June 3, 1947. G. B. UMBDENSTOCK 2,421,665

STEEL BARREL PLUG WRENCH

Filed Sept. 1, 1943 2 Sheets-Sheet 1

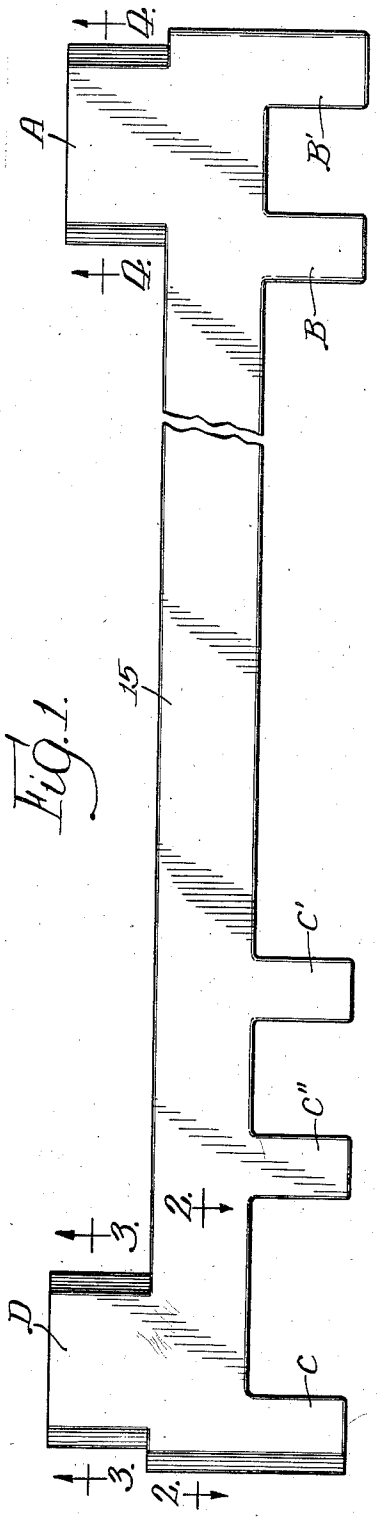


FIG. 1.

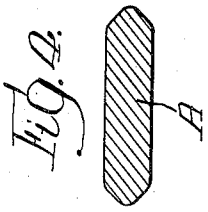


FIG. 4.

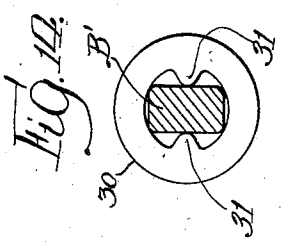


FIG. 14.

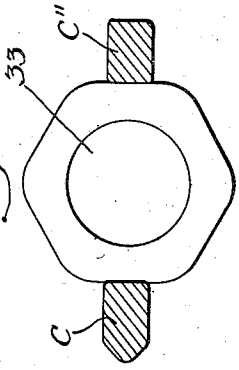


FIG. 13.

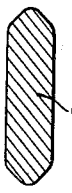


FIG. 3.

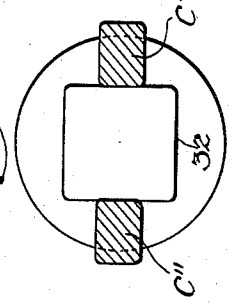


FIG. 12.

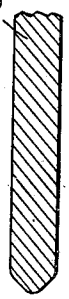


FIG. 2.

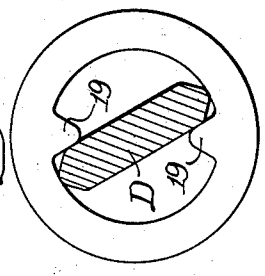


FIG. 11.

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STEEL BARREL PLUG WRENCH

Filed Sept. 1, 1943 2 Sheets-Sheet 2

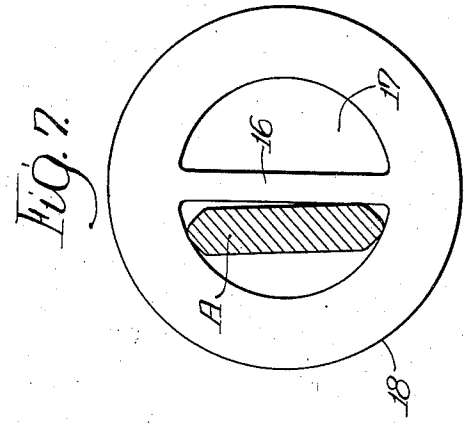


Fig. 7.

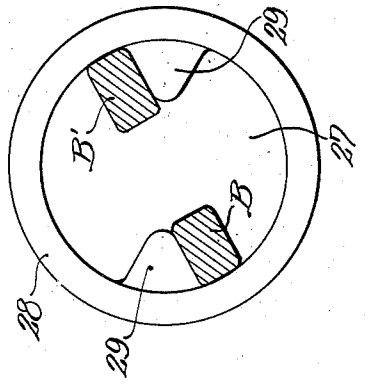


Fig. 10.

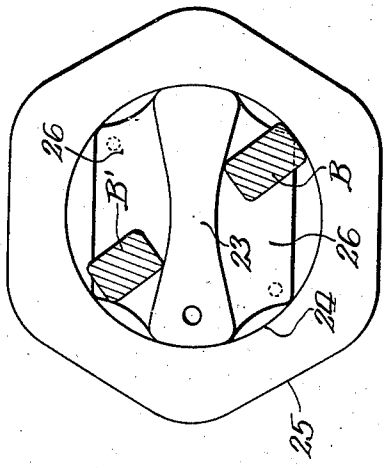


Fig. 6.

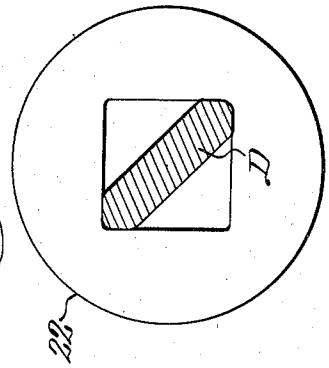


Fig. 9.

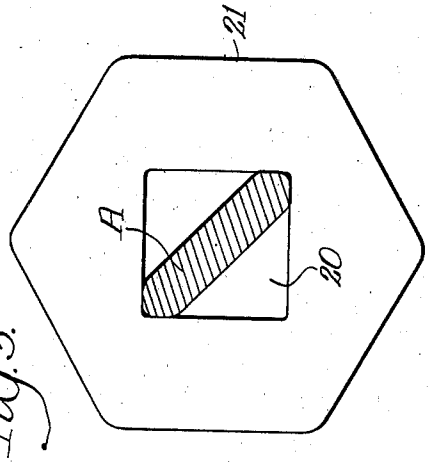


Fig. 5.

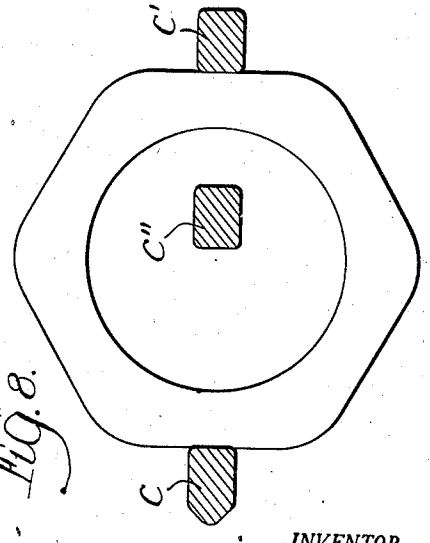


Fig. 8.

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STEEL BARREL PLUG WRENCH

George B. Umbdenstock, Prairie View, Ill.

Application September 1, 1943, Serial No. 500,777

1 Claim. (Cl. 81—119)

1

My invention relates to plug wrenches for steel barrels and the like.

In such receptacles the plugs are of metal, are externally threaded and screw into correspondingly internal threaded fittings which are fitted and secured to the sheet metal of the casks.

Such plugs vary in diameter and form. In most, there are depressions in their outer faces to save material and weight in the case of cast metal or similar plugs and to follow the contour of the outside of same in the case of pressed or formed sheet metal plugs.

These depressions or recesses, varying in depth from one-fourth to three-fourths of an inch, are also of various sizes and outlines, circular, square, hexagonal, etc., and some have ribs, straight or curved, across the bottom, and others diametrically opposite lugs or projections extending inwardly from the side walls. In general, these depressions, with their sides, corners, ribs, angles, lugs, etc., and other shallow depressions in the faces of the flanges, are commonly used for the application of cold chisels and hammer blows thereto to loosen the plugs from their seats. This is objectionable as being troublesome and tending to damage the plugs and barrels.

It is an object of my invention, therefore, to provide a wrench of substantially universal application to remove and apply any type of plug used in steel barrels and the like and thereby producing a tool of great convenience and utility and rendering unnecessary the use of hammer and chisel for the purpose.

A further object is the provision of a wrench comprising a bar or shank having a plurality of tangs of various sizes projecting therefrom and spaced and related to tang-engaging and cooperating surfaces on the variously designed barrel plugs.

Another object of the invention is the provision, in a bar or spanner type of wrench, of a plurality of tangs, fingers or jaws projecting from the bar and having plug-engaging surfaces on the several faces thereof whereby the same may be variously engaged with the tang-engaging surfaces of differently formed plugs, such engagements being singly or in pairs, on the inside or outside of adjacent or alternate tangs, or on the sides thereof.

Further objects and advantages will appear from the detailed description and claim to follow, in connection with the accompanying drawings which illustrate an embodiment of my invention and in which—

Figure 1 is a side view of the complete wrench;

2

Fig. 2 is a fragmentary cross-sectional view on the line 2—2 of Fig. 1, showing the more or less pointed or tapered edge conformation of the end tang of the wrench;

Fig. 3 is a cross-section, on line 3—3 of Fig. 1, of the wide tang on the opposite edge of the bar of the wrench and showing the tapered edges of the tang;

Fig. 4 is a similar cross-sectional view, on the line 4—4 of Fig. 1, of the tang at the opposite end of the bar, showing the angular edge conformation thereof; and

Figs. 5 to 14, inclusive, show plan views of different threaded plugs for steel barrels, with cross-sections of the cooperating tangs, fingers or jaws of the wrench in engaging positions in or on the plugs.

Referring to these drawings in detail, the wrench comprises a bar shank or handle 15, preferably of steel and which in practice may be ¾ inch in width, ⅜ inch in thickness and 15 inches in length, although, of course, any other suitable dimensions may be employed.

The bar 15 has a plurality of tangs, fingers or jaws A, B, B′, C, C′, C″ and D, preferably integral therewith and projecting edgewise therefrom and in the same plane and arranged to cover practically any design of plug.

Tangs A and D preferably have tapered end walls, as shown in Figs. 4 and 3, and are similar except for size. This type of tang is adapted to remove or apply the type of plug having a cross bar 16 extending across the circular recess 17 (Fig. 7) in the top of the circular plug 18. Or it may be used with plugs, as shown in Fig. 11, having diametrically opposed lugs 19 projecting from the wall of the recess toward the center. Again, as in Figs. 5 and 9, the tang A may be inserted diagonally across the square or rectangular recess 20 in the top of plug 21 or tang D may be inserted in the top recess of plug 22 of Fig. 9. The tapered edges of tangs A and D readily fit into the corners of the recesses in plugs 21 and 22 of Figs. 5 and 9, as indicated.

Tangs B and B′ may be used to remove plugs of the type shown in Figs. 6, 10 and 14.

In Fig. 6, having the rib 23 extending across the bottom of the circular recess 24 in the top of the plug, the tangs B and B′ straddle the rib. The rib 23 is made of pressed sheet metal with lateral foot flanges which are riveted or spot-welded to the bottom of the recess.

In the case of Fig. 10, the tangs B and B′ span the space across the circular recess 27 in the top of circular plug 28 and bear sidewise against the

lugs 29 projecting inwardly from the side wall of the recess.

In the case of Fig. 14, the single tang B' spans the small circular recess in the top of small circular plug 30, between the side lugs 31.

The tangs such as B and B', as well as the C, C' and C'' tangs, may have more or less tapered or rounded corners to enable them readily to enter the recesses to meet the tang-engaging surfaces of the plugs.

The tangs C, C' and C'' are arranged to handle plugs, say, of the types shown in Figs. 8, 12 and 13.

In Fig. 8 the plug is large and has a hexagonal outer flange and a smooth circular recess in its top surface. Tangs C and C' conveniently handle this by spanning the flange as shown, the intermediate tang C'' meanwhile projecting into the recess in the top of the plug and therefore not obstructing such use of the outer tangs C and C'.

In Fig. 12, the plug shown has a central projecting lug or boss 32 instead of a recess. This is rectangular or square and therefore may be conveniently spanned outside as shown by tangs C' and C''.

Fig. 13 shows a plug with a circular recess 33 but without lugs or ribs therein. It has, however, a hexagonal outer flange which may be spanned by tangs C and C''.

Thus these three tangs as well as the others have plug-engaging surfaces around on the sides and edges so that the size of the plugs and the distances apart, the locations and the accessibility of the tang-engaging surfaces on the plugs, determine which tangs are to be used, and how. Of course, the bar 15 constitutes the handle and lever part for turning the wrench to remove or apply the plugs, and is made strong enough to withstand the required efforts. It is made smooth and the corners may be rounded. This applies to the end portions too. By rounding the corners, it will be easier on the hands. The widening of the ends of the wrench by the tangs on opposite sides of the bar gives a better grip for the hand of the operator at maximum leverage when the turning is difficult. The spaces between the tangs enable the fingers to engage them for a firmer grip not only for turning the wrench but preventing its tendency to twist or turn in the hand due to the fact that the plane of rotation of the handle is outside the tangs. In this connection it will be noted that the wrench is of the spanner type in that the turning effort is exerted in a plane transverse to the plane of the bar and tangs. This wrench, therefore, is made of a comparatively thick, heavy, preferably steel bar with correspondingly strong and more or less stubby and relatively short tangs, since, in general, they do not engage the plugs in the plane of rotation of the handle but off at the side thereof and frequently toward their ends only where they are subjected to a twisting and prying action more severe than in a wrench turning in the plane of its jaws.

From the foregoing it will be apparent that I have produced a convenient, relatively cheap, and long lasting wrench of convenient and universal application for the purpose intended in which the tangs, fingers or jaws of the wrench have plug-engaging surfaces related to and cooperating with various tang-engaging surfaces on differently formed plugs.

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

A wrench comprising an elongated arm having a substantially uniform rectangular cross section and an elongated unobstructed straight edge, a pair of tangs extending transversely outwardly from said straight edge adjacent one end thereof, said tangs lying in a straight line and in the plane determined by flat dimensions of said arm, each of said pair of tangs having a pair of exterior work-engaging surfaces, and a third tang extending transversely outwardly from said straight edge in between said two tangs and lying in said plane, the lengths of each of said tangs being equal to each other, said third tang being spaced unequal distances from each of said pair of tangs and having at least three exterior work-engaging surfaces, each work-engaging surface of said third tang cooperating with a different one of the work-engaging surfaces of said two tangs.

GEORGE B. UMBDENSTOCK.

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