

(No Model.)

J. R. DOWNS.
SELF LEVELING TABLE.

No. 594,681.

Patented Nov. 30, 1897.

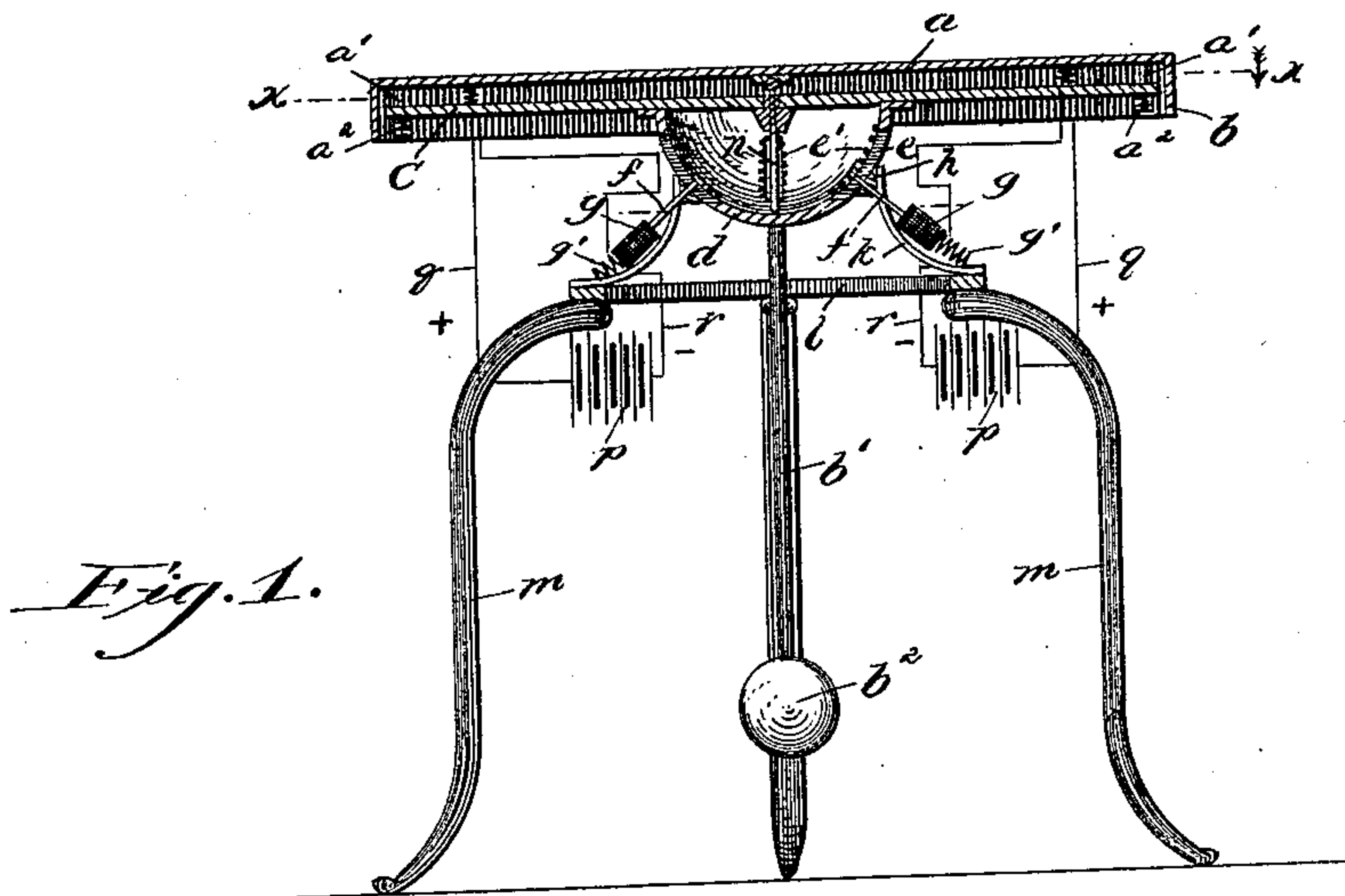


Fig. 1.

Fig. 2.

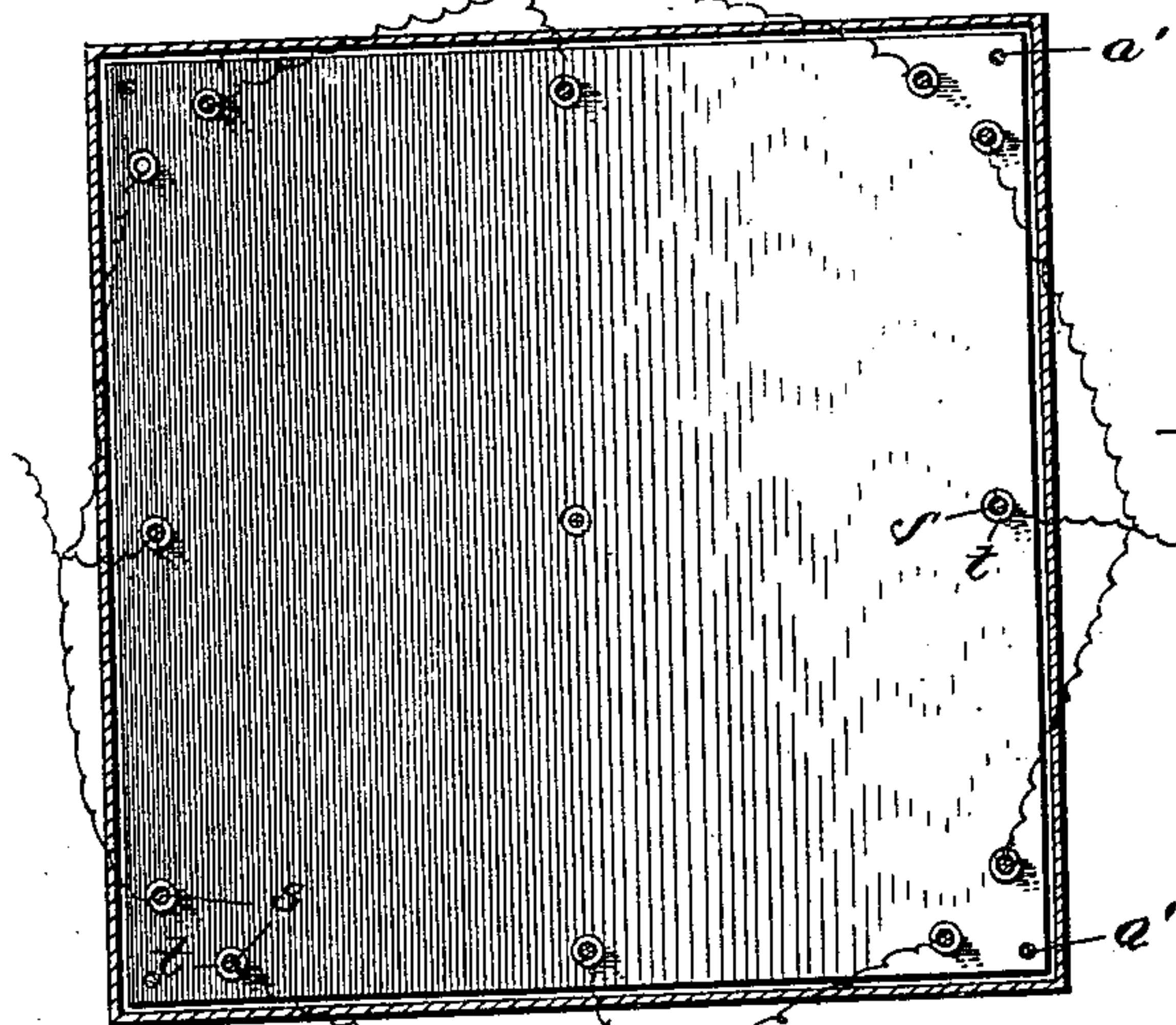


Fig. 3.

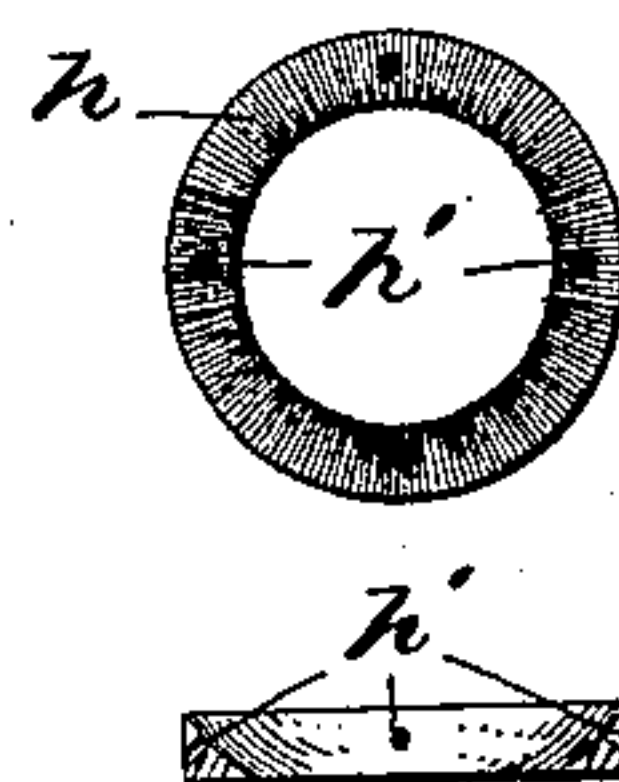


Fig. 4.

Fig. 5.

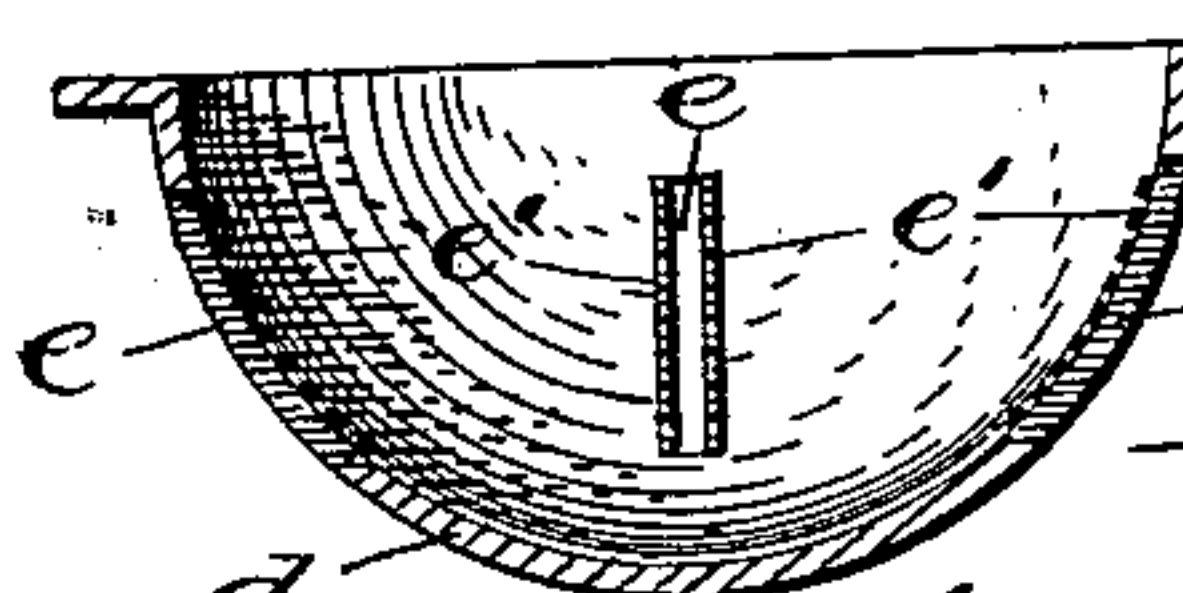
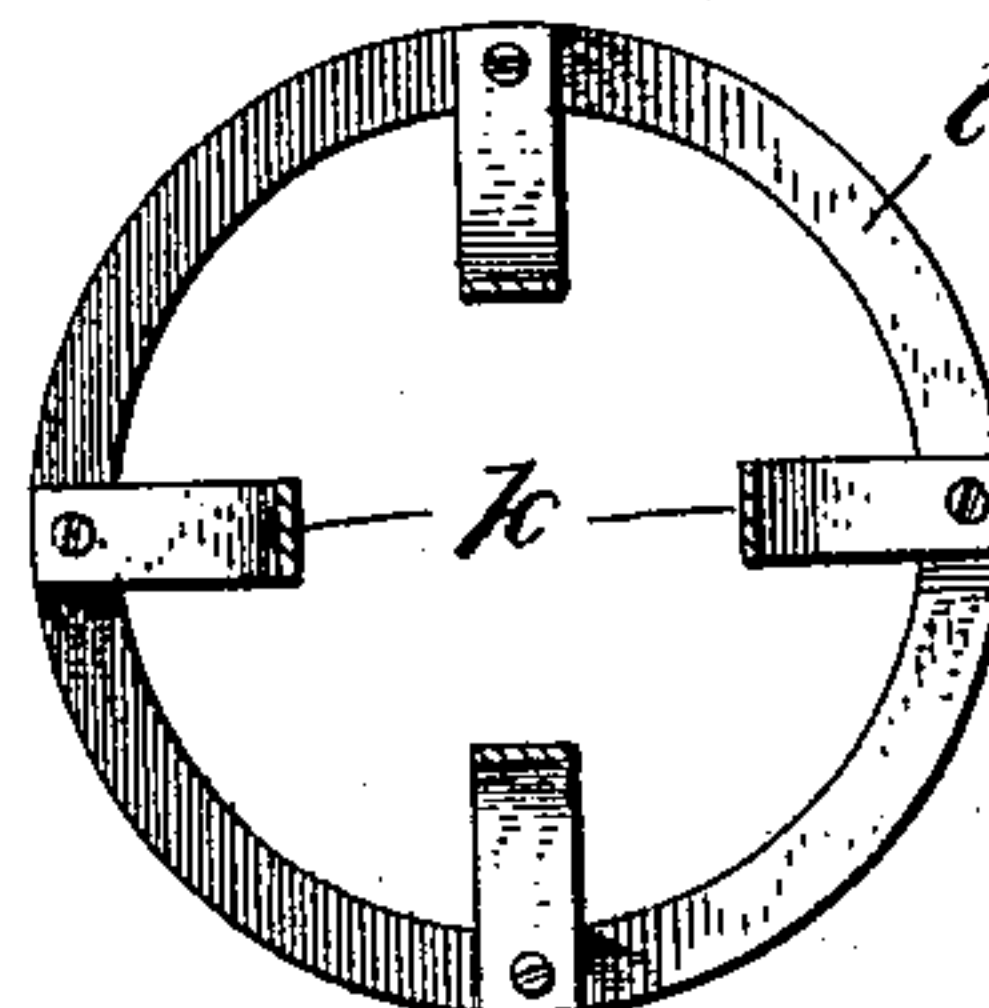


Fig. 6.

Fig. 7.

Witnesses
J. P. Appelman.
A. M. Wilson

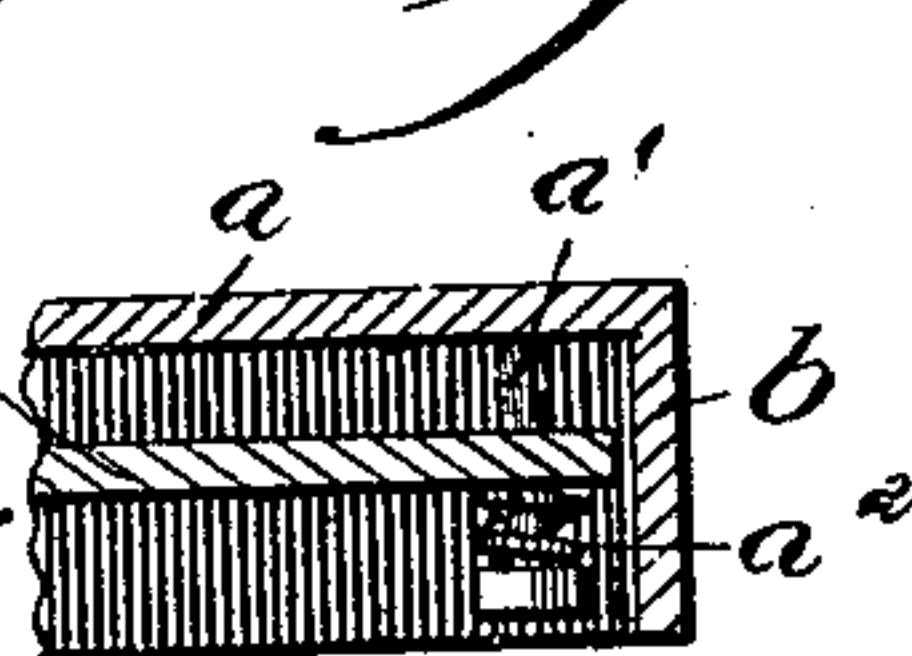


Fig. 8.

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UNITED STATES PATENT OFFICE.

JAMES R. DOWNS, OF EAST PITTSBURG, PENNSYLVANIA.

SELF-LEVELING TABLE.

SPECIFICATION forming part of Letters Patent No. 594,681, dated November 30, 1897.

Application filed April 29, 1897. Serial No. 634,422. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. DOWNS, a citizen of the United States of America, residing at East Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Electrogravity Tables, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in tables, and may be more particularly referred to as an "electrogravity" table, having for its object to provide a table that will retain its level irrespective of the tilting of the floor on which it rests or of any undue pressure that may be brought upon it; and to this end the invention consists in the novel construction, combination, and arrangement of parts to be hereinafter more specifically described, and particularly pointed out in the claims.

The invention consists, briefly, in a double-topped table, the upper top being supported at its center by a rod passing through the lower top and resting in the center of a hemisphere attached to the said lower top, the hemisphere resting in a seat suitably supported and having attached to said hemisphere a weight-rod, serving to hold the same in its proper position in the seat in order to retain the level of the table, and in order to prevent the tilting of the table by undue weight at any one side thereof I have provided catches engaging the hemisphere and operated by magnets which are controlled through batteries connected to the upper and lower table, whereby the undue weight on any one side of the table will cause the magnets to operate the catches and lock the table to prevent the weight depressing the same at the side upon which it is brought to bear.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate similar parts throughout the several views, in which—

Figure 1 is a vertical sectional view of my improved table. Fig. 2 is a view taken on the line X X of Fig. 1. Fig. 3 is a vertical sectional view of the hemisphere. Fig. 4 is a top plan view and longitudinal section of the

seat for said hemisphere. Fig. 5 is a cross-sectional view of the supports for the hemisphere, showing the manner in which the same are secured on their supporting-ring. Fig. 6 is a sectional view of a portion of the upper and lower table and supporting-rod. Fig. 7 is a sectional view of the ball-socket supporting the table. Fig. 8 is a top plan and vertical sectional view of the plug secured in the lower table and engaging this supporting-rod.

Referring now to the drawings by reference-letters, *a* represents the top table, which may be composed of any suitable material and is preferably formed with a downwardly-extending rim or flange *b*, which serves to hide from view the underneath table *c*, which is centrally supported by means of a hemisphere *d*, having a flange *d'* for securing it to the table and provided with slots *e* and a series of notches *e'*, arranged at each side of said slots, these slots being adapted to receive the rods *f*, which may be provided with a T or other suitably shaped head to engage in the notches and are connected to magnets *g g*, supported by springs *g' g'*. The hemisphere *d* is in turn supported by a ring *h*, having an inclined face which forms a seat for the hemisphere and provided with apertures *h'* to receive the rods *f*, said ring *h* being supported by braces *k*, secured thereto, and a ring *l*, which is supported by legs *m*.

The top table *a* is supported by means of a rod *n*, suitably swiveled thereto and provided with a rounded end which rests upon the bottom of the hemisphere *d*, thus serving to produce the same effect as a ball-and-socket joint, said rod being supported by means of a plug *o*, secured in the lower table *c* and through which the rod extends.

The batteries *p* are located at any suitable point, preferably somewhere beneath the table, and are connected by positive wires *q* to the upper table and by negative wires *r* to the lower table, these connections being made to contact-pins *s*, which are provided with a suitable insulating material and with tension-springs *t* between the two tables.

I have also supported the lower table at its four corners by means of pins *a'* from the top table and provided with pressure-springs *a''* between the head of the pin and the lower table.

The table is retained in a perfectly level position by means of a rod b' , attached to the center of the hemisphere and provided with a weight b^2 on its lower end, this rod and weight thus
 5 hung centrally from the table serving to keep the hemisphere adjusted properly on its seat upon the ring h . As a weight is placed upon one side of the table the pressure thus obtained immediately closes the contact of the
 10 top table with the contact-pins, and by thus opening circuits through the positive and negative wires, as heretofore stated, causes the magnet to operate the rod f and engage the same in the notches e' and prevent the in-
 15 clining of the table by reason of the hemisphere being held firmly in position upon its seat. The pressure being removed, the contact-pieces are forced apart by means of the balancing-springs, which breaks the circuit
 20 and causes the rod f , which has been temporarily formed into a magnet, to lose its magnetism and it is forced out of engagement with the notches by means of a coil-spring q' .

By means of the concave ring h a ball-bearing is practically obtained and friction thus
 25 reduced to a minimum, and by the law of gravitation the rod is always perpendicular to the plane of the table at all times, irrespective of the plane on which the legs may rest,
 30 and by means of the electric battery, should any sudden force be applied either vertically or longitudinally, the electric magnet becomes magnetized and drawn into the coil, the other end of the magnet engaging in the slots on
 35 the inner side of the hemisphere and causing the magnet to act as a guide or stop to prevent the table from revolving.

This device will be particularly adapted for use in dining-cars, ships, and the like where
 40 it is utterly impossible to retain an ordinary table at its level by reason of the pitch given to the car or vessel.

It will be noted that various changes may be made in the details of construction without
 45 departing from the general spirit of my invention.

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

50 1. A gravity-table consisting of a double

top, supporting-legs, a ring supported by said legs, braces secured to said ring, a concave ring supported by said braces, a hemisphere resting in said concave ring and secured to the
 55 lower table and a weighted rod secured to said hemisphere, substantially as shown and described.

2. A gravity-table consisting of an upper and lower top, a hemisphere secured to the lower top, a concave ring forming a seat for
 60 said hemisphere, braces attached to said concave ring and to a ring supported by the legs, and a weighted rod attached to said hemisphere to retain the table-top in a level position, substantially as shown and described. 65

3. A gravity-table having a double top, a hemisphere and rod for supporting same, a concave ring for forming a seat for the hemisphere, supporting means for said ring, elec-
 70 tromagnets engaging the hemisphere, and one or more batteries connected to the table-top to control the electromagnets, substantially as shown and described.

4. A gravity-table consisting of suitable supporting-legs, a ring supported by said legs,
 75 braces secured to said ring, a concave ring supported by said braces, said concave ring forming a seat to receive a hemisphere supporting the table-top a gravity-weight suspended from the hemisphere, electromagnets
 80 engaging said hemisphere, and electrical connections from batteries to the table-top for controlling the electromagnets, substantially as shown and described.

5. In a gravity-table, an upper and lower table, a hemisphere supporting the lower table,
 85 a rod secured to the upper table and engaging said hemisphere, a seat for said hemisphere, supports therefor, a gravity-weight attached thereto, electrical connections between the
 90 upper and lower table, and suitable batteries, and electromagnets engaging the hemisphere to control the movement of the same, substantially as shown and described.

In testimony whereof I affix my signature
 95 in presence of two witnesses.

JAMES R. DOWNS.

Witnesses:

JOHN NOLAND,
 GEO. B. PARKER.