with a shank-engaging side, substantially a duplicate of one of the sides of the locking part illustrated in the preferred form, having a stop 16<sup>a</sup> and a cut-out portion 19<sup>a</sup> coacting with the shank in the same manner as the locking part 12. The inclined edge 25 insures the parts being locked. The sliding jaw 26 is provided with a transverse slot 27, in which the locking part slides and in which it is held by the contact of the stop 16<sup>a</sup> with

the shank 20. The operation of the locking part 24 is substantially the same as the operation of the locking part 12, both affording a quick reliable means for securing the sliding jaw in any adjusted position. The sliding jaw 26 is preferably provided with a button 24' for securing the locking member 24 from slipping out when the wrench is laid down with its wrong side down.

10 What I claim, and desire to secure by Letters Patent, is—

1. A wrench, having a rigid jaw provided with a shank comprising two parallel guide-bars provided with oppositely-disposed teeth, a sliding jaw on the shank, and a sliding locking part carried by and movable transversely of the jaw, and having teeth to engage those on the shank.

2. A wrench, having a longitudinally-slotted shank with teeth on the edges of the slots and a rigid jaw on one end of the shank, a sliding jaw carried by the shank and a transversely-movable wedge-shaped locking part carried by the movable jaw, and having teeth to engage those on the shank.

3. A wrench, comprising a yielding shank having a rigid jaw on one end, a sliding jaw on the shank and means carried by the sliding jaw and engaging both the jaw and shank to bind the shank and jaw together.

4. A wrench, comprising a shank having parallel guide-bars with a terminal rigid jaw, a sliding jaw carried by the shank, and a wedge-shaped locking part carried by the sliding jaw and movable for engagement with the respective guide-bars.

5. A wrench, comprising a shank having parallel guide-bars with a terminal rigid jaw, a sliding jaw sleeved upon the shank and a transversely-movable wedge-shaped locking part having terminal guide-bar engaging means constituting stops to limit the movement of the locking part.

6. A wrench, comprising a shank provided with parallel guide-bars having a terminal rigid jaw, a sliding jaw carried by the guide-bars, a sliding locking part movable in the rigid jaw for engagement with the bars, and stops on the locking part for engagement with the bars to limit the movement of the locking part.

7. In a wrench, a toothed shank, a slidable jaw thereon, and an endwise-slidable toothed locking part carried by the jaw in coöperative relation with the shank, a portion of the teeth of the locking part being omitted for the loose reception of the toothed portion of the shank to permit slidable movement of the jaw.

8. In a wrench, a shank, a slidable jaw thereon, and an endwise-slidable wedge in coöperative relation with the jaw and the shank and provided with a recess to loosely receive one of the parts and permit free slidable movement of the jaw.

9. In a wrench, a toothed shank, a slidable

jaw thereon, and an endwise-slidable toothed wedge carried by the jaw in coöperative relation with the shank, the toothed face at the smaller end of the wedge being provided with a recess to loosely receive the shank and permit slidable movement of the jaw.

10. In a wrench, a shank, a slidable jaw thereon, and an endwise-slidable wedge carried by the jaw and working in frictional engagement with the shank, that face of the wedge which is next to the shank being provided with a recess at its smaller end to loosely receive the shank and permit sliding of the jaw thereon.

11. In a wrench, a shank, a slidable jaw thereon, and an endwise-slidable wedge carried by the jaw and working in frictional engagement with the shank, the smaller end of the wedge being provided with a stop projection, and the shank lying in the path of the stop projection to limit the endwise movement of the wedge.

12. In a wrench, a shank, a slidable jaw thereon, and an endwise-slidable wedge carried by the jaw and working in frictional engagement with the shank, that face of the wedge which is next to the shank being provided with a recess near its smaller end to loosely receive the shank and permit sliding of the jaw, and said smaller end of the wedge being provided with a lateral stop projection at the outer side of the recess, the shank lying in the path of the projection to limit the endwise movement of the wedge.

13. In a wrench, a toothed shank, a slidable jaw thereon, and an endwise-slidable wedge carried by the jaw in coöperative relation with the shank, that face of the wedge which is next to the shank being provided with longitudinally-disposed teeth at the larger end of the wedge to adjustably engage the teeth of the shank, the teeth of the shank being interrupted by a transverse recess near the smaller end of the wedge for the loose reception of the shank to permit sliding of the jaw, and said smaller end of the wedge being provided with a lateral stop projection at the outer side of the recess, the shank lying in the path of the projection to limit the endwise movement of the wedge.

14. In a wrench, a longitudinally-slotted shank, a slidable jaw having a pair of openings loosely receiving the shank portions at opposite sides of the slot thereof to permit slidable movement of the jaw, the latter being pierced by a transverse slot located between the two openings and intersecting the latter to expose the shank portions at opposite sides of the slot therein, and an endwise-slidable wedge working in the slot in frictional engagement with the opposite portions of the shank to adjustably interlock the jaw thereon.

15. In a wrench, a shank having spaced and yieldable members, a slidable jaw provided with openings loosely receiving the shank

members to permit sliding of the jaw, the latter being pierced by a slot located between the openings and intersecting the inner sides thereof to expose the shank members, and an endwise-slidable wedge working in the slot in frictional engagement with the shank members to bind the latter upon the jaw.

16. In a wrench, a shank having spaced members provided upon their inner faces with teeth, a slidable jaw having a pair of openings loosely receiving the shank members, said jaw being transversely pierced by a slot located between the openings and intersecting the same to expose the toothed portions of the shank members, and an endwise-slidable wedge working in the slot, opposite faces at the larger end of the wedge being longitudinally

toothed for engagement with the teeth of the shank members, the smaller end of the wedge having opposite lateral stop projections for engagement with the shank members to limit the endwise movement of the wedge, and the latter being provided with opposite recesses located between the stop projections and the toothed portions to loosely receive the shank members and permit sliding of the jaw.

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

ROLLIN BURNHAM.

Witnesses:

S. E. COUCH,

L. E. YERINGTON.