April 17, 1962 H. M. GODSEY 3,029,673

WRENCH SIZE REDUCING AND NUT SIZE-ENLARGING ADAPTERS

Filed Feb. 18, 1960



Fig. 1 Prior Art



Prior Art

Fig. 5



Prior Art

Fig. 4

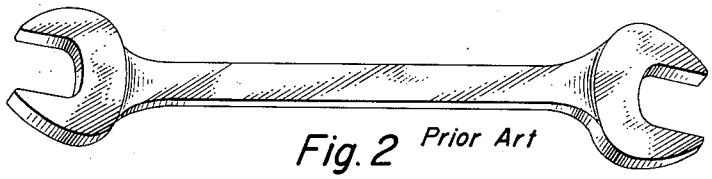


Fig. 2 Prior Art

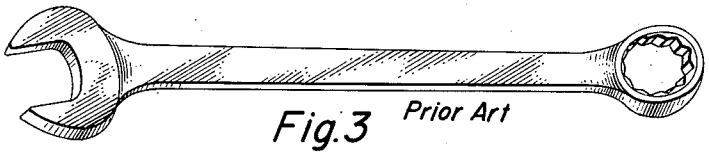


Fig. 3 Prior Art

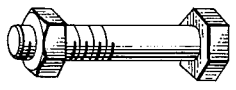


Fig. 6 Prior Art

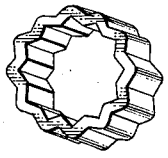


Fig. 8

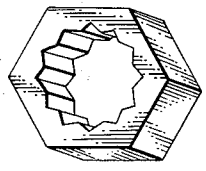


Fig. 9

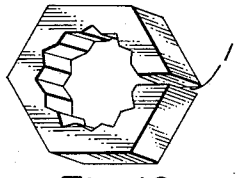


Fig. 10

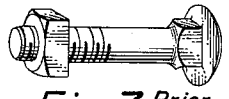


Fig. 7 Prior Art

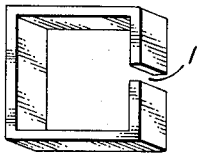


Fig. 11

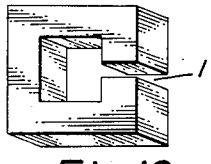


Fig. 12

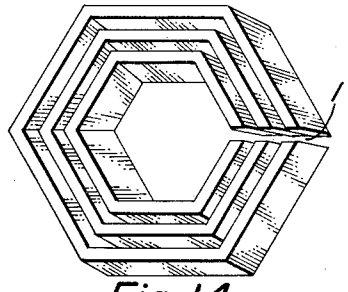


Fig. 14

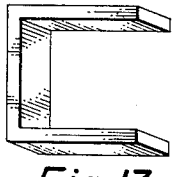


Fig. 13



Fig. 15

INVENTOR



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WRENCH SIZE-REDUCING AND NUT SIZE-ENLARGING ADAPTERS

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2 Claims. (Cl. 81—185)

This invention relates to wrenches, but more particularly to wrench sockets, socket end wrenches, "box-end" wrenches and open end wrenches.

The gist of my invention is a wrench size adapter comprising a band or ring-like member having outer and inner surfaces arranged for close contact with the inner surface of a wrench and the outer surface of a nut, respectively, and disposed concentrically between the respective surfaces for the purpose of tightening and loosening a nut.

The primary object of my invention is to create a device that will offer the maximum of convenience to anyone having a use for the character of wrenches referred to. The vast utility of such a device becomes apparent to any artisan immediately upon the disclosure to one of such, a hitherto unknown tool. For example, it is immediately obvious that one or two or two or three master sizes of a wrench like the combination socket-and-open-end wrench shown in FIGURE 3 of my drawing, together with a handful of my adapters, will provide the equivalent of a toolboxful assortment of such wrenches.

It follows then that another important object of my invention is that of a material economy in first cost. The equivalent of a set of wrenches created by combining "master" sizes of wrenches, as in my FIGURE 3 with a number of my adapters will cost perhaps less then one-fourth that of an equal number of wrench sizes.

Other objects will become apparent on a study of the forms suggested in the drawings that follow, bearing in mind that numerous other forms are possible.

On considering the precise action of such a device as my adapter invention one is confronted with the choice of regarding it for two alternative uses. Should the adapter be regarded as a wrench-insert size reducer; or is it to be a nut-enlarger?

In the drawings:

FIGURES 1, 2, 3, 4 and 5 are fully illustrative of the category of wrenches to which my invention is more particularly adapted. They are so universally familiar to everyone whose uses tools to any appreciable extent that any one FIGURE among them will be instantly recognized for what it is. Therefore, no explanation of the particular utility of any one of them is considered necessary. Likewise, the hexagon head machine bolt with a hexagon head nut mounted upon it shown in FIGURE 6, and the carriage bolt with a square nut mounted upon it in FIGURE 7 are familiar objects to all those skilled in the mechanical arts.

FIGURES 8, 9, 10, 11, 12, 13 and 14 are suggested preferred modifications of my invention. Only a plan or top view of each of these is shown since these and other

forms which may be found desirable may be made in a great variety of thicknesses, depending on the sizes desired and uses they are designed for. Therefore, it is believed that the one view is quite sufficient to anyone skilled in the art.

FIGURE 8 shows a thin band form to suggest possibly a single size reduction, both outer and inner surface contours shown as conforming to those of conventional split-ring farm as shown by reference numeral **1** in FIGURES 10, 11, 12 and 14. This may be found to be necessary in all forms in order to have the flexibility required for a slightly force-fit within a wrench or with the outside of a nut.

FIGURES 9 and 10 together illustrate a form in which the outer periphery of each of several sizes of adapters in a set, as governed by the size of nut the inner face of each ring is to fit, may be all the same size.

In exactly the same manner FIGURES 11 and 12 illustrate a form adaptable more specifically to square nuts as in FIGURE 7.

FIGURE 13 should have all the utility possibilities as FIGURES 11 and 12, and in addition, it is adaptable for use with open end wrenches on hexagon nuts.

FIGURE 14, magnified somewhat for the sake of clearness, suggests a nest of hexagon shaped adapters which may be formed from short metal strips.

FIGURE 15 is a plan view of the nested adapters.

I claim:

1. In a wrench size-reducing adapter in combination with conventional sockets and socket end wrenches, a single-piece, split-ring type, resilient adapter, the said adapter being formed with a combination of outer and inner periphery patterns to fit the socket and member to be turned respectively; and further formed so as to tend to expand outwardly with force against the inner periphery of an oversize wrench socket when the said adapter is forced into said socket, to hold it securely therein.

2. A nut size-enlarging adapter comprising a single-piece, split-ring type, resilient member formed with outer and inner periphery patterns, so that the inner periphery thereof will make a forced fit with the outer periphery of a nut with inward pressure sufficient to hold it firmly affixed thereto; the outer periphery thereof being frictionally engageable with a wrench socket.

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