

J. SHARPE.
POCKET PROTRACTOR.
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1,062,740.

Patented May 27, 1913.

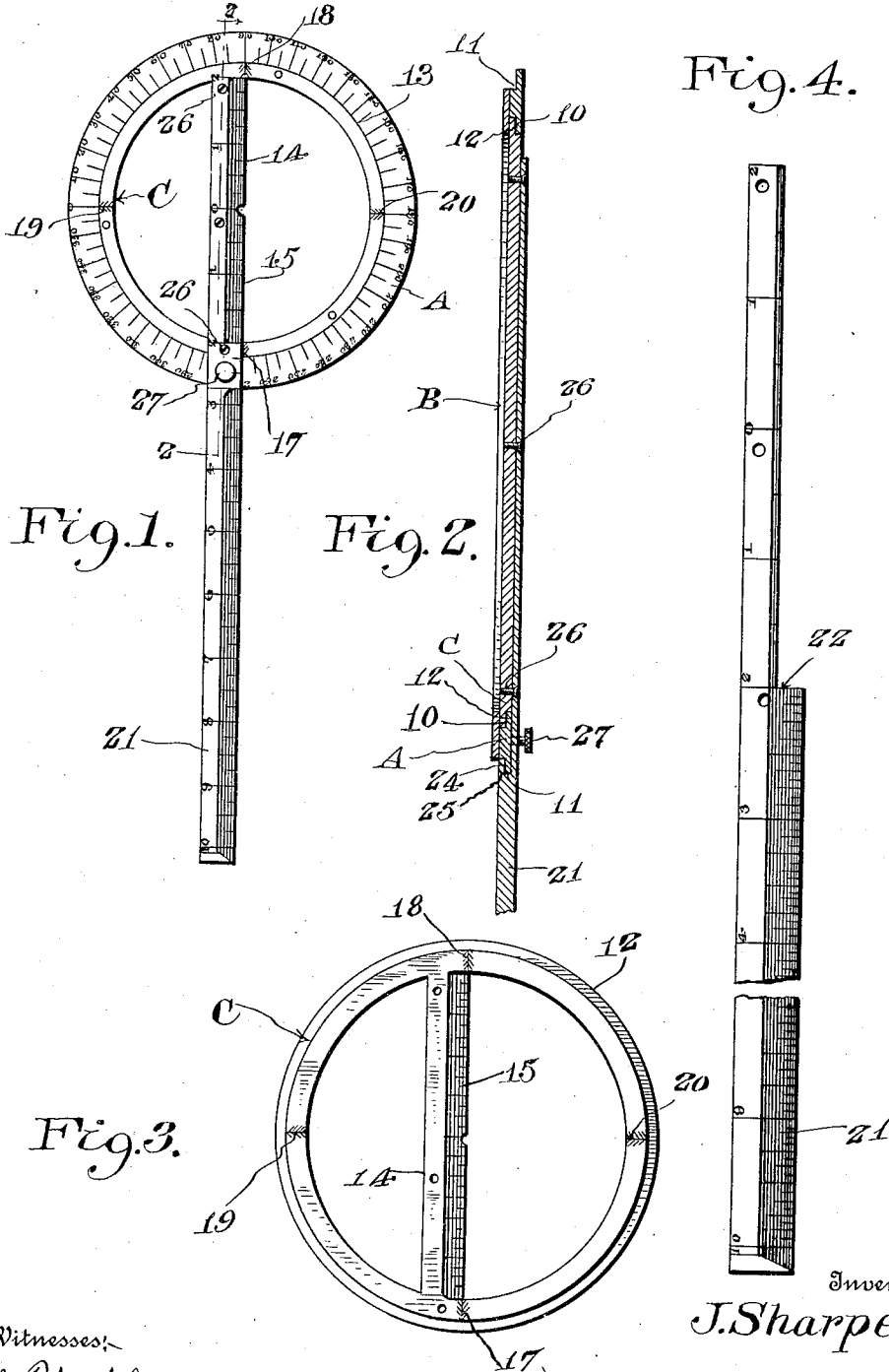


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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JOSEPH SHARPE, OF THE UNITED STATES ARMY.

POCKET-PROTRACTOR.

1,062,740.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH SHARPE, of the United States Army, have invented certain new and useful Improvements in Pocket-Protractors; and I do hereby 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.

This invention relates to pocket protractors.

The object of the invention resides in the provision of a protractor of the character named which will occupy a minimum space and which may be utilized with facility for solving a wide range of mechanical problems without resorting to the use of mathematics.

With the above and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and particularly pointed out in the appended claim.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters of reference denote corresponding parts in the several views, and in which,

Figure 1 is a plan view of the protractor constructed in accordance with the invention, Fig. 2, a section on the line 2—2 of Fig. 1, Fig. 3, a plan view of the rotatable ring of the protractor detached, and Fig. 4, a plan view of the detachable bar for effecting the rotation of the protractor ring.

Referring to the drawings the protractor is shown as comprising outer ring members A and B and an intermediate ring member C. The outer ring member A has its inner face provided at each side with annular recesses 10 and 11, while the ring C is provided with a flange 12 on the outer edge thereof which seats in the recess 10. The ring C is held against disengagement from the ring A by means of the outer ring B, which latter is secured against the inner face of the ring A in overlapping relation to the flange 12 and recess 11. In this manner the ring C is rotatable within the rings A and B. The outer face of the ring B is provided with degree graduations 13. Connecting the inner edge of the ring C is a diametrical cross bar 14 the side edge 15 of

which is beveled and coincides with a given diameter of the ring C. This diametrical cross bar 14 is provided with graduations 16 which read from the center of said cross bar outwardly in each direction. The ring C is provided on its outer face with lines 17 and 18 which register with the side edge of the cross bar 14 which coincides with a given diameter of a ring C. The outer face of the ring C is also provided with lines 19 and 20 which coincide with a diameter of the ring C disposed at right angle to the bar 14. The ring C is adapted to be rotated within the rings A and B by means of a graduated arm 21 one end of which is reduced as at 22 forming a resultant shoulder and this shoulder is provided with a recess 24 forming a resultant tongue 25. In applying the arm 21 to the instrument the reduced portion thereof is disposed in overlapping relation to the cross bar 14 and the tongue 25 inserted in the recess 11 when the arm is secured to the cross bar 14 by means of screws 26. By this construction it will be apparent that the ring C can be readily rotated by means of the arm 21. Mounted in the arm 21 is an adjusting screw 27 which is adapted to engage the outer face of the ring A so as to lock the ring C against rotation.

What is claimed is:

A pocket protractor comprising a pair of outer rings one of which has its inner face provided with annular recesses at each edge, and its outer face graduated, an intermediate ring having its outer edge provided with a flange seated in the innermost recess of said outer ring whereby said intermediate ring is rotatably mounted between the outer rings, a graduated diametrical cross bar connecting the inner edge of the intermediate ring and having one side edge coincident with a diameter of said ring, a graduated arm having one end reduced and overlying said cross bar, means connecting said reduced end of said arm to the cross bar, and a tongue on said arm slidable in the outermost recess of the outer ring.

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

JOSEPH SHARPE.

Witnesses:

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