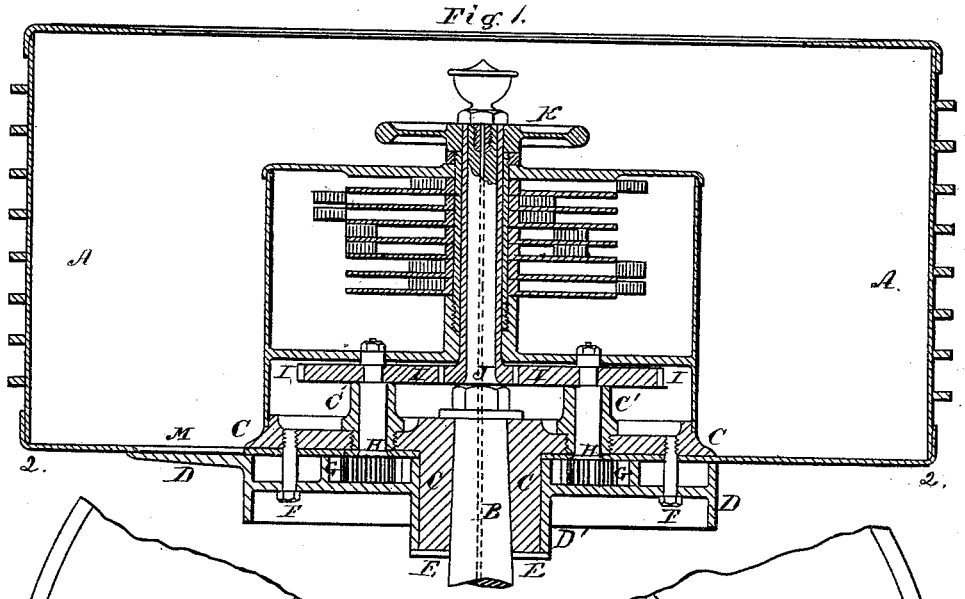
S. S. HEPWORTH.

Centrifugal Machine.

No. 218,441. Patented Aug. 12, 1879.

Fig. 1.



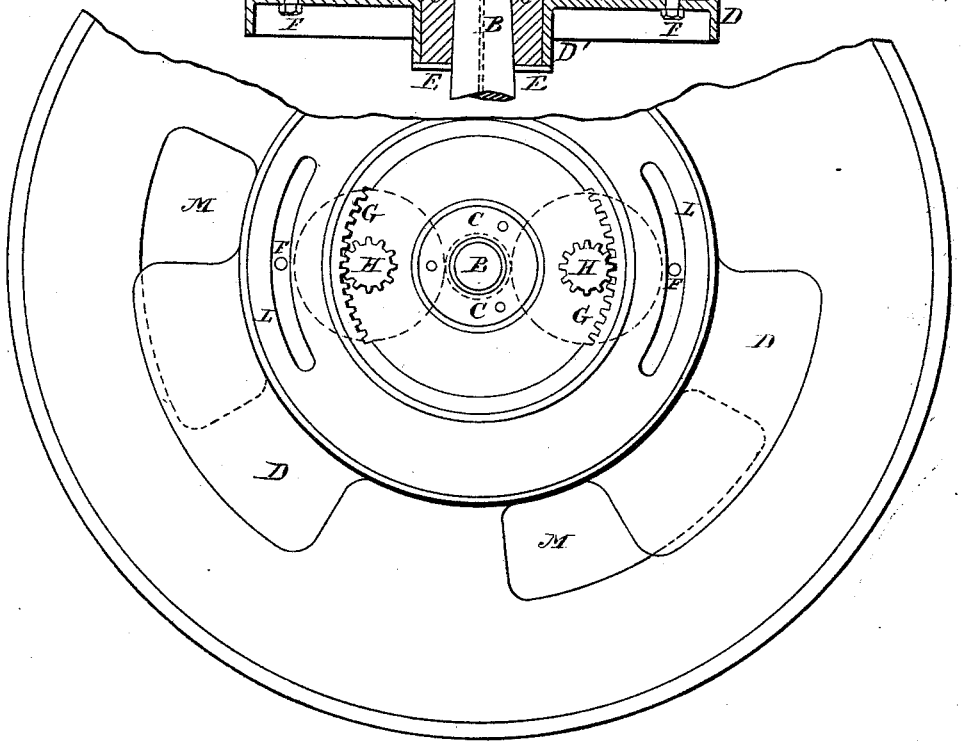


Fig. 2.

Witnesses.

Wendell R. Curtis

Willard Eddy.

Inventor.

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by Theo. G. Ellis, Attorney

UNITED STATES PATENT OFFICE.

SAMUEL S. HEPWORTH, OF YONKERS, NEW YORK.

IMPROVEMENT IN CENTRIFUGAL MACHINES.

Specification forming part of Letters Patent No. **218,441**, dated August 12, 1879; application filed June 17, 1878.

To all whom it may concern:

Be it known that I, SAMUEL S. HEPWORTH, of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Centrifugal Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to such centrifugal machines as are ordinarily used for the separation of sugar from its sirup, but more particularly to those which are supported and driven from below the basket.

Valves have heretofore been placed upon the interior of the basket, and rotated directly by hand from the top; but when placed underneath, in the most advantageous position for the discharge of the sugar, no convenient means for operating such valves has been in use.

The object of my invention is to provide a means for rotating a valve placed underneath the bottom of the basket, without being obliged to have access to the space below or having any interior openings in the basket by which the sirup or magma can reach the working parts of the machine.

My invention consists in the construction and arrangement of the mechanism that will be hereinafter described.

In the accompanying drawings, Figure 1 shows a vertical section through the basket of a centrifugal machine embodying my improvements. Fig. 2 is an upward view from the line 2 2 of Fig. 1, part of the circumference of the basket being cut out for convenience of delineation.

A is the basket for containing the sugar to be drained. B is the spindle upon which it is supported, and from which it receives its rotary motion. C is a cast-metal center, to which the bottom plate of the basket is firmly attached. This center is keyed or otherwise secured to the spindle B. In this center are bearings C′ for the shafts of the pinions, as will be hereinafter described.

D is a valve having a number of leaves, usually three, covering openings in the bottom of the basket, and so arranged as to uncover them by rotating upon its central axis. This valve is provided with a collar, D′, which turns upon a central bearing, which is shown in the drawings as being formed upon the center-piece C. E is a collet upon the spindle B for supporting the valve in its proper position.

F F are bolts passing through slots in the valve, which limit its throw in either direction, and screw into the cast center C. These slots (shown at L L, Fig. 2, in connection with the bolts F,) serve as checks for the valve in opening and closing.

G G are internal racks upon the valve for opening and closing. H H are pinions working in these racks, upon the lower end of a short shaft passing through the bearings C′. I I are wheels upon the tops of the pinion-shafts, both gearing into the central pinion J. J is a pinion at the lower end of a sleeve surrounding the upper part of the central spindle B. At the upper end of this sleeve is placed the hand-wheel K for turning the pinion J and operating the valve.

The operation of my improved manner of opening and closing the valve is as follows:

The machine is supposed to be filled with the semi-liquid sugar and operated in the usual manner. When it is desired to open the valve to discharge the drained sugar, the hand-wheel K is turned, which operates, through the pinion J, the wheels I and the pinion H upon the racks G, to open the valve and uncover the apertures N in the bottom of the basket. When it is desired to close the valves again, the hand-wheel is turned back in the opposite direction.

What I claim as my invention is—

In a centrifugal machine, the valve D rotating upon the spindle underneath the basket, provided with one or more racks, in combination with the intermediate gearing H I J and the hand-wheel K, substantially as described.

SAMUEL S. HEPWORTH.

Witnesses:

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