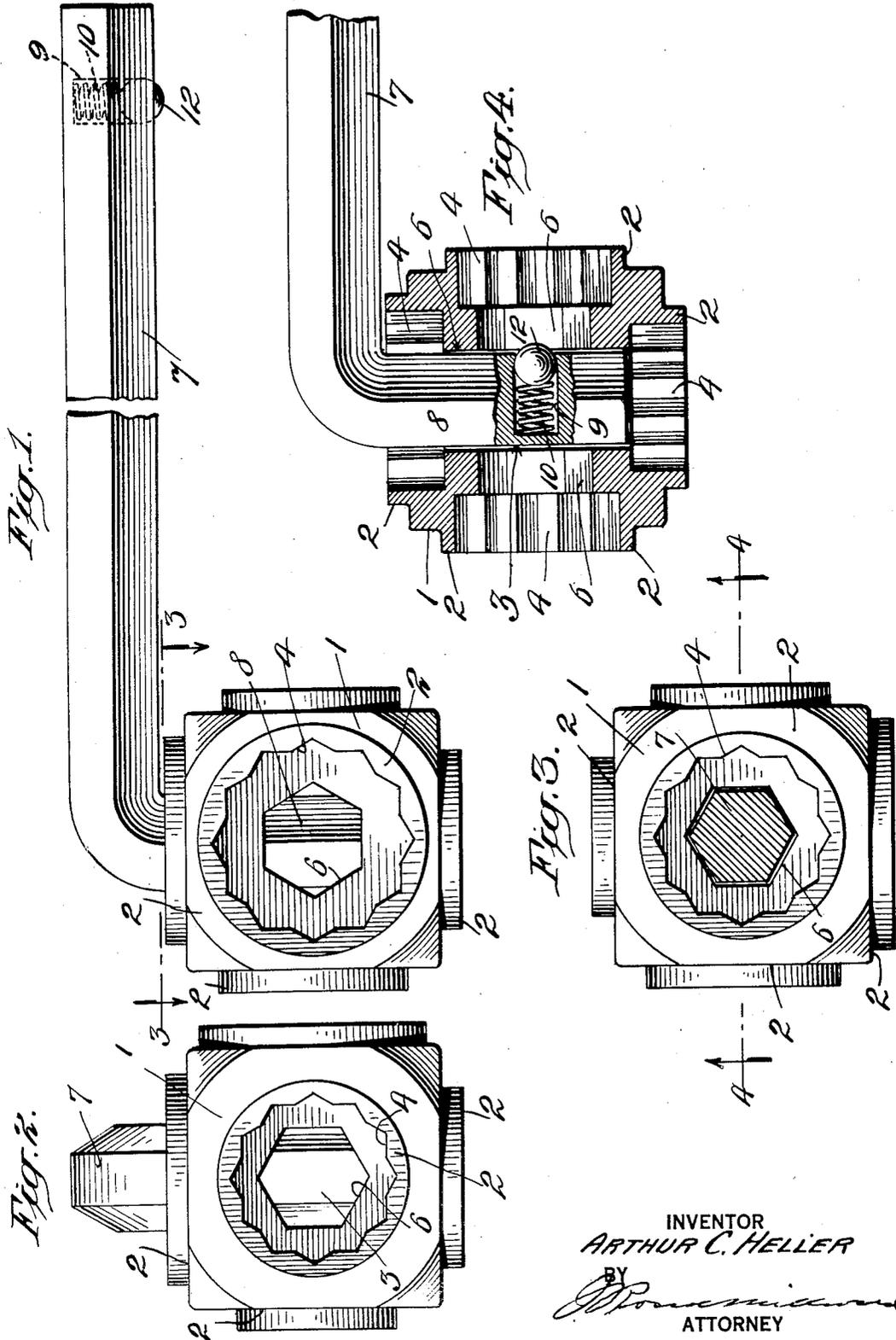


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MULTIPLE SOCKET WRENCH

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MULTIPLE SOCKET WRENCH

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2 Claims. (Cl. 81—121)

This invention relates to improvements in wrenches of the multiple socket type adapted for convenient and quick adjustment to varied sizes of nuts to be turned. An object of the present improvements is to produce a more advantageous design of wrench of this type wherein the handle element may be variously altered in its operating position to obtain the most convenient and effective leverage on the nut in varied and confined locations so as to facilitate and expedite the tightening operation.

To this end, my improved wrench consists of a head or nut engaging member, which may desirably be of hollow cubical form having a nut engaging socket formed in each wall thereof adapted for engagement with nuts of varied sizes and formed with an inner socket or opening associated with each of the nut engaging sockets and adapted for coupling engagement with a detachable, squared end handle element. As a result, the handle element may be assembled in varied positions relative to the head member for conveniently manipulating nuts of different sizes. The handle element is further formed with an angularly disposed end, likewise of squared form to have coupling engagement with the head, so that it may be assembled with the head at either end for obtaining varied leverage relations as desired in the nut tightening operation. The improved arrangement accordingly, allows, by reason of the multiple coupling sockets or openings for the handle element, of obtaining for a given nut socket variously positioned handle adjustments best suited for the given operation.

The described and other features and advantages of the present invention will be more fully understood by reference to the accompanying drawing wherein like reference numerals are applied to the corresponding parts in the several views.

Referring to the drawing:

Fig. 1 is a side elevation.

Fig. 2 is an end view.

Fig. 3 is a sectional view on line 3—3 of Fig. 1, and,

Fig. 4 is a sectional view on line 4—4 of Fig. 3.

In the approved embodiment of the features of my present invention as here shown, 1 indicates the nut engaging or head member which is made as a steel casting of hollow cubical formation having the side walls 2—2, central opening 3 and nut engaging openings or sockets 4—4 centrally positioned in each of the side walls to be radially disposed with relation to the head member. The nut engaging sockets 4, as shown, are

desirably of the form as illustrated having their annular walls serrated to adapt them for tightening or coupling engagement with polygonal nuts. These nut engaging sockets are of varied sizes to adapt the tool for engagement with a range of graduated nut sizes as commonly used.

In accordance with the present invention, each wall of the head member is further formed with means for coupling engagement with a handle element for obtaining an operating leverage as shown each wall being formed with an inner polygonal socket opening 6 adapted to be engaged by the handle element 7, the inner openings being associated with each of the nut sockets 4 in radial alignment therewith. These inner openings 6 are preferably of the same size and form, hexagonal as here shown, to be complementary to the cross-sectional form of the separable handle or lever element 7 so as to receive the end of the latter for coupling engagement or rotative connection therewith. The handle element, as shown, may be formed of a hexagonal rod having one end 8 thereof bent into angular relation to the major portion of the rod whereby either end may be fitted within an opening 6 thereby to obtain a different angle of leverage on the nut as desired. The handle element, adjacent its ends, is formed with a bore 9 within which is fitted a compressed coil spring 10 pressing outwardly against a ball 12 which is retained within the bore by contracting the opening to the bore by pressing inwardly of the metal at the rim of the bore opening so as to allow the ball to project slightly therefrom. There is thus provided a yieldable retaining means operable to retain the head and handle elements in assembled relation while allowing of their being readily parted for different assembly as desired by forcible separation of the parts.

My improved construction as shown employs a cubical head member in an arrangement providing a nut engaging socket associated with each of its flat faces or walls, thereby obtaining a maximum number of nut engaging positions for the form of head employed while the separable coupling of the handle element, as is readily understood, allows of quickly engaging with the head in numerous positions. The arrangement of the yieldable ball retainer positioned a slight distance inwardly of the handle end is also advantageous in allowing of quick manipulation of the nut by partial insertion of the handle element within the openings in the initial turning of the nuts.

While in the approved form of the device as illustrated all of the handle engaging inner open-

ings are of the same size, it will be understood that in the instance of employing a range of nut engaging sockets including a very small size socket which would not accept the handle element, a smaller handle opening may be employed with the smaller socket and a reducer may be employed with the handle when used with said socket. Accordingly, while I have shown and described an approved embodiment of the features of the invention, it will be understood that varied modifications may be made therein without departing from the scope of the invention as defined in the appended claims.

Having described my invention, I claim:
 1. A multiple socket wrench comprising a head member of hollow form having a nut engaging socket formed in each wall thereof, said sockets being of varied sizes and said head being formed with a plurality of similar, polygonal openings for engagement with a handle element, said polygonal openings being disposed inwardly and in alignment with the sockets and said head being formed with a central opening defined by in-

wardly opposed surfaces, a detachable handle element having a polygonal end portion for engagement with the polygonal openings and provided with yieldable retaining means positioned to register with said central opening when the parts are assembled.

2. A multiple socket wrench comprising a head member of hollow cubical form having a nut engaging socket formed in each wall thereof, said sockets being of varied sizes and said head being formed with a plurality of similar, polygonal openings disposed inwardly and in alignment with the sockets and with a central opening defined by opposed inwardly directed surfaces, a detachable handle element having a polygonal end portion for engagement with the said polygonal openings and provided with yieldable retaining means positioned to register with the central opening when the parts are assembled, said retaining means consisting of a spring pressed ball fitted to a bore in the handle for yieldable engagement with the head member.

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35	110
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50	125
55	130
60	135
65	140
70	145
75	150