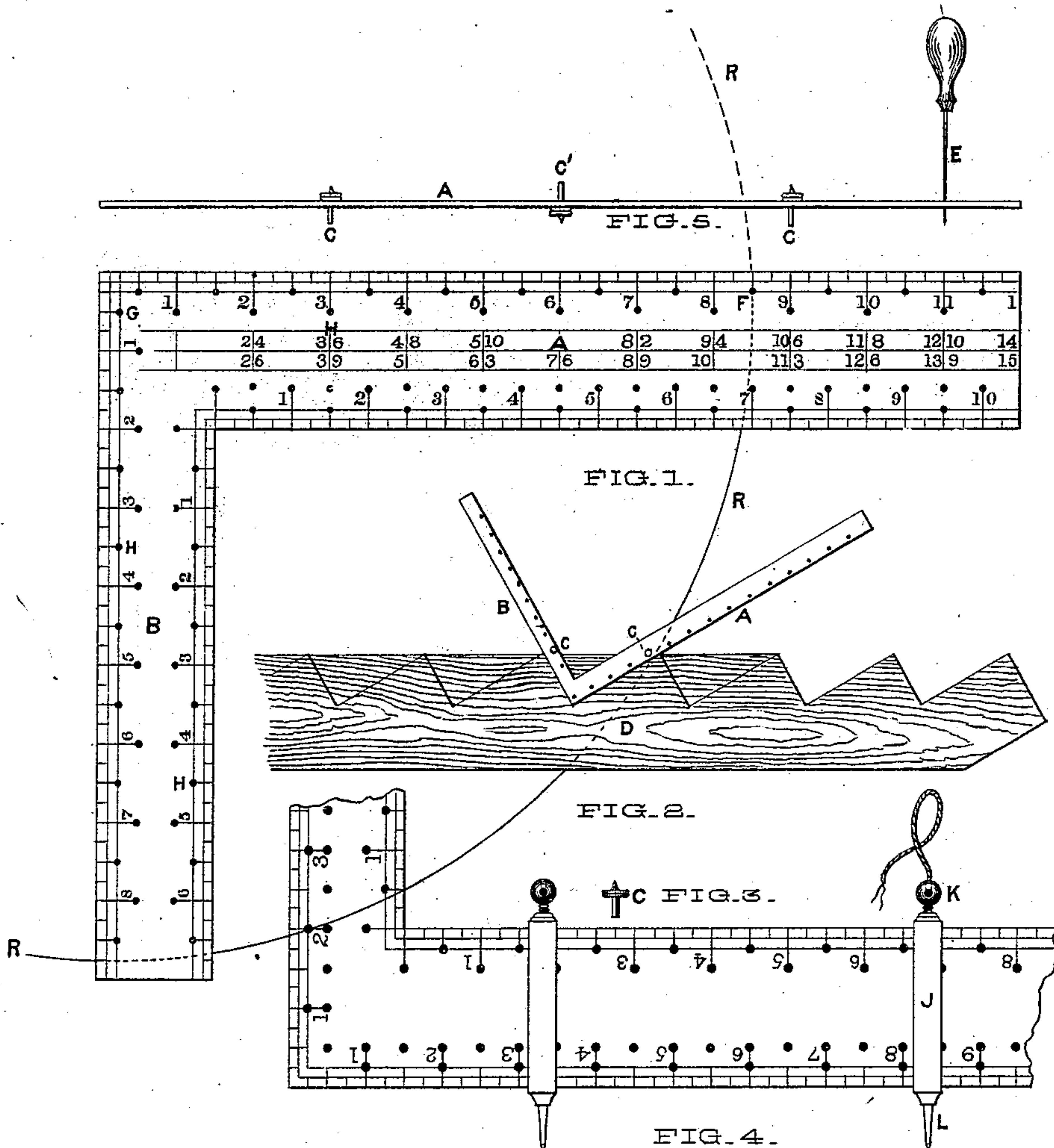


J. ESSEX.
TRY-SQUARES.

No. 183,387.

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WITNESSES,

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UNITED STATES PATENT OFFICE.

JEREMIAH ESSEX, OF BENNINGTON, VERMONT.

IMPROVEMENT IN TRY-SQUARES.

Specification forming part of Letters Patent No. 183,387, dated October 17, 1876; application filed April 25, 1876.

To all whom it may concern:

Be it known that I, JEREMIAH ESSEX, of the town of Bennington, in the county of Bennington and State of Vermont, have invented certain Improvements in Carpenters' Steel and Try Squares, of which the following is a specification:

The object of this invention is to provide steel squares and try-squares of the kinds in ordinary use by mechanics for laying out work with means and appliances to facilitate the laying out of tenons, mortises, and other rectangular work, the striking of circles, the laying off of parallel lines, and other mechanical operations, hereinafter more fully set forth.

The accompanying drawing, to which reference is hereby had, and which forms a part of this specification, fully illustrates the character of my invention, and some of its applications to various kinds of work.

Figure 1 represents a half-section of a carpenter's steel square having small perforations drilled at definite distances from the edges. Fig. 2 shows the adaptation and use of a perforated square for laying out work for common stairs. Fig. 3 represents one of a set of center or guide pins, which are designed to accompany, and in certain cases to be used in connection with, the perforated square. Fig. 4 shows another style of center-pin, which is adapted to be used in connection with the perforated square or rule in a variety of ways, more fully described hereinafter. Fig. 5 exhibits an edge view of the square or rule and the mode of using the center guide-pins shown in Fig. 3.

In the drawing I have shown my system or invention as applied to an ordinary steel square having a twenty-four-inch body, two inches wide, and an eighteen-inch tongue an inch and a half wide. On the outside edge thereof I have marked the half-inch subdivisions with drilled holes or perforations, each one-fourth of an inch from the edge of the blade, and the inch-divisions with holes just a half-inch from the edge. On the inner edge of the body are shown two ranges of perforations, the outer of which marks the half-inch subdivisions, and is one-fourth of an inch from the inner edge of the blade. The inner range of holes is just half an inch from the

inner edge of the body of the square, and the holes are half an inch apart, and mark the inch-divisions and the half-inch subdivisions as well. As many series or ranges of these perforations may be employed as the character of the work or the judgment or fancy of the workman may determine.

As concomitants of the perforations, and used in connection therewith, I have provided a device (shown at J, Fig. 4) which, for most purposes, may be designated a "scriber." It consists of a cylinder of metal, provided with a longitudinal slot or mortise, adapted to slide onto the body of the square or onto a straight rule, as the case may be. In one end of this cylinder is inserted a set-screw, K, which is used to hold the scriber in adjustment on the blade, and in the opposite end is fixed a short tapering piece of steel, L, drawn to a point of proper shape to serve either as a center or a scriber, and of a diameter just above the point to fit the holes or perforations H H H, Fig. 1. In use, two or possibly more of these scribers may be found convenient. The head of the set-screw K is preferably made in a spherical form, so as not to occasion annoyance to the hand when the same is detached from the bar and used as a center or an awl. A hole passes through the horizontal diameter of the head of this set-screw, and another hole, whose axis is coincident with the axis of the scriber, passes from the top of the head of the set-screw down through, and intersects with, the horizontal hole. The head of these set-screws are thus constructed to admit of the introduction of a cord or line, so that the whole, when detached from the bar or blade, may be used as a plumb-bob.

In Fig. 4 the scribers are shown in adjustment on the body of the square, ready for use in striking a circle or for laying off equal spaces; but there are times and places where it is impracticable to use the several parts for such purposes, combined as shown in Fig. 4. In such instances the scribers may be detached, the square or rule laid flat upon the surface upon which the proposed circle is to be made, the point or center L of one scriber inserted through one of the perforations, (as, for instance, at G, Fig. 1,) and with the point of another scriber, awl, or pencil inserted

through some other one of the perforations, as at F, the arc R R R, or any similar arc, may be described. All the holes upon both body and tongue of a common steel square may thus be utilized for such purposes, and an extreme radius obtained equal to the distance between the last holes upon the ends of the body and tongue, respectively.

The small center or guide pin C is provided to be used for like purposes, where there is insufficient space or it is inconvenient to use the layer-center or scribe J. The guide-pin C is constructed with a collar or flange, from one side of which projects a conical apex or spur, which is used for a center, and from the opposite side projects a short pin of a size to pass through and fit the holes H H H, Fig. 1. When two are inserted through the body and tongue of the square, respectively, with stems protruding downward, as at C C, Fig. 1, and in position relatively, as shown at C C, Fig. 2, they serve as guide-pins to bear or slide against the edge of the board or plank, for the purpose of laying out work of the character shown in Fig. 2. Angles of uniformity can thus be easily and rapidly projected.

Another important use to which squares so perforated may be applied is in framing timber and in other analogous work. By allowing the inner edge of the body of the square to impinge and slide against the front side or face of the timber or other material upon which it is desired to lay out the work, accurate distances from such front edge may be laid off on the tongue of the square, and marked by the point of the scribe, awl, or pencil inserted through the proper orifice; and if a parallel line through such point is desired, as very frequently happens, all that is necessary to produce such line is to draw the square along (still bearing against the timber) the desired distance, carrying with it the marking-point inserted in the proper perforation, as aforesaid. Lines at right angles with these are made in the usual way. In this manner an almost endless variety of rectangular work can be laid out without removing the square from its relative position to the stick, and with a much greater degree of accuracy than in the old way.

Metallic squares are much used about various kinds of work where, by reason of dirt,

rust, &c., the lines of the graduation and the figures become obscured or nearly obliterated. In such cases these perforations afford a ready, certain, and accurate means of ascertaining correct dimensions and of laying off the same. In the drawings submitted I have shown the perforations arranged in regular ranges at a certain specific fraction of an inch from the edge of the tongue or body; but the distance from the edges of the rule or square may be regulated and determined to suit the user. As arranged in the drawing they furnish means of getting accurate measurements across the tongue or body, which, in many cases, might be desirable.

In the use of the foregoing-described perforations I do not restrict myself to their application to graduated work, for the holes themselves subserve purposes entirely independent of graduation.

If found desirable, the perforations may be countersunk on either or both sides, for the more ready reception of the point of the awl, scribe, pencil, or center-punch.

The tongues of common try-squares, which have a thick body or head and a thin metallic tongue, may be perforated after the system above described, and thus be especially adapted for use in laying out mortises, tenons, and other analogous kinds of rectangular work.

I am aware that subdivisions of linear measure have heretofore been marked or indicated upon rulers by perforations. Hence I do not broadly claim perforations applied to rulers or scales as an adjunct to the designation or marking of such divisions or subdivisions; but

I do claim as my invention—

1. The combination of the perforated square A B and guide-centers C C, substantially as described and set forth.

2. A square for artisans' use, having each limb thereof provided with perforations at regular intervals of linear measure, reading from the inner edge of its adjacent limb, substantially as specified.

In testimony whereof I have hereto set my hand, at North Bennington, Vermont, this 20th day of April, A. D. 1876.

JEREMIAH ESSEX.

Witnesses:

FRANKLIN SCOTT,
GEO. B. PHILLIPS.