

(No Model.)

P. FAUST.
MILL FOR GRINDING LIQUID SUBSTANCES.

No. 566,069.

Patented Aug. 18, 1896.

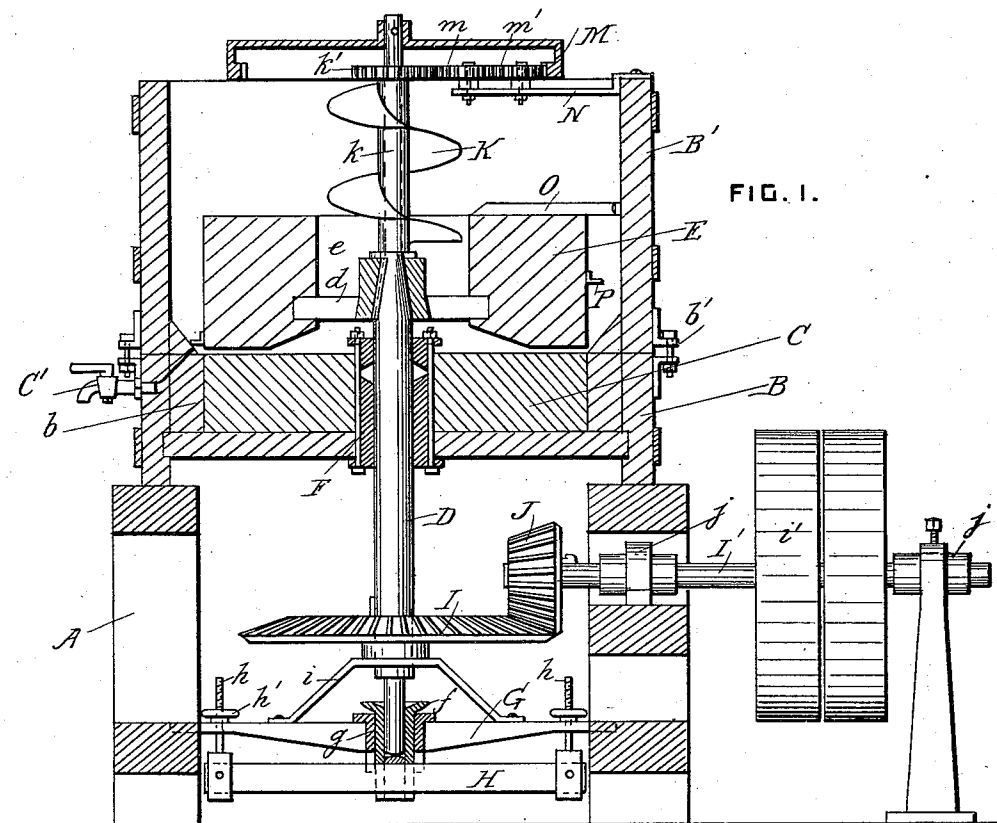


FIG. 1.

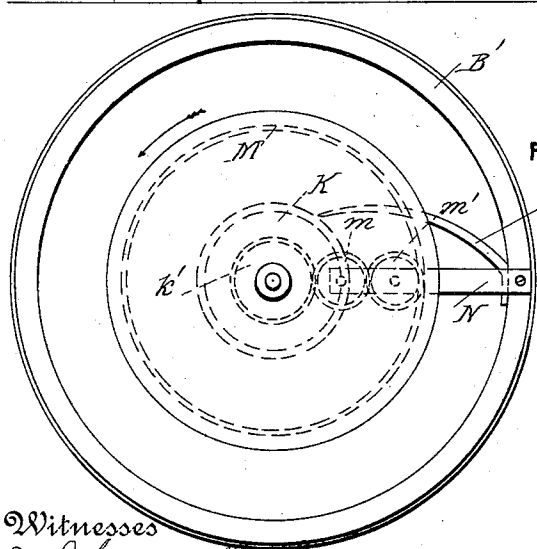


FIG. 3.

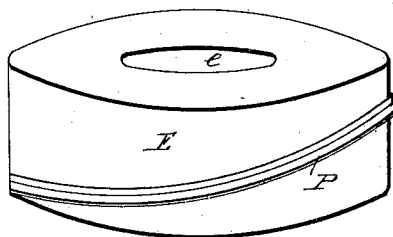


FIG. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

PETER FAUST, OF BROOKLYN, NEW YORK.

MILL FOR GRINDING LIQUID SUBSTANCES.

SPECIFICATION forming part of Letters Patent No. 566,069, dated August 18, 1896.

Application filed October 21, 1895. Serial No. 566,319. (No model.)

To all whom it may concern:

Be it known that I, PETER FAUST, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Mills for Grinding Liquid Substances; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to mills for grinding all kinds of liquids and thin pastes; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a vertical section through the mill, and Fig. 2 is a perspective view of the upper millstone. Fig. 3 is a plan view of the mill.

A is the supporting-frame of the mill, which may be of iron or wood, as found convenient.

B is the tub, supported on the frame A.

C is the lower millstone, arranged inside the tub B, and *b* is an annular distance-piece between the said millstone and the tub. B' is the cylindrical upper part of the tub, which is removable, and *b'* are clamping devices of approved construction for securing the part B' to the tub B. When the upper part B' is removed, free access can be had to the lower millstone for the purpose of dressing its upper surface.

C' is a faucet for emptying the tub of its liquid contents.

E is the upper millstone, provided with an eye *e* and carried by a driver *d*, which is operatively connected with the driving-shaft D in any approved manner.

The driving-shaft D passes through the stuffing-box F, secured in the lower millstone and in the bottom of the tub, and the lower end of the driving-shaft is journaled in the step *f*.

G is a cross-bar secured to the frame A and provided with a hub *g*, in which the said step is slidable.

H is an adjustable cross-bar, which carries the step *f*, and *h* are screw-threaded spindles provided with hand-wheels *h'*, which suspend the cross-bar H under the cross-bar G and afford a means for adjusting the face of the

upper millstone with reference to the face of the lower millstone. The cross-bar H is slidable in slots in the said hub and step, and keeps the step from revolving in the hub.

I is a beveled toothed wheel splined on the shaft D, and *i* is a bracket supporting the wheel I and secured to the cross-bar G. I' is a shaft provided with a driving-pulley *i'* and journaled in the bearings *j*. J is a beveled toothed pinion, secured to the shaft I' and gearing in the said wheel I.

K is a worm provided with a central hub *k*, which runs loose upon the upper end of the driving-shaft D above the driver. The lower part of the worm is arranged within the eye of the upper millstone, and the upper part of its hub is provided with a toothed wheel *k'*. An internal toothed wheel M is secured on the upper end of the shaft D above the worm. Two intergearing toothed pinions *m* and *m'* gear into the wheels *k'* and M, respectively, and transmit the motion of the wheel M to the wheel *k'*. The said pinions are journaled on pins carried by the support N, which is secured to the tub. The worm is driven at a greater speed than the millstone, and the sizes of the pinions *m* and *m'* may be changed so as to adjust the speed of the worm relative to that of the millstone.

O is a scraper operating to scrape the material on the top of the upper millstone toward its eye.

P is a spiral guide secured on the periphery of the upper millstone in the space between it and the upper part of the tub.

The operation of the mill is as follows: The liquid to be ground is placed in the tub and the mill is started. The motion of the worm causes the liquid to flow down the eye of the upper millstone, and the spiral guide P causes the liquid to flow upward around the periphery of the upper millstone, so that a constant circulation of the liquid is secured in the direction of the arrows in the drawing independent of the centrifugal action of the upper millstone. When the liquid has been sufficiently ground, it is let off at the faucet.

What I claim is—

1. In a liquid-mill, the combination with a revoluble millstone and its driving-shaft, of a worm provided with a hub journaled on a prolongation of the said shaft over the eye of

the millstone, a toothed wheel on the said hub, an internally-toothed wheel secured on the said driving-shaft, above the said worm, and intermediate toothed pinions operatively connecting the said wheels, substantially as set forth.

2. In a liquid-mill, the combination, with a stationary lower millstone, and an inclosing tub, of an upper millstone provided with a driving-shaft and means for revolving it, a worm journaled on a prolongation of the said shaft over the eye of the upper millstone, driving mechanism operating to revolve the worm at a higher speed than the upper millstone whereby the liquid is projected downwardly through its eye, and feeding devices operating to raise the ground liquid in the

tub and deliver it to the said worm, substantially as set forth.

3. In a liquid-mill, the combination, with two millstones, of a feed-worm operating to project the liquid downward through the eye of the upper millstone, driving mechanism operating to revolve one of the said millstones and the said worm, and feeding devices operating to raise the ground liquid passing from between the millstones and to deliver it to the said worm, substantially as set forth.

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

PETER FAUST.

Witnesses:

CONRAD KESSLER,
AUGUST ECKHARDT.