

No. 791,245.

PATENTED MAY 30, 1905.

W. S. CASTERLIN.
WRENCH.

APPLICATION FILED MAR. 21, 1905.

Fig. 1

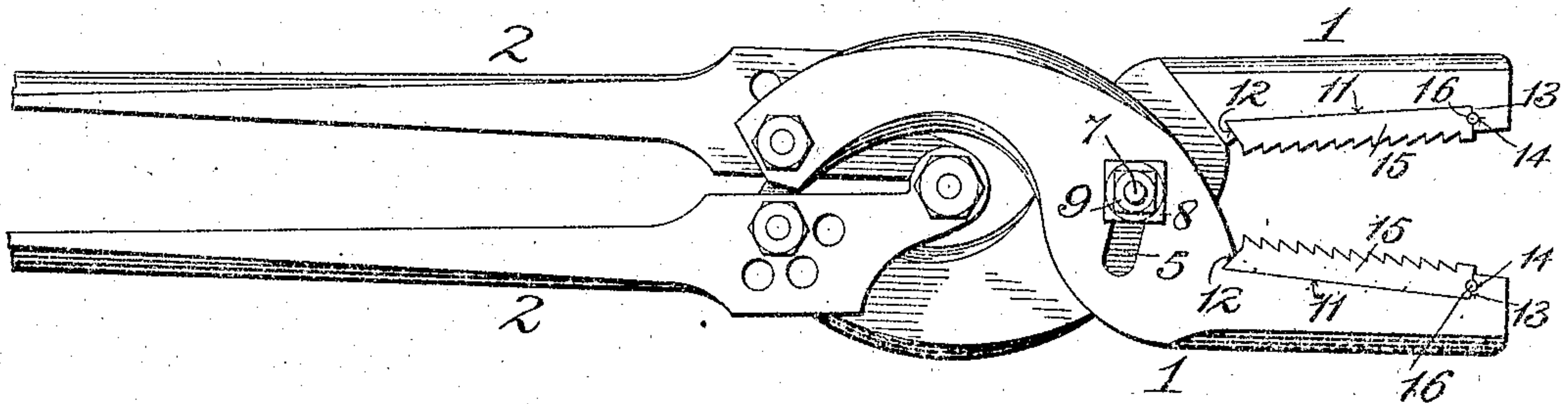


Fig. 2.

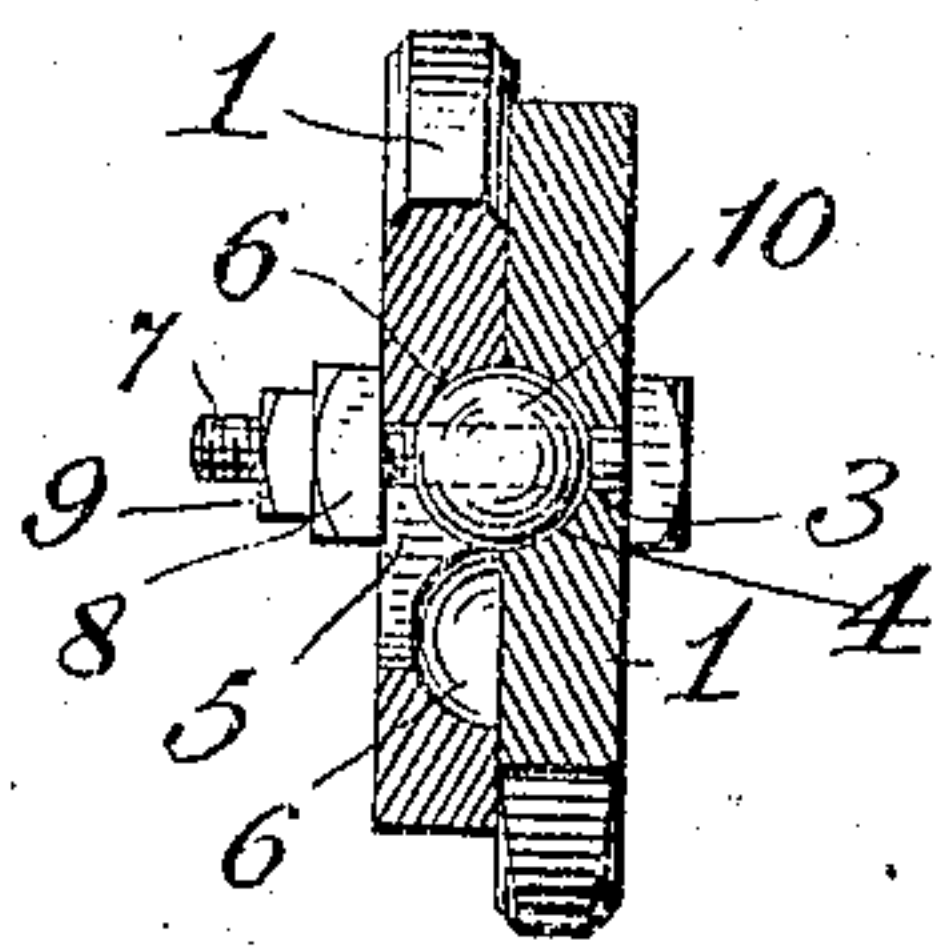


Fig. 3.

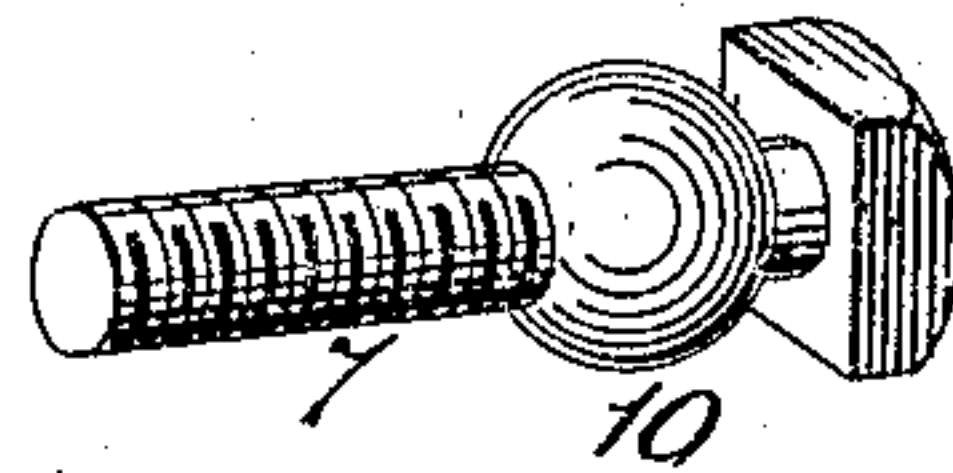


Fig. 4.

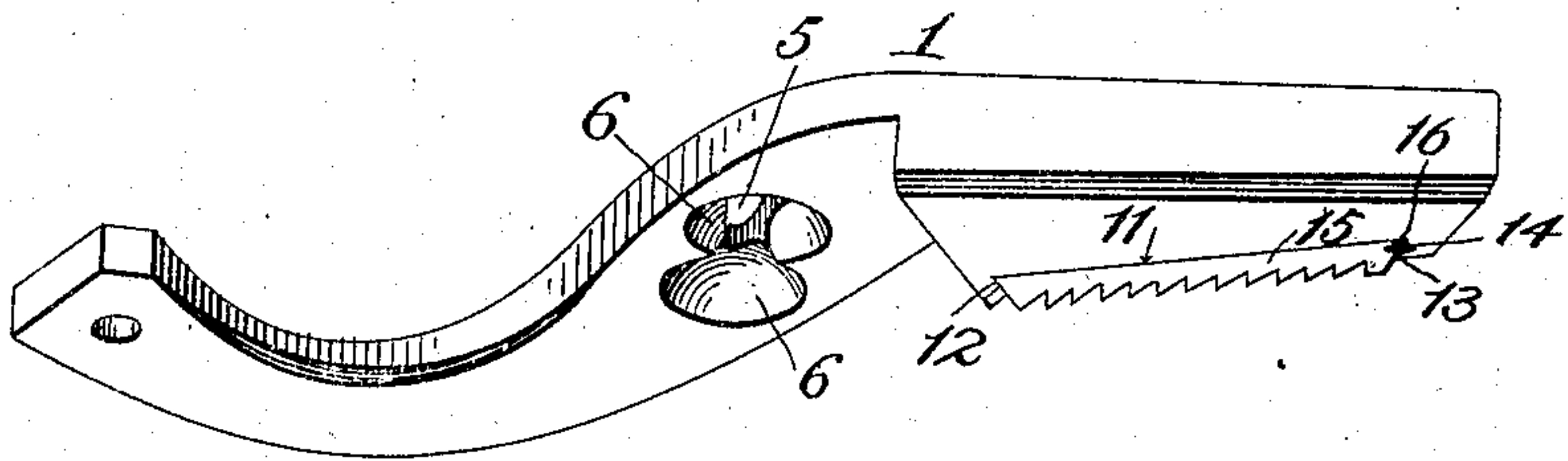
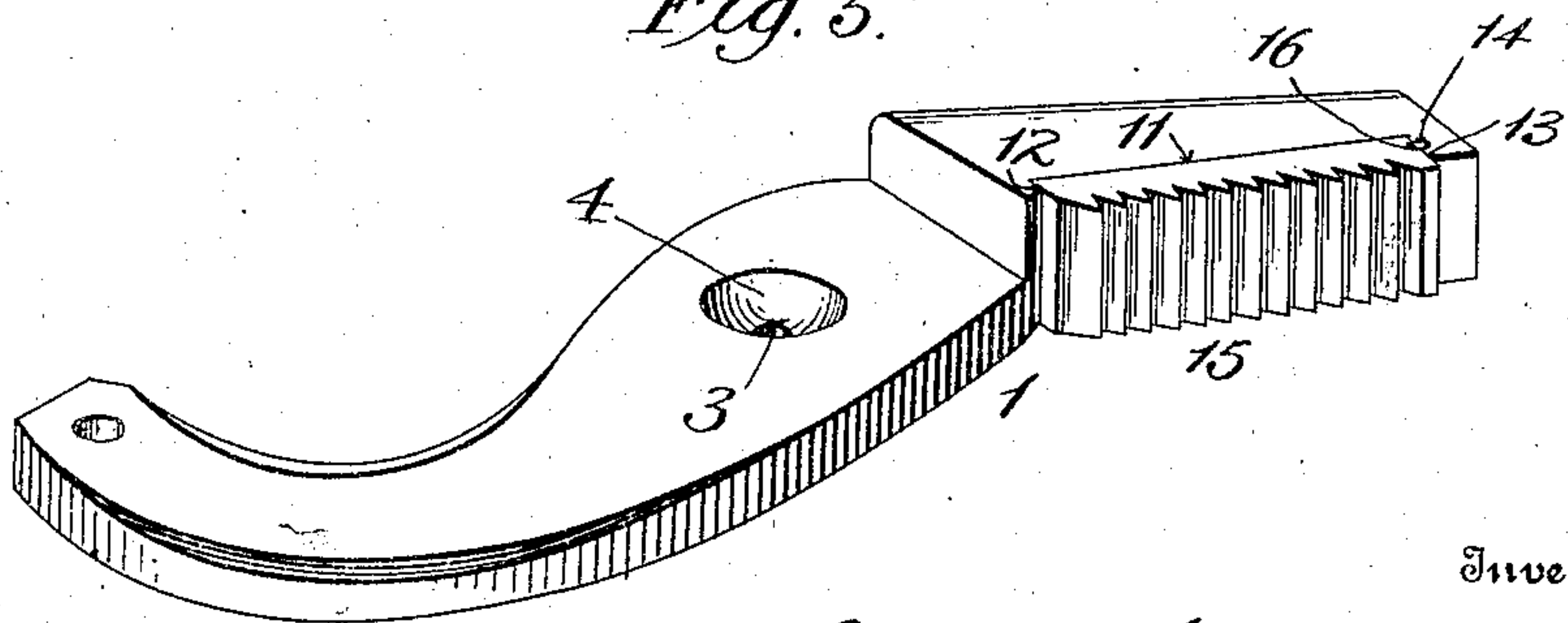


Fig. 5.



Witnesses

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 791,245, dated May 30, 1905.

Application filed March 21, 1905. Serial No. 251,264.

To all whom it may concern:

Be it known that I, WARREN S. CASTERLIN, a citizen of the United States of America, residing at Pittston, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to improvements in wrenches of that type which comprise two jaws pivotally connected together and operated by handles or levers to grasp a nut or pipe or other article.

The object of the invention is to provide a construction which will remove the strain from the pivot and permit the work to be firmly held; and with this object in view the invention consists in certain novel features of the device illustrated in the accompanying drawings, as will be hereinafter first fully described and then particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of a wrench embodying the invention. Fig. 2 is a sectional view of the same, taken through the pivot. Fig. 3 is a detail perspective view of the pivot-bolt and the collar thereon, and Figs. 4 and 5 are detail perspective views of the jaws.

The jaws 1 1 cross each other at their pivotal connection and beyond said connection may be extended to form lever-handles; but I prefer to pivotally connect them to operating-levers 2, and in the drawings I have illustrated the arrangement of adjustable power lever-handles shown in the Patent No. 638,378, granted to me December 5, 1899. It will be understood, however, that the particular form of handles or operating-levers is not an essential element of the present invention.

One of the jaws is provided in its face around the pivot-opening 3 with a conical or substantially hemispherical recess 4, while the other jaw is formed with a transverse slot 5, through which the pivot-bolt passes, and on

its inner face within the walls of the slot are formed tapered or approximately hemispherical recesses 6. The pivot-bolt 7 is inserted through the opening 3 and the slot 5, and retaining-nuts 8 9 are mounted on the free end of the same. On the intermediate portion of the pivot-bolt between the jaws is mounted a collar 10 of substantially spherical form adapted to rest in the recesses 4 and 6 of the jaws. The grasping-faces of the jaws are constructed with longitudinal seats 11, having their inner ends dovetailed, as shown at 12, while their outer ends constitute square shoulders 13, formed with grooves 14. Clamping-blocks 15 are fitted in the seats 11 and have their inner ends inclined to snugly engage the dovetailed ends of the seats, while their outer ends are provided with transverse grooves corresponding to the grooves 14. Pins 16 are inserted through the registering grooves and secure the blocks in the seats. The outer faces of the said blocks are serrated to present a biting or gripping surface to the work in order that the work may be firmly held without any liability of slipping. The serrations are so arranged that the strain is transmitted to and received by the shoulders at the ends of the seats.

By the use of the collar mounted on the pivot-bolt between the jaws all strain is removed from the bolt, so that there is no wear on the same, and the only work it is called upon to do is to hold the jaws together. The inner nut on the bolt retains the jaws in their proper relative positions, while the outer nut thereon is simply a locking-nut to prevent the retaining-nut from working loose. The rubbing action of the jaws is taken up by the collar resting in the recesses in the inner faces of the jaws, so that the wear is reduced to a minimum and a smaller bolt may be used than has been heretofore possible. The jaws may be adjusted to larger or smaller work by loosening the retaining-nut on the pivot-bolt sufficiently to permit the slotted jaw to be raised from the collar, after which the jaw may be shifted to bring the said collar into engagement with a different recess or socket. The nut is then tightened and the wrench used as before.

The construction of the device is very simple, and the collar is entirely between the two jaws, so that there is no unnecessary multiplication of shoulders or projections.

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

1. In a tool of the character described, the combination with the jaws, and the pivot-bolt
10 inserted therethrough, of a spherical collar fitted loosely on the bolt and lying entirely between the jaws.

2. In a tool of the character described, the combination with the jaws, one having a single recess in its inner face and the other having
15 a plurality of recesses in its inner face, of a pivot-bolt inserted through the registering recesses, and a collar loosely mounted on the

bolt and having its ends engaging the said recesses. 20

3. In a tool of the character described, the combination with the jaws, one having a single recess in its inner face and the other having a transverse slot and a series of recesses in its inner face and in the walls of the said
25 slot, a pivot-bolt inserted through the registering recesses in the jaws, and a spherical collar mounted on the bolt and engaging the said recesses.

In testimony whereof I have signed this
specification in the presence of two subscribing witnesses. 30

WARREN S. CASTERLIN.

Witnesses:

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