June 30, 1964 G. I. FREDHOLM 3,139,207

TRANSPORT-CONTAINER FOR TRANSPORT OF LAUNDRY-GOODS FROM A WASHING-MACHINE INTO A CENTRIFUGE

Filed July 26, 1962 3 Sheets-Sheet 1

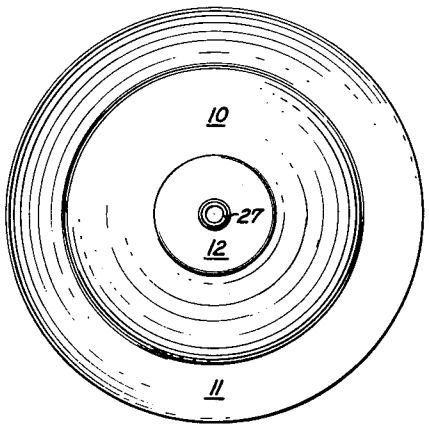


Fig. 3

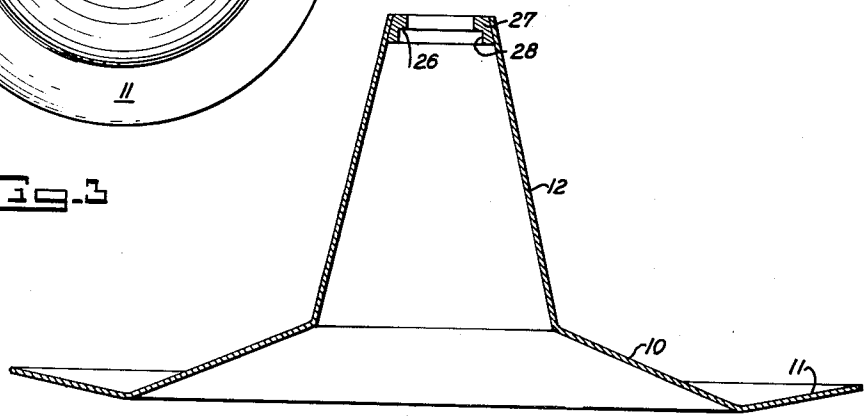


Fig. 1

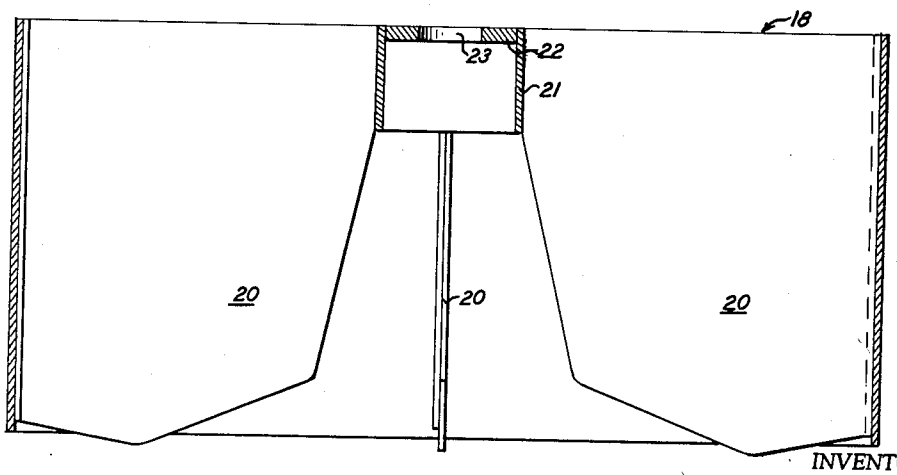


Fig. 2

INVENTOR

GUNNAR I. FREDHOLM

June 30, 1964 G. I. FREDHOLM 3,139,207

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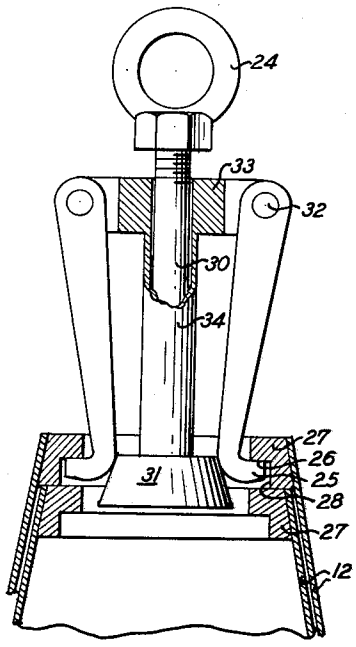


Fig-5

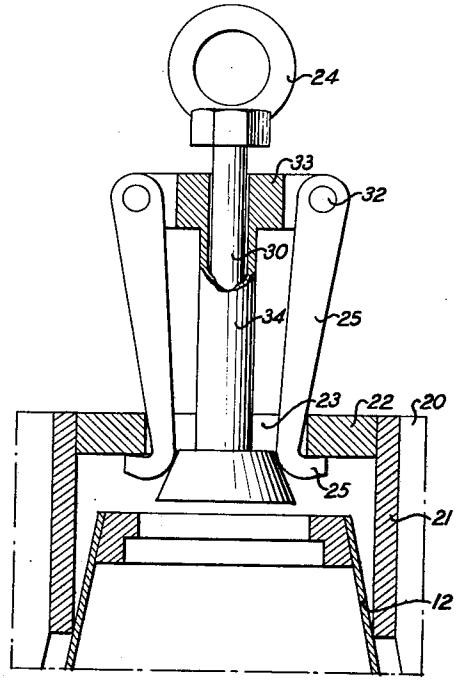


Fig-10

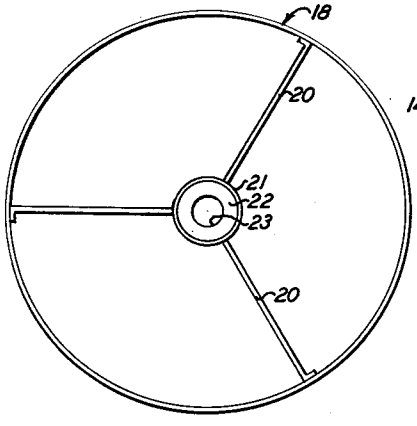


Fig4

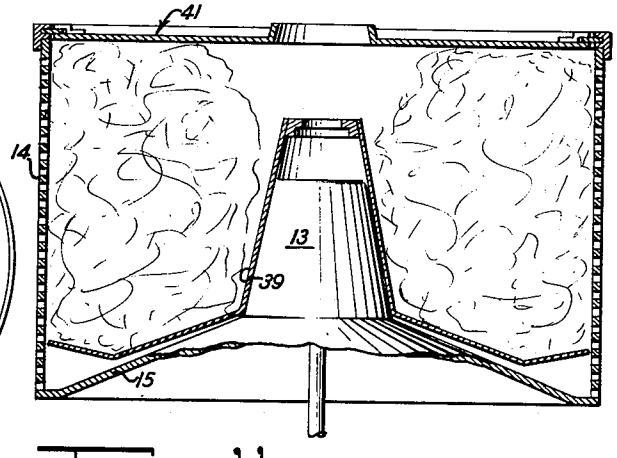


Fig-11

INVENTOR

GUNNAR I. FREDHOLM

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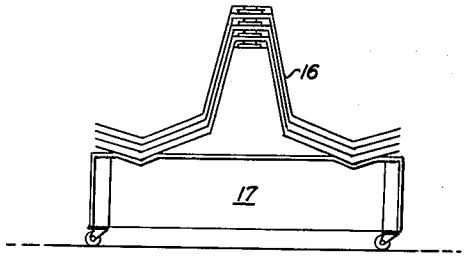


Fig. 6

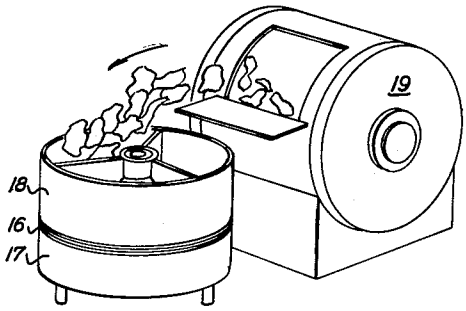


Fig. 7

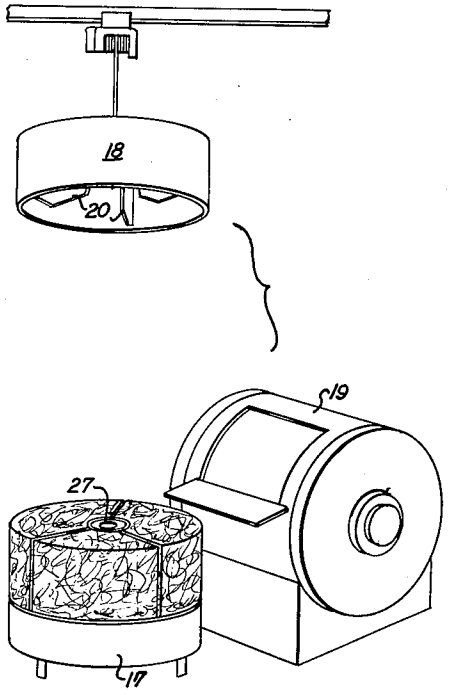


Fig. 8

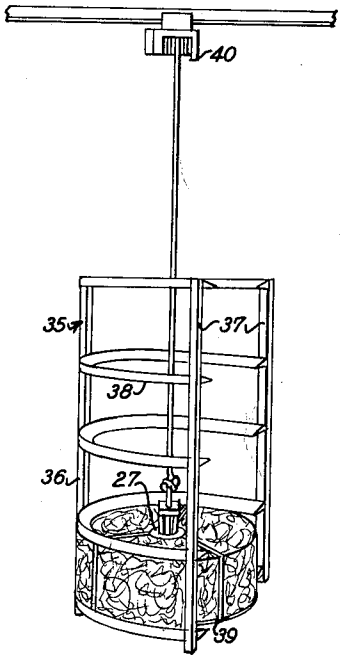


Fig. 9

INVENTOR

GUNNAR I. FREDHOLM

United States Patent Office 3,139,207 Patented June 30, 1964

3,139,207 TRANSPORT-CONTAINER FOR TRANSPORT OF LAUNDRY-GOODS FROM A WASHING-MACHINE INTO A CENTRIFUGE

Gunnar Ivar Fredholm, Forfattarvagen 44, Bromma, Sweden

Filed July 26, 1962, Ser. No. 212,522
Claims priority, application Sweden Aug. 1, 1961
4 Claims. (Cl. 220—20)

The invention relates to transport-containers for the transport of laundry-goods from a washing machine into a centrifuge or hydroextractor of the kind referred to as constructed for use in laundries.

In such machines it is desirable to provide means which will facilitate the proper loading of the machine basket with clothes or other material to be centrifuged and for enabling the material to be rapidly discharged when the centrifuging operation is complete. It is also desirable that the discharge arrangements shall be such as to obviate any possibility of damage to the material.

It is further desirable to provide containers which upon discharging can be stored within a minimum of space and be comfortably stored upon their loading with laundry-goods, so that the centrifuging-operation of the laundry-goods can take place at an order of timing convenient for the manner of operation of the centrifuge, which is of particular importance in industrial laundries, where a large number of containers is required.

The present invention has for its object to provide a transport-container possessing the desirable features above mentioned.

In the accompanying drawings:

FIG. 1 shows a transport-plate in axial section;

FIG. 2 shows in the same way a cylindrical mantle to be combined with the transport-plate;

FIG. 3 shows the transport-plate in plan-view and smaller scale;

FIG. 4 is a plan-view of the cylindrical mantle on smaller scale;

FIG. 5 shows in side-view and partial section a lifting-hook intended for transport of the plates according to the invention;

FIG. 6 shows a plurality of transport-plates in vertical section piled on a wagon;

FIG. 7 is a perspective view of the same plate-pile and wagon combined with the mantle shown in FIGS. 2 and 4 and placed close to a washing-machine;

FIG. 8 shows in perspective the wagon with the laundry-goods ready loaded, with the mantle in hoisted position;

FIG. 9 is a perspective view of a scaffolding for the storage of loaded transport-plates, a loaded plate being shown deposited in one of the scaffolding-compartments;

FIG. 10 is an axial section of the upper part of the boss-portion of a plate as well as of a part of a mantle placed thereonto, the lifting-hook shown in FIG. 5 being shown in engagement with the mantle and

FIG. 11 is a partial section through a centrifuge-basket and a loaded transport-plate inserted thereinto.

According to the invention the transport-container consists of a circular disc or plate **10** principally of the shape as shown in FIG. 1. The peripheral portion **11** of the plate is slightly bent upwardly and forms a brim. The plate is integral with a central conical boss-portion **12**, which is sleeve-shaped and is upwardly directed and formed such, that it can accommodate a center-tap **13** of a perforated basket **14** of a washing-centrifuge, as shown in FIG. 11. The plate **10** as such is fitted according to the bottom **15** of the basket **14**. All parts of the plate and the boss-portion **12** are conical and are concentric to permit a plurality of plates that can be piled

upon another with a minimum use of space, as shown in FIG. 6, according to which a pile **16** containing four plates rests on a wagon **17**. The plate is suitably stainless sheet-metal or is sheet metal treated against corrosion. The plate may also be constituted of plastic material.

Such a wagon with the plate-pile is located close to a washing-machine for loading the uppermost plate on the pile with wet laundry-goods. During the loading, use is made of means in the form of a cylindrical or upwards slightly conically tapering mantle **18**, as shown in FIGS. 2 and 4. The mantle is of such a diameter, that it encloses the peripherical edge of the plate and rests on the plate by means of ledges. As shown in FIG. 7, where the mantle **18** is arranged on the uppermost plate of the pile **16**, the laundry-goods from a washing machine **19**, can be directly conveyed into the mantle and be formed by said mantle during the loading to a plate which maintains its shape after the mantle has been removed, as shown in FIG. 8. In order to obtain a more even distribution of the laundry-goods inside the mantle, said mantle is provided with radially inward-directed blades **20**, the free lower and inner edges of which correspond to the shape of the plate and bear against the latter and the boss-portion **12** and constitute the above-mentioned ledges. At their upper central part the blades are connected with a cylindrical sleeve **21**, in the upper part of which is provided a hollow-disc **22** having a central aperture **23**. For the lifting of the mantle from the loaded plate a lifting-hook **24**, shown in FIG. 5, is introduced through the aperture **23**, the grip-means **25** of the hook engaging with the under-side of the disc **22** (FIG. 10).

In the loading-position of the mantle **18** on the plates, the blades **20** divide the space inside the mantle into a number of sectors, each of which is filled with laundry-goods. The sleeve **21** of the mantle encloses hereby—as shown in FIG. 10—the upper part of the boss-portion **12** of the plate, which towards the top, similar as in the mantle-sleeve, is provided with inward-directed stop surfaces forming engaging-points for the grip-means **25** of the lifting-hook **24**. Said stop surfaces are constituted by the under-side **26** of a ring **27** fitted in the upper part of the boss-portion **12**, said under-side **26** being connected with a downwardly extending cylindrical surface **28** (FIG. 1), serving as stop for the grip-means **25**.

The above-mentioned lifting-hook as shown in FIG. 5, is formed such, that the mantle **18** and the plates **10** can be lifted successively from the wagon **17**. The lifting-hook is provided with a suspending-loop **24** arranged on a vertical bolt **30**, the lower end of which supports an upwards conically tapered wedge **31**. When the bolt is elevated during the lifting-movement, the wedge will contact the grip-means **25** thereby pressing them radially outwards, said grip-means being pivoting about pivots **32**, inserted in a yoke **33**, which is slidable along the bolt **30**. From the yoke there extends downwardly a guide-sleeve **34** for the bolt **30**, which sleeve can also serve as a stop for the limitation of the upwards movement of the wedge **31**. In FIG. 5 there is shown the lifting-hook in position for the lifting of the upper-most plate of a plate-pile.

In FIG. 9 there is shown a scaffolding **35** consisting of three posts, namely one back post **36** and two forward posts **37**, said posts being inter-connected by a number of horse-shoe shaped rails **38**. The leg-ends of the rails, which are connected to the posts **37**, are straight and arranged at a somewhat greater distance from each other than the diameter of the plate. The portion of the rail arranged at the post **36** follows a circular arc corresponding to the principal edge of the plate. The rails form superposed compartments in the scaffolding for receiving

plates loaded with laundry-goods. A loaded plate **39** hoisted in a device **40** can be inserted between the posts **37** into one of the compartments for storage. According to the figure, the plate **39** is shown deposited in the lower-most compartment. As the washing-centrifuge is emptied, the plates are transported from the scaffolding **35** and inserted into the centrifuge.

The plate **39** is shown in FIG. 11 inserted in the basket **14** of the centrifuge, being provided with a lockable cover **41** for the retention of the laundry-goods during the operation of the centrifuge.

What I claim is:

1. A container adapted for the transport of laundry from a washing machine to a centrifuge, said container comprising a plate including a central frusto-conical boss, said plate including a frusto-conical portion extending away from the boss, said boss narrowing in a direction away from said portion of said plate while the latter diverges in a direction away from the boss, said plate including a peripheral portion on the frusto-conical portion, also of frusto-conical shape, and extending away from the frusto-conical portion in the same direction as the central boss while diverging in said direction, said boss and frusto-conical portions being concentric to permit stacking of the plates one on top of the other, said container further comprising a mantle adapted for resting on said plate and including a bounding wall and inwardly

directed radial blades having a free edge corresponding to the outline of the boss and said portions of said plate whereby the mantle rests with the free edges of the blades on the plate while the wall encloses the plate, said mantle including an upper cylindrical sleeve connected to said blades encircling the boss of the plate on which the mantle rests, said boss and sleeve being provided with openings which are in substantial alignment with the mantle resting on the plate, said boss and sleeve including outwardly directed portions bounding the opening to permit engagement thereof for respectively lifting the boss and sleeve.

2. A container as claimed in claim 1 comprising a ring in said boss constituting said outwardly directed portion therefor and provided with said opening.

3. A container as claimed in 1 comprising a disc in said mantle constituting said outwardly directed portion therefor and provided with said opening.

4. A container as claimed in claim 1, wherein said wall of the mantle is cylindrical.

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