

No. 661,483.

Patented Nov. 13, 1900.

J. D. BARRIE.
COMPASS PROTRACTOR.
(Application filed Apr. 12, 1900.)

(No Model.)

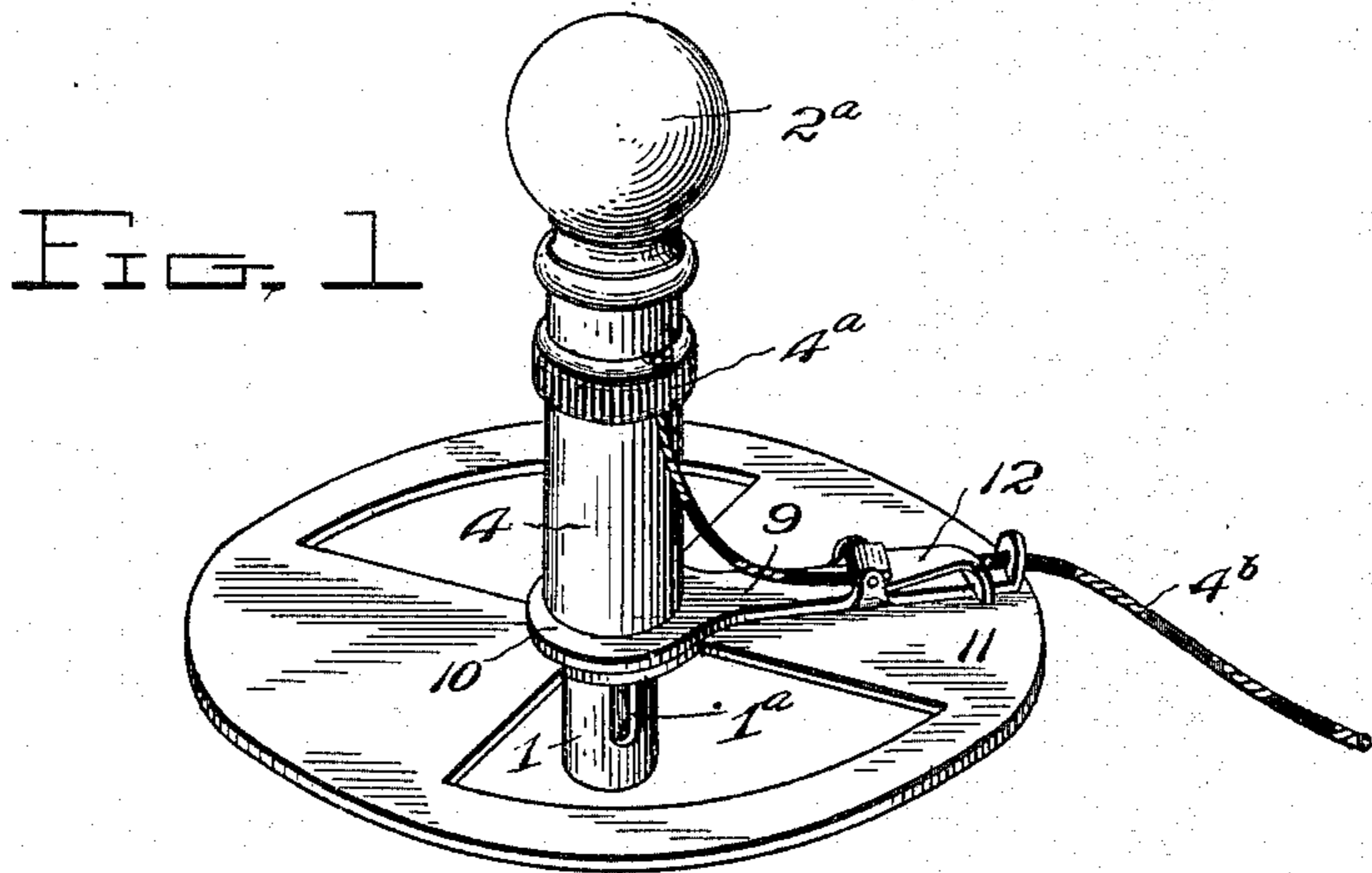


FIG. 2

FIG. 8.

FIG. 3

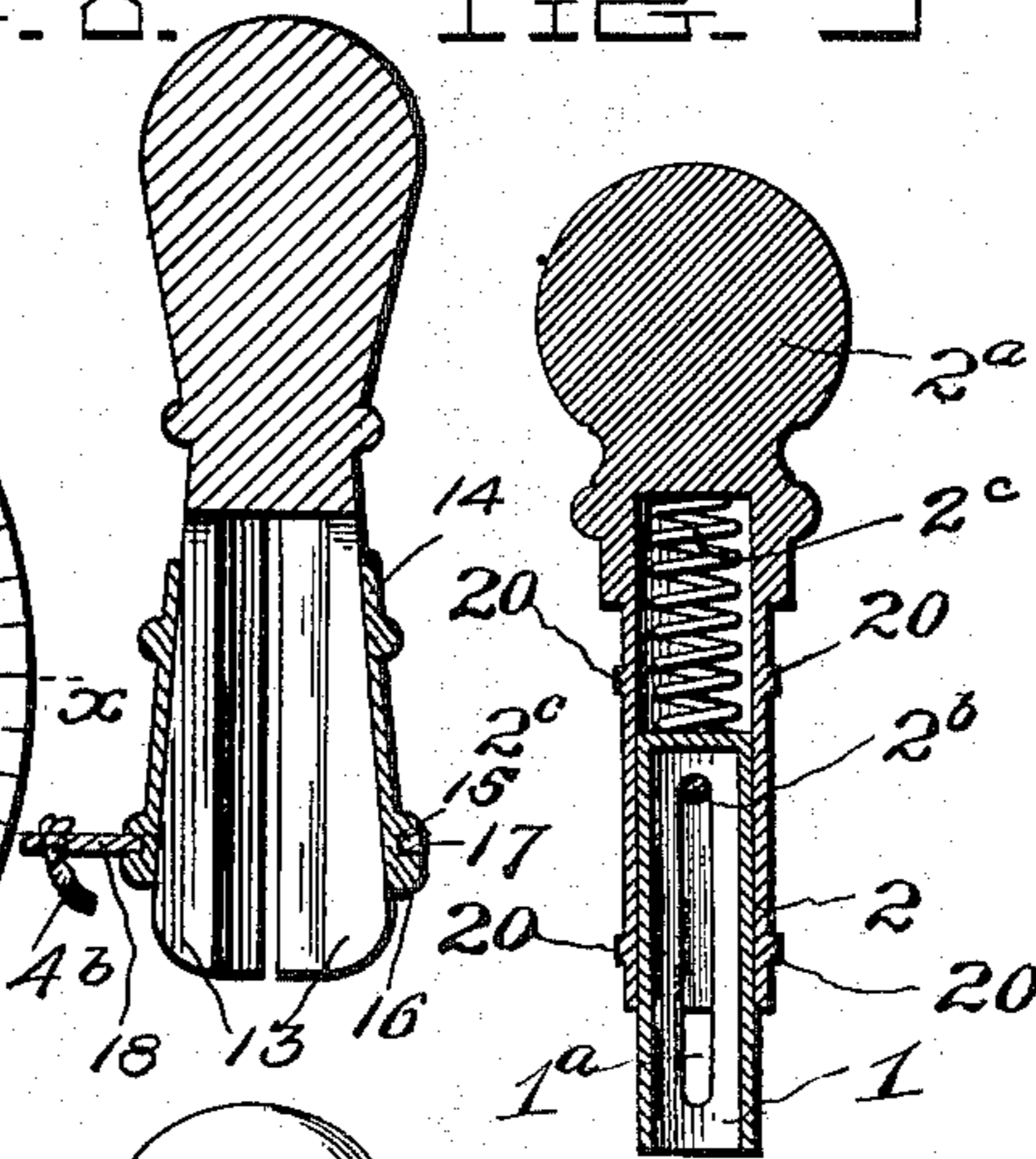
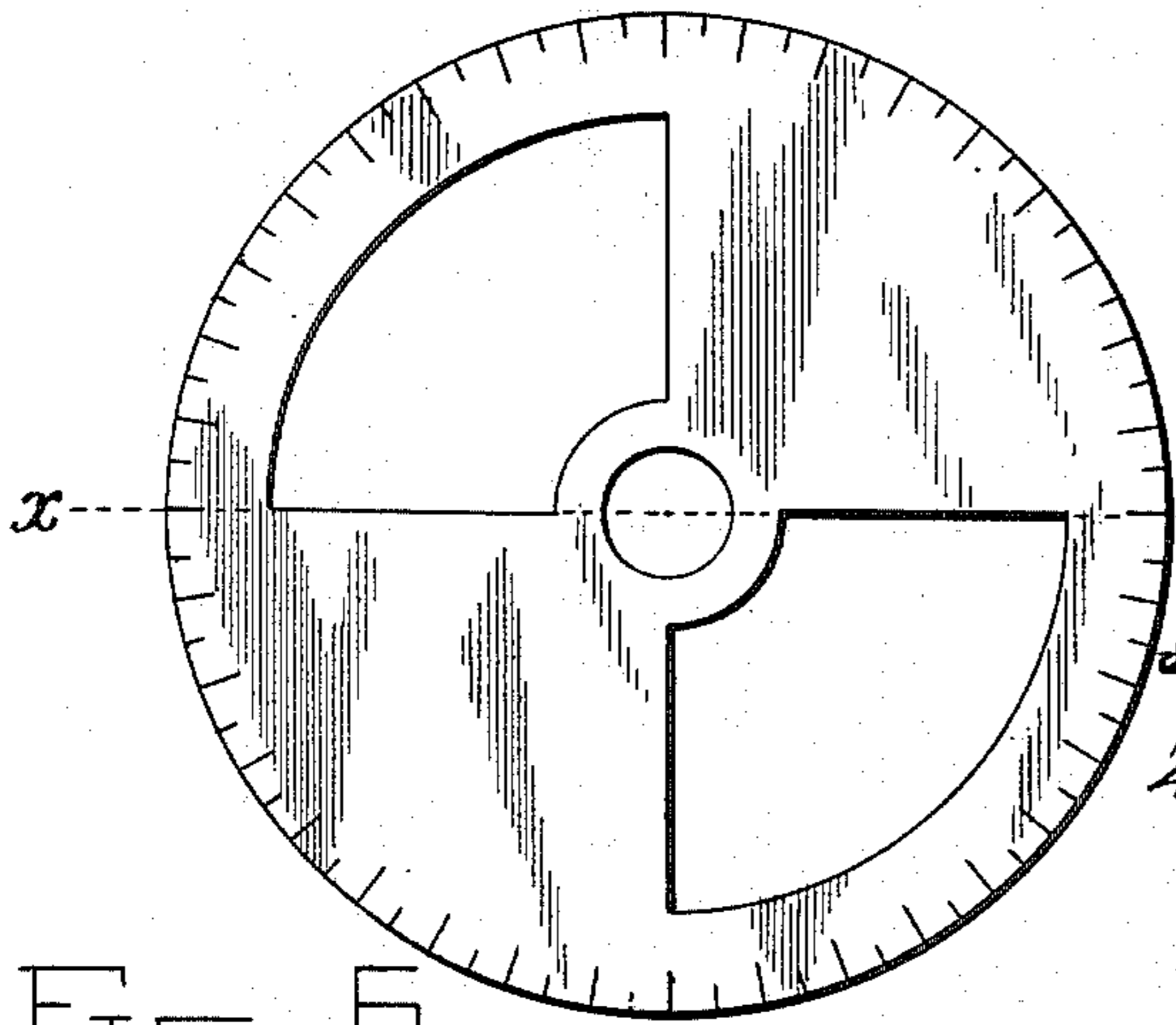


FIG. 6



FIG. 4

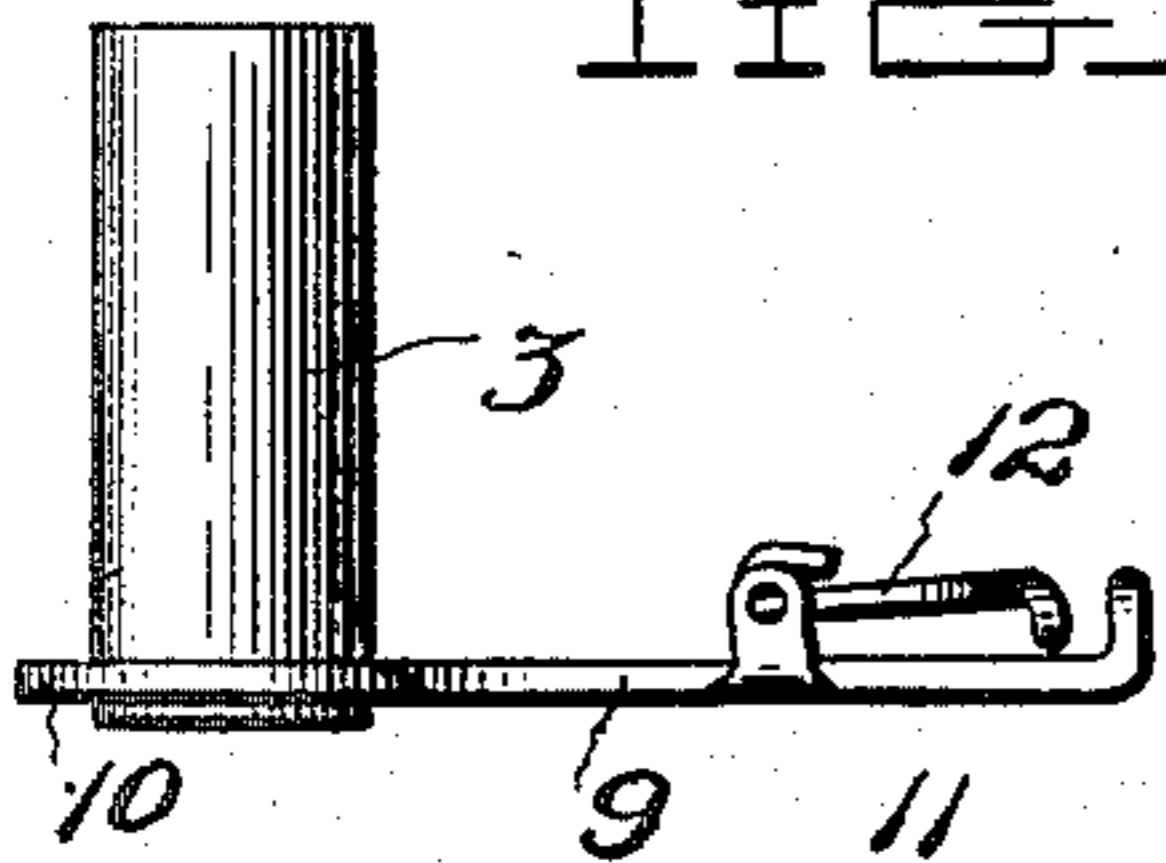


FIG. 5

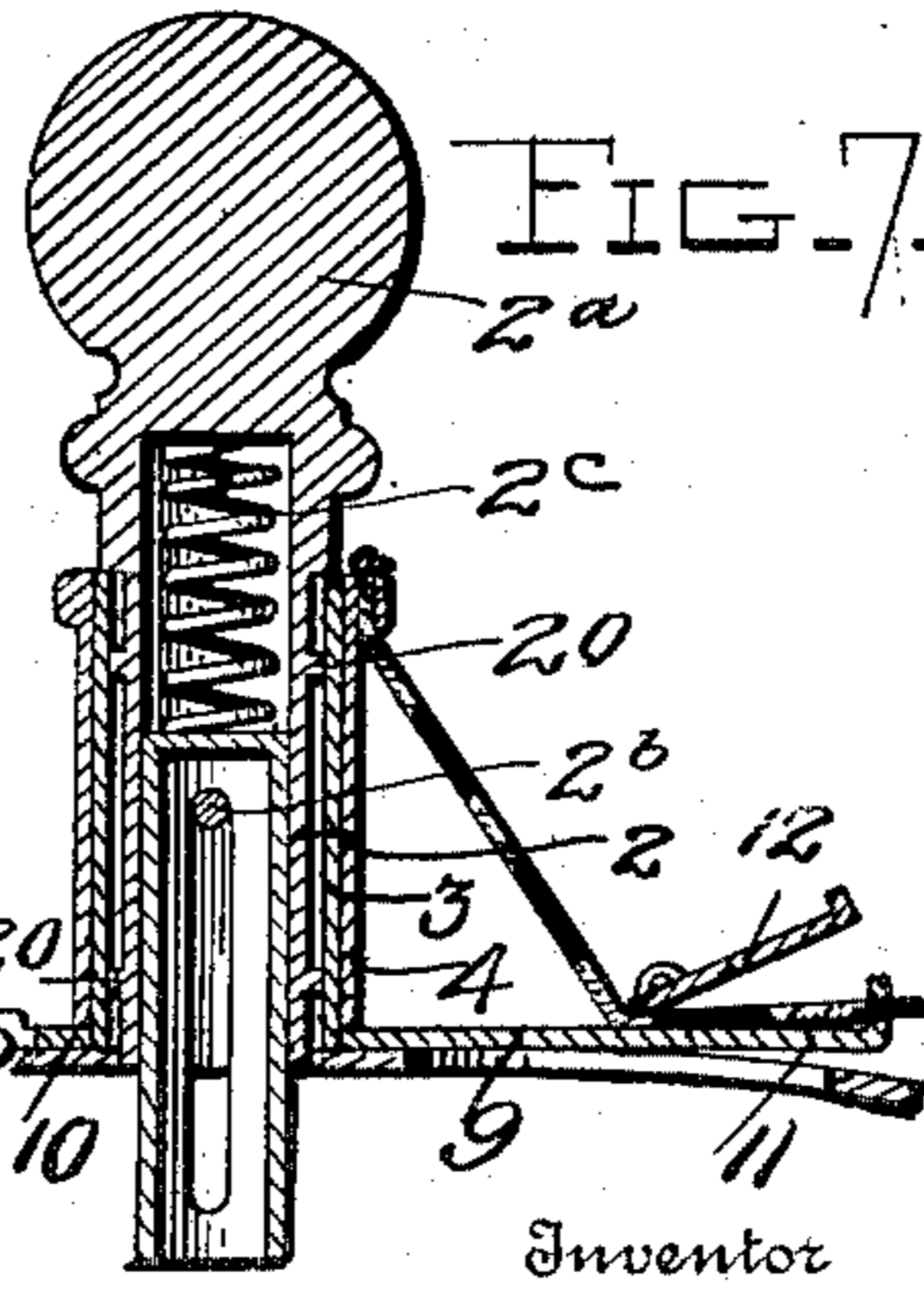
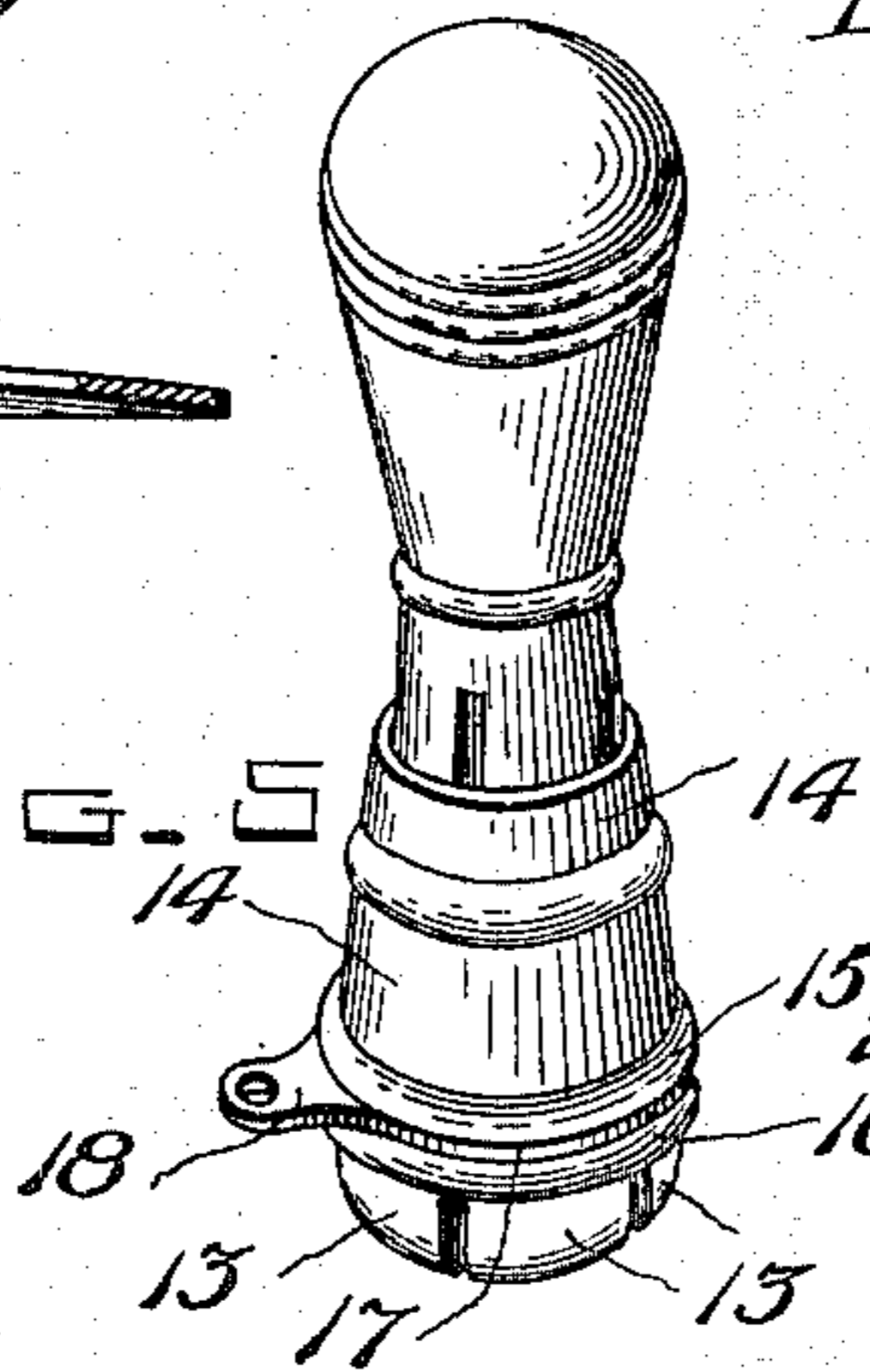


FIG. 7.

Inventor

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN D. BARRIE, OF LOS ANGELES, CALIFORNIA.

COMPASS-PROTRACTOR.

SPECIFICATION forming part of Letters Patent No. 661,483, dated November 13, 1900.

Application filed April 12, 1900. Serial No. 12,567. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. BARRIE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Compass-Protractors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to compass-protractors for use in the school-room on the blackboard in drawing circles or any fraction of a circle, and it is designed to take the place of a compass and protractor as at present used in school-rooms and also of the more frequently used piece of crayon tied on a string and used by holding one end of said string against the blackboard while with the crayon attached to the other end of the string the pupil makes the circle as best he can, and when it is desired to take a certain number of degrees of a circle on said blackboard one pupil holds the protractor on the blackboard, while another pupil is required to hold one end of the string on the center of the protractor with one hand and with the other hand he takes as many degrees of the circle as may be desired.

The object of my improvements is to produce a compass-protractor which is simple in construction and easy of application in drawing circles or fractions of circles on a blackboard with the ordinary chalk crayons now in use.

With this object in view the invention consists in the construction and novel combination of the parts of the same, as hereinafter fully described and claimed.

In the drawings hereto annexed and forming part of this specification, Figure 1 is a view in perspective of the improved compass-protractor. Fig. 2 is a detail view of the protractor proper. Fig. 3 is a sectional detail view of the slotted spring-pressed crayon-holding tube seated in the sleeve on the stationary handle. Fig. 4 is a detail view of the revolving sleeve which fits over and is slipped upon the stationary sleeve in the stationary crayon-holder and is provided with an in-

tegral projecting cord-arm provided with the hinged eccentric near its outer end. Fig. 5 is a view in perspective of the crayon-holder that is used to describe the circles or parts of circles on the blackboard when connected by the string with the center-marking handle of the compass-protractor. Fig. 6 is a sectional view of the protractor, taken on the line xx in Fig. 2. Fig. 7 is a vertical sectional view through the parts shown in Fig. 1. Fig. 8 is a vertical sectional view through the chalk or crayon holder.

Referring by numerals to the accompanying drawings, 1 designates the central crayon-holding tube, which is provided with longitudinal diametrically-opposed slots 1^a, extending nearly throughout its length, and which is held in its normally-projected position in a sleeve 2, forming part of the center-marking handle 2^a, by a transverse pin 2^b, secured in said sleeve 2. A spiral spring 2^c within the sleeve 2, at the upper end of the latter, normally projects the crayon-holder 1 outwardly against said transverse pin 2^b; but when the crayon in the point of said crayon-holding tube 1 is pressed against the face of the blackboard the spring yields to pressure and the crayon-holding tube recedes within the sleeve 2.

The sleeve 2 is provided with bearings 20, upon which the revolving sleeve 3 bears. These bearings lessen the friction and allow the sleeve 3 to revolve as lightly as possible. Immediately surrounding the sleeve 3 is the revolving drum 4, which latter is provided at its upper end with a milled flange 4^a by which to turn it to wind the measuring-cord 4^b thereon whenever said cord 4^b may have been either partially or wholly unwound from said drum. At its lower end the revolving sleeve 3 is provided with an annular flange 10. With the annular flange 10 is formed an integral radially-projecting arm 11, which is provided with lugs or ears at opposite points about midway of its length to receive the journals of an eccentric cord-clamp 12.

The protractor proper is slightly convex, as shown in Fig. 6, in order to lessen its tendency to slip, and is provided with an axial opening and radial view-openings. In prac-

tice it is scaled to the three hundred and sixty degrees of a circle.

The measuring-cord 4^b is colored in lengths of inches or half-inches in order that it may
5 be practically used for measuring.

The crayon-holder forming the pencil portion of the compass-protractor comprises a handle bored axially for a portion of its length, said bored portion being sawed along inter-
10 secting diametrical lines to form crayon-holding fingers 13, (four in number,) which are surrounded by a sliding sleeve 14, which loosely fits the contour of said finger portion and when moved forward on said fingers com-
15 press them upon the crayon to hold it in position for use. The sliding sleeve 14 is provided with concentric rings or flanges 15 16, between which a loose ring 17, having an attaching-arm 18 for connecting the measuring-
20 cord 4^b thereto, is provided, said measuring-cord being passed through an eye in an arm 18 on said loose ring 17 and knotted at its end to prevent the withdrawal of the cord from said eye.

In operation the measuring-cord being wound upon the drum the center-marking crayon is placed against the blackboard through the central opening in the protractor and is pressed against the latter, the thumb
30 and forefinger of the left hand of the operator or pupil retaining the drum and preventing it from revolving until it may be desired. When the drum is held from revolving and the marking-handle is used to draw upon the
35 measuring-cord to inscribe the desired circles or parts of circles, the eccentric hinged to the arm of the revolving sleeve 3 is swung up against the measuring-cord and removes most of the strain upon said cord from the
40 drum, thereby rendering the device comparatively easy of manipulation by a single pupil.

Although I have described my device in the best form known to me, it is obvious that many changes might be made in the construction without departing from the character of the invention, and I do not therefore

limit myself to the precise construction herein described and illustrated.

Having thus fully described my invention, what I claim, and desire to secure by Letters
50 Patent, is—

1. In a compass-protractor, in combination, the handpiece having a stationary sleeve; a spring within said stationary sleeve; a slot-
55 ted crayon-holding tube working in said stationary sleeve and retained therein by a cross-pin traversing said slotted sleeve; a cord-winding drum; a revolving sleeve provided with a cord-guiding arm having an eccentric clamp hinged to its upper face, said revolving
60 sleeve being interposed between said cord-winding drum and said stationary sleeve; substantially as specified.

2. In a compass-protractor, the combination with the axially-bored crayon-holder
65 having one end provided with crayon-holding fingers and the sliding finger-clamping sleeve provided with separated encircling rings; the loose ring mounted between said encircling rings and provided with an arm
70 having an eye therein for attaching one end of a measuring-cord thereto; substantially as specified.

3. In a compass-protractor, the combination with the protractor proper and the hand-
75 piece having the winding-drum and the rotary sleeve provided with the integral arm having the cord-guide and the eccentric cord-clamp; of the crayon-holder provided with the holding-fingers; the finger-clamp sleeve
80 provided with the loose ring having the cord-attaching arm; and the measuring-cord connecting said attaching-arm with the winding-drum on said handpiece; substantially as
85 specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN D. BARRIE.

Witnesses:

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CHARLES A. TAIT.