

(No Model.)

F. MOSSBERG.
WRENCH.

No. 550,025.

Patented Nov. 19, 1895.

Fig. 1.

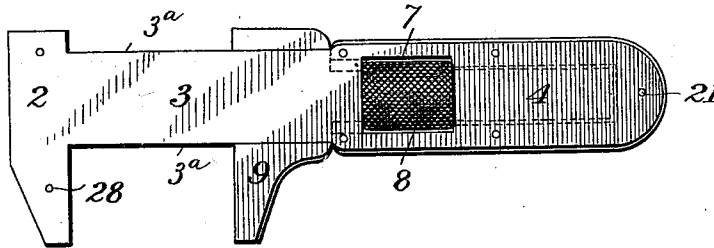


Fig. 2.

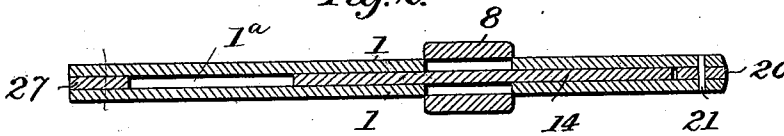


Fig. 3.

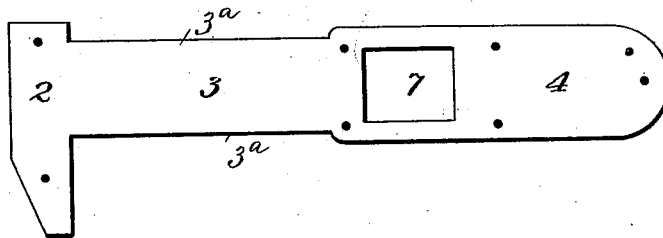


Fig. 5.

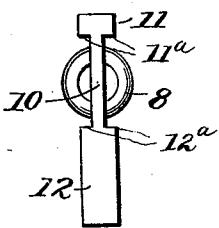


Fig. 4.

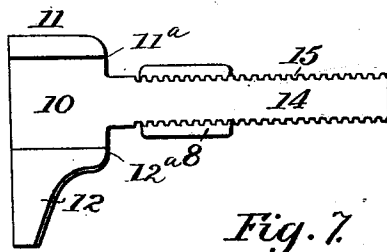


Fig. 6.

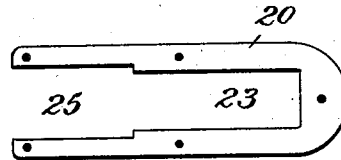
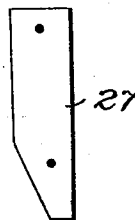


Fig. 7.



Witnesses
J. G. Hinkel
E. Everett Ellis

Inventor
Frank Mossberg
by
Jesse Freeman
Attorneys

UNITED STATES PATENT OFFICE.

FRANK MOSSBERG, OF ATTLEBOROUGH, MASSACHUSETTS, ASSIGNOR TO THE
MOSSBERG WRENCH COMPANY, OF SAME PLACE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 550,025, dated November 19, 1895.

Application filed September 27, 1894. Serial No. 524,271. (No model.)

To all whom it may concern:

Be it known that I, FRANK MOSSBERG, a citizen of the United States, residing at Attleborough, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to certain new and useful improvements in wrenches; and it consists, substantially, in such features of construction, arrangement, and combinations of parts as will hereinafter be more particularly described.

Sliding or movable jaw wrenches as ordinarily constructed are rendered entirely unavailable for many purposes in the arts on account of the relative thickness of the several parts thereof, and recent attempts have been made to so reduce the thickness of the same as to enable the wrench to be inserted more readily into narrow spaces or between closed parts of machinery, either for the purposes of adjustment or tightening up. It has been proposed in one instance heretofore to construct a sliding or movable jaw wrench of sheet metal, the handle portion and stationary jaw whereof being stamped or cut out of one piece of metal, while the sliding or movable jaw was bent or brought together in such manner as to embrace the shank portion, and the movable jaw was regulated or adjusted in the ordinary manner by a movable nut. In another instance a wrench has been constructed of sheet metal embodying in the main the several general characteristics just specified, but in order to further decrease the thickness of the wrench a pawl or lever was substituted for the movable nut by which to adjust the movable jaw upon the shank connecting the stationary jaw with the handle portion of the wrench. In still another instance heretofore it has been proposed to construct a movable or sliding jaw wrench with a hollow sheet-metal handle, in which moves the flattened shank portion, to the outer end of which the movable jaw is formed or attached, the movements or adjustments of said jaw being effected, also, through the medium of a movable or adjusting nut confined in suitable recesses formed in the handle portion.

The former constructions above referred to

while naturally reducing the thickness of the wrench, are still open to a great many objections which have been encountered in the uses of the wrenches for different purposes, and they have been found to get out of order very easily, besides being very liable to breakage when subjected to any very great amount of strain. In the instances referred to, where the movable or sliding jaws embrace the shanks of the wrenches, the said jaws very frequently become so spread and distorted from use as to render it almost impossible to move or adjust the jaws in conformity with the different requirements. In the former instance last above referred to the hollow sheet-metal handle is made or constructed by bending or turning a piece of sheet metal around a forming device, and consequently the handle portion very soon becomes weakened or distorted from use and the parts are not capable of operating with that ease and freedom which is required of a wrench under ordinary circumstances.

The object of the present invention is to overcome the objections and disadvantages of the several former embodiments referred to and to provide a sheet-metal wrench possessing the greatest amount of strength and durability, and one that is readily inserted into small spaces or between close parts of machinery, as is very often required in the arts.

The above objects I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 represents in side elevation a movable or sliding jaw wrench constructed of sheet metal and embodying the several characteristics of my invention. Fig. 2 is a central longitudinal sectional view thereof. Fig. 3 is a view of one of the blanks constituting the side pieces of my improved wrench. Fig. 4 is a detail view in side elevation representing the movable jaw and its shank, together with the nut by which said jaw is moved or adjusted. Fig. 5 is an end view of the preceding figure. Fig. 6 is a view in detail representing the filler for the handle-pieces of the wrench. Fig. 7 is a view in detail of the filler or head-forming part of the stationary jaw of the wrench.

In carrying my invention into effect I punch

out from a piece of sheet metal of the desired character two plates 1 1, which, as shown in Fig. 2, constitute the side pieces of my improved wrench throughout the entire extent or length thereof, the said plates being counterparts and of the form clearly indicated in Fig. 3. By reference to this latter figure, 2 indicates the head portion, 3 the shank portion, and 4 the handle portion. The opposite parallel edges 3^a of the shank portion intermediate the head and handle portions are formed perfectly straight and serve as bearing-surfaces upon which the movable jaw 9 moves. The plates 1 1 are separated by means of filling-pieces, hereinafter described, to provide a recess or opening 1^a between them for accommodation of the movable jaw 9. Each of the plates 1 is formed with a corresponding opening 7, designed to receive and accommodate the adjusting-nut 8, through the medium of which the movable jaw 9 of the wrench is operated. The said movable jaw is also punched out of sheet metal, and by passing a suitable cutter or roller over the two sides thereof an intermediate thinner or web portion 10 is formed, leaving the upper end portion 11 thereof, as well as the lower jaw portion 12, of greater thickness than the said web portion 10 to form shoulders 11^a 12^a on each face of the movable jaw. Each of these shoulders corresponds in thickness to that of one of the plates 1, and when the movable jaw 9 is inserted in the recess 1^a between the plates 1, said shoulders 11^a and 12^a engage, respectively, the rear and front edges or bearing-surfaces 3^a of said plates 1, and thus all strain upon the movable jaw 9 is equally distributed upon said plates and the lateral movement of the jaw 9 prevented. Formed with the said movable jaw and of an equal thickness with the web-like or reduced portion 10 thereof is a shank 14, formed on each of its edges with a mutilated thread 15, which enters the threads of the adjusting-nut 8, hereinbefore referred to, the said shank 14 of the movable jaw extending between the shank portions 3 3 of the plates 1 1.

In order to properly unite the side pieces at the handle portions thereof I insert the filler 20 (see Fig. 6) between such handle portions, and then unite the parts together by means of rivets, (indicated by the numeral 21.) The said filler 20 is of substantially the same external contour as the handle portions, while in the main body of said filler is formed an oblong recess or opening 23, designed to accommodate the shank 14 of the movable jaw as the said movable jaw is adjusted or moved back and forth between the side pieces of the wrench, in the manner herein fully set forth. The said oblong recess or opening 23 of the filler-plate 20 is enlarged somewhat, as shown at 25, such enlargement being formed at a point coincident with the openings 7 of the side plates or pieces, so as to accommodate the adjusting-nut, which construction is of

course necessary to enable the nut to be turned to adjust the movable jaw.

Between the head portions 2 of the side plates or pieces 1 1 I insert the filler 27, (see Fig. 7,) which is of equal thickness to the filler 20, and in like manner I secure said filler 27 between said head portions by means of rivets 28. After the parts have all been joined in the manner herein shown and described, they are or may be brazed together in such manner as to form practically a solid implement or device, and it will be seen that a wrench so constructed is fully equal to all the demands required of it.

The wrench has no protruding portions and can be readily inserted between close parts of machinery, whereas if constructed in the old-time way, such results could not be effected. It will be understood that the head portions of the plates, together with their intermediate filler 27, constitute the stationary jaw of the wrench, and it will be seen that both the said stationary jaw and the movable jaw are of the same thickness on their operative portions or surfaces.

A further advantage in the construction shown and described is that the side pieces or handle portions of the wrench are not liable to spread apart or become distorted, and the shank of the movable jaw is surrounded throughout in such a way that the greatest amount of strength is imparted to the movable jaw at whatever position it may be adjusted with respect to the stationary jaw.

It is of course apparent that immaterial changes could be resorted to in the construction and general arrangement of the several parts of my invention, and while it is the purpose to construct the wrench of sheet metal it will be understood to be perfectly practicable to construct the same of larger sizes and of thicknesses common to the ordinary form of sliding or movable jaw wrenches. Thus the side pieces of the wrench herein could be formed in a die, making a ridge in the middle throughout the entire lengths thereof, which would allow of using the full thickness of the shank of the movable jaw.

Therefore, without limiting myself to the precise details herein shown and described, I claim—

1. A wrench consisting of two similar side pieces of metal formed to constitute the stationary jaw, shank and handle portions, said shank portions being provided with bearing surfaces, filling pieces inserted between the said handle portions and jaw portions of the side pieces, to leave a recess between said pieces, a movable jaw working in said recess and engaging the bearing surfaces of the shank portions, and means for adjusting the movable jaw, substantially as described.

2. A wrench consisting of two similar side pieces of metal formed to constitute the stationary jaw, shank and handle portions, said shank portions being provided with bearing

surfaces, filling pieces inserted between the said handle portions and jaw portions of the side pieces to leave a recess between said pieces, a movable jaw working in said recess, said jaw being provided with shoulders which engage the opposite bearing surfaces of the shank portions and means for adjusting the movable jaw, substantially as described.

3. A wrench consisting of two similar side pieces formed to constitute the stationary jaw, shank and handle portions, filling pieces inserted between the stationary jaw and handle portions of the side pieces, to leave a recess between said pieces, a movable jaw contained in said recess and moving wholly between the shank portions of the side pieces, and means for adjusting the movable jaw, substantially as described.

4. A wrench consisting of two similar side pieces formed to constitute the stationary jaw, shank and handle portions, said handle portions being provided with coinciding openings, filling pieces inserted between the stationary jaw and handle portions of the side pieces to leave a recess between said pieces, a movable jaw contained in said recess and moving wholly between the shank portions of the side pieces, said jaw being provided

with a threaded shank, and a nut surrounding said shank and held in the openings of the handle portions, substantially as described.

5. A wrench consisting of two similar side pieces formed to constitute the stationary jaw, shank and handle portions, said shank and handle portions being provided with bearing surfaces and coinciding openings respectively, filling pieces inserted between the stationary jaw and handle portions of the side pieces to leave a recess between said pieces, a movable jaw contained in said recess and moving wholly between the shank portions of the side pieces, said jaw being provided with a threaded shank and with shoulders for engaging the bearing surfaces of the shank portions, and a nut surrounding the threaded shank of the movable jaw and held in the openings in the handle portions, substantially as described.

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

FRANK MOSSBERG.

Witnesses:

CARL CHRISTENSEN,
PHILIP E. BRADY.