No. 813,180. PATENTED FEB. 20, 1906.

J. L. SMITH.

QUICK ACTING MONKEY WRENCH.

APPLICATION FILED FEB. 13, 1905.

Fig. 1

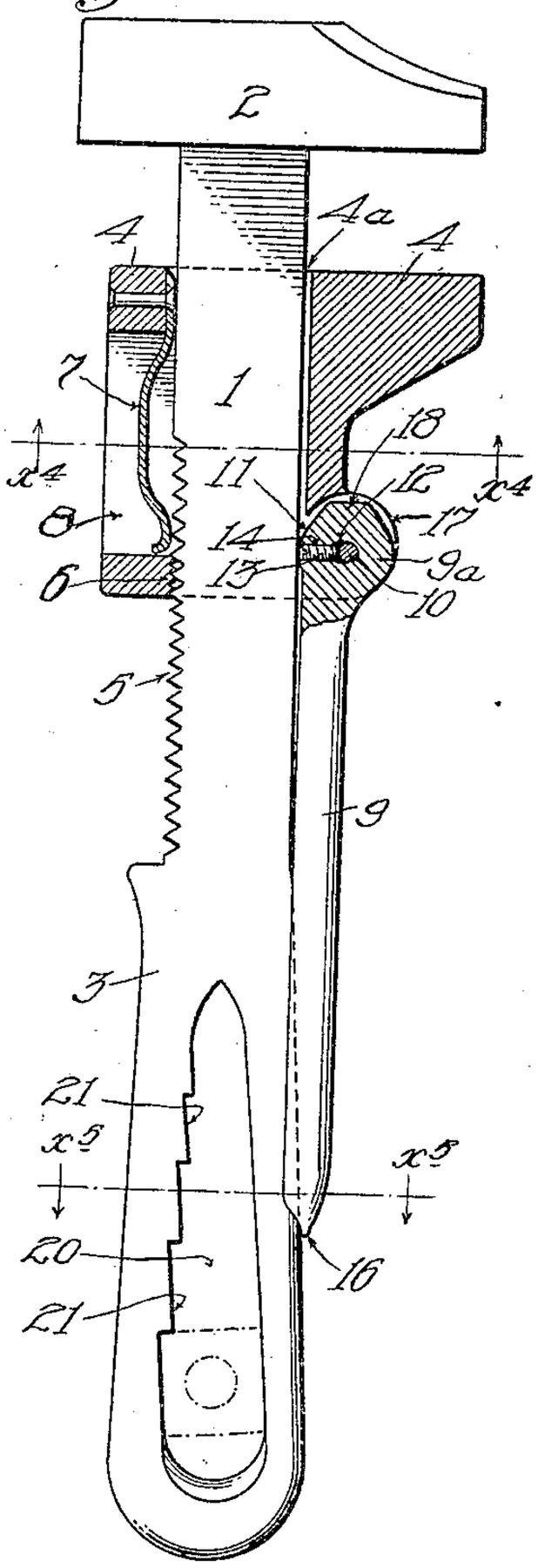

Fig. 2

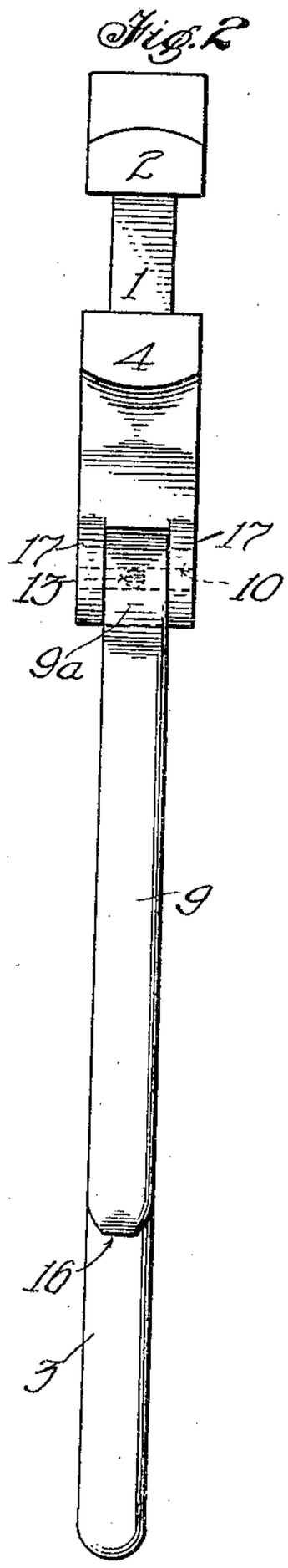

Fig. 3

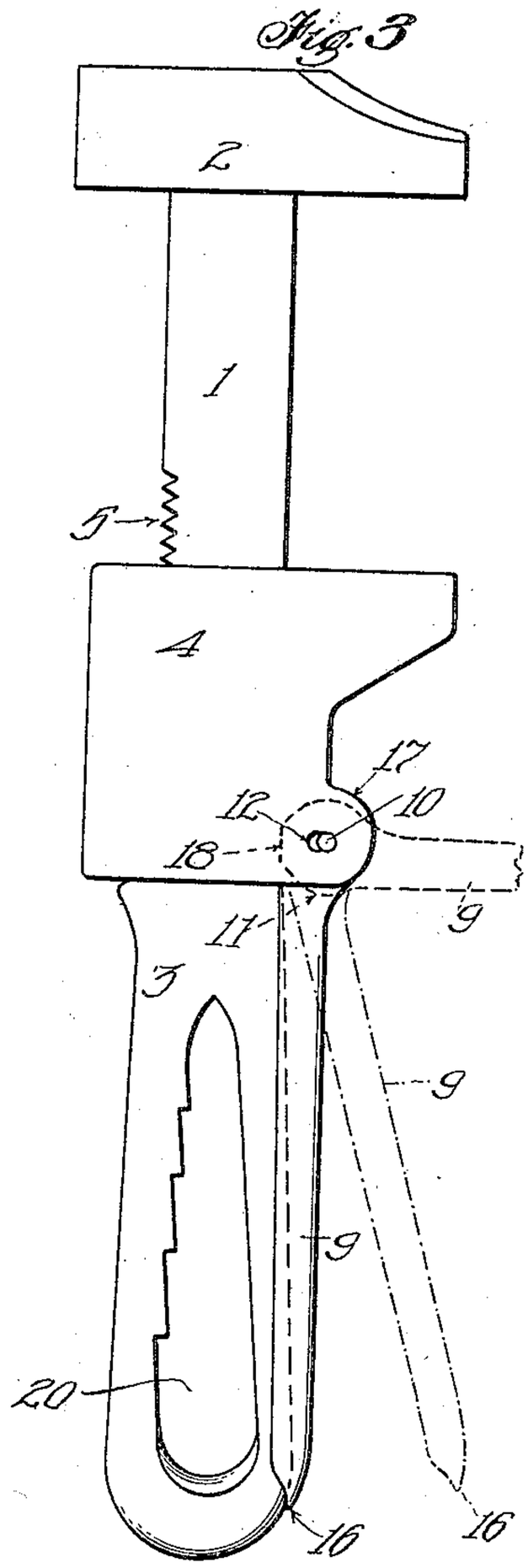

Fig. 4

Fig. 5

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES L. SMITH, OF PIRU, CALIFORNIA.

QUICK-ACTING MONKEY-WRENCH.

No. 813,180. Specification of Letters Patent. Patented Feb. 20, 1906.

Application filed February 13, 1905. Serial No. 245,369.

To all whom it may concern:

Be it known that I, JAMES L. SMITH, a citizen of the United States, residing at Piru, county of Ventura, and State of California, have invented a new and useful Quick-Acting Monkey-Wrench, of which the following is a specification.

The main object of this invention is to provide a monkey-wrench which can be quickly set or adjusted to adapt it for use on different sizes of nuts and which is of a strong construction, so as to be able to withstand rough usage, the device being especially applicable as a tool for rough or outside work on the farm or elsewhere.

A further object of the invention is to provide a wrench of this nature with a handle portion formed with wrench-holds in such manner that the tool can be used for the operation of certain sizes of nuts without recourse to the monkey-wrench portion and can be so used in locations where the adjustable wrench-jaws cannot be inserted.

Another object is to provide in connection with the monkey-wrench a collapsible portion which when extended can be used as a screw-driver, and in this connection the invention provides for utilization as such collapsible member of a lever which controls the adjustment or setting of the monkey-wrench.

All of the above features are of value in adapting the tool for general use in situations where a single tool only can be conveniently carried and where it is subjected to hard usage.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation, partly in section. Fig. 2 is an edgewise elevation. Fig. 3 is a side elevation showing a different position of the movable wrench-jaw to that shown in Fig. 1. Fig. 4 is a section on the line x^4 x^4 in Fig. 1. Fig. 5 is a section on the line x^5 x^5 in Fig. 1.

1 designates the body or shank of the wrench, provided at one end with a fixed head or jaw 2, which is secured thereon in any suitable manner, as by riveting, and at the other end with a handle portion 3. The portion of said shank or body 1 between the handle and the head serves as a support and guide for the movable jaw 4, which slides thereon and engages therewith to hold it in longitudinal position. For this purpose said shank portion may have teeth 5, engaged by projections 6 on the movable jaw member 4, and said teeth or projections 6 may be smaller and closer together than the teeth 5.

The jaw member 4 has a longitudinal bore or passage 4^a loosely fitting the shank portion 1, so as to allow of a certain amount of lateral play in the direction of the height of the teeth 5 and 6, and a spring 7 is provided for normally pressing the jaw member 4 in a direction to separate and clear the teeth 6 from the teeth 5. Said spring is inclosed in a recess 8 in said jaw member 4 and is formed as a leaf-spring fastened at one end to member 4 and having an upturned end resting on the points of the teeth 5.

Means are provided for operating the jaw member 4 to draw the teeth thereon into engagement with the teeth 5 against the influence of the spring 7, said means consisting of a lever 9, pivoted at 10 to said jaw member and having a cam portion 11 engaging the side of the shank 1 aforesaid and causing the teeth 5 to press said teeth toward the teeth 6, or, conversely, to draw the teeth 6 toward the teeth 5. To provide for the proper operation of this clamping-lever, the same is desirably adjustable, being provided with a slot 12, fitting over the pivot 10 with a slight lateral play, and a screw 13 working in tapped hole 14 in said lever and engaging said pivotal pin so as to vary or adjust the extension or distance of projection of the cam portion 11 from said pivotal pin, and thereby vary the throw or operative effect of the cam.

When the lever 9 is drawn away from the body or shank portion of the wrench to position shown in broken lines in Fig. 3, it will release the clamping cam portion from the shank and will allow the movable jaw member 4 to be moved freely back and forth to bring it to the position desired for the nut to be operated, and then on turning back or collapsing the lever 9 toward and upon the handle and shank of the wrench the clamp will again be fastened and the jaw member 4 firmly held for operation of the nut. During this operation the hand of the operator will embrace both handle 4 and lever 9, thereby holding the lever 9 firmly in clamping position.

To enable the lever 9 to fold closely upon the handle portion 3, it is desirably recessed or concaved on its inner face, as shown in Fig. 5, so as to conform to the handle, and is rounded or convex on its outer face in con-

formity with the curvature of the handle, so as to form when collapsed substantially a part of the handle.

The lever 9 is preferably provided at its outer or free end with a screw-driver bit or blade 16, adapting it for use as a screw-driver when said lever is turned transversely of the body 1 of the wrench, as shown in dotted lines in Fig. 3.

In order to enable the lever 9 to be used conveniently in this manner, it is desirable to provide means for holding the same with sufficient firmness in the extended or transverse position to prevent it from collapsing toward the handle under a moderate pressure. For this purpose the friction between the members 9 and 4 may be made sufficient to provide for accidental displacement. For example, the member 4 may have wings or lugs 17 embracing the pivotal portion or head 9^a of the member 9 with sufficient pressure to hold it, and as an additional means to the same end the said head portion 9^a may have a flat cam portion 18 thereon which engages the side of the member 1 to press said member toward the spring 7, thereby enabling said spring to hold the lever 9 in transverse or extended position by pressure on said flat cam portion. At the same time this cam portion causes the teeth 5 and 6 to engage one another and to lock the movable jaw member 4 in position on the shank member 1, thereby facilitating the use of said shank member and the handle 3 thereof as a handle or operating means for the screw-driver.

The handle portion 3 of the wrench is preferably provided with a slot or opening 20, one wall or side of which is stepped or jogged, as at 21, to form between said wall and the opposite wall of the slot a series or plurality of wrench-holds of different size adapted for engagement with nuts of certain sizes. This handle portion of the wrench being thinner than the jaws may be inserted in places where the jaws cannot enter.

For rough work or in cases where the nuts happen to be of just the proper size these wrench-holds may be used quickly and conveniently without recourse to the adjustable or monkey-wrench portion, the latter being, however, always available in case the nut is found not to fit any one of the wrench-holds. Each of the wrench devices comprised in the tool therefore forms a desirable adjunct to the other.

What I claim is—

A monkey-wrench comprising a toothed shank carrying a fixed jaw, a movable jaw member slidable on the shank and having lateral play thereon and provided with teeth for engaging the shank-teeth, a spring pressing the shank-teeth away from the teeth on the movable jaw member, a cam pivoted on the movable jaw engaging the shank to draw the teeth together, and means for adjusting the projection of said cam, consisting of a screw in the cam engaging the pivot thereof, the cam having a slot engaging its pivot to permit of such adjustment.

In testimony whereof I have hereunto set my hand, at Los Angeles, California, this 6th day of February, 1905.

JAMES L. SMITH.

In presence of—

GEORGE T. HACKLEY,
EARL A. R. LYNN.