United States Patent [19]

Smith

[11] **3,733,938**

[45] **May 22, 1973**

[54] PLURAL BUNG TOOL

[76] Inventor: **Bernard L. Smith,** P. O. Box 10504, Atlanta, Ga. 30310

[22] Filed: **Mar. 8, 1972**

[21] Appl. No.: **232,746**

[52] **U.S. Cl.** .....**81/119,** 81/121 R

[51] **Int. Cl.** **B25b 13/02**

[58] **Field of Search** .....81/3.1 R, 3.34, 90 R, 81/90 B, 90 C, 119, 177 G, 121, 71, 53 R

[56] **References Cited**

UNITED STATES PATENTS

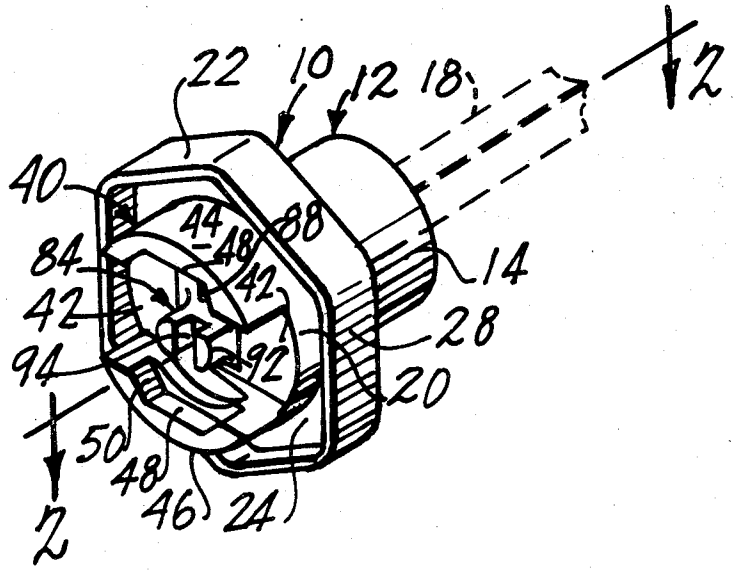
2,643,566 6/1953 Santos et al.....81/121 R

Primary Examiner—Othell M. Simpson
Assistant Examiner—James G. Smith
Attorney—Patrick F. Henry

[57] **ABSTRACT**

A plural bung tool for removing or replacing barrel bungs, comprising one unitary head having a socket or other standard fitting thereon for mounting on the shaft of a standard tool, including a compressed air driven tool or a manual wrench, and having a plurality of cavities and faces arranged to fit six or more existing bungs. The head includes a sleeve-like body near one end of which is mounted a hexagonal cavity collar for fitting the hexagonal bungs and within said hexagonal collar extending and protruding therefrom a second sleeve defining opposed jaws recessed to fit a smaller square or rectangular recessed bung fitting. The main body includes a passageway which is rectangular or square but not circular so that a spring biased bifurcated jaw travels therein to be pushed out of the way when fitting the plural tool second jaw collar to a bung. The bifurcated, sliding jaw arrangement is insertable inside the type of small bung fitting which has a cavity with opposed protrusions thereon and said second bifurcated jaw will also insert between projecting, parallel plates in another type of bung fitting. The second opposed jaw arrangement will fit over certain hexagonal bungs and some square or rectangular bungs. Thus, the single tool head fits any one of six or more existing bungs simply by inserting same thereon or thereinto as the case may be without further manipulative work.

10 Claims, 12 Drawing Figures



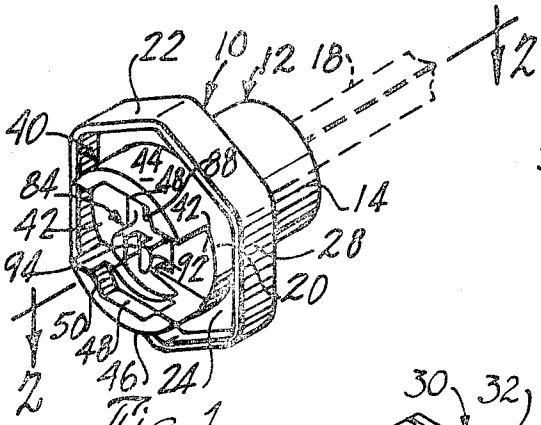


Fig. 1

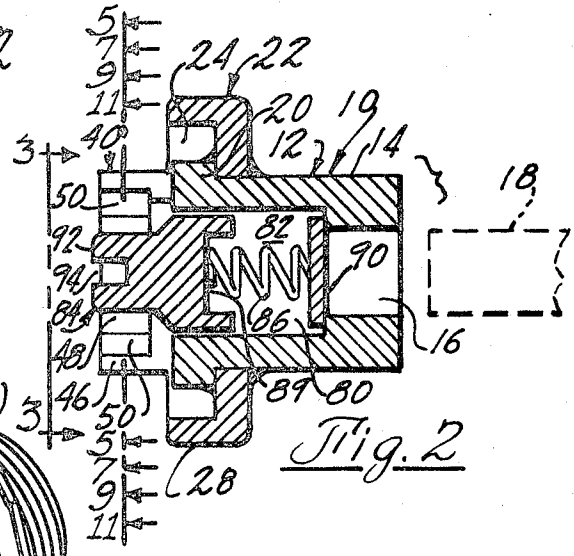


Fig. 2

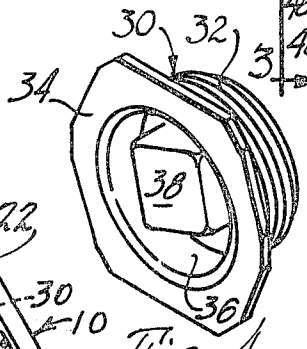


Fig. 4

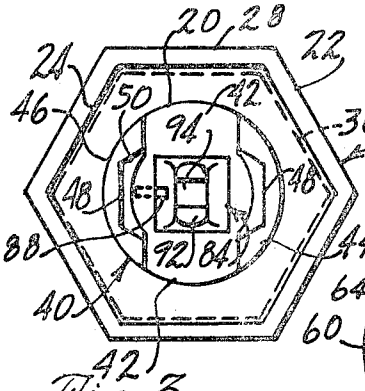


Fig. 3

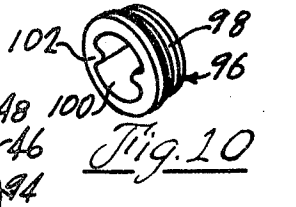


Fig. 10

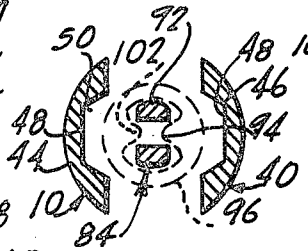


Fig. 9

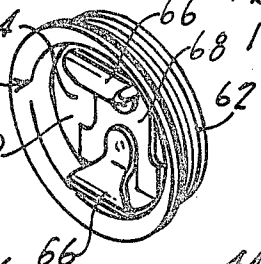


Fig. 6

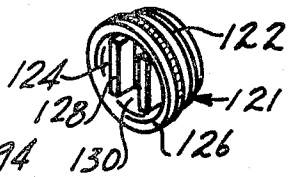


Fig. 12

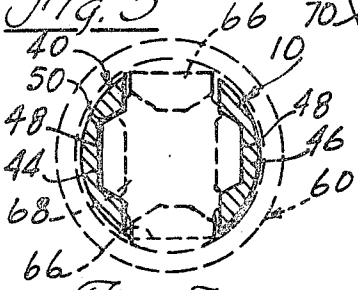


Fig. 5

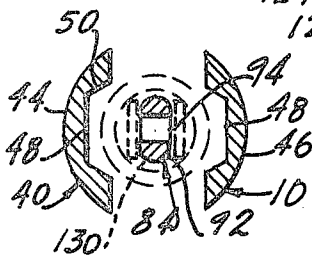


Fig. 11

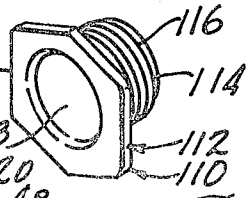


Fig. 8

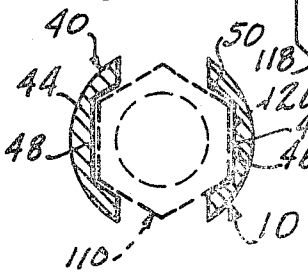


Fig. 7

PLURAL BUNG TOOL

BACKGROUND OF THE INVENTION

1. Field of the Invention

Plural tools and particularly bung fitting tools.

2. Description of the Prior Art

There are in excess of six steel barrel bungs commonly in use and it is possible that all or some of them would be encountered in the course of a day's work wherever different steel barrels are being opened or closed. Ordinarily it is necessary to have a separate tool on hand to fit each bung and if such a tool is not available it is necessary either to improvise from other standard tools or to obtain a special tool that has the necessary fitting in complementary relationship to fit that bung. In those operations in industry where many different kinds of barrels with different bungs are being opened and closed in the course of a day's work, possibly on an assembly line type of arrangement, it is very time consuming and difficult to switch from one bung tool to another and also the different bung tools often become misplaced and it is necessary to search from time to time. This is costly wherever any sort of production line or continuous work is being performed and especially so if power tools or air driven tools are being used in the operation. For example, steel barrels are reused many times must be cleaned, repainted, examined and so forth to be placed back in service again after use. The bungs and the threaded bung openings in the barrels must be checked and made correct. If this is to be a profitable business it must be done on some sort of continuous basis so that the per unit cost of reclaiming the barrel does not get too high. One problem in this sort of steel barrel reclaiming business has been the lack of uniformity of bungs and the consumption of time in removing and replacing same.

SUMMARY OF THE INVENTION

A plural bung tool is contained on a single body which employs on one end a standard fitting which similar to any socket wrench will attach to and detach from the driving tool which may be manual or power driven. The plural tool body has several different configurations and arrangements carried thereby to fit as many different bungs as desired up to approximately six or seven.

An object of this invention is to provide a single tool which will actuate a number of different bung fittings.

Another advantage of this invention is found in the simplicity of construction and operation whereby no manipulative effort is required to change from one bung fitting to another and it is simply a matter of inserting the end of the present plural bung tool onto or into the particular bung being removed or replaced as the case may be.

A further advantage of this invention is found in the simplicity of the arrangement and the fact that there is only one moving part which is not readily damaged or detached so that the upkeep and maintenance is practically zero.

Other and further objects and advantages of this invention will become apparent by specific references to the figures of the drawings and the description of the particular embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a plural tool made in accordance with the present invention.

FIG. 2 is a cross-sectional view taken substantially along lines 2—2 in FIG. 1.

FIG. 3 is an elevation view taken substantially in the direction of the lines 3—3 in FIG. 2, showing the bung of FIG. 4 in dotted lines.

FIG. 4 is a perspective view of a typical standard bung which is fitted by the portion of the tool viewable in FIG. 3.

FIG. 5 is an elevation view taken substantially along lines 5—5 in FIG. 2 showing another part of the tool showing the bung of FIG. 6 in dotted lines.

FIG. 6 is a standard bung which is fitted by the portion of the tool viewable in FIG. 5.

FIG. 7 is an elevation view taken substantially in the direction of lines 7—7 in FIG. 2 showing another portion of the tool.

FIG. 8 is a standard bung fitting which is fitted by the portion of the tool viewable in FIG. 7.

FIG. 9 is an elevation view taken substantially in the direction of lines 9—9 in FIG. 2 showing the bung of FIG. 10 in dotted lines.

FIG. 10 is a perspective view of another standard bung which is fitted by the portion of the tool viewable in FIG. 9.

FIG. 11 is an elevation view taken substantially along 11—11 in FIG. 2 showing another portion of the tool for fitting the bung in FIG. 12 shown in dotted lines.

FIG. 12 is a perspective view of another, different standard bung which is fitted by the portion of the tool viewable in FIG. 11 in accordance with the dotted lines shown in FIG. 11.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The relationship between standard bung arrangements and the drawing is pointed out generally in reference to the figures of the drawings. However, it should be understood that according to the system used in the present drawings, the section lines 3—3, 5—5, 7—7, 9—9 and 11—11 generally refer to different portions of the plural tool each of which will fit at least one standard bung and in accordance with this system the portions of the tool viewable in the respective figures fit the standard bungs associated therewith so that in accordance with this system FIG. 3 fits the bung of FIG. 4, FIG. 5 fits the bung of FIG. 6, FIG. 7 fits the bung of FIG. 8, FIG. 9 fits the bung of FIG. 10 and FIG. 11 fits the bung of FIG. 12. This is not limiting for the reason that other bungs can be constructed which would be fitted by one or more of the different portions of the tool shown in the different figures.

In FIG. 1 the complete tool 10 is a unitary tool head comprising a tool body 12 which is similar to a large socket of a socket wrench set using a very strong tool steel sleeve 14 which has a standard socket fitting 16 in one end thereof to receive the square drive member 18 which may be attached either to a manual socket tool such as a rachet wrench or may be attached to an electric, air or other power driven tool (not shown). Sleeve 14 on the end near the opposite end from the socket fitting 16 is enlarged with an annular ring 20 and welded to the outside of sleeve 14 behind the annular ring 20 is the hexagonal fitting 22 which has a hexago-

nal cavity 24 larger than any other part of the tool 10 and flat hexagonal sides 28.

Reference to FIG. 3 and 4 discloses that the hexagonal cavity 24 fits a standard bung 30 which has the usual standard bung threads 32 which fit into a threaded bung opening in a steel barrel (not shown) and which has the flat hexagonal plate 34 about a circular bore 36 in which there is a square projection 38. The hexagonal cavity 24 fits over the hexagonal plate 34 to remove or replace bung 30.

Extending from the annular ring 20 at the front of the body 12 there is a second tool portion in the form of a socket jaw arrangement 40 comprising a cylindrical sleeve notched out in portions 42 defining a pair of opposed jaws 44, 46 each of which has a flat recess 48 therein and portions of other flat edges 50 providing a tool both between the jaws 44, 46 through the openings 42 and a tool in the recesses 48 with the partial edges 50.

Reference to FIGS. 5 and 6 discloses a standard bung 60 which has a standard bung thread 62 formed on a circular plate or cap and a recessed portion 64 in which is attached a pair of bent metal plates 66 fastened to a flat metal plate 68 in the bottom of the bung on the flat plate surface 70.

The body 12 includes an internal bore or passageway 80 which is rectangular in formation having straight sides 82. Another bung tool implement designated generally by reference numeral 84 is slidably, but not rotatably, mounted in the passage 80 against a coil spring 86 which is compressed when the tool implement 84 is pushed back into the passageway 80. There is a pin 88 at the front entrance of the passageway 80 which engages the front of and prevents complete displacement of the tool implement 84 which is being pushed by spring 86. A recess or cavity 89 in the back of the implement 84 inside the passageway 80 receives one end of the coil spring 86 and the other end presses against a plate 90 confined at the back end of the passageway 80. As readily seen in FIGS. 1, 2, 3, 9 and 11, the front end of the tool 84 implement which projects inside the jaws 44, 46, is bifurcated or forked providing prongs 92 spaced about an opening 94.

The standard, small bung designated generally by reference numeral 96 in FIG. 10 includes the usual bung threads 98 and a front cavity or depression or concavity 100 which has opposed, tapered projections 102 forming somewhat of an hourglass shape recessed into the bung 96 and as seen in FIG. 9 the prongs 92 fit in the cavity 100 with the projections 102 lying into the space 94. The space between the jaws 44, 46 is large enough to accommodate the outside of the bung 96 as shown in FIG. 9.

Whenever the jaws 44, 46 are fitted to the inside or outside of a bung as for example in the manner of FIG. 5 or FIG. 7 and the projection of the implement 84 at the ends of projections 92 would interfere, the entire implement 84 automatically retracts into the bore 80 as a result of the pressure against the implement 84 when the tool 10 is inserted in place and the jaws 44, 46 are placed over the bung such as bung 60 in FIG. 6.

With reference to FIGS. 7 and 8, in FIG. 8 there is shown another standard bung 110 with a hexagonal nut 112 formed as a plate on the bung which has the usual cylindrical body 114 with threads 116 and a concavity or depression 118 in the front inside plate 112. The jaws 44, 46 set with the flat edges 48, 50 in engagement with the edges 120 of the hexagonal nut 112 in the manner shown in FIG. 7 whereupon the entire tool 10 may be rotated to remove or replace bung 110.

In FIG. 12 there is shown a bung 121 which has the usual threaded body 122 and a cavity or concavity 124 with circular edges 126. Inside the concavity 124 there is a pair of projecting plates or blocks 128 spaced about a space 130 providing surfaces against which pressure may be brought to screw or unscrew the threads 122 from the threaded opening in the barrel. As seen in FIG. 11, the plural tool 10 is positioned with the jaws 44, 46 outside the bung 120 which places the implement 84 inside the spaced plates 128 thereby jamming the projections 92 inside and between the blocks 128 whereby the bung may be screwed or unscrewed by rotating the entire tool 10 from the shaft 18.

While I have shown and described a plural tool which may be used to remove several bungs this is by way of illustration of a known preferred embodiment and is not limiting since there are other bung arrangements and various alterations, changes, deviations, additions, removals, combinations, and departures which may be made in the embodiment shown and described without departing from the scope of my invention as defined only by a proper interpretation of the appended Claims.

I claim:

1. In a single bung tool implement for removing one of several shapes and configurations of bungs:
   a. an elongated tool body receiving a tool driving means such as a standard wrench or power tool shaft therein and having an internal chamber therein,
   b. a multi-sided tool implement on the outside of said body having a large cavity which fits over a large multi-sided bung,
   c. a pair of spaced, projecting jaws inside said multi-sided implement and projecting outwardly therefrom and being attached to said tool body,
   d. said jaws having flat sides on the inside thereof corresponding to the edges of a bung and having a space between said jaws in which portions of another bung will fit, and
   e. a movable implement mounted in said chamber and having spaced projections thereon with a space therebetween.

2. The bung tool in claim 1:
said implement being spring biased and said projections fitting into the cavity of a bung having portions thereof projecting into the space between said projections, whereby said tool may be fitted to any one of several different bungs for removal or replacement of same.

3. The bung tool in claim 2:
wherein said movable implement is retained against rotation whereby said implement moves in a line but does not rotate or turn.

4. The tool in claim 3:
said implement having a stop means thereon to prevent dislodgement from said chamber.

5. The tool in claim 1:
said flat sides on said projecting jaws being angularly positioned to present a multi-sided configuration.

6. The tool in claim 5:
said projecting jaws having a space therebetween and said space having flat edges on opposite sides thereof and closer together than said flat sides whereby said

jaws present a tool across said opening of less size than the multi-sided configuration.

7. The tool in claim **1**:

said projections on said implement having spaces therebetween and the inside edges of said projections being flat and the outside of said projections being flat whereby said projections may be fitted inside a bung opening to have portions thereof in said space or said projections may be fitted with the outside edges engaging a bung with two flat plates having space therebetween.

8. The bung tool in claim **1**:

wherein said movable implement is retained against rotation whereby said implement moves in a line but does not rotate or turn,

said implement having a stop means thereon to prevent dislodgement from said chamber,

said flat sides on said projecting jaws being angularly positioned to present a multi-sided configuration,

said projecting jaws having a space therebetween and said space having flat edges on opposite sides thereof and closer together than said flat sides whereby said jaws present a tool across said opening of less size than the multi-sided configuration,

said projections on said implement having spaces therebetween and the inside edges of said projections being flat and the outside of said projections being flat whereby said projections may be fitted inside a bung opening to have portions thereof in said space or said projections may be fitted with the outside edges engaging a bung with two flat plates having space therebetween.

9. The bung tool in claim **7**:

said implement being spring biased and said projections fitting into the cavity of a bung having portions thereof projecting into the space between said projections, whereby said tool may be fitted to any one of several different bungs for removal or replacement of same.

10. The bung tool in claim **9**:

wherein said movable implement is retained against rotation whereby said implement moves in a line but does not rotate or turn.

* * * * *