G. K. GOMBARTS.

DRAFTING INSTRUMENT.

APPLICATION FILED JULY 6, 1910.

1,005,827. Patented Oct. 17, 1911.

Fig. 1.

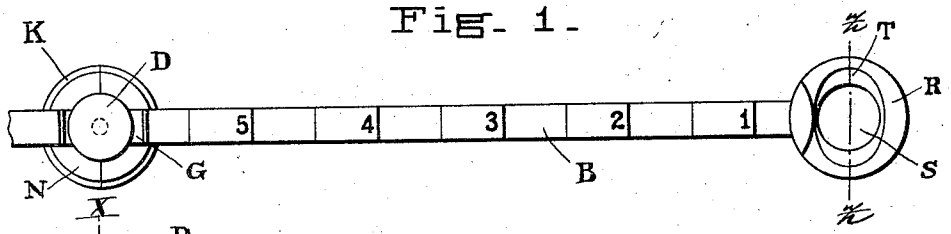


Fig. 2.

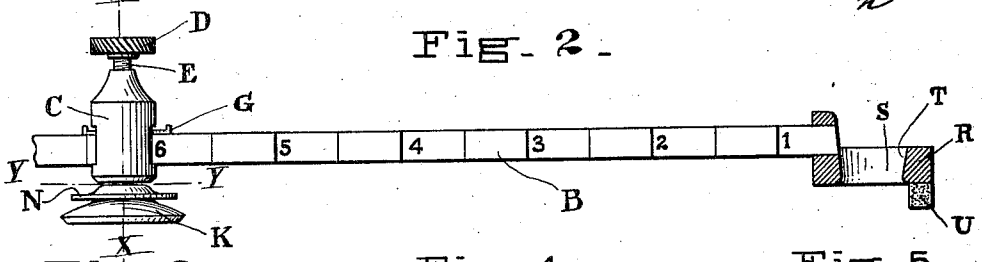


Fig. 3.

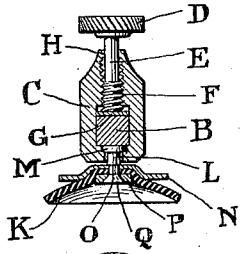


Fig. 4.

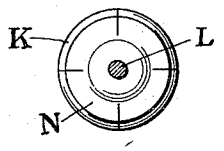


Fig. 5.

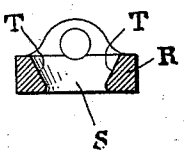


Fig. 6.

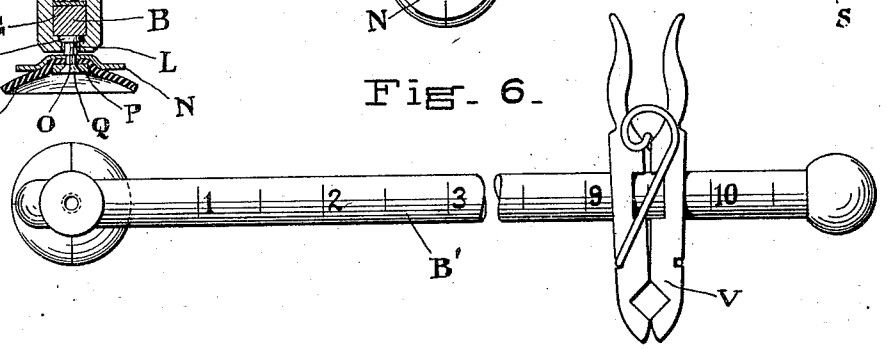
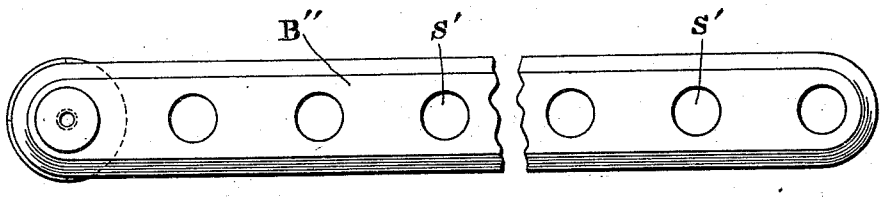


Fig. 7.



WITNESSES

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DRAFTING INSTRUMENT.

1,005,827. Specification of Letters Patent. **Patented Oct. 17, 1911.**

Application filed July 6, 1910. Serial No. 570,542.

To all whom it may concern:

Be it known that I, GEORGE K. GOMBARTS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Drafting Instruments, of which the following is a specification.

My invention relates particularly to improvements in compasses for use on blackboards and in other cases where it is impossible or undesirable to use a compass having a sharp center point.

The invention resides in the improvements in construction of the support or pivot member and of the means for holding the chalk which will be more clearly understood from the following specification and claims.

Figure 1, is a plan view of a beam compass embodying the improvements of my invention. Fig. 2, is a side view and partial section of the same. Fig. 3, is a vertical section of the pivotal member on the plane of the line X X of Fig. 2. Fig. 4, is a horizontal section and plan of the pivotal member on the plane of the line Y Y of Fig. 2. Fig. 5, is a vertical transverse section of the chalk holder on the plane of the line Z Z of Fig. 1. Fig. 6, is a plan view of a modification. Fig. 7, is a plan view of another modification.

The invention is illustrated as applied to a type known as beam compasses in which B indicates the main rod or beam. The pivotal support or member is shown at the left and the chalk holding or guiding member is shown at the right.

C is the main post or body of the pivotal member having running through it transversely a passage to accommodate the beam B. The beam is clamped by operation of the thumb-screw having a head D, a shank E and screw-threaded portion F which presses preferably against the shoe or clamping plate G. The shank E of the screw is of smaller diameter than the screw-threaded portion F and the upper end of the post C forms a shoulder H which is turned inward to the position shown after the screw threaded portion F is inserted to prevent the screw from being entirely retracted from the post and possibly lost or mislaid.

The base of the pivotal member consists of a rubber suction cup K which is secured to the spindle L which is pivotally mounted loosely in the lower end of the post C. This spindle has a head M which holds it in place. A metal washer or disk N is mounted on the spindle L above the suction cup K, the spindle being provided with a shoulder O to hold the disk in position on the spindle. A washer P beneath the cup K is held tightly against the lower surface of the cup in any suitable manner for instance, by heading over the lower end of the spindle as at Q. The cup K is preferably formed of rubber and is adapted to be pressed against the surface of a blackboard or similar surface so as to drive out the air beneath the cup and allow the cup to be held against the blackboard or other surface by atmospheric pressure. The spindle L being securely connected to the cup K affords a stationary pivot for the compass. As before mentioned the spindle is preferably loosely mounted in the post C so as to permit a considerable wabbling or side play of the post without disturbing the cup K and loosening it from the board. The connection between the spindle and the cup K must of course be sufficiently tight to prevent air from leaking through around the spindle.

The chalk holder in its preferred form consists of a ring or loop R which is secured to one end of the beam B preferably below the center plane of the beam as shown in Fig. 2. This ring R has extending through it an opening S which is for the chalk or other marking device. The walls of the opening are sloping as at T T in order to allow the chalk to be tilted somewhat without twisting the beam and thus loosening the cup K. I also provide a pad U for instance, of felt on the under side of the chalk holding ring R at the outer edge to hold the ring away from the blackboard when drawing and to steady it. It is much better to place this pad at the outer edge than in any other position because it does not come in contact with the line which is being drawn and prevents the pressure of the chalk or of the hand guiding the chalk from tilting up the compass.

The beam of the compass is preferably provided with a scale or scales of distances reading from the chalk opening S. This scale is laid off so that the right hand edge of the post C may be brought to the division of the scale representing the radius of the desired curve, the scale being laid off so as to allow for the distance from the axis of the post to right hand edge, that is,

the number on the scale opposite the right edge on the post represents the distance from the center of the chalk to the center of the post. To assist in locating the cup K at the desired point I preferably lay off two or more marks upon the disk N and also if desired upon the cup K which marks intersect at the center or axis of the cup K and its spindle L.

In the modification shown in Fig. 6 the chalk is adapted to be held in the grip of a spring pressed holder V which can be slid along the beam B′ and held thereon by friction.

In the form shown in Fig. 7 the beam B″ has a series of openings such as S′ for the chalk.

It will be obvious that any length of beam may be employed in any of the forms shown and that in the forms shown in Figs. 1 and 2 a number of different lengths of beam may be supplied if desired to be used with a pivotal member.

The instrument may be used for marking circles on glass either with chalk or a brush or with a glass cutter. A glass cutting wheel or diamond may be held at the end of the beam and used for marking the glass in order to cut circles and arcs as desired and the claims are to be construed as covering such use of the invention.

What I claim is:—

1. A drafting compass comprising a suction cup, a post pivotally carried thereby, a beam secured to said post and a chalk guiding ring secured to said beam and having its walls inclined as at T T for the purpose specified.

2. A drafting compass, a suction cup, a post pivotally carried thereby, a beam connected to said post, a chalk guiding ring secured to said beam and a spacing pad secured beneath the outer edge of said ring to prevent tilting.

3. A drafting compass comprising a post having a transverse passage, a beam in said passage, a clamp screw operable downward in said post against said beam, and a suction cup loosely pivoted to the lower end of said post beneath said beam its pivotal axis being in alinement with said clamp screw.

4. A drafting compass comprising a beam, a suction cup loosely pivoted to one end of said beam so as to permit the beam to be tilted relative to said cup, the chalk holding ring carried by the opposite end of said beam having inclined walls to permit the chalk to be inclined without titling the beam and a pad secured to the under side of the outer edge of said ring to support the same and prevent the beam from being tilted by the pressure of the chalk.

5. A drafting compass comprising, a post, a beam carried thereby, a spindle having a head loosely pivoted in said post to permit the post to tilt without tilting the spindle, a shoulder on said spindle below said post, an upper washer on said spindle abutting against said shoulder, a suction cup on said spindle below said washer, a lower washer on said spindle below said cup, said spindle having a head drawing said washers toward each other and compressing the suction cup.

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