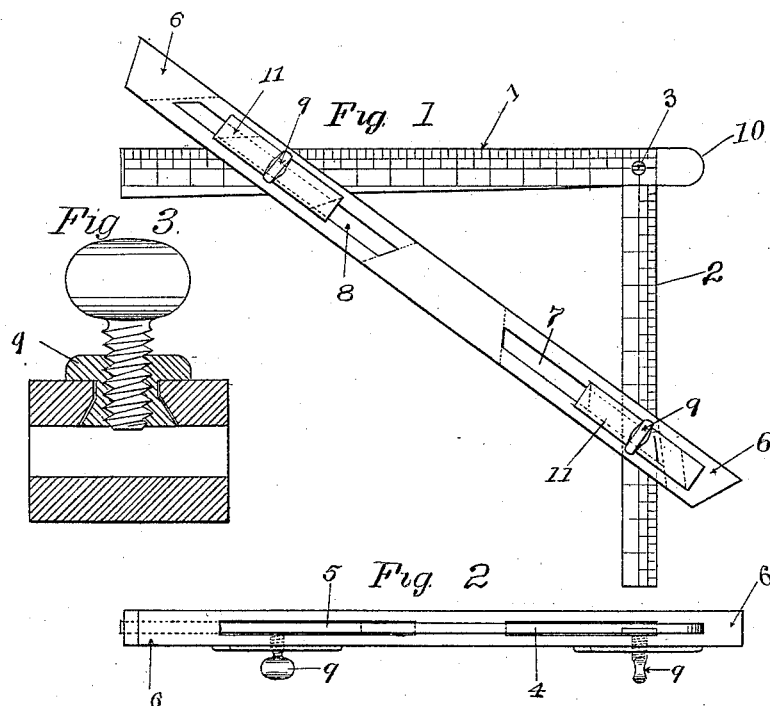


(No Model.)

C. E. WILSON.  
STAIR RULE.

No. 421,216.

Patented Feb. 11, 1890.



Witnesses  
*B. M. Day*  
*L. F. Milton*

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By his Attorney *A. J. Brown*

# UNITED STATES PATENT OFFICE.

CHARLES E. WILSON, OF DENVER, COLORADO.

## STAIR-RULE.

SPECIFICATION forming part of Letters Patent No. 421,216, dated February 11, 1890.

Application filed June 5, 1889. Serial No. 313,218. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. WILSON, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Stair-Rules, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in stair-rules for use by carpenters and stair-builders, in which two graduated arms are suitably united at right angles to each other, their free extremities passing through openings in a frame or guide provided with thumb-screws or equivalent means, whereby the arms within the guide, after having been properly adjusted, may be held securely in the desired position.

The object of my improvement is to provide a tool which shall be cheap, durable, and reliable, and so simple that no special skill is required in its use.

It is well known that the ordinary method of laying out string-boards for stairs by using the common square is both slow and tedious, requiring great care in order to avoid inaccuracy in the work. This difficulty I propose to overcome by the use of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved stair-rule in position for use. Fig. 2 is an edge view of the guide. Fig. 3 is a vertical section taken through the guide and a button, showing a set-screw.

In the drawings, reference-numeral 1 is a graduated arm united at right angles to another graduated arm 2 by means of a screw 3. The free extremities of arms 1 and 2 are passed through slots 4 and 5 of guide 6. Slots 4 and 5 are of sufficient width to allow the arms to move freely within them, and they are of sufficient length to allow arms 1 and 2 a suitable degree of adjustability for marking out any width of tread or height of riser. Guide 6 is also provided with slots 7 and 8, cut in its top through to slots 4 and 5, and at right angles to said last-named slots. Slots 7 and

8 are each provided with a button 11, fastened to a slide within said slots 7 and 8, these slots being chamfered underneath, as shown in Fig. 3, thus giving the button a free longitudinal movement within slots 7 and 8. Buttons 11 are provided with set-screws 9, which extend through them into slots 4 and 5, the buttons being provided with suitable threaded openings to correspond with the thread on the screws. The extension 10 of arm 1 is the nosing projection used in marking out the string-board. It will be observed that arm 1 is not of uniform width throughout, its shape corresponding with that of the socket in the string-board which receives the end of the tread; but where the ends of the tread are free, not being received within sockets or mortises in the string-board, of course there is no necessity for this peculiar shape of arm 1, nor for the nosing projection 10. In this case in marking out the joist for use I use the ordinary carpenter's square within the guide 6 in place of graduated arms 1 and 2, the square being adjusted and held in position within the guide in the same manner as said arms before described.

In the use of my improved stair-rule the edge of the guide is run along the edge of the joist, the flat surface of the graduated arms or square, as the case may be, being in contact with the side of the joist, which may then be quickly marked out, as described.

My improved rule may also be used in cutting rafters and in many other cases, as will be readily observed.

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

1. In a stair-rule, the guide 6, provided with slots 4, 5, 7, and 8, slots 4 and 5 being cut at right angles to slots 7 and 8, in combination with graduated arms 1 and 2, secured together at right angles to each other, arm 1 being provided with nosing projection 10, and suitable set-screws provided with buttons 11, fashioned to slide within slots 7 and 8, substantially as set forth.

2. In a stair-rule, the graduated arms 1 and 2, suitably secured together at right angles,

arm 1 tapering from its free extremity and  
terminating at its opposite end in a nosing  
projection 10, in combination with a guide 6,  
provided with slots 4, 5, 7, and 8, and set-  
5 screws 9, provided with buttons 11, fashioned  
to slide within slots 7 and 8, substantially as  
set forth.

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

CHARLES E. WILSON.

Witnesses:

FRED. W. FELDWISCH,  
T. H. SMITH.