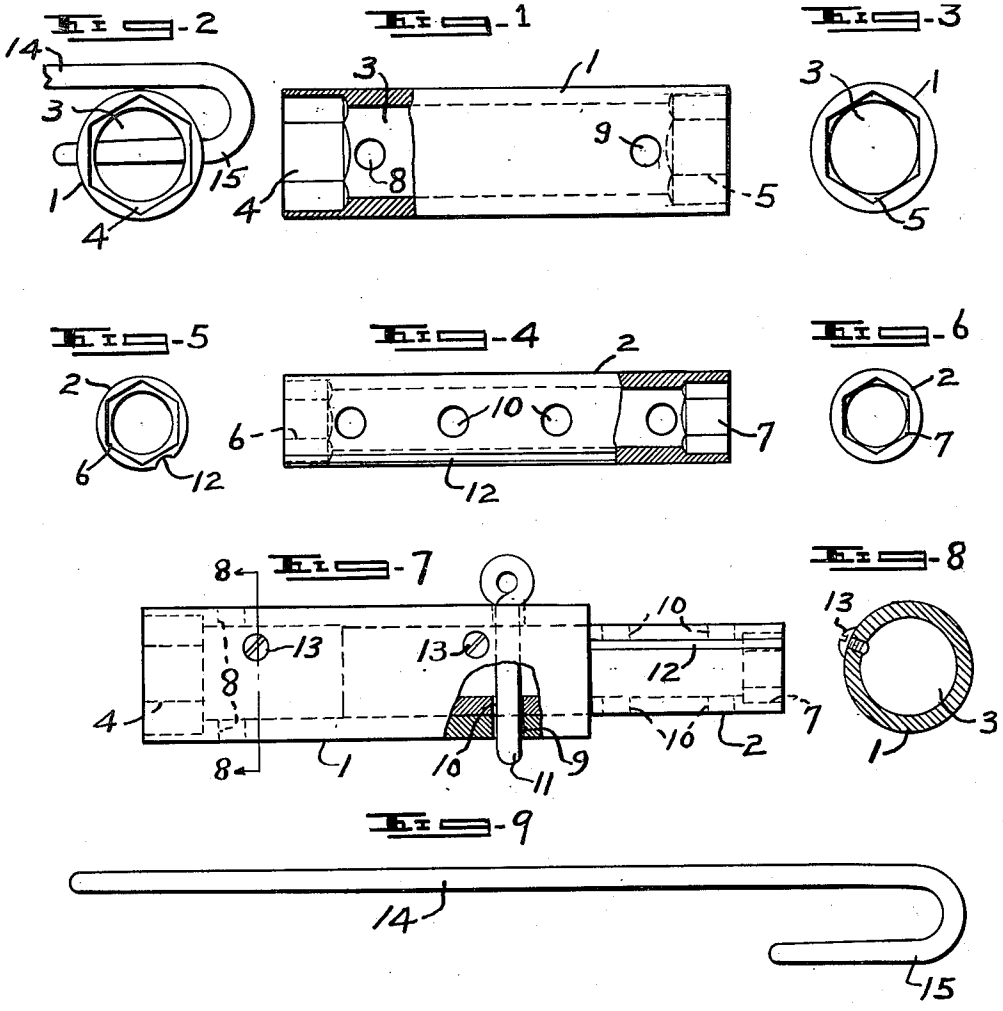
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MULTIPLE SOCKET WRENCH

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MULTIPLE SOCKET WRENCH

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1 Claim. (Cl. 81—185)

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This invention relates to a multiple socket wrench, and important objects and advantages thereof are to provide a wrench of the character described, which embodies a plurality of sockets of different sizes, which includes a pair of telescopically engaged sleeves that may be used combinedly or separately, which is adjustable to adapt the same for use on nuts located at otherwise inaccessible positions, which is simple in its construction and arrangement, durable and efficient in its use, and comparatively economical in its manufacture.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination, and arrangement of parts herein specifically described and illustrated in the accompanying drawing, but it is to be understood that changes in the form, proportions and details of construction may be resorted to that come within the scope of the claim hereunto appended.

In the drawing wherein like numerals of reference designate corresponding parts throughout the several views:

Figure 1 is a side elevational view of the outer sleeve.

Figure 2 is one end view of the outer sleeve, and showing the attachment of the hooked end of the operating rod therewith.

Figure 3 is an end view of the other end of the outer sleeve.

Figure 4 is a side elevational view of the inner sleeve.

Figures 5 and 6 are respective end views of the inner sleeve.

Figure 7 is a side elevational view of the outer and inner sleeves in the assembled position.

Figure 8 is a sectional view on line 8—8, Figure 7.

Figure 9 is a side elevational view of the operating rod.

Referring in detail to the drawing the improved wrench comprises a tubular outer sleeve 1 and a tubular inner sleeve 2. The sleeves are of considerable and uniform lengths and have cylindrical surfaces. The inner sleeve 2 is of a diameter to fit into the bore 3 of the outer sleeve 1 and is normally mounted in the latter. The inner sleeve is telescopically slidable and adjustable in the outer sleeve, and may be projected from said outer sleeve to provide a structure length best suited to meet conditions found in practice.

Each interior end portion of the outer sleeve 1 is shaped to form a socket, respectively indicated at 4 and 5, adapted for engaging a nut. The

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sockets 4 and 5 are of different sizes, with the socket 4 being larger than the socket 5. In like manner, each interior end portion of the inner sleeve 2 is shaped to form a nut socket, respectively indicated at 6 and 7. The sizes of the sockets 6 and 7 vary from each other, and are, of course, of smaller sizes than the sockets 4 and 5 of the outer sleeve 1.

The outer sleeve 1 is provided with two pairs of apertures, respectively indicated at 8 and 9, with the apertures of each of said pairs being diametrically aligned and disposed adjacent to the respective ends of the outer sleeve.

The inner sleeve 2 is provided with a plurality of apertures 10, which are arranged in equally spaced, diametrically aligned pairs. While four such pairs of apertures 10 are shown, it will be obvious that the number may be varied without departing from the principle of the invention.

To adjust the inner sleeve 2 in the outer sleeve 1 to project the former the desired distance from the latter, as shown in Figure 7, the pair of apertures 10, providing the necessary projection, are brought into registration with one pair of apertures in the outer sleeve, and a suitable holding pin 11 is then inserted through such registering apertures to secure the outer and inner sleeves in the adjusted position.

A longitudinally disposed guide groove 12 is formed in the surface of the inner sleeve 2 and extends throughout the length of the latter. A guide screw 13 is secured adjacent to each end of the outer sleeve 1 and engages in the groove 12 to prevent the rotation of the inner sleeve within the outer sleeve. Such engagement of the guide screws in the guide groove maintains the longitudinal alignment of the apertures 10 in the inner sleeve with respect to the longitudinal alignment of the apertures 8, 9, in the outer sleeve, and thereby facilitates positioning respective apertures into registration with each other to receive the holding pin 11 when adjusting the device. The holding pin may be attached to the outer sleeve by some suitable flexible member to prevent possible loss of the said holding pin.

The inner sleeve 2 is removable from the outer sleeve 1, and it will be apparent that either of said sleeves may be used independently of the other. The arrangement and position of the apertures 10 in the inner sleeve are such that the latter may be projected any distance to the maximum of nearly its entire length from either end of the outer sleeve, and secured in such projected position by the holding pin 11. It will be evident that when the device is used with the inner sleeve

in the projecting position, one of said sleeves merely serves as an extension to provide the structure length best suited to reach and engage the nut to be worked on. Due to the sliding fit of the inner sleeve in the outer sleeve, the device, when extended, will be stabilized to function efficiently.

An operating rod 14, formed with a hook 15 at one end and adapted for being extended through any suitable diametrically aligned pair of apertures in the sleeves 1 and 2, is provided for rotating the latter during nut tightening and releasing operations. The rod either may be used as an ordinary cross-bar in the usual manner, or the hook 15 may be engaged in the apertures, as shown in Figure 2, to increase its leverage advantage.

The present invention provides a most efficient device of its kind, which may be economically constructed, and successfully employed for the purposes and in the manner herein set forth.

What I claim is:

A multiple socket wrench comprising an outer sleeve of considerable length and having a cylindrical bore, a cylindrical inner sleeve of similar length and having a cylindrical bore, said inner sleeve being slidably engaged in and longitudinally adjustable in the bore of said outer sleeve, each end portion of the walls of said bores in said outer and inner sleeves being formed with a polygonal-shaped socket, each of said sockets varying in size relatively to the size of any of the other of said sockets, said outer sleeve being provided with two pairs of apertures disposed adjacent to respective ends thereof with the apertures of each pair of apertures being diametrically opposed

to each other, said inner sleeve being provided with a plurality of spaced pairs of apertures with the apertures of each pair of apertures being diametrically opposed to each other, the outer surface of said inner sleeve being provided with a groove extending throughout the length thereof, a guide screw threadedly engaged adjacent to each end of said outer sleeve and engaging in said groove for preventing the rotation of said inner sleeve in said outer sleeve to maintain the registrable alignment of respective pairs of apertures in said sleeves, a holding pin engageable in any of the registering pairs of apertures for securing said inner sleeve in its adjusted position in said outer sleeve, and an operating rod engageable in any of said pairs of apertures in said sleeves.

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