

(No Model.)

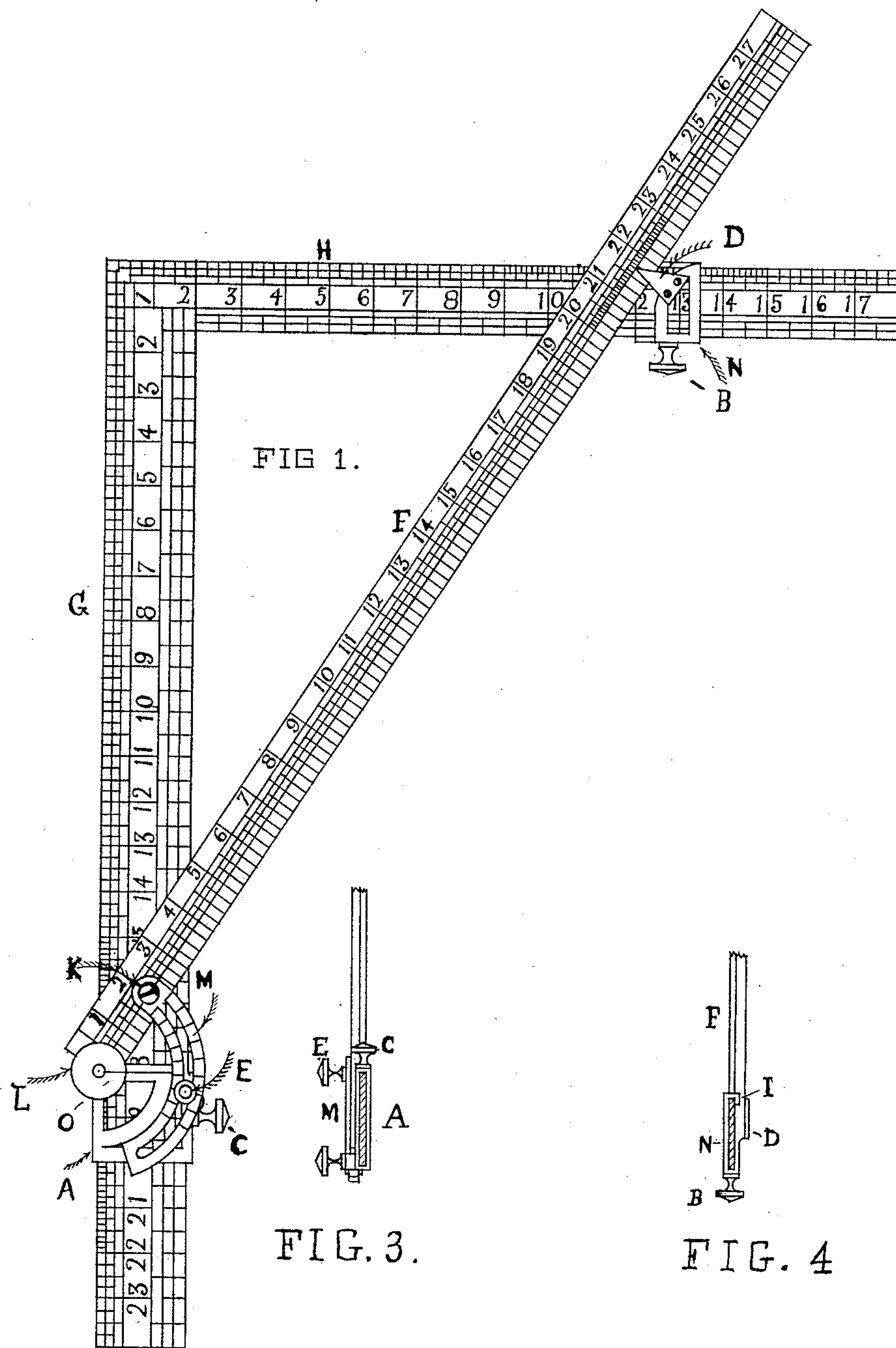
2 Sheets—Sheet 1.

J. M. McKINNEY.

BEVEL ATTACHMENT FOR SQUARES.

No. 335,293.

Patented Feb. 2, 1886.



WITNESSES
James C. Holland
W. H. Good

INVENTOR
J. M. McKinney
Per L. D. Campbell, atty

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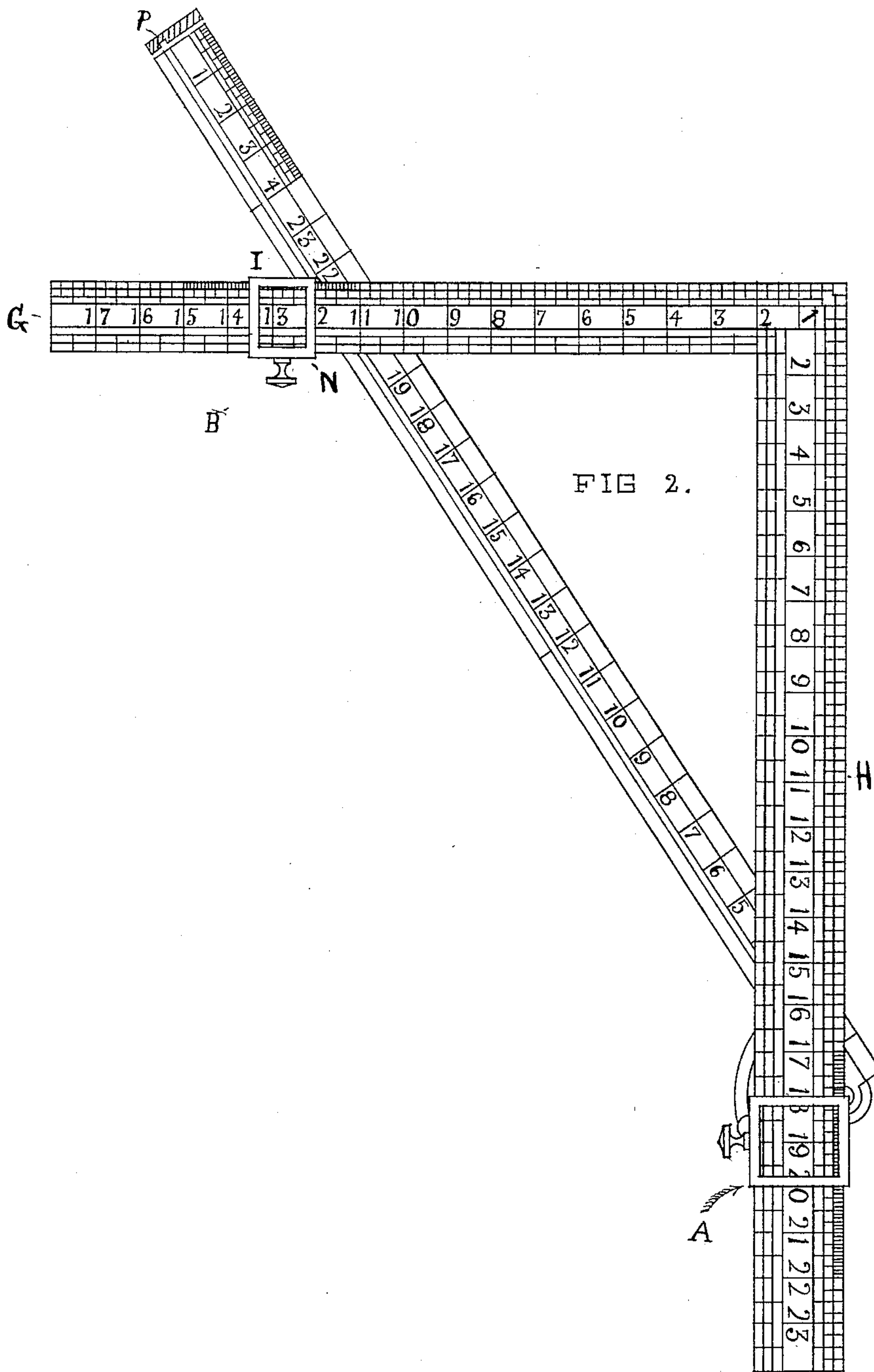
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UNITED STATES PATENT OFFICE.

JAMES M. McKINNEY, OF LIMA, OHIO.

BEVEL ATTACHMENT FOR SQUARES.

SPECIFICATION forming part of Letters Patent No. 335,293, dated February 2, 1886.

Application filed April 24, 1885. Serial No. 163,347. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. McKINNEY, a citizen of the United States, and a resident of Lima, in the county of Allen and State of Ohio, have invented a new and useful Bevel and Angle Measurer, of which the following is a specification.

My invention consists of an attachment to a carpenter's square, by means of which an instrument is formed for the ready determination of all the angles and measurements and bevels in carpenter-work, such as the angles and bevels of the rafters and pieces in a hip-roof or other roof.

By means of my instrument a carpenter, knowing the rise of the roof and the length of the base, can readily find the length, bevel, and pitch of all the rafters.

Figure 1 is a plan view of my device attached to a carpenter's square; Fig. 2, a plan view of the reverse side; Fig. 3, a sectional end view of the clamp bearing quadrant, &c.; Fig. 4, a sectional end view of the clamp bearing the pointer.

A is the slide or clamp, pivoted on one end of a graduated inclined piece, and which slides over one blade of the square.

B is a set-screw that holds slide N on the outer blade, H, of the square.

C is a set-screw that fastens slide A on blade C.

D is a pointer or indicator that indicates the measure on the inclination-bar F.

E is a set-screw that fastens the protractor at any point desired.

F is the inclination-bar or main piece of my attachment, graduated to twelfths of an inch; G H, the blades of the square; I, a pin on slide N, that plays in groove P in bar F; K, screw by which the quadrant M is attached to inclination-bar F; L, pivot by means of which bar F is pivoted to slide A; M, quadrant by which the inclination or pitch of the roof is determined; N, slide pivoted to bar F, which slides on tongue H of the square; P, groove in bar F, in which the pin I plays.

In practice one inch on the square or on the inclination-bar represents one foot on the lumber, and the twelfths of an inch represent inches.

The operation of my device is as follows:

To find the length of the rafter and the bevels of the ends where the seat is, say, eighteen feet and the rise twelve feet, we place the inner edge of the slide A at eighteen inches on the blade of the square and the inner edge of the slide N at twelve, as shown in Fig. 1, and secure them there by the set-screws. We then turn the instrument over, as shown in Fig. 2, and find that the indicator D is pointing to twenty-one and eight-twelfths, which shows the length of the rafter to be twenty-one feet and eight inches. We then turn the instrument over again in position, as shown in Fig. 1, and apply the inner face of the inclination-bar F to the side of the rafter at the upper end, and draw a mark along the outer face of the tongue H of the square. This will give the bevel by which to cut the upper down-bevel of the rafter. The face of the bar F is then applied at the other end of the rafter and a line drawn along the other edge of blade G of the square, which gives the lower end or horizontal bevel of the rafter.

To my inclination-bar, near the slide A, I attach a quadrant, as shown in Fig. 2, the numbering on which begins at the free end. The slide A is a vertical mark, which indicates on the quadrant the pitch of the roof.

My quadrant M is attached to the inclination-bar and divided into spaces, which in practice are numbered; but in the drawings the numbering is omitted, as it would unnecessarily complicate the drawings. On slide A, extending up from the center of pivot, is a vertical mark, O, that indicates on the quadrant the amount of inclination or the pitch the roof has as the slide is moved and the quadrant changes.

What I claim is—

1. The graduated bar F, having groove P, slides A and N, and quadrant M, to attach to the ordinary carpenter's square, as and for the purpose set forth.

2. The combination, with graduated piece F and square G H, of the pointer D and the slide N, as and for the purpose set forth.

JAMES M. McKINNEY.

Witnesses:

JAMES C. HOLLAND,
H. G. HADSELL.