

No. 889,273.

PATENTED JUNE 2, 1908.

A. W. THOMAS.

BORING JIG.

APPLICATION FILED OCT. 10, 1906.

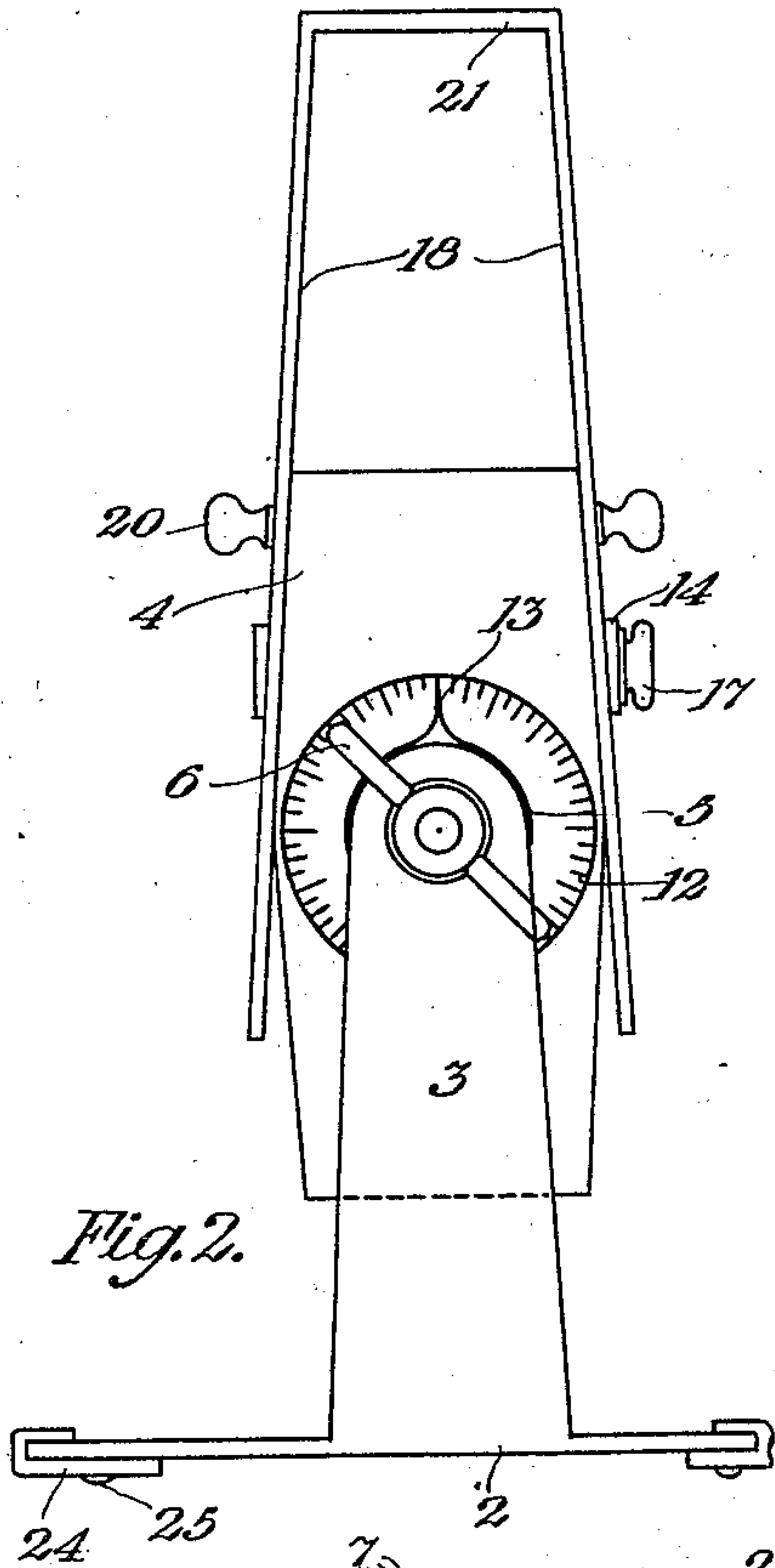


Fig. 2.

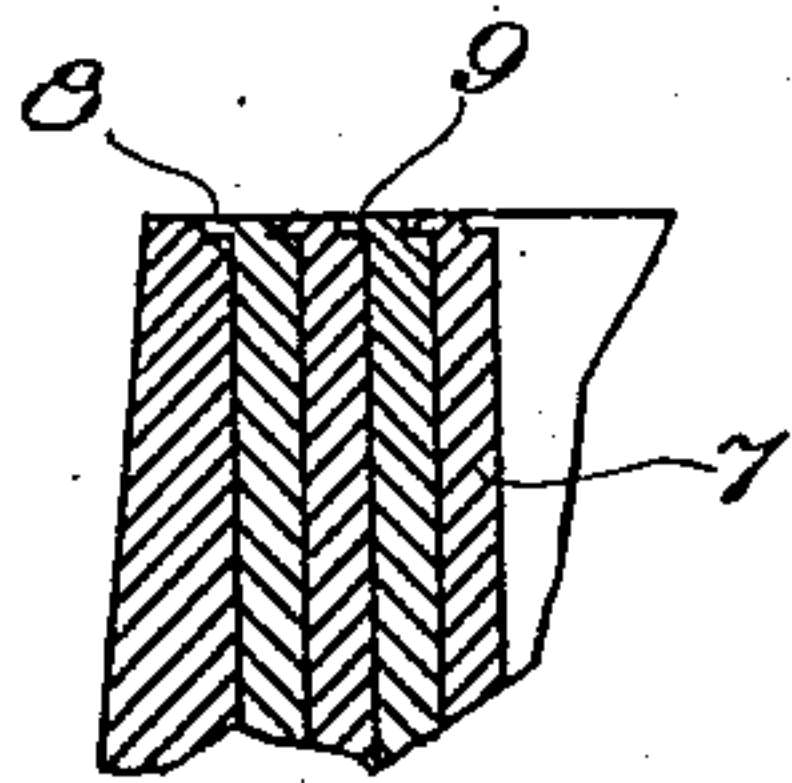


Fig. 6.

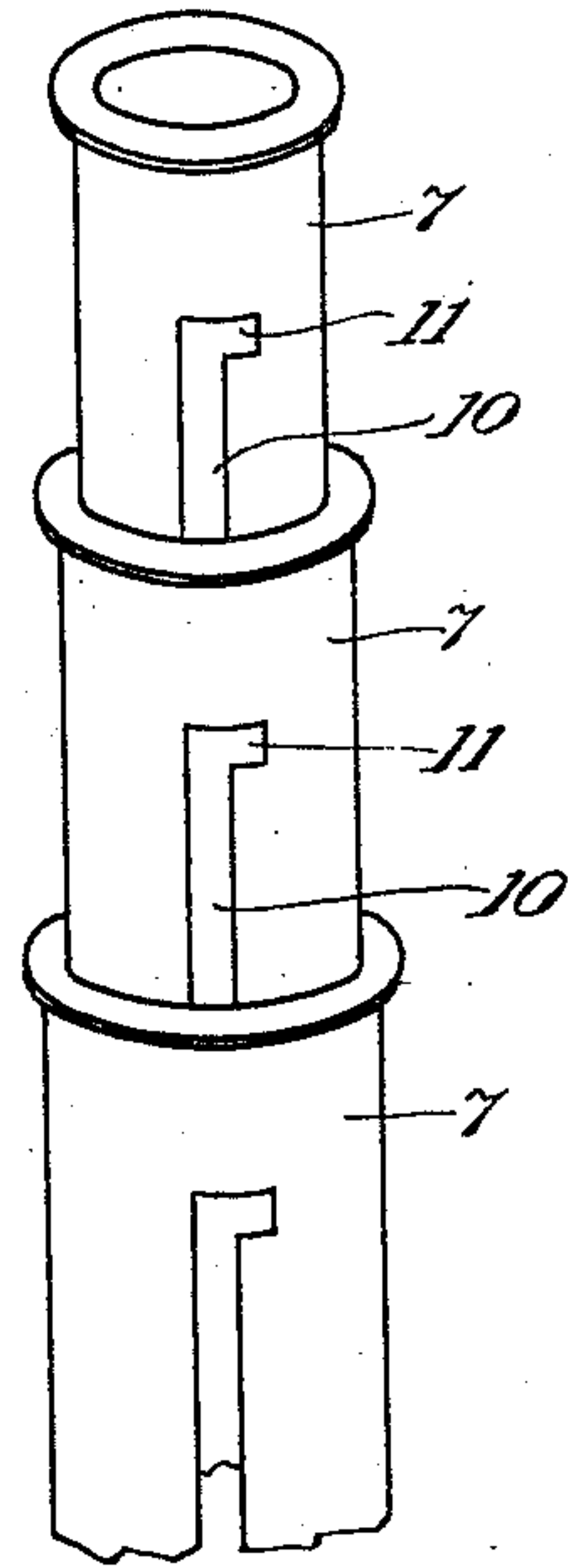


Fig. 5.

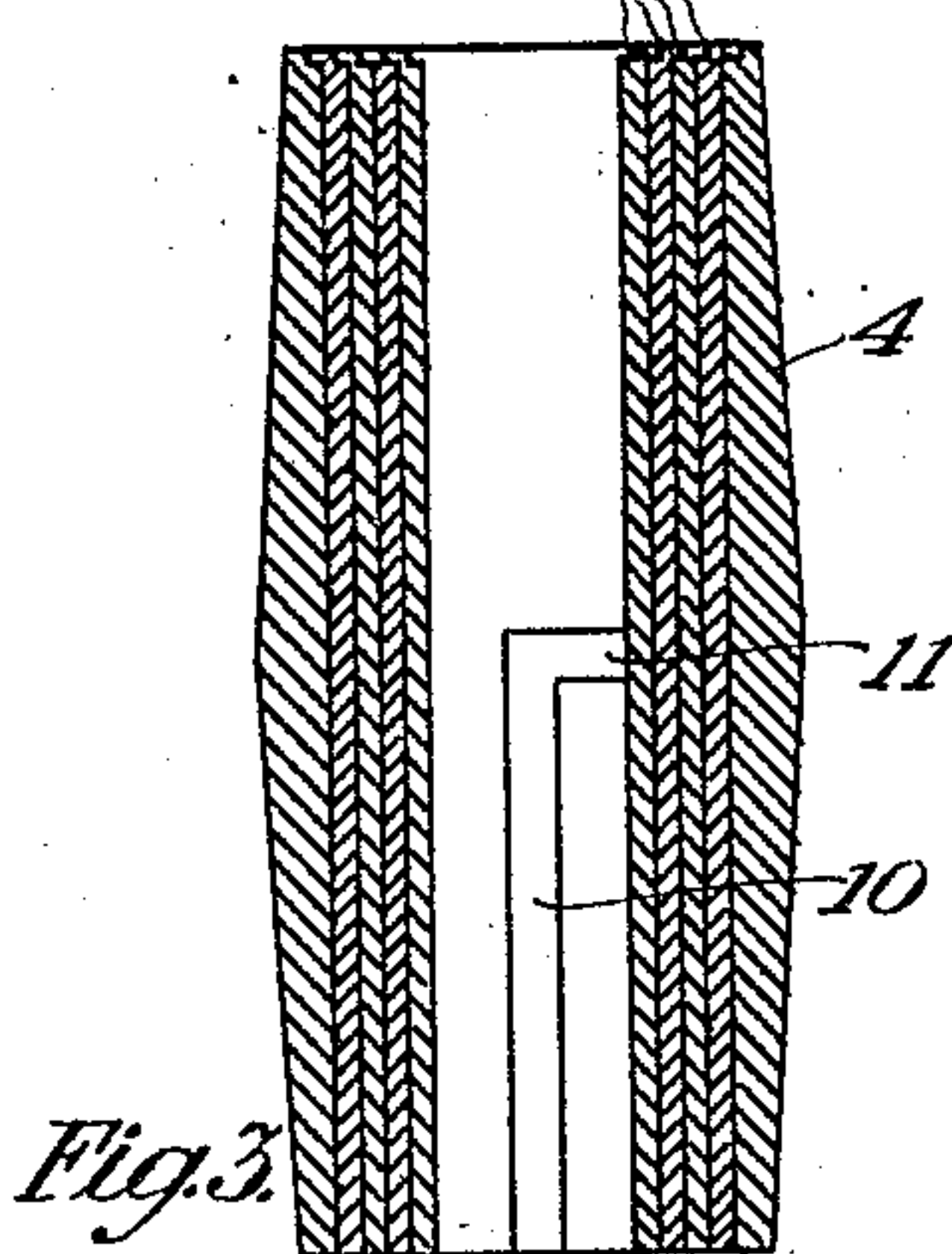


Fig. 3.

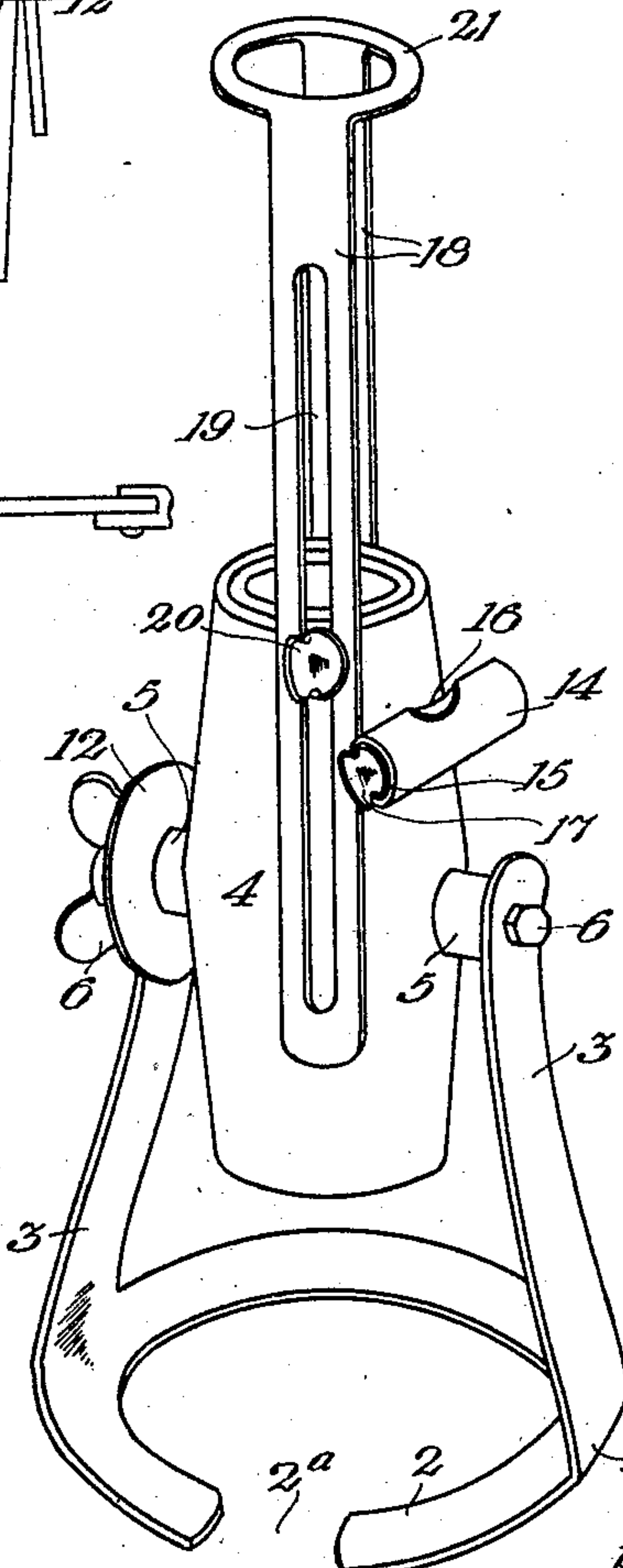


Fig. 1.

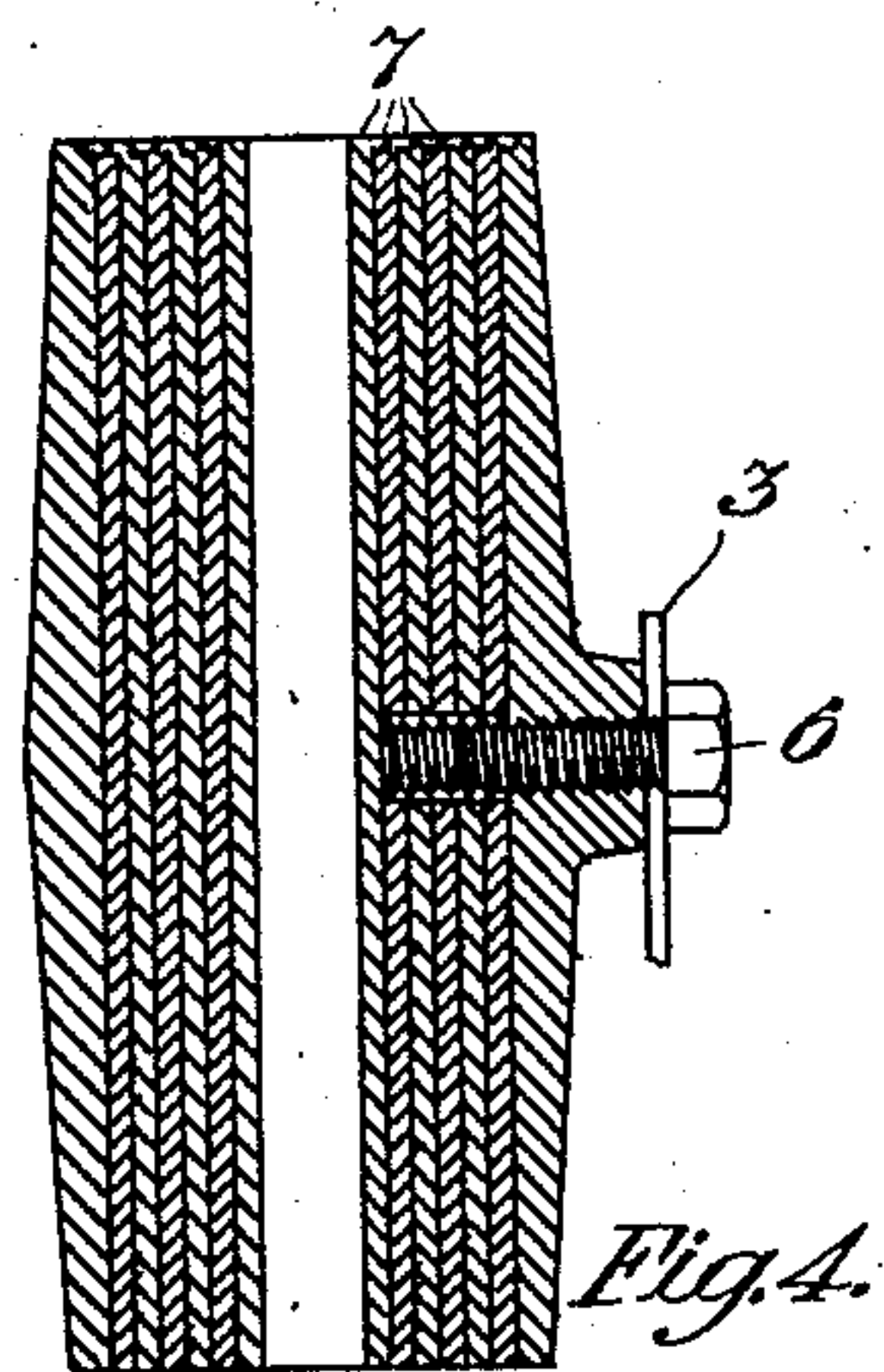


Fig. 4.

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UNITED STATES PATENT OFFICE.

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BORING-JIG.

No. 889,273.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed October 10, 1906. Serial No. 338,199.

To all whom it may concern:

Be it known that I, ALBION W. THOMAS, a citizen of the United States, residing at Rome, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Boring-Jigs, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to an improved boring jig, and I declare that the following is a full, clear, concise and exact description thereof sufficient to enable one skilled in the art to make and use the same, reference being had to the accompanying drawings in which like letters and numerals refer to like parts throughout.

The purpose of the invention is to provide a means by which a mechanic can insure the boring of a hole at a right or oblique angle and can also insure that the holes bored from opposite sides will by reason of such angles being fixed, exactly meet, and the various utilities of the device will be apparent to any skilled mechanic.

The device comprises a standard which supports a barrel by trunnions, the barrel being adapted to receive gages of different sizes according to the bit to be used. The barrel and the gages are centrally bored so that the bit passes through the gage which is mounted in the barrel and establishes and maintains the direction of the hole to be bored.

In the drawings, Figure 1 is a perspective view; Fig. 2 is a partial side view; Fig. 3 is a vertical sectional view of the device, and Fig. 4 is a partial sectional view at right angles to Fig. 3, while Fig. 5 is a view of some gages to be supported in the barrel. Fig. 6 is a partial cross-section view in detail of the nested gages.

Referring to the figures more in detail, 1 represents a frame having a ringlike base 2 with vertical standards 3. On these standards is mounted a barrel or sleeve 4 by trunnions 5 and bolts 6, one of which is a thumb-screw to turn the barrel on the standards 3. This latter bolt 6 extends simply through the standard 3 and into the trunnion, but the one on the side, though either may be adapted for the purpose, passes through the trunnion and the barrel a sufficient distance to engage the inside or smallest gage by friction of the bolt 6 to hold it in place, the other gages being likewise held by the bolt, as will be seen. The gages are indicated by 7 and comprise a

series of cylinders, each smaller fitting into the next larger and the gages being of such size that the smallest in this instance is a quarter of an inch, the gages increasing by eighths and the largest gage, which is the barrel itself, is an inch in diameter. The top of the barrel is cut out as indicated at 8, and each gage has an overlapping edge 9 so that they are supported in a nest on the top of the barrel. All the gages, except the innermost one, have a longitudinal slot 10 with side-cut 11 which is provided for the passage of the bolt 6 therethrough to its frictional contact with the innermost gage, the intermediate gages being slipped down over the bolt and turned so as to be held in position. When one of the slotted gages is to be used the bolt 6 is unscrewed so as to leave the bore of the gage clear.

On one side of the device the trunnion has integral or mounted thereon a graduate dial 12 and the corresponding side piece of the frame has an upward extended arrow or needle 13. The purpose of this device is to permit the mechanic to measure the angle and maintain it in different pieces of work. On one side of the barrel is mounted or integrally cast a case 14 which is bored at right angles to the bore of the barrel. This case is bored out and a level inserted therein comprising a brass tube 15 with glass 16 therein, the tube having slightly projecting thumb-pieces 17 so that it can be turned to protect the glass by the wall of the outer casing when the level is not in use. The end of the casing is screwthreaded a short distance and the outer wall of the tube is also screwthreaded so that the tube is held in the casing thereby. I provide also means for limiting the depth of the bore. This comprises two arms 18 slotted at 19 and supported on the barrel by thumb-screws 20 and supporting at their top the ring 21. The height of the ring is adjusted so that contact of the brace grip with the ring limits the depth of the bore made by the bit, the thumb-screws permitting adjustment of the ring as desired. Since the barrel may be tilted at such angle that its axial line would strike the base part 2, this latter part has a cut-out on one side as shown at 2^a in Fig. 1.

In order to provide a stable mounting for the device I provide a rubber ring 24 constructed to lap over ring 2 and having on its underside nubs 25 whereby the device is held on a surface without marring the surface or

without danger of slipping. Of course, the rubber nubs may be mounted directly on the base ring 2.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a device of the character described, a frame comprised of a base and vertical standards, a barrel trunnioned at the end of the standards, and a tubular gage removably supported in the barrel with its axis coincident with the axis of the barrel.

2. In a device of the character described, an annular base having oppositely disposed vertical standards, a barrel mounted on the standards by means of trunnions, one of the trunnions having a graduate dial and one of the standards having an index finger adjacent the dial, substantially as shown.

3. In a device of the character described, a standard, a barrel, gages supported in the barrel and means supporting the barrel on the standard and the gages in the barrel, substantially as shown.

4. In a device of the character described, a barrel axially bored for the passage of a boring tool therethrough, the barrel having mounted therein a plurality of gages and means securing the gages in the barrel, the said gages being cut out for the entry of said securing means to abut against the wall of the innermost gage, substantially as shown.

5. In a device of the character described, a swingably mounted barrel, and a nest of interfitting guides, the outermost being sup-

ported on the barrel and each successive inner one supported on the next outer one, the said guides being severally of a length adapted to control the direction of a boring tool passed therethrough, substantially as described.

6. In a device of the character described, a tool-guiding means comprising a frame with vertical standards, a guiding barrel trunnioned on the standards, in combination with a guard mounted on the barrel and adjustable lengthwise thereof to limit the depth of the tool bore, substantially as described.

7. In a boring gage, a standard, a tool-guiding means swingably mounted thereon at a point substantially distant from the work to be bored, extensible means adjustably mounted thereon to limit the bore-depth of a tool and means for measuring the angle of the bore, by the combination of which means the direction and depth of a plurality of holes may be standardized.

8. In a device of the character described, a barrel and a plurality of tool-guides nested therein, each guide having an exterior annulus and an interior annular cut-out at one end and the end of the barrel having such cut-out, and means for retaining the nest of guides in the barrel.

In testimony whereof I affix my signature in presence of two witnesses.

ALBION W. THOMAS.

Witnesses:

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