June 14, 1966 DA RUBEN L. BECK 3,255,792

LOCKING DEVICE FOR TOOL HANDLES

Filed March 18, 1964

FIG. 1

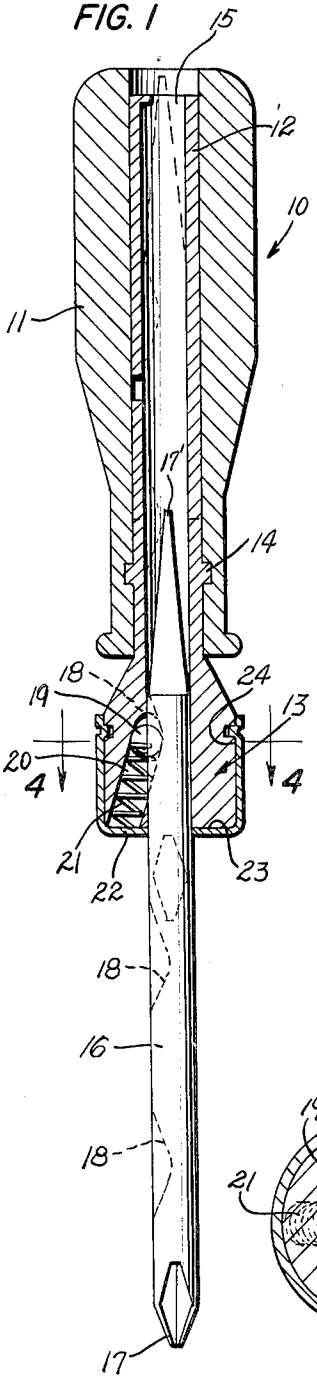



FIG. 2

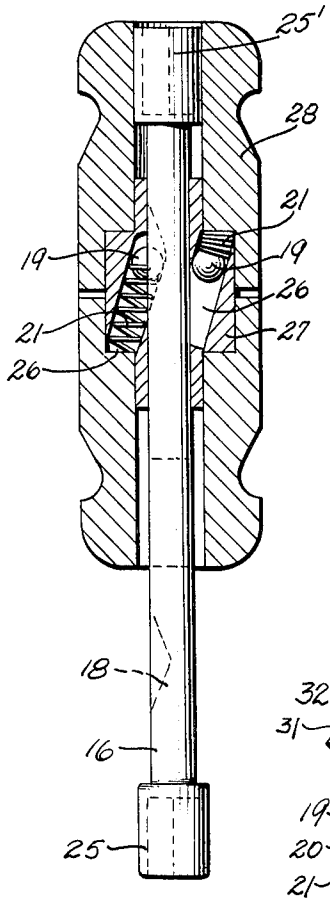



FIG. 3

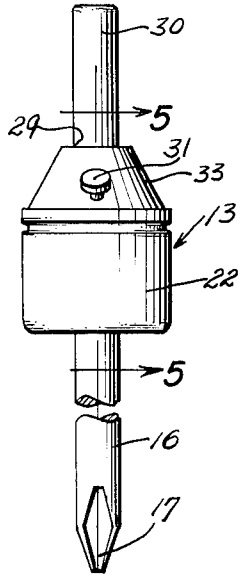



FIG. 5

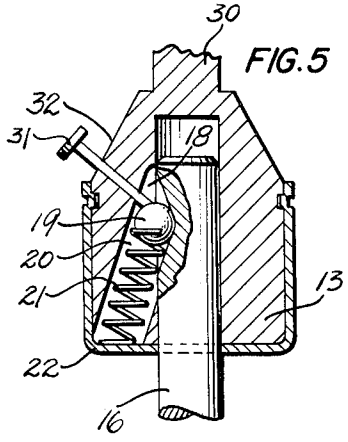
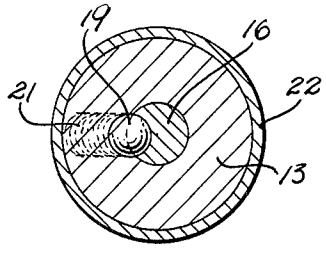



FIG. 4




INVENTOR

DaRuben L. Beck

United States Patent Office 3,255,792 Patented June 14, 1966



3,255,792

# LOCKING DEVICE FOR TOOL HANDLES

Da Ruben L. Beck, Belle Glade, Fla., assignor of one-fourth to Josef E. Louis, Palm Beach, Fla.

Filed Mar. 18, 1964, Ser. No. 352,839
2 Claims. (Cl. 145—64)

This invention relates to tools, and more particularly to hand tools, although it is not to be limited to this class of tools, as it is adaptable to nearly any other tool having a shaft, as will hereinafter be understood from the reading of this specification and its claims and examination of the appended drawing.

The complaint that most users of hand tools have about the performance of their tools is that the handles not only rotate about the axis of the shaft of the tool, but also the fact that each tool must have its own separate handle.

It is, therefore, an object of this invention to provide a locking device for tool handles that will not only firmly lock the shaft of the tool in the handle, but one that can also be adapted to hold shafts having working ends for different purposes, such as a socket wrench.

Another object of this invention is to provide a locking device for tool handles that is spring-loaded at all times.

Another object of this invention is to provide a locking device for tool handles that is foolproof in its operation.

Another object of this invention is to provide a locking device for tool handles that will lock the handle in any one of a number of locations along the shaft of the tool.

Still another object of this invention is to provide a locking device for tool handles that has a minimum number of parts and is, therefore, a tool that can be mass produced and retailed at a cost within the means of everyone who has need of tools.

Other objects and advantages will appear as I proceed with the description of that embodiment of the invention which, for the purposes of the present application, I have illustrated in the accompanying drawing, in which:

FIGURE 1 is a vertical sectional view of this invention.

FIGURE 2 is a vertical sectional view of an alternate form of construction of this invention.

FIGURE 3 is a side view of another form of one detail assembly of this invention.

FIGURE 4 is a horizontally disposed sectional view of FIGURE 1 taken along line 4—4 and viewed in the direction indicated by the arrows.

FIGURE 5 is a vertical sectional view of FIGURE 3, along line 5—5 and viewed in the direction indicated by the arrows.

Referring now to the drawing, and more particularly to FIGURE 1, it will be seen that the reference numeral **10** indicates a screwdriver made according to this specification and embodying a handle **11** having a centrally located opening longitudinally therethrough, and in which is secured a liner **12** having an enlarged head **13** and ring **14** that is integral with the aforesaid liner **12** as well as being located within the aforesaid handle **11**. A centrally located opening **15** extends the full length of the aforesaid liner **12** and enlarged head **13**. A solid shaft **16** has a screwdriver **17** at one end and a different screwdriver **17'** at the other end, and a plurality of equally spaced recesses **18** therein for the reception of the ball **19** that is located within the recess **20** of the enlarged head **13** of this invention. A coil spring **21** is placed within the aforesaid recess **20** and under the just-mentioned ball **19**. A retainer **22** encompasses both the flat end **23** and the sides **24** of the aforesaid enlarged head **13**, thereby keeping the ball **19** in place.

It is now obvious, from reading the above description of FIGURE 1 of the drawing when examining the figure, that this novel invention of a locking device for tool handles provides an unusual form of construction embodying a plurality of well-designed and cooperating parts and that this invention will give one a tool handle in which the shaft, which in this instant has a screwdriver end **17**, can be automatically locked in any one of a predetermined number of positions that will not change unless a little more than ordinary pressure or pull is exerted on the aforesaid shaft **16**, regardless of what type of tool may be formed or otherwise made or located on one end thereof.



Downward pressure on handle **11** will wedge ball **19** between the inclined surface of recess **18** and the wall of recess **20** and prevent relative movement of handle **11** and shaft **16**. Pulling on shaft **16** will draw ball **19** into recess **20**, in the position occupied by ball **19** at the right of FIGURE 2. Shaft **16** can then be turned so that ball **19** is not opposite a recess **18**. Shaft **16** can then be withdrawn or moved to a position in which ball **19** drops into another recess **18**. If shaft **16** is withdrawn, it can be reversed or another shaft having different screwdrivers or at least one other tool put in its place. Shaft **16** must always be inserted from the upper end of FIGURE 1.

Looking now at FIGURE 2 of the drawing, it will be seen that in this alternate form of construction the screwdriver ends **17** and **17'** of the shaft **16** are replaced by hollow socket wrenches **25** and **25'**; otherwise, all parts like those shown in the previously described FIGURE 1 bear like reference numbers.

One will also observe by continuing to look at FIGURE 2 that in this instant the enlarged head **13** is dispensed with and balls **19** are located in recesses **26** that are located in the sleeve **27**, which in turn is located in both the two-piece handles **28** instead of in an enlarged head **13** that has been dispensed with in this alternate form of construction. In FIGURE 2 two balls are used so that one socket wrench **25** can be used at one end of the handle **28** and the other socket wrench **25'** can be used at the other end of the handle **28**.

FIGURES 3 and 5 illustrate still another form of this invention wherein the shaft **16** projects upward into a recess **29** in the enlarged head **13** that has its upper end integral with a shaft **30** that will be placed in the opening in the aforesaid handle **11**, or in a chuck. A button **31** is located in the angularly disposed upper side **32** of the enlarged head **13** in order to push ball **19** into recess **20** when it is desired to insert shaft **16** into recess **29**.

It is to be realized that the various parts of this novel invention may be made from any number of different kinds of materials without affecting the herein described construction of its details, which themselves are subject to modification and change in shape without departing from the spirit and intent of the contents of the appended claims.

What I now claim as new is:

**1.** A tool comprising a handle having a bore extending throughout its entire length, a tubular liner disposed and secured in said bore, an enlargement formed at one end of said liner and having an inclined recess communicating with the interior of said liner, a spring pressed ball carried in said inclined recess for projecting into said interior, a shaft having a tool formation at each end thereof and a plurality of equally spaced V-shaped recesses intermediate the ends thereof, said shaft being removably inserted in said liner whereby said ball engages a selected V-shaped recess to permit relative axial movement between said shaft and said liner in one direction and prohibit axial movement between said shaft and said liner in the opposite direction.

2. A tool as defined in claim 1, wherein said inclined recess also communicates with the exterior of the enlargement, and a retainer encompassing the exterior and the end of the enlargement for retaining said spring pressed ball in said recess.

**References Cited by the Examiner**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 1,269,413 | 6/1918 | Finnigan | 145—64 |
| 2,089,166 | 8/1937 | Reichhardt | 279—79 |
| 2,592,978 | 4/1952 | Trimboli | 145—64 |
| 3,106,120 | 10/1963 | Reece | 279—76 |



WILLIAM FELDMAN, *Primary Examiner.*

MILTON S. MEHR, *Examiner.*

R. V. PARKER, JR., *Assistant Examiner.*