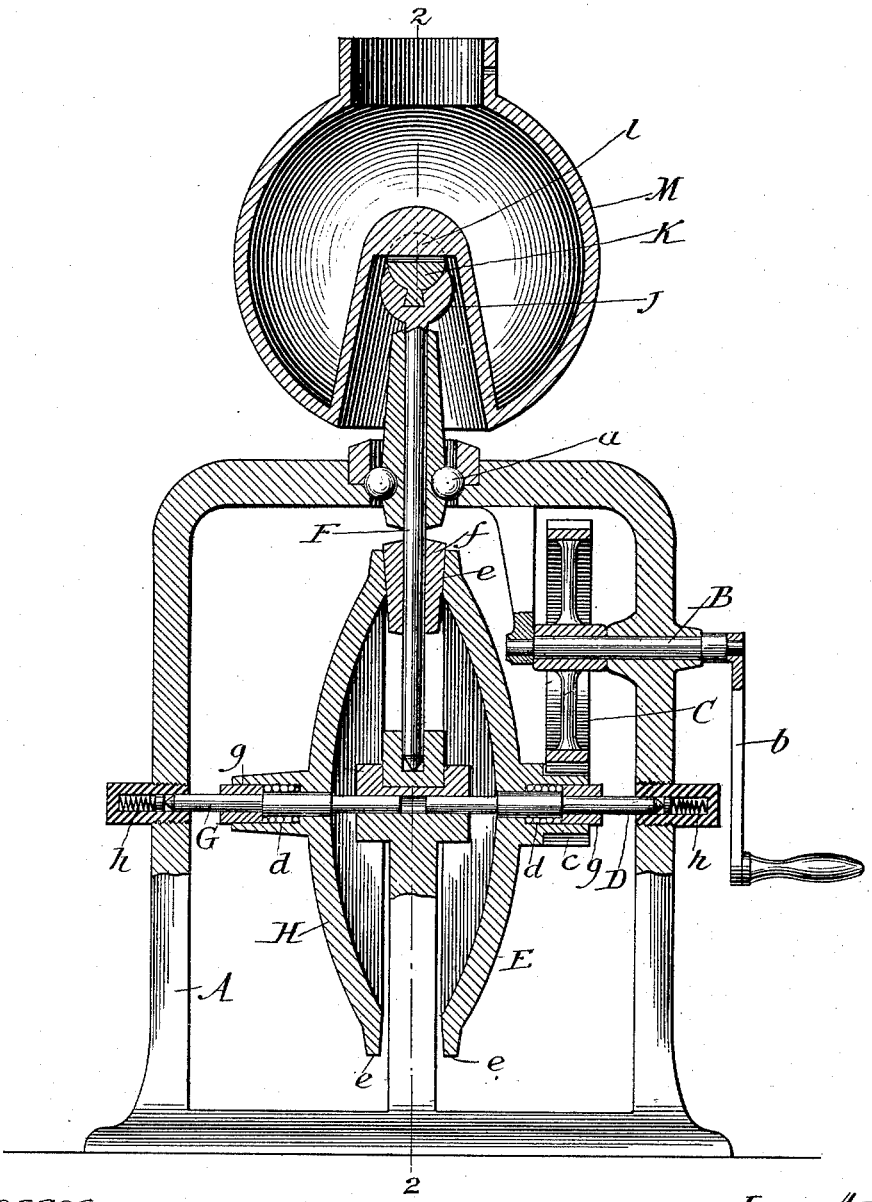
(No Model.) 2 Sheets—Sheet 1.

C. J. JEPPESEN.

CENTRIFUGAL MACHINE.

No. 456,654. Patented July 28, 1891.

Fig. 1.



Witnesses:
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Arthur K. Durand

Inventor:
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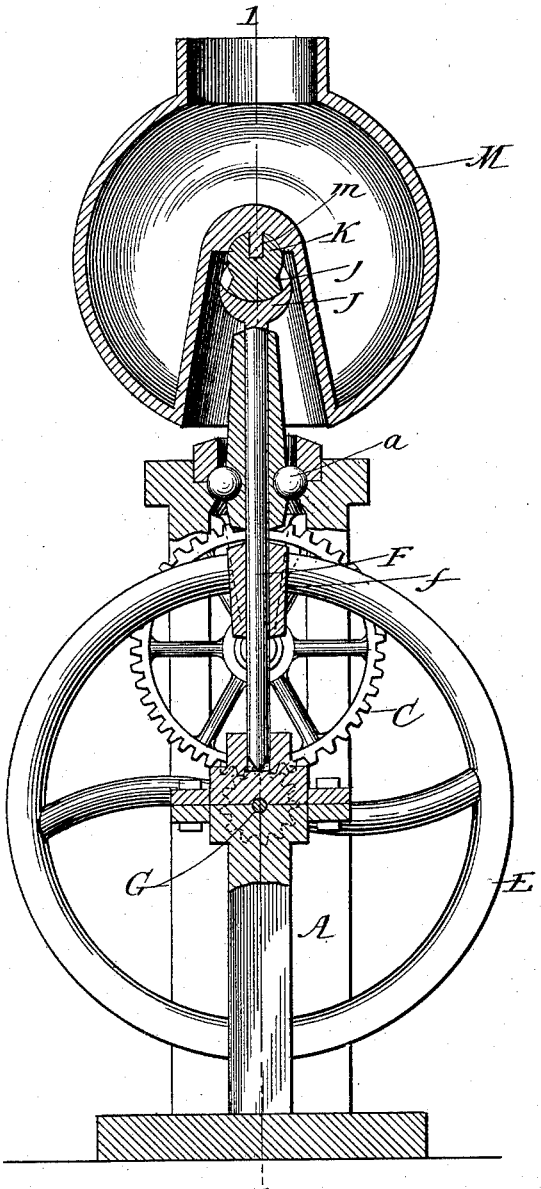
(No Model.) 2 Sheets—Sheet 2.

C. J. JEPPESEN.

CENTRIFUGAL MACHINE.

No. 456,654. Patented July 28, 1891.

Fig. 2.



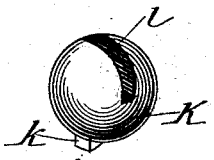
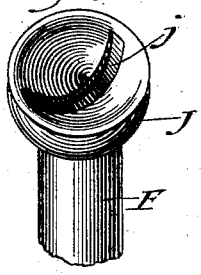


Fig. 3.



Witnesses:
John L. Jackson
Arthur F. Durand

Inventor:
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UNITED STATES PATENT OFFICE.

CHRISTEN JOHN JEPPESEN, OF CHICAGO, ILLINOIS.

CENTRIFUGAL MACHINE.

SPECIFICATION forming part of Letters Patent No. 456,654, dated July 28, 1891.

Application filed September 12, 1890. Serial No. 364,778. (No model.)

To all whom it may concern:

Be it known that I, CHRISTEN JOHN JEPPESEN, residing in Chicago, in the county of Cook and State of Illinois, and a subject of the King of Denmark, have invented certain new and useful Improvements in Centrifugal Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a central longitudinal section on line 1 1 of Fig. 2. Fig. 2 is a cross vertical section on line 2 2 of Fig. 1; and Fig. 3 is an enlarged detail, being a perspective view of the globe and ball separated.

This invention relates to centrifugal machines, and is designed especially as improvements in centrifugal cream-separating machines; but the improvements are applicable to various forms of centrifugal machines.

The object of my invention is to provide an improved device for freely supporting the centrifugal basket upon the upper end of a vertical shaft, so that the basket is free to rock. I accomplish this object as illustrated in the drawings, and as hereinafter described.

That which I claim as new will be pointed out in the claim.

Similar letters refer to similar parts throughout the several views.

A indicates a suitable standard or frame, which may be made in any desired form to support the operating parts hereinafter described.

B indicates a shaft supported in suitable bearings in the frame A, as best shown in Fig. 1. This shaft may be rotated by means of a crank *b* or other suitable driving device.

C indicates a spur-wheel, which is secured upon the shaft B.

D indicates a second shaft, which is supported in suitable horizontal bearings in the frame A.

E indicates a wheel, which is loosely mounted upon the stationary shaft D. Anti-friction balls *d* are provided to reduce the friction of the wheel upon the shaft D, as best shown in Fig. 1. The wheel E is provided with a spur-pinion *c*, with which the wheel C meshes.

F indicates a vertical shaft. This vertical shaft is supported at its lower end in a suitable bearing in the frame A and at its upper end is supported in a bearing provided with anti-friction balls *a*. Upon this vertical shaft F is secured a small drum *f*. The wheel E is provided with a smooth bearing-surface *e*, which is adapted to engage with the drum *f* and by frictional contact therewith rotate the drum *f* and shaft F. Upon a shaft G, mounted in suitable bearings on the opposite side of the shaft F from the shaft B, is loosely mounted a wheel H, similar in form to the wheel E and provided with a bearing-surface *e*, adapted to engage with the drum *f* on the opposite side from the wheel E.

Each shaft D and G is provided with a sleeve *g*, and in the bearing at the outer end of each shaft D G is a spring *h*, as best shown in Fig. 1. These springs *h* press the shafts D G inward, which presses the wheels E and H inward, causing them to keep constantly in engagement with the drum *f*.

By driving the shaft B the wheel C will drive the pinion *c*, which will drive the wheel E. The wheel E, being of considerable diameter, will cause the drum *f* and shaft F to rotate rapidly. The wheel H, being on the opposite side from the wheel E, will be rotated by its engagement with the drum *f* in the opposite direction from the wheel E. Its engagement with the drum *f* will overcome the pressure of the wheel E against the drum *f*. By this construction the shaft F can be rotated very rapidly and without causing any side pressure.

Upon the upper end of the shaft F is a globular head J, which is provided with a transverse groove *j*, as best shown in Figs. 2 and 3. The upper portion of the globular head J is provided with a concave recess adapted to receive a ball K. This ball K is provided with a tongue *k*, adapted to enter the groove *j*. The upper portion of the ball K is provided with a groove *l*, which is preferably at right angles to the tongue *k*.

M indicates the basket or receiver of the centrifugal machine, which may be made in any suitable form. The form shown is one form now in use; but any of the other common and well-known forms may be used. The basket M is provided with a concave recess adapted to receive the upper portion of the

ball K, and this recess is provided with a tongue *m*, adapted to enter the groove *l* in the ball K.

The shaft F, while rotating, will cause the ball K to rotate by means of the engagement of the tongue *k* with the groove *j*, and the ball K will cause the basket M to rotate by the engagement of the tongue *m* in the groove *l*. By this construction the basket M will therefore rotate with the shaft F, while it will be free to oscillate on said shaft by reason of the construction of the ball K and its engagements with the basket M and globular head J.

The oscillation of the basket M is important in cream-separating machines, as it prevents the breaking of the cream in passing through the basket. It is also important in other forms of centrifugal machines.

I am aware that baskets have been loosely mounted upon the end of vertical shafts in centrifugal machines, and I therefore do not claim such construction, broadly.

What I claim as new, and desire to secure by Letters Patent, is—

In a centrifugal machine, the combination, with a vertical shaft F and a globular head J thereon, having a concave recess provided with a groove *j*, of a ball K, having a tongue *k* and groove *l*, and a basket M, provided with a tongue *m*, adapted to enter the groove *l*, substantially as and for the purpose specified.

CHRISTEN JOHN JEPPESEN.

Witnesses:
ALBERT H. ADAMS,
JOHN L. JACKSON.