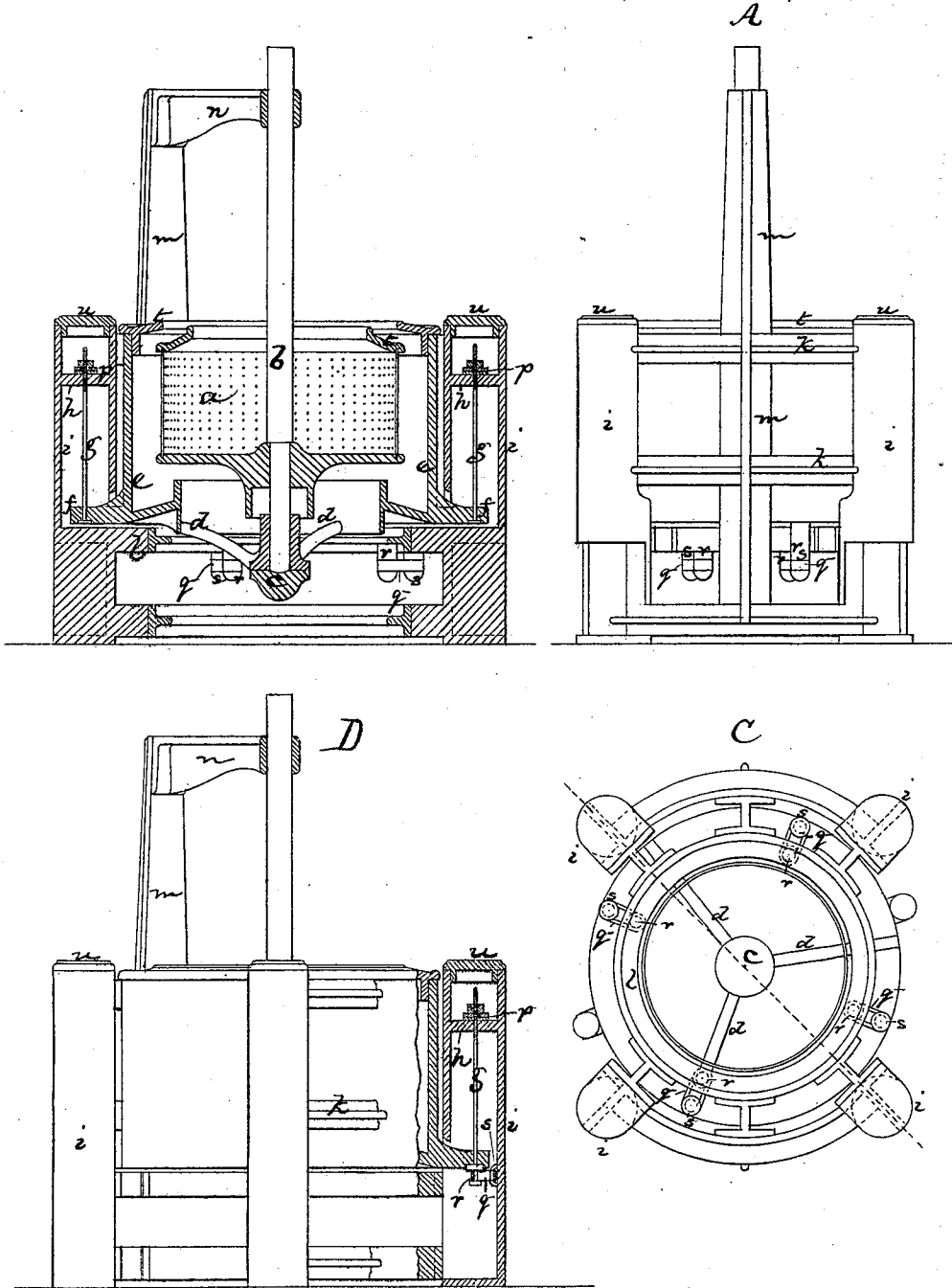


J. COTTLE.

Improvement in Centrifugal-Machines.

No. 129,322.

Patented July 16, 1872.



Witnesses  
M. W. Frothingham.  
S. B. Kildet.

Inventor  
Jonathan Cottle.  
By his Attys.  
Crosby & Gould.

# UNITED STATES PATENT OFFICE.

JONATHAN COTTLE, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN CENTRIFUGAL MACHINES.

Specification forming part of Letters Patent No. 129,322, dated July 16, 1872.

*To all whom it may concern:*

Be it known that I, JONATHAN COTTLE, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Centrifugal Machine; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to the construction of centrifugal machines for draining sugar and analogous purposes, and to that class of such machines in which the basket is so hung as to be capable of a free gyratory or vibratory movement, or such gyratory movement as the basket tends to assume in consequence of the inequality of its load or its want of balance when loaded. In my present invention, I support the foot of the basket-shaft (the basket being fixed to the shaft) upon a center-bearing, which is connected by radial arms or spokes to the bottom of the curb-cylinder, and the curb-cylinder I suspend by rods or chains from bridges or bearings in the upper parts of vertical tubular pillars forming part of the stationary frame, the upper end of the shaft turning in a suitable bearing, which permits the free vibratory movements of the shaft. It is in this manner of supporting the basket, or in a basket supported at its foot upon a bearing, at the center of a curb, suspended by chains or rods, so that the curb and basket thus suspended have a capability in common of gyratory movement that my present invention primarily consists.

The drawing represents a machine embodying the invention. A shows the machine in side elevation. B is a central vertical section. C is a bottom view. D is an elevation, showing a modification.

*a* denotes the basket, which may be constructed in the usual manner; *b*, the rotating shaft, to which the basket is fixed, the shaft having movement imparted to it by any suitable driving mechanism. *c* is the socket-bearing, in which the foot of the shaft *b* is supported and rotates. This bearing is connected

or united by arms or spokes *d* with the bottom of the curb-cylinder *e*, and from the side of the curb-cylinder at its bottom extend outward four or any other suitable number of short arms or projections, *f*, by which the basket is suspended by chains or rods *g* from the bearing-plates or bridges *h* in the upper parts of tubular pillars or standards *i*, said pillars standing upon the floor or bed where the machine is to be used. The pillars *i*, cross-bars *k*, and a connecting-ring, *l*, form the stationary framework of the machine, and uprights *m* rise from said frame for supporting a cross-bar, *n*, in which is the bearing for the upper end of the shaft *b*. The support of the basket upon the curb, suspended as shown, permits the basket to vibrate without affecting the concentricity of basket and curb, and enables the machine to be run at a maximum speed without injurious strain upon the mechanism or the structure upon which the machine rests. The suspension chains or rods *g* are preferably suspended by means of nuts and eye-bolts, and under the nuts are elastic washers or cushions *p*, by means of which the bearing *c* is made yielding. To center the curb loop-springs *q* are employed, said springs passing around pins or projections *r* at the lower end of the rods *g*, and eyes *s* extending from the inner surface of the pillars *i*, as seen at D. The curb may be surmounted by a cap-ring, *t*, covering the space between the curb and the basket, and the tubular pillars may be covered by caps *u*. By thus suspending the curb and basket together, and at their bottom, the machine is rendered very strong and enduring, and can be run at speed with greater safety than when the curb and basket are suspended at top. At D the loop-springs *q* are shown as passing around the pins or rod-projections *r* and the eyes *s*, but at A, B, and C, pins *s* extend from the ring *l*, and the pins *r* from the bottom of the curb, either method of arranging the loop-springs being used, though I prefer the arrangement shown at D.

I claim—

1. In a combined curb and basket, the basket supported and rotating in the bearing con-

nected with the bottom of the curb, and the bottom of the curb suspended by the chains or rods, substantially as shown and described.

2. The stationary frame made with the tubular standards or pillars for receiving the suspending chains or rods, substantially as shown and described.

3. In combination with the basket and curb,

suspended as described, the loop-springs *g* connecting the bottom of the curb with the frame or pillars, substantially as shown and described.

JONATHAN COTTLE.

Witnesses:

FRANCIS GOULD,  
M. W. FROTHINGHAM.