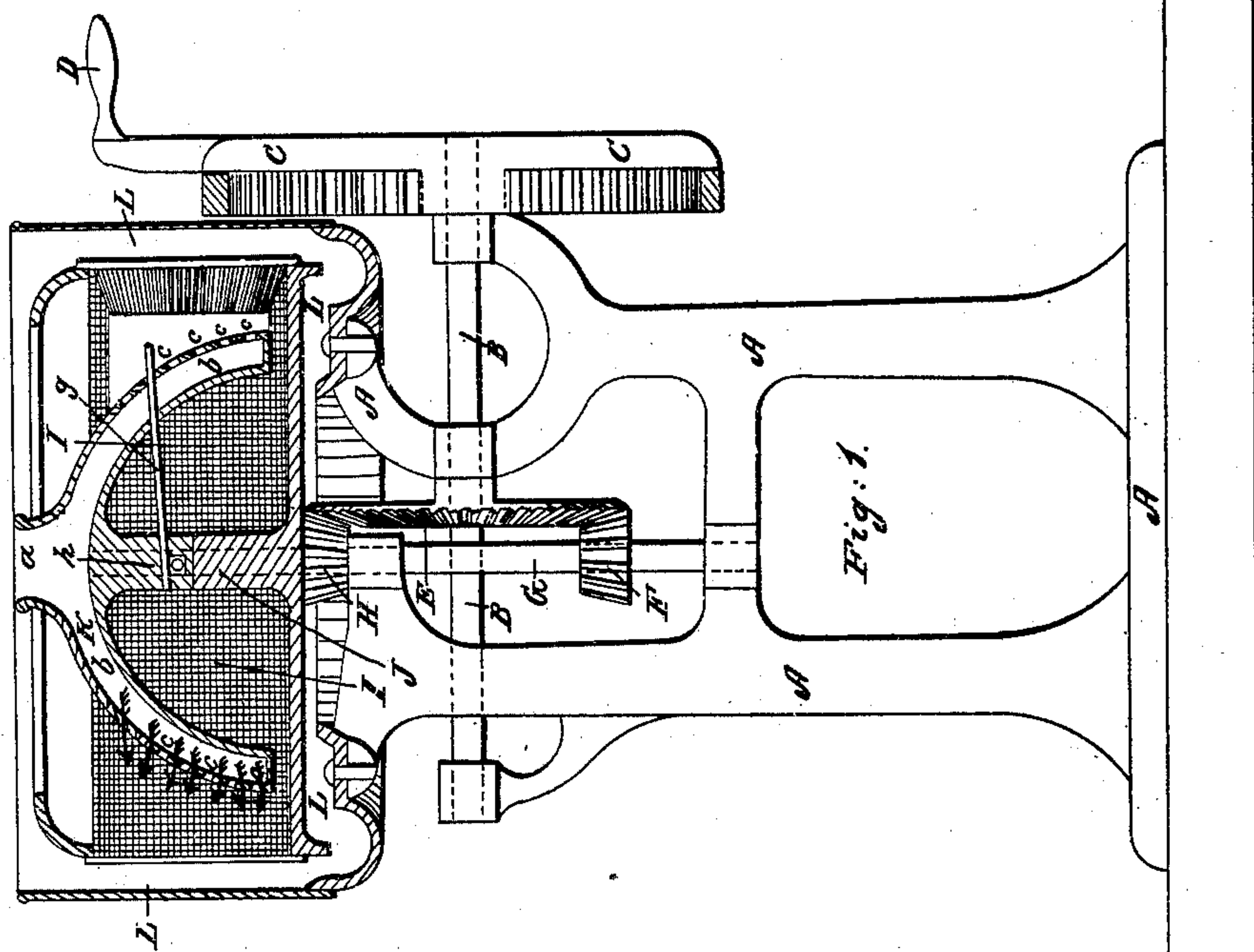
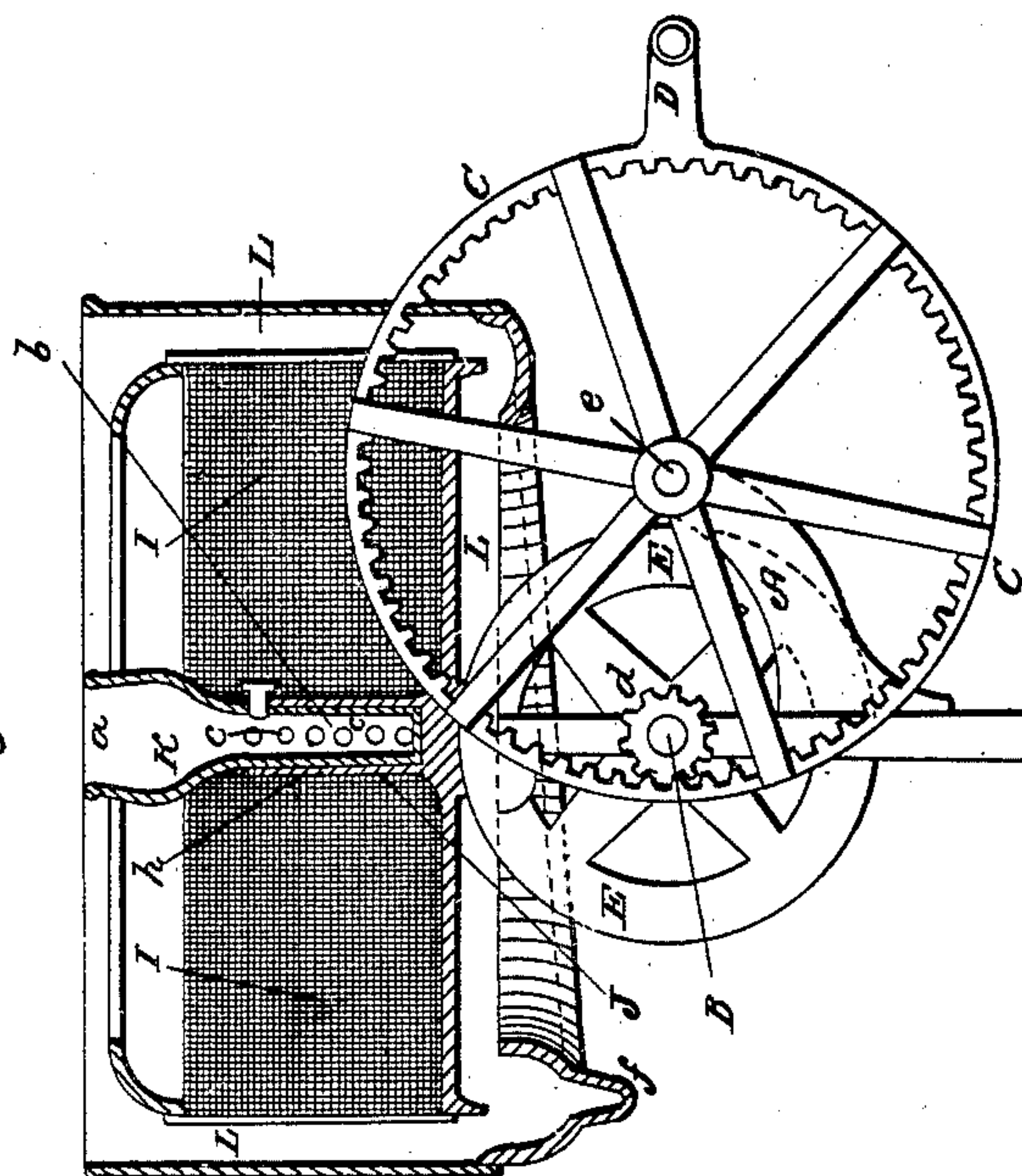


J. O. JOYCE.
Centrifugal Sugar Separator.

No. 57,517.

Patented Aug. 28, 1866.

Fig. 2.



Witnesses:
A. B. Stoughton.
Edw. T. Brown

Inventor:
J. O. Joyce

UNITED STATES PATENT OFFICE.

JACOB O. JOYCE, OF DAYTON, OHIO.

IMPROVED CENTRIFUGAL-MACHINE.

Specification forming part of Letters Patent No. 57,517, dated August 28, 1866.

To all whom it may concern:

Be it known that I, JACOB O. JOYCE, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Centrifugal Sugar-Separating Machines; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a vertical section taken through the machine in the line of its supports, and Fig. 2 represents a vertical section taken in a line at right angles to the line of said supports.

Similar letters of reference, where they occur in the separate figures, denote like parts of the machine in both of the figures.

My invention consists in a rotating feeding mechanism applied to the rotating gauze cylinder for expediting and facilitating the separation of the molasses from the granulated sugar.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

On a substantial frame or base, A, is placed in suitable bearings a driving-shaft, B, having on its projecting end a pinion, *d*, which is driven by an internal cogged gear, C, placed on the shaft *e*, and driven by a crank, D, or by a belt, or in any other well-known way.

At about the center of the driving-shaft B there is placed a bevel-gear wheel, E, that drives a bevel-pinion, F, on the vertical shaft G, and also drives another bevel-pinion, H, secured to the revolving gauze cylinder I.

The shaft J of the gauze cylinder is hollow, and the shaft G passes up through it and carries upon its upper portion the revolving feeder K, by which gearing the gauze cylinder and the feeder K have uniform motions in opposite directions. But it is obvious that by enlarging or diminishing the size of one or both of the bevel-pinions the comparative motions of the cylinder and feeder may be varied or

changed, or they may be made to run in the same directions, at uniform or different velocities, by putting in an intermediate gear. I prefer, however, the arrangement of gear as herein shown by the drawings.

The feeder consists, first, of an open portion, *a*, into which the material to be separated by centrifugal force is introduced. From this central vertical portion there extends outward and downward two tubular arms, *b b*, which have their lower ends closed, and the portions opposite the gauze screens perforated with holes *c c c*, so that the liquid, sirup, or fluid matter fed into it shall, by centrifugal force, be thrown directly against the wire-gauze cylinder, which also runs at a high velocity, and thus force the molasses through the meshes, while the sugar is retained by the gauze.

Outside of the gauze cylinder, and permanently secured to the frame, is the tub L, for catching the molasses that is forced through the gauze cylinder. The bottom of this tub is inclined, grooved, or guttered, so as to concentrate the molasses at one point, as at *f*, where it flows off into any suitable receiver.

M is a brush, the block of which is fitted to sit upon one of the arms *b* of the feeder, and, by means of spring-rods *g*, to catch and hold upon the vertical stem or portion *h* of the feeder, which portion *h* also forms the hub of the feeder, that slips over the shaft G and rests upon the hub J of the gauze cylinder I. This brush is used for cleaning the gauze when it becomes filled by the sugar, and when used the feeding is suspended, but the feeder revolves it rapidly against the gauze.

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

In combination with a centrifugal sugar-separator, a revolving feeder operating substantially in the manner and for the purpose described.

J. O. JOYCE.

Witnesses:

A. B. STOUGHTON,
EDM. F. BROWN.