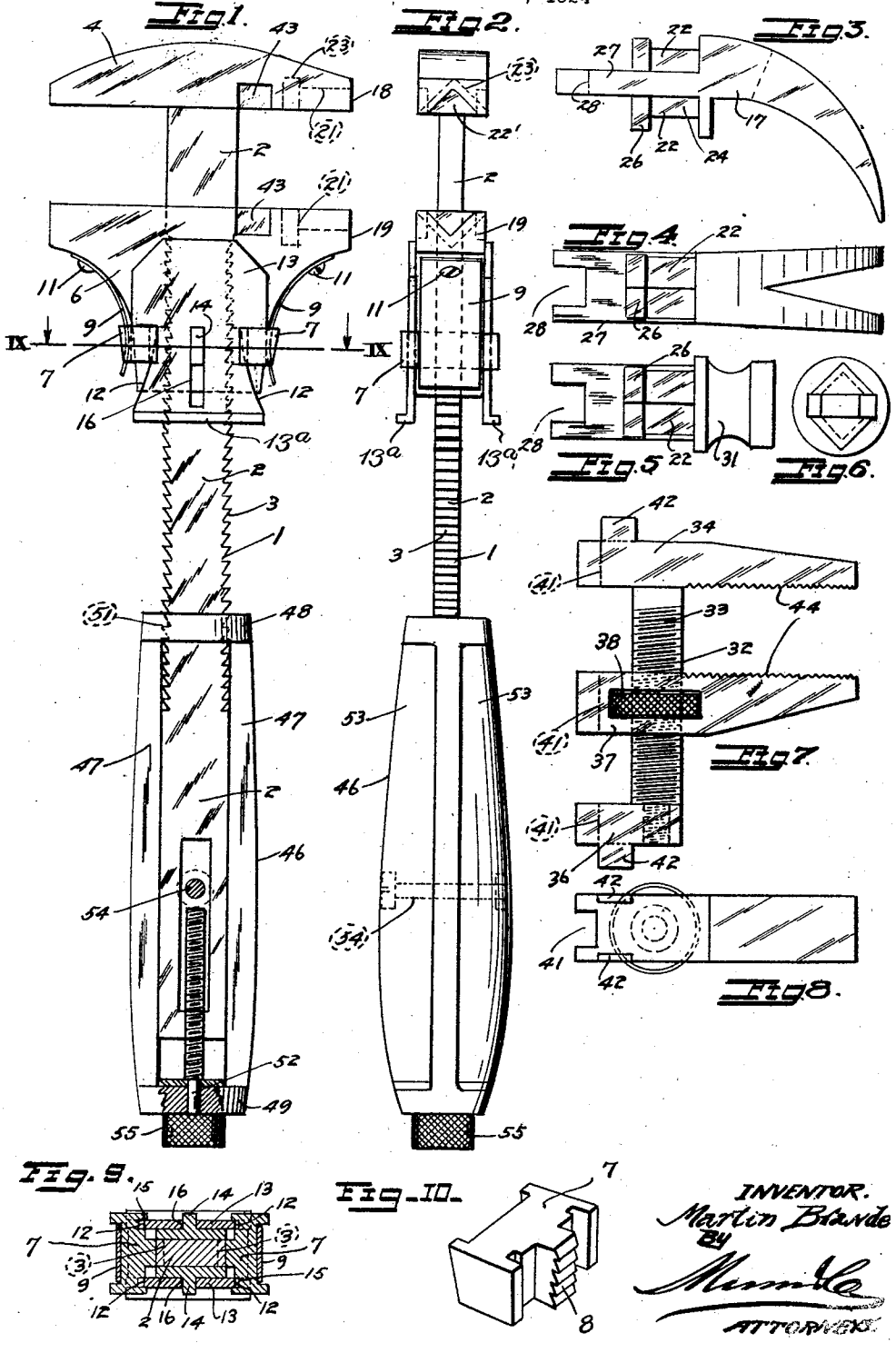
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M. BRANDE

WRENCH

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INVENTOR.
Martin Brande
BY
Munn & Co
ATTORNEYS.

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MARTIN BRANDE, OF BROOKLYN, NEW YORK.

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The present invention relates to improvements in adjustable wrenches commonly known as monkey wrenches, and its particular object is to provide certain improvements which render the wrench particularly easy to operate and which furthermore provide a positive stop for the sliding member of the wrench requiring an actual release of the same before the sliding member can be adjusted, instead of relying on the mere frictional resistance of a threaded engagement provided in a well known type of monkey wrench now on the market.

It is further proposed to provide in combination with a wrench of this character means for securing thereto auxiliary tools such as a hammer or a second adjustable wrench of different capacity, or any other tools of similar character. Further objects and advantages of my device will appear as the specification proceeds.

The preferred form of my invention is illustrated in the accompanying drawing, in which Figure 1 shows a plan view of the same; Figure 2 a side view; Figure 3 a detail view of a claw hammer adapted to be used in connection with my adjustable wrench; Figure 4 an end view of the claw hammer; Figure 5 a detail view of the back or striking portion of a hammer adapted to be used in combination with my adjustable wrench; Figure 6 an end view of the same; Figure 7 a detail view of an adjustable wrench of different proportions adapted to be inserted in my adjustable wrench; Figure 8 an end view of the wrench shown in Figure 7; Figure 9 a cross section taken along line 9—9 of Figure 1 and Figure 10 a perspective detail view of a toothed detent used in my wrench. While I have shown only the preferred form of my invention, I wish to have it understood that various changes or modifications may be made within the scope of the claims hereto attached without departing from the spirit of the invention.

My wrench (1) includes a stem (2) toothed throughout a large portion of the same as shown at (3) and terminating at its outer end in the head (4), which preferably projects over opposite sides of the stem so as to be adapted to coact with registering projections of the sliding member (6) in engaging a nut, the head of a bolt or similar objects. The sliding member (6) is formed to allow two detents (7) which are slidably mounted therein and which are toothed internally as shown at (8) to be pressed upon the toothed faces of the stem by means of leaf springs (9) secured on the outside of the sliding member (6) by means of screws (11).

The two detents (7) are in contact, on opposite sides of the sliding member (6), with slanting edges (12) of the plates (13), which latter are slidable on the side faces of the member (6) and are guided by a stud (14) rising from each face of the member (6) and extending into a slot (16) in the member (13). The latter members are further held to the sides of the member (6) by the fact that the slanting edges (12) ride in grooves 15 provided in the detents (7). The two members (13) serve as wedges. Flanges 13ª are provided at the lower ends of the wedge members 13 to facilitate the manipulation of these members. When pushed downwardly they allow the two detents (7) to be forced against the toothed faces of the stem (2) by the springs (9), and when pushed upwardly they force the two detents outwardly over the resistance of the springs (9) so as to free the stem from the engagement with the detents and to allow the member (6) to slide on the stem in either direction.

The cooperating jaws 18 and 19 are provided wth recesses to make possible the insertion of a tool which would make the wrench useful for different purposes. To allow the front portion or claw (17) of a hammer to be inserted the two elements (18) and (19) of the wrench are recessed as shown at (21) to receive registering projections (22) on the claw of the hammer, the recesses preferably comprising tapered grooves (22′) terminating at their inner ends in somewhat deeper grooves (23), while the projections consist of corresponding tapered ridges (24) terminating in somewhat higher ridges (26).

The claw (17) has a flat shank (27) extending therefrom adapted to be engaged by the flat faces of the elements (18) and (19) of the wrench and ending interiorly in a recess (28) adapted to allow the shank to straddle the stem (2) of the wrench. The back or striking portion (31) of a hammer may be secured between the two elements (18) and (19) in a similar manner.

If it is desired to use a wrench allowing of a larger bite, the auxiliary device (32)

shown in Figure 7 may be used. The latter comprises a threaded rod (33) having a transverse head (34) secured to one end thereof, and a transverse base member (36) at the other end. A sliding member (37) providing the movable jaw of the auxiliary wrench may be advanced on the rod by turning the nut (38). The head (34), the sliding member (37) and the base member (36) are recessed as shown at (41), whereby the inner ends of the three elements are allowed to straddle the stem (2) of the main wrench.

Two projections (42) rising from the head (34) and the base member (36) in spaced relation are adapted to be inserted in recesses (43) in the head (4) and the sliding member (6) of the main wrench for locking the auxiliary wrench in place when the slide (6) is tightened upon the same. The two jaws of the auxiliary device are preferably formed with corrugated inner faces as shown at (44).

The handle (46) of the wrench comprises a frame consisting of two parallel bars (47) connected at the top and bottom by rings (48) and (49), the former being perforated as shown at (51) to allow the stem (2) to pass therethrough, while the latter is perforated to receive and hold against endwise motion the rod (52) which latter is threaded so that it may be screwed into and out of the end of the stem (2) for the purpose of shortening and lengthening the wrench. Wooden side pieces (53) secured to the frame by means of a bolt (54) complete the handle. The rod (52) may be turned by means of the knob (55).

The manner of using my wrench is as follows:

To adjust the wrench to receive a certain nut or bolt head, the two plates or wedges (13) are pushed upward so as to force apart the two detents (7) anchoring the sliding member (6) to the stem (2). The member (6) may now be slid back and forth on the stem until the proper adjustment has been obtained, whereupon the operator pushes the two wedges (13) downwardly and allows the detents (7) to close in on the stem (2) and to hold the sliding member against endwise motion. To insert the hammer, either the claw or the back of the same, it is only necessary to cause the shank (27) to straddle the stem (2) with the ridges (22) disposed between the recesses (21), whereupon the member (6) may be tightened upon the hammer for securing the same in place.

To use the auxiliary wrench it may be necessary to lengthen the main wrench by turning the rod (52) until the extreme length of the wrench has been reached. The sliding member (6) is then slid downwardly on the stem (2) until the distance between it and the head (4) is sufficiently large to allow the auxiliary wrench to be introduced between the same. The sliding member (6) is then forced upon the auxiliary wrench and the detents (7) are allowed to close in on the stem by pushing the wedges (13) downwardly.

I claim:

1. In an adjustable wrench, a shank of rectangular cross section toothed on opposite sides and terminating in a transverse T-shaped head, a member slidable thereon formed symmetrically on opposite sides of its center line, symmetrical spring-pressed detents associated with the latter normally engaging the shank from opposite sides for holding the member against endwise motion and two symmetrical wedge members slidable in the two detents and disposed on the other two sides of the shank allowing the detents to be separated for releasing the sliding member.

2. In an adjustable wrench, a shank of rectangular cross section toothed on opposite sides and terminating in a transverse T-shaped head, a member slidable thereon formed symmetrically on opposite sides of its center line, symmetrical spring-pressed detents associated with the latter normally engaging the shank from opposite sides for holding the member against endwise motion and two symmetrical wedge members slidable in the two detents and disposed on the other two sides of the shank allowing the detents to be separated for releasing the sliding member, the wedge members having flanges thereon facilitating the manipulation of the same.

MARTIN BRANDE.