W. B. PEOPLES.

WRENCH.

APPLICATION FILED JULY 21, 1913.

1,096,317.

Patented May 12, 1914.

2 SHEETS—SHEET 1.

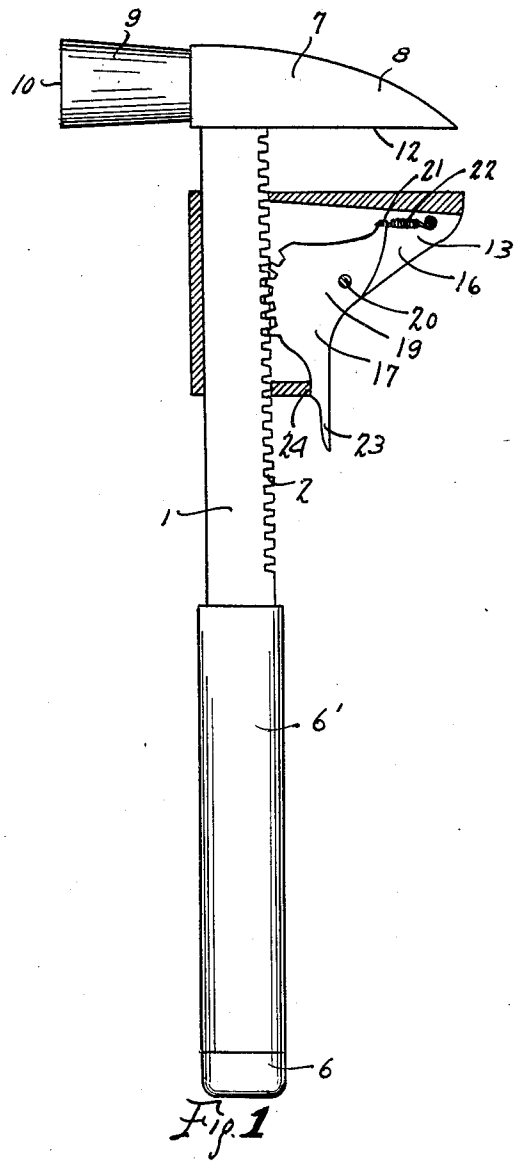


Fig. 1

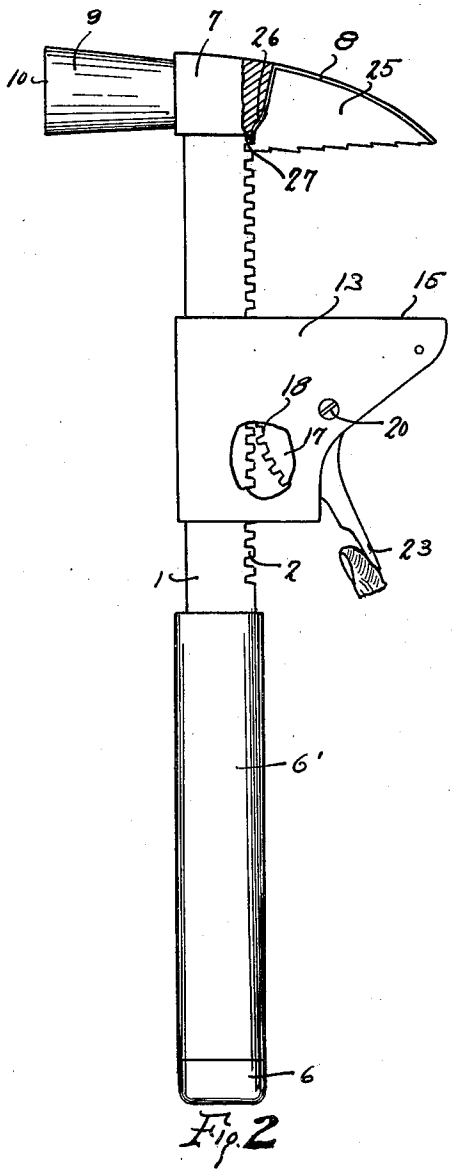


Fig. 2

Witnesses

Harold Scantlebury

Edna Broyles

Inventor

William B. Peoples

By Herbert E. Smith

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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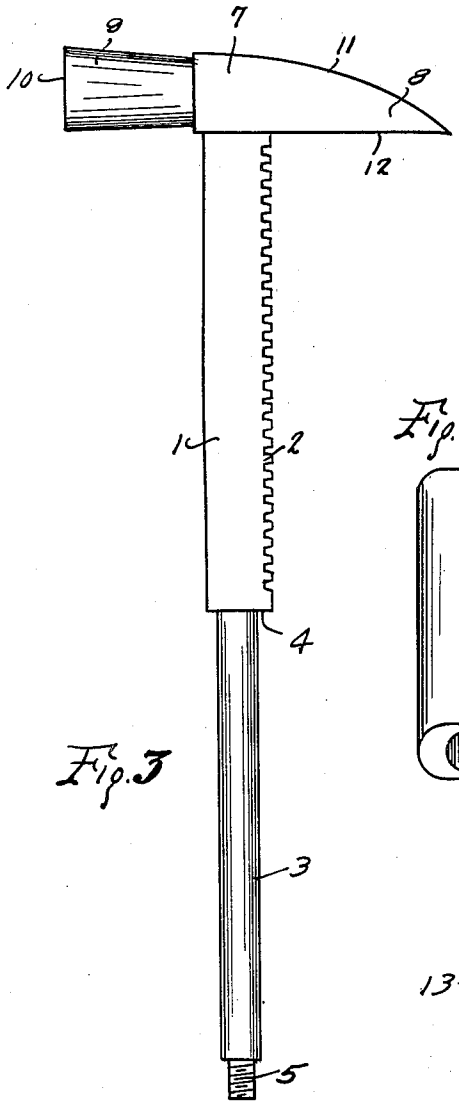


Fig. 3

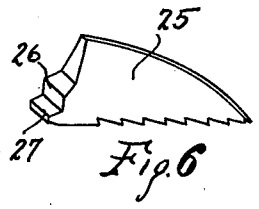


Fig. 6

Fig. 7



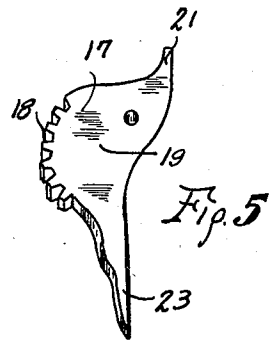


Fig. 5

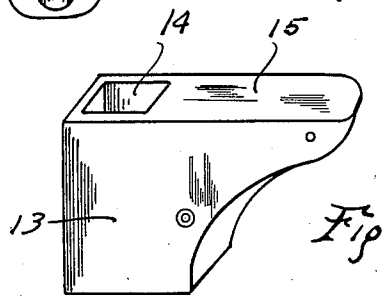


Fig. 4

Witnesses

Harold Scantlebury

Edna Broyles

Inventor

William B. Peoples

By Herbert E. Smith

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM B. PEOPLES, OF ELBERTON, WASHINGTON, ASSIGNOR OF ONE-FOURTH TO HUGH R. PENN AND ONE-FOURTH TO AUGUSTUS R. METZ, BOTH OF ELBERTON, WASHINGTON.

WRENCH.

1,096,317. Specification of Letters Patent. Patented May 12, 1914.

Application filed July 21, 1913. Serial No. 780,200.

To all whom it may concern:

Be it known that I, WILLIAM B. PEOPLES, a citizen of the United States, residing at Elberton, in the county of Whitman and State of Washington, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in combined hammers and monkey wrenches wherein a jaw is slidably mounted on the shank of the hammer for coaction with a fixed jaw on the hammer head.

One of the novel features of my invention resides in a locking pawl which is mounted in such a manner that strain imposed on the slidable jaw will act to more effectively hold the pawl in a locking position.

A further feature consists in mounting the pawl so that when the same is swung in one direction it will be thrown out of a locking position.

Further novel features will be more fully described in connection with the accompanying drawings and will be more particularly set forth in and by the appended claims.

In the drawings:—Figure 1, is a view in elevation, partly in section, illustrative of one embodiment of my invention. Fig. 2, is a similar view with parts in a different adjustment. Fig. 3 is a view showing the wrench attachments removed. Fig. 4 is a perspective view of the slidable jaw detached from the hammer. Fig. 5 is a perspective view of the locking pawl. Fig. 6 is a perspective view of a pipe wrench attachment detached from the hammer. Fig. 7 is a perspective view of a hammer sleeve detached from the hammer.

Like characters of reference designate like parts throughout the different figures of the drawings.

As shown, the device of my invention includes a hammer having a shank 1, provided with a serrated surface which may take the form of a rack 2. Below the rack 2, the handle is cylindrical in cross section as indicated at 3, and to provide a shoulder 4, I desirably form the upper part of the shank polygonal in cross section. The part 3, terminates in a reduced threaded end 5, on which a nut 6, is adapted to be turned to secure a handle sleeve 6′ in position on the shank against the shoulder 4.

A head 7 is disposed on one end of the shank and may comprise a claw 8 and a hammer portion 9 provided with a hammer face 10. The claw 8 will be of the divided form with a rounded outer portion 11 and a flat face 12, which latter is provided to act as a fixed wrench jaw.

A wrench jaw 13 is cored at 14 so as to be slidably disposed on the polygonal portion of the shank 1 and a jaw portion is shown at 15 for coaction with the flat jaw portion 12, of the claw 8. The jaw 13, is hollowed out, as at 16, to receive a locking pawl 17. Pawl 17 is provided with a circular or arc shaped serrated or toothed surface 18, adapted to coact with the toothed surface or rack 2, of the shank 1. The center of radius of the arced teeth of pawl 17, is indicated at 19. A pivot 20 serves as a mounting for the pawl 17 in the jaw 13 and the pivot 20 is eccentrically disposed with respect to the center 19, as shown in Fig. 1. The pawl 17 is provided with a projection 21 to which a tension spring 22 may be attached, at one of its ends, the remaining end being secured to the jaw 13 so as to normally swing the pawl toward the shank 1, and mesh the teeth of pawl 17 with the teeth of shank 1. Said pawl 17 is provided with a tail or handle portion 23, adapted to engage a stop 24, formed on jaw 13.

It will be noted that a vertical line intersecting the juncture of the handle 23 with the stop 24, would lie between the pivot 20 and the points of engagement of the pawl teeth with the rack teeth. Thus the strain imposed on the slidable jaw 13 is transmitted by the pivot 20, to the pawl 17 in a manner to force the handle 23 into engagement with the stop 24 thereby insuring engagement of the pawl teeth with the rack teeth of the shank 1. This improved feature avoids the uncertainty of action resulting from reliance on springs to maintain a pawl engagement under the strain of power applied to the tool and provides a positive structural locking adjustment. It will also be seen that the teeth 18, of the pawl 17 need not be in full depth mesh with the teeth 2 of rack 1, and it will be further noted that the disposition of the stop 24 prevents the teeth of the pawl from being jammed into the teeth of the rack under the application of power. By disposing the pivot 20, sufficiently eccentrically with respect to the center 19, the pawl is thrown out of mesh with the rack 2, when the handle 23 is shifted to

the right, of Fig. 1, so as to permit of longitudinal adjustment of the jaw 13, on the shank 1.

If it is desired to employ the wrench for pipe work, a serrated jaw-plate 25 may be used and it is one of the features of my invention to form the claw and the serrated jaw so that the latter will fit between the bifurcated portions of the former, snugly, and in such a manner that no separate locking means need be provided, and also, to insure projection of the serrated portion of the jaw 25 from the face of jaw 12.

It will be seen from Fig. 6, that the sides of the jaw 25, taper from the serrated base toward the top and I also taper the adjacent faces of the claw 8, so as to maintain the serrated base of the jaw 25 projecting below the face 12, as will be clearly seen in Fig. 2. This taper also serves to maintain the jaw 25 in place in the claw without additional fastening means. That end of the jaw 25, nearest the shank 1, is stepped, as at 26, and a projection 27 is adapted to fit into one of the uppermost teeth of the rack 2, as a further means of securing the jaw 25, in place. The upwardly stepped faces on said jaw 25, also take some of the strain from the claws and serve to transmit such strain to that part of the hammer head nearest the shank which is the stronger part of the tool. These stepped faces also prevent the jaw 25 from becoming so tightly wedged between the claw portions as to present difficulty in removing said jaw.

It will be seen that the claw is entirely exposed when the wrench portions are removed, as will be seen by reference to Fig. 3, so that both the claw and the hammer portions can be freely used, as such, without any encumbrance resulting from the wrench features, the sleeve 6 being usually replaced after the slidable jaw is removed.

While I have herein shown and described one specific form of my invention I do not wish to be limited thereto except for such limitations as the claims may import.

I claim:—

1. A wrench comprising in combination, a shank having a serrated surface, a head on said shank provided with a jaw portion, a jaw slidably disposed on said shank, a pawl having an arc shaped serrated surface for coaction with the serrated surface of said shank, and a pivot mounting said pawl on said slidable jaw and disposed eccentrically with respect to the center of the arc of the serrated surface on said pawl, said slidable jaw having a stop engaging said pawl at a point lying between its serrated surface and the pivot thereof to transmit strain wholly through the said pivot and pawl to and through said movable jaw to structurally lock the same against movement away from said fixed jaw, substantially as described.

2. A wrench comprising in combination, a shank having a serrated surface, a head on said shank provided with a claw having an under jaw surface or portion, a jaw slidably disposed on said shank, a pawl having an arc shaped serrated surface for coaction with the serrated surface of said shank, and a pivot mounting said pawl on said slidable jaw and disposed eccentrically a sufficient distance with respect to the center of the arc of the serrated surface on said pawl thereby serving to shift said pawl out of engagement with said shank upon turning movement of said pawl, substantially as described.

3. A wrench comprising in combination, a shank provided with a claw having a stepped crotch, a jaw adapted to be fitted in said claw and having a stepped end fitting said crotch, and a jaw slidable on said shank for coaction with said first named jaw, substantially as described.

4. A wrench comprising in combination, a toothed shank and a fixed jaw thereon, a movable jaw on said shank having a pawl stop, a toothed pawl adapted to engage said stop and mesh with the teeth on said shank, and means for movably mounting said pawl on said movable jaw in such relation with respect to the point of mesh engagement of the teeth of said pawl with the teeth of said shank and the point of engagement of the pawl with said stop that strain on the movable jaw will urge the pawl into mesh with said toothed shank to lock said movable jaw against movement away from said fixed jaw, substantially as described.

In witness whereof I hereby affix my signature in the presence of two witnesses.

WILLIAM B. PEOPLES.

Witnesses:
A. R. METZ,
H. R. PENN.

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