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J. W. PASHBY

2,502,171

ANGLE GUIDE ATTACHMENT FOR BORING TOOLS

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Fig. 1.

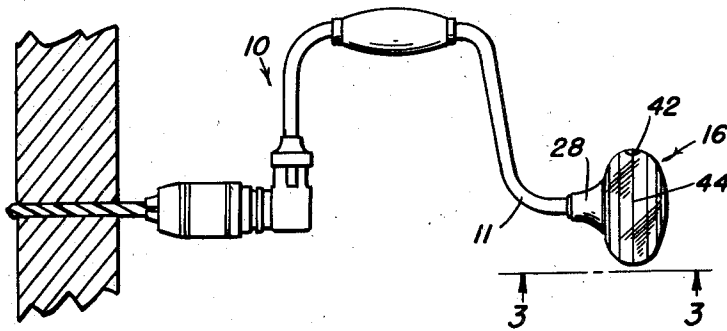


Fig. 2.

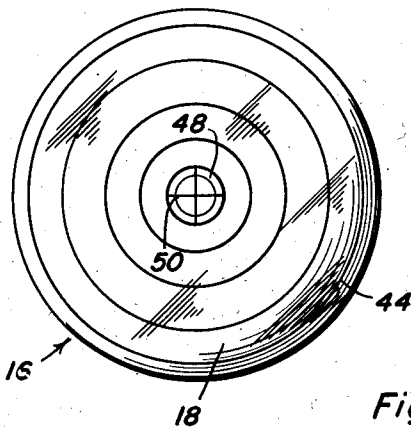


Fig. 3.

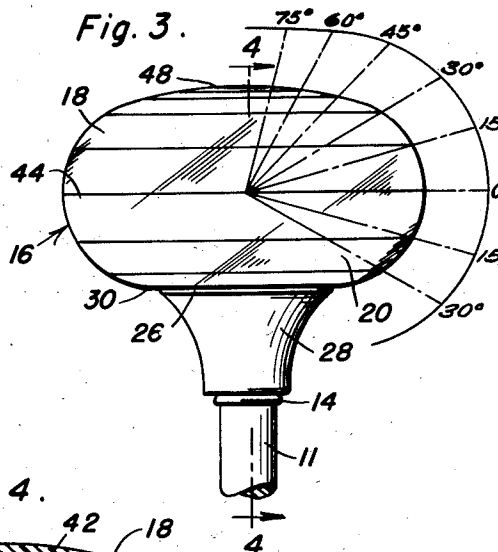
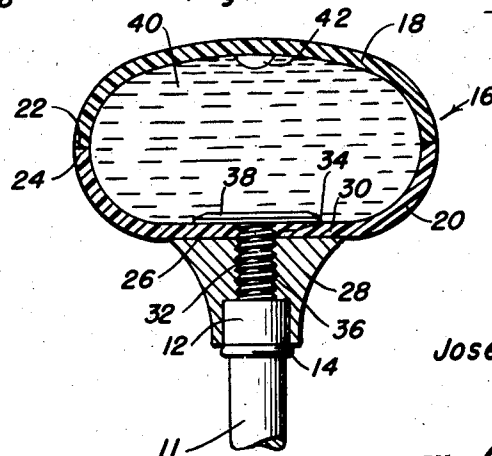


Fig. 4.



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## UNITED STATES PATENT OFFICE

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ANGLE GUIDE ATTACHMENT FOR  
BORING TOOLS

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1 Claim. (Cl. 33—207)

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This invention relates to new and useful improvements in angle guide attachments for boring tools, and the primary object of the present invention is to provide a handle applicable for the ends of tool shanks such as bit braces or the like, including novel and improved means for indicating the vertical or angular disposition of the bit without the necessity of having to employ measuring instruments.

Another important object of the present invention is to provide an angle guide handle including novel and improved means carried by the same for rotatably engaging the end of a bit brace in a convenient manner, facilitating the same to be retained in a fixed, selected position during use of the bit brace.

A further object of the present invention is to provide a spirit level in the form of a handle and including concentric degree lines of various colors that will be easily and quickly readable to the user.

A still further aim of the present invention is to provide an angle guide attachment for boring tools 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 a side elevational view of a brace and bit in use for boring a horizontal bore in a structural element, and showing the present gauge handle applied thereon;

Figure 2 is a top plan view of the present gauge handle;

Figure 3 is an enlarged fragmentary longitudinal sectional view taken substantially on the plane of section line 3—3 of Figure 1; and

Figure 4 is a longitudinal vertical sectional view taken substantially on the plane of section line 4—4 of Figure 3.

Referring now to the drawings in detail wherein, for the purpose of illustration, there is disclosed the preferred embodiment of the present invention, the numeral 10 represents a substantially U-shaped bit brace having its free terminals 11 turned outwardly to provide a stud or cylindrical tip 12 having an annular stop shoulder 14 adjacent its outer extremity.

The numeral 16 represents a transparent body

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or spirit level of preferably plastic material comprising a pair of substantially hemispherical complementary halves 18 and 20 having their abutting annular edges 22 and 24 sealed to each other.

The relatively flat enlarged inner end 26 of a socket 28 is secured to the lower walls 30 of body 16 by the use of a screw-threaded rod 32 receiveably engaging aligned internally threaded apertures 34 and 36 that are provided in the bottom wall 38 of the body and the socket 38. The relatively flat head 38 of this rod 32 bears upon the inner surface of the walls 30 to close the entrance to aperture 34.

A suitable non-freezing fluid 40 is sealed in the body 16 except for an air bubble 42, as is conventional in spirit levels. A plurality of spaced parallel, concentric, calibrated degree lines 44, preferably of various colors, are provided in the outer face of the body 16. These lines, for clarity, may be provided with suitable indicia, such as calibrated degrees, to facilitate the positioning of the air bubbles 42 on a selected degree line.

The outermost concentric line 48 is divided into equal quadrants by cross lines 50, that permits the air bubbles to be more accurately centered in the outer degree line 48 for use in positioning the bit when drilling precise vertical bores.

It is noted that the tip 12 is loosely mounted in the socket 28, so that the body 16 may be gripped by hand and held firmly against rotation during the rotating of the brace and bit.

In practical use of the device, by centering the air bubble 42 in the body 16 and on a selected degree line 44, the brace and bit may be used to drill or bore openings in various structural elements at a selected angle or at a vertical angle. Since the body 16 is held firmly in one hand, during the use of the brace and bit, it will be necessary only to initially center the air bubble relative to a selected degree line, and to retain the air bubble on this degree line during the use of the brace and bit.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding 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 within the scope of the appended claim.

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

An angle indicator for boring tools comprising a hollow, transparent hand grip having a plurality of concentric degree lines including an outer degree line, cross lines dividing said outer degree line into quadrants, said hand grip having a flat portion and a filling opening provided in said flat portion, said hand grip having a fluid therein, a headed bolt extending through said opening, the head portion of said bolt bearing against the inner surface of said flat portion for closing the filling opening, and a nut receivably engaging said bolt, said nut having a socket for receiving one end of a bit brace.

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