

(No Model.)

M. D. SCHALLER.
WRENCH.

No. 573,487.

Patented Dec. 22, 1896.

Fig. 1.

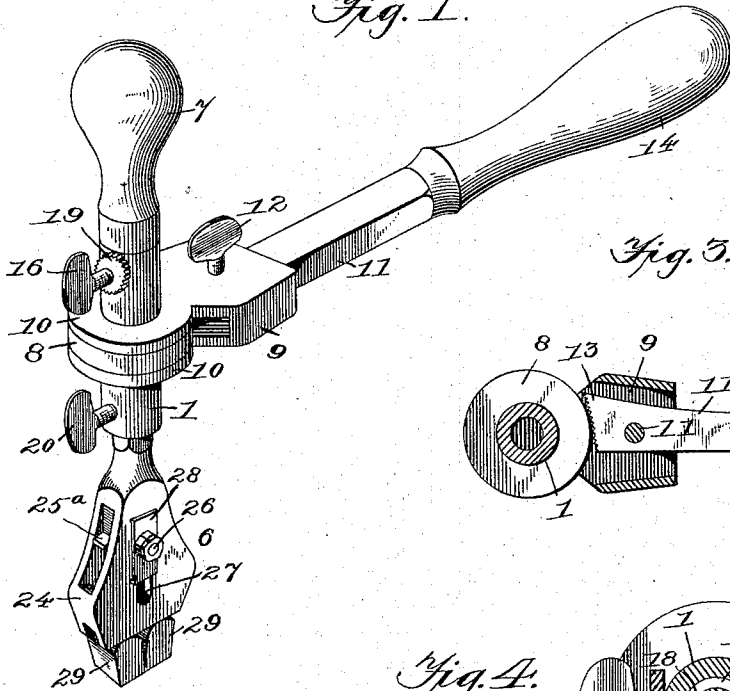


Fig. 3.

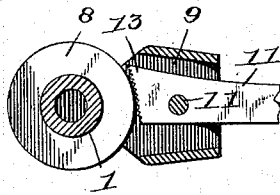


Fig. 4.

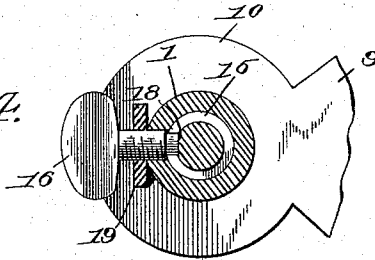


Fig. 2.

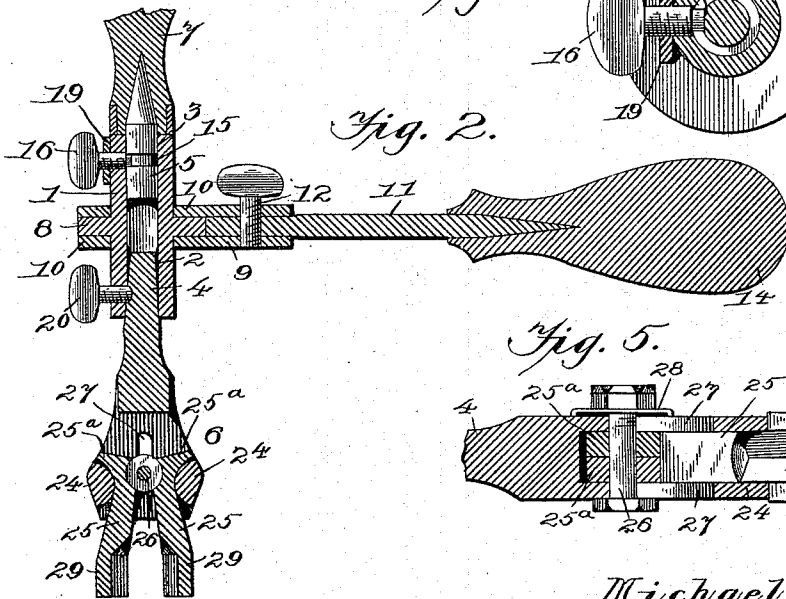
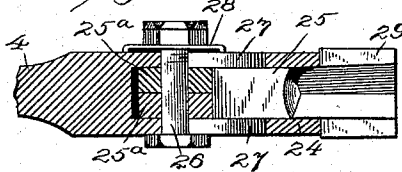


Fig. 5.



Witnesses

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SPECIFICATION forming part of Letters Patent No. 573,487, dated December 22, 1896.

Application filed May 22, 1896. Serial No. 592,597. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL D. SCHALLER, a citizen of the United States, residing at Lowell, in the county of Oneida and State of New York, have invented a new and useful Wrench, of which the following is a specification.

The invention relates to improvements in wrenches.

The object of the present invention is to improve the construction of ratchet-wrenches and to provide a simple, inexpensive, and efficient one which will dispense with the pawls usually employed in this class of wrenches, and which will be capable of ready adjustment to enable the wrench to be rotated in either direction.

A further object of the invention is to provide a wrench which will be capable of rapid adjustment to receive nuts of different sizes, and which will also be adapted for receiving bits and other tools.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a wrench constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a sectional view taken transversely of the spindle and illustrating the construction of the ratchet mechanism. Fig. 4 is a detail sectional view illustrating the manner of swiveling the handle to the spindle. Fig. 5 is a detail sectional view illustrating the manner of mounting the jaws of the wrench.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a spindle provided at its ends with sockets 2 and 3 for the reception of shanks 4 and 5 of a wrench-head 6 and a handle 7. The spindle is provided at a point intermediate of its ends with an annular flange or disk 8 and has swiveled to it a casing 9, which is provided with sleeves 10, arranged on the spindle and located at opposite sides of the disk 8, which is rigid with the spindle. The disk 8 is provided with a smooth periph-

ery and is adapted to be engaged by a lever 11, which is removably fulcrumed in the casing 9 by a screw 12 or other suitable fastening device. The lever has its engaging end 13 cut at an angle and provided with teeth, and it is adapted, when the screw 12 is removed, to be reversed to bring its projecting portion at either side of the casing, which is substantially rectangular in cross-section, and the projecting portion of the engaging end of the lever extends in the direction in which the spindle is to be rotated, as a forward movement of the lever carries the projecting end into engagement with the disk 8. A reverse movement or oscillation of the lever carries its engaging end away from the perforation of the disk 8 and swings the casing backward, and it is thereby returned to its initial position to obtain a fresh hold on the disk 8. By this construction an effective ratchet-wrench is employed, and pawls and toothed disks are dispensed with, and by removing the screw the lever may be quickly reversed to rotate the spindle in either direction. The lever 11 is provided at its outer end with a suitable handle 14 to enable it to be conveniently grasped.

The socket 3 is cylindrical, and the shank 5 of the handle 7 is rounded and is provided with an annular groove 15, which is engaged by a set-screw 16. The set-screw 16 is mounted in a threaded perforation of the spindle and is adapted to engage the annular groove to swivel the handle 7 to the spindle, and the shank 5 is provided at one side of the annular groove with a flat face 18, adapted to be engaged by the screw when it is desired to connect the handle 7 rigidly with the spindle. The handle may be used rigid with the spindle or swiveled to the same, and the screw is provided with a jam-nut 19 for engaging the spindle to lock the screw at either adjustment. The other socket 2 of the spindle is rectangular or polygonal, and the shank 4 of the wrench-head 6 conforms to the configuration of the same and is secured in the socket by a set-screw 20, arranged in a perforation of the spindle similar to the other set-screw 16.

The wrench-head 6 consists of a tapering casing having a longitudinal opening and provided with side walls 24 and receiving

longitudinal adjustable pivotally-connected arms 25. The side walls are located adjacent to the front of the casing and have their inner faces rounded, and the arms are provided 5 at their inner ends with diverging curved extensions 25^a, engaging the side walls to limit the outward movement of the arms. The inner ends of the arms are recessed, overlapped, and perforated to form a joint and are connected 10 by a bolt 26, which forms a pivot, and which is arranged in slots 27 of the casing, and the bolt is provided at one end with a head, and at its other end with a nut, a plate 28 being interposed between the nut and the 15 adjacent face of the casing to prevent any liability of the nut being accidentally unscrewed by the movement of the pivoted arms.

The arms are provided at their outer ends with jaws 29, extending from the casing, and 20 are adapted to be spread, as illustrated in Fig. 2 of the accompanying drawings, and as they are gradually moved inward they are brought together and are caused to clamp the nut with the desired degree of tightness. 25 The jaws are provided with angular recesses, forming a nut-opening, and they are also adapted to receive the shank of a bit or the like, and the greater the pressure exerted on a nut or tool the greater will be the clamping 30 action of the jaws. The casing is provided in rear of the side walls with openings to form a passage for the curved extensions of the arms.

It will be seen that the wrench is simple 35 and comparatively inexpensive in construction, that it dispenses with pawls and a ratchet-disk, which are usually employed in this class of wrenches, and that it is capable of ready 40 adjustment to change the direction of its rotation or to receive nuts or tools of different sizes. It will also be apparent that the handle of the wrench may be readily adjusted to swivel it to the wrench-spindle or to connect 45 it rigidly with the same.

Changes in the form, proportion, and minor details of construction may be resorted to

without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. In a wrench, the combination of a casing 50 provided near its outer end with side walls, and arms arranged within the casing, pivotally connected and capable of movement longitudinally of the casing, said arms being provided at their inner ends with extensions 55 disposed laterally of the casing and adapted to engage the said side walls thereof, substantially as and for the purpose described.

2. In a ratchet-wrench, the combination of a spindle provided with end sockets, a disk 60 having a smooth periphery and fixed to the spindle, a casing provided with sleeves arranged on the spindle and located at opposite sides of the disk, a lever fulcrumed in the casing and having its engaging end cut at an 65 angle and serrated, a handle having a round shank arranged in one of the end sockets, provided with an annular groove and having a flat face at one side of the groove, a set-screw mounted on the spindle adjacent to 70 the shank of the handle, arranged to engage the groove and provided with a jam-nut, and a wrench-head having a shank detachably secured in the other end socket of the spindle, substantially as described. 75

3. In a wrench, the combination of a casing provided near its outer end with side walls rounded at their inner faces, said casing being provided with longitudinal slots, arms 80 arranged in the casing, provided at their outer ends with jaws and having curved extensions at their inner ends, and a pivot connecting the inner ends of the arms and arranged in the slots of the casing, substantially as described. 85

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

MICHAEL D. SCHALLER.

Witnesses:

A. FOSTER BREWSTER,
E. L. STEVENS.