C. H. McKEE.

Attachments to Carpenters' Squares.

No. 150,339. Patented April 28, 1874.

Fig. 1.

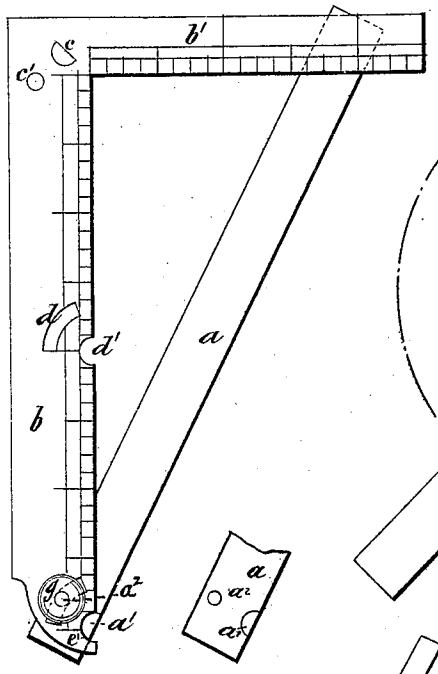


Fig. 2.

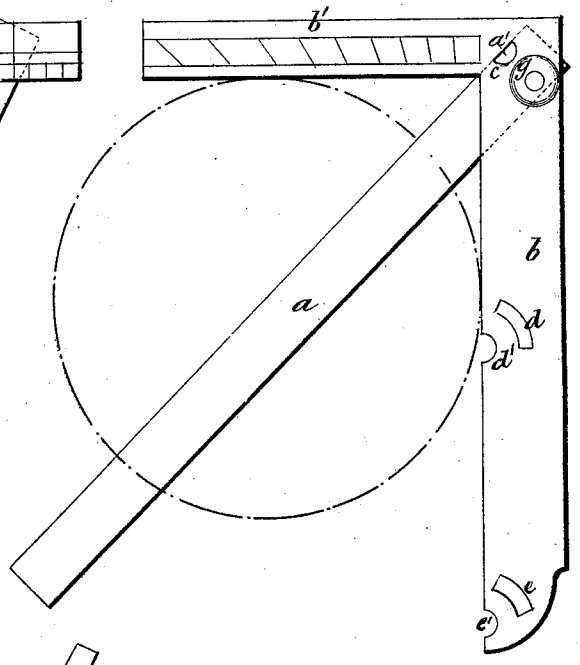
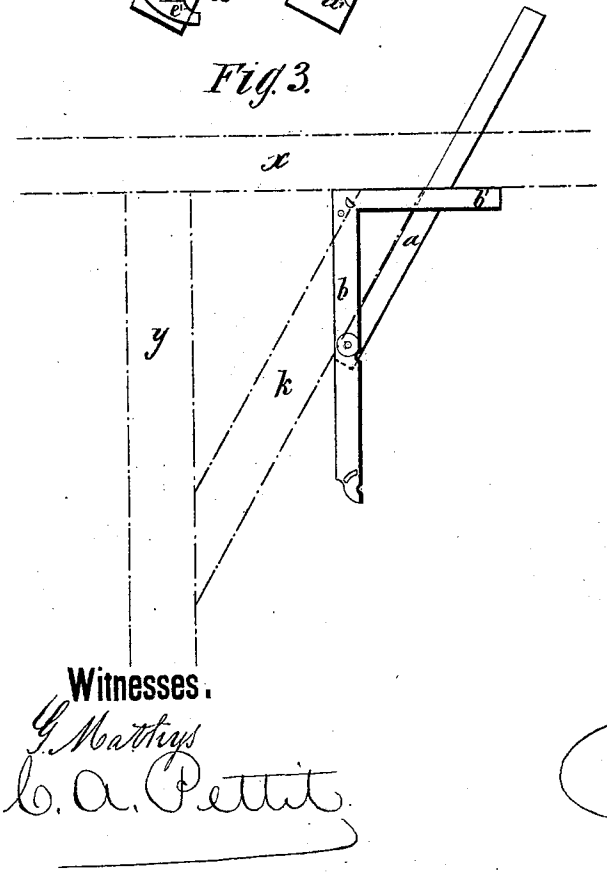


Fig. 3.



Witnesses.

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CHARLES H. McKEE, OF OAKDALE STATION, PENNSYLVANIA.

IMPROVEMENT IN ATTACHMENTS TO CARPENTERS' SQUARES.

Specification forming part of Letters Patent No. **150,339**, dated April 28, 1874; application filed January 26, 1874.

To all whom it may concern:

Be it known that I, CHARLES H. McKEE, of Oakdale Station, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Attachments to Carpenters' Squares; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 represents my tool in plan view. Fig. 2 represents it as a centering-tool. Fig. 3 represents it as a brace-measurer.

The invention relates to tools for carpenters and other mechanics, and consists in an instrument which may be used either as a brace-measurer, an ordinary square, a bevel-square, a centering-square, or a plumb, the same being constructed and applicable to its several purposes as hereinafter fully described.

a represents a movable arm, or the hypotenuse of a right angle, *b b'*, the former having the stud-pivot a^1 and screw-threaded pin a^2, and being attachable to the base *b'* in the cavities *c c' d d' e e'*, and held by a clamp, *g*. One side of arm *b'* is graduated to mark arcs, from units to forty-five degrees, of a circle whose center is at *d*, and the other side is notated in inches and fractions of an inch. The hypotenuse *a* and side *b* are also notated in inches or fractions thereof.

It is obvious that the sides or angle *b b'* may be used either with or without hypotenuse *a* as an ordinary square, while by attaching the movable arm *a* at *c* or *d*, (shown in Fig. 1,) it may be employed as a bevel-square, and by attaching it at *c*, bisecting the right angle, (shown in Fig. 2,) as a center-square.

I apply it for a brace-measurer as follows: Fig. 3 shows side brace *k*, while *x y* represent a frame. The brace is inserted at three feet from the intersection of *x* and *y* on *x*, and at four feet on *y*. By constructing a similar triangle with the instrument, with *a* attached at *d*, and set at nine inches on *b*, I have the length of brace for each foot that it extends down on *y*, or four times the length of *a*. This gives the exact length of the brace. Thus, by constructing with the instrument a similar triangle, of which *a* corresponds to the hypotenuse, the length of any brace, rafter, or anything of the kind can be accurately ascertained by applying *a* as many times as the smaller triangle is contained in the larger one.

Of course, in every case where it is used as a brace-measurer, it is particularly applicable as a bevel-square. The length of the brace is ascertained by applying the instrument with the arm *a* next the timber, which will give the angle at which to cut it, so as to unite properly with the base and cross-tie, while being adjusted to give the length; it then will give the bevel at which to cut the brace, so as to fit both *a* and *y*. The arm *a* being made to swing with its edge in line with that of the edge of the square, the small arm *b* will act as a level, and the vertical side as a plumb.

One great object of this device is to enable a true diameter to be obtained by simply placing the legs B B so that each is tangential to a circle, with the bisecting arm in place; and another, to enable different radial lines to be drawn from the same center without any change in the adjustment of the instrument, but by simply pivoting it at one end, and turning it over the desired distance or part of a circle.

I am aware that a right-angled plate having both legs of the angle longitudinally slotted, and used in conjunction with a hypotenuse-plate held by screws at various points of adjustment, are old, but believe that none distinguished by the peculiar construction and means of connecting above described have ever been heretofore known to the public.

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

An instrument consisting of the right-angled piece *b b'* and the independent hypotenuse *a*, the latter having the stud-pin a^1 and screw-threaded pin a^2, and the former having the holes *c c'*, *d d'*, and *e e'*, as and for the purpose specified.

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Witnesses:

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