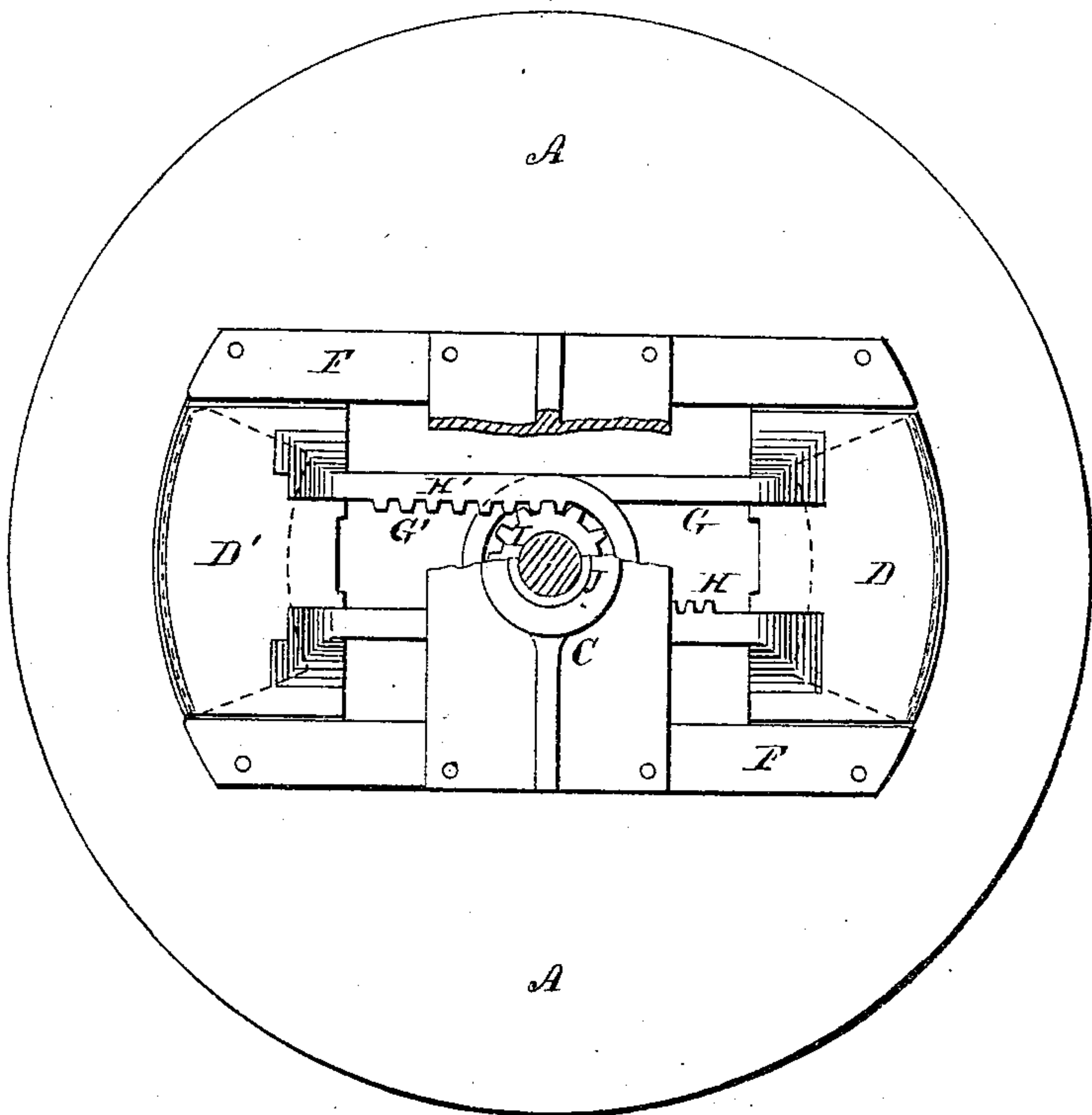


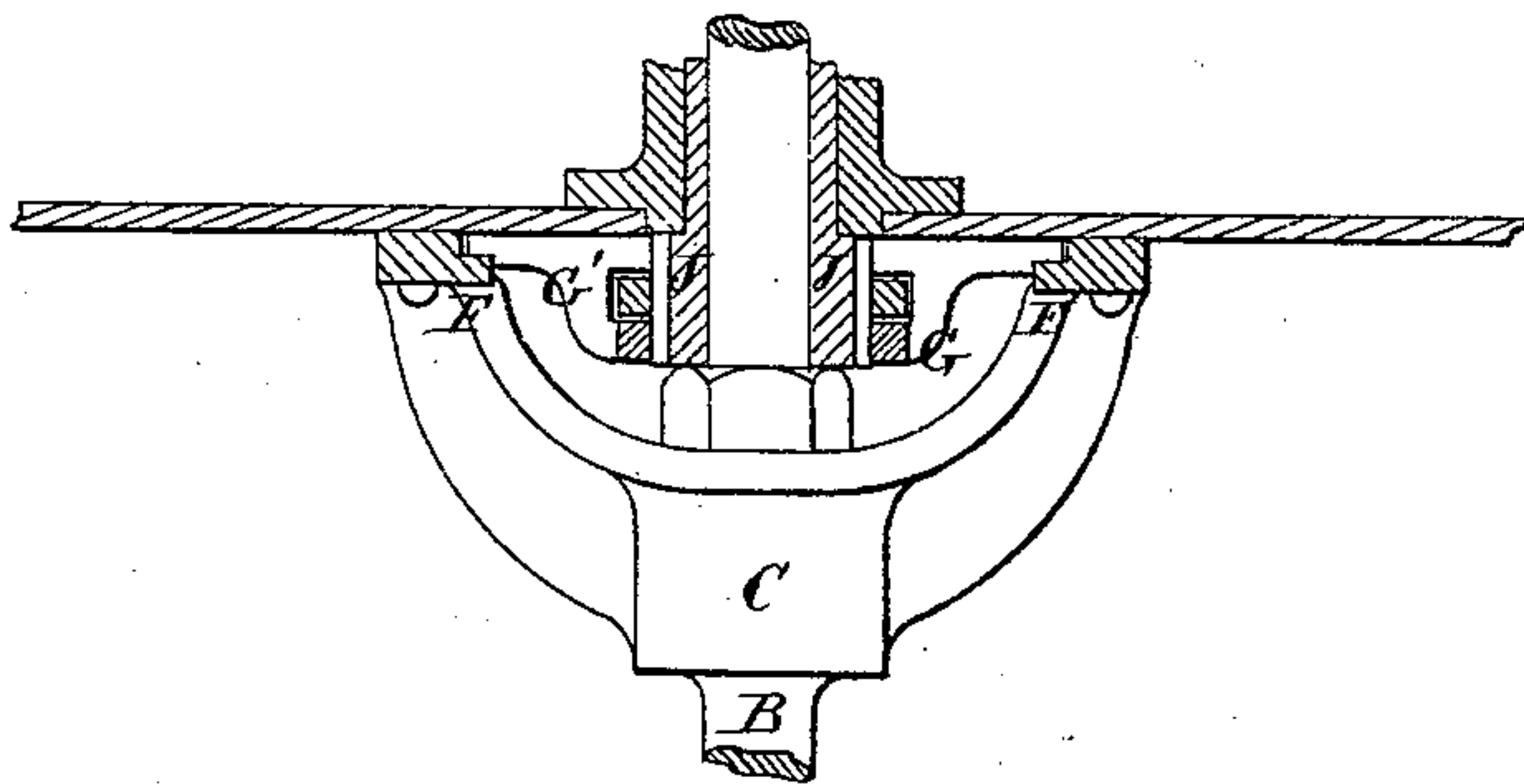
S. S. HEPWORTH.  
Centrifugal-Machine.

No. 217,689.

Patented July 22, 1879.  
*Fig. 1.*



*Fig. 3.*



*Witnesses.*

*Inventor.*

Frederick R. Curtis  
Willard Eddy.

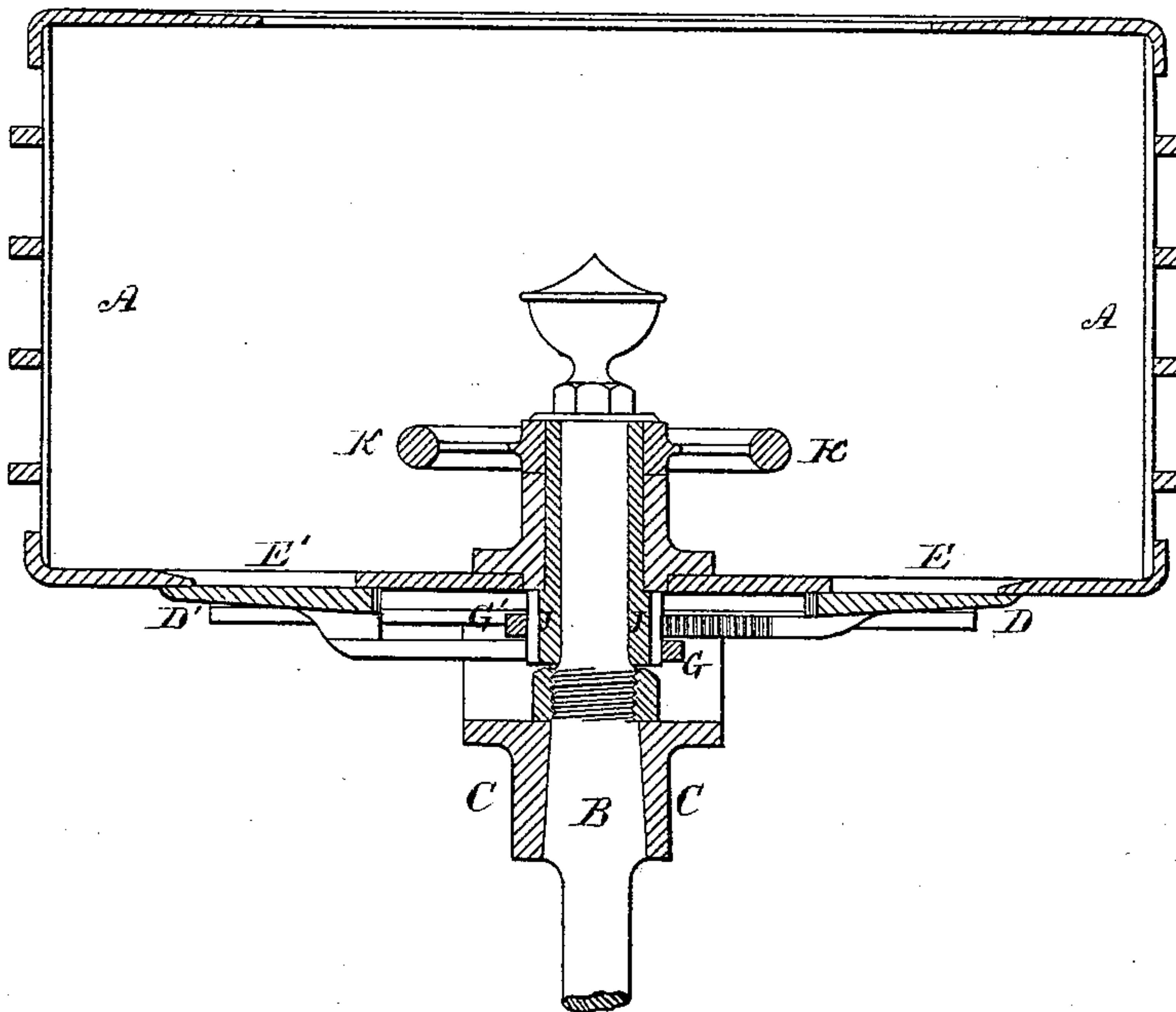
Samuel S. Hepworth  
by Theo. G. Ellis, Attorney

S. S. HEPWORTH.  
Centrifugal-Machine.

No. 217,689.

Patented July 22, 1879.

*Fig. 2.*



*Witnesses.*

*Inventor.*

Wendell R. Curtis  
Willard Eddy.

Samuel S. Hepworth  
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. **217,689**, dated July 22, 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 drawings, 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.

Heretofore the valves in the baskets of centrifugal machines have been made to open and close by rotating or by a vertical movement, and have generally been placed in the interior of the basket. When placed underneath the basket they have been of such construction as to become clogged by the discharged sugar, and have required access to the space below the basket to operate them.

The object of my invention is to provide a valve sliding radially under the bottom of the basket with mechanism for operating it from above, so that while it is in the best position for the discharge of the drained sugar, or other contents of the basket, it cannot become clogged or interfere with the free discharge of the sugar, nor require access to the space below the basket.

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

In the accompanying drawings, Figure 1 is a bottom view of the basket of a centrifugal machine embodying my improvements. Fig. 2 is a vertical cross-section of the basket upon the line 2 2 of Fig. 1. Fig. 3 is a vertical cross-section of the working parts of the valve upon the line 3 3 of Fig. 1.

A is the basket of a centrifugal machine. B is the spindle by which it is supported and from which it receives its motion. C is a yoke, keyed or otherwise attached to the spindle B, and extending upward upon each side

of the valve to the bottom of the basket, which it serves to support.

D and D' are sliding valves, which cover the openings E and E' in the bottom of the basket. They slide in and out from the center, and when they are drawn inward they uncover the openings E and E', so that the sugar contained in the basket can be discharged.

F F are channels or grooves, formed by longitudinal pieces bolted upon the bottom of the basket, in which the outer edges of the valves move to retain them in their proper positions.

G G' are arms, in the form of loops, extending back from the valves. Upon one side of the interior edge they are furnished with racks H H', which engage upon opposite sides of a central pinion, I. The opposite side of the interior edge of the arm is made smooth, and runs upon the points of the leaves of the pinion, so as to hold the rack and pinion together.

The end of the arm is made of such a form as to strike against the pinion and stop the valve at the proper point to close the opening in the bottom of the basket.

The arms G and G' run one above the other, and are guided above by the bottom of the basket, and below by a stop or collar upon the central spindle.

The pinion I is fixed upon a sleeve, J, which turns upon the central spindle, and which is operated by the hand-wheel K at its upper end.

The operation of my improvement is as follows: The basket of the centrifugal machine is supposed to be charged and operated in the usual manner. When it is desired to discharge the contained sugar, the hand-wheel K is turned so as to draw the valves inward until the motion is stopped by the valves coming in contact with the pinion, or any other suitable stop to limit the motion of the valve. The sugar is then discharged in the usual manner. To again close the valves, the hand-wheel K is turned back in the opposite direction to that of opening the valves until the motion is stopped by the loops of the arms coming in contact with the pinion. The machine is then ready to be again charged with sugar to be drained.

What I claim as my invention is—

1. In a centrifugal machine, radially-sliding valves under the bottom of the basket, in combination with mechanism for operating them, substantially as described.

2. In a centrifugal machine, one or more valves placed below the basket, provided with the rack H, in combination with the pinion I,

sleeve J, and hand-wheel K, whereby the valve is operated radially, substantially as and for the purpose described.

SAMUEL S. HEPWORTH.

Witnesses:

T. H. MÜLLER,  
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