Aug. 24, 1926. 1,596,951

L. B. SMITH

SOCKET WRENCH SET

Filed Feb. 26, 1926

Fig. 1.

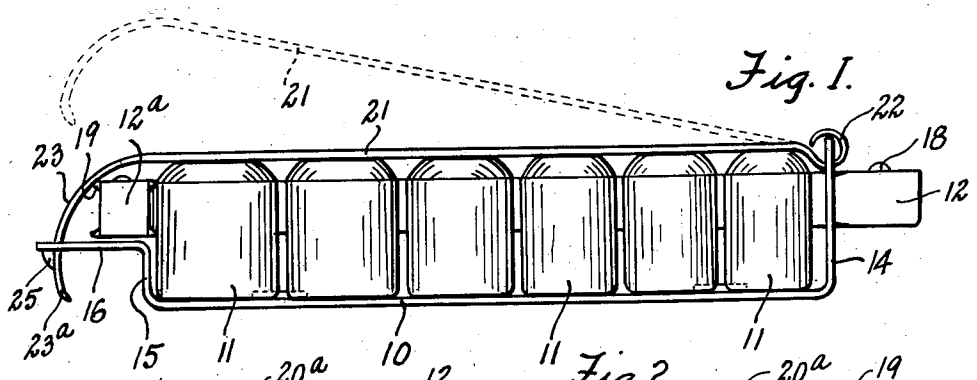


Fig. 2.

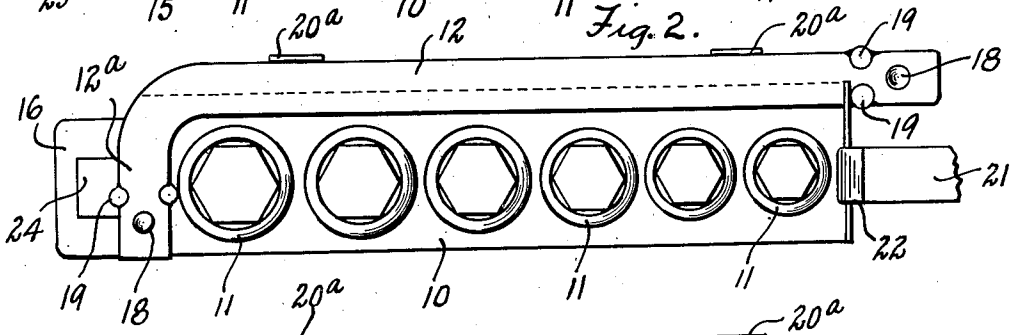


Fig. 3.

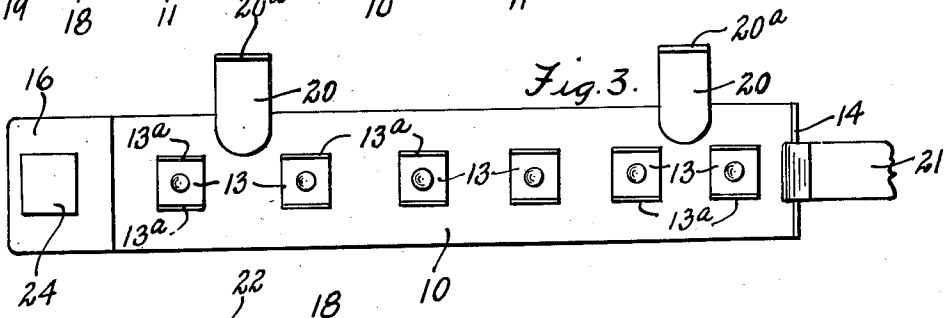


Fig. 4.

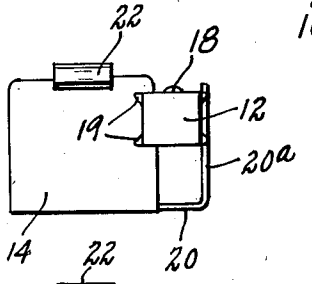


Fig. 5.

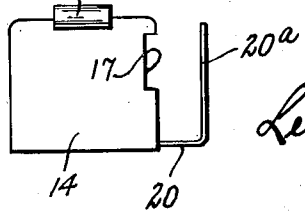
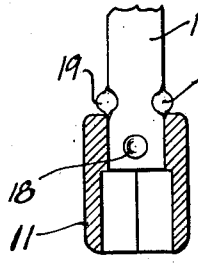


Fig. 6.



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UNITED STATES PATENT OFFICE.

LELAND B. SMITH, OF ATTLEBORO, MASSACHUSETTS, ASSIGNOR TO FRANK MOSSBERG CORPORATION, A CORPORATION OF MASSACHUSETTS.

SOCKET-WRENCH SET.

Application filed February 26, 1926. Serial No. 90,805.

This invention relates to socket wrench sets. One of the objects thereof is to provide a socket wrench set which is practical and efficient. Another object is to provide apparatus of the above nature wherein a plurality of wrench sockets, together with a handle member therefor are arranged compactly and are conveniently accessible. Another object is to provide a construction of the above nature which is rugged and serviceable. Another object is to provide a socket wrench set of the above characteristics which is simple in construction and which may be manufactured at low cost. Other objects will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts as will be exemplified in the structure to be hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, in which is shown one of the various possible embodiments of this invention,—

Figure 1 is a side elevation of a wrench socket set;

Figure 2 is a top plan view with the upper member thrown back out of operative position;

Figure 3 is a top plan view showing the device with the socket members and handle removed;

Figure 4 is an end elevation viewed from the right of Fig. 1;

Figure 5 is a view similar to Fig. 4, but with the wrench handle removed, and

Figure 6 is a section through a socket member showing the handle coacting therewith.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawing in detail, there is shown what may be termed a base member or supporting member 10 in the shape of an elongated flat metal strip which is conveniently made of sheet metal. Upon the surface of this member 10 are arranged in a row a plurality of socket members 11 of varying sizes and shown in this instance as six in number. These socket members are supported upon the metal strip 10 in upright position with their nut-engaging ends facing upwardly, as shown in Figure 2.

The sockets herein shown are hollow throughout, the bore therethrough being shaped at its end opposite the nut-engaging end to receive a handle member 12. The handle member 12 is carried in this set as will be later described in detail, and in Figure 6 it is shown in operative relation to a socket 11. While the nut-engaging ends of the various socket members are of different sizes to accommodate different sizes of nuts, the bore of the handle-receiving end of each of the sockets is identical with that of every other socket so that the handle member 12 may be employed to coact with any one of these sockets.

As shown in Figure 3, on the surface of the member 10 are secured a row of upwardly projecting members 13 which enter the handle-receiving ends of the sockets when the sockets are placed in position thereon. These members 13 thus position the sockets in predetermined relation to each other and prevent their sliding upon the surface of the member 10 and out of position. These parts 13 are conveniently made in the form of spring clips having two upstanding parts 13^a over which the socket springs and which grip the inner walls of the handle-receiving bore of the socket.

At the right-hand end of the base member or supporting strip 10 is an end wall 14 which is preferably formed integrally with the member 10, being bent upwardly substantially at right angles thereto. This end wall 14 is preferably of a height substantially equal to that of the length of the sockets 11. At its left-hand end, the supporting strip 10 is bent upwardly providing an upright portion 15 adjacent to the end of socket 11, and is then bent downwardly again providing a horizontal projecting end portion 16.

As best shown in Figure 5, the end wall 14 is provided in its side edge with a recess or notch 17. This notch is shaped to receive therein a portion of the handle member 12. The lower edge of the notch 17 is substantially on a level with the surface of the projecting end portion 16 at the opposite end of the base member 10.

The handle member 12 comprises an

elongated bar which has an end portion 12ª bent substantially at right angles to the body thereof. The handle is shaped at either end thereof to coact with the sockets 11. Preferably, it is provided with spring-pressed balls 18 which serve to hold the socket member in position thereon. Since the socket members 11 are hollow throughout their length, a means is provided upon the handle member 12 to limit its movement into the sockets. This means preferably takes the form of projections or small ears 19 which may be swaged out of the metal of the bar 12 by forcing a suitable punch thereinto adjacent the edge thereof.

The handle member 12 is carried in this set as is shown in Figures 1 and 2. It is supported alongside the row of sockets 11. The bent end portion 12ª of the handle curves around the end socket and rests upon the projecting end portion 16. Adjacent its other end, the handle member enters the notch 17. Means are provided for holding the handle member inwardly toward the row of sockets 11 and in engagement with the notch 17. Preferably, for this purpose, a pair of lugs 20 project outwardly from the side of the member 10, as shown in Figure 5, and have upstanding parts 20ª which hold the handle, as shown in Figure 4, against sidewise lateral movement.

Above the row of sockets 11 is provided a member 21 in the form of a metal strip which is hinged at its right-hand end 22 to the upper portion of the end wall 14. This member 21 extends across the upper ends of the sockets 11, fitting snugly against the same, and at its left-hand end 23 is curved downwardly, passing through an opening 24 in the end projection 16 of the strip 10. The extreme end portion 23ª of the member 21 is provided with a lug 25 which is preferably struck up from the metal thereof and which serves as a latch to hold the member 21 down in the closed position shown in Figure 1. In order to release the member 21 it is necessary only to spring the end portion 23 thereof by a pressure inwardly against the part 23ª, to permit the lug 25 to move upwardly through the opening 24. The member 21 may then be swung upwardly, as indicated by the dotted lines in Figure 1, and back out of the way, as shown in Figures 2 and 3.

The left-hand portion of the hinged member 21 extends over the end portion 12ª of the handle 12 and thus holds this end of the handle down in position. The other end of the handle is prevented from being lifted out of position by the notch 17 with which it engages. The lugs 20 hold the handle in its position against lateral displacement.

It will be seen that neither the handle member 12 nor the socket members 11 can be removed for use while the member 21 is in operative position, but that, upon the member 21 being swung out of position, the handle may be removed without disturbing the sockets, or the sockets may be removed without disturbing the handle. In inserting the handle 12 in its position shown in Figures 1 and 2, it is moved endwise into engagement with the notch 17. In this movement of the handle into position, the projections 19 thereon facing toward the end wall 14 are required to slip through the notch. When this action takes place, the lugs 20 spring outwardly a slight amount and the snap back, urging the handle member into the notch 17. When the handle is in position, as shown in Figure 2, the projections 19 have just moved through the slot 17 and are closely adjacent to the wall 14. A slight effort is required in order to effect endwise sliding of the handle out again for use. Thus, even when the hinged member 21 is thrown back to inoperative position, the handle 12 is yieldingly held in place, although its left-hand end 12ª may be lifted upwardly. Moreover, the individual socket members 11 are yieldingly held in place by their spring clips 13.

From the foregoing it will be seen that there is herein provided a socket wrench set which accomplishes many advantages of practical importance. The parts are compactly assembled and each is conveniently accessible without disturbing any of the other parts. The apparatus is simple in construction, comprising few parts, and may be manufactured conveniently at low cost.

As many possible embodiments may be made of the above invention, and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawing, is to be interpreted as illustrative and not in a limiting sense.

I claim as my invention:

1. In a socket wrench set, in combination with a plurality of sockets and a handle member therefor, a sheet metal strip having means upon its surface adapted to receive and hold said sockets in a row and in substantially upright position therein, said strip having at one end thereof a portion bent upwardly at substantially right angles forming an end wall, and means projecting outwardly from one side of said strip and having upright parts spaced laterally from said row of sockets adapted to hold said handle member alongside said row, said upright end wall having in its side edge a notch within which a portion of said handle member is adapted to rest.

2. In a socket wrench set, in combination with a plurality of sockets and a handle member therefor, a sheet metal strip having

means upon its surface adapted to receive and hold said sockets in a row and in substantially upright position therein, said strip having at one end thereof a portion bent upwardly at substantially right angles forming an end wall, and means adapted to hold said handle member alongside said row of sockets, said means including a notch in a side edge of said end wall in which said handle rests at a portion thereof adjacent one end, said notch preventing vertical movement of said end, means engaging an intermediate portion of said handle and preventing movement of said handle laterally away from said row of sockets, and releasable means engaging said handle adjacent the other end thereof and preventing vertical movement of said last end.

3. In a socket wrench set, in combination with a plurality of sockets and a handle member therefor, a sheet metal strip having means upon its surface adapted to receive and hold said sockets in a row and in substantially upright position therein, said strip having at one end thereof a portion bent upwardly at substantially right angles forming an end wall, a member hinged to said end wall and extending therefrom lengthwise of said metal strip above the upper ends of said sockets and locking the latter against removal, and means for supporting said handle member alongside said row of sockets, one end of said handle member being held in place by said hinged member.

4. In a socket wrench set, in combination with a plurality of sockets and a handle member therefor, a sheet metal strip having means upon its surface adapted to receive and hold said sockets in a row and in substantially upright position therein, said strip having at one end thereof a portion bent upwardly at substantially right angles forming an end wall, a member hinged to said end wall and extending therefrom lengthwise of said metal strip above the upper ends of said sockets and locking the latter against removal, and means for supporting said handle member alongside said row of sockets, one end of said handle member being held in place by said hinged member and the other end thereof resting in a notch in a side edge of said end wall.

5. In a socket wrench set, in combination with a plurality of sockets and a handle member therefor, a sheet metal strip having means upon its surface adapted to receive and hold said sockets in a row and in substantially upright position therein, said strip having at one end thereof a portion bent upwardly at substantially right angles forming an end wall, a member hinged to said end wall and extending therefrom lengthwise of said metal strip above the upper ends of said sockets and locking the latter against removal, means for supporting said handle member alongside said row of sockets, said means including lugs bearing against said handle member and holding the same inwardly toward said row of sockets, and a notch in said end wall in which said handle rests at a portion thereof adjacent one end, a portion of said handle adjacent the other end thereof resting beneath said hinged member.

6. In a socket wrench set, in combination, a flat metal strip having means upon its surface adapted to position a plurality of socket members in a row and in upright position thereon, a row of sockets thereon, a member extending lengthwise of said metal strip above the upper ends of said sockets and adapted to hold the latter down, a handle member for said sockets comprising an elongated bar having an end portion bent substantially at right angles to the body thereof, and means for holding said handle member alongside said row of sockets, said end portion thereof being held beneath said member in conjunction with said sockets.

7. In a socket wrench set, in combination, a flat metal strip having means upon its surface adapted to position a plurality of socket members in a row and in upright position thereon, a row of sockets thereon, a member extending lengthwise of said metal strip above the upper ends of said sockets and adapted to hold the latter down, a handle member for said sockets comprising an elongated bar having an end portion bent substantially at right angles to the body thereof, and means for holding said handle member alongside said row of sockets, said means including supporting means extending outwardly from the side of said metal strip and having parts adapted to hold said handle member in toward said row of sockets, said end portion of said handle being held beneath said member in conjunction with said sockets.

8. In a socket wrench set, in combination, a supporting member comprising an elongated flat metal strip, a plurality of socket members resting upon the surface thereof in a row and in substantially upright position, means upon said strip for holding said sockets thereon against sliding along the surface thereof and out of their positions, a member hinged at one end of said supporting member and extending therefrom above said socket members to the other end of said supporting member and adapted to hold said socket members down, and a handle member for said sockets comprising an elongated bar having an end portion bent at substantially right angles to the body thereof, and means mounting said handle member upon said supporting member alongside of said row of sockets, said bent end portion thereof curving around an end socket of

said row and being held beneath said hinged member.

9. In a socket wrench set, in combination, a supporting member comprising an elongated flat metal strip, a plurality of socket members resting upon the surface thereof in a row and in substantially upright position, means upon said strip for holding said sockets thereon against sliding along the surface thereof and out of their positions, a substantially upright wall at one end of said supporting member, means extending from said wall lengthwise of said supporting member and above said sockets to hold said sockets down, a handle member for said sockets comprising an elongated bar having an end portion bent at substantially right angles to the body thereof, and means for supporting said handle member alongside said row of sockets, said means including a notch in a side edge of said end wall in which said handle rests, said bent end of said handle being held beneath said means.

10. In a socket wrench set, incombination, a supporting member comprising an elongated flat metal strip, a plurality of socket members resting upon the surface thereof in a row and in substantially upright position, means upon said strip for holding said sockets thereon against sliding along the surface thereof and out of their positions, a substantially upright wall at one end of said supporting member, a member hinged to said end wall and extending therefrom lengthwise of said supporting member and above said sockets to hold said sockets down, a handle member for said sockets comprising an elongated bar having an end portion bent substantially at right angles to the body thereof, and means for supporting said handle member with the body thereof extending alongside said row of sockets, said last means including means adapted to hold said handle member in against a side edge of said end wall and closely adjacent to said row of sockets, said bent end of said handle curving around toward said row of sockets and beneath said hinged member.

In testimony whereof, I have signed my name to this specification this 23d day of February, 1926.

LELAND B. SMITH.