

(No Model.)

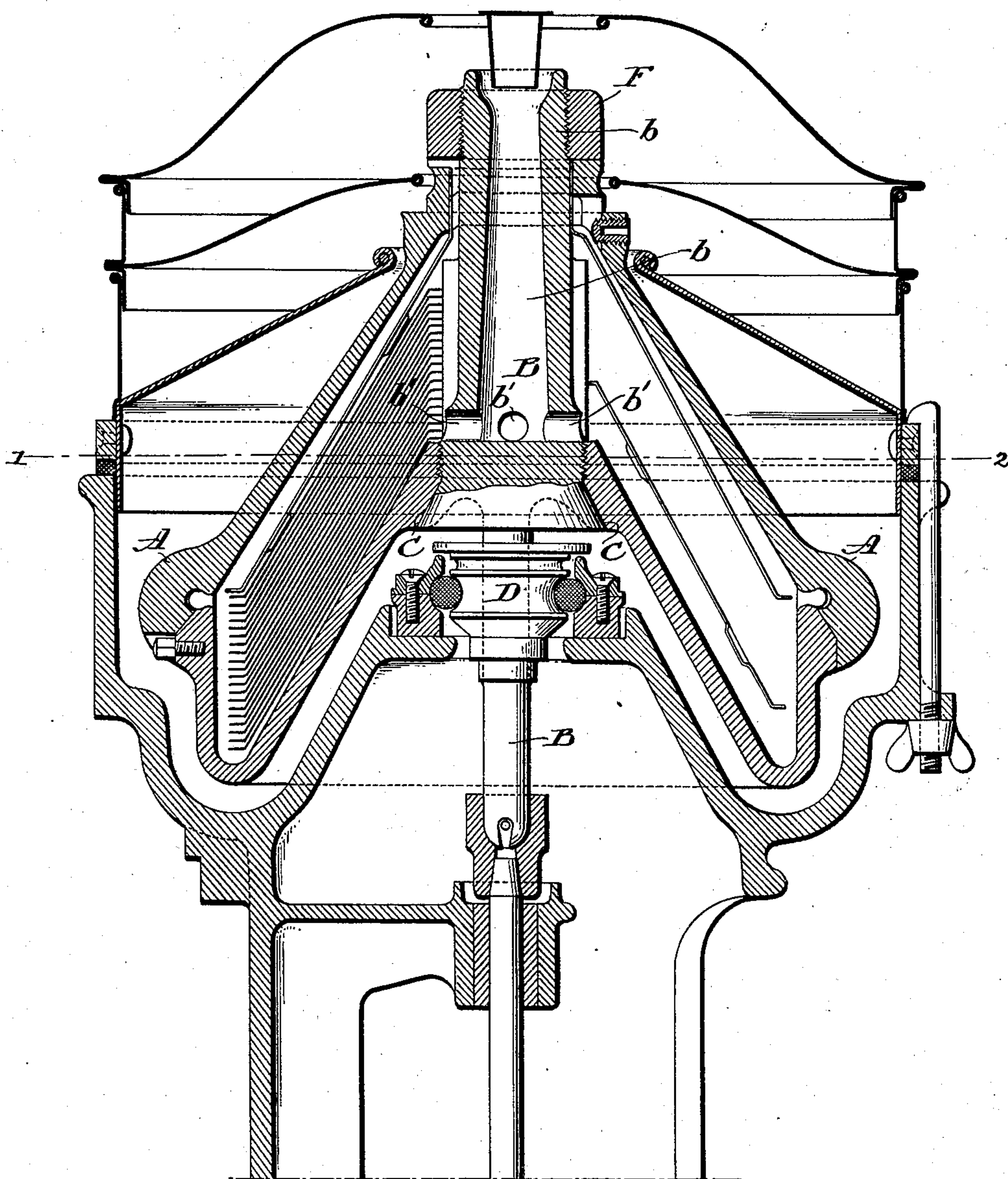
2 Sheets—Sheet 1.

J. L. JÖNSSON.  
CENTRIFUGAL MACHINE.

No. 567,273.

Patented Sept. 8, 1896.

FIG. 1.



WITNESSES:

*Philip Boutelle*  
*David S. Williams*

INVENTOR

*Johan Ludvig Jönsson*

*by his atty*  
*J. H. Haiding*



(No Model.)

2 Sheets—Sheet 2.

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CENTRIFUGAL MACHINE.

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FIG. 2.

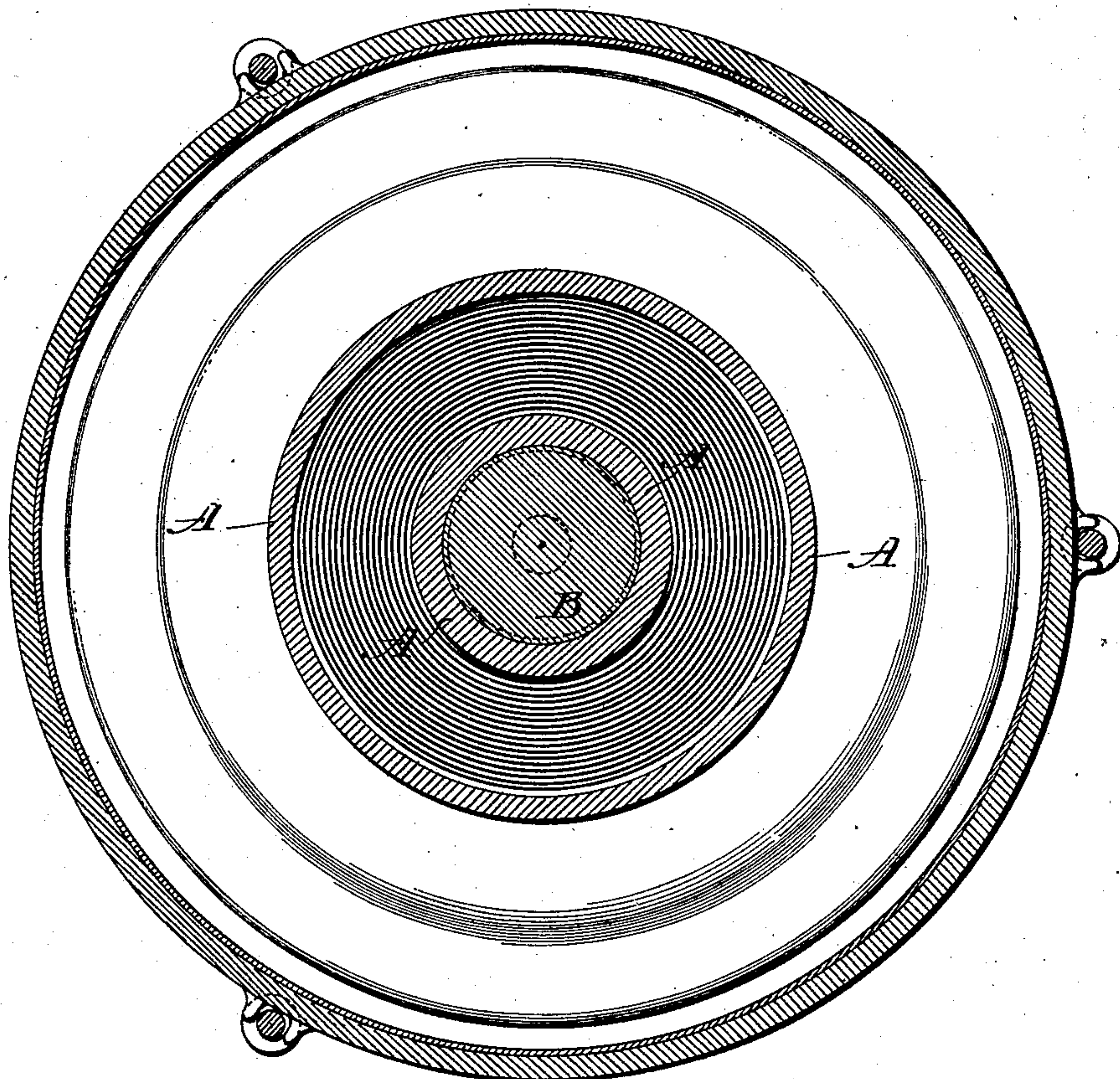
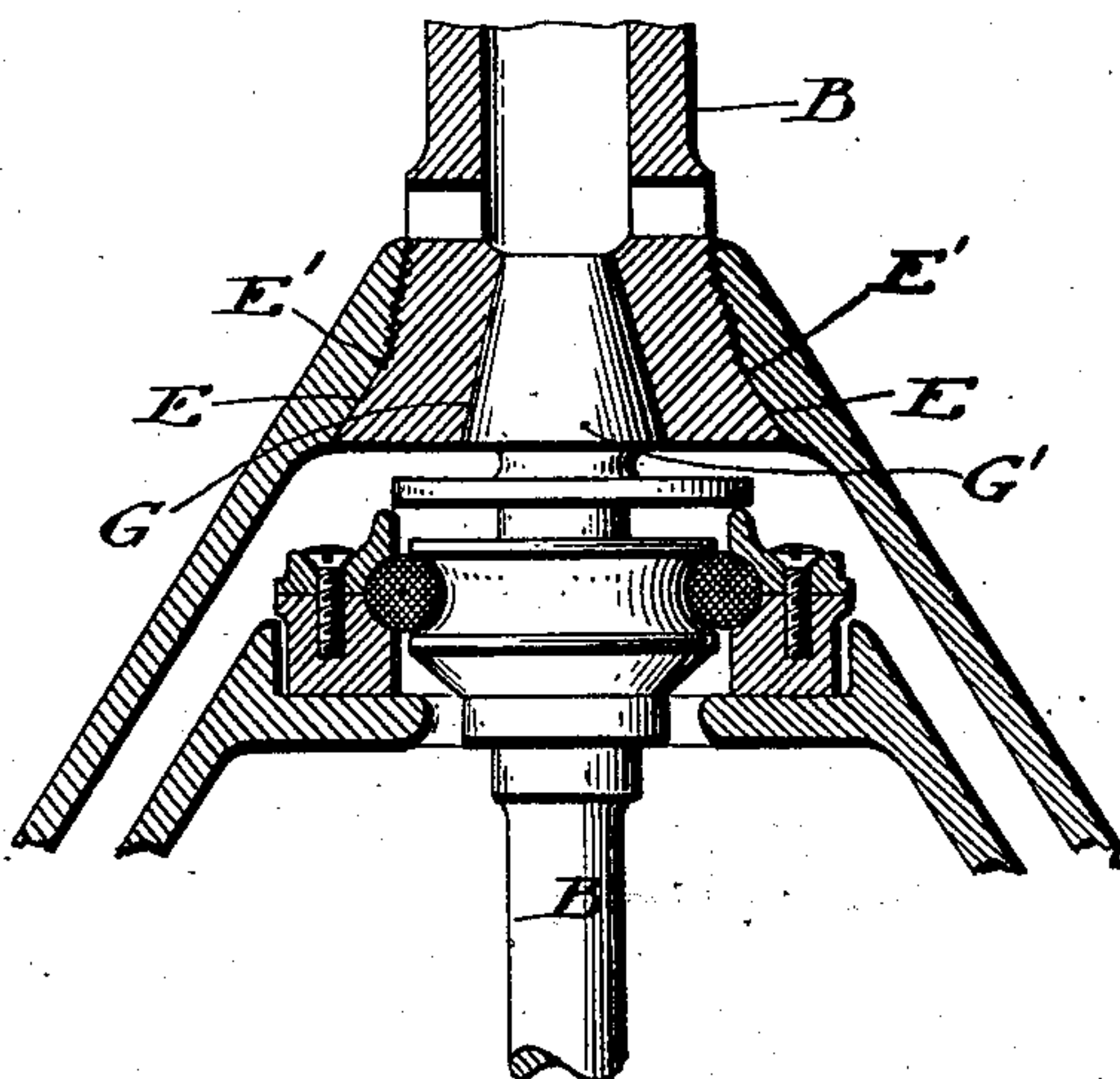


FIG. 3.



WITNESSES:

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INVENTOR

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# UNITED STATES PATENT OFFICE.

JOHAN LUDVIG JÖNSSON, OF STOCKHOLM, SWEDEN, ASSIGNOR TO THE  
AKTIEBOLAGET SEPARATOR, OF SAME PLACE.

## CENTRIFUGAL MACHINE.

SPECIFICATION forming part of Letters Patent No. 567,273, dated September 8, 1896.

Application filed March 15, 1895. Serial No. 541,858. (No model.)

*To all whom it may concern:*

Be it known that I, JOHAN LUDVIG JÖNSSON, a subject of the King of Sweden and Norway, residing at Stockholm, Sweden, have invented certain new and useful Improvements in Centrifugal Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In centrifugal machines in general use the centrifugal bowl is removably secured on the upper end of the rotating spindle. This arrangement, although in general use, has certain disadvantages, the connection between the bowl and spindle being liable to be broken; also, the bowl is liable to turn over easily, even if its center of gravity should be placed at the same height with or beneath a horizontal plane passing through the point of connection between the spindle and the centrifugal bowl.

The invention forming the subject of this application has for its object the overcoming of these dangers, and the construction by which this is accomplished is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of my improved machine. Fig. 2 is a section on the line 1 2, Fig. 1. Fig. 3 is a vertical section of a modification of a portion of the machine, the parts not illustrated being the same as Fig. 1.

A is the bowl, and B the spindle. This spindle extends upward through and beyond the bowl, the upper contracted portion of the bowl resting adjacent to the spindle, the upper end *b* of the spindle being hollow and provided with orifices *b'*, the material to be subjected to the action of centrifugal force being fed in through the hollow spindle and passes into the bowl through the orifices *b'*. The centrifugal bowl is provided with the orifice C, through which the spindle B passes. The surface of the bowl at this orifice is threaded and works in corresponding threads upon the exterior surface of the spindle at corresponding place, and by this means the bowl and spindle are secured together. In order to prevent any

movement of the bowl upon the spindle, I form a thread upon the upper end of the spindle, upon which a nut F is secured, so as to press upon the upper surface of the bowl, and thus any movement of the screw connection between the bowl and spindle is prevented. As in the ordinary machine, I provide beneath the bowl A the collar-bearing D for the spindle B. To facilitate the balancing of the bowl, I prolong it downward beneath the bearing D, so that its center of gravity will be at or about the same height as said bearing. Instead of relying alone upon the screw connection between the bowl and spindle, I can supplement such connection by the means shown in Fig. 3, which consist in providing the spindle with an inclined projection E, upon which rests the reduced portion E' of the opening in the bowl, contact between the two being retained by means of the nut F upon the threaded end of the spindle pressing upon the upper surface of the bowl, as in Fig. 1. The hollow and solid portions of the spindle B may be made in one piece or two pieces secured together in any manner, or preferably may be formed in the following manner, (shown in Fig. 3:) The upper or hollow part *b* is formed with its lower end provided with a conical opening, as shown at G, and the upper end of the lower solid portion of the spindle formed with a corresponding cone G', the last-mentioned cone being loosely entered within the conical opening. The cone and conical opening are carefully turned true and are kept together only by means of the friction between the surfaces of contact. If desired, I can dispense with the screw connection of the bowl and spindle, relying upon the surface contacts E and E'.

Except wherein the form of connection of bowl and spindle is specifically claimed, I do not intend to limit myself to any particular form of connection.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In a centrifugal machine, the combination with a bowl adapted to be rotated, of a spindle formed in two parts passing through said bowl, the upper portion being passed over a conical projection on the lower por-



tion, said bowl being provided with a thread meshing with a corresponding thread on the spindle.

2. In a centrifugal machine, the combination with a bowl adapted to be rotated, of a spindle formed in two parts passing through said bowl, the upper portion being passed over a conical projection on the lower portion, said bowl being provided with a thread meshing with a corresponding thread on the spindle, the top of said spindle being threaded, and a nut adapted to work on said threaded end and rest against the top of said bowl.

3. In a centrifugal machine, the combination with a bowl adapted to be rotated, of a spindle formed in two parts passing through said bowl, the upper portion being passed over a conical projection on the lower portion, said bowl being provided with a projection adapted to rest upon a corresponding projection upon the spindle, the top of said spindle being threaded, and a nut adapted to work on said threaded end and rest against the top of said bowl.

4. In a centrifugal machine, the combination with a bowl adapted to be rotated, of a spindle provided with an inclined projection,

the bowl being provided with a corresponding projection adapted to rest upon the projection of the spindle, and provided also with a thread adjacent to the inclined projection meshing with a corresponding thread on the spindle the top of said spindle being threaded, and a nut adapted to work on said threaded end, and rest against the top of said bowl.

5. In a centrifugal machine, the combination with a bowl adapted to be rotated, of a spindle provided with an inclined projection substantially midway between its ends, the bowl being provided with a corresponding projection adapted to rest upon the projection of the spindle, and provided also with a thread adjacent to the inclined projection meshing with a corresponding thread on the spindle, the top of said spindle being threaded, and a nut adapted to work on said threaded end and rest against the top of said bowl.

In testimony whereof I affix my signature in presence of two witnesses.

JOHAN LUDVIG JÖNSSON.

Witnesses:

CARL P. GERELL,  
TH. WAURIMSKY.