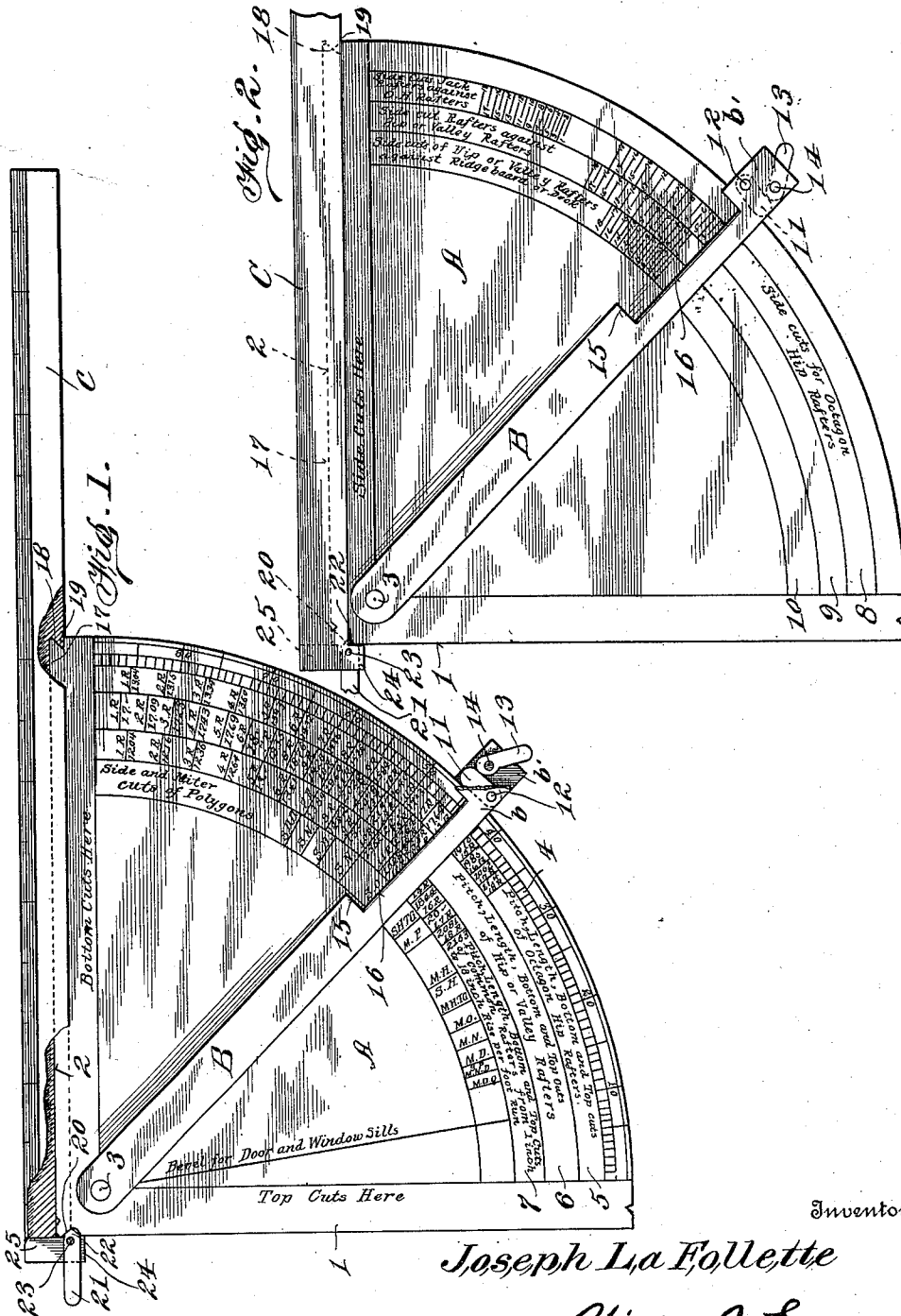


J. LA FOLLETTE.
 COMBINED BEVEL, PROTRACTOR, AND RULE.
 APPLICATION FILED AUG. 13, 1910.

996,591.

Patented June 27, 1911.



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UNITED STATES PATENT OFFICE.

JOSEPH LA FOLLETTE, OF PORTLAND, OREGON.

COMBINED BEVEL, PROTRACTOR, AND RULE.

996,591.

Specification of Letters Patent. Patented June 27, 1911.

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To all whom it may concern:

Be it known that I, JOSEPH LA FOLLETTE, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented new and useful Improvements in Combined Bevels, Protractors, and Rules, of which the following is a specification.

This invention relates to an instrument especially designed for laying out or drafting all kinds of roofs and braces and all kinds of architectural drawings in general with pitch, length, bottom and top cuts for common rafters from one to eighteen inches rise per foot run and pitch, length, bottom, top and side cuts for hip or valley and jack rafters from one to eighteen inches rise per foot run, and pitch, length, bottom top and side cuts for octagon hip and jack rafters from one to eighteen inches rise per foot run, etc.

The invention has for one of its objects to improve and simplify the construction and operation of instruments of this character so that they will be reliable and efficient in use, and readily adjusted for laying out various angles, pitches and the like.

Another object of the invention is the provision of a rule which can be fastened to the protractor plate so as to be used as a square or rule in drafting and in making lay-outs.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention, Figure 1 is a plan view of one side of the instrument. Fig. 2 is a plan view of the opposite side.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawing, A designates a flat plate of metal or other similar material which is in the form of a quadrant having side edges 1 and 2 disposed at right angles to each other. Set in from the corner of the plate is a pivot 3 on which swings an arm B which is movable over the various scales on the two sides of the plate A. Along the outer curved edge of the plate, Fig. 1, is a

protractor scale 4, and arranged concentrically therewith are scales 5, 6 and 7 for obtaining the different bottom and top cuts for various rafters. On the opposite side 60 of the plate are scales 8, 9 and 10 with which the arm B cooperates for obtaining the various side cuts for the different rafters, the scales on both sides of the plate being concentric with the pivot 3 on which the arm B 65 swings. The arm B is made of strips b and b' which are spaced apart so that the plate A will be disposed between them, and the strips are of such length as to project beyond the curved edge of the plate. Between the projecting ends of the strips or 70 members b and b' is a clamping block 11 which is pivoted at 12 so that its free end can be jammed against the periphery of the quadrant or plate A and thereby clamp the 75 arm B in set position. The clamping of the member 11 is effected by a cam lever 13 fulcrumed at 14 between the two strips of the arm so as to engage the outer edge of the member or block 11 so as to force the inner 80 edge thereof against the periphery of the plate A. By throwing the cam lever outwardly, the parts are clamped together while the opposite movement unclamps the parts and allows the arm B to freely swing over 85 the plate. The two strips that form the arm B are recessed at 15 where they cross the scales on the plate A, and the bottom 16 of each recess forms a straight edge or index that is brought opposite the divisions on the 90 scales in taking a reading.

A rule C may be applied to the plate A for drafting work, the said rule being in the form of a straight bar having a longitudinal groove 17 in its bottom edge so that 95 the top edge of the plate A can fit into the groove. The curved edge of the plate A at the upper outer corner thereof is formed with a notch 18, into which engages a shoulder 19 at the inner end of the groove 17 in 100 the rule, and the edge 1 of the plate is also provided with a notch 20, and on the rule is a clamping lever 21 that has a projection 22 that is adapted to engage in the notch 20 to lock the rule on the plate A. This lever 105 21 is mounted on a pivot or fulcrum 23 secured in spaced lugs 24 of the rule, the locking end of the lever being disposed between the lugs. The end of the rule provided with a lever has a recess 25 to provide for the 110 movement of the lever when clamping or unclamping the rule on the plate A.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim as new, is:—

1. An instrument of the class described comprising a protractor plate having notches in opposite edges, a rule applied to one edge of the plate, and means on the rule for engaging in the said notches to hold the rule on the plate.

2. An instrument of the class described

comprising a protractor plate having notches in opposite edges, a rule applied to one edge of the plate, means on the rule for engaging in the said notches to hold the rule on the plate, one of the said means consisting of a locking lever pivoted on the rule.

3. An instrument of the class described comprising a scale bearing plate having notches adjacent two of its corners, a rule having a longitudinal groove into which one edge of the plate fits, a shoulder in one end of the groove for engaging one of the notches on the plate, a pivoted locking lever on the rule having means for engaging in the other notch of the plate to hold the rule detachably in place.

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

JOSEPH LA FOLLETTE.

Witnesses:

WENZEL FRITSCHÉ,
PAUL WAIDT.

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