J. GRAHAM.

Bevel and Square.

No. 70,547. Patented Nov. 5, 1867.

Fig. 3.

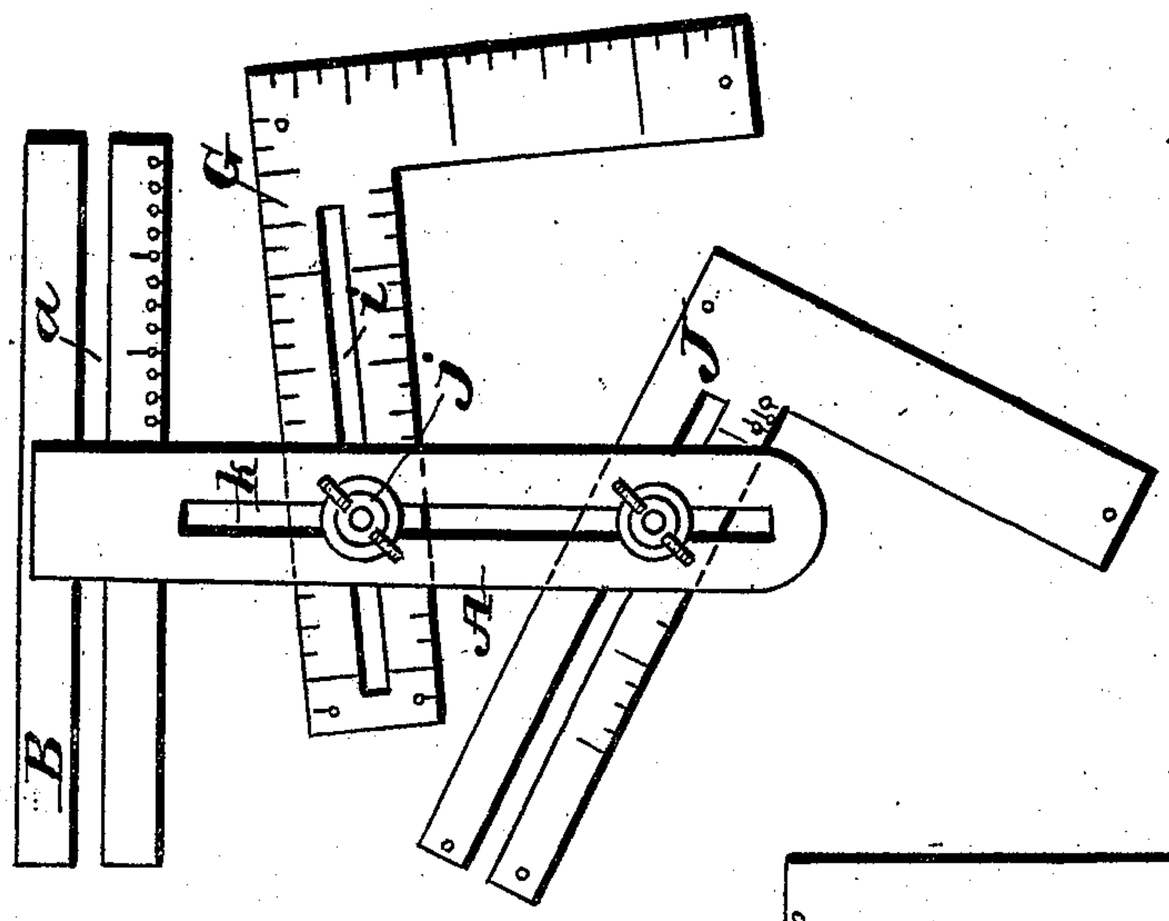

Fig. 2.

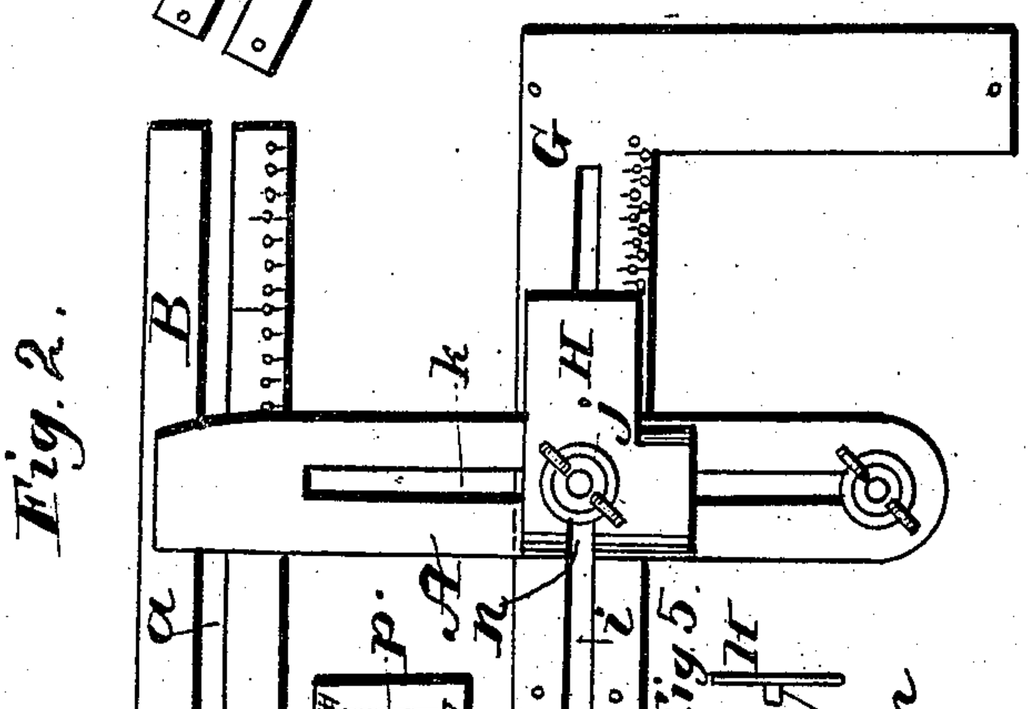

Fig. 5.

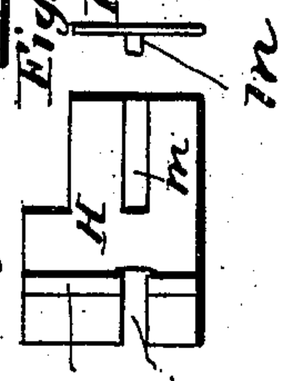

Fig. 4.

Fig. 1.

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JOHN GRAHAM, OF LUDLOW, VERMONT.

Letters Patent No. 70,547, *dated November* 5, 1867.

IMPROVEMENT IN BEVEL AND TRY-SQUARES.

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 GRAHAM, of Ludlow, in the county of Windsor, and State of Vermont, have invented a new and improved Bevel and Try-Square; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to a new and improved combination of a bevel and try-square, as hereinafter fully shown and described, whereby a very useful implement is obtained for carpenters and joiners.

The invention consists in the application of an index to a try-square, and also of one or more supplemental squares, and a sliding-gauge, all arranged substantially as hereinafter shown and described. In the accompanying sheet of drawings—

Figure 1 is a side view of my invention, shown adapted as a try-square and marker.

Figure 2, a side view of the same, adapted as a gauge or calipers.

Figure 3, a side view of the same, adapted for laying off work.

Figures 4 and 5, detached views of a part pertaining to the same, to serve as a lock for a supplemental square.

Similar letters of reference indicate like parts.

A represents the stock and B the blade of a small T or try-square. The stock is constructed of two metal plates, between one end of which the blade B is permanently secured by nuts or otherwise. The blade B is slotted longitudinally its whole length, or it may be described as formed of two parallel parts, with a space, *a*, allowed between them. D is a plate, which has a rib, *b*, attached to it, to fit in the space *a* of the blade, and E is a set-screw, by which the plate is secured to the blade. By this arrangement the plate D may be applied to the blade with facility, and adjusted thereon at any desired point. To the lower end of plate D there is attached, by a pivot, *c*, a T-shaped bar, F, the upper end of which has a toothed segment, *d*, secured to it, and this segment gears into a pinion, *e*, on the axis of an index, *f*, which traverses over a graduated circle or ring, *g*, attached to the ring. The lower part *h* of the bar F is at right angles to the other part *h'*, and is below the blade B, so that when the square is applied to its work, the lower edge of *h* is brought in contact with the surface operated upon; and when the latter is perfectly level, or at right angles with the side against which the stock of the square is placed, the index *f* will be in a vertical position or point to zero, X, on the graduated ring; and if said surface is not at right angles with the side of the work against which the stock of the square is placed, the index *f* will vary accordingly, more or less, from the zero point. Thus by this simple attachment the relative position of the surface of the work operated upon with the side of the work to which the square is applied will be shown by the index *f*.

In laying off mortises, I attach a supplemental square, G, to the stock A. This square is slotted longitudinally, as shown at *i*, and a set-screw, *j*, passes through said slot and a corresponding slot, *k*, in the stock A of the square. In addition to this set-screw, a plate, H, is employed, as shown more particularly in figs. 4 and 5, said plate being provided at one side with two ribs, *l m*, and a slot, *n*, as shown in fig. 4. This plate H is fitted on the stock A, underneath the washer of the set-screw *j*, the rib *l* being fitted in the slot *k* of the stock A, and the rib *m* fitted in the slot *i* of the supplemental square G. This plate holds the supplemental square in position, and it will be seen that by relaxing the nut of the set-screw *j*, the supplemental square may be adjusted either upward or downward, or to the right or left. This supplemental square is useful in laying out mortises, the length of the mortise being given between the blade B and the supplemental square G. In lieu of this supplemental square a slide, I, may be used, as shown in fig. 1, said slide having one end provided with a bevelled or V-shaped notch, *o*, and provided at its opposite end with parallel slots *p*, by which the width of the mortise may be marked out after the length is obtained. In certain cases two supplemental squares may be employed, as shown in fig. 3, J representing the additional one. The two squares admit of various patterns being laid or marked out with facility.

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

1. The indicator, composed of a T-shaped bar, F, connected by a toothed segment, *d*, and pinion, *e*, or

eir equivalents, with an index, *f*, which traverses over a graduated ring, *g*, all being arranged and applied to square, to operate in the manner substantially as and for the purpose set forth.

2. The combination of one or more supplemental movable or adjustable squares, G J, with a T or try-uare, substantially as shown and described.

3. The slide I, provided with a bevelled or V-shaped notch, *o*, at one end, and a series of slots, *p*, at the posite end, when said slide is applied to or used in connection with a T or try-square, substantially as and the purpose specified.

4. The plate H, provided with the ribs *l m* and slot *n*, when said plate is used in combination with a sup-mental square applied to a T or try-square, substantially as and for the purpose set forth.

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