

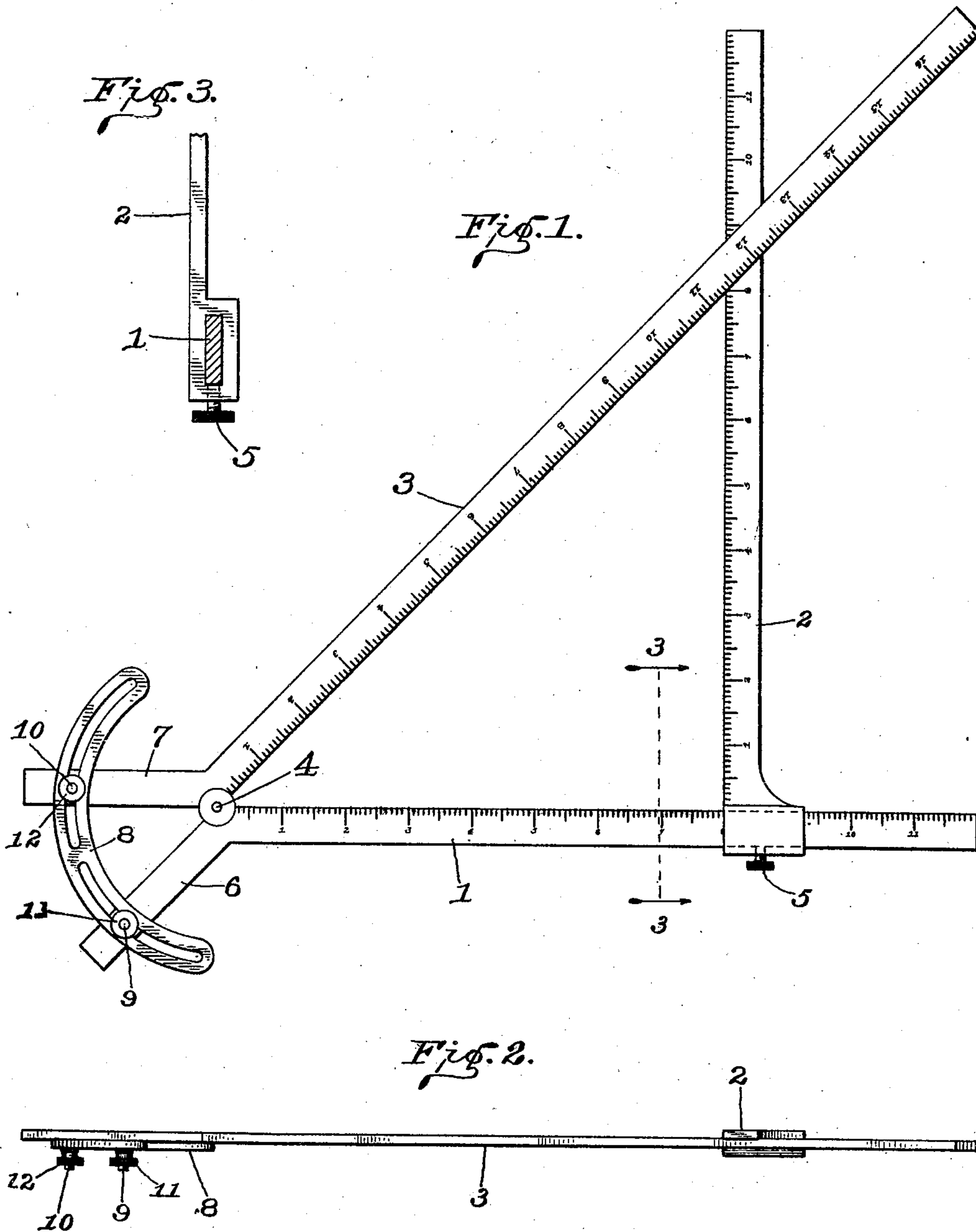
No. 679,820.

Patented Aug. 6, 1901.

J. H. ARMSTEAD.
MEASURING TOOL.

(Application filed Nov. 30, 1900.)

(No Model.)



WITNESSES:

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JAMES H. ARMSTEAD, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF
TO JOHN T. ARMSTEAD, OF DULUTH, MINNESOTA.

MEASURING-TOOL.

SPECIFICATION forming part of Letters Patent No. 679,820, dated August 6, 1901.

Application filed November 30, 1900. Serial No. 38,182. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. ARMSTEAD, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Measuring-Tools, of which the following is a specification.

The object of my said invention is to provide a tool by means of which the hypotenuse of any desired right-angled triangle may be immediately ascertained without calculation. It is designed especially for carpenters' use in the framing of rafters, but may be used wherever similar work is to be performed or the hypotenuse of any such angles is desired to be ascertained.

A tool embodying said invention will be first fully described, and the novel features thereof then pointed out in the claim.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is an elevation of a tool embodying my said invention; Fig. 2, a top or plan view of the same, and Fig. 3 a detail sectional view as seen when looking in the direction indicated by the arrows from the dotted line 3 3 in Fig. 1.

This tool consists, essentially, of three blades 1, 2, and 3, the blades 1 and 3 being hinged together by the hinge 4 and the blade 2 being adapted to slide along the blade 1. The several blades are graduated with appropriate marks, according to the use to which the tool is to be put. In the drawings they are shown as having principal divisions of one inch, subdivided into twelfths. The blade 2 is adapted to be clamped in place, when adjusted to the desired position, by a set-screw 5. The blades 1 and 3 are respectively provided with the tailpieces 6 and 7, which extend out at a suitable angle (preferably sufficient to permit the blades 1 and 3 to stand at an angle of ninety degrees) and are adapted to be held in fixed relation to each other by means of a bar 8, adapted to be adjustably secured thereto, the means of adjustment shown being screw-threaded

studs 9 and 10 on the tailpieces, upon which thumb-nuts 11 and 12 are mounted and operate. Said bar 8 is suitably curved, as shown, and has a curved slot in each end through which the appropriate screw-threaded stud extends. By this means a large variety of adjustments are provided for.

In use, the blade 2 is first adjusted to the point on the blade 1 which indicates the base of the angle to be measured. For example, suppose it is desired to frame the rafters for a building sixteen feet wide. It would be adjusted to the point marked 8 on said blade 1, or that indicating one-half of the width. When adjusted to the desired point, it is secured rigidly in place by means of the set-screw 5. The thumb-nuts 10 and 11 being sufficiently loosened, the blade 3 is then swung to intersect the blade 2 at that point on said blade 2 which indicates the height or perpendicular of the angle. In the example shown the perpendicular is to be the same as the base, thus making what is known as a "square" roof. When the blade 3 reaches this point on the blade 2, the number on said blade 3 at the point of intersection indicates the length of the rafter or hypotenuse of the angle. If it is desired to use the tool as a bevel in framing the rafters, the thumb-nuts 10 are screwed down tightly, holding the parts rigidly in the adjusted relation, and the tool can then be used as a framing-tool in addition to its function in finding the length of the hypotenuse or rafter without calculation.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, in a measuring-tool, of a horizontal or base blade 1 having suitable graduations, a hypotenuse or angle-blade 3 also provided with suitable graduations, said blades 1 and 3 being hinged together by the hinge 4, and each formed with a tailpiece extending back from said hinge at an angle with the main portion of the blade and diverging from each other, a screw-stud on each of said tailpieces, the curved slotted bar 8 the slot in each end of which engages one of said screw-

studs, the thumb-nuts 9 and 10 on said screw-
studs for clamping said bar 8 to either tail-
piece in the position desired, and the perpen-
dicular blade 2 also provided with suitable
5 graduations and slidably mounted on blade 1,
all substantially as shown and described.

In witness whereof I have hereunto set my

hand and seal, at Indianapolis, Indiana, this
19th day of November, A. D. 1900.

JAMES H. ARMSTEAD. [L. S.]

Witnesses:

CHESTER BRADFORD,
JAMES A. WALSH.