

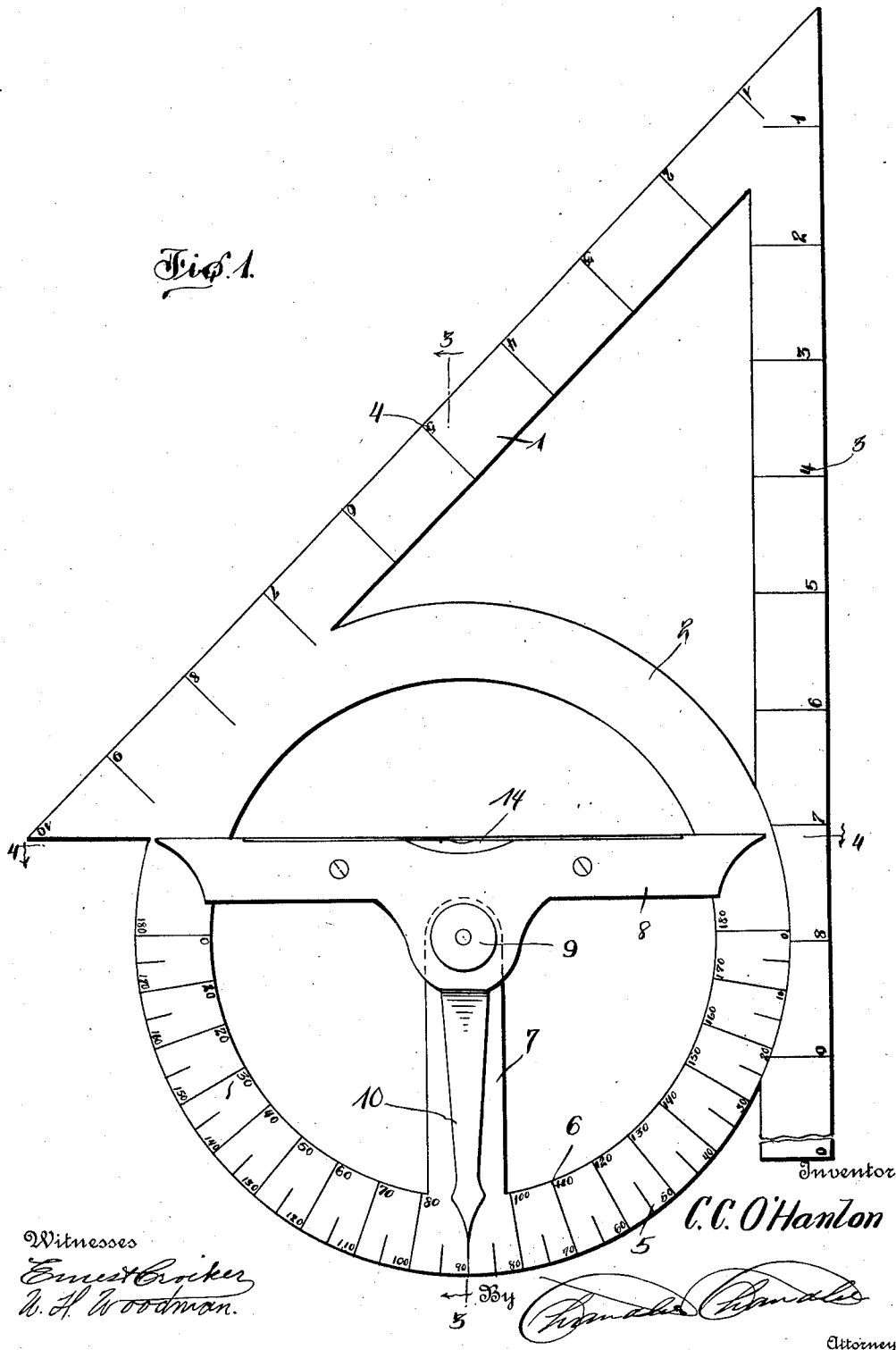
C. C. O'HANLON.
COMBINATION TOOL.
APPLICATION FILED AUG. 8, 1911.

1,016,765.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
Ernest Crocker
W. H. Woodman.

C. C. O'Hanlon

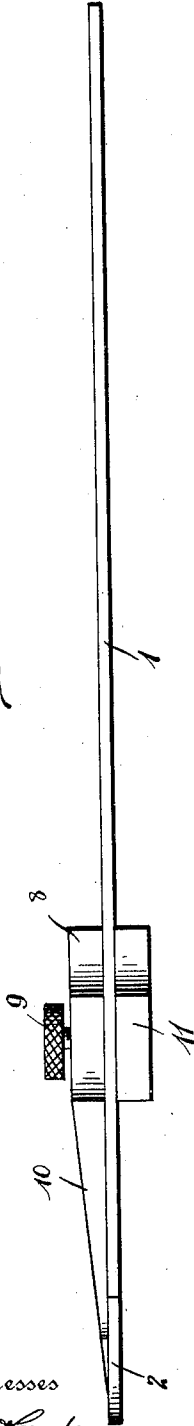
Attorney

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2 SHEETS—SHEET 2.

Fig. 2.



Witnesses
Ernest Bercher
W. H. Woodman.

Fig. 3.

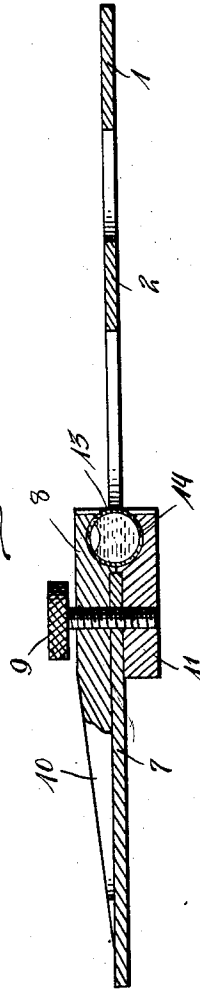
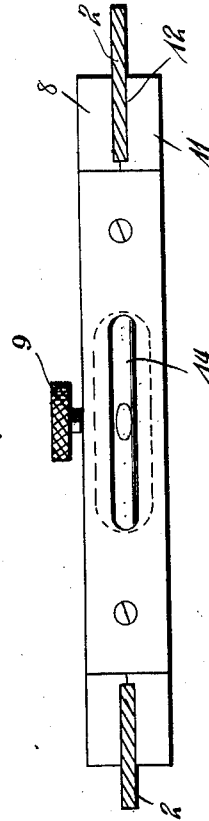


Fig. 4.



Inventor

C. C. O'Hanlon

By [Signature]

Attorneys

UNITED STATES PATENT OFFICE.

CHRISTOPHER C. O'HANLON, OF LOGAN, UTAH.

COMBINATION-TOOL.

1,016,765.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed August 8, 1911. Serial No. 642,965.

To all whom it may concern:

Be it known that I, CHRISTOPHER C. O'HANLON, a citizen of the United States, residing at Logan, in the county of Cache, State of Utah, have invented certain new and useful Improvements in Combination-Tools; 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.

My invention relates to new and useful improvements in combination tools and the object of my invention is to provide a combination protractor, level and square.

A further object of my invention is to provide a tool which may be readily employed in measuring or laying off angles and inclinations and which may also be employed as a level upon both horizontal and vertical work.

With these and other objects in view, my invention consists primarily of a forty five degree square, a circle formed integrally with the square and scaled to act as a protractor, and a level movable about the circle and provided with a needle coacting with the scale of the protractor as a means for reading the angles.

In the accompanying drawings which show a preferred embodiment of my invention, Figure 1 is a top plan view of the tool, Fig. 2 is a side elevation thereof, Fig. 3 is a section on the line 3—3 of Fig. 1, and Fig. 4 is a section on the line 4—4 of Fig. 1.

Referring more specifically to the drawings in which similar reference numerals designate corresponding parts throughout, 1 designates in general a square which is preferably one of forty five degree angle but which may be made in a thirty or sixty degree angle as may be desired and formed integrally with this square is a circular member 2, both the square and circular member being preferably stamped from a single piece of sheet metal.

As shown the sides of the square are marked with spaced apart lines forming scales 3 and 4 both of which preferably run from the vertex of the angle to the free ends of the square and the circular member 2 is also provided with the customary form of protractor scales 5 and 6, one running in one direction while the other runs in the opposite direction, said scales being so positioned with respect to each other that the zero mark

of one coincides with the 180 degree mark of the other while the 90 degree mark of one coincides with the 90 degree mark of the other.

Extending inwardly from that portion of the circular member adjacent the 90 degree mark and parallel to the base of the square is a radial arm 7 upon the inner end of which is the pivoted transversely extending member 8, the pivot being located at the center of curvature of the circular member and the transverse member being so proportioned that its ends bear upon the face of the member 2. The pivot consists of a threaded stud which passes through an aperture in the member 8 and through the aperture in the arm 7 and is adapted to receive a winged nut 9 by means of which the member 8 may be clamped at any desired position. This member 8 is extended at right angles beyond the pivoted point to form an indicator needle 10 the end of which as shown passes over the scales of the protractor.

Secured to the lower face of the transverse member 8 and coinciding therewith is a second transverse member 11, the ends of which are recessed as at 12 to form a space for receiving the protractor circle which thus forms a guide for supporting said transverse member.

The inner faces of each of these transverse members is recessed to form a socket 13 in which is secured a bubble tube 14 whereby the transverse member in reality forms a level.

From the foregoing description taken in connection with the drawings, the operation of the tool will be readily understood.

It will be seen that the device may be used as a simple square or protractor in the customary manner and the only point needing further description is therefore, the manner of employing the tool for the measurement of angles where the protractor alone could not be used.

Suppose for instance it was necessary to measure the angle of inclination of a rafter or other beam. In doing this the base of the square would be positioned against the inclined face of the beam and the level member would be turned until the level bubble assumed a central position, that is until the level member itself was level, when it would be clamped in position and the angle of inclination read directly from the protractor scale as indicated by the needle.

From the foregoing description it will be apparent that I have provided an extremely simple and efficient tool and one which is adapted for use for a variety of purposes.

5 It will of course be understood that minor changes in the details of construction may be made, without in the slightest degree departing from the spirit of my invention.

What is claimed is:

10 A tool of the character described, comprising a square, a circular member formed integrally with said square and between the arms thereof, said member being provided with protractor scales, an arm extending

radially within said circular member, a 15 transverse member pivoted to said arm and provided with an indicator needle adapted to pass over the scales, means for securing said transverse member in adjusted position and a level carried by said transverse 20 member.

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

CHRISTOPHER C. O'HANLON.

Witnesses:

ED. KORUPKAT,
JAMES W. QUAYLE.

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