

H. H. PUGH.
 LEVEL DEVICE FOR BRACES, &c.
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949,842.

Patented Feb. 22, 1910.

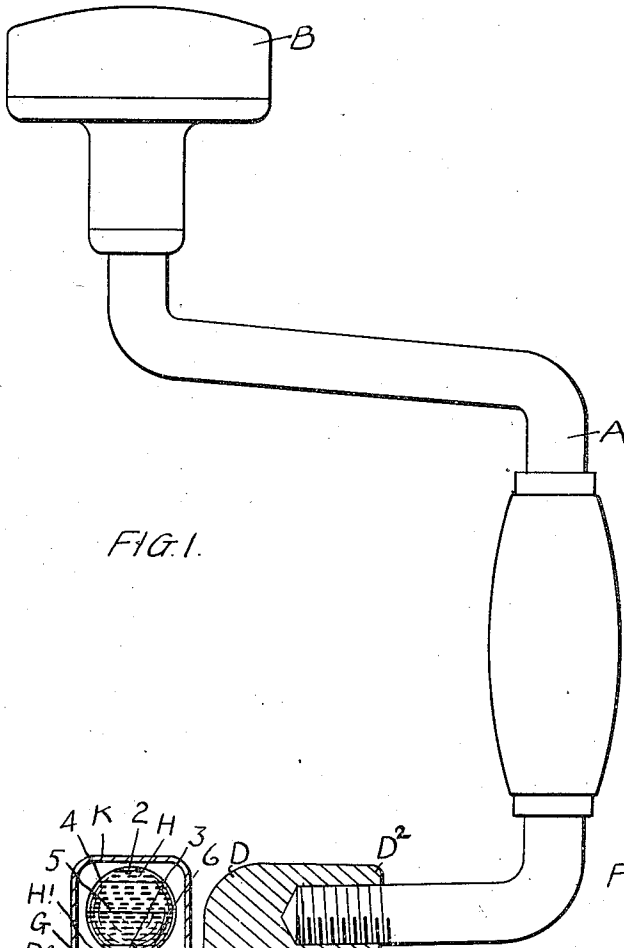


FIG. 1.

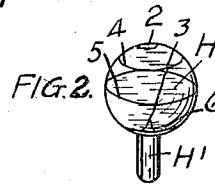
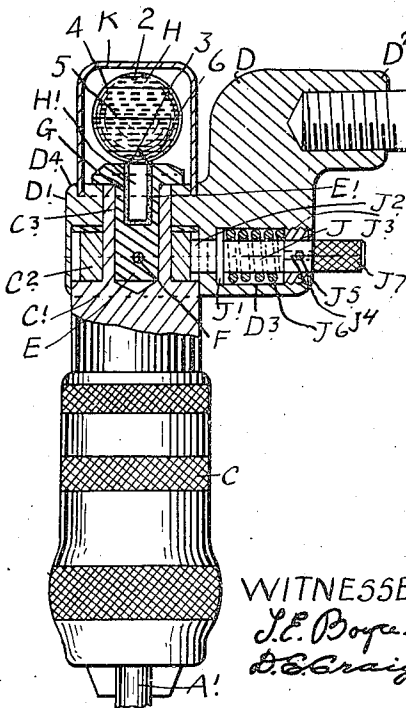


FIG. 2.

WITNESSES:
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UNITED STATES PATENT OFFICE.

HARRY HAYWOOD PUGH, OF ALLISTON, ONTARIO, CANADA.

LEVEL DEVICE FOR BRACES, &c.

949,842.

Specification of Letters Patent.

Patented Feb. 22, 1910.

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To all whom it may concern:

Be it known that I, HARRY HAYWOOD PUGH, of the town of Alliston, in the county of Simcoe, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Level Devices for Braces and the Like, of which the following is the specification.

My invention relates to improvements in level devices for braces and the like, and the object of the invention is to devise an attachment for braces by which the bit may be set straight or at any desired angle, when in use, and insure when proper care is exercised of it being held when drilling in the determinate position to which it is set.

The invention is illustrated in the accompanying drawings.

Figure 1, is a view of a brace showing the portion thereof involved in my invention broken away and in section. Fig. 2, is a detail of the spirit glass.

In the drawings like characters of reference indicate corresponding parts in each figure.

A is the crank shaft of the brace or bit and B is the cushion and C is the socket in which the bit A' is held. The socket C has a reduced upper end C' on which is fitted the square tooth pinion C². The reduced end C' extends through the lower portion D' of the right angular casting D.

E is a headed plug, which fits into a socket C³ in the reduced end C'.

F is a pin, which extends through the reduced end C', the headed plug E and the ratchet pinion C². The pin F serves to hold the ratchet so as to rotate with the pad and also to hold the plug E securely in the reduced upper end C'.

G is a cork thimble, which fits into a socket E' in the plug E.

H is a spirit glass, which is preferably made of hollow spherical form with a stem H', which fits within the cork thimble G, such cork thimble serving to hold the stem and the spirit glass in place. The spherical glass is filled with alcohol or other spirits, so as to leave the usual air globule 2. At the bottom of the spirit glass opposite the stem is formed a spicular projection 3. The manner of filling the spherical spirit glass as well as forming the globule need not here be

described as it is commonly understood by glass blowers.

4 is an annular line etched around the upper portion of the spherical spirit glass.

5 is an annular line etched around the center of the spirit glass and 6 is an annular line etched around the bottom portion of the spirit glass the same distance from the lower end as the line 4 is from the upper end.

D² is the outwardly extending portion of the right angular casting D into which the screw end of the crank A fits.

D³ is a socket in the lower portion of the right angular casting D opposite the ratchet pinion C².

J is the plunger having an annular collar J' and a pawl shaped end J². J³ is a screw plug through which the plunger J extends and which is screwed into the correspondingly threaded outer end of the socket D³. The screw plug has two slots J⁴ located diametrically opposite each other. J⁵ is a pin extending into the slots J⁴ and J⁶ is a spiral spring encircling the plunger J and extending between the collar J' and the screw plug. The normal tendency of the spring is to force the plunger inwardly. J⁷ is the outer knurled end of the plunger J. It will now be seen that by drawing the plunger outwardly and giving it half a turn the position of the pawl shaped end of the plunger may be reversed, the pin J⁵ re-
entering the slots J⁴ reversed.

K is a protecting cap, which fits into an annular groove D⁴ in the casting D but which is removed when the brace is in use.

From this description it will be seen that the user of the bit by seeing that the globule 2 is opposite the center of the top of the spherical spirit glass when he is working can be sure that the bit is entering the wood at right angles to the surface thereof, or in other words that he is boring a straight hole. The globule 2, of course, will be in this position when he is boring downward but should he be boring upward the globule would necessarily surround the spicular projection 3. If he is holding the brace horizontally the globule 2 would be opposite the center line 5. If the brace is being used to bore at an angle of forty-five degrees the globule would be opposite the line 4 or 6. Other lines, of course, if desired may be also made besides

the lines 4, 5, and 6 to obtain any angle of bore. It will also be noticed that I preferably form the casting D right angular in order that the plunger J co-acting with the
5 ratchet C² may be conveniently placed.

What I claim as my invention is:

1. A spirit level comprising a spherical body portion made of glass having a spicular projection on its bottom and a depending supporting lug extending from the body
10 portion, and indicating marks around its circumference and at its top.

2. A spirit level comprising a spherical body portion made of glass and a depending
15 stem formed integral with said body portion and having the same diameter from end to end, a carrier for the level having a central recess and an elastic packing sleeve located within the recess into which the stem of the

spherical body portion is designed to be
20 forced so as to wedge such packing between the walls of the recess and the stem as and for the purpose specified.

3. A spirit level comprising a spherical body portion made of glass, a depending
25 stem formed integral with the body portion and of the same diameter from end to end, a carrier for the level having a central recess, a plug fitting within the said recess and having an enlarged outer end and a recess in
30 its enlarged end, an elastic packing sleeve fitted within such recess and into which the stem of the spherical portion is designed to be forced as and for the purpose specified.

HARRY HAYWOOD PUGH.

Witnesses:

B. BOYD,

R. COBAIN.