

(Model.)

J. MÜLLER.

COMBINED DRAWING SQUARE AND MITER.

No. 306,418.

Patented Oct. 14, 1884.

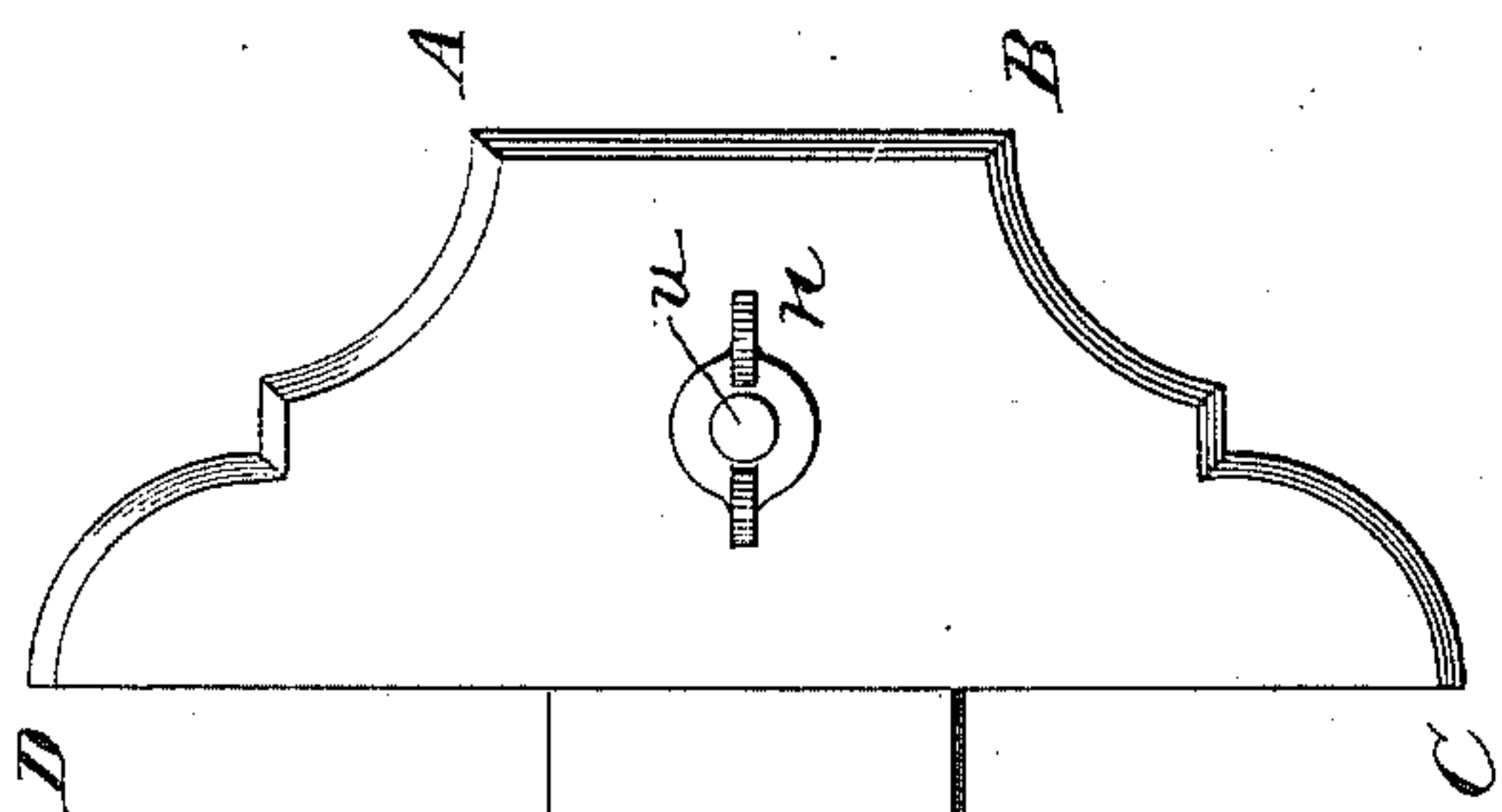


Fig. 1.

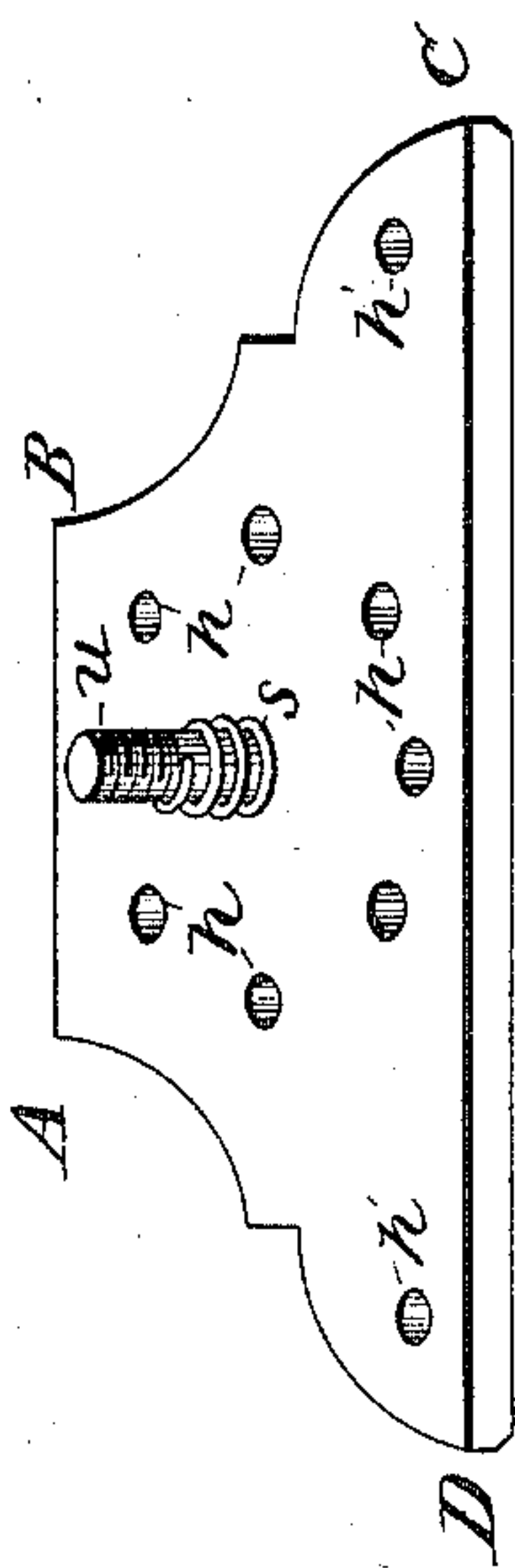


Fig. 3.

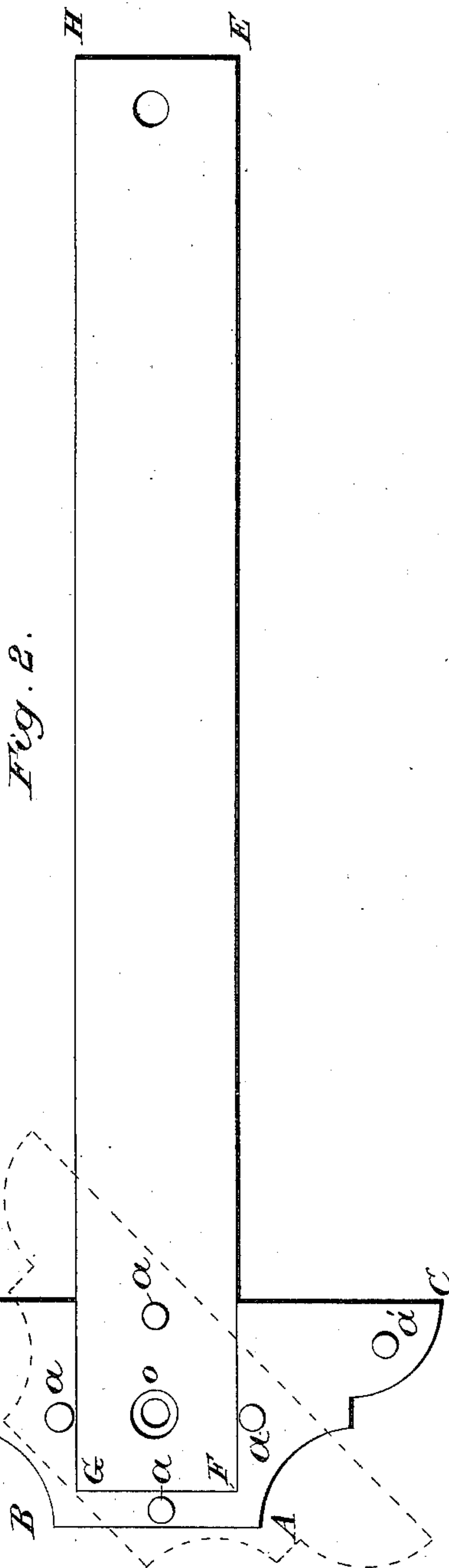


Fig. 2.

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## COMBINED DRAWING-SQUARE AND MITER.

SPECIFICATION forming part of Letters Patent No. 306,418, dated October 14, 1884.

Application filed May 19, 1884. (Model.)

*To all whom it may concern:*

Be it known that I, JOHN MÜLLER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in a Drawing-Square and Miter; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 represents the instrument closed and as a simple drawing or carpenter's square. Fig. 2 represents the same with the movable half of the squaring head-piece A B C D removed, but shown by means of the dotted lines as a miter. Fig. 3 represents the movable half of the head-piece A B C D with its inner surface presented.

The letters *a' a' a' a' a' a'* point out six pins or short posts securely fastened into closely-fitting openings in one half of the head-piece. This half of the head-piece is attached firmly as a square to the rule or arm E F G H, the end of the rule being sunk, as shown in Fig. 1, into this half of the head-piece and fastened there, so that the whole surface A B C D on Fig. 1 is smooth.

The letter *o* marks a hole through which the bolt S can pass; and this hole is for a short depth, about one-eighth of an inch, greater in diameter on the inner than on the outer side of the head-piece. The two pins *a' a'* are located in the opposite corners of the longer side of this part of the head-piece, while the other four pins are equidistant from the center of the hole *o*.

On the presented surface of the movable part of the head-piece, Fig. 3, are shown ten holes suited in size and depth and position to the pins above described on the other part. The two holes marked *h' h'* are intended to receive the pins *a' a'*, while the other eight are intended to receive the pins *a a a a*. These eight holes divide into equal parts the circumference of a circle whose radius is equal to a line drawn from the center of one of the posts *a* to the center of the hole *o*, and the center of this circle corresponds in its position on

this part of the head-piece with the center of the hole *o* on the other part thereof. Through the center of this circle an iron bolt with a screw end of a length sufficient to reach from one-quarter to three-eighths of an inch through both halves of the head-piece is fastened. Between the two parts of the head-piece, around the screw-bolt and in the enlarged part of the hole *o*, is a spiral spring, *s*, of three or four coils of brass wire, long and strong enough, when the nut *n* is loosened, to throw the two parts of the head-piece apart far enough to take the pins out of the holes and allow the movable half to be swung on the bolt either to the right or the left. This instrument can be made of any hard wood or of metal. The iron bolt and spiral spring alone are necessarily of metal.

To operate the instrument, fit the two parts of the head-piece and screw fast. It is then a common artificer's square. Now loosen the nut *n*, and the coil of brass wire within throws apart the head-piece. Turn the movable half of the head-piece to right or left till the pins reach the next holes and screw fast. It is now a combined square and miter. By stopping the movable half of the head-piece at any desired angle and screwing fast, allowing the pins to rest on the opposite surface, instead of entering the holes, lines can be thrown in any direction.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

The combination, with the rule provided with the rigid half head-piece having a hole, *o*, with a diameter at its inner end greater than the diameter at its outer end, the short pins *a a a a*, equidistant from the hole *o*, and the pins *a' a'*, near the opposite corners of the longer side of this half head-piece, of a movable half head-piece provided with the corner holes, *h' h'*, and the holes *h*, arranged in a circle around the screw-bolt *u*, the spiral spring *s*, the screw-bolt *u*, and the thumb-nut *n*, substantially as specified.

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

JOHN MÜLLER.

Witnesses:

JAMES G. YOUNG,  
WILLIAM H. WATTS.