No. 827,024. PATENTED JULY 24, 1906.

R. E. LEE.

CENTRIFUGAL FILTER.

APPLICATION FILED JUNE 23, 1905.

Fig. 1.

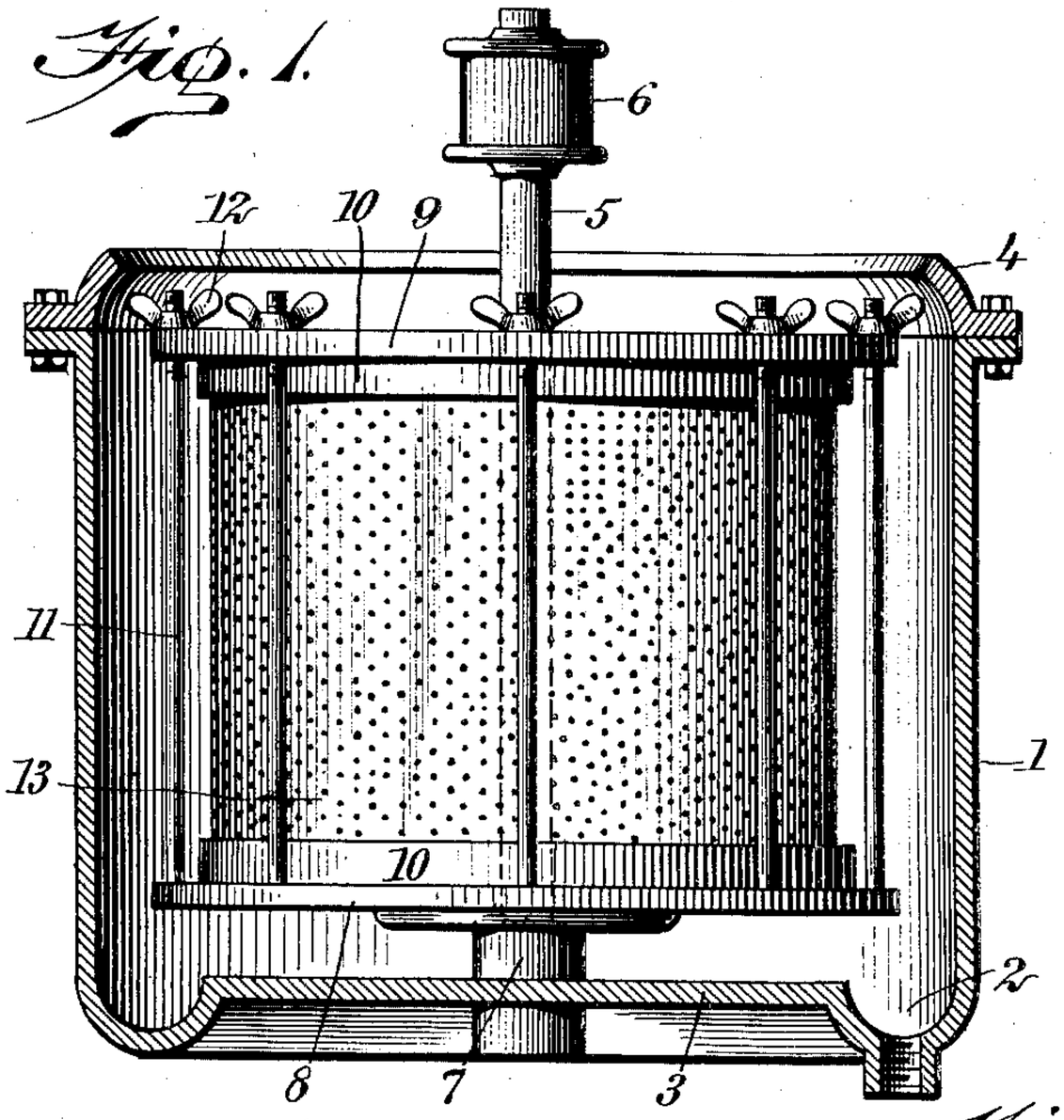


Fig. 2.

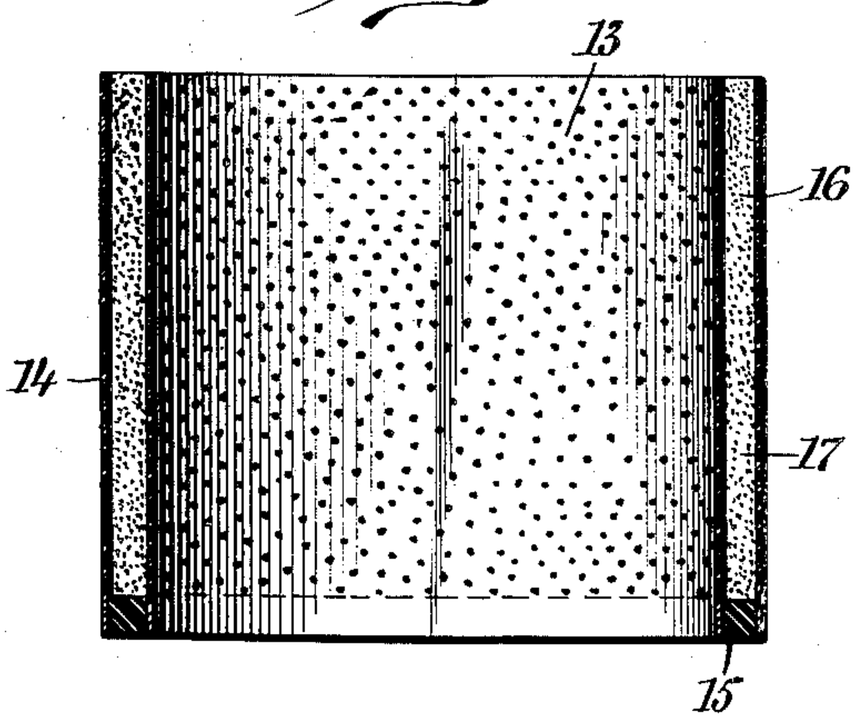


Fig. 3.

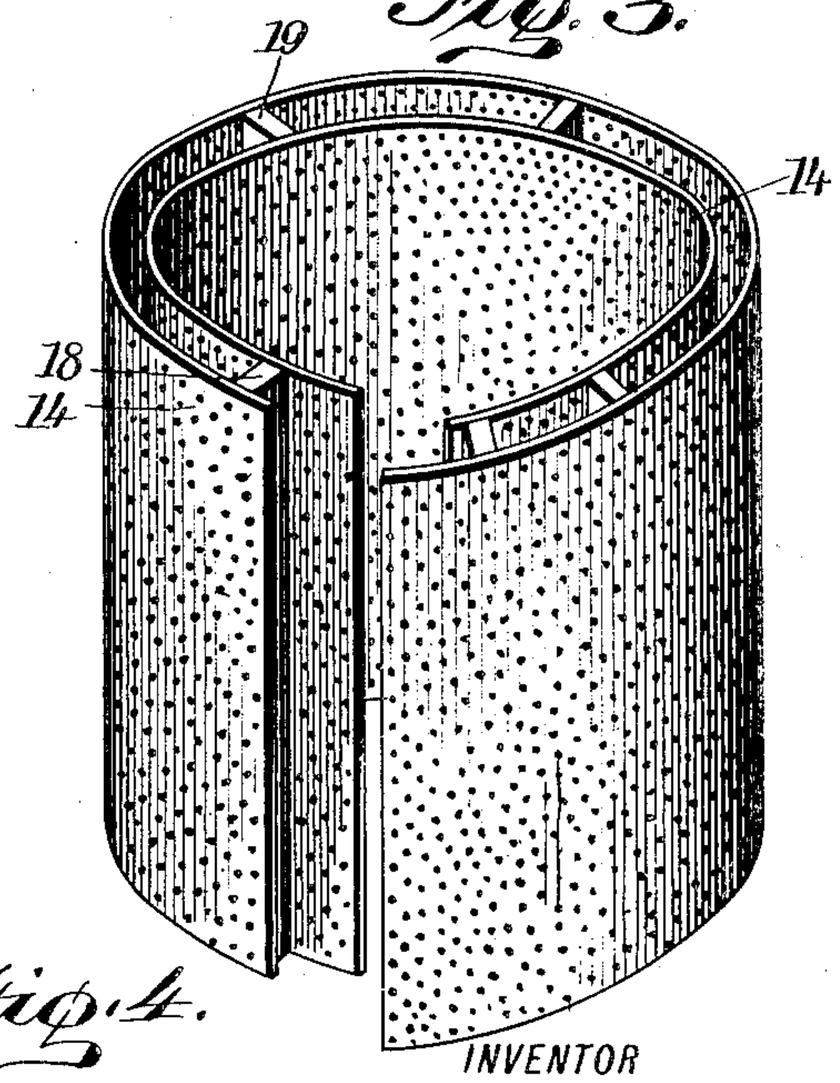
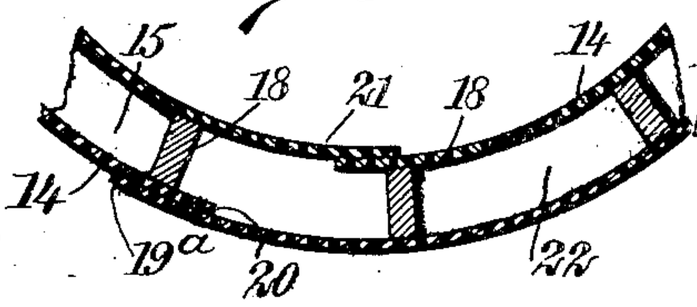


Fig. 4.



WITNESSES:

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CENTRIFUGAL FILTER.

No. 827,024. Specification of Letters Patent. Patented July 24, 1906.

Application filed June 23, 1905. Serial No. 266,555.

To all whom it may concern:

Be it known that I, ROBERT E. LEE, a citizen of the United States, and a resident of Franklin, in the parish of St. Mary and State of Louisiana, have invented a new and Improved Centrifugal Filter, of which the following is a full, clear, and exact description.

This invention relates to centrifugals or centrifugal filters.

The object of the invention is to provide a cylinder or drum of such construction as will enable the same to be readily adapted to machines of slightly-different sizes.

The invention consists in the construction and combination of parts to be more fully described hereinafter and definitely set forth in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical central section through the casing of a centrifugal to which my invention has been applied. Fig. 2 is a vertical section through the cylinder or drum of the machine. Fig. 3 is a perspective of the drum, and Fig. 4 is a horizontal section through a portion of the drum and taken at a joint formed therein.

Referring more particularly to the parts, 1 represents the casing or body of the filter, which is preferably of the usual cylindrical form, having a vertical axis and an annular gutter 2 in the bottom 3. To the upper edge of the body a splash-ring 4 is attached, which projects inwardly for a well-understood purpose. Within this body 1 there is mounted a vertical shaft 5, provided with a pulley 6, adapting the shaft to be rotated at the usual high speed. The shaft 5 is stepped in a suitable boss 7 upon the bottom 3, and it is provided with a lower head 8 and an upper head 9, said heads being provided on their adjacent faces with flanges 10, which project toward each other, as indicated. These heads are connected and may be drawn toward each other by bolts 11, the upper extremities whereof project through the upper head 9, at which point wing-nuts 12 are provided, as shown. These wing-nuts may be dispensed with, if found desirable, in practice.

In applying my invention I provide a cylinder or drum 13, which has a double wall formed of two cylindrical sheets or screens 14, of perforated sheet metal or gauze. As shown in Fig. 3, these sheets are of approximate cylindrical form, but their edges are not connected to form a perfect cylinder. At their lower edges they are attached to a ring 15, which is of some resilient material, such as steel, rubber, or wood. In this way an annular space 16 is formed between the screens 14, which space is closed below and adapted to receive a filtering substance, such as fine sand, charcoal, or similar material 17. Near the vertical edges of the screens the same are connected by vertical bars 18, as indicated most clearly in Fig. 4. These are attached by any suitable means and afford means for retaining the sand, as will be readily understood. In addition to these bars or strips 18 additional strips 19 are provided around the circumference of the cylinder, which assist in keeping the cylinder in shape. The ends of the ring 15 preferably terminate at the bars or strips 18; but the edges of the screens project therebeyond, as shown. The edge 19^a of the outer screen projects only a slight distance beyond the corresponding strip 18, while the corresponding edge 20 projects a great distance therebeyond, as shown. A similar but reverse arrangement occurs at the inner edges 21. In setting the cylinder up in the machine these projecting edges are applied to each other so as to form lap-joints, as indicated in Fig. 4. In this connection it should be understood that the resiliency of the ring 15 tends to enlarge the diameter of the cylinder, and in this way the outer sheet thereof forces itself outwardly against the inner faces of the flanges 10. From this arrangement the cylinder will evidently be held in place by the flanges and will adapt itself to heads of various diameters, the extent of the lap at the joints varying accordingly. The width of the space between the screens will be adapted to the particular grade of filtering which is being carried on.

When the drum is placed in the position indicated, the upper head 9 will be tightened into place by means of the bolts 11, and the spaces 22 between the strips 18 and 19 will be filled with sand, as described.

The cylinder is evidently of very simple construction and may be readily adapted to machines of different dimensions.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A centrifugal machine having a filter-

ing-wall of resilient material with overlapping unattached edges whereby said wall adapts itself to various diameters.

2. A filter having a substantially cylindrical filtering-wall having overlapping edges, the said wall having a resilient member embodied therein, whereby it tends to change its normal diameter.

3. A filtering-machine having a cylinder composed of substantially cylindrical sheets of perforated sheet metal, and a ring between said sheets to which the lower edges attach, said cylinder having vertical strips near the vertical edges of said sheets, said edges projecting beyond said strips and overlapping.

4. A centrifugal machine having a resilient filtering-wall, and heads engaging the extremities of said cylindrical wall and maintaining the same in a contracted condition.

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

ROBERT E. LEE.

Witnesses:
ISAAC MAYER,
THOS. J. BELL.