

April 24, 1928.

1,667,227.

E. I. THOMPSON

BUSHING REMOVER

Filed Dec. 28, 1925

Fig. 1.

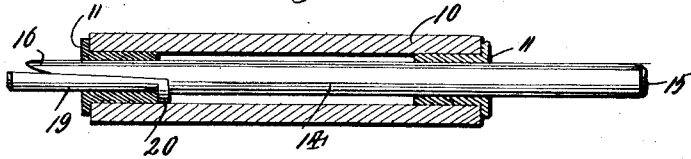


Fig. 2.

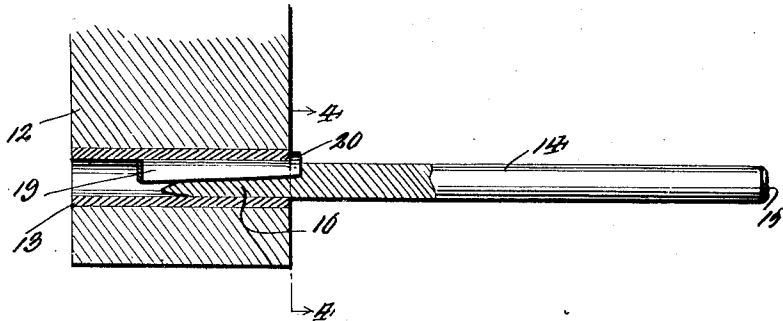


Fig. 4.

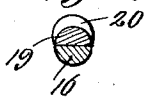
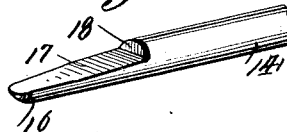


Fig. 3.



Fig. 5.



WITNESSES

Guy M. Spring
E. A. Block.

Inventor

ELBERT I. THOMPSON

By

Richard B. Owen

Attorney

UNITED STATES PATENT OFFICE.

ELBERT I. THOMPSON, OF OSAGE CITY, MISSOURI.

BUSHING REMOVER.

Application filed December 28, 1925. Serial No. 78,010.

The present invention relates to improvements in tools for removing bushings and the like from bearing sleeves and hubs.

An important object of the invention is to provide a bushing removing tool of simple and durable construction designed to permit convenient removal of bushings.

A further object of the invention is the provision of a tool of the above character which may be quickly mounted in position in association with a bushing for removal of the same.

Still another object of the invention is the provision of an efficient bushing removing tool which may be sold at a relatively low cost.

Other objects and advantages of the invention will become apparent as the description progresses.

In the accompanying drawing forming a part of this specification and in which like reference characters are employed to designate corresponding parts throughout the same:

Figure 1 is a side elevational view of my improved tool shown in association with a sectional sleeve provided with flanged bushings,

Figure 2 is a similar view of the tool partially in section shown operatively associated with a cylindrical form of bushing,

Figure 3 is a detailed top plan view of the tool elements in separated position,

Figure 4 is a transverse sectional view taken on the line 4-4 of Figure 2, and

Figure 5 is a fragmentary perspective view of one of the tool elements.

In the drawing, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 10 generally indicates a bearing sleeve of conventional construction provided at its end portions with a pair of flanged bushings 11. With particular reference to Figure 2, the numeral 12 designates a bearing structure provided with a longitudinal bore in which is snugly fitted a cylindrical liner or bushing 13. The foregoing structure is well known in the art and forms no part of the present invention, being merely illustrated to indicate the application of my improved bushing removing tool in connection therewith.

Referring now more particularly to the structure embodying my invention, the numeral 14 designates the striking element of

the tool, embodying a longitudinal rod of circular cross section slightly beveled at one end to provide a suitable striking surface 15 while the opposite extremity is cut to form a tapered projection 16 of reduced size, providing a beveled face 17 at the inner portion of the projection and a shoulder 18 at the intermediate portion of the bar. This member is formed of a durable metallic bar slightly smaller in diameter than the inner diameter of the bushing so as to permit convenient engagement thereof.

Designed so as to be co-actively associated with the reduced portion 16 of the bar 14 is a key member 19 formed so as to be readily inserted through the bushing in an engageable position with the bar. The key member is of semi-circular formation providing a rounded outer side of the same radial dimension as the bar 14 while the inner side provides a flat forwardly beveled side corresponding with the beveled formation of the projection 16. Formed on one end of the key member 19 is an eccentric flange 20, particularly formed to engage the interior edge of the bushing, necessarily greater in diameter than the interior of the bushing, and less in diameter than the interior diameter of the sleeve. As shown to advantage in Figures 1 and 2, the shoulder 18 formed on the longitudinal bar 14 will engage the projecting flange portion of the key member so that these members will be locked together in a bushing for removal thereof.

In use, to remove a bushing of the type illustrated in Figure 2, the key member 19 is first positioned in the interior bore of the bushing with the projecting flange 20 arranged in contact with the exterior edge of the bushing. The tapered projection 16 formed on the bar 14 is then forced in the space provided between the key member and the opposite wall of the bushing so that the shoulder 18 will be forced tightly against the flanged edge of the key member. The opposite end of the bar 14 is then struck with a hammer or other convenient tool and the bushing readily removed from the bearing by the force applied thereto. When employing the removing tool in a bearing of the type illustrated in Figure 1, the key member is inserted so that the flange 20 will be disposed in the interior of the sleeve so as to engage the interior edge of the bushing 11. The bar, in this instance, is inserted in the

opposite end of the sleeve, through the opposite bushing if necessary, and placed in engagement with the key member. Force is then applied to the outer projecting end of the bar and the bushing readily removed.

It is readily apparent, from the foregoing, that a simple and exceedingly efficient bushing removing tool has been devised, capable of application upon various types of bushings and arranged to be conveniently transported. An important feature of the present construction, is the cheap construction, enabling the ordinary user of this type of tool to maintain a supply of tools of various sizes for convenient application on different sized bushings.

It is to be understood that the form of my invention herewith shown and described is to be taken as the preferred example of the same, and that the construction is susceptible of modification so that changes as to the shape, and size may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

A bushing remover comprising a driving bar of cylindrical form and uniform diameter for the major portion of its length, the bar at one end being recessed in one side to provide a flat face inclined with respect to the axis of the bar and a shoulder at the inner end of the face extending substantially at right angles to the axis of the bar, and a key having a transversely arcuate side of the same curvature as the bar and a flat side extending its entire length and inclined with respect to the axis of the bar and to the same degree as the face of the bar, the said key having its inner end transversely flat to engage the shoulder of the bar, and an eccentric outstanding flange at the inner end of the arcuate side of the key to engage the end of a bushing into which the said end of the bar and the key are inserted.

In testimony whereof I affix my signature.

ELBERT I. THOMPSON.