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LOCK LID FOR BOX COMPARTMENTS

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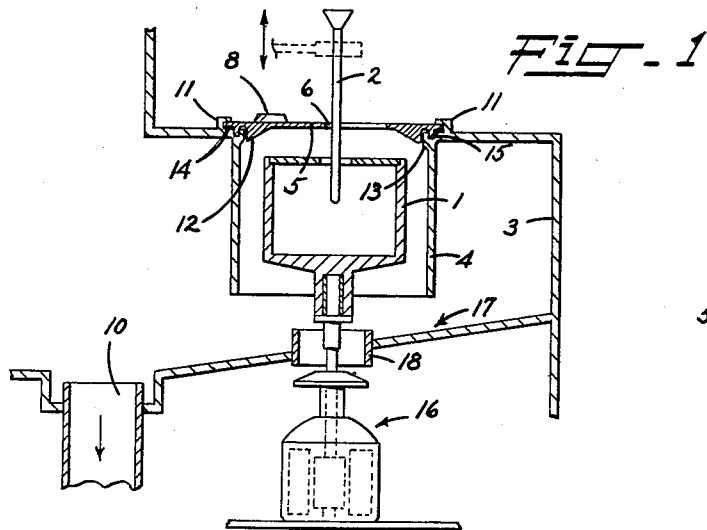


Fig. 1

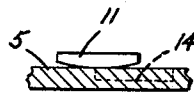


Fig. 5

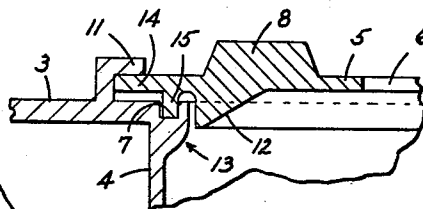


Fig. 3

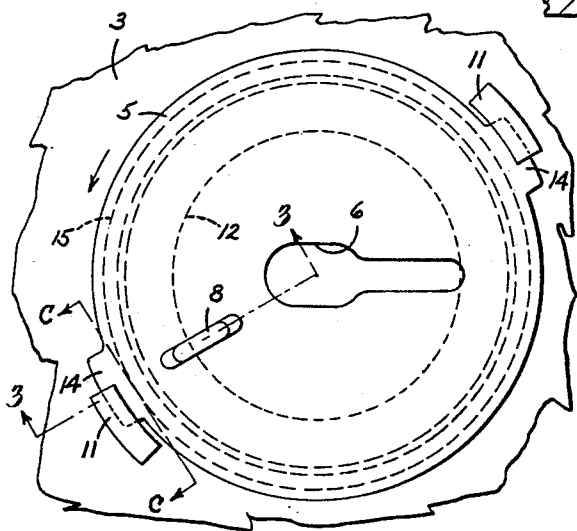


Fig. 2

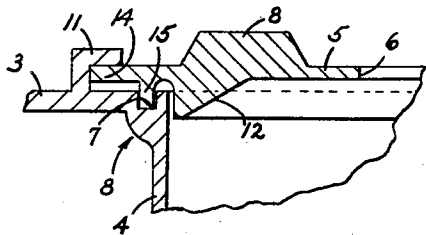


Fig. 4

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LOCK LID FOR BOX COMPARTMENTS

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This invention relates to an improved method of application of a lock lid to spinning box compartments, such as may be used in collecting artificial filamentary material produced in accordance with the viscose process on spinning machines.

Heretofore many lock lids that have been employed have proven to be unsatisfactory, since they have the peculiarity of "blowing" frequently. This so-called blowing is caused by the high speed of rotation of the spinning pots inside of this box compartment. The spinning pots set up air currents, thrown outwardly due to centrifugal force, and if there are not adequate means for breaking them up or freeing them from the box compartment, the lid on the box compartment will lift and allow the blowing-out and release of the air and gases in the box compartment into the spinning room. It is imperative that these gases are held to a minimum in the atmosphere of the spinning room, since they contain noxious and corrosive ingredients, viz., hydrogen sulfide and finely atomized sulfuric acid. Thus, in order to keep the efficiency of the operations at their maximum, it is expeditious to employ some device to prevent the blowing of lids from box compartments.

The main object of this invention is to provide an improved lid for box compartments to substantially entirely prevent the blow-out of gases therefrom into the atmosphere surrounding the machine.

Ancillary objects and advantages will become more apparent by a study of the following description and by reference to the accompanying drawings, in which—

Figure 1 is a partial elevation in section of a preferred embodiment of the invention,

Figure 2 is a top view of the lock lid employed in this invention,

Figure 3 is an enlarged view of section 3—3 of Figure 2,

Figure 4 is a modification of Figure 3, and

Figure 5 is a view of the locking lug and clamp in detail.

As shown in Figures 1 to 3, the spinning pot 1 into which a funnel 2 is vertically reciprocated is provided with a protective member 4 which surrounds the spinning pot 1. This complete assembly is mounted in the housing 3 of the spinning machine. The protective member 4 is provided with a cover 5 which has a central aperture 6 through which the funnel 2 has access to vertically reciprocate. Cover 5 rests in place on member 4 in a grooved seat 7. Cover 5 is locked firmly in place on member 4 by exerting a slight pressure to finger grip 8, which is mounted to cover 5 so that it slips lug 14 completely under clamps 11 which are mounted on housing 3.

Cover 5 has a keyhole slot 6 to facilitate the

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removal of the funnel from the spinning pot 1. However, this opening may be circular, oblong, or any other shape, depending on the lifting mechanism of the funnel bracket.

Cover 5 has attached integrally on its underside a beveled baffle 12 which is adjacent to, but spaced inwardly from the upper rim of the protective member 4. The baffle 12 may be annular, oval or square, depending on the design of the upper edge of protective member 4.

Due to the rotation of the spinning pot 1 the centrifugal force set up causes air to be drawn in through aperture 6 from which place it goes along the under side of the top of cover 5, passes under the beveled baffle 12 and down the inside of protective member 4. The air and gases are evacuated through duct 10 by a pump (not shown). Impurities in the form of liquids are directed toward duct 10 by the inclined floor 17 on housing 3, directly underneath and between the spinning pot and the driving mechanism 16. Liquids are prevented from getting into the driving mechanism by a sleeve 18 or the like, which protrudes slightly above and below the inclined floor 17. In this way, the flow is deflected around member 18. The wall of the protective member may be projected to the inclined floor 17. If this is done, an aperture must be provided so that the duct 10 will be able to evacuate the noxious gases and liquids.

Cover 5 has attached integrally on its underside a flange 15 near or at its outer circumference which extends perpendicularly downward and rests upon seat 7. This flange may be circular, oval, square or any other shape so as to conform to the design of the grooved seat 7. The flange 15 and beveled baffle 12 are both dependent on the design of the upper rim of protective member 4, and are each substantially the same shape as the other. Further, it is preferable that the protective member be concentric to the spinning pot.

As shown in Figure 4, the upper rim of protective member 4 may be designed in such a way as to have a lead head burned to the outside thereof, so that the inside wall of the member will be in the same plane from the bottom to the upper edge of the member. However, this is not as good a principle as is illustrated in Figure 3. The air would cause a suction at 13 in Figure 3 whereas it probably would not be as effective in doing this with the construction shown in Figure 4.

As shown in Figure 5, the under side of clamp 11 is arcuate in such a way as to lock lug 14 firmly in place no matter which direction pressure is applied on finger grip 8. In this way a tighter fit is insured between the cover 5 and protective member 4.

From the disclosure it is readily apparent that

there are three factors all acting in conjunction with one another to prevent the blow-off of noxious vapors and air into the spinning room. Clamp 11 holds lug 14, attached to the cover, in place, which, in turn, seats flange 15 in its grooved seat 7 around the upper rim of protective member 4. High pressures under the cover 5 are minimized by virtue of the beveled baffle 12, which reduces the pressure in the space between the beveled baffle 12 and the upper rim of protective member 4.

Although this invention has been described with reference to the improvements shown, it will readily be appreciated that numerous changes in the details of the construction may be made without departing from the spirit and scope of the invention as described in the appended claims.

I claim:

1. In combination, a centrifugal spinning pot, means for guiding filamentary material into the pot, a protective member surrounding the pot, a cover for the protective member, a recess around the upper rim of the protective member, a flange extending downwardly from said cover seating in said recess, and means for clamping said flange against its seat in said recess.

2. In combination, a centrifugal spinning pot, means for guiding filamentary material into the pot, a protective member surrounding the pot, a cover for the protective member, a recess around the upper rim of the protective member, a flange extending downwardly from said cover seating in said recess, a beveled baffle extending from said cover adjacent to the inside periphery of the protective member to minimize pressure at the junction of the flange and its seat in the recess, and means for clamping said flange against its seat in said recess.

3. In combination, a centrifugal spinning pot, means for guiding filamentary material into the pot, a protective member surrounding the pot, a cover for the protective member, a recess surrounding the protective member, a flange extending downwardly from said cover seating in said recess, means for clamping said flange against its seat in said recess, and a beveled baffle extending from said cover adjacent to the inside periphery of the protective member to minimize pressure at the junction of the flange and its seat in the recess.

4. In combination, a centrifugal spinning pot, means for guiding filamentary material into the pot, a protective member surrounding the pot, a cover for the protective member, a recess surrounding the upper edge of the protective member, a flange extending downwardly from said cover seating in said recess, a beveled baffle extending from said cover adjacent to the inside periphery of the protective member to minimize pressure at the junction of the flange and its seat in the recess, and means for clamping said flange against its seat in said recess.

5. In combination, a centrifugal spinning pot, means for guiding filamentary material into the pot, a protective member surrounding the pot, a cover for the protective member, a recess surrounding the upper edge of the protective member, a flange extending downwardly from said cover seating in said recess, a beveled baffle extending from said cover adjacent to the inside periphery of the protective member to minimize pressure at the junction of the flange and its seat in the recess, and means for clamping said flange against its seat in said recess.

6. In combination, a centrifugal spinning pot, means for guiding filamentary material into the pot, a protective member surrounding the pot, a cover for the protective member, a recess surrounding the upper edge of the protective member, a flange extending perpendicularly downward from said cover seating in said recess, a beveled baffle extending from said cover adjacent to the inside periphery of the protective member to minimize pressure at the junction of the flange and its seat in the recess, and means for clamping said flange against its seat in said recess.

7. In combination, a centrifugal spinning pot, means for guiding filamentary material into the pot, a protective member surrounding the pot, a cover for the protective member, an annular recess surrounding the upper edge of the protective member, a flange extending perpendicularly downward from the underside of said cover seating in said annular recess, a beveled baffle extending from said cover adjacent to the inside periphery of the protective member to minimize pressure at the junction of the flange and its seat in the annular recess, and means for clamping said flange against its seat in said annular recess.

8. In combination, a centrifugal spinning pot, means for guiding the filamentary material into the pot, a protective member surrounding the pot, a cover for the protective member, an annular recess surrounding the upper edge of the protective member, a flange extending perpendicularly downward from the outer circumference underside the cover and seating in said annular recess, a beveled baffle extending from said cover adjacent to the inside periphery of the protective member to minimize pressure at the junction of the flange and its seat in the annular recess, means comprising a plurality of diametrically opposed lugs and clamps, the lugs secured under the clamps for clamping said flange against its seat in said annular recess.

9. In combination, a centrifugal spinning pot, means for guiding the filamentary material into the pot, a protective member surrounding the pot and having an inwardly projecting shoulder around the upper rim of the member, said shoulder being beveled downwardly and outwardly to the inside wall of the protective member, a cover for the protective member, an annular groove surrounding the upper edge of the protective member, a flange extending perpendicularly downward from the outer circumference underside the cover and seating in said annular groove, a beveled baffle extending from said cover adjacent to the inside periphery of the protective member with its bevel in approximate alignment with the bevel of the shoulder to minimize pressure at the junction of the flange and its seat in the annular groove, and means for clamping the cover with said flange against its seat in said annular groove.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,579,548	Lindgren	Apr. 6, 1926
2,167,583	McDermott	July 25, 1939
2,375,469	Haley	May 8, 1945
2,391,781	House	Dec. 25, 1945