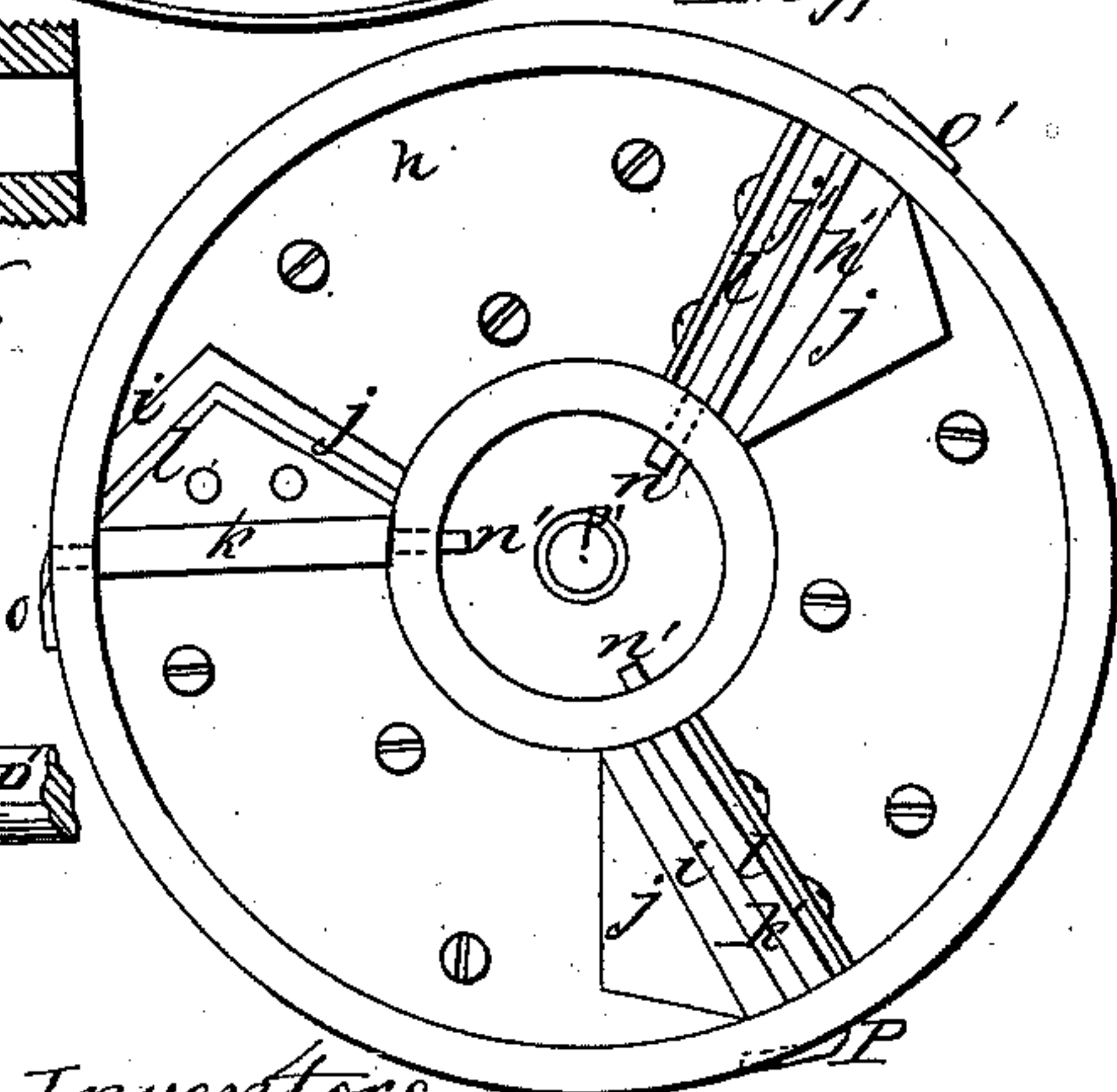
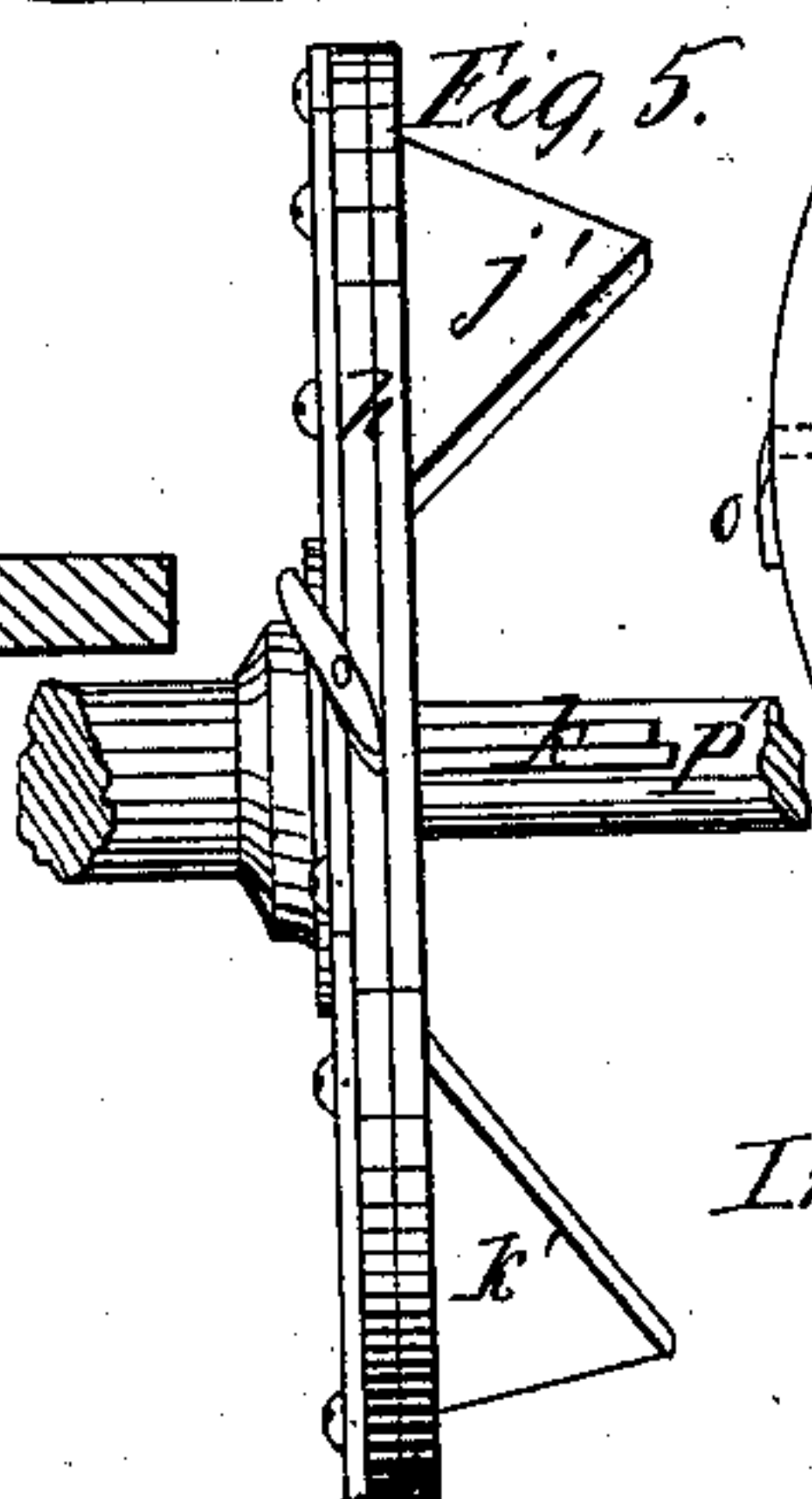
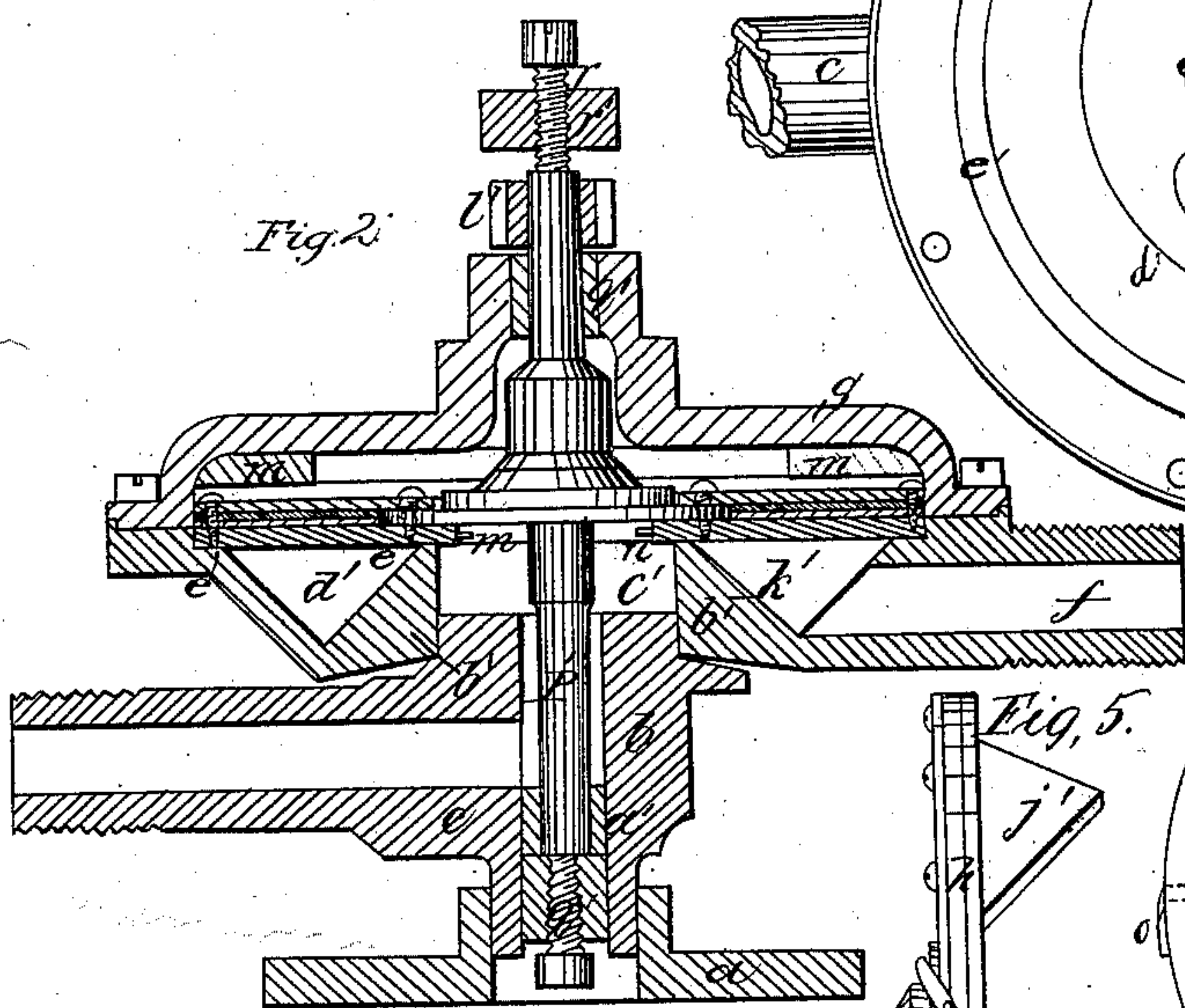
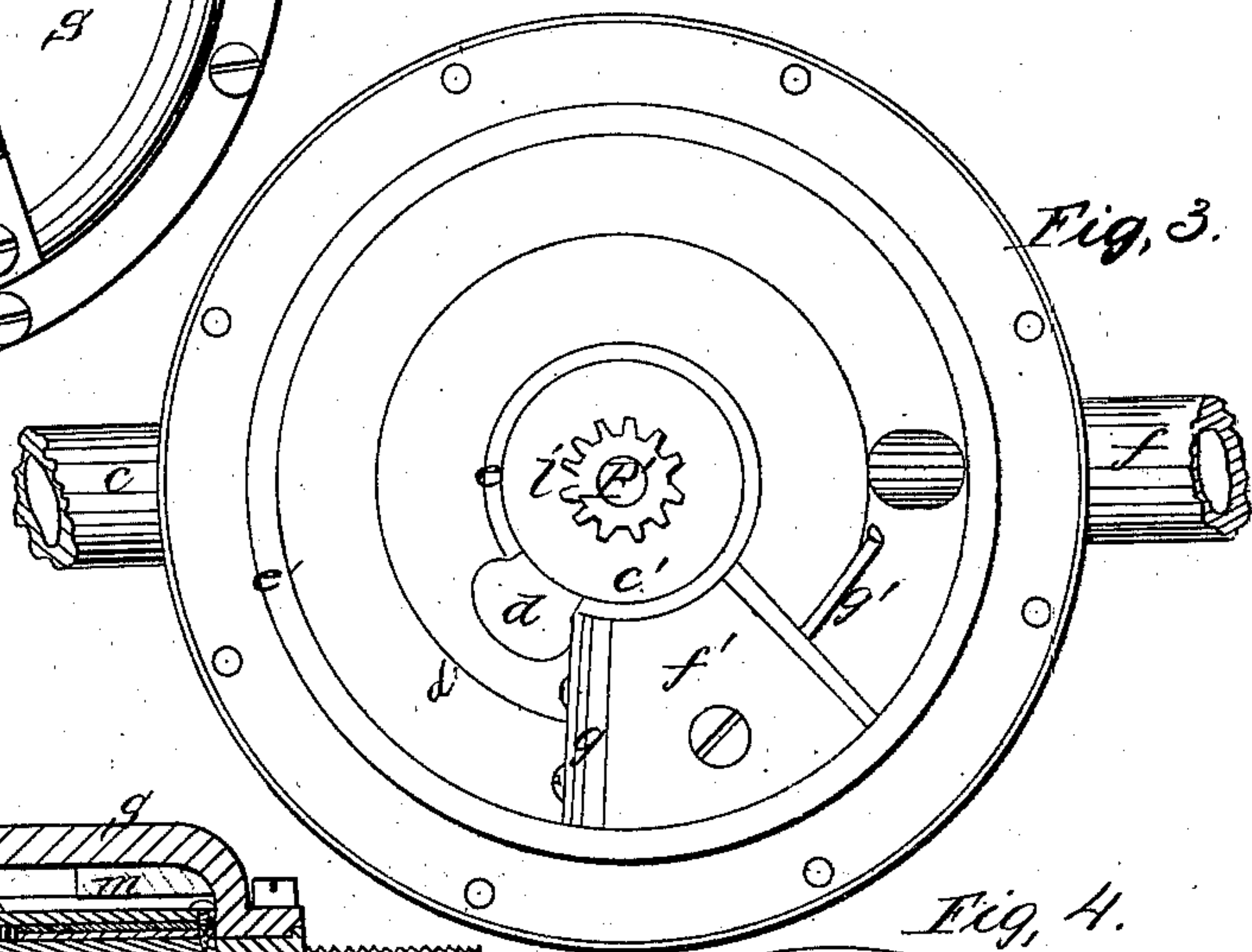
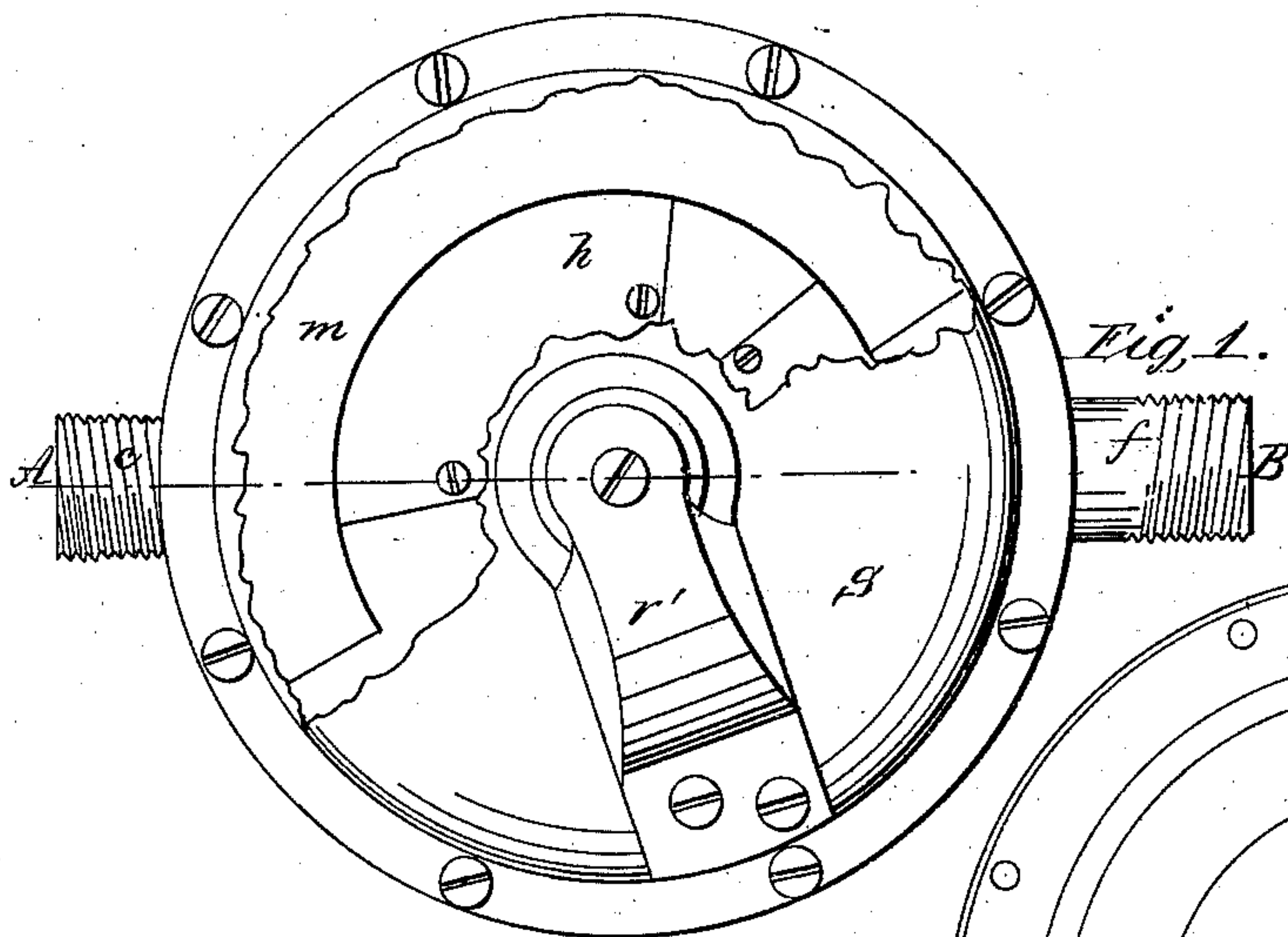


Bradshaw & Brown.

Water Meter.

No. 88,362.

Patented Mar. 30, 1869.



Witnesses,
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JOHN A. BRADSHAW AND WILLIAM H. BROWN, OF LOWELL, MASSACHUSETTS.

Letters Patent No. 88,362, dated March 30, 1869.

IMPROVEMENT IN WATER-METER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JOHN A. BRADSHAW and WILLIAM H. BROWN, both of Lowell, in the county of Middlesex, and State of Massachusetts, have invented new and useful Improvements in Water-Meters; and we 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 our invention consists in providing a water-meter with several devices, so arranged and constructed that the amount, or quantity of water used may be accurately measured, and at the same time be self-operating, combining in itself simplicity, durability, cheapness, and novelty.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

Figure 1 represents a plan of our improved water-meter.

Figure 2 represents a longitudinal section through A and B of fig. 1.

Figure 3 represents a plan of the meter-case.

Figure 4 represents a plan of the float-plate.

Figure 5 represents a side elevation of the same.

Similar letters, in the different figures, indicate corresponding parts.

a represents the pedestal, to which is secured firmly the stand *b*, the bottom of this stand being supplied with a socket, *a'*, and the top with a flange, to which is secured the meter-case *b'*. The stand *b* is also provided with a receiving-pipe, *c*, which conveys the water to and through the centre of the same, into the chamber *c'*, where it then passes through the aperture *d* into the meter-chamber *d'*; this chamber, *d'*, as represented in the drawings, being of a triangular form, but may be made in various forms, as desired.

The disk-edge *e*, of the meter-chamber *d'*, is finished true and level with the seat *e'*, which is formed in the top of the meter-case *b'*, on the outside of the meter-chamber *d'*.

f is the discharge-pipe, which connects with the meter-chamber *d'*. This chamber is further provided with a foothold, *f'*, which is located in the same, between the aperture *d* and discharge-pipe *f*, its top being flush and even with the seat *e'* and disk-edge *e*.

The side of this foothold *f'*, nearest the aperture *d*, is supplied with elastic packing *g*, the other side being provided with an inclined plane, *g'*.

h is the float-plate, its under side being finished off true and level, which, when placed in position, will bear equally on the disk-edge *e* and seat *e'*, thus forming a cover for the meter-chamber *d'*, making it perfectly water-tight. This float-plate *h* is provided with recesses *h'*, *i*, and *i'*, suitably packed with elastic packing *j j j*, and supplied with floats *j'*, *k*, and *k'*, which correspond exactly in shape with the meter-chamber *d'*. They are

provided with elastic packing *l l l*, and hung in the under surface of the plate *h*, by suitable gudgeons, or shafts *m'*, *n*, and *n'*, one bearing near the centre of said plate, and the other near its periphery, and projecting through the same, their ends being so constructed as to form arms *o*, *o'*, and *p*.

The floats *j'*, *k*, and *k'*, when closed in the recesses *h'* *i* *i'*, are flush with the under side of the plate *h*, their weight being sufficient to open them when in position. They are kept open by the semicircular projection *m*, the leaves coming directly against the edge of the recesses *h'*, *i*, and *i'*, forming a perfect joint, water-tight, between the same and plate *h*.

Passing through the plate *h*, and secured to the same, is the shaft *p'*, which is provided with bearings at each end; its lower bearing resting in the socket *a'*, and adjusted by means of the screw *q*, the top bearing fitting or working in the socket *q'*, and adjusted by the screw *r*, which passes through the top of the stand *r'*, which is secured on and to the cap *s*, by means of screws.

Attached to the extreme end of the shaft *p'* is the pinion *l*, which, when the shaft *p'* is in operation, imparts motion to a worm, or gear, which may be attached to a suitable clock, which will indicate the work performed, as desired.

The cap *s*, in its inside, is furnished with a semicircular projection, *m*, its object being, when the float-plate *h* is in motion, the arms *o*, *o'*, and *p*, will operate on the surface of the same, keeping the floats *j'*, *k*, and *k'* open, as desired. The under side of this cap *s* is turned, and finished true, to correspond with the top and finish of the meter-case *b'*, and when properly secured to the same, is water-tight.

The meter being thus constructed, and its several parts finished, and adjusted in their respective places, and properly secured, is then ready for use. Water is let into the receiving-pipe *c*, passing through the same into and through the centre of the stand *b*; thence to the chamber *c'*, forcing through the aperture *d*, into the meter-chamber *d'*, where it comes in contact with the floats *j'*, *k*, and *k'*, one at a time, and foothold *f'*, which being firm and stationary, and properly packed, the whole force and pressure of the water is thrown against the floats, carrying the float-plate *h* around until another float, *k*, receives the same pressure, and so on, float succeeding float alternately, as long as the plate *h* revolves. The water being carried forward, and prevented from passing around the foothold *f'*, is forced to escape, with great pressure, through the discharge-pipe *f*.

The floats *j'*, *k*, and *k'*, are closed alternately before passing the foothold *f'*, by the aid of the inclined plane *g'*, their weight, with the aid of the projection *m*, opening them, after passing the foothold *f'*, and they are kept open by the assistance of the semicircular projection *m*, until all the water in advance of each float is discharged through the discharge-pipe *f*.

The quantity of water contained between the float and foothold f' , or one-third of the contents of the chamber d' , the measurement, or calculation of water discharged is easily and readily computed, by the number of revolutions of the shaft p , which is indicated on the clock by the assistance of the pinion l .

Thus it will be seen, that with our improved water-meter, we are enabled to accurately measure the water from any service-pipe that may be required, simply by opening the discharge-pipe f , and force the same, as desired, with this device, which is simple in its construction, cheap, reliable, and durable.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the meter-case b' , foothold f' , with packing g and inclined plane g' , when constructed and arranged to operate as herein described, and for the purposes set forth.

2. In combination with the arms o , o' , and p , the

semicircular projection m , when constructed and arranged to operate the floats j' , k , and k' , as herein described.

3. The arrangement and construction of the float-plate h , with recesses h' , i , and i' , and elastic packing $j j j$, when used in connection with the floats j' , k , and k' , as and for the purposes described and set forth.

4. The combination and arrangement of the cap s , with semicircular projection m , float-plate h , with floats j' , k , and k' , shaft p' , adjustable screws q and r , meter-case b' , with chamber d' , foothold f' , inclined plane g' , and discharge-pipe f , stand b , with receiving-pipe c , all when constructed and arranged to operate substantially as and for the purposes herein described and set forth.

JOHN A. BRADSHAW.

WM. H. BROWN.

Witnesses:

S. F. GLADWIN,
GEO. E. PEVEY.