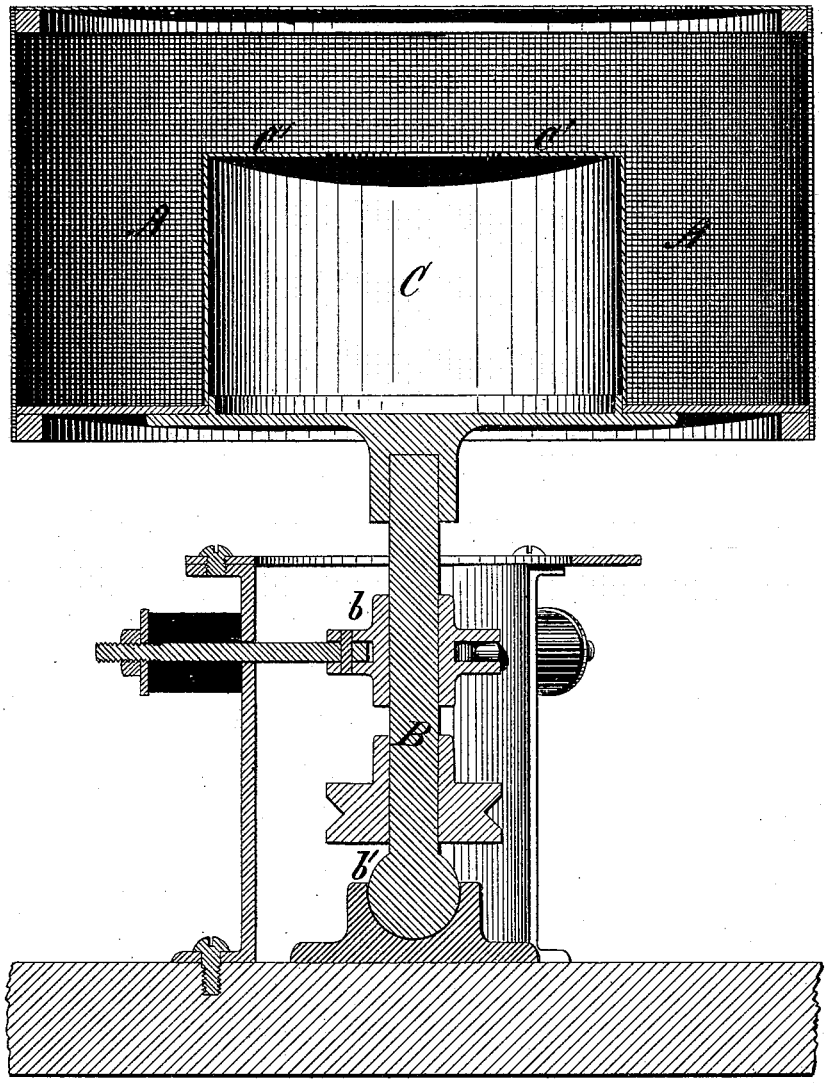
2 Sheets—Sheet 1.

A. A. GOUBERT.

CENTRIFUGAL-MACHINE.

No. 191,137. Patented May 22, 1877.

Figure 1.



Witnesses:

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Geo. W. Miatt

Inventor:

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2 Sheets—Sheet 2.

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Figure 2.

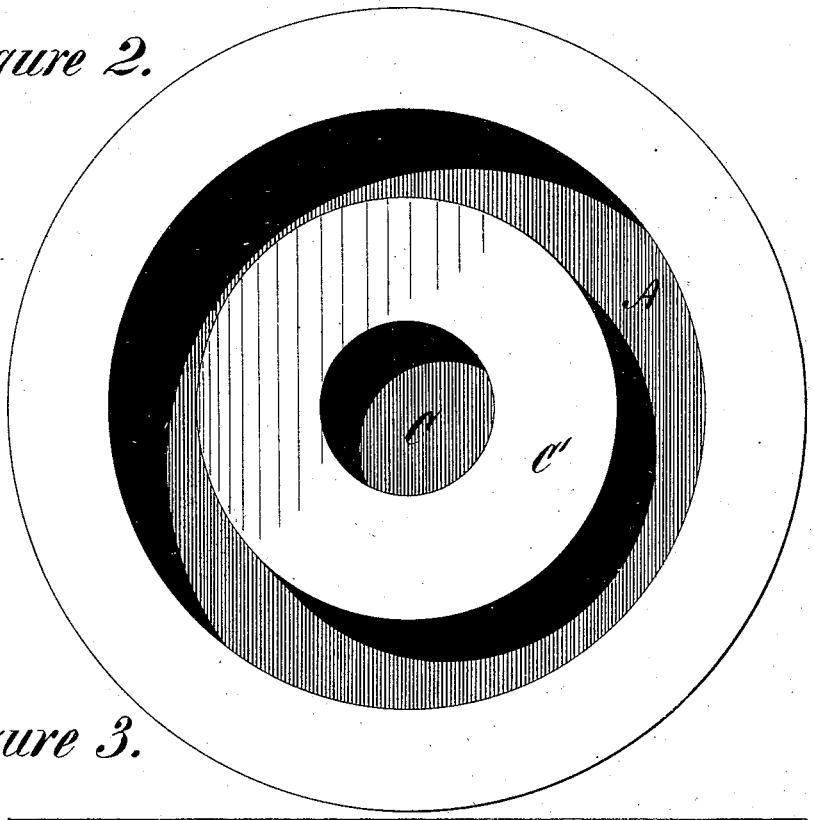
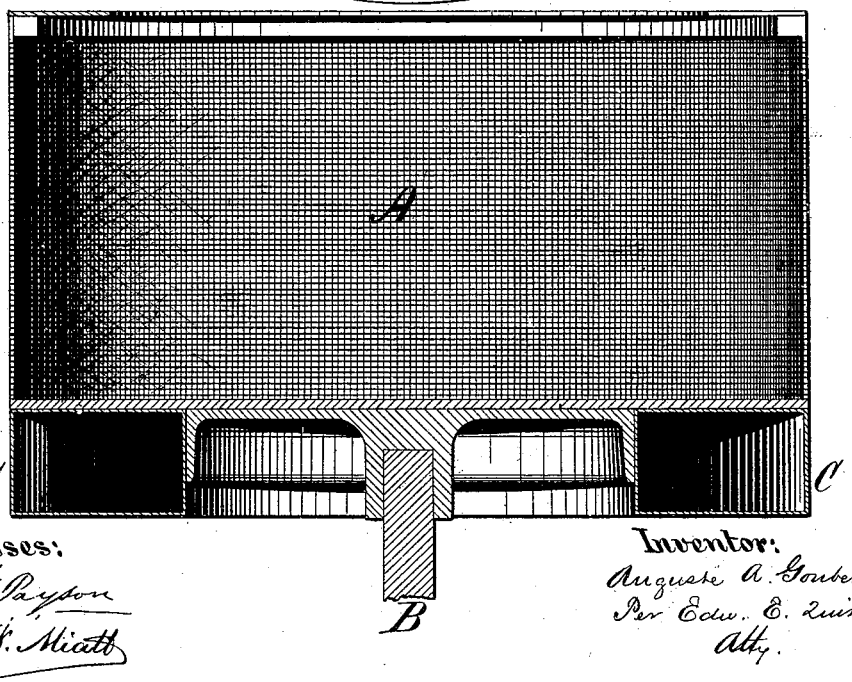


Figure 3.



Witnesses:
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Geo. H. Miatt

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UNITED STATES PATENT OFFICE.

AUGUSTE A. GOUBERT, OF NEW YORK, N. Y.

IMPROVEMENT IN CENTRIFUGAL MACHINES.

Specification forming part of Letters Patent No. **191,137**, dated May 22, 1877; application filed April 12, 1877.

To all whom it may concern :

Be it known that I, AUGUSTE A. GOUBERT, of the city and State of New York, have invented an Improvement in Centrifugal Machines, of which the following is a specification:

My improvements relates to that class of centrifugal machines in which the basket is affixed to a shaft having yielding bearings, and in which counterbalancing-weights are employed to counteract the tendency of the basket to wabble when it is unevenly loaded; and my invention consists in providing the machine with a cylindrical chamber concentric with the basket, and introducing into such chamber a material, preferably a fluid, which, by its mobility, will arrange itself in the chamber in obedience to the centrifugal forces generated by the rotation of the machine. In most cases water will answer the desired purpose; but, if necessary, glycerine or even a heavier fluid may be used. A granulated material, as, for example, fine shot or small metallic balls, may also be used.

The accompanying drawings illustrate my invention as applied to an ordinary centrifugal machine, like those used for draining sugar.

Figure 1 is a central vertical section through the spindle and perforated basket. Fig. 2 is a top view, showing the interior of the basket with the counterbalancing-chamber in the center. Fig. 3 is a section through the axis of the basket and a portion of the spindle, showing the counterbalancing-chamber arranged beneath the basket.

I have not deemed it necessary to show the exterior chamber used to collect the fluid discharged from the machine, as my invention relates solely to the subject of counterbalancing the basket.

Referring to the drawings, it will be seen that an ordinary centrifugal-machine basket, A, with its periphery perforated, is mounted upon the upper end of a vertical shaft, B. This shaft has the usual yielding upper-bearing *b*, and is supported at the bottom by the ball-and-socket bearing *b'*. Figs. 1 and 2 show a central chamber, C, which is firmly secured to the bottom of the basket, and which is provided with the inwardly-projecting flange, C'. In Fig. 3 the counterbalancing-chamber is shown beneath the basket. In this position the chamber may be increased in diameter, and hence can be diminished in height.

The operation of the machine is as follows: When an overweight of material is placed on one side of the basket the tendency of the overweight to fly off at a tangent as the basket revolves causes the shaft to incline toward the overweight; therefore the shaft in its revolution describes an inverted cone, and the basket wabbles. Under such conditions fluid contained in the counterbalancing-chamber, being free to move in any direction within the chamber, collects upon the side of the chamber farthest from the place where the overweight of material in the basket is situated. The centrifugal pull of the overweight in the basket in one direction is therefore counteracted by the centrifugal pull of the fluid in the opposite direction, and the effect of the continued rotation of the machine is to bring the shaft back into a vertical position, and hence cause the basket to revolve upon its geometrical axis.

Of course it will be seen that the chamber may be conical, spherical, or annular, the only conditions precedent to its effective use being that it shall be concentric with the basket, and shall be of suitable capacity.

I claim as my invention in a centrifugal machine—

1. In combination with the basket of a centrifugal machine, mounted upon a vertical shaft having yielding bearings, a chamber concentric with the basket, and a liquid or granular substance contained in such chamber, substantially as and for the purpose set forth.

2. The method of effecting the counterbalancing of centrifugal machines herein described, to wit, by means of a suitable quantity of liquid or granulated material contained in a chamber concentric with the basket, and of such dimensions that the quantity of liquid required to counterbalance an overweight in the basket will have room to arrange itself against the side of the chamber radially opposite the overweight in the basket, under the influence of the centrifugal forces generated by the rotation of a centrifugal machine upon a vertical axis mounted in yielding bearings.

AUGUSTE A. GOUBERT.

Witnesses:
M. L. ADAMS,
EDWD. PAYSON.