Nov. 18, 1941. A. LEE 2,263,508

EXTENSION HANDLE ASSEMBLY

Filed June 20, 1940

Fig. 1.

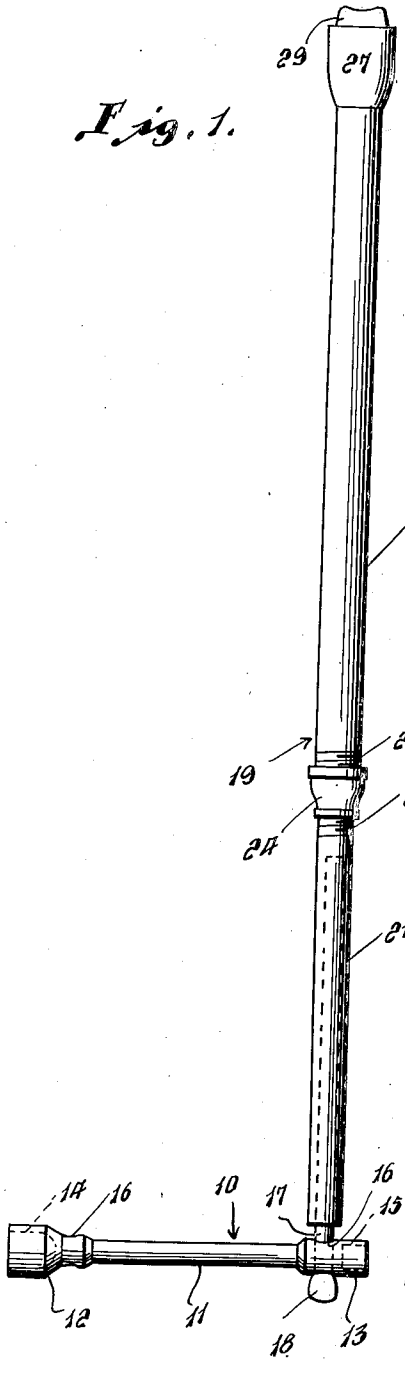


Fig. 3.

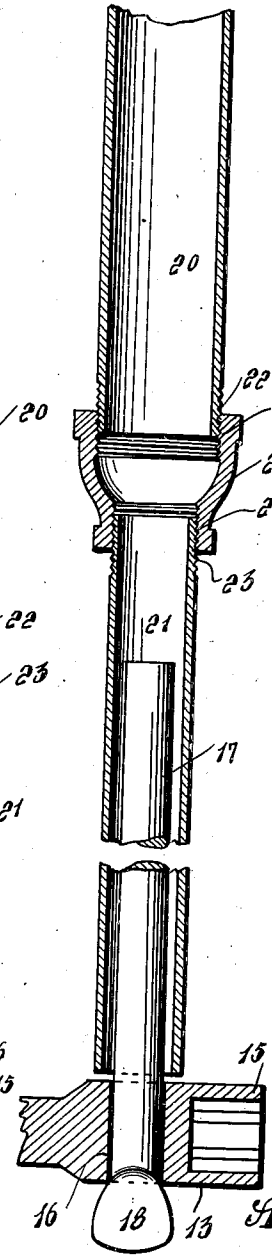
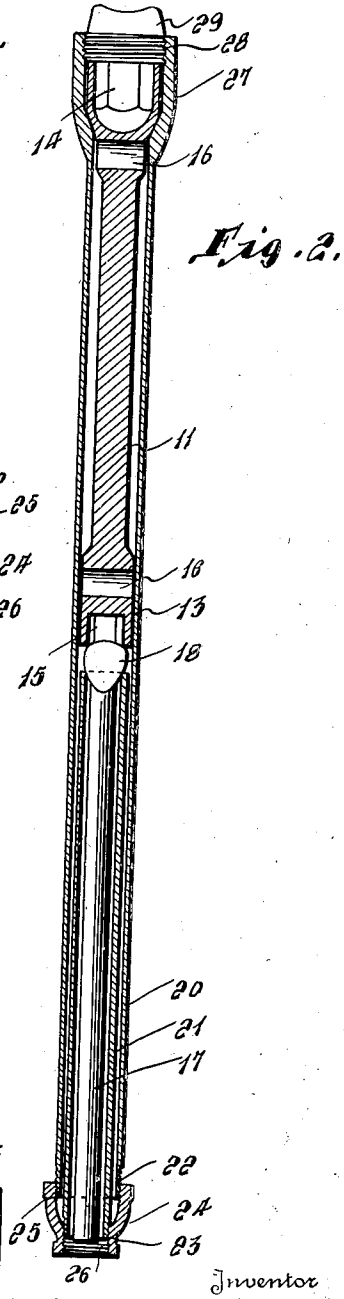


Fig. 2.



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EXTENSION HANDLE ASSEMBLY

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3 Claims. (Cl. 81—177)

This invention relates to an improved extension handle assembly for socket wrenches and especially to an extension handle for use with socket wrenches for removing wheel retaining nuts on large trucks and buses where it is necessary to tighten the nuts to such an extent that it is practically impossible to remove them with a conventional socket wrench handle.

More particularly, it is an aim of this invention to provide an extension handle having an open end to receive a socket wrench handle and adapted to afford additional leverage for more readily turning the socket wrench.

Still another aim of the invention is to provide an extension handle formed of detachable sections, including a large and small section having connecting means so designed that the smaller section together with the socket wrench and its handle may be nested and contained within the larger section to enable the socket wrench and extension handle to be compactly stored and retained as a unit so that all of the parts will be available for use when required.

Other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, which illustrates a preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view showing the extension handle assembled for use and applied to the handle of a conventional socket wrench,

Figure 2 is an enlarged longitudinal central sectional view showing the sections of the extension handle nested and containing the socket wrench and socket wrench handle, and

Figure 3 is an enlarged fragmentary longitudinal central sectional view, partly in elevation of the parts as seen in Figure 1.

Referring more particularly to the drawing, wherein like reference characters designate like or corresponding parts throughout the different views, 10 designates generally a conventional socket wrench having a shank portion 11 provided with enlarged ends 12 and 13 of different diameters and containing polygonal shaped recesses 14 and 15, respectively, of different sizes for engaging nuts and bolt heads, not shown, of two sizes. The enlarged ends 12 and 13 are each provided with a corresponding transverse opening 16 to receive a rod 17, forming the handle of the socket wrench 10, and which is provided with an enlarged flat end 18. The opposite end of the rod 17 may be inserted in either of the openings 16 and the rod moved therethrough until the end 18 engages an end of one of the openings 16. The aforementioned parts forming the socket wrench 10 are shown and described for the purpose of illustrating the application of the extension handle 19 comprising this invention.

The extension handle 19 is of tubular construction and includes tubular sections 20 and 21, the latter of which is substantially smaller in diameter and shorter in length than the former, for a purpose which will hereinafter become apparent. The sections 20 and 21 are provided with the externally threaded ends 22 and 23, respectively. A coupling member 24 is provided with a bore which extends longitudinally therethrough and which is provided with internally threaded ends 25 and 26 of different diameters, as best seen in Figure 3, to receive the ends 22 and 23, respectively, to connect the sections 20 and 21 in end to end relationship, as illustrated in Figures 1 and 3. The opposite end of the tubular section 20 is provided with an enlarged socket 27 having an internally threaded free end 28 for receiving a threaded plug 29 which closes said end.

It will thus be seen that the parts when assembled, as illustrated in Figures 1 and 3 will form an extension handle which may be readily applied to the handle 17 when said handle 17 is connected to one of the openings 16, in the manner as seen in Figures 1 and 3, by passing the free end of the tubular section 21 over the extended end of the handle or rod 17 to form an extension thereof to enable the wrench 10 to be more readily turned for loosening a nut or bolt.

All of the parts as seen in Figure 1 may be readily stored in the tubular section 20, in the manner as illustrated in Figure 2. This is accomplished by detaching the rod or handle 17 from the member 11. The sections 21 and 20 are then detached from the coupling member 24 after which the section 21 is inserted through the enlarged end of the coupling member 24 and its threaded end 23, in this position, connected to the threaded portion 26. The smaller end of rod 17 is then inserted into the free end of the tubular section 21. The flattened end 18 being wider than the bore of section 21 will prevent the rod 17 from passing therethrough and thereby prevent its removal through the opposite end of section 21. The tubular section 21 is then inserted into the end of the tubular section 20 which is provided with the threads 22. The threaded portion 25 of the coupling member 24 is then connected to the threaded end 22 to thereby mount the tubular section 21 and the rod 17 in one end of the tubular section 20. The plug 29

is then removed and the headed end 13 of the shank 11 is then inserted into the socket end 27 of the tube 20. End 13 is of a diameter less than that of the tube 20 while the end 12 is of greater diameter than tube 20 and of a smaller diameter than the socket 27 so that it will fit therein with the end 13 abutting against the flattened end 18 of rod 17. The plug 29 is then replaced in the socket 27 to combine with the coupling member 24 to retain the remaining parts within the tubular section 20. By removing the plug 29 and the coupling member 24 the remaining parts disclosed may be readily removed from the tubular section 20 after which rod 17 may be removed from tubular section 21 and the section 21 disconnected from coupling member 24.

Various modifications and changes are contemplated and may obviously be resorted to as only a preferred embodiment of the invention has been illustrated and described.

I claim as my invention:

1. An extension handle assembly for socket wrenches comprising a handle including two pipe sections, one of said pipe sections having an externally threaded end and an enlarged internally threaded end, the other pipe section being of a substantially smaller diameter than the first mentioned pipe section and having an externally threaded end, a coupling member having threaded ends of different diameters for engaging the externally threaded ends of said pipe sections for connecting them in end to end or in a nested relationship, and the open free end of the smaller pipe section being adapted to engage a rod, forming the handle portion of a socket wrench, when the pipe sections are connected in end to end relationship, to form an extension for said handle portion, said rod being of less diameter than said second pipe section so as to nest therein and having a flattened end of a width greater than the diameter of the bore of the second pipe section to prevent the rod from being removed from the nested sections through the smaller pipe section, and a threaded member for engaging the internally threaded end of the first mentioned pipe section to close said end against removal of the rod.

2. A socket wrench comprising a polygonal shaped socket member for engaging nuts and bolt heads, provided with a transverse opening, a rod, insertable through said opening, provided with an enlarged end for engaging a portion of the socket member at an end of said opening, the opposite end of said rod forming a handle for the socket member, an extension handle including tubular sections of different diameters, means for connecting said sections in end to end relationship or in nested relationship, one within the other, said rod being of a diameter less than the bore of the inner tubular section and its enlarged head being of a diameter greater than the bore of the inner tubular section and smaller than the bore of the outer tubular section whereby the rod can be nested in said inner tubular section with its enlarged head disposed at the inner end thereof to prevent said rod from moving outwardly through the inner section, said outer tubular section being of a length approximately equal to the combined lengths of the inner tubular section and the socket member, said socket member being nested in the opposite end of the outer tubular section, and a closure member for the last mentioned end of the outer tubular section for retaining said socket member and rod therein.

3. An extension handle assembly including a tubular handle formed of tubular sections of different diameters, each of said sections having an externally threaded end, a coupling member having a bore extending therethrough provided with ends of different diameters, said ends each being internally threaded for engaging the externally threaded ends of said tubular sections for detachably connecting them in end to end relationship relatively to each other or in nested relationship one within the other, the free end of the smaller tubular section being adapted to engage the free end of a detachable handle of a socket wrench to form an extension for said handle when the sections are extended, and the larger tubular section being of sufficient length to permit the smaller tubular section, said handle and socket wrench to be positioned in the larger tubular section for storage, when the sections are nested, said handle being adapted to be disposed in the inner end of the smaller section and being provided with an enlarged end to prevent passage of the handle outwardly therethrough, and means for closing the opposite end of the larger tubular section.

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