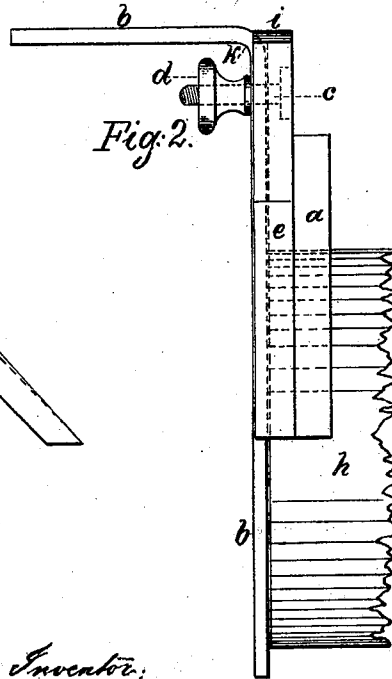
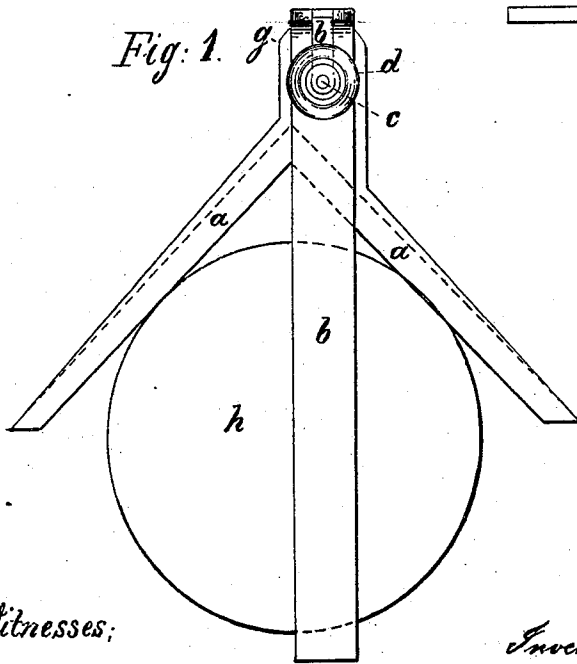


G. W. BROOKS.
Centering Square.

No. 82,917.

Patented Oct. 13, 1868.



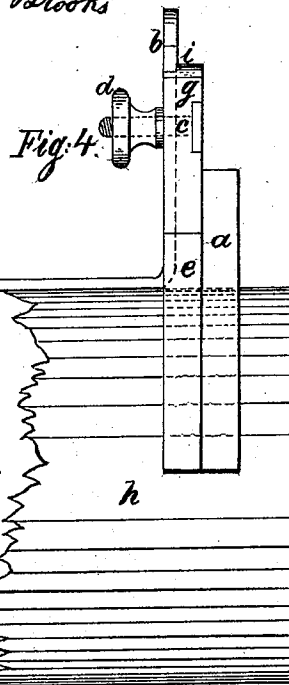
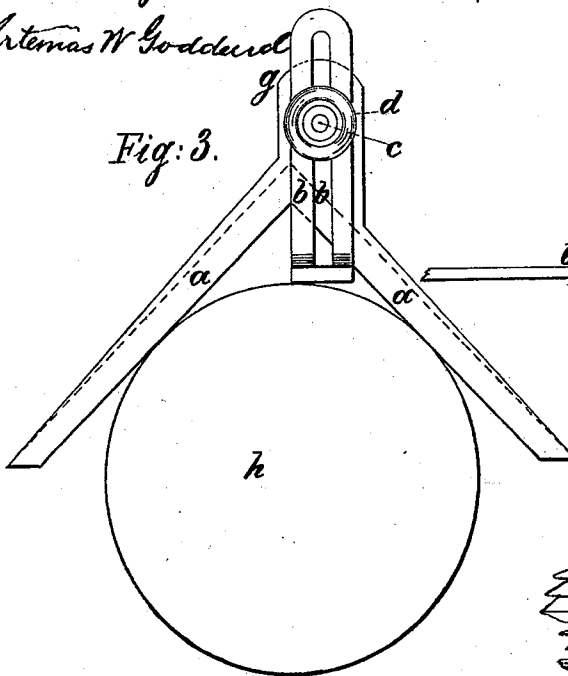
Witnesses:

Boa Greenough

Artemas W. Goddard

Inventor:

Geo. W. Brooks





GEORGE W. BROOKS, OF CLINTON, MASSACHUSETTS.

Letters Patent No. 82,917, dated October 13, 1868.

IMPROVEMENT IN CENTRING-SQUARE.

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, GEORGE W. BROOKS, of Clinton, county of Worcester, and State of Massachusetts, have invented a new and improved Universal Square; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in applying to an angle of ninety degrees, made of iron or any other suitable material, of the proper form, a movable tongue, of an L-form, which shall be attached to the angle by a bolt and thumb-nut, in such a way that it will divide the angle exactly in the centre, thus making a tool, which can be used for making a longitudinal line on shafting or anything of a like form, or for centring shafting or circular disks, and also as an inside or an outside square.

To enable others skilled in the arts to make and use my invention, I will proceed to describe its construction, and the manner of using the same.

I construct my angle of the form, substantially as shown at *a*, (see drawings,) with the brace *c* on the outside to strengthen it, and the ear *g* with the slot *i*, Figures 2 and 4, to receive the tongue *b*. The two beams *a a* are made with a wide bearing, thereby preventing the square from rocking or twisting round, when placed astride of any cylindrical object. The tongue *b* is held in place by the bolt *c* and thumb-nut *d*. The tongue *b* is made in the form of an L, the short arm of which is provided with a slot, *f*, extending from near the extreme end to the angle of the L, and con-

tinued a short distance into the other arm, as shown in Figures 1 and 3.

The tongue *b* at the angle, as shown at *k*, is made with a small curve, so that by loosening the thumb-nut *d*, the square may be easily and quickly changed from a centring-tool to a longitudinal lining-tool, or *vice versa*.

Having explained the manner in which the parts composing my square are constructed, I will now proceed to describe how they are used.

For centring shafting or circular disks, the tongue *b* is secured by the bolt and thumb-nut in the position, as shown in figs. 1 and 2, and the square is placed upon the object to be centred, the tongue resting across the end, one edge of which will divide the shaft exactly in the centre.

For making longitudinal lines on shafting for keyways or any other purpose, the tongue *b* is secured to the square in the manner as shown in figs. 3 and 4, and the square is placed on the object to be lined, the long arm of the tongue resting lengthwise on the shaft, thereby lining it exactly over and parallel with the centre.

Having described my invention,

I claim, in combination with the square, the adjustable slotted bar *b*, when constructed as and for the purpose substantially as described.

GEO. W. BROOKS.

Witnesses:

IRA GREENOUGH,
ARTEMUS W. GODDARD.