

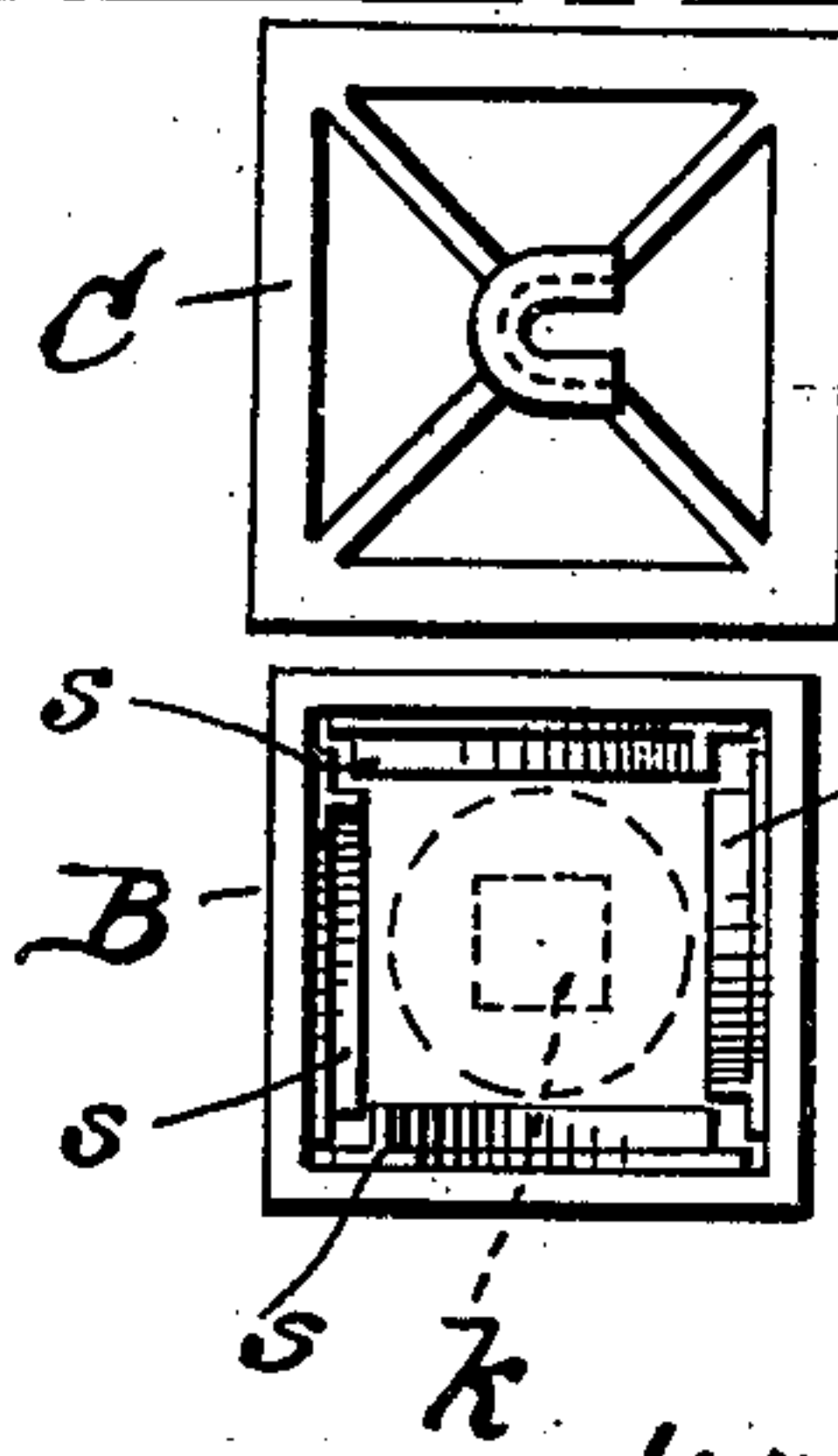
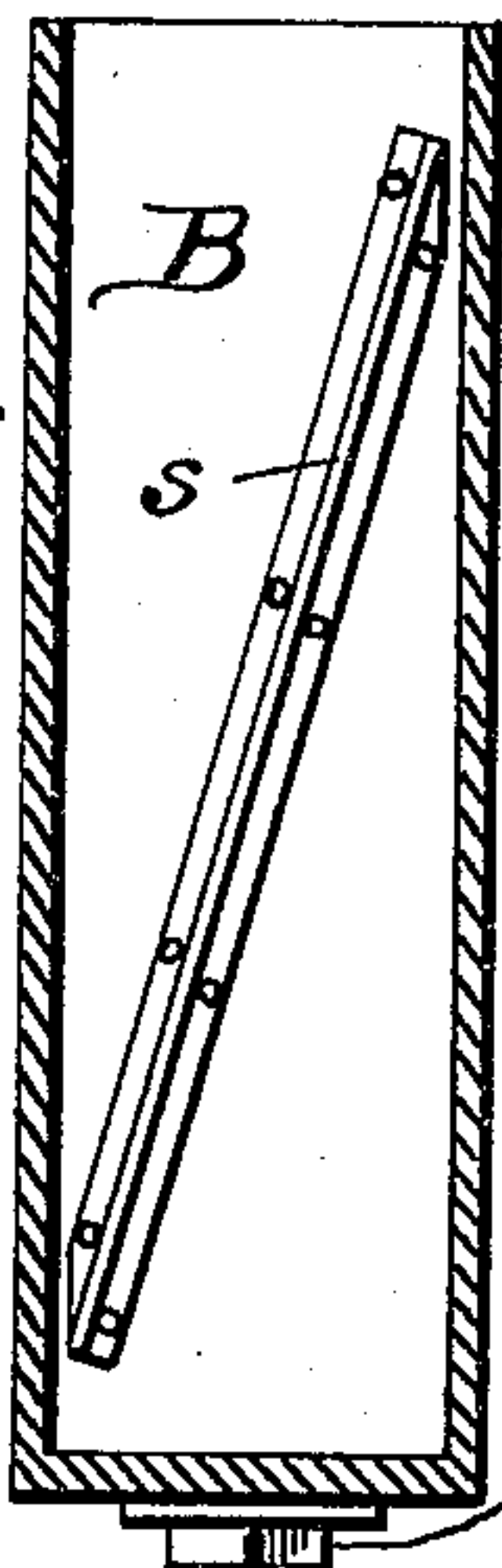
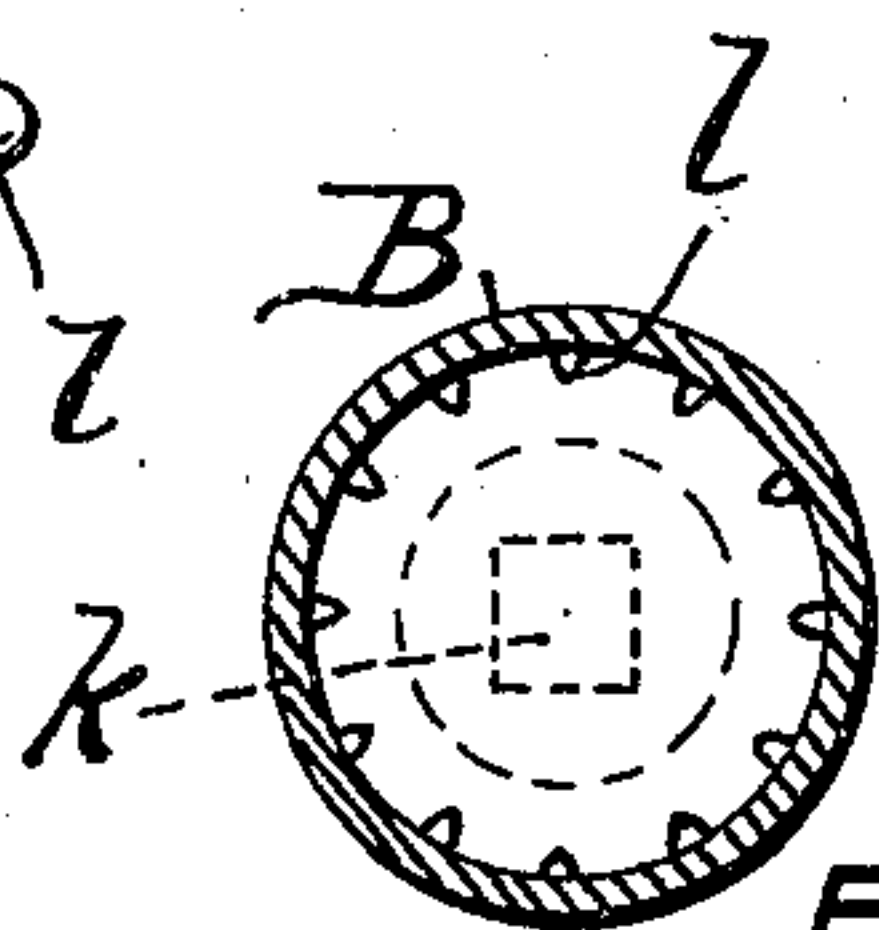
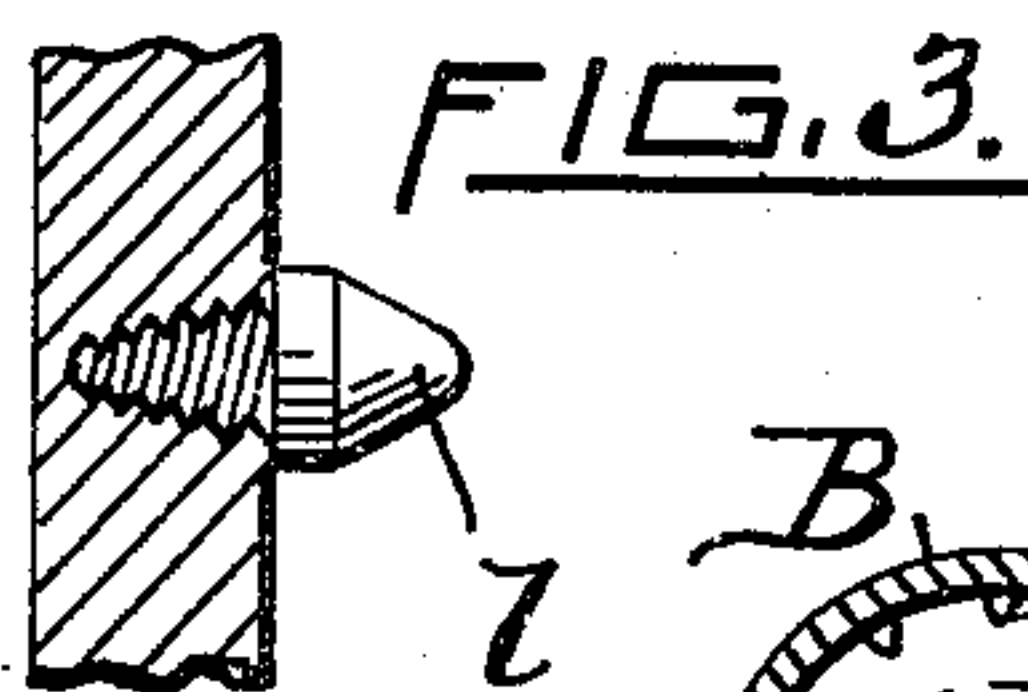
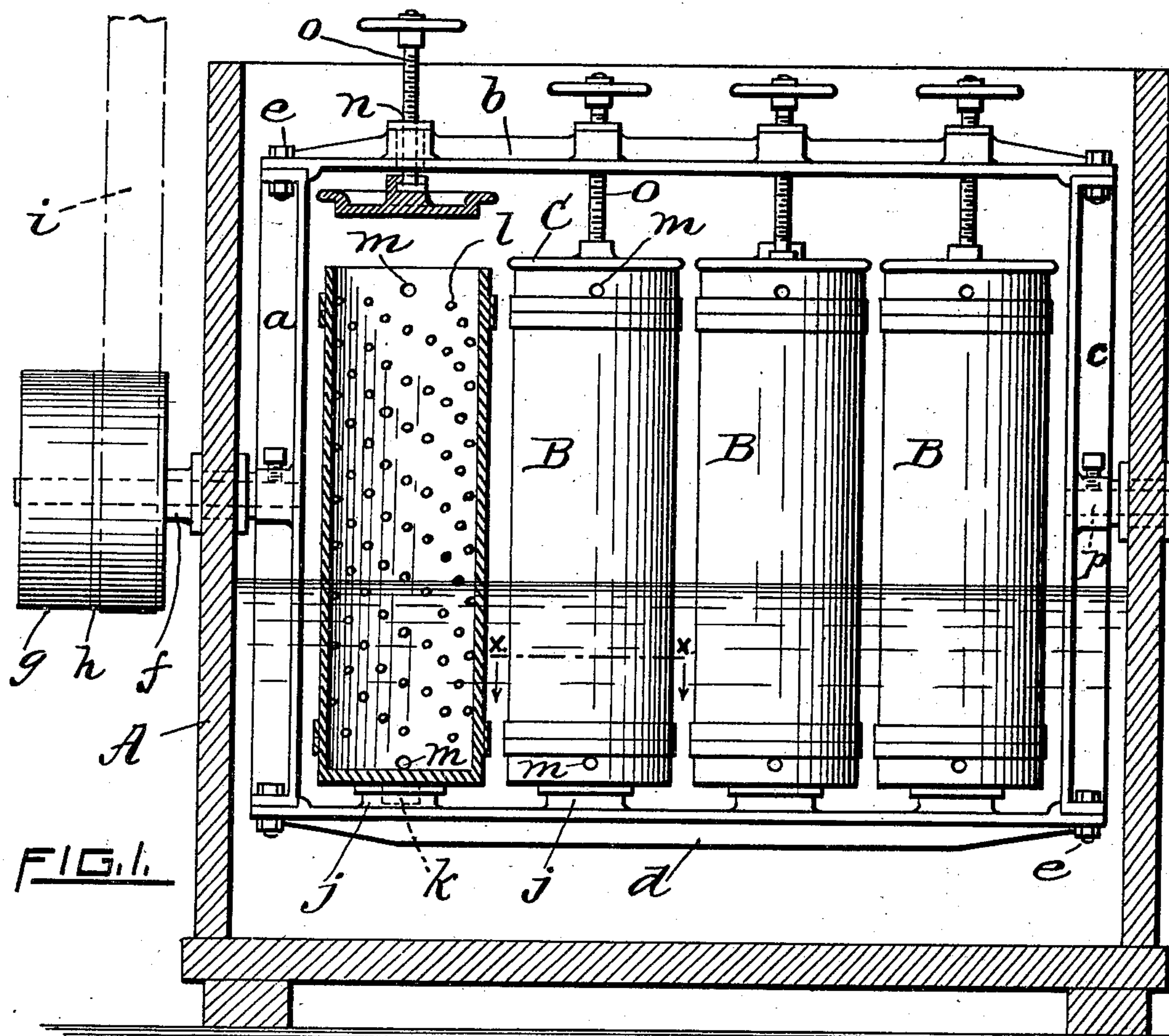
No. 754,122.

PATENTED MAR. 8, 1904.

J. P. BUCKLIN.
TUMBLING MACHINE.

APPLICATION FILED JUNE 30, 1903.

NO MODEL.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JAMES P. BUCKLIN, OF PROVIDENCE, RHODE ISLAND.

TUMBLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 754,122, dated March 8, 1904.

Application filed June 30, 1903. Serial No. 163,717. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. BUCKLIN, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Tumbling-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to mechanisms adapted by agitation to burnish, polish, or cleanse small irregularly-shaped articles, such as jewelry findings or pearl-work, and has for its objects the ends commonly sought in machines of this character.

Hitherto a revolving barrel has been commonly used for the above purposes. The unsatisfactory results of this structure was the tendency of the articles treated to accumulate into an interlocked spherical mass, the individual constituents of which were thus unlikely to receive treatment.

To the ends first above mentioned and to obviate the defects already enumerated my invention consists in the structure and combination of parts hereinafter described, and illustrated in the accompanying drawings, wherein—

Figure 1 is a longitudinal vertical section of the tank and one of the holders of my new machine, showing the remaining parts in side elevation; Fig. 2, a transverse section of a holder on line *xx* of Fig. 1; Fig. 3, a detail of one of the studs; Fig. 4, a vertical central section of a modified form of holder; Fig. 5, a top plan view of the same, and Fig. 6 a plan of the cover portion of the modified form.

Like reference-letters indicate like parts throughout the views.

My machine comprises the usual tank A for holding the cleansing liquid. Rotatably mounted in the tank upon horizontal shafts *p f* is a rectangular frame, composed of four metallic bars *a b c d*, whose extremities are secured by bolts *e*. The frame is driven by the shaft *f*, which carries the usual fast and loose pulleys *g h*, actuated by the bolt *i*. The lower bar *d* of the frame is provided with a plurality of rectangular sockets *j*, adapted to receive rectangular studs *k*, upon the bottom

of cylindrical receptacles or holders B. The latter are provided upon their interior with spirally-arranged knobs or projections *l*, and the walls are pierced, *m*, at both ends to allow passage therethrough of the cleansing liquid. At intervals the upper bar *b* is provided with threaded openings *n* to allow passage therethrough of hand-screws *o*, which removably engage the covers C of the holders B.

My machine is operated as follows: The articles to be treated are placed within the removable holders B and the latter mounted in the socket *j*, after which the covers C are lowered in engagement with their holders by means of the hand-screws *o*. Power is then applied to the shaft *f*, and the frame carrying the holders B is revolved. The latter are rigidly held against lateral rotation by the rectangular form of their studs *k*. During this rotation the articles within the holders are thoroughly segregated by the spirally-arranged knobs *l*, which not only tend to separate the articles, but by their spiral disposition furnish a series of diagonal paths, which retain the articles in prolonged frictional contact with the sides of the holders.

The modified form of holder (shown in Figs. 4 and 5) differs in structure only in being angular in cross-section and in substituting for the knobs a diagonal strip *s* upon the inner face of each of the sides.

If desired, the liquid in the tank may be omitted and be introduced into the holders through their tops after plugging the openings *m*.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the class described, the combination with a tank of a frame revolubly mounted in the tank, and a removable holder mounted in the frame.

2. In a machine of the class described, the combination with a tank of a frame revolubly mounted in the tank, and holders mounted in the frame.

3. In a machine of the class described, the combination with a tank of a frame revolubly mounted in the tank, a removable holder

mounted in the frame and means for retaining the holder against lateral rotation.

4. In a machine of the class described, the combination with a tank of a frame revolubly
5 mounted in the tank, a holder mounted in the frame and openings in the holder for the admission of liquids.

5. In a machine of the class described, the combination with a frame of means for re-
10 volving the frame, holders mounted in the frame, and means within the holders for segregating their contents.

6. In a machine of the class described, the combination with a frame of means for re-
15 volving the frame, a holder mounted in the frame at right angles to the axis of said frame, and projections upon the interior of the holder.

7. In a machine of the class described, the combination with a frame of means for revolving the frame, holders mounted in the 20 frame, and diagonally-disposed projections upon the interior of the holders.

8. In a machine of the class described, the combination of a frame of means for revolving the frame, holders mounted upon the bot- 25 tom of the frame, screws traversing the top of the frame, and holder-covers engaging the screws.

In testimony whereof I have affixed my signature in presence of two witnesses.

JAMES P. BUCKLIN.

Witnesses:

HORATIO E. BELLOWS,
WILLIAM E. BROWN.