Aug. 14, 1951 J. R. BLANCO 2,564,460

BORING HEAD

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Fig. 2.

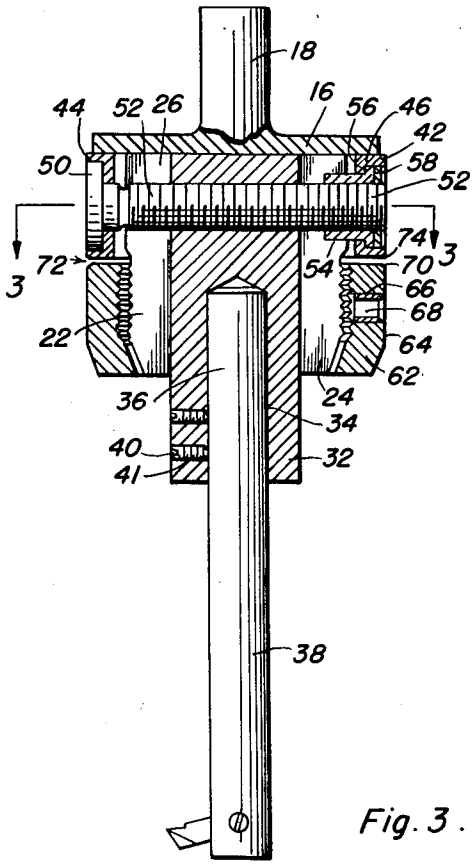


Fig. 1.

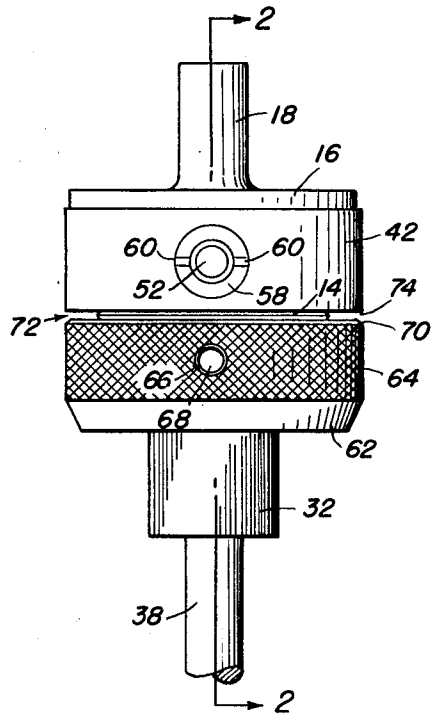
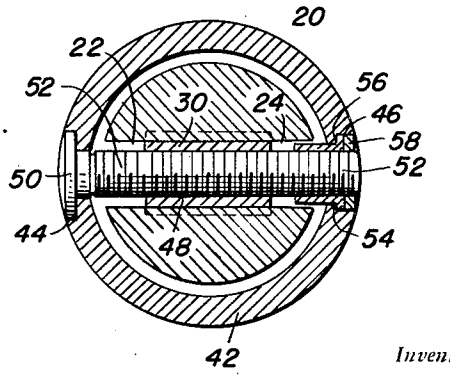


Fig. 3.



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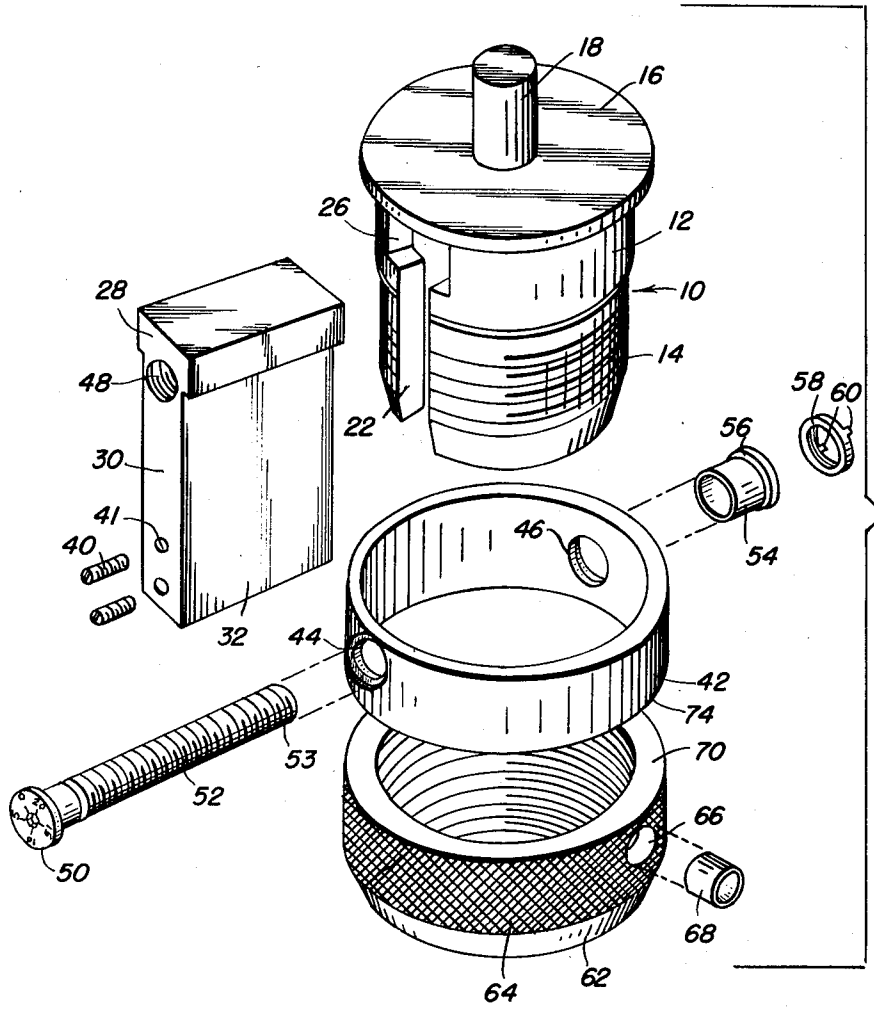


Fig. 4.

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2,564,460

UNITED STATES PATENT OFFICE

2,564,460

BORING HEAD

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Application November 25, 1947, Serial No. 787,900

3 Claims. (Cl. 279—6)

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This invention relates to new and useful improvements in boring heads and the object of the present invention is to provide a boring head including a body and novel and improved means for adjustably securing the body to a tool holding member.

Another important object of the present invention is to provide a boring head so designed as to facilitate the same to tightly support a tool holding member even though the device may become worn during excessive use.

A further object of the present invention is to provide a boring head all parts of which are quickly and readily disassembled or assembled facilitating the convenient storing and packing for transporting or for inspection or replacement of parts.

A still further aim of the present invention is to provide a boring head that is simple and practical in construction, strong and reliable in use, neat and attractive in appearance, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is an elevational view of the boring head constructed in accordance with the present invention, and showing the same in supporting a boring tool (shown in parts);

Figure 2 is a longitudinal vertical sectional view of the present boring head taken substantially on the plane of section line 2—2 of Figure 1, and showing the tools supported thereby in elevation;

Figure 3 is a transverse horizontal sectional view taken substantially on the plane of section line 3—3 of Figure 2; and

Figure 4 is a group perspective view of the present boring head.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a substantially vise-like cylindrical body of metallic material comprising an annular head portion 12 and a reduced externally threaded neck or end portion 14.

Integrally formed with the outer face of the head portion 12, is an annular anchor or stop plate 16 of a diameter slightly greater than the

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diameter of the head 12. Integrally formed at the center of the plate 16, is a stud or cylindrical projection 18 that is adapted to be engaged by a suitable tool for imparting a rotation to the body 10.

A substantially rectangular bore or seat 20 extends axially through the body 10 and one end of the seat is closed by the anchor or stop plate 16.

Opposed longitudinal slots 22 and 24 are provided in the threaded neck 14 of the body, extend partially into the end portion 12, and terminate in key ways or enlarged channels 26. These slots and key ways communicate with the seat 20, so that the enlarged substantially head or key portion 28 of an integral tool holding block 30 may slide into the key ways and at the same time the block 30 may slide into one of the slots to be positioned in the seat 20, with one end 32 of the block projecting outwardly from the opening and the threaded end 14 of the body. A tool engaging bore 34 is centrally located in the block 30 and aligns the longitudinal axis of the body 10. This bore 34 engages one end 36 of a boring tool 38 and adjustable fasteners 40 receivably engaged in internally threaded apertures 41 provided in the end 32 of the block, may be tightened to bear against the end 36 of the boring tool 38.

Frictionally engaging the neck portion 12 of the body 10, is an annular spacer or collar 42 having opposed counter socket apertures or recesses 44 and 46 that align a transverse internally threaded bore 48 provided in the block 30 adjacent the key portion 28 thereof.

Recessed in the aperture 44, is the head portion 50 of a screw threaded rod 52, that receivably engages bore 48. The free end 53 of this rod 52 extends loosely through aperture 46 and terminates co-planar with the outer face of the collar 42. A sleeve or bushing 54 frictionally positioned in aperture 46, and embracing the end 53 of rod 52, engages the key way 26 adjacent slot 24, with the flanged portion 56 of this bushing 54 seated in the aperture 46 to prevent inward movement of the bushing relative to the collar. A ring nut 58 receivably engaged on the end 53 of the rod 52, is also recessed in aperture 46 and bears against the flange portion 56 of the bushing 54. This nut 58 is provided with radially disposed equally spaced lugs 60 that are engageable with a suitable tool such as a spanner wrench (not shown) whereby the rod 52 may be removed from the collar and tool supporting block.

Adjustably mounted on the threaded end portion 14 of the body 10, is an internally threaded

lock ring 62 having knurled annular surface portion 64. This lock ring 62 is provided with a recess 66 that frictionally engages a hardened thrust bushing 68 having its open outer end co-planar with the knurled surface of the lock ring. This bushing 68 is adapted to receive a spanner wrench or the like whereby the lock ring may be adjusted to close the slots 22 and 24 and the seat provided in the body 10, thus tightly gripping the block 30 within the seat.

It should be noted, that the innermost extremity 70 of the block ring 62 is spaced as at 72, which is preferably .020 inch relative to the opposite annular edge 74 of the collar 42, when the lock ring is in a completely adjusted position for effecting a gripping action of the body of the tool holding block.

In this manner, when the parts of the device become worn during use, the lock ring may still be adjusted a slight amount so that the body will always tightly support the tool holding block.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A boring head comprising a cylindrical body having an annular head portion and an externally threaded neck portion, said body having a socket in the neck portion thereof, diametrically opposed longitudinal key slots provided in said body communicating with said socket, a tool holding block loosely received in said slot, a keyway provided in said body communicating with said slots, said block having a head portion slidably received in said keyway, a collar embracing the head portion of said body and having diametrically opposed openings therein, an internally threaded bore provided in said block in registry with the openings in said collar, a screw-threaded rod extending between the openings in said collar and receivably engaging the bore in said block, and a locking ring receivably engaging the neck portion of said body for contracting the neck portion of said body to grip the block.

2. The combination of claim 1 wherein said locking ring includes a recess, and a tool receiving bushing mounted in and reinforcing said recess.

3. The combination of claim 1, said collar and said ring having a space therebetween when the latter is in a completely adjusted position effecting a gripping action of the body on the block whereby when the collar and ring become worn during use, the lock ring may still be adjusted a slight amount so that the body will always tightly support the block.

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