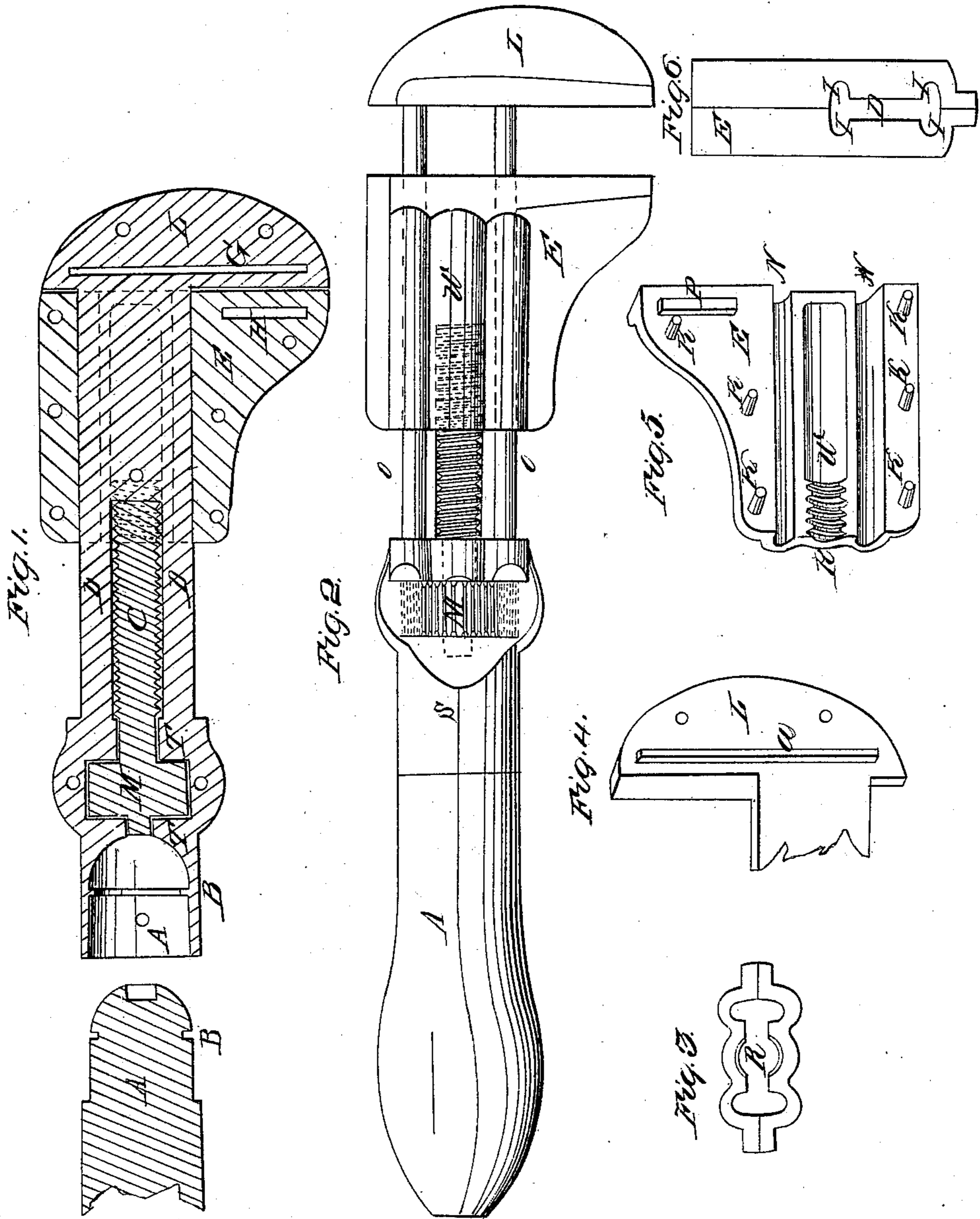


J. Hyde,

Wrench.

No 22,122.

Patented Nov. 23, 1858.



UNITED STATES PATENT OFFICE.

JOSEPH HYDE, OF TROY, NEW YORK.

SCREW-WRENCH.

Specification of Letters Patent No. 22,122, dated November 23, 1858.

To all whom it may concern:

Be it known that I, JOSEPH HYDE, of Troy, in the county of Rensselaer and State of New York, have invented a new and Improved Wrench; and I hereby declare that the following is a full and exact description of the nature, construction, and operation thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

I describe my invention in the following manner, to wit:—1st. The nature. 2d. The construction. 3d. The operation, and 4th, the claim, which I draw out of and base upon the said nature, construction and operation.

Nature of the invention.—The nature of my invention consists first in constructing a "wrench" in such form as will give the greatest amount of strength with the smallest amount of metal, which is done by making the bar and other parts very thin and strengthening by means of flanges, and secondly, my invention consists in making a "wrench" in such form as to lessen the expense in manufacturing, which is done by making the wrench in thin pieces and of malleable iron which cannot be done in the usual form of "wrenches". The parts being so heavy they will not anneal, hence the necessity of making them of wrought iron with a finish. By this arrangement of mine, *i. e.* casting the entire wrench in halves, it will be seen that no coring is required about any part of said "wrench", but allows each and every part to be cast perfectly, requiring no finish, except to put in the handle, and each part in its appropriate place, and then rivet together the parts so designed. By this arrangement the cost of wrenches is reduced at least 75 per cent.

Construction.—I construct my wrench by casting the bar and jaws in two parts each.

Figure 1 shows one half of the whole wrench. Fig. 2 shows the wrench completed.

(D, D,) Fig. 1, is the bar with the jaw (L) at one end which jaw and bar are cast together. At (E), same figure, may be seen one half of the inside and movable jaw upon the bar (D, D).

(H) is a recess the sliding jaw (E) to receive (P) Fig. 5.

(G,) Fig. 1, is a recess upon the end jaw (L) and is to receive (Q) of Fig. 4.

(P) and (Q) of Figs. 4 and 5 are projec-

tions cast to fit the recess (H and C), Fig. 1, which are for the purpose of giving great strength to the jaws E and L, which jaws when together will appear as seen at Fig. 2.

Fig. 5 shows one half of the sliding jaw (E). The pins (K, K, &c.) are cast with this part of the jaw and are to fill the holes represented in the other half of (E) at Fig. 1, which when done after the process of annealing has taken place and the metal becomes soft are riveted down and the sliding jaw is then completed. The bar (D, D) must be put in before the operation of riveting takes place upon this jaw, which is not put together until the bar (D, D,) and the jaw (L) at the end thereof are riveted together.

(N, N), Fig. 5, are recesses to receive the flanges (O, O), Fig. 2. These recesses are also to correspond with recesses in the other half of the sliding jaw (E) for the same purpose.

Fig. 6 shows one end of the sliding jaw (E). D is the bar upon which this jaw moves, and is cast in the shape represented by the light color thereof, therefore (I, I, I, I,) are the flanges of the bar (D). This is the sliding jaw put together upon the bar (D).

Fig. 4 is one half of the end jaw (L).

Fig. 3 shows the end of the sliding jaw (E) which contains the nut for the screw (C), Fig. 1. This nut is cast in each part of the jaw as seen at (R), Fig. 3.

(M), Fig. 2, is the thumb piece for the purpose of operating the screw (C) and is cast upon and with said screw, which screw is also cast and is of common form.

(A), Fig. 2, is the handle and is made of wood, and may be cast of iron and with the bar (D, D) and the jaw (L), which of course would be in a one half part as the said bar and jaw are cast in half parts.

(W), Fig. 5, shows a recess or depression to receive the screw (C).

(B of A), Fig. 1, is depression in the handle to receive a projection or flange cast in the socket (S), Fig. 2.

The bar and head or end jaw may be made whole except that part which surrounds the thumb piece (M), Fig. 2, and the socket (S). This thumb piece has a bearing for it to turn upon at (T and T'), Fig. 1. This is for the purpose of operating the screw (C) and holding it in the same position in the bar, whereupon the jaw (E) is moved

back and forth at pleasure. This arrangement will allow the screw and thumb piece to be put in their proper place without making the entire bar and jaw in halves. The same screw may be put upon the outside of the bar instead of in the middle as shown.

Operation.—This wrench is operated by moving the thumb piece (M), which will then move the jaw (E) toward the jaw L or from said jaw as the case may require. This wrench is taken in its cast form and condition and put together and riveted without any other finish. Thus a cheap, strong and durable wrench is made of cast malleable iron.

Like figures represent like parts.

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

1. The arrangement of the thumb piece (M), and the screw (C) in the manner and place herein described.

2. I claim making the sliding jaw (E) in two equal parts, divided on a vertical line, parallel with the bar (D), and the jaw (L), so as to cast the nut (R), and the recess (H) at the same casting of the said sliding jaw.

JOSEPH HYDE.

Witnesses:

LEWIS CORNING,

MARCUS P. NORTON.