M. BISHOP.

Paint and Drug Mill.

No. 52,953. Patented March 6, 1866.

Fig. 1.

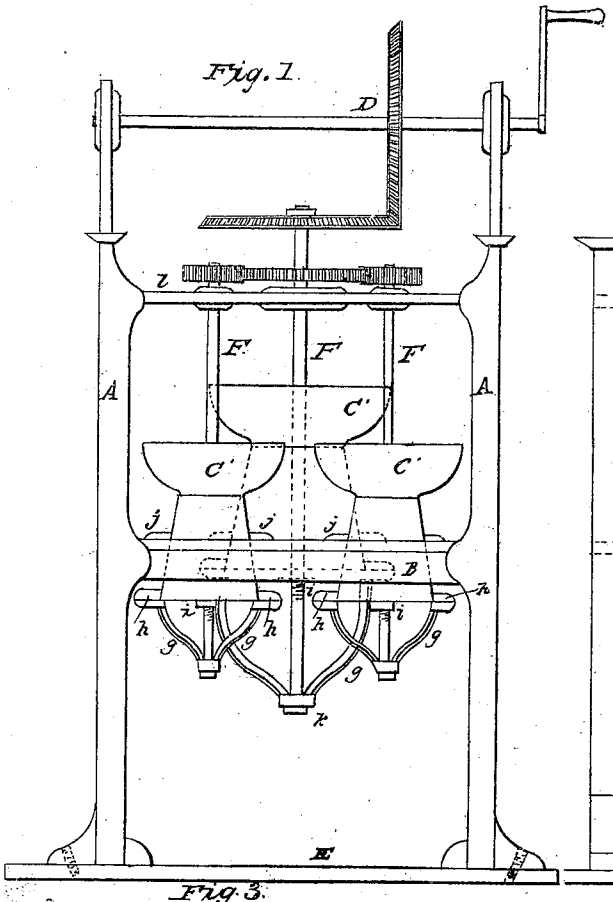


Fig. 2.

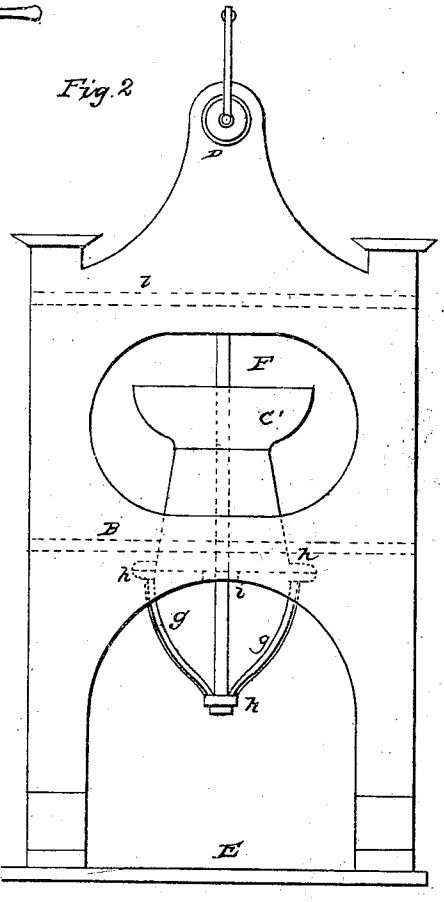


Fig. 3.

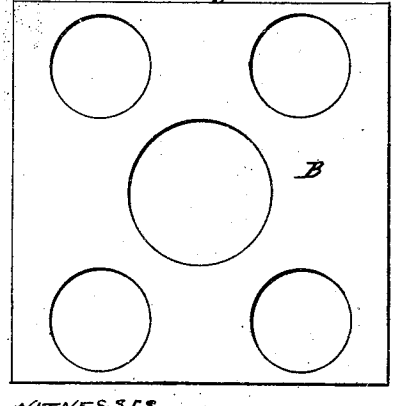


Fig. 4.

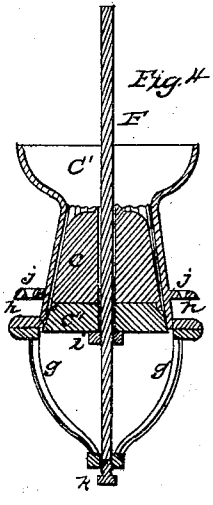


Fig. 5.

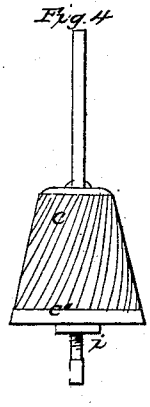
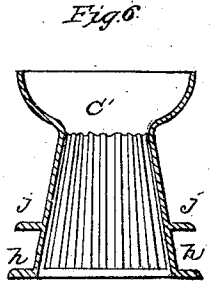


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

MARTIN BISHOP, OF LAFAYETTE, INDIANA.

IMPROVEMENT IN PAINT AND DRUG MILLS.

Specification forming part of Letters Patent No. **52,953**, dated March 6, 1866.

To all whom it may concern:

Be it known that I, MARTIN BISHOP, of Lafayette, in the county of Tippecanoe and State of Indiana, have made new and useful Improvements in Paint and Drug Mills; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is an end elevation. Fig. 2 is a side elevation. Fig. 3 is a plan of the perforated plate upon which the mills are supported. Fig. 4 is a vertical sectional view of one of the mills. Fig. 5 is an elevation of the spirally-corrugated frustum which revolves within Fig. 6, which is represented by a vertical section, and constitutes the corrugated concave around the rotary frustum.

Corresponding letters of reference refer to like parts in the different figures.

My invention consists, first, in the method of arranging and combining the satellite mills so as to be used in concert (one or more) with the central mill, or the latter by itself; second, in the devices for closing the circular aperture of exit between the grinder and its concave or casing.

To enable one skilled in the art to which my invention appertains to construct and use the same, I will proceed to describe it.

The machine consists of five mills, C C′, which are suitably mounted upon a platform, B, which is supported upon uprights A on sills E. The mills are relatively disposed as shown in Fig. 3, which represents a plan of the platform, the five circular openings therein being the spaces occupied by the shells or concaves C′, the flanges *j* of which rest upon the platform B.

Secured to the lower flanges, *k*, of the concaves are bridge-pieces *g*, which support the lower journal or step, *h*, of the upright shaft F, on which the grinding-frustum C is fastened. This frustum is corrugated spirally, as shown in Fig. 5, while the interior surface of the concave in which it rotates is corrugated in the plane of the axis of the concave, as shown in the section, Fig. 6.

The grinding-frustum C is raised or lowered on its shaft F by means of the nut *i*, which traverses a screw-thread on the shaft, and by its elevation raises the frustum so as to cause it to grind more finely, or, as shown in Fig. 4, to cause the lower section, *c″*, of the frustum to come in direct contact with the lower portion of the concave and retain the contents of the mill. This is especially valuable in preventing the paint or other matter contained in the mill from evaporating to dryness, as oil, water, or other liquid may be retained therein when the mill is disused.

The shafts F pass through journal-boxes in the plate *l*, and at their upper ends have cog-wheels, that on the central shaft gearing into those on the surrounding shafts, and itself being driven by the bevel-gearing M N and the hand-crank P on the shaft D, which is mounted in journals on the upper end of the frame A, as shown in Fig. 1.

The motion derived from the hand-crank P is communicated by the bevel-gearing M N to the cog-wheel R on the central shaft, F, and by the engagement of this cog-wheel with those on the other shafts they are all kept moving.

When it is desired to run less than the whole number of mills the cog-wheels on such of the shafts F′, Fig. 1, as are not required to be used are slipped up or down, or thrown out of gear, or unkeyed on their shaft, as may be convenient, so as to prevent the rotation of said shaft or shafts. By means of this arrangement five different paints or drugs may be operated upon at one time distinctly, or a less number, as may be preferred, and the contents of each, when the machine is not in use, or itself temporarily detached from the central running-gear, may be protected by closure of the lower orifice and the surrounding liquid from evaporating to dryness.

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

The arrangement on the spindle F of the removable and adjustable frustrum C, attached below the grinding-cone *c* and adapted to be replaced or to close the aperture when required, as herein described.

MARTIN BISHOP.

In presence of—
T. G. CLAYTON,
JO. C. CLAYTON.