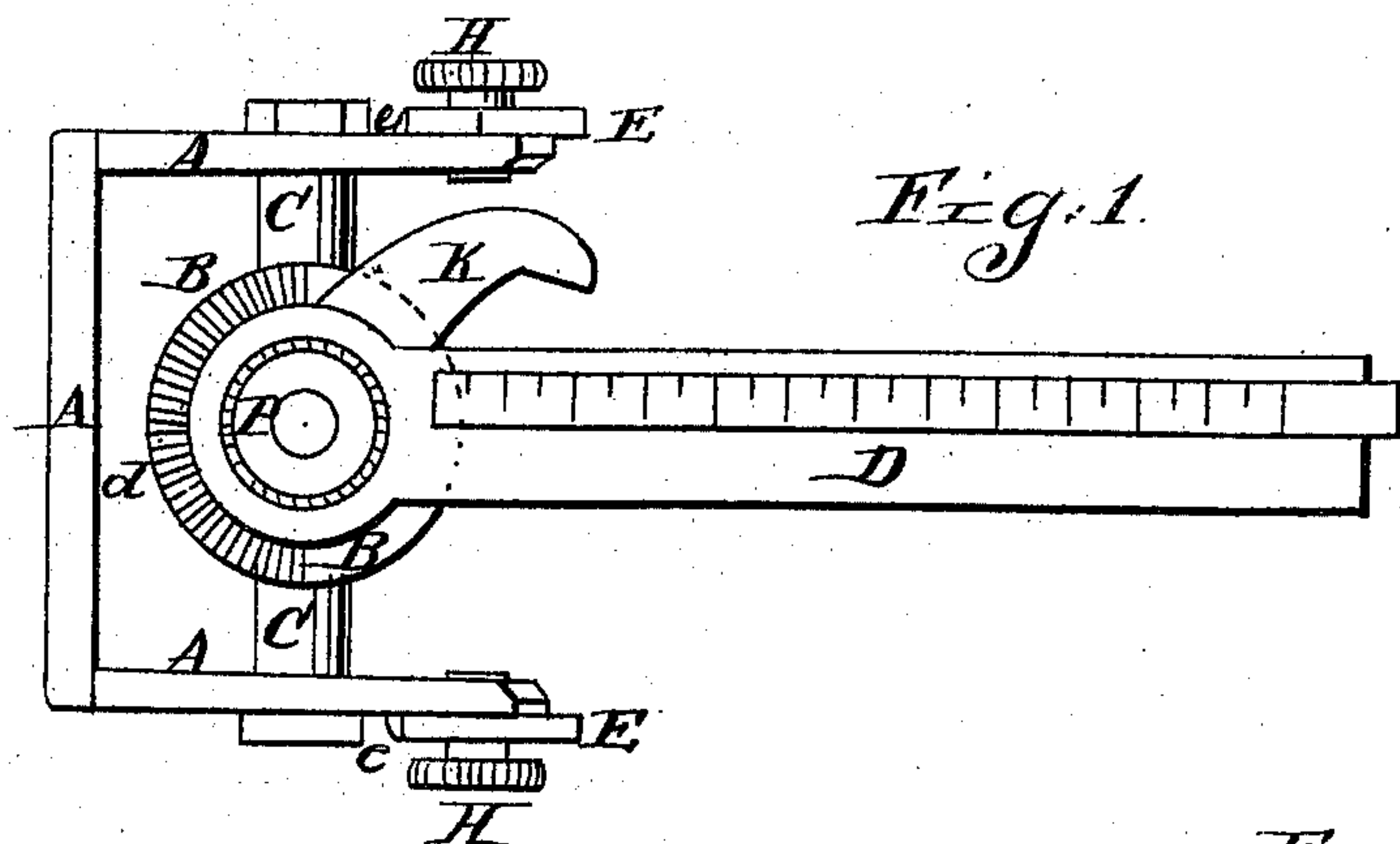


*H. N. Burr.*

*Combination Square.*

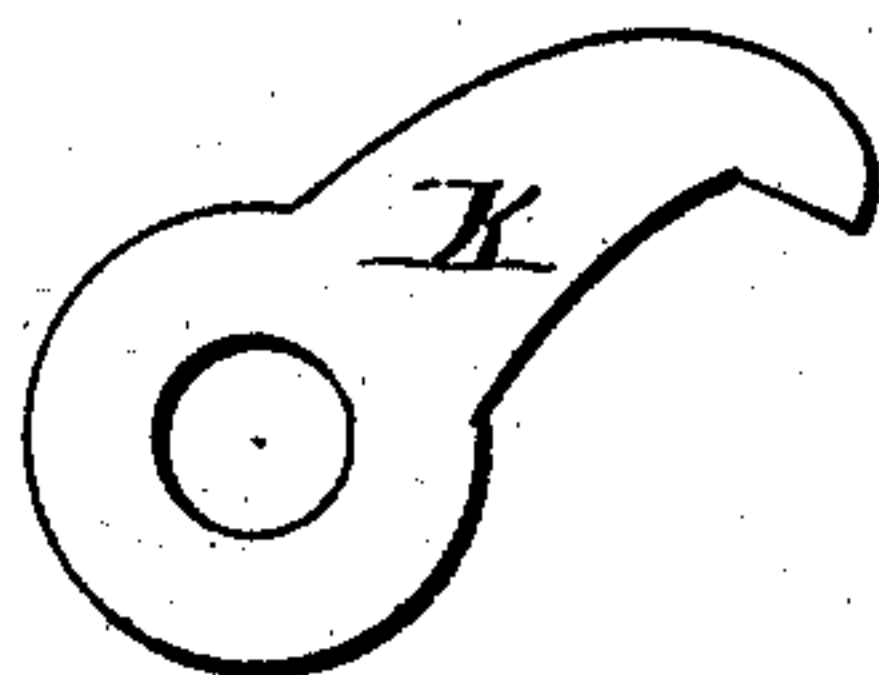
*N<sup>o</sup> 94,867.*

*Patented Sept. 14, 1869.*

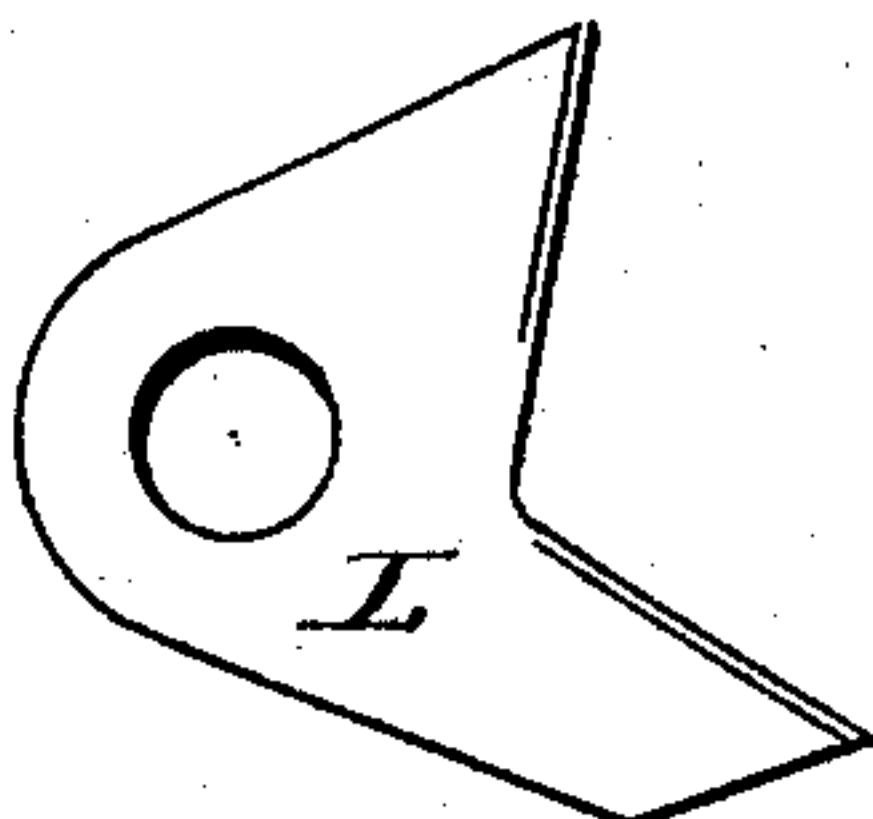


*Fig. 1.*

*Fig. 3.*



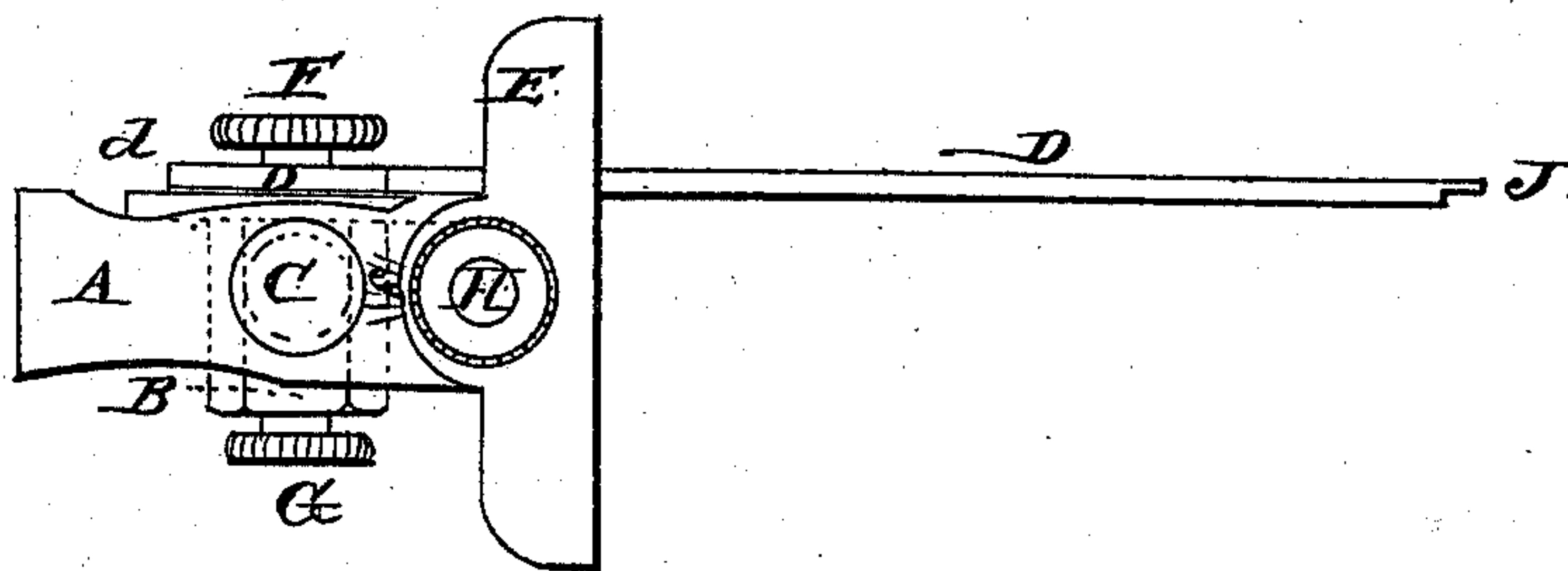
*Fig. 4.*



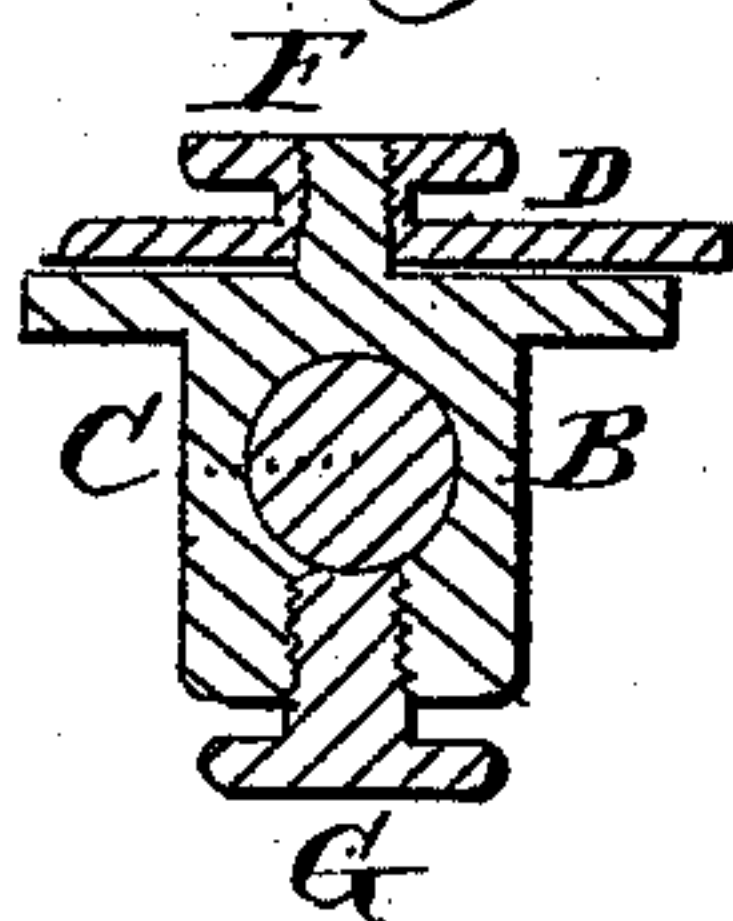
*Fig. 5.*



*Fig. 2.*



*Fig. 6.*



Witnesses:

*F. W. Howard*  
*E. C. Sterling*

Inventor:

*H. N. Burr*  
By his Attorney  
*Chas. F. Mansbury*



# United States Patent Office.

H. N. BURR, OF MOUNT GILEAD, OHIO.

Letters Patent No. 94,867, dated September 14, 1869.

## IMPROVEMENT IN COMBINATION-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, H. N. BURR, of Mount Gilead, in the county of Morrow, and State of Ohio, have invented a new and useful tool or instrument, which I denominate a Combination-Square; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of the square complete.

Figure 2 is a side elevation of the same.

Figures 3, 4, 5; and 6, details.

The same letter indicates the same part wherever it occurs.

The object of this invention is to provide a tool for circular, bevelled, and other work, adapted for the use of machinists, wheelwrights, millwrights, and pattern-makers, and applicable to a variety of useful purposes in the mechanic arts.

The invention consists in the peculiar construction of a square, provided with numerous graduated adjustments which adapt it for use on surfaces in different planes, and at various angles with each other, and for laying out and spacing circular, bevelled, and other work in a convenient, rapid, and accurate manner, all as hereinafter more particularly described.

To enable others to make and use my new and improved square, I will proceed to describe its construction and operation.

In the drawings—

A marks a rectangular frame, the two sides of which are united by the arbor C.

The frame has two adjustable feet, E E, which are fixed at any desired angle with it by means of the set-screws G H.

Each of these feet has an index, *e*, at its apex, as shown in fig. 2, which moves over a graduated arc on the frame, enabling the feet to be set in advance at any given angle.

On the arbor C is placed the head B, so as to slide longitudinally on the arbor, and also to rotate on it as an axis.

It is fixed to the arbor at any desired angle to the frame by means of the set-screw G, figs. 2 and 6, which passes up through its lower end and abuts against the surface of the arbor.

The top of this head B is a circular flange, graduated as shown in fig. 1.

On the flange is placed the blade D of the square, which is held in place by means of clamp-screw F, which enables it to be adjusted at any required angle with the head of the square.

An index, *d*, on the rear of the blade D, facilitates this adjustment.

The blade D is provided with a sliding-scale, J.

The spacing-arm K is a flat piece of metal of the form shown in fig. 3.

The angle-arm L is of the form shown in fig. 4, having its inner edges turned up at right angles to its surface, as shown in fig. 5, which presents it in edge view.

These arms are sometimes placed on the screw F, between the blade D and the flange of the head B, and are clamped in any required position by the screw F.

The office of arm K is to aid in dividing a surface into equal spaces by lines at any desired distance apart.

Arm L is intended to receive and hold objects too small to be received and held by the feet E E.

The application of the instrument to various classes of work will be at once apparent to the practical mechanic.

It can be used as an ordinary T-square, by adjusting the blade D at right angles to the arbor C.

The blade D can be set to any bevel by loosening the clamp-screw F, and placing the index *d* at the proper point on the graduated arc of the flange of head B.

Spacing can be conveniently and rapidly accomplished by setting the arm K at the distance from the edge of the blade D it is desired to place the lines apart. Then, having drawn a line along the edge of the blade, retract the blade until the point of arm K touches the line so drawn. The edge of the blade will then be in the proper position for the next spacing line.

Wheels or other articles too small to be embraced by the feet E E will be held by the angle-arm L, as before stated, while the required work is performed.

The feet E E can be adjusted to surfaces on planes at any angle to the plane of the square frame, and the blade D can, at the same time, be adjusted to another plane, distinct from those of the frame and of the feet.

The maximum lateral inclination of the blade D to the arbor C will be obtained by bringing the periphery of the flange of head B in contact with one or other of the sides of frame A, by sliding the head B on the arbor C, to the side preferred.

Having thus fully described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The combination of the frame A, arbor C, head B, and blade D, in the manner and for the purposes described.

2. The combination of the frame A and feet E E, in the manner and for the purpose set forth.

3. The spacing-arm K, arranged for conjoint operation with the blade D, in the manner and for the purpose specified.

4. The angle-arm L, in combination with the instrument constructed as described, for the purpose stated.

The above specification of said invention signed and witnessed at Mount Gilead, this 20th day of May, A. D. 1869.

H. N. BURR.

Witnesses:

GEORGE D. CROSS,

THOMAS PATTERSON.