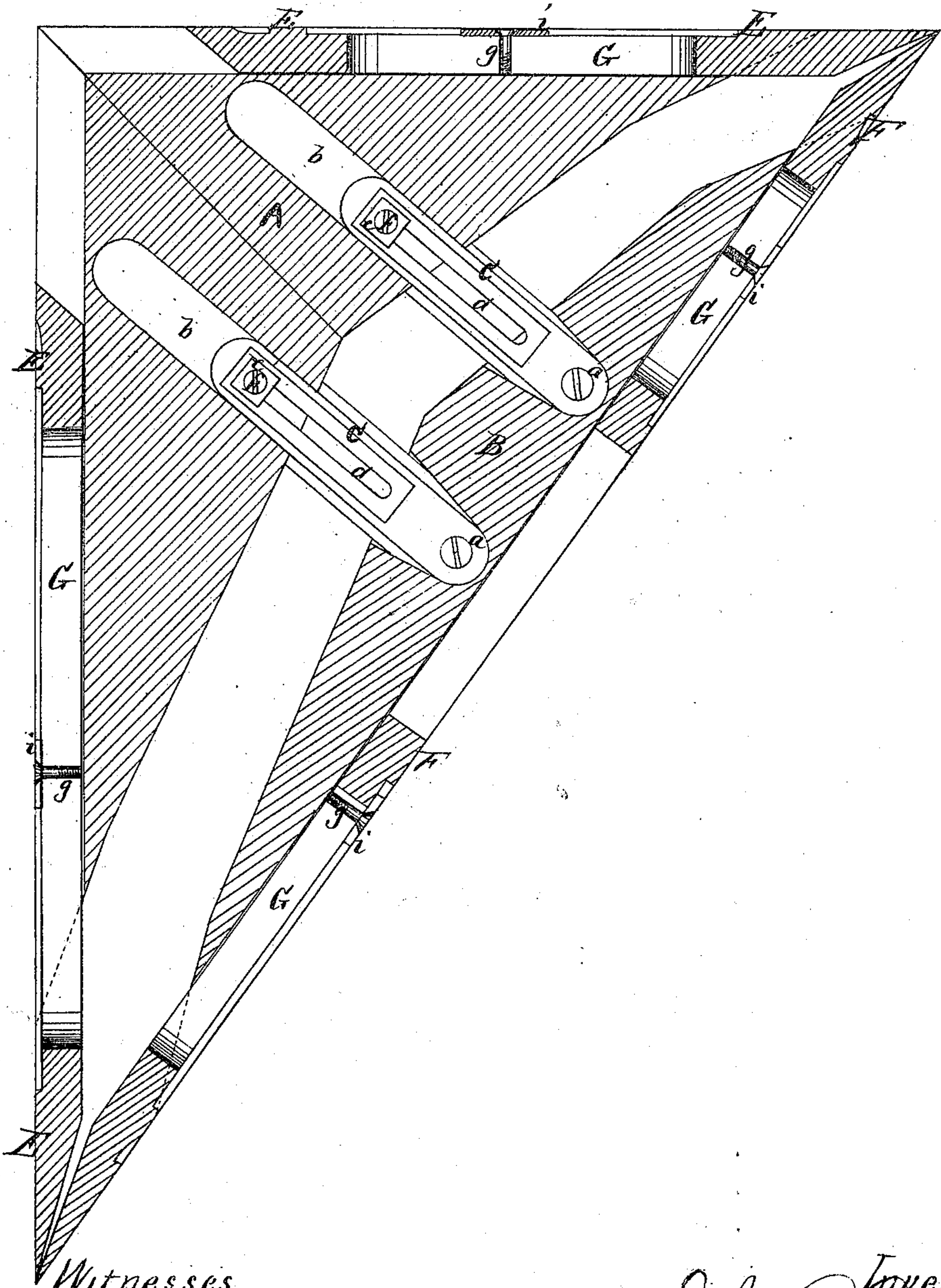


*J. R. Drew,*  
*Pitch Board.*

*No. 97,281.*

*Patented Nov. 30. 1869.*



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# United States Patent Office.

JOHN R. DREW, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 97,281, dated November 30, 1869.

## IMPROVEMENT IN PITCH-BOARDS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern :*

Be it known that I, JOHN R. DREW, of the city and county of San Francisco, State of California, have invented an Extension Pitch-Board for gauging stairs; 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 or improvements without further invention or experiment.

My invention relates to a new and improved pitch-board, or board for measuring the height and width of steps in stairs.

These boards are made triangular in shape, one side being of a suitable length for measuring the rise or height of the step, and another side being used for measuring the tread or width of the step.

In stair-building it is necessary, owing to the varying heights of stories in different houses, and to the various angles at which stairs are to be built, to make for each flight of stairs a new pitch-board, of the proper length of sides for accommodating each particular height of story, from floor to ceiling, thus causing, besides the loss of time and trouble required to make them, a waste of lumber, while the board may never be of use a second time.

The object of my invention is to avoid this waste of time and material, by providing a pitch-board which may be extended at the sides, so as to enable the builder to set it to the desired size for any flight of stairs.

The accompanying drawings are referred to in the following description, in which my invention is fully set forth and described.

The figure represents my pitch-board when extended.

The pitch-board is of a triangular form, having one side shorter than the other.

A and B are two pieces of wood or metal, which, when closed together, or when extended to any required size, and the angles produced from the sides, form the figure of a right-angled triangle.

In order to construct the pitch-board, so that this will be the case, a portion of the figure marked B is separated from the triangle by means of angular or circular division-lines, which cut the triangle through the acute angles.

The exact manner of separating the hypotenuse B from the rectangular piece A, is immaterial, so that sufficient strength is retained for rendering it strong and substantial.

The two pieces, A and B, are joined together by two slides, C C.

One end, *a*, of these slides, is fitted into a slot in the piece B, and is secured loosely by means of rivets, bolts, or screws.

The opposite end moves in a channel, *b*, in the piece A.

The slides are provided with a longitudinal slot, *d*, which is countersunk around its upper edge.

A small plate, *e*, rests in the sink, and a screw, *f*, passes through it and the slot, and into the piece A, below the slot, so that by loosening the screws, the piece B can be drawn out or extended to any length desired, where, by turning the screws down again, it can be firmly held.

The channel, in the piece A, in which the slides C move, may be made narrow at the top, in the form of a dovetail, in order to keep them firmly in place, and the groove or slot in the piece B, and in which the end *a* is attached, is cut away at each side, as shown, so as to allow the piece B to be turned to any required angle for gauging the tread or width of the step.

In order to produce the acute angles, when the two pieces A and B are separated, I arrange slides E in the two sides of the piece A.

The slides E are let into the edges of the board A, so that they are flush with them, and a fair edge is always presented, whether they are closed up or drawn out.

Similar sliding pieces, F, are arranged, one at either end of the hypotenuse or long side, on B, so that, by extending the slides E and F till they meet, the triangle will be still complete, although larger.

In order to keep these sliding pieces in place, and also to fix them firmly at any desired point, a long slot, G, is made through them, and a plate, *i*, and screen *g*, serve to secure them in the same manner as the slides C are held by the plate *e* and the screw *f*, previously described.

As the relation of the rise to the tread of the stairs will vary according to the angle desired, the position of the piece B must be changed, which is done by drawing out one of the slides C further than the other, and this can be done, as the slides are pivoted loosely at *a*, as before described, so that considerable motion is given to the piece B.

Having determined the height and tread of each step, the piece B is drawn out from the piece A, and set, so as to give the proper angle of rise by the slides C C and screws *f*.

The slides E and F are then loosened, and drawn out in their respective slots, till they meet, forming the acute angles, when they are also set firmly,

and the board is ready for use in marking off the stairs.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

The above-described pitch-board, for stairs, formed of the two parts A and B, connected by slides C, when said parts are respectively provided with extension-pieces E E and F F, and the whole device is

constructed and arranged to operate substantially as set forth.

In witness whereof, I have hereunto set my hand and seal.

JOHN R. DREW. [L. s.]

Witnesses:

JOHN L. BOONE,

WM. GERLAH.