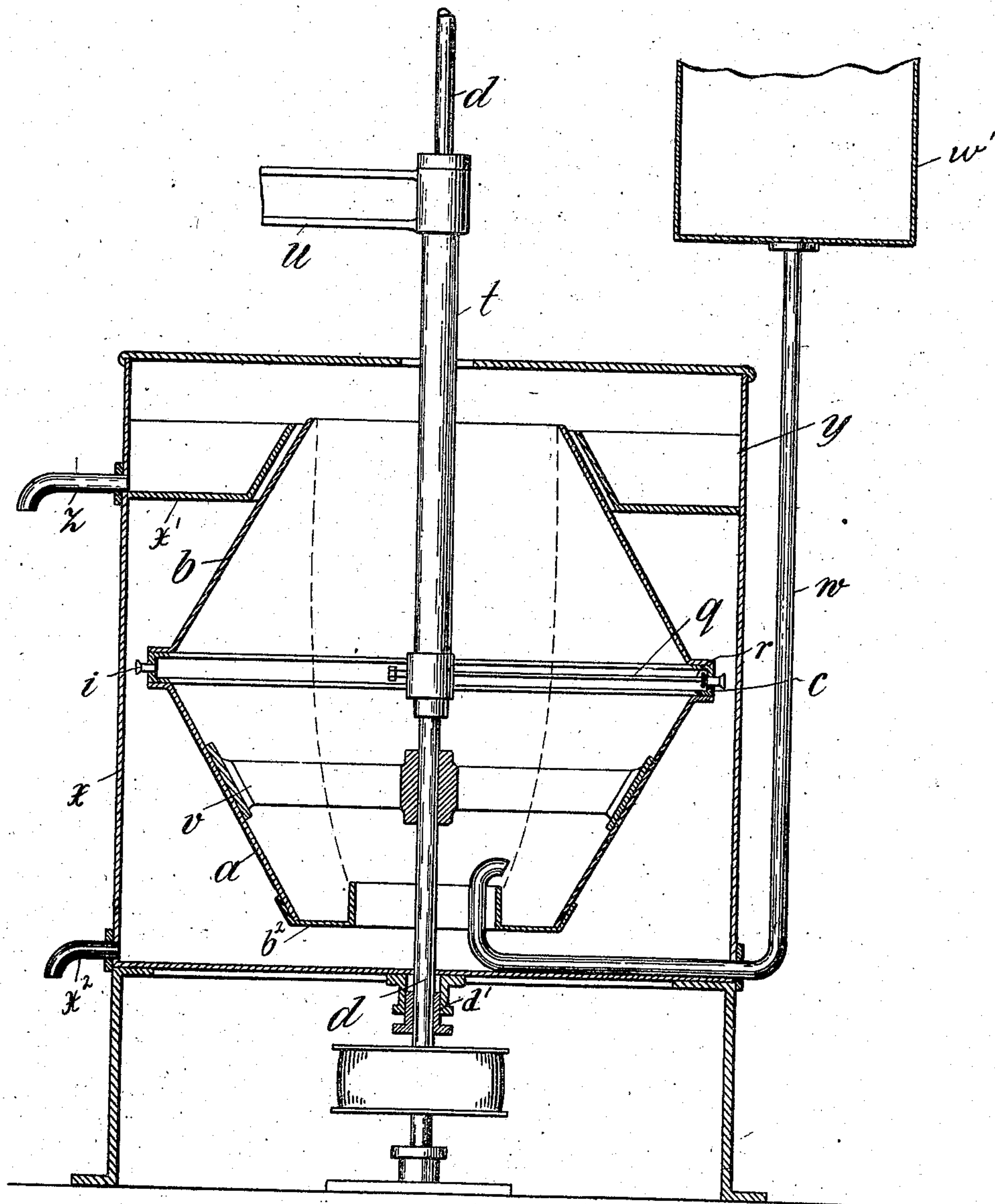


No. 840,497.

PATENTED JAN. 8, 1907.

F. KAEHL.
CENTRIFUGAL MACHINE.
APPLICATION FILED APR. 11, 1905.



Witnesses
J. M. Hynke
J. A. Hynke

Inventor
Ferdinand Kaehl
by Knight Bros
attys.

UNITED STATES PATENT OFFICE.

FERDINAND KAEHL, OF BERLIN, GERMANY.

CENTRIFUGAL MACHINE.

No. 840,497.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed April 11, 1905. Serial No. 255,020.

To all whom it may concern:

Be it known that I, FERDINAND KAEHL, a citizen of the Empire of Germany, residing at Berlin, in the Empire of Germany, have invented a new and useful Centrifugal Machine, of which the following is a specification.

My invention relates to improvements in centrifugal machines, in which the drum, formed of two oppositely-conical portions and a perforated ring between their largest peripheries, is adapted to receive the charge through the opening at the one end and to discharge the separated liquid through the opening at the other end and the separated solid substance through the perforations in the ring; and the objects of my improvement are, first, to provide an arm stationary on the drum-shaft and carrying a scraper which bears on the internal face of the ring of the drum, and, second, to provide means for holding said arm with scraper in a stationary position.

I attain these objects by the arrangements illustrated in the accompanying drawing, which shows a vertical longitudinal section through a centrifugal machine with a vertical drum-shaft.

The centrifugal machine illustrated is chiefly intended for separating starch, wheat-gluten, and the like from water and dissolved ingredients; but of course it may be employed for separating other materials.

The drum consists of two oppositely-conical portions *a* and *b*, which are connected with each other at their largest peripheries by a ring *c*, preferably of a U-shaped cross-section. They are fastened on the shaft *d* by means of a spider *v*. The bottom *b*² of the lower conical portion *a* is preferably formed at its central opening to a flange, as shown. Of course the bottom opening is made smaller than the opening at the upper end of the conical portion *b* in accordance with the dotted curves, which represent the internal surface of the charge rotating with the drum at the given speed. A suitable casing *x* incloses the drum and is provided in its bottom with a stuffing-box *d'*, through which the shaft *d* passes. The casing *x* is divided by a

convenient partition *x'* into a lower receptacle for the liquid starch, wheat-gluten, and the like and an upper receptacle *y* for the separated liquid. The arm *q*, carrying at its end the scraper *r*, is here shown as fastened on a sleeve *t*, which loosely surrounds the shaft *d* and is supported by a convenient arm *u*. The latter may be a part of the machine-frame or secured on a wall and the like.

The operation of this centrifugal machine is as follows: During the rotation of the drum the charge is conducted from the vessel *w* through the bent tube *w* to the drum, where it is divided by the centrifugal force. The separated solid substance is by the scraper *r* prevented from choking the outlets *i*, so it can be thrown out through the outlets *i* of the ring *c* into the lower receptacle and thence discharged through the outlet *x*², while the separated liquid flows over into the upper receptacle *y* and escapes through the outlet *z*.

The centrifugal machine may be varied without deviating from the spirit of my invention.

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

1. In a centrifugal machine, the combination with a drum open at both ends and formed of two rotary oppositely-conical portions of different diameter at both ends, which are connected at their largest peripheries, of a shaft, means securing said drum on said shaft while leaving free passage to the materials to be separated and discharged, an arm stationary on said shaft, means for holding said arm in a stationary position, and a scraper on said arm and adapted to scrape the internal face of said drum.

2. In a centrifugal machine, the combination with a drum having openings of unequal diameter at both ends and formed of two oppositely-conical portions and a perforated ring connecting their largest peripheries, of a vertical shaft, a spider on said vertical shaft for supporting said drum, means for introducing the materials to be separated into said drum through its smaller opening below, means for collecting the separated liquid from said drum at its larger opening above, means for collecting the separated solid sub-

stance discharged from said drum through
the perforations of its ring, a sleeve loose on
said vertical shaft, means for supporting said
sleeve from without, an arm fastened on said
5 sleeve, and a scraper on said arm and adapted
to scrape the internal face of the perforated
ring of said drum.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

FERDINAND KAEHL.

Witnesses:

HENRY HASPER,
WALDEMAR HAUPT.