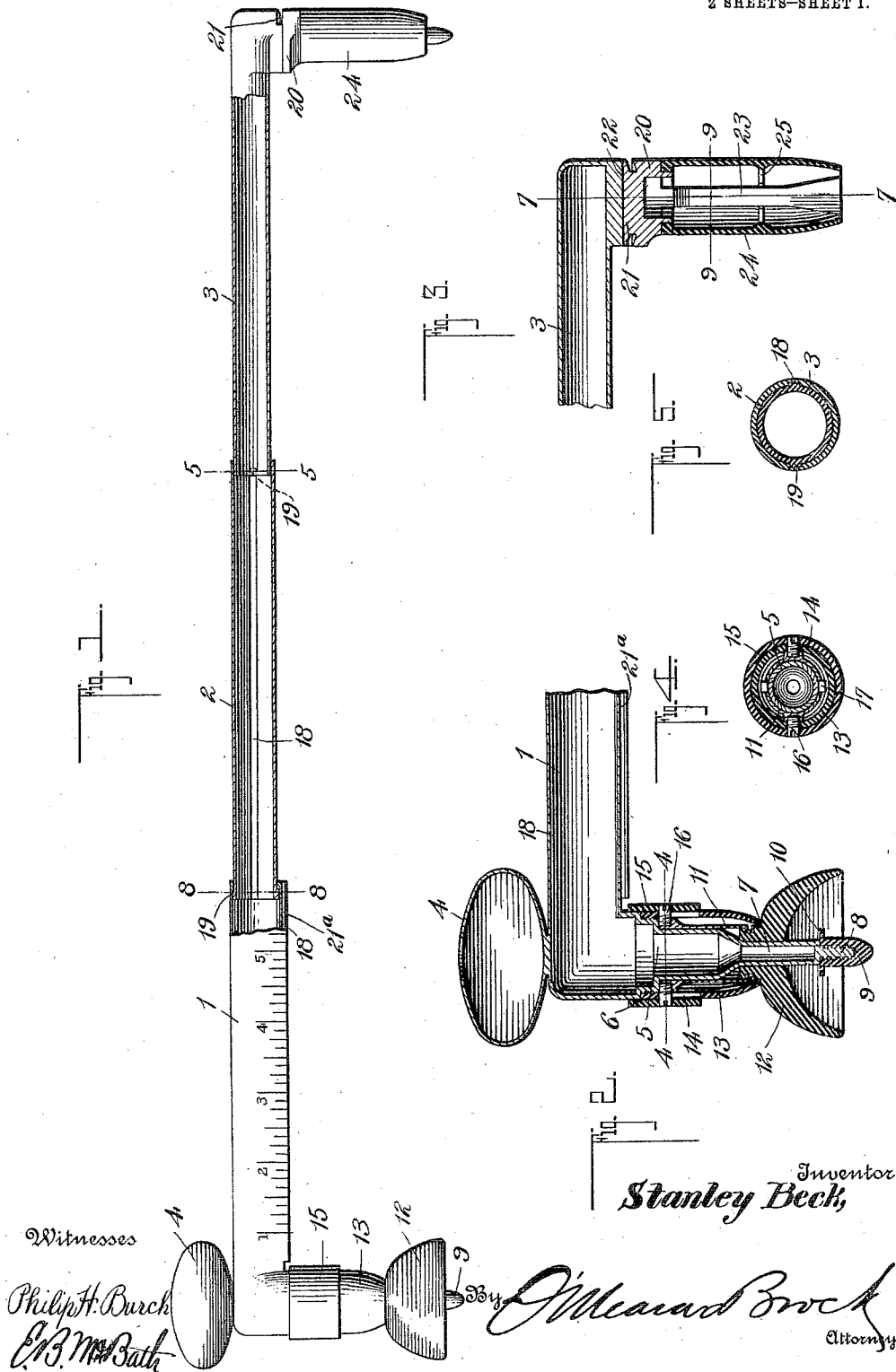


S. BECK.
BLACKBOARD COMPASS.
APPLICATION FILED FEB. 15, 1910.

985,968.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.

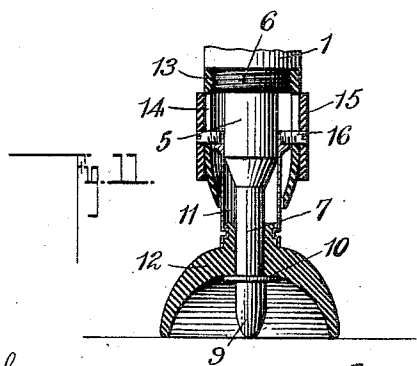
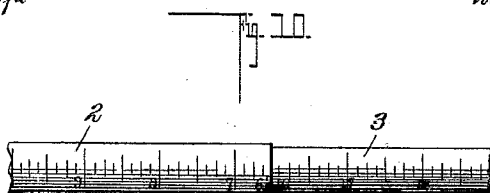
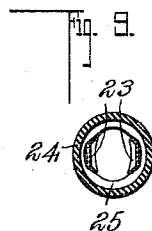
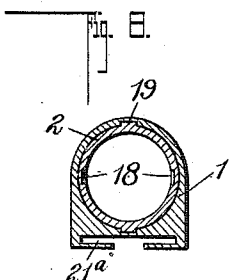
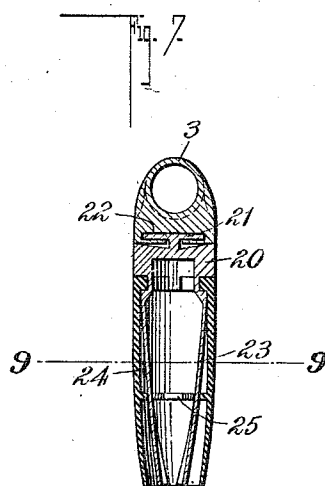
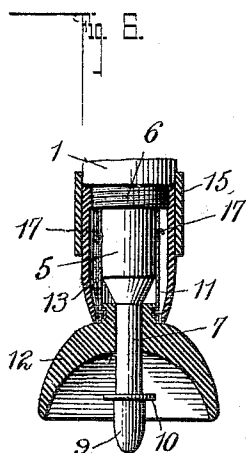


S. BECK.
BLACKBOARD COMPASS.
APPLICATION FILED FEB. 15, 1910.

985,968.

Patented Mar. 7, 1911.

2 SHEETS-SHEET 2.



Witnesses

Philip H. Burch
E. B. McEach

Inventor
Stanley Beck,

By O'Leary & Brock
Attorneys

UNITED STATES PATENT OFFICE.

STANLEY BECK, OF CAMDEN, NEW JERSEY.

BLACKBOARD-COMPASS.

985,968.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed February 15, 1910. Serial No. 543,942.

To all whom it may concern:

Be it known that I, STANLEY BECK, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented a new and useful Improvement in Blackboard-Compasses, of which the following is a specification.

This invention relates to a blackboard compass and the object of the invention is to provide a device of this kind which will be adjustable in length, and also to provide a compass having detachable sections, thus giving a further increase in the effectiveness of the instrument, adapting it for use in connection with circles and curves having a short radius, as well as with curves having a radius practically as great as can be used upon blackboards of the usual size.

A further object of the invention is to provide means for securing to the blackboard the pivotal point upon which the instrument swings, and which forms the center of the curve to be struck, by means of suction, thus avoiding injury to the board by using a sharp needle-like point, and also preventing said pivotal point from slipping, as would likely be the case when used upon a board or wall of such a hard substance that a fine point could not indent it. By employing a pneumatic or suction point, I cause the pivotal point about which the device works to adhere closely to the board without danger of it slipping and without in any way marring or defacing the surface of the board.

A still further object of the invention is to provide a detachable chalk or crayon holding device, said device being carried by the free end opposite the pivotal point.

To accomplish these results, I provide a construction as hereinafter fully described, pointed out in the claims and shown in the accompanying drawings, in which:

Figure 1 is a side elevation, partly broken away and shown in section. Fig. 2 is an enlarged central longitudinal sectional view of the pivotal or inner end portion of the device. Fig. 3 is a central longitudinal sectional view of the outer or chalk holding end of the device. Fig. 4 is a section on the line 4—4 of Fig. 2. Fig. 5 is a section on the line 5—5 of Fig. 1. Fig. 6 is a detail sectional view of a suction cap inclosing the pivotal point, said point being shown in elevation and the section being at right angles to that shown in Fig. 2. Fig. 7 is a

section on the line 7—7 of Fig. 3. Fig. 8 is an enlarged cross section upon the line 8—8 of Fig. 1. Fig. 9 is a section on the line 9—9 of Fig. 7. Fig. 10 is a detail plan view showing the intermediate portion of the compass. Fig. 11 is a central longitudinal sectional view illustrating the pivotal point with the parts in position for using the instrument.

In these drawings 1, 2 and 3 illustrate metal telescoping sections, the section 1 being an end section and having at its outer end a knob 4 by which the device can be held in position. At this end the section 1 is provided also with an elbow 5 which elbow is reduced in diameter, being stepped as shown most clearly in Figs. 2, 6 and 11, and adjacent its upper end the said elbow is exteriorly threaded as shown at 6. Below this portion it tapers down to a cylindrical supporting leg 7, the extreme end of which is provided with a screw tip 8 upon which is fitted a rubber tip 9 provided with an annular flange 10 at its upper end. Slidable upon the elbow 5 is a sleeve 11 the lower portion of which is provided with an interior circumferential rib or shoulder which grips a circumferential groove formed in a rubber suction cap or bell 12, said bell being slidably mounted upon the supporting leg 7 and adapted to inclose the rubber tip 9 and to bear upon the flange 10 when the device is in position for use, as shown in Fig. 11. A second sleeve 13 is threaded upon the threaded portion 6 of the elbow 5 and will be distinguished from the slidable sleeve 11 by being referred to as a fixed sleeve, which will also distinguish it from a rotatable sleeve to be hereafter described. The fixed sleeve 13 is longitudinally slotted upon opposite sides as shown at 14 and a collar 15 encircles the sleeve 13, and is secured to the sleeve 11 by set screws 16 which pass through and slide in the slots 14. The slidable sleeve is preferably of spring metal and has spring tongues 17 punched from it, which tongues form spring clips which bear upon the elbow 5 and by friction serve to hold the slidable sleeve in adjusted position. By grasping the collar 15 between the fingers the sleeve 11 can be slipped along the elbow, and the cap 12 moved into or out of engagement with the surface of the blackboard, such movement being limited by the slots 14.

The sections 1 and 2 are provided with

oppositely placed interior grooves 18 which receive lugs 19 carried respectively by the telescoping sections, thus preventing the sections rotating with respect to each other, and these grooves also terminate short of the outer end of the sections 1 and 2, thereby preventing the telescoping sections from being entirely withdrawn.

At the opposite end of the device from the pivotal point I secure a chalk holding device constructed as follows: A head portion 20 is provided with a T-shaped extension 21, as shown in cross section in Fig. 7 which extension is frictionally held in a runway 22 formed in the outer end of section 3. A similar runway 21^a is also provided for section 1 so that the chalk holder can be detached from section 3, and may be connected to section 1, thus making it possible to employ the device for very small circles. The head 20 carries two oppositely placed cooperating spring gripping fingers 23 which fingers converge toward their free ends. These fingers are adapted to hold a pencil, chalk, crayon or other suitable drawing material and in order to spring them inwardly into gripping engagement with such material a rotatable sleeve 24 is also carried by the head 20 and incloses the gripping fingers. This sleeve is provided with an interior shoulder 25 which is cut to form two pairs of eccentric arcs, the reciprocal arcs being arranged opposite each other, and by rotating the sleeve the springs will be forced positively into engagement with the drawing material, and upon a further rotation, or a reverse rotation they will be released, the position of the spring fingers depending upon their positions relative to the arcs cut in the said shoulder.

While I have shown the knob 4 as being integral with the section 1 the knob can be secured in any desired manner, and I prefer to construct all parts of a light spring metal with the exception of the tip 9 and bell 12 which are of rubber, and the fixed sleeve 13, collar 15 and the rotatable sleeve 23 which I prefer to construct of gutta-percha.

In using the device the tip 9 is placed upon the center of the arc or circle to be struck,

the collar 15 is moved so as to force the bell 12 against the blackboard, which will hold the device in position by suction, and the describing point carried by the holding device can be adjusted for the proper radius and by means of the knob 4 the arc or circle described.

What I claim is:

1. A device of the kind described comprising telescoping sections, a pivotal point carried by one of said sections, a pencil holding device carried by one of said sections, a flexible vacuum cap carried by and surrounding the pivotal point and means for moving said cap along the said pivotal point.

2. A device of the kind described comprising telescoping sections, a spring holder detachably carried by one of said sections, a rotatable sleeve inclosing said spring holder and adapted to close the same upon rotation, a pivotal point carried by one of said sections, a vacuum cap slidably mounted upon said point, and means for moving said cap into and out of engagement with the surface upon which the pivotal point rests.

3. In a compass of the kind described, a pivotal point, a slidable sleeve carried thereby, a suction cap carried by the lower end of said sleeve and slidable upon the pivotal point, a fixed sleeve inclosing the slidable sleeve, a collar sliding upon the fixed sleeve, and means connecting said collar and the slidable sleeve, the fixed sleeve being slotted to permit passage of the said means.

4. A device of the kind described comprising telescoping sections, means carried by one of said sections for holding a drawing material, a knob carried at one end of one section, an elbow formed at said end, said elbow tapering to a pivotal point, a rubber tip for said pivotal point, a suction cap slidably mounted upon the pivotal point, a slidable sleeve on the elbow for operating said cap, and means for securing a drawing material in the holder, as and for the purpose set forth.

STANLEY BECK.

Witnesses:

WILLIAM VAN HORN,
WILLIAM CROUCH.