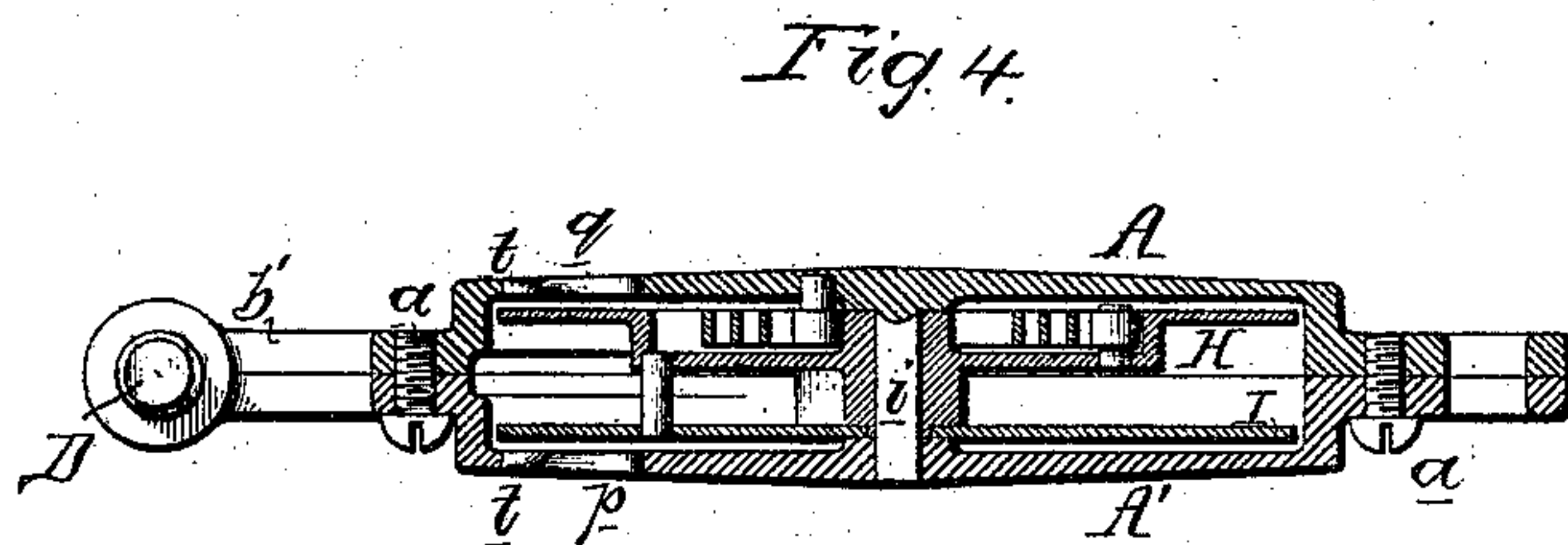
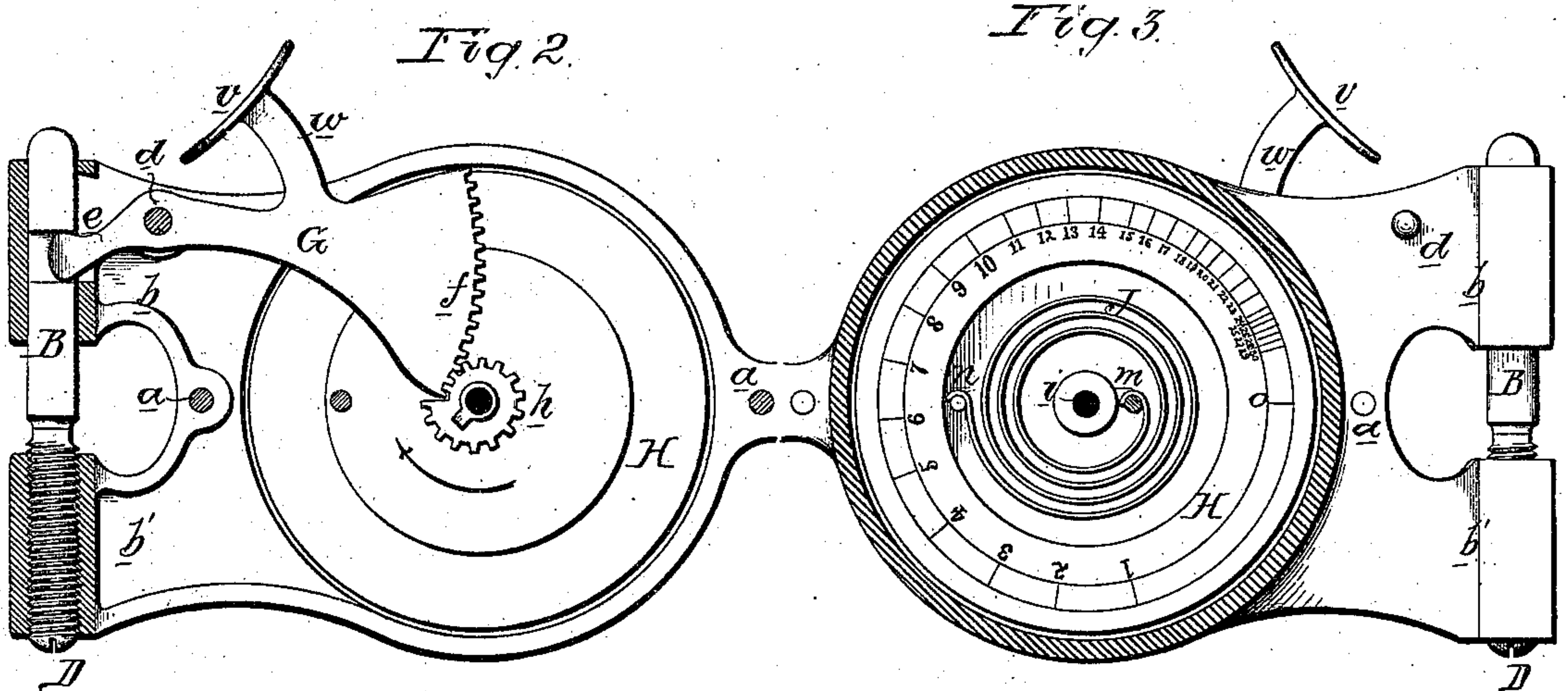
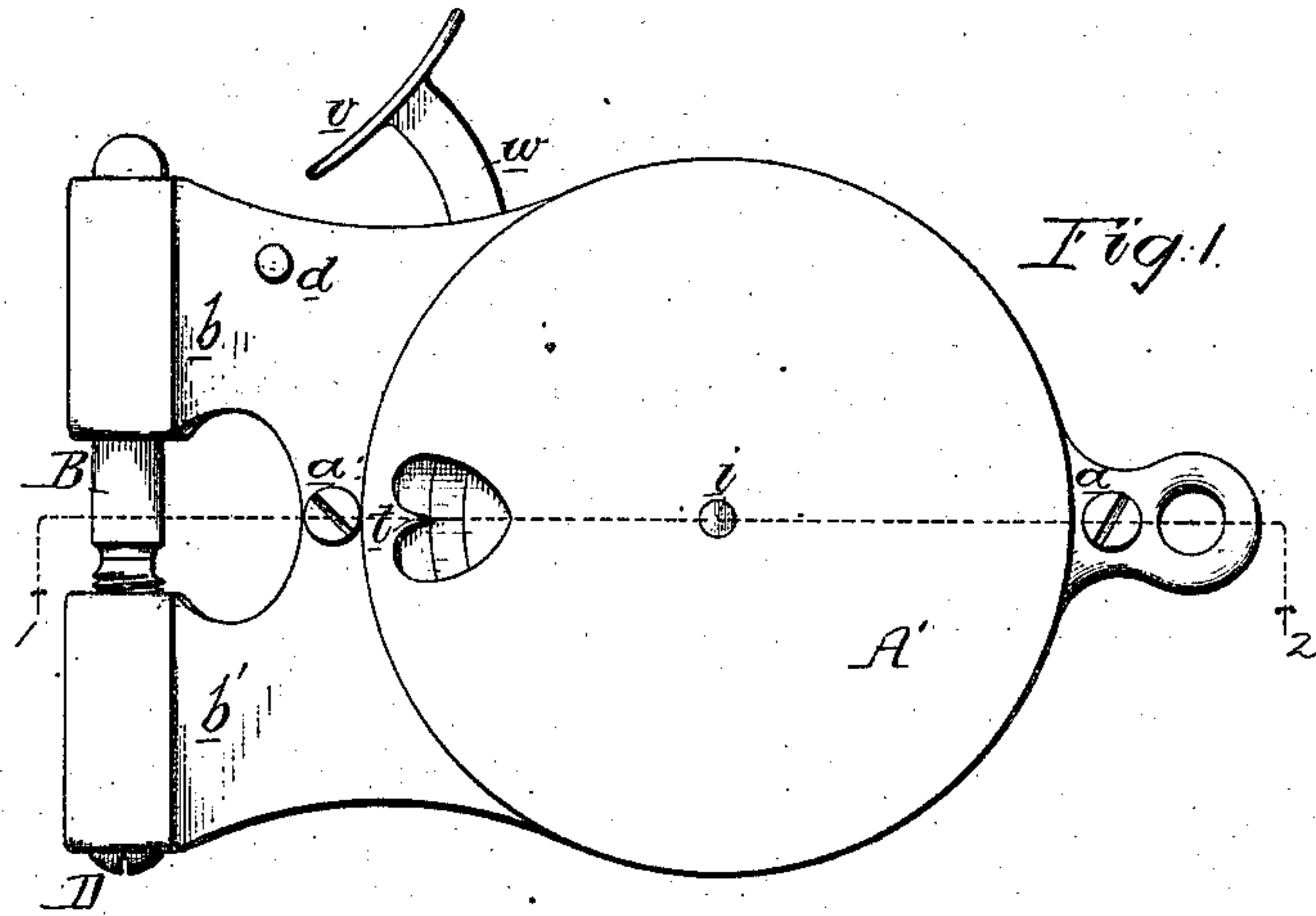


T. S. DISSTON.

GAGE.

No. 174,211.

Patented Feb. 29, 1876.



Witnesses
Harry Howson Jr
Harry Smith

Thomas S. Dieston
by his Attorneys
Howson and Son

UNITED STATES PATENT OFFICE.

THOMAS S. DISSTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO HENRY DISSTON, HAMILTON DISSTON, AND ALBERT H. DISSTON, OF SAME PLACE.

IMPROVEMENT IN GAGES.

Specification forming part of Letters Patent No. 174,211, dated February 29, 1876; application filed February 14, 1876.

To all whom it may concern:

Be it known that I, THOS. S. DISSTON, of Philadelphia, Pennsylvania, have invented an Improved Measuring-Gage, of which the following is a specification:

The object of my invention is to construct for gaging-plates, wire, and other objects, an instrument which can be conveniently manipulated and applied, and the truth of which can always be insured.

In the accompanying drawing, Figure 1 is an exterior side view of my improved gage; Fig. 2, the same as it appears after the removal of one side of the casing and one of the graduated plates; Fig. 3, a sectional view the reverse of that shown in Fig. 2, and Fig. 4 a transverse section.

The casing of the gage consists, in the present instance, of two plates, A and A', secured together by screws *a a*, and from one of these plates project the two arms *b* and *b'*, the former for the reception and guidance of a pin, B, and the latter for receiving the set-screw or adjustable pin D, the said screw and pin being in line with each other. A lever, G, contained between the two plates A and A' of the casing, is hung to a pin, *d*, and the short arm *e* of this lever projects into a slot, *e'*, in the pin B, or is otherwise connected to the same. On the end of the long arm of the same lever is formed a toothed segment, *f*, which gears into a pinion, *h*, on the circular plate H, both the latter and the pinion being arranged to turn on a central pin, *i*, projecting from the plate A of the casing. A disk, I, is also arranged to turn with the plate H and pinion on the same pin. The said plate H is dished for the reception of a coiled spring, J, one end of which is attached to a pin, *m*, on the plate A of the casing, the other end being connected to the pin *n* on the plate H. The tendency of this spring is to turn the pinion *h* in the direction of the arrow, Fig. 2, and consequently to maintain the pin B in contact with the end of the screw D. The outer face of the circular plate H has a circular scale, as shown in Fig. 3, and graduations and figures of this scale can be observed through the opening *p* in the plate A' of the casing, a part of the lat-

ter projecting in the form of a pointer, *t*, into the said opening. In like manner the graduations on the circular plate H can be observed through an opening, *q*, in the plate A of the casing, from which a pointer also projects into the said opening. The graduations of the plate H and those of the disk I differ from each other, one scale being arranged and numbered in accordance with the ordinary Birmingham wire-gage, and the other to accord with the American or Brown and Sharp gage.

From the lever G an arm, *w*, projects through the edge of the casing, and this arm terminates in a plate, *v*, for receiving the operator's thumb.

It will be observed that the toothed segment *f* gears into, and is made to conform with, a differential pinion, *h*—a plan which is not essential, although I prefer it, because it insures a differential movement of the graduated disk and plate in respect to the movement of the pin B, and this enables me to mark on the scales a number of subdivisions for determining the gage of thin plates.

In using the instrument, the operator grasps the casing in his right hand, and, by applying his thumb to the plate *v*, depresses the long arm of the lever, thereby elevating the pin B. With his other hand he introduces a plate or other object to be gaged between the upper end of the set-screw or adjustable pin D and the pin B, and then releases the lever G, which, through the action of the spring J, depresses the said pin B, and brings it into contact with the plate, the exact thickness of which can be ascertained by an examination of the scale on either the plate H or disk I in connection with the pointer.

For the convenient examination of one scale, the instrument may be held in the position shown in Fig. 2; but for the purpose of examining the other scale the instrument should be reversed, when the arm *w* of the lever G will be below, and can be manipulated by the forefinger instead of the thumb.

One of the serious objections to the ordinary wire gage is the wearing away of the metal on each side of each slot by the repeated introduction of the object to be gaged. This

difficulty is obviated in the above-described instrument, for, should the upper end of the screw D or lower end of the pin B become worn, so as to render the instrument untrue, the fact can be at once determined by the pointer, which, when the pin and screw are in contact with each other, should always coincide with the zero-mark, (0), and if this examination detects any untruth it can be easily rectified by the adjustment of the screw.

I claim as my invention—

1. The combination, in a gaging instrument, of an adjustable screw or pin, D, a sliding pin, B, a spring tending to maintain the same in contact with the said adjustable pin D, and a graduated plate or plates, geared to and arranged to move simultaneously with the said sliding pin, all substantially as set forth.

2. The combination of the pin B, the lever

G, its arm *w*, and toothed segment *f*, with the pinion *h*, connected to the graduated plate or plates.

3. The differential pinion on the graduated plate or plates, in combination with the toothed segment on the operating-lever G, connected to the pin B.

4. The combination of the two sides A A' of the casing with the graduated disk I, dished and graduated plate H, and coiled spring J, all being constructed substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOS. S. DISSTON.

Witnesses:

H. HOWSON,

HARRY HOWSON, Jr.