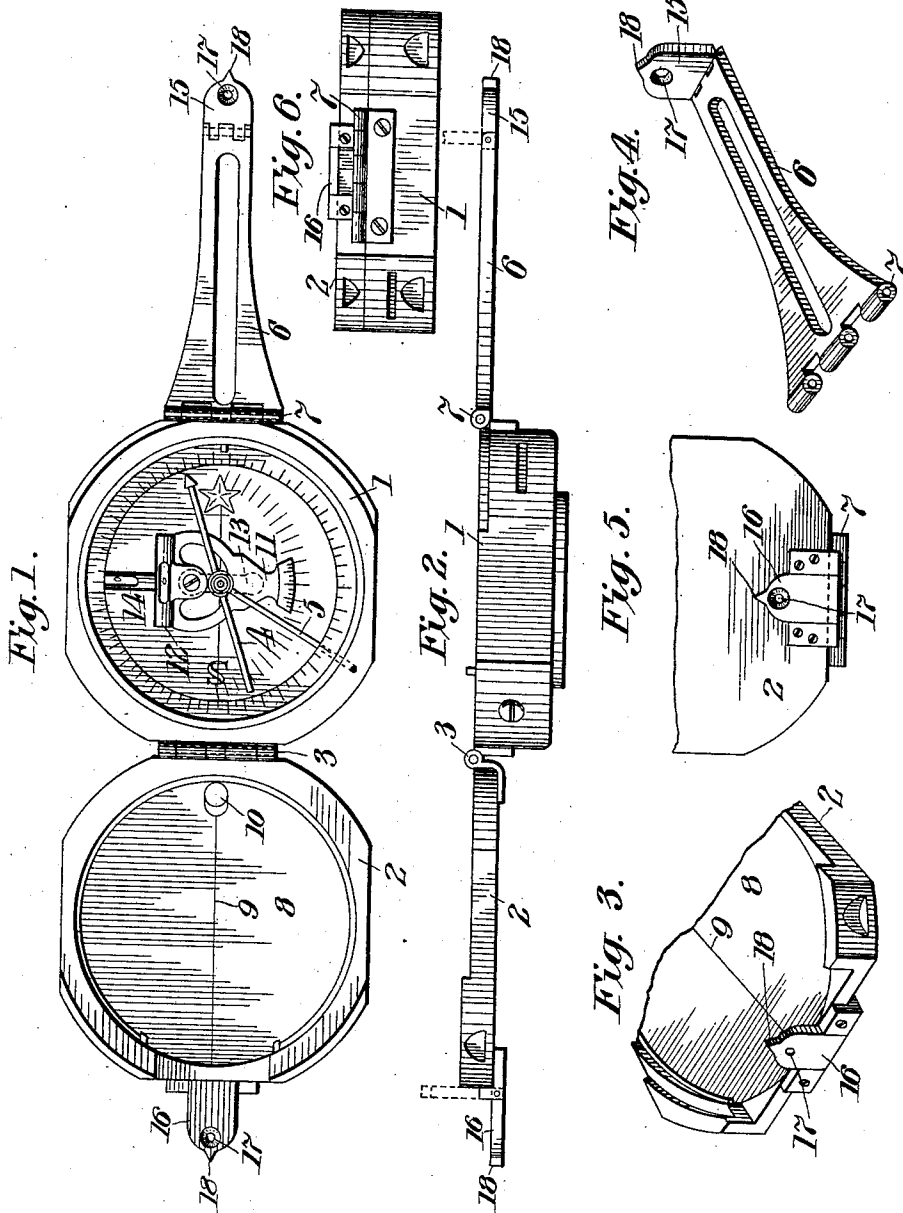


D. W. BRUNTON.
TRANSIT.
APPLICATION FILED AUG. 1, 1912.

1,062,582.

Patented May 27, 1913.



WITNESSES

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UNITED STATES PATENT OFFICE.

DAVID W. BRUNTON, OF DENVER, COLORADO.

TRANSIT.

1,062,582.

Specification of Letters Patent.

Patented May 27, 1913.

Original application filed July 3, 1911, Serial No. 636,751. Divided and this application filed August 1, 1912. Serial No. 712,712.

To all whom it may concern:

Be it known that I, DAVID W. BRUNTON, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented a certain new and useful Improvement in Transits, of which the following is a full, clear, and exact description.

This invention is designed to improve the construction and extend the usefulness of the pocket transit of my Patent No. 526,021, dated December 18, 1894, and this present application is a division, in accordance with the requirement of the Patent Office, of my application for patent for transits filed July 3, 1911, Serial No. 636,751, (Patent No. 1,042,079, dated October 22, 1912.)

The improvement consists in the provision of sights whereby both forward and backward sighting may be conveniently and accurately practised irrespective of local magnetism and the needle, as I will proceed now more particularly to set forth and finally claim.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a plan view of the transit in open state. Fig. 2 is a side elevation of the open transit, the sights being shown horizontal in full lines and upright in dotted lines. Fig. 3 is a perspective view of the free end of the cover. Fig. 4 is a perspective view of the folding sight detached. Fig. 5 is a top view of the front end of the transit closed. Fig. 6 is a front elevation of the transit closed.

The body of the instrument may comprise a casing 1, graduated as desired, and having a lid or cover 2 hinged thereto as at 3. The casing has the magnetic compass needle 4, and the locking lever 5 therefor, and the longitudinally slotted, adjustable, folding sight 6, hinged to the front as at 7. The cover has the inside mirror 8, sight line 9, and sight opening 10, all substantially as in the patent referred to. The casing has the vernier 11 with its transverse bubble tube 12 and its operating crank lever or handle 13, also as in the said patent, but in accordance with the present invention the vernier is provided with a second bubble tube 14 arranged at right angles to the bubble tube 12, one of the objects of which is to provide a means for perfectly leveling the instrument whether held in the hands

or placed upon a tripod. This vernier forms part of the invention of the application previously referred to.

In places where there is local magnetic attraction it is sometimes desirable to run tangent lines by back-sighting instead of with the needle, and in order that this may be done, with accuracy, the sights 15 and 16 are applied respectively to the ends of the folding sight 6 and the free edge of the cover 2. These sights are substantially alike and are respectively hinged to their parts so as to be turned at any desired angle and to be folded down out of the way when the instrument is not in use, or these sights are not required.

Each sight has a beveled sight hole 17 and a sight point 18. These sights are used in substantially the same manner as peep sights on a rifle, and being both alike, forward and back sighting may take place under the same conditions; and to provide for any inequalities of the ground, either the folding sight or mirror lid may be elevated or depressed to meet conditions.

With instruments of this general character where opposite hair sights are used, fore-sighting but not back-sighting may be conveniently practised, and it is inconvenient if not impossible to take a sight at night or in the dark underground where a candle or artificial light must be used. With my instrument, by turning up the sights, observations may be taken with equal facility either fore or back and in daylight or artificial light. The eye looks through the peep hole and over the rifle sight in front, and sights at objects above or below the horizontal are obtainable by swinging the hinged lid on one side of the instrument or the long sight on the other.

The improvements described add greatly to the value, convenience and possibilities of the instrument in varied work, especially of the mining engineer.

The instrument is susceptible of all of the uses mentioned in the patent referred to, in addition to having the added facilities incident to the improvements herein referred to.

What I claim is:—

1. In a transit of the character described, a casing, a folding sight hinged to said casing, and provided with a peep sight hinged thereto at its free end and having a sight hole and a sight point, a cover also hinged

to said casing, and an adjustable peep sight hinged to the free edge of the cover and adapted to be folded over upon the outside of said cover and also having a sight hole and a sight point, the two peep sights arranged for alinement one with the other, substantially as and for the purpose described.

2. In a transit of the character described, a casing, a hinged lid or cover therefor, and a peep sight hinged to the free edge of the lid or cover and adapted to be turned upwardly and outwardly at an angle to said

cover and also to be folded over upon the outside of said lid or cover and provided with a sight point, combined with a complementary sight oppositely arranged on the instrument and having a sight hole and sight point. 15

In testimony whereof, I have hereunto set my hand this 29th day of July A. D. 1912. 20

DAVID W. BRUNTON.

Witnesses:

ROBERT K. McCORMICK,
HOWLAND BANCROFT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."