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CENTRIFUGAL DRUM AND PARTS THEREOF.  
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963,073.

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Fig. 1.

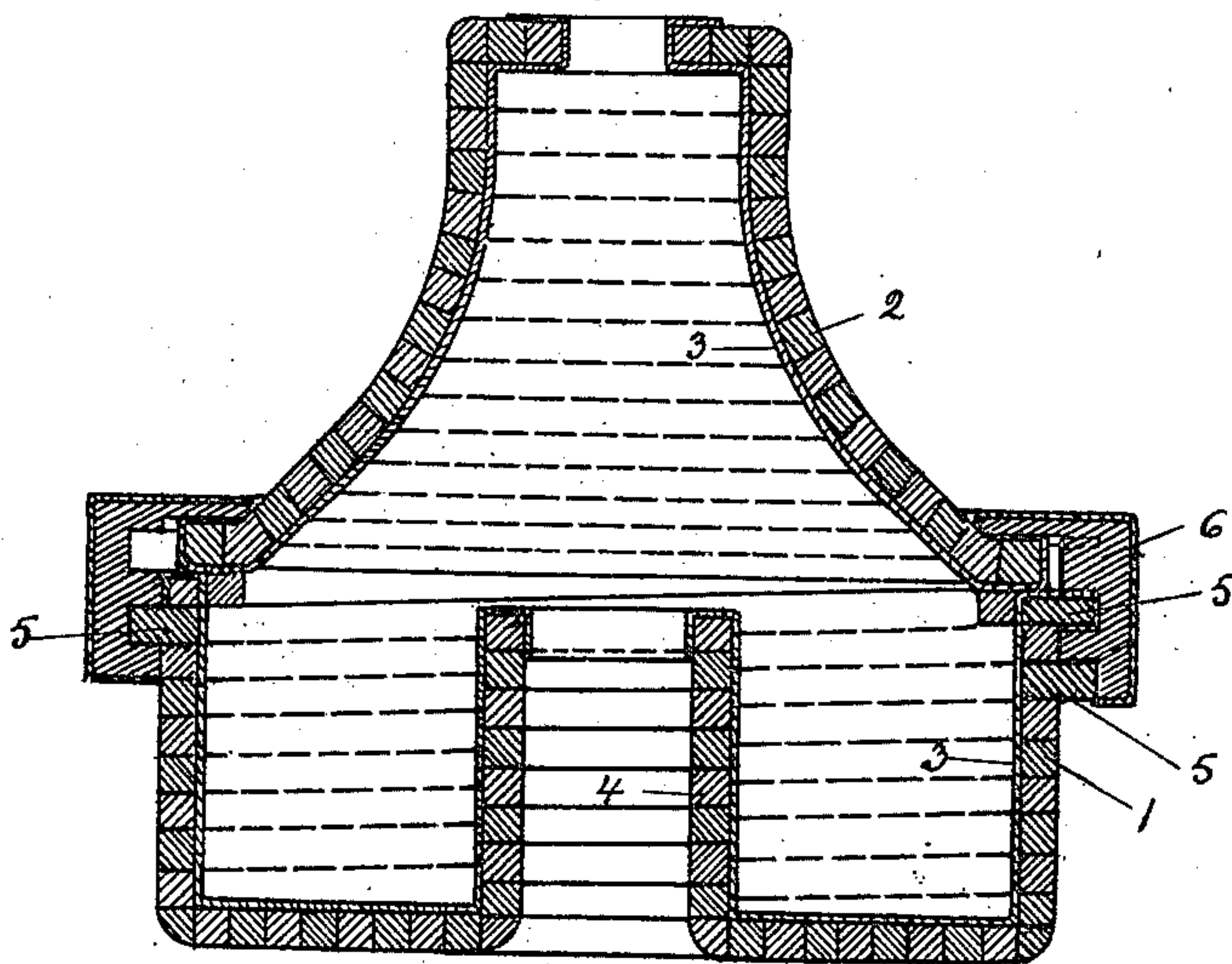


Fig. 2.

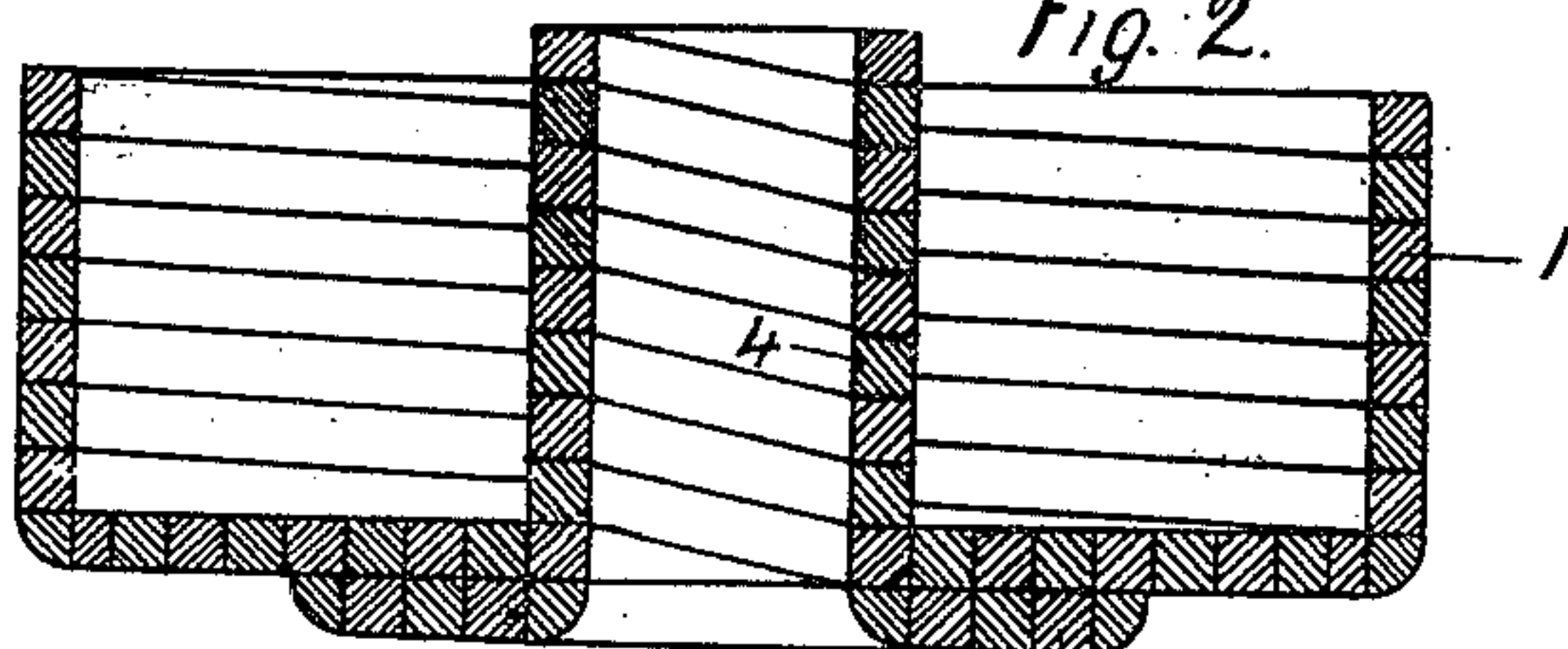
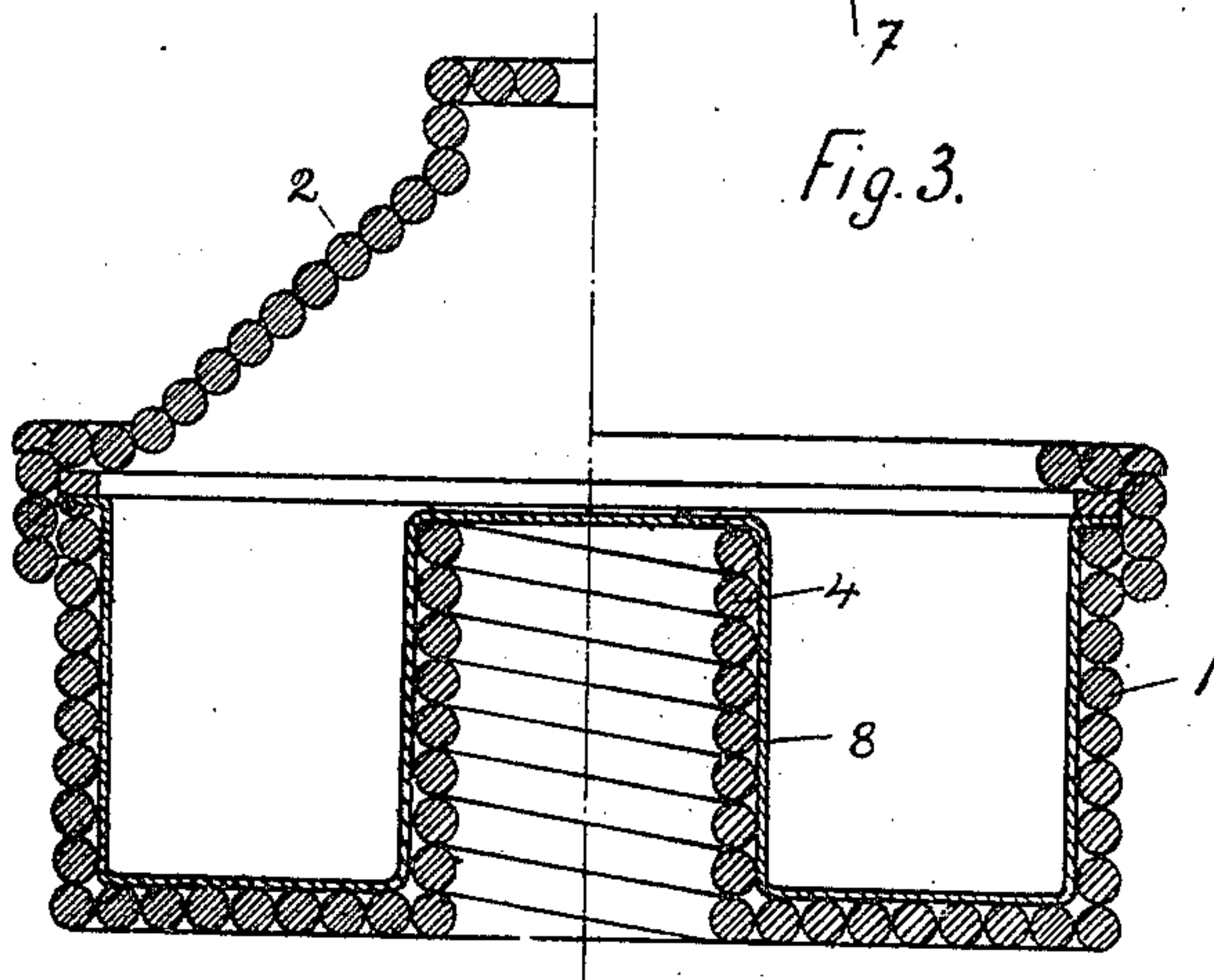


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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CENTRIFUGAL DRUM AND PARTS THEREOF.

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*To all whom it may concern:*

Be it known that I, ANDERS GUSTAF GUNNAR SALENIUS, a subject of the King of Sweden, residing at Svedenborgsgatan 2, Stockholm, Sweden, have invented certain new and useful Improvements in Centrifugal Drums and Parts Thereof, of which the following is a specification.

This invention relates to a novel construction of centrifugal drums and parts thereof, whereby certain advantages hereinafter pointed out are attained.

As is well known, there are certain disadvantages incident to the operation of centrifugal machines owing to the fact that the material in the drums often accumulates largely on one side of the drum, thus throwing the center of gravity off to one side of the true center of the drum, and causing the end of the spindle to travel in a circle of greater or lesser magnitude according to the amount of eccentricity of the center of gravity.

To provide a drum for centrifugal machines which will be self-balancing or which will accommodate its shape to fluctuations in the position of the center of gravity, by virtue of a special construction of the drum, is the main object of the present invention.

A further object is to construct a centrifugal drum having such properties, in a perfectly tight manner, so as to prevent leakage.

The invention consists in constructing the centrifugal drum or parts thereof by winding wire in one or more layers into a body having the form of the desired drum or part thereof, and by providing the inside or outside of the formed wire body with a lining of metal plate in order to render the drum tight.

Forms of centrifugal drums made according to the present invention are illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical section of a centrifugal drum and cover, representing the latter secured to the drum by means of a special screw ring. Fig. 2 is a modified form of the drum without cover; and Fig. 3 is a form of the drum and cover so formed that the cover may be screwed upon the drum by virtue of a portion of the wire con-

struction of both parts acting as screw threads.

Referring particularly to the drawings, the numeral 1 designates a centrifugal drum, and 2 the cover of said drum. Both the drum and cover have their main walls formed of stiff wire, spirally wound to correspond to the desired shape of receptacle and wound in such a manner that the coils of wire lie tightly against each other. The wire may be either square or round in cross-section, but is preferably square as shown in Fig. 2, greater strength and tightness of the vessel being attained in this manner, while in Fig. 3 the wire is shown round, for a purpose hereinafter described. The drum formed as described is provided with an inner portion 4 constituting a shell for the reception of the spindle. The side walls of the drum and cover and the bottom of the drum are provided on the inside portion with lining 3 of thin metal plate. This lining extends also up and around the shell portion 4. While the wire will be, as shown in Fig. 1 preferably of uniformly square cross section throughout the extent of the body, a special spiral 5 of wider wire is inserted between the uppermost windings of the drum, this spiral 5 forming outer screw threads for securing the cover on the drum. In the construction shown in Fig. 1 the cover 2 is not provided with screw threads for engaging the drum 1, and a special arrangement is provided. This arrangement consists of a ring 6, which is provided with screw threads, also formed by winding wire spirally, and corresponding to the screw threads on the outside of the upper edge of the drum. The said ring 6 grasps the lower edge of the cover 2.

In order to maintain the wire windings constituting the main body portion of the various parts described in the proper relative position, it is desirable to fold the metal lining 3 over the edges of the parts so that a portion of the lining extends to the outer side of the drum and other parts, as is shown in Fig. 1. In said figure the metal lining is also shown folded over the upper edges of the shell 4.

The drum 1 and its bottom shell 4 are formed by winding a single wire so that the



said parts are integrally formed, as in Fig. 1, but the drum and the shell may be formed by winding separate wires, as is represented in Fig. 2, the drum being left with an opening in its bottom through which the shell can be inserted. The shell is wound so that a flange portion 7 is formed, said flange engaging the under side of the drum and being secured to the latter in any suitable manner, for instance by soldering.

According to the arrangement shown in Fig. 3, the cover has no lining, and the cover and drum are wound of wire circular in cross section. The wire windings at the upper edge of the drum thus themselves form exterior screw threads, and as the windings of the lower edge of the cover form corresponding interior screw threads for the cover, the latter may readily and tightly be screwed onto the drum. The lining of plate metal on the interior of the drum, according to said Fig. 3, projects upwardly from the bottom forming a shell 8, which is closed at the top and entirely surrounds the wound bottom shell 4 of the drum. The metal lining can be suspended freely in the frame formed of wire windings.

By the constructions above described, centrifugal drums are formed which will be self-balancing, that is, will change their shape so as to conform to the conditions caused by a fluctuating position in the vessel of the center of gravity.

I claim:—

1. A centrifugal drum having its walls formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, and provided in its bottom portion with an inwardly extending shell, and a lining of metal plate on the interior of said drum and also lining said shell.

2. A centrifugal drum having its main body portion formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, and provided at its bottom portion with an inwardly extending shell, and a lining of metal plate on the interior of said drum and also lining said shell, said metal plate being extended so as to overlap the outer edge of the body formed of the wire coils and maintain them in position.

3. A centrifugal drum having its main body portion formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, and provided at its bottom portion with an inwardly extending shell, and a screw thread formed on the body consisting of coils of wire.

4. A centrifugal drum having its main body portion formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, and provided at its bottom portion with an inwardly ex-

tending shell, a lining of metal plate on the interior of said drum and also lining said shell, and a screw thread formed on the body consisting of coils of wire.

5. A centrifugal drum having its main body portion formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, a lining of metal plate on the interior of said drum, and an additional coil of wire arranged between the coils constituting the main body portion, the wire of said additional coil being wider than the wire constituting the main body portion, said additional coil of wire constituting a screw thread on the body of the drum.

6. A centrifugal drum having its main body portion formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, the wire of said coils being substantially square in cross section, and an additional coil of wire arranged between the coils constituting the main body portion, the wire of said additional coil being wider than the wire constituting the main body portion, said additional coil of wire constituting a screw thread on the body of the drum.

7. A centrifugal drum having its main body portion formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, the wire of said coils being substantially square in cross section, a lining of metal plate on the interior of said drum, said lining being extended so as to overlap the edge of the main body portion, and an additional coil of wire arranged between the coils constituting the main body portion, the wire of said additional coil being wider than the wire constituting the main body portion, said additional coil of wire constituting a screw thread on the body of the drum.

8. In combination, a centrifugal drum having its main body portion formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, a lining of metal plate on the interior of said drum, a portion of said coils of wire constituting a screw thread on the body, a cover for said drum having its main body portion formed of coils of wire similar to said drum, a lining of metal plate on the interior of said cover, and means associated with said cover adapted to engage the screw thread on the drum.

9. In combination, a centrifugal drum having its main body portion formed of coils of wire wound in such a manner that the coils of wire lie tightly against one another, a lining of metal plate on the interior of said drum, an additional coil of wire arranged between the coils constituting the main body portion, the wire of said ad-

ditional coil being wider than the wire constituting the main body portion, said additional coil of wire constituting a screw thread on the body of the drum, a cover for  
5 said drum having its main body portion formed of coils of wire similar to said drum, a lining of metal plate on the interior of said cover, and a ring provided with an internal screw thread, said ring being applied

over the cover and adapted to engage the 10 screw thread formed on the body of said drum.

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

ANDERS GUSTAF GUNNAR SALENIUS.

Witnesses:

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ANNA SÖDERSTRÖM.