

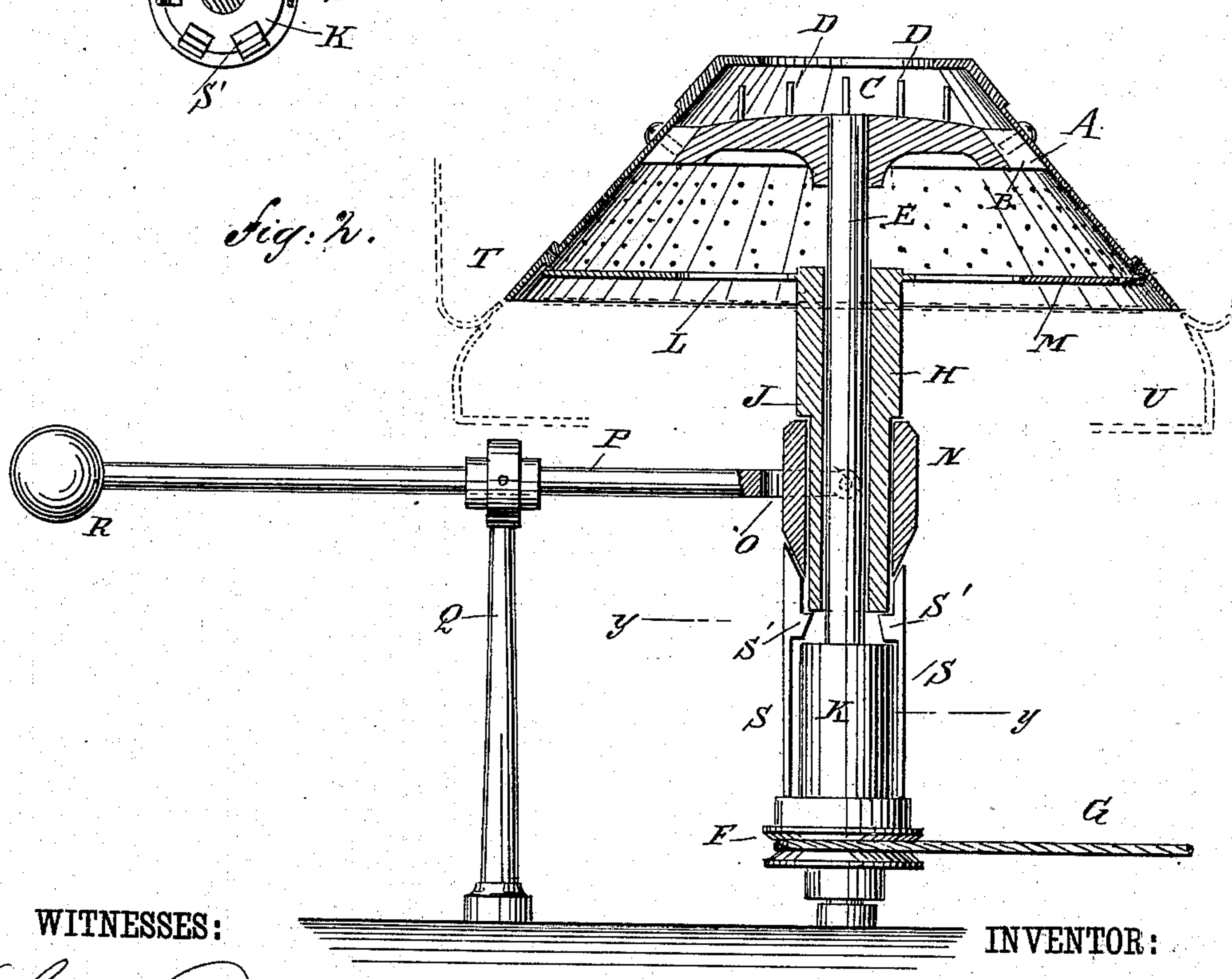
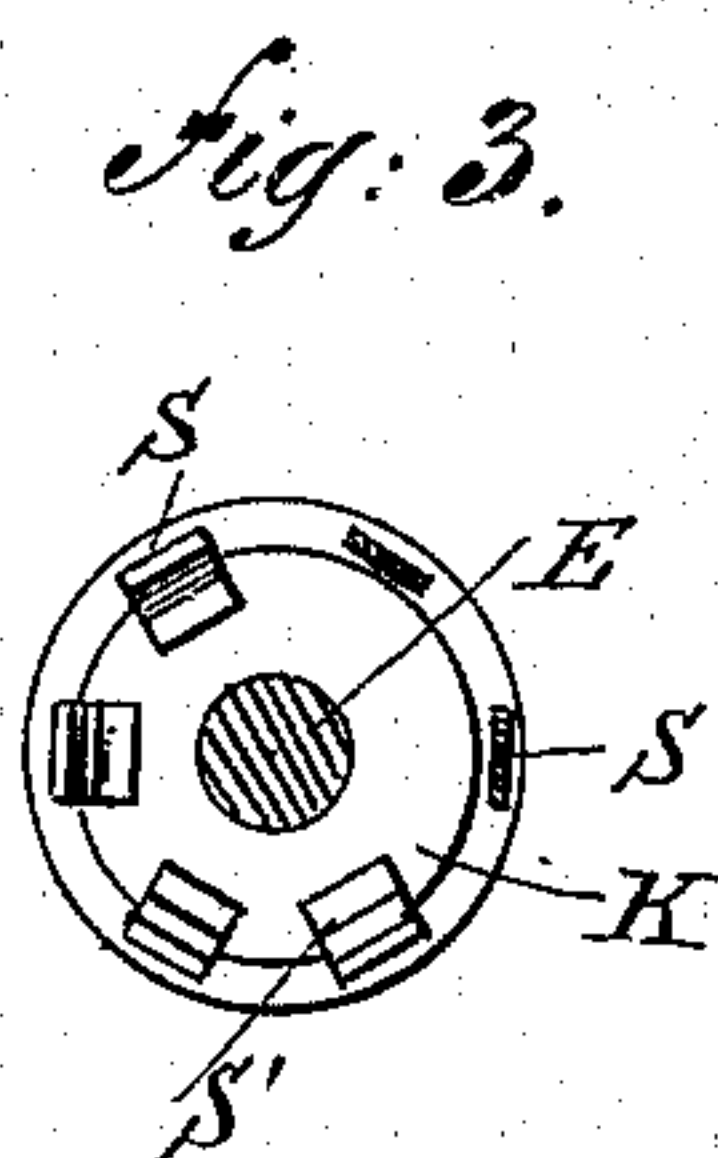
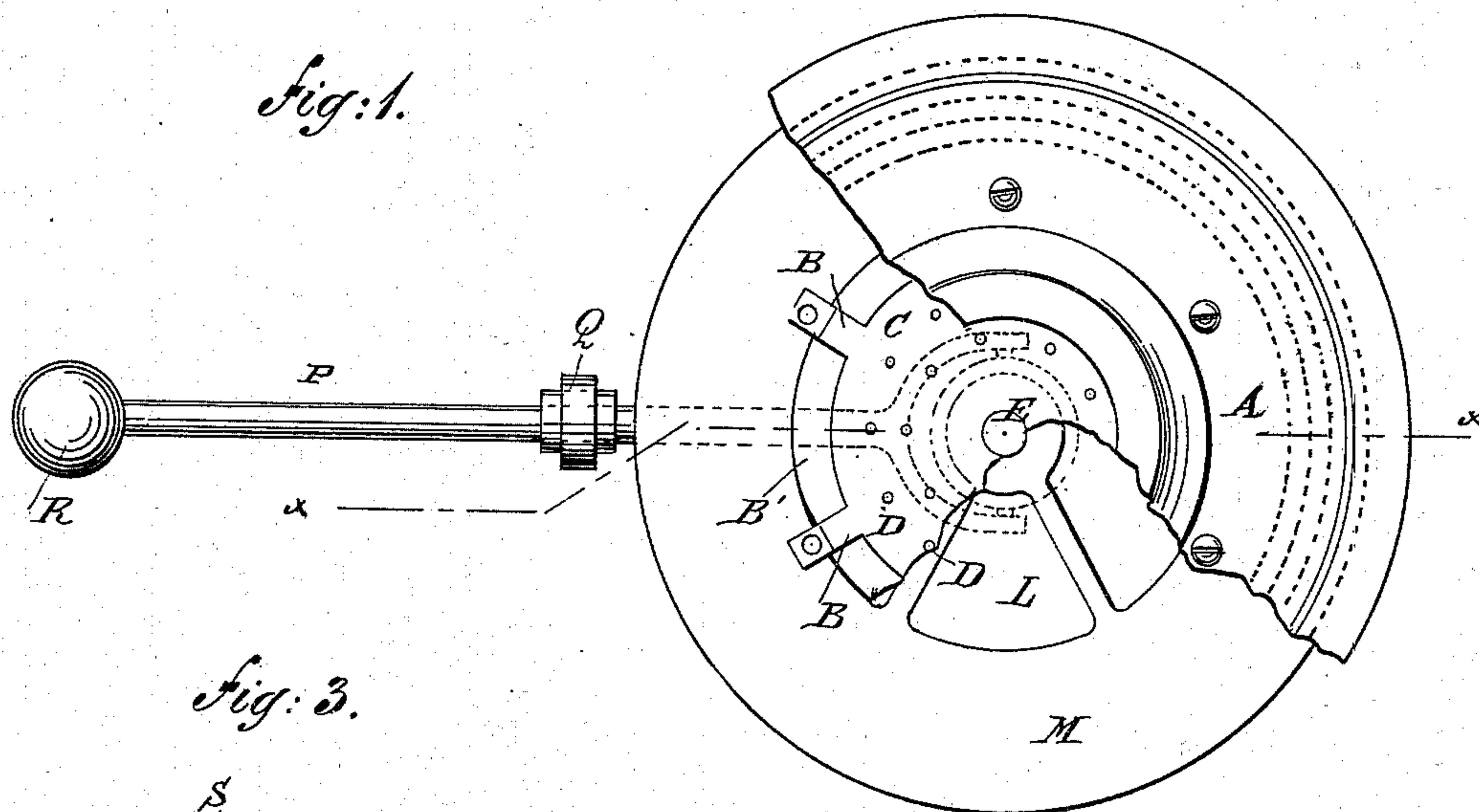
(No Model.)

T. LONG.

## CENTRIFUGAL DRYING MACHINE.

No. 252,483.

Patented Jan. 17, 1882.



**WITNESSES:**

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# UNITED STATES PATENT OFFICE.

THOMAS LONG, OF BOSTON, MASSACHUSETTS.

## CENTRIFUGAL DRYING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 252,483, dated January 17, 1882.

Application filed June 22, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS LONG, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Centrifugal Drying-Machine, of which the following is a specification.

The object of my invention is to provide a new and improved centrifugal drying-machine which can be charged and discharged without stopping the machine.

The invention consists in a conical perforated hood attached to a studded receiving-plate contained in the upper part of the hood and attached to the top of the shaft of the machine, which receiving-plate throws the sugar or other material down upon the annular bottom of the hood, which bottom is attached to arms fastened to a sleeve surrounding the shaft and resting on the shoulders of a number of springs attached to the lower thicker part of the shaft, accordingly as the bottom of the hood is to be in a raised or lowered position. When this bottom is to be lowered the above-mentioned springs are pressed outward by means of a sleeve with a lower beveled edge and mounted in a fork of a pivoted lever.

In the accompanying drawings, Figure 1 is a plan view of my improved centrifugal machine, showing parts broken away. Fig. 2 is a longitudinal sectional elevation of the same on the line  $x x$ , Fig. 1. Fig. 3 is a horizontal sectional view of the same on the line  $y y$ , Fig. 2.

Similar letters of reference indicate corresponding parts.

The perforated conical hood A is secured on the short radial arms B of the receiving plate or pan C, provided with studs D on its upper surface, and mounted on the upper end of a vertical shaft, E, provided with a pulley, F, for the driving belt or rope G, or with any other suitable device for rotating it. A sleeve, H, provided with a shoulder, J, surrounds the shaft E, and its lower edge rests on the upper edge of an enlargement, K, of the shaft E, or on a shoulder of this shaft. The upper end of this shoulder is provided with a series of radial arms, L, carrying a flat ring, M, which fits into the wide end of the conical hood A, this

ring forming the removable bottom of the hood A. A sleeve, N, having its lower edge beveled, surrounds the sleeve H, and is pivoted in a fork, O, at the end of a lever, P, pivoted on an upright, Q, and balanced by means of a weight, R. A series of springs, S, having their upper ends beveled and provided with studs S', projecting toward the shaft E a short distance below the upper end, are fastened to the bottom enlarged part of the shaft E in such a manner that the studs are above the upper edge of the enlarged part.

T is the receiving and collecting chamber for the liquids, and U the collecting chamber for the solids.

The operation is as follows: The material to be dried—for instance, sugar—drops from a hopper upon the plate or pan C, where the lumps are broken and the sugar is thrown by the centrifugal force through the recesses B' between the arms B against the hood or basket, down which it slides until it rests on the annular bottom plate, M, of the hood A, this plate M being raised, as shown in Fig. 2, the lower edge of the sleeve H resting on the studs S' of the springs S. By the action of the centrifugal force the water or liquid is thrown from the hood A and collects in the collecting-chamber T, from where it is conducted into a suitable receptacle. As soon as the sugar is dry and is to be discharged the outer end of the lever P is raised, causing the sleeve N to descend and thereby press the springs S outward, so that the studs S' pass from under the lower edge of the sleeve H, thus permitting this sleeve to drop, so that the lower edge will rest on the upper edge of the enlarged part K of the shaft E. By this movement the annular bottom plate, M, has been lowered, as shown in dotted lines in Fig. 2, and the centrifugal force throws the sugar out between the edge of the hood and of the plate M, the sugar passing into the receiving or collecting compartment U. The outer end of the lever P is then depressed, causing the sleeve N to rise and its upper edge to catch on the shoulder J of the sleeve H, thereby raising this sleeve and the annular bottom plate, M, into the position shown in Fig. 2, when a fresh supply of sugar is passed into



the hood again. The cap pan or top plate, C, is of great importance, as it prevents the sugar or other material from falling through the hood, but throws the material to the sides of the hood, as is necessary.

The machine need not be stopped for filling or discharging it.

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

1. In a centrifugal drying-machine, the combination, with a conical perforated hood, of a movable bottom, substantially as herein shown and described.
2. In a centrifugal drying-machine, the combination, with the conical perforated hood A, of the top plate, C, and the movable bottom M, substantially as herein shown and described, and for the purpose set forth.
3. In a centrifugal drying-machine, the combination, with the conical perforated hood A, of the top plate, C, provided with short radial arms B', and of the movable bottom M, substantially as herein shown and described, and for the purpose set forth.
4. In a centrifugal drying-machine, the combination, with the perforated conical hood A, of the top plate C, the shaft E, the bottom M, the sleeve H, and the springs S, substantially as herein shown and described, and for the purpose set forth.

5. In a centrifugal drying-machine, the combination, with the perforated conical hood A, of the top plate, C, the bottom plate, M, the shaft E, the sleeves H and U, the springs S, and the pivoted and forked lever P, substantially as herein shown and described, and for the purpose set forth.

6. In a centrifugal drying-machine, the combination, with the perforated conical hood A, of the top plate, C, and the studs D D, substantially as herein shown and described, and for the purpose set forth.

7. A centrifugal drying machine made substantially as herein shown and described, and containing the following elements, to wit: a rotary perforated hood and a vertically-adjustable bottom, whereby the machine can be charged and discharged without stoppage, as set forth.

8. The method herein described of discharging the contents of a centrifugal drying-machine, consisting in separating the bottom of the perforated hood from this hood, so that the contents will be discharged at the lower edges of this hood by the centrifugal force, as set forth.

THOMAS LONG.

Witnesses:

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