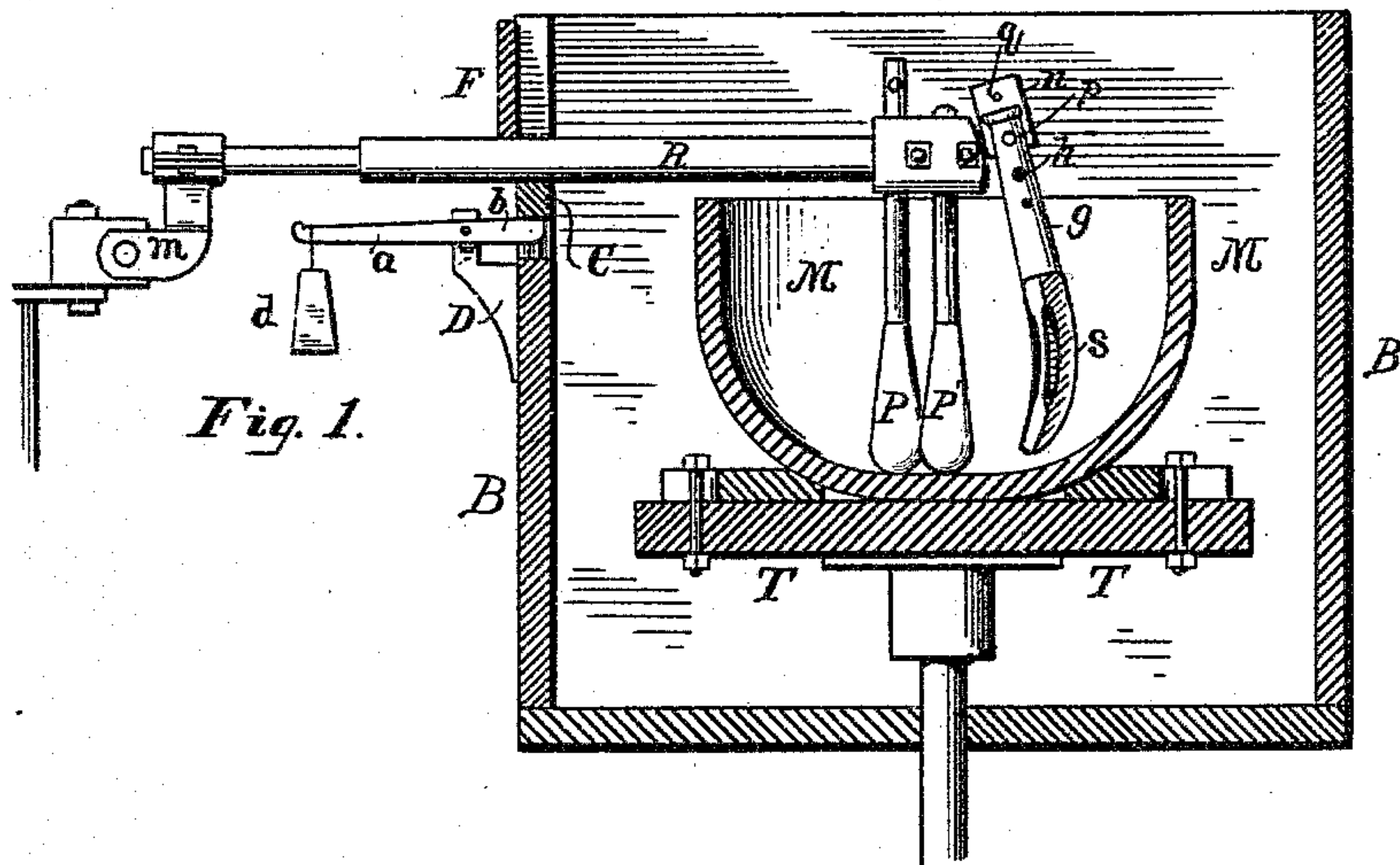


(No Model.)

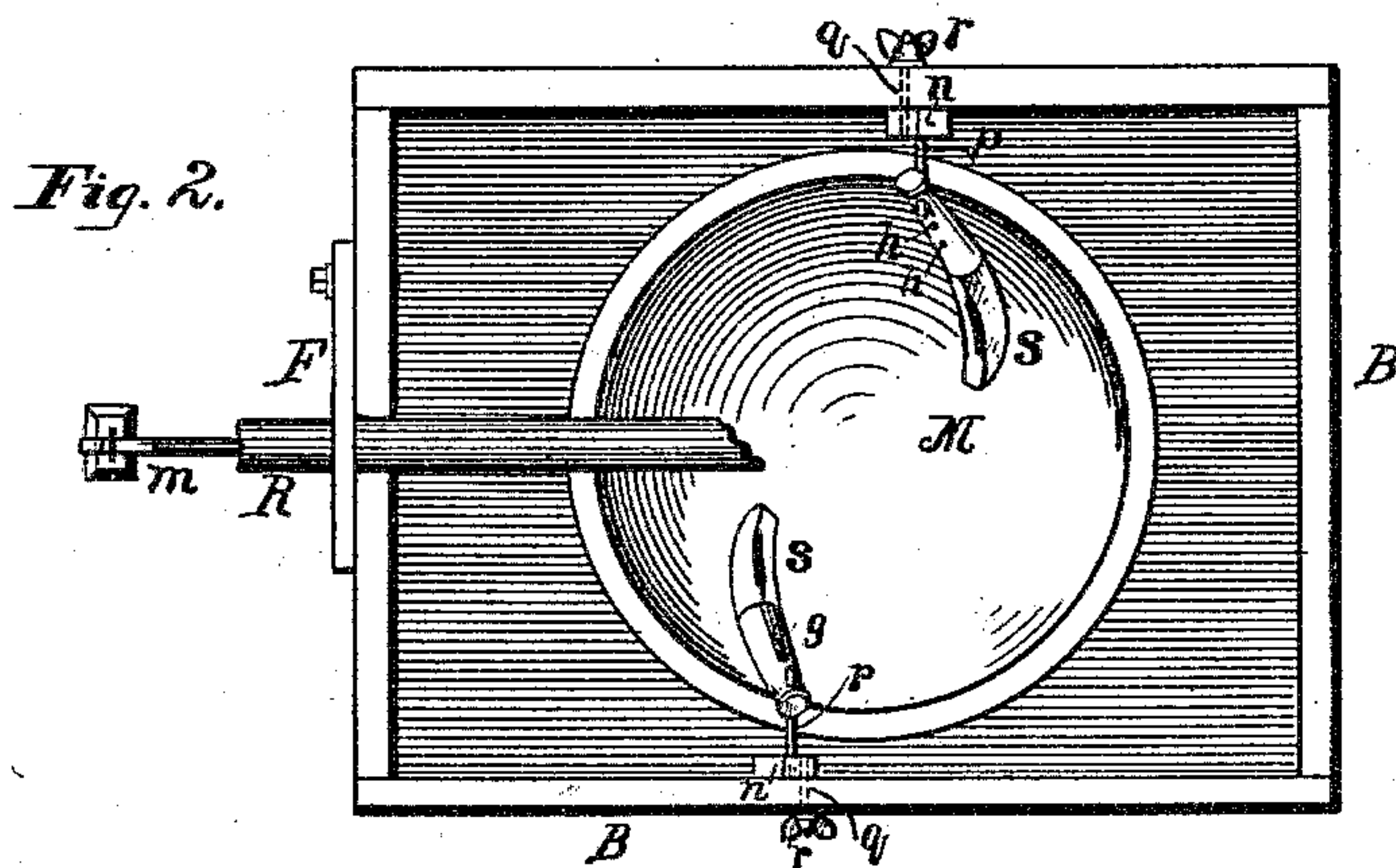
F. E. BOERICKE & G. GOLL.  
TRITURATING MACHINE.

No. 296,816.

Patented Apr. 15, 1884.



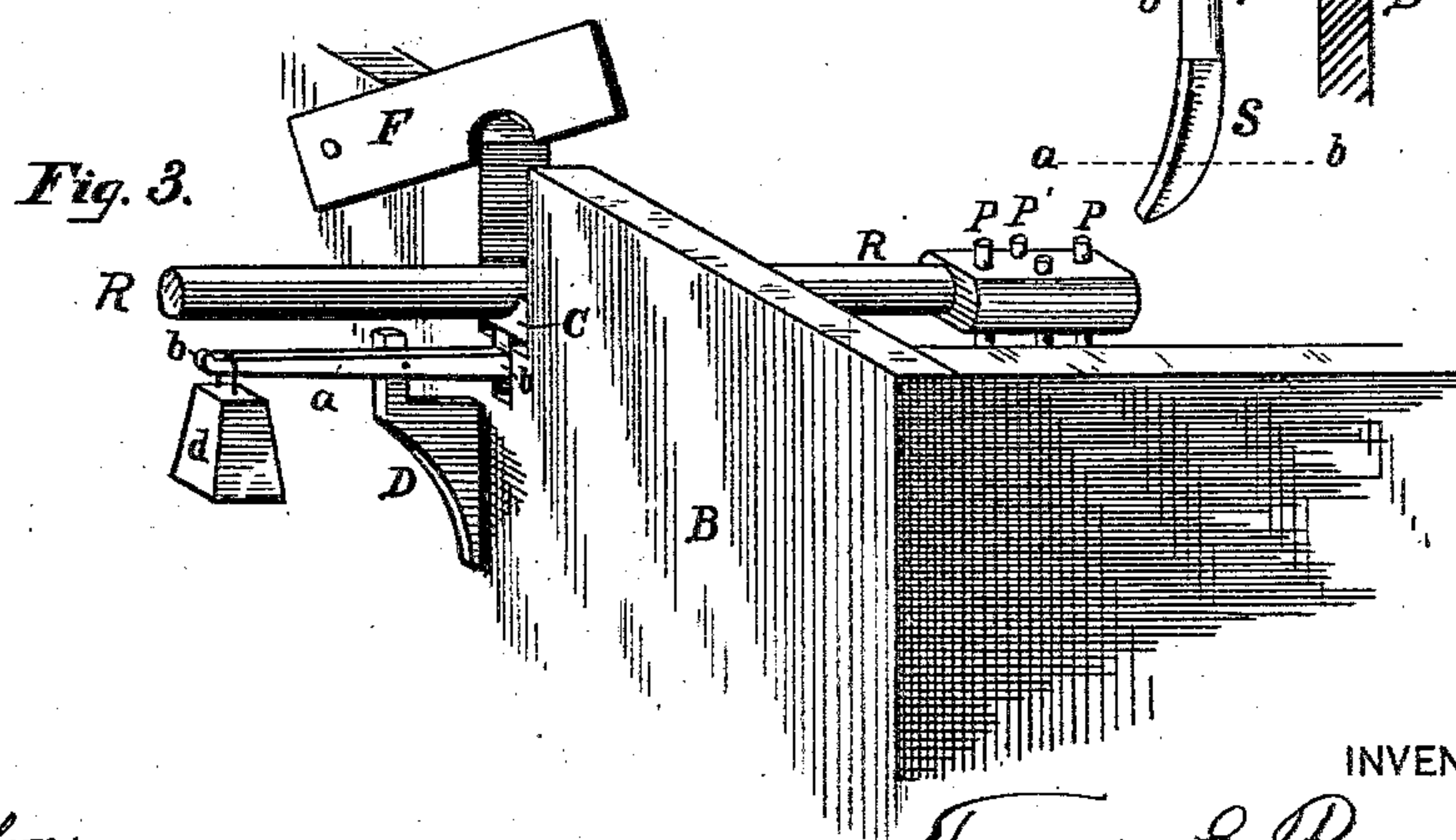
*Fig. 1.*



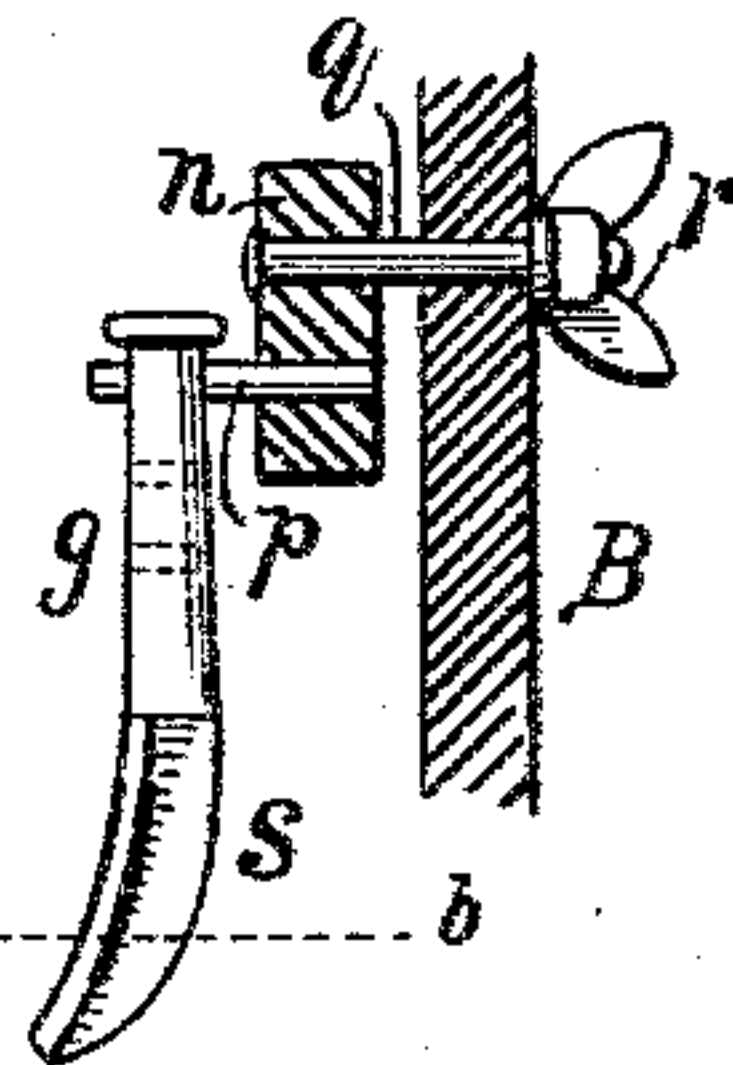
*Fig. 2.*



*Fig. 5.*



*Fig. 3.*



*Fig. 4.*

WITNESSES:

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# UNITED STATES PATENT OFFICE.

FRANCIS E. BOERICKE AND GEORGE GOLL, OF PHILADELPHIA, PA.

## TRITURATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 296,816, dated April 15, 1884.

Application filed December 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, FRANCIS E. BOERICKE and GEORGE GOLL, citizens of the United States, residing at the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Triturating-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention is an improvement upon the triturating apparatus invented by us, and described in Letters Patent No. 266,756, dated October 31, 1882, although it may be adapted to other machines operating upon the same general principle.

In the accompanying drawings, Figure 1 is a vertical section, partly in elevation, of the triturating apparatus described and shown in the said Letters Patent provided with our improvements, the front portion of the pestle-head being broken off. Fig. 2 is a plan view of the mortar and scrapers. Fig. 3 is a perspective showing the device for regulating the degree of pressure or bearing of the pestles in the mortar. Fig. 4 is a side view, partly in section, of a scraper and its connections. Fig. 5 is a section of scraper on line *a b*, Fig. 4.

Like letters of reference, where they occur, indicate corresponding parts.

M is the bowl or mortar, secured to the rotating table T within the box or case B.

R is the rod that carries at its free end the pestles P P', which rod is caused to reciprocate while the mortar is turning around, all as described in the Patent No. 266,756, above referred to.

The devices for giving the desired support to the rod and the pestles while they move back and forth consist of a block or pillow, C, hollowed out on top, so as to conform to the shape of the rod, and a lever pivoted to a bracket, D, on the outside of the case B, one arm, *b*, of which lever carries or takes under said block, and the other arm, *a*, is provided with a counterpoise, *d*, as shown.

It is obvious that the block C being free to move up and down at the end of the lever, and the other arm of the latter having the counterpoise, the rod and fixed pestles P are sup-

ported to a greater or less degree, depending upon the gravity of the counterpoise and its position on the lever, and that at the same time the block C is permitted to adjust itself as the pestle-rod reciprocates, and rises and falls as the pestles slide from the bottom of the mortar up some distance on its curved side and back again.

F is simply a door or panel hinged on the outside of the case, designed to close up the upper part of the slot above the rod, in order to prevent, so far as possible, the escape of the finer particles or dust of the substance being triturated. It is pivoted, as seen in Fig. 3, so that it can readily be turned out of the way when the rod R is to be thrown up on the hinged clamp *m* in order to raise the pestles out of the mortar when the trituration is accomplished.

The scrapers S, which are employed to scrape the material being triturated from the side or curved part of the mortar, and thus cause it to drop down in the path of the pestles as the mortar rotates, are given a suitable curved form, as shown. They are preferably of porcelain or other hard and harmless or neutral material, similar to that of which the mortars are made, and are provided with one or, usually, two scraping-edges. Their shanks *g*, which we prefer to make of wood, are pierced with a series of holes, *h*, whereby the scrapers may be vertically adjusted, to suit the size and form of the mortar, upon a pin, *p*, which projects from the side of a block, *n*. The latter is connected to a second pin, *q*, which passes through and bears loosely in a hole in the side of the case B, and at the end of the pin outside the case is a thumb-nut, *r*.

The operation of the device is as follows: The scraper being adjusted to the proper height upon pin *p*, and by means of the thumb-nut to the proper distance laterally with relation to the mortar, so as to bring the scraping-edge suitably against the curved portion of the latter, and swinging freely from the pin *q*, which has a loose bearing, as stated, it is enabled to freely adjust itself to any irregularities in the movement of the mortar.

We do not confine ourselves to the precise



means for holding the scrapers so as to swing freely, as shown. For instance, they may be secured directly to the pin *q*, the pin *p* and block *n* being dispensed with; but we have shown in the drawings and have described the exact construction which we have in actual use.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent—

1. In a triturating-machine operating substantially as described, the combination, with the rod and pestles, of the pillow-block C and means for adjusting the same, substantially as and for the purpose specified.

2. The combination of the mortar, the pestles, the reciprocating rod, the pillow-block, and the pivoted and weighted lever, substantially as and for the purpose set forth.

3. The combination, with the rotating mortar, of the loosely-swinging scrapers, substantially as and for the purpose stated.

4. In combination with the mortar and the pestles, the swinging scraper and pin *q*, provided with a thumb-nut for adjusting the scraper laterally with relation to the side of the mortar, substantially as and for the purpose set forth.

5. In combination with the mortar, the scraper having its shank provided with a series of holes therein, and a supporting-pin, whereby the scraper may be vertically adjusted with relation to the mortar, substantially as and for the purpose described.

In testimony whereof we have hereunto affixed our signatures this 2d day of November, A. D. 1883.

FRANCIS E. BOERICKE.  
GEORGE GOLL.

Witnesses:

HENRY M. BOYD,  
L. B. PENDLETON.