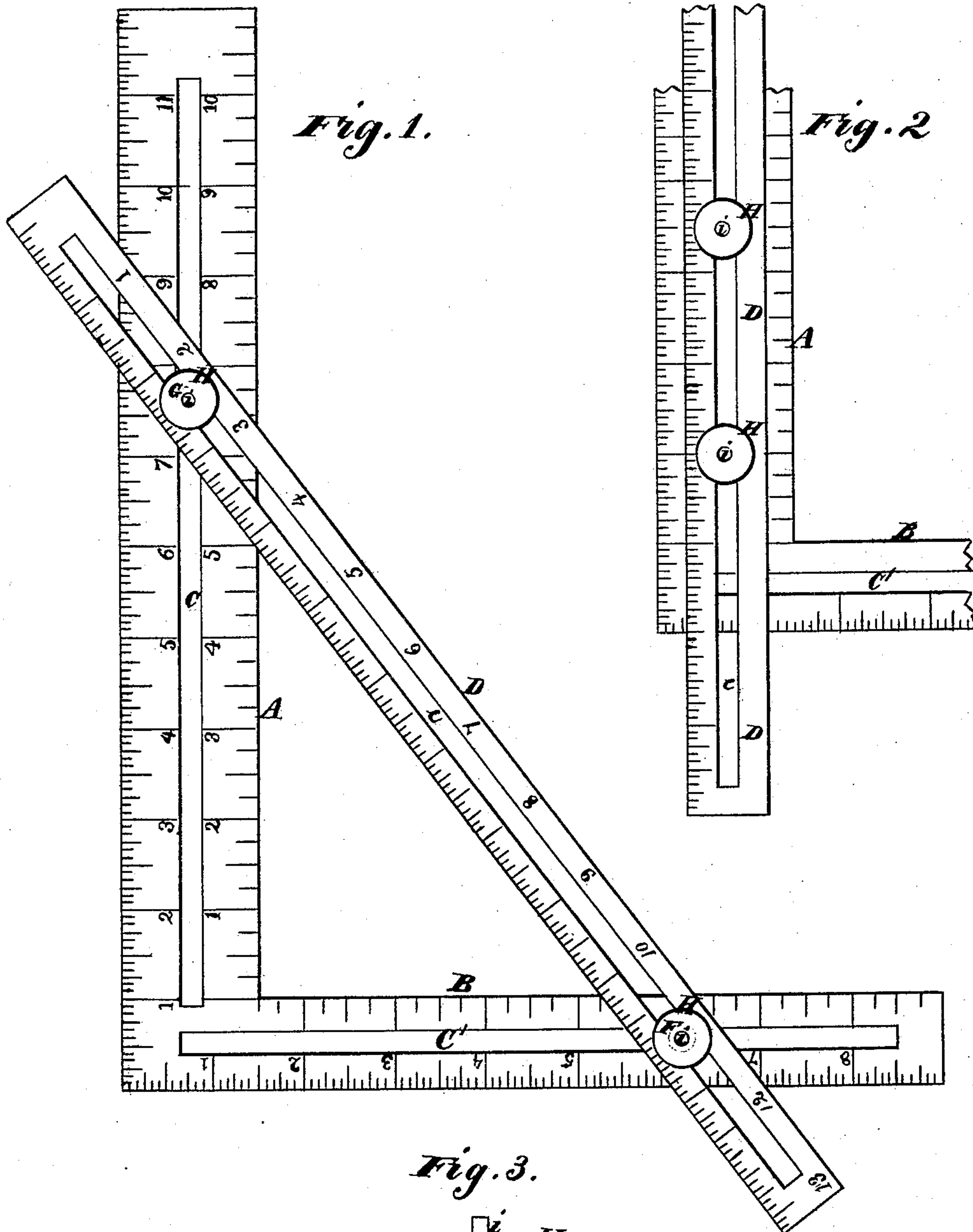


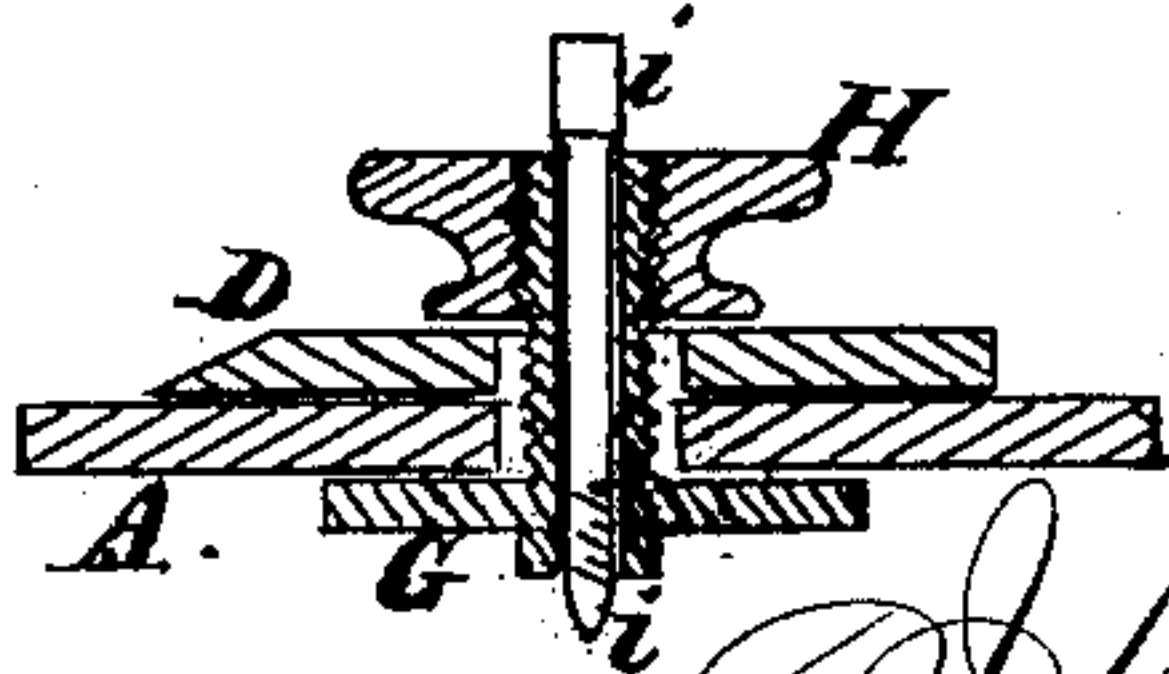
J. H. MCINNES.
Slotted Framing Squares.

No. 168,656.

Patented Oct. 11, 1875.



Witnesses
Jno. L. Boone
C. M. Richardson



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UNITED STATES PATENT OFFICE.

JOHN HENDERSON MCINNES, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN SLOTTED FRAMING-SQUARES.

Specification forming part of Letters Patent No. **168,656**, dated October 11, 1875; application filed November 6, 1874.

To all whom it may concern:

Be it known that I, JOHN H. MCINNES, of San Francisco city and county, State of California, have invented a Slotted Framing-Square; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention consists of a slotted square, in combination with a slotted scaled ruler and adjustable scribing-points, confined in sliding nuts controlled by set-screws, as hereinafter more fully described.

This tool is valuable for laying out stairs, giving the length of stringer or carriage, and serving also as a pitch-board and pattern. It also gives the length and head and foot cuts for any given angle of brace, bridging, valley, hip, common or false rafter, and at the same time indicates the length in feet and inches. It can be used in place of the ordinary trammel for laying out an ellipse, and it may also serve as a mortise-and-tenon gage, when desired.

Referring to the accompanying drawing for a more complete explanation of my invention, Figure 1 is a view of my square with its bevel-arm as used for stairs or rafters. Fig. 2 shows it in position for a mortise-gage. Fig. 3 is a section showing the set-screws and the marking-points.

A is the long and B the short arm of an ordinary carpenters' square. These two arms are slotted, as shown at C C', nearly their whole length, and the slots may be joined together at their point of meeting, if desired; but for the purpose of strength I prefer to leave a small connecting-rib at this point. D is an independent arm, which is also slotted at *e*, and has a scale of feet and inches marked upon it, as shown. Two set-screws, F and G, are fitted to pass through the slots in the arms A B and the arm D; and by means of these and the thumb screws or nuts H it will be seen that the independent arm D can be secured at any point.

Its operation will be as follows: In laying out a stairway, the distance between floors being known, the rise and tread of the step is laid out by setting the arm D so that it will cross the arm A at six inches, for example, and the arm B at eight inches. The

set-screws are then tightened, and by reading the scale upon the arm D the hypotenuse will be given in inches, and if the distance between floors be twelve feet, then twice this hypotenuse will represent the length in feet of the carriage or stringer for the stairs. The square with its arm then serves as a pitch-board and a pattern without further trouble.

In laying out rafters of all kinds it will be seen that their length, and also the angle of the cut to be made at the base, can be easily laid out with this tool.

In order to use the tool as a gage for tenons or mortises, I have perforated the screws F and G longitudinally, as shown, and the small pointed screws *i i* are inserted into the holes. By means of milled heads these points are easily made to project below the bottom of the screws F and G. The arm D is then placed longitudinally upon the arm B of the square, and the screws are set at such a distance from the inner edge of the arm A as to indicate the distance between the edge of the timber and the inner and outer edge of the mortise or tenon.

By moving the square along the points will mark the lines, and the length can also be marked by the edge of the square.

It will also be seen that one-fourth of an ellipse can be drawn with this tool by using it in the manner of an ordinary trammel as far as it will go; and this one-fourth pattern may be used to form the remainder when needed, which is not often.

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

1. The set or adjusting screw, having its externally screw-threaded stem perforated longitudinally, and provided with an adjustable scribing-point, substantially as described.

2. The combination, with the slotted arms A B D of a framing-square, of the adjusting or set screws H H, perforated longitudinally, and provided with the scribing-points *i i*, adjustable therein, as described.

In witness whereof I hereunto set my hand and seal.

JOHN HENDERSON MCINNES. [L.S.]

Witnesses:

JNO. L. BOONE,

C. M. RICHARDSON.