

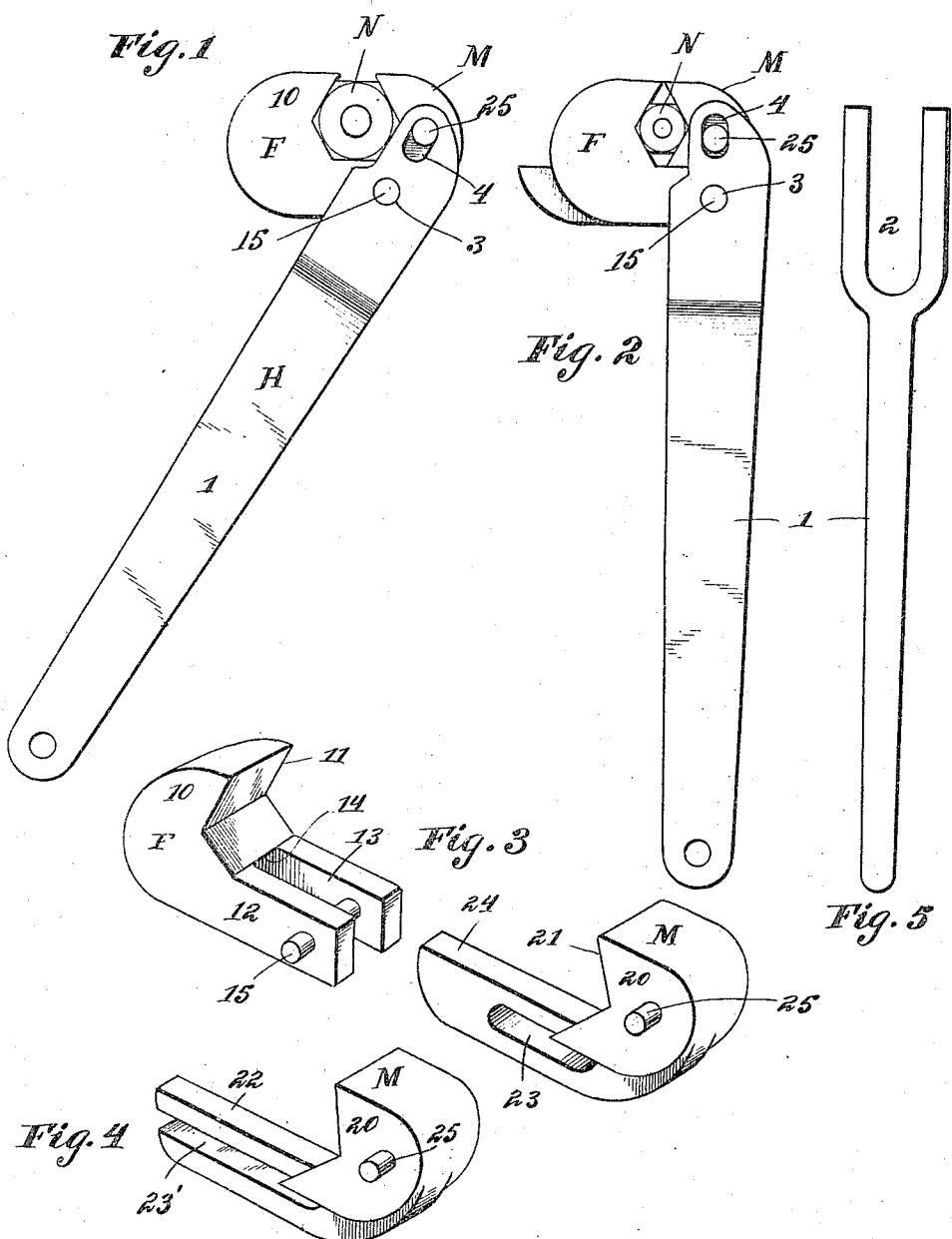
1,237,952.

V. PIPSHIK,

WRENCH.

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WITNESSES

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WRENCH.

1,237,952.

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To all whom it may concern:

Be it known that I, VALENTINE PIPSHIK, a citizen of the United States, residing at New York, in the county of New York and 5 State of New York, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches, and more especially to those having a sliding jaw 10 with a handle lever grip; and the object of 10 the same is to simplify the construction of such wrench and utilize one of the handle pivots as one of the guides for connecting the jaws.

15 In its completeness my wrench is adaptable to nuts of various sizes within limits, straining applied to its handle lever only increases its grip on the nut or object being clamped, and by using the tool one side up 20 or the other the nut may be screwed on or off as desired.

Details are set forth in the following specification, reference being had to the accompanying drawings wherein:—

25 Figure 1 is a side view of this wrench in the act of being applied to a nut which is to be unscrewed, and

Fig. 2 is a similar view applied to a smaller nut which also is to be unscrewed.

30 Fig. 3 is a perspective detail of the movable members of the wrench slightly separated.

Fig. 4 is a perspective detail of the male member in slightly modified form.

35 Fig. 5 is an edge view of the handle.

In the drawings the letter N designates a nut, and this is typical of any object that is to be grasped by the jaws and screwed onto a bolt or other threaded member or be 40 unscrewed therefrom. My wrench as a whole comprises a handle or lever H, a male member M and a female member F; and, with the exceptions hereinafter described, these may be of any materials, size, and de- 45 tailed construction without departing from the principle of the invention.

The handle H has a straight body 1 bifurcated or forked at its upper end as at 2 and provided in its fork-arms with a hole 3 and 50 a slot 4, both being of appropriate width to receive the pins hereinafter described. The fork-arms are spaced sufficiently to permit the free movements between them of the head portions or jaws of the members 55 yet to be described.

The female member F has a head portion

or jaw 10 whose working face 11 might be flat but is herein shown as angular so as to contact with two faces of a hexagonal nut as seen in Figs. 1 and 2, and a shank 12 below 60 and integral with the head, standing substantially at right angles thereto and projecting beyond said face 11 for some little distance. The shank of this member is of equal width or thickness with the head as 65 best seen in Fig. 3 but is bifurcated longitudinally as at 13 to produce two arms slightly spaced, as shown, the bifurcation extending through the head 10 and forming a face 14 yet to be referred to. Through 70 these arms near their outer ends is fastened a pin 15 whose extremities enter loosely the holes 3 in the fork arms 2 of the handle H.

The male member M has a complementary head or jaw 20 with a working face 21, and a pin 25 is fixed through this head, its extremities working in the slots 4 in the fork arms 2 of the handle. This member also has a shank 22 below and integral with the head 20, standing substantially at right angles 75 thereto, and projecting beyond said face 21 for some little distance. The shank is of a size to fit slidably into the bifurcation 13 in the shank 12 of the female member with its upper edge 24 moving beneath said face 14. Within the length of the shank is a slot 23 slidably engaging the pin 15. The modification in Fig. 5 simply carries the slot 23 80 out the end of the shank as shown at 23'. As every slot which is not closed at one end is weaker than slots that are closed at both 85 ends, I prefer to close the slot where possible. But with the modified form of this member it is possible to slip it onto the female member by inserting the shank 22 in the bifurcation 13 and running the slot 23' over the pin 15 without necessarily withdrawing the latter. As both pins 15 and 25 are fast in their members and loose in the fork-arms of the handle, means must be 90 provided for holding them so. It is quite possible to use bolts instead of these pins, extending them through the parts which they are to connect and letting the head and the nut of each bolt hold it in place; or in a 95 cheap form of the wrench it might be possible to employ rivets and upset their extremities. I prefer, however, that the pins shall be fast in the movable members and loose in the fork-arms of the handle.

100 With this construction, the use of my wrench is as follows: When the handle is 105 110

moved to the left in Fig. 1, its hole 3 moves the pin 15 to the left with respect to the movement of the pin 25 by its slot 4, and therefore the members shown in Fig. 3 are 5 spread apart and their jaw faces 11 and 21 separated. The tool is now passed over an article such as the nut N, after which the handle is moved in the opposite direction. This moves the members relatively toward 10 each other and causes the jaw faces to clasp opposite faces of the nut N, after which further movement of the handle turns the nut in the present instance to the left to unscrew it. It will be obvious that by a reversal 15 of the wrench, the forcible turning of the nut would screw it on instead of unscrewing it from an object such as a screw. When the jaw faces clasp the object N and pressure is applied, the tendency is of 20 course to throw each jaw outward relatively to the other, or in other words to turn it out of a position at right angles to the line on which the members slide on each other. The effect of this tendency is to move the head 25 10 outward and downward so that its face 14 contacts with the upper edge 24 of the shank 22 of the male member, but the descent of this shank is resisted by the fact that the pin 15 engages the slot 23. Therefore 30 the pin 15 and the face 14 coact to resist the spreading tendency of the jaws, and this I consider the most important feature of my invention. I might say in closing 35 that while I have shown a hole at 3 and a slot at 4 in each fork-arm of the handle, the

position of the holes and slots might be reversed. It is only necessary that when the handle is thrown to an oblique position as seen in Fig. 1, one of the bearings shall rotate on its pin and the other shall slide 40 slightly on its pin for obvious reasons.

What is claimed as new is:—

The herein described sliding jaw-wrench comprising a male member consisting of a head having a jaw face, and a shank narrower than and underlying said head, integral therewith, standing at right angles thereto, and projecting beyond its jaw face, the shank having a longitudinal slot and the head having a transverse pin; a female member consisting of a head having a jaw face, and a shank of the same width as and underlying said head, integral therewith, standing at right angles thereto, and projecting beyond its jaw face, the shank being 45 bifurcated throughout its length to produce arms lapping the shank of the male member and the bifurcation extending beneath the head and forming a face thereunder, and a pin through said arms remote from the 50 head and slidably engaging the slot in the male shank while the upper edge of the latter slidably engages beneath said face; and a handle lever forked at one end to embrace the widest portions of both members 55 and provided with aligned holes and slots in its fork-arms respectively engaging said pins.

In testimony whereof I affix my signature.
VALENTINE PIPSHIK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."