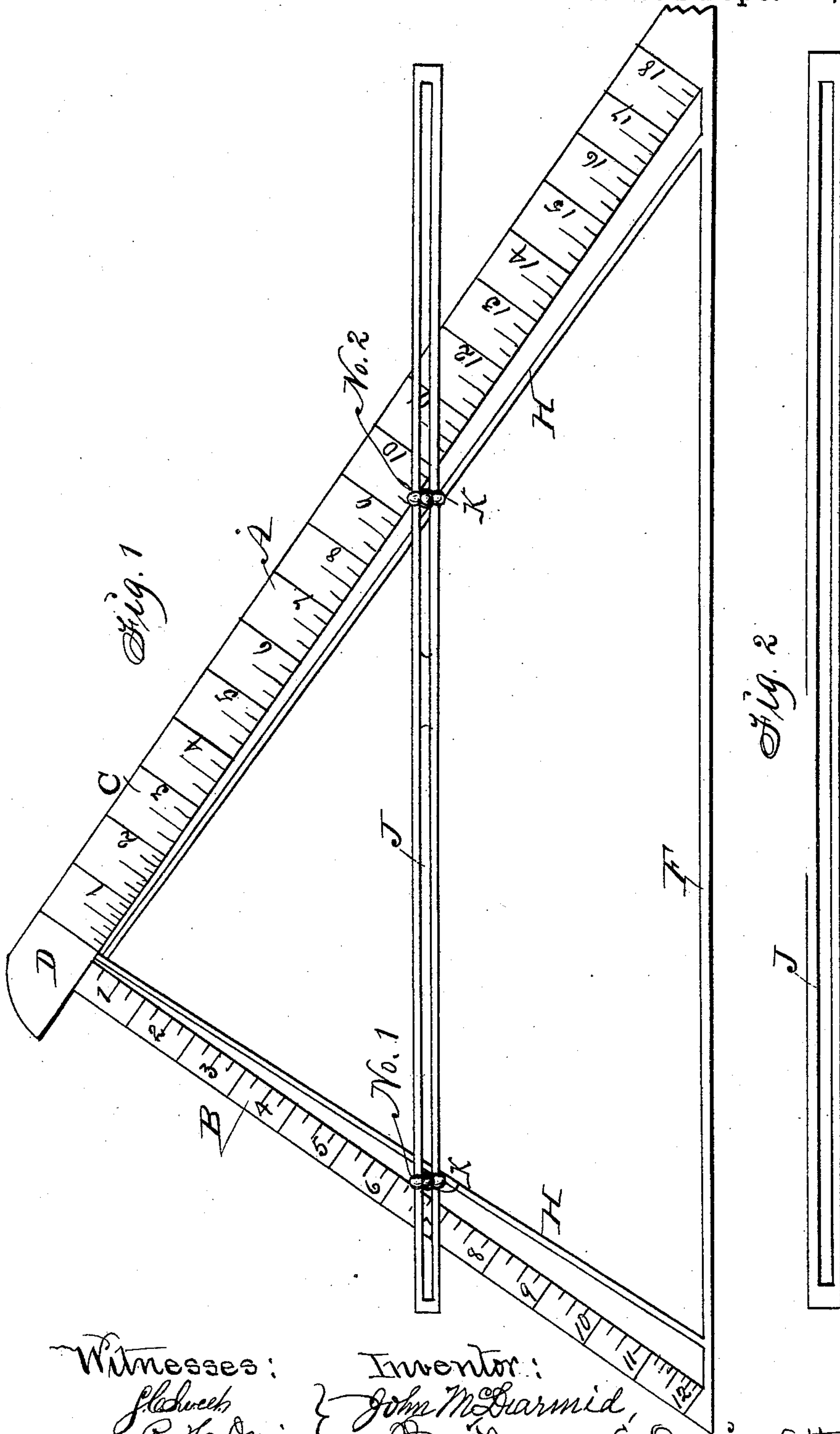


(No Model.)

J. McDIARMID.
TOOL FOR LAYING OUT STAIRWAYS.

No. 437,313.

Patented Sept. 30, 1890.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN MCDIARMID, OF DES MOINES, IOWA.

TOOL FOR LAYING OUT STAIRWAYS.

SPECIFICATION forming part of Letters Patent No. 437,313, dated September 30, 1890.

Application filed October 29, 1888. Serial No. 289,854. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCDIARMID, a citizen of the United States, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Tool for Laying Out Stairs, of which the following is a specification.

My object is to facilitate the marking of the face of a bridge-board preparatory to cutting grooves therein for the admission of the ends of steps and risers; and my invention consists in the construction and use of a tool, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a top view of the complete tool, and Fig. 2 is an edge view of the detachable and adjustable part.

A is a frame in the form of a right-angled triangle adapted to be placed flat upon the surface of a board. It is preferably made of flat pieces of steel joined together by brazing or in any suitable way, or it may be made complete from one piece of plate metal, hard wood, or other suitable material.

B is the short side, and C the long side, of the right-angled portion of the frame, and each side or arm of the square they produce is marked with an inch scale or measure in the manner carpenters' squares are marked, excepting that the measures begin at the juncture of their inner edges and not on the outside edges.

D is an extension on the end of the arm C, corresponding in shape with the cross-sectional view of that portion of a step which projects over a riser in a stairs and the shape of a groove cut into the face of a bridge-board to admit the end of a step.

F is that part or side of the frame that connects the divergent ends of the parts B and C.

H are straight bars formed on or fixed to the end portions of the part F and jointly connected with the arms B and C in the corner of the square, so as to be in inclined positions relative to the straight edges of the square.

J is a straight-edge, made of a single square

bar of hard wood or metal slotted vertically and also horizontally from near its ends to its central portion, or by connecting four pieces of uniform size at their ends, so as to produce a complete straight-edge adapted to be adjustably and detachably connected with the frame A by slipping the frame through the horizontal slots, as shown in Fig. 1.

Nos. 1 and 2 are bolts passed upward between the bars H and the arms B and through the vertical slots in the straight-edge and secured by means of thumb-nuts K in such a manner that the straight-edge can be thereby clamped fast to the frame A at any points or distances from the corners of the frame desired.

If the risers in a stairs are to be six (6) inches high and the cover or step ten (10) inches wide, I place the straight-edge at the figure seven (7) on the arm B and at the figure ten (10) on the arm C of the square, and then place the straight-edge against the edge of the board that is to be grooved and let the square corner of the frame lie flat on the top of the board. I then scribe or mark with a pencil the outline of the groove required to be cut in the face of the board by simply moving the pencil along the outside edge of the frame that overlaps the board. Intersecting wedge-shaped grooves can be thus readily and accurately produced upon the board in succession, as required, to form a stairs in which the risers are six inches high and the steps or covers ten inches wide.

It is obvious that different heights of risers and different width of steps can be marked out in the same manner after first adjusting the straight-edge relative to the two arms B and C of the square and frame, as directed by the inch-measures therein.

I claim as my invention—

1. A tool for marking grooves in boards for stairways, consisting of a flat frame that is a right-angled triangle in shape and has inch-measures on the parts that are in right-angled position to each other, an extension on the corner projecting in the plane of the long arm of the square, bars or slots along the inner edges of the two arms of the square, a

straight-edge having slots to admit the frame and slots to admit bolts, and bolts and nuts to detachably fasten the straight-edge to the frame to operate in the manner set forth.

- 5 2. The frame A, consisting of the arm B, the arm C, having an extension D, the bars H, the straight-edge J, the bolts Nos. 1 and 2,

and thumb-nuts K, arranged and combined in the manner set forth, for the purposes stated.

JOHN McDIARMID.

Attest:

A. G. MILLIKEN,
EMMA CRAWFORD.