

No. 890,822.

PATENTED JUNE 16, 1908.

J. M. TOURTEL & G. L. HOGAN.  
THERAPEUTIC VIBRATORY APPARATUS.

APPLICATION FILED MAY 12, 1906.

2 SHEETS—SHEET 1.

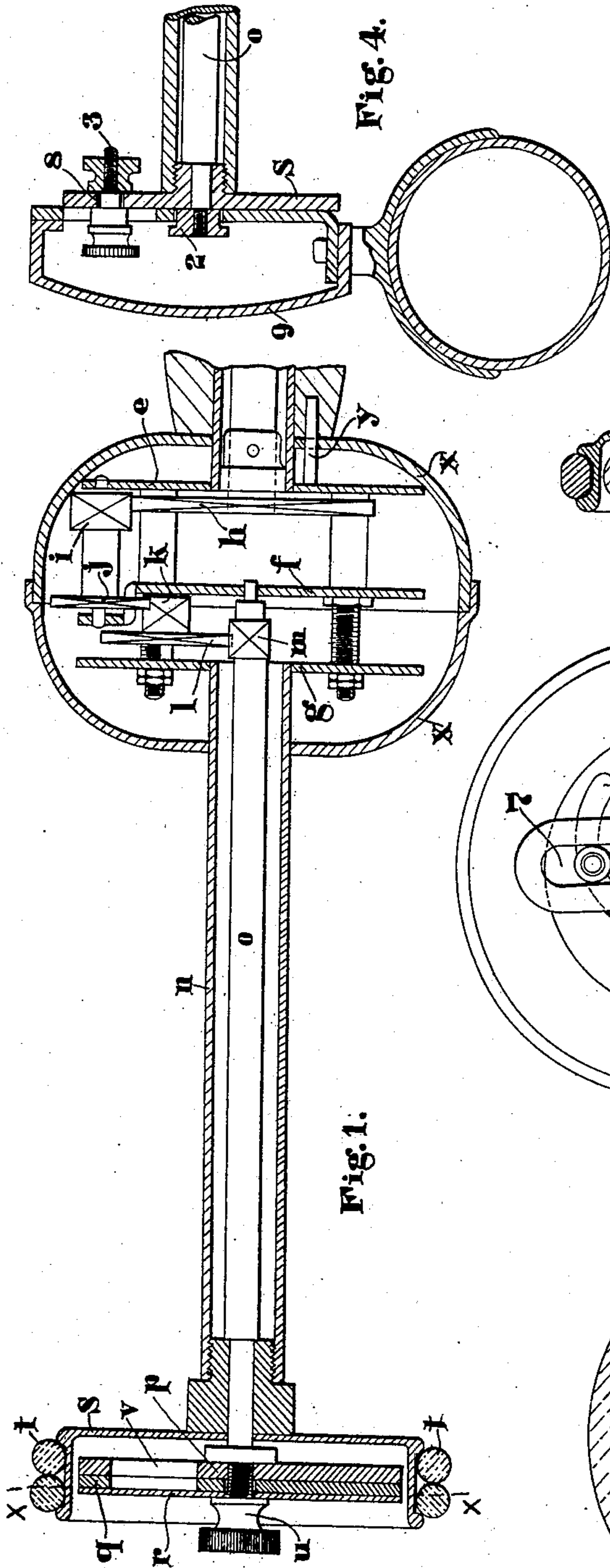


Fig. 1.

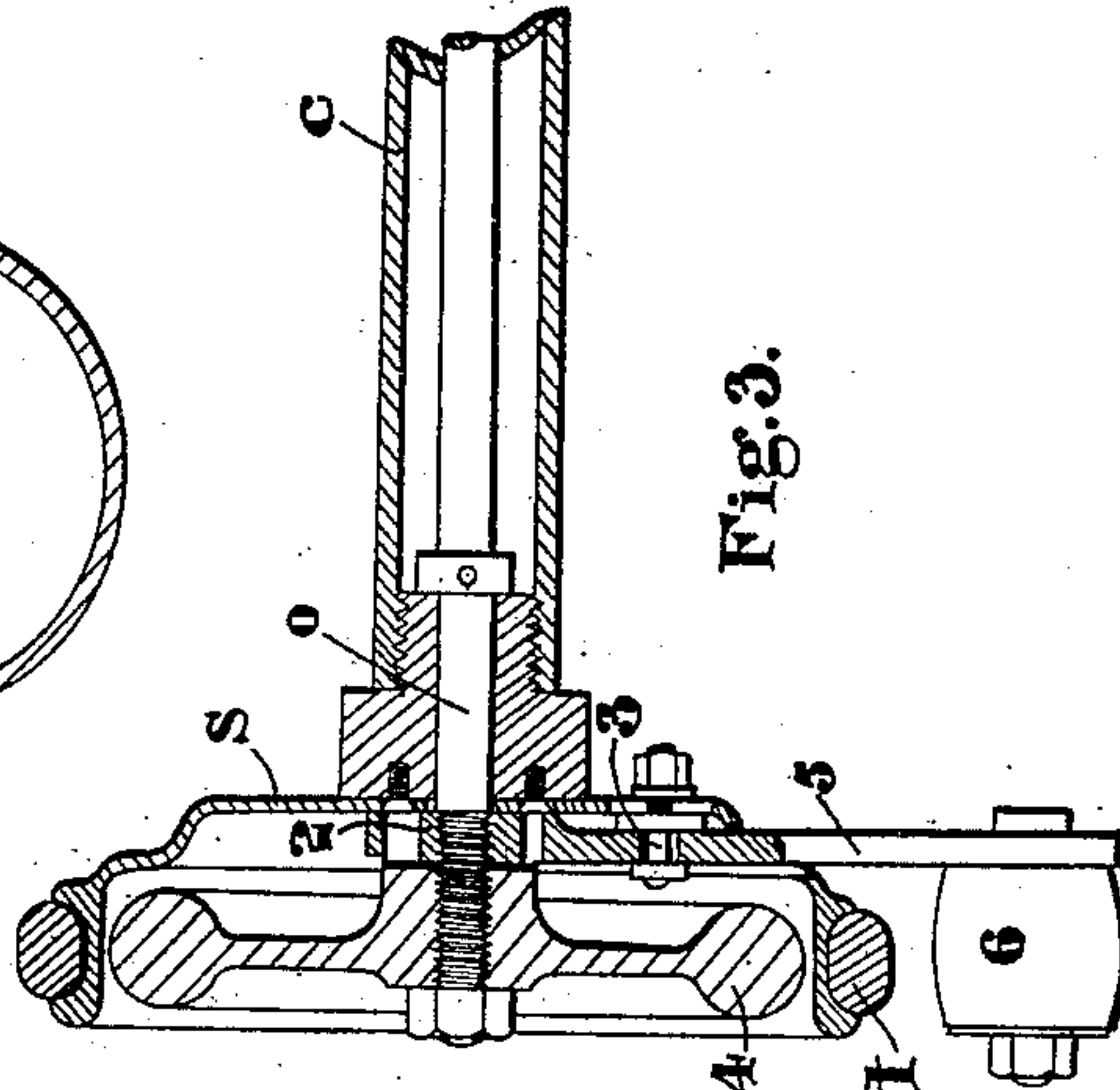


Fig. 3.

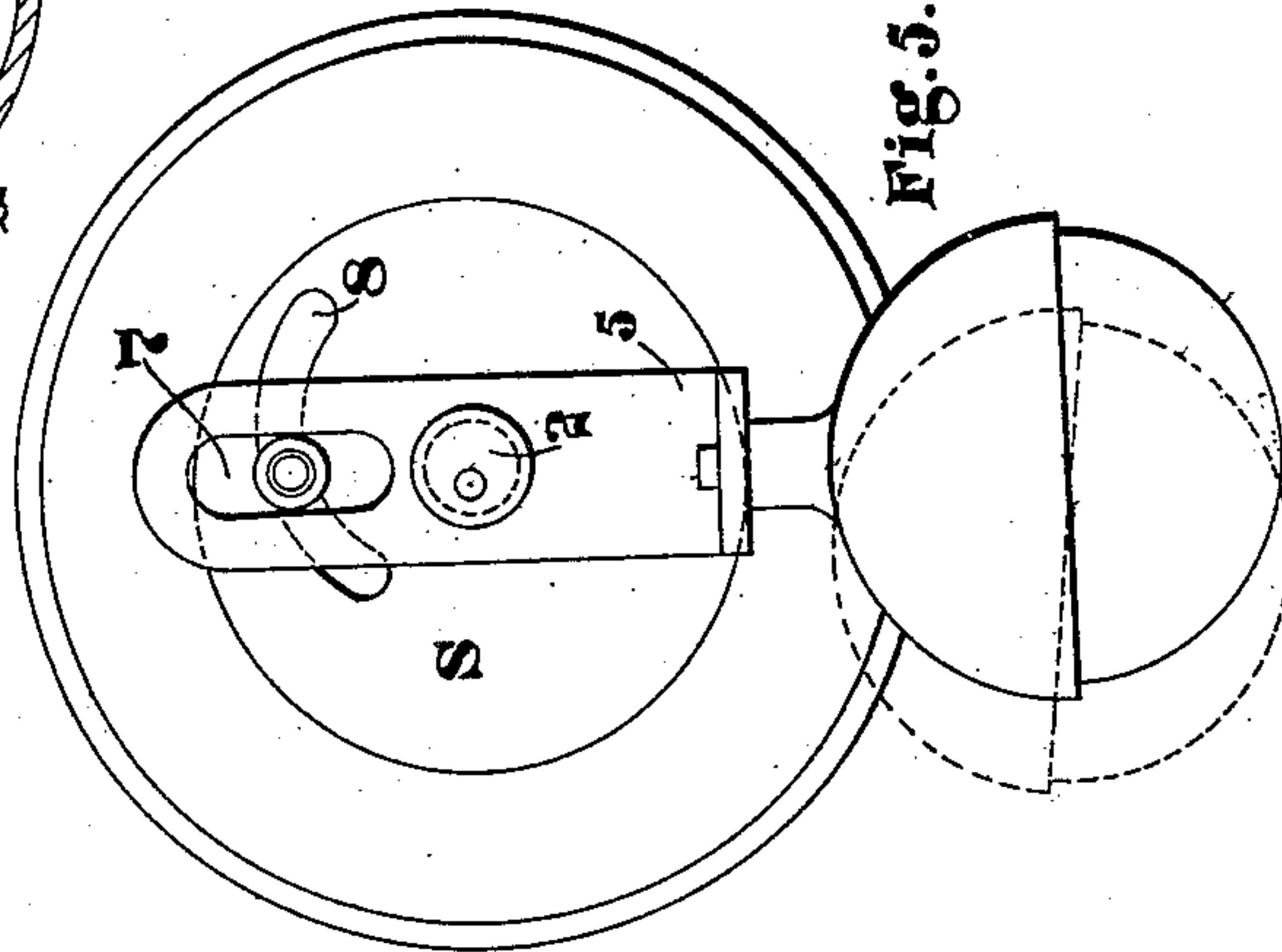


Fig. 5.

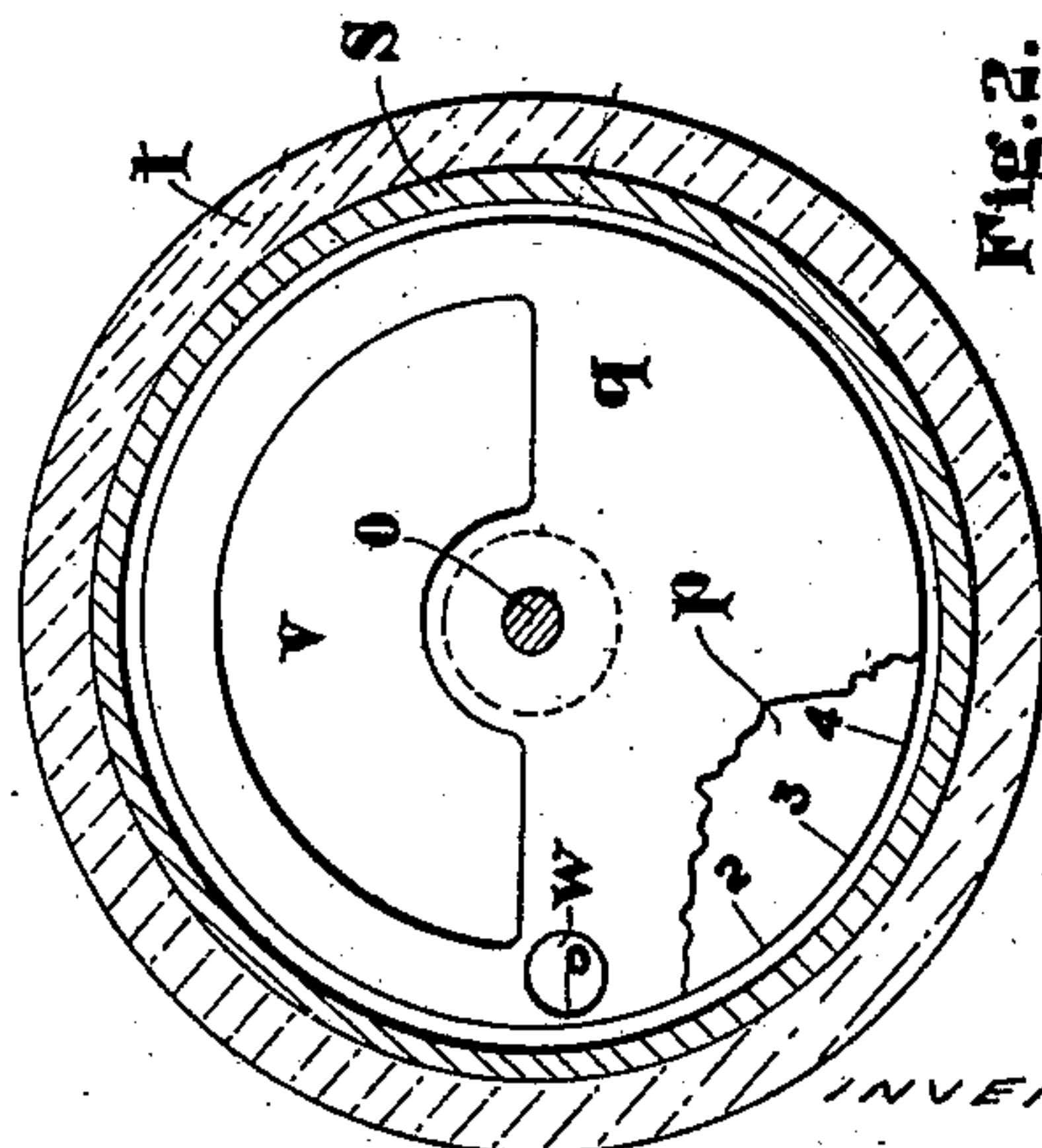


Fig. 2.

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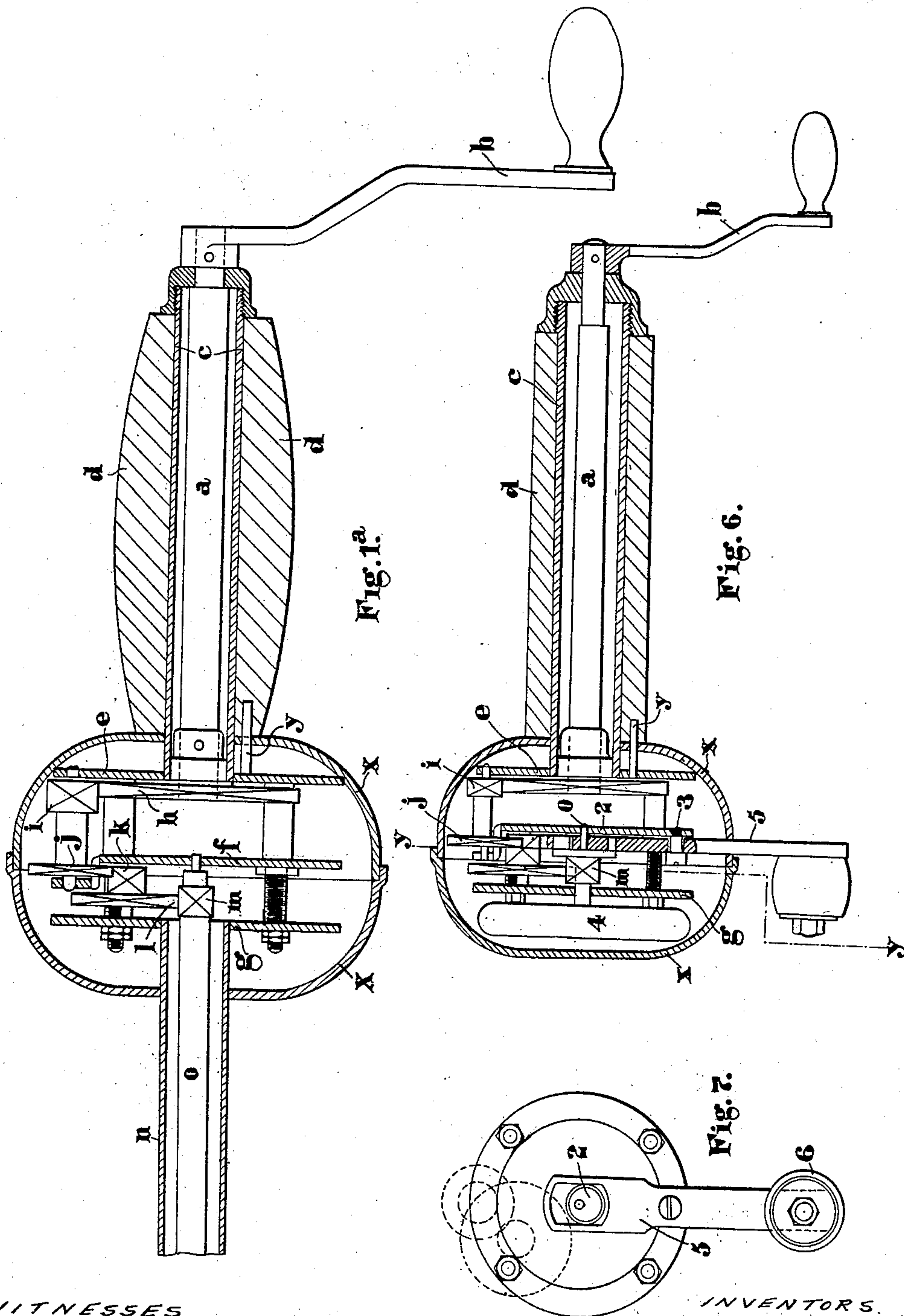
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# UNITED STATES PATENT OFFICE.

JOHN MESNY TOURTEL AND GEORGE LEWIS HOGAN, OF LONDON, ENGLAND.

## THERAPEUTIC VIBRATORY APPARATUS.

No. 890,822.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed May 12, 1905. Serial No. 260,118.

*To all whom it may concern:*

Be it known that I, JOHN MESNY TOURTEL, a subject of the King of Great Britain and Ireland, and residing at Wardrobe Chambers, 146<sup>a</sup> Queen Victoria street, London, England, consulting engineer, and I, GEORGE LEWIS HOGAN, a subject of the King of Great Britain and Ireland, and residing at Queen's House street, James Court, Buckingham Gate, London, England, engineer, have invented certain new and useful Improvements in Therapeutic Vibratory Apparatus, of which the following is a specification.

This invention relates to apparatus for producing and imparting vibrations, oscillations or the like for therapeutic, hygienic or similar purposes the object being to improve the construction and arrangement of parts so as to produce a compact and very effective apparatus which is very convenient to hold and easy to work.

In the accompanying drawings several forms of the invention are illustrated by way of example:

Figures 1 and 1<sup>a</sup> show longitudinal sections of the apparatus, Fig. 2 being a cross section on X X, Fig. 1. Fig. 3 is a part longitudinal section of a slightly modified form. Figs. 4 and 5 are longitudinal section and end view respectively of another form. Fig. 6 is a longitudinal section of a further form, Fig. 7 being a cross section on Y Y, Fig. 6.

In carrying the invention into effect according to one mode as illustrated in Figs. 1 and 2 a driving spindle *a* is suitably mounted in a sleeve *c* of a hand grip *d*, so that it may be freely rotated therein by a crank handle *b* while the hand grip *d* is held stationary. A plate *e* is mounted on the projecting end of the sleeve *c*. This plate and two others *f* and *g* connected therewith by pillars or bolts form supporting plates for the gearing. A main driving wheel *h* is mounted on the inner end of the driving spindle *a*. This wheel *h* drives a pinion *i* freely pivoted in the two plates *e* and *f* and mounted on the same spindle as or made in one with another pinion *j*. The plate *f* is bent in the manner shown and slotted so that the pinion *j* projects through the slot and engages with a pinion *k* on the other side of the plate *f*. The pinion *k* is rigid with the wheel *l* which drives a pinion *m* on a vibrating spindle *o* which is mounted at one end in the plate *f* and at the other in a bearing formed by a plug screwed in the end of a projecting sleeve *n* secured to the plate *g*.

By bending and slotting the plate *f* to enable the pinion *i* to project through the slot and the pinion *k* to nest in the angle a very compact arrangement of gearing is rendered possible. Further, the wheel *l* being able to project beyond the spindle of the pinion *i* and wheel *j* it may be of larger diameter than it could be if the said spindle was mounted between the two plates *g* and *e*. The whole gearing is inclosed in a suitable casing for instance an approximately spherical casing such as *x* made in halves fitting one in the other as shown. A pin *y* projects from the plate *e* into the wooden or other handle *d*, so as to insure the gearing plates and the handle being held stationary when the handle is gripped and the crank handle *b* is turned.

Upon the outer end of the vibrating spindle *o* are mounted two disks *p*, *q*, having openings, *v*, therein, so arranged that the weight is unequally distributed. Both disks are loosely mounted on the spindle being clamped by a screw *u* against a suitable shoulder. One of the disks *p* for instance, has a scale marked on it while the other, *q*, has an aperture *w* through which the scale may be seen when the disks are relatively rotated. By this means their relative positions may be set or adjusted so as to give different degrees of eccentricity as regards the distribution of weight that is to vary the position of their combined center of gravity and thereby to vary the degree of vibration consequently set up. A cover plate *r* may be placed over the outer disk. The disks are inclosed in a guard *s* which may have rubber or other cushions *t* thereon to prevent injury in case of the apparatus being allowed to fall and also to enable the vibrations to be transmitted without jar.

When a tapping action is required the disks before referred to are replaced by an oscillating or reciprocating tapper actuated by the vibrating spindle *o*. For example as illustrated in Fig. 3 an eccentric 2 mounted on the end of the spindle *o* engages in the slotted end of a vibrating lever or tapper 5, which is pivoted on a pin 3 secured to the guard *s* which is slotted to permit the passage therethrough of the tapper 5. A fly-wheel 4 is mounted on the spindle *o*. The tapper may have a contact piece 6 thereon.

The pivot pin 3 may be passed through a slot in the guard *s* to which it is clamped by a nut and washer. This arrangement allows the pivot pin to be adjusted so that the



amount of oscillatory movement imparted to the tapper may be varied as desired, or in another form as shown in Figs. 4 and 5 the pin 3 may work in a slot 7 in the lever or tapper 5 and be secured by a clamping nut and washer in an eccentric slot 8 in the guard plate *s*. Adjustment may then be effected by slacking the nut and turning the tapper relatively to the casing *s*. A front guard or cover 9 may be screwed to the tapper 5 as shown.

When a tapper is used as above described, the spindle *o* need not be so long but may be very short as shown in Figs. 6 and 7 in which case the eccentric 2 and tapper lever 5 may be mounted between the gear plates *g* and *f* in the casing *x* thus providing a much shorter and very compact apparatus. All corresponding parts in the various figures are indicated by similar reference characters.

Having now described our invention what we claim as new and desire to secure by Letters Patent is:—

1. Apparatus for producing vibrations, oscillations, or the like for therapeutic, hygienic or similar purposes, comprising a hand grip, an operating shaft passing longitudinally therethrough, a hand crank on the outer end of said shaft, a gear wheel on the other end, a train of gearing driven thereby comprising three parallel plates supporting two pairs of pinions and wheels the center plate being bent and slotted so that one wheel can project through the slot and engage a pinion on the opposite side, and a vibrating member driven by said gear, substantially as set forth.

2. Apparatus for producing vibrations, oscillations or the like, for therapeutic, hygienic or similar purposes comprising a hand grip, an operating shaft passing longitudinally therethrough, a hand crank on the outer

end of said shaft, a gear wheel on the other end, a train of gearing driven thereby comprising three parallel plates supporting two pairs of pinions and wheels the center plate being bent and slotted so that one wheel can project through the slot and engage a pinion on the opposite side, a spherical casing inclosing said gear and made in halves and a vibrating member driven by said gear, substantially as set forth.

3. Apparatus for producing vibrations, oscillations, or the like for therapeutic, hygienic or similar purposes, comprising a hand grip, an operating shaft passing longitudinally therethrough, a hand crank on the outer end of said shaft, a gear wheel on the other end, a train of gearing engaging therewith, a spindle driven by said gearing and two disks mounted on said spindle having their centers of gravity eccentric to the axis of the spindle, means for adjusting the relative positions of the disks and a guard inclosing the disks and provided with a cushioned outer surface, substantially as set forth.

4. An apparatus for producing vibrations, comprising a spindle, means for rotating the spindle, two disks mounted on said spindle having their centers of gravity eccentric to the axis of the spindle, and means for adjusting the relative positions of the disks, one of said disks having a scale marked thereon and the other disk having a small indicating hole therein coöperating with said scale for indicating the amount of adjustment of the disks.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN MESNY TOURTEL.  
GEORGE LEWIS HOGAN.

Witnesses:

ALBERT E. PARKER,  
REGINALD W. AVIS.