March 23, 1954 H. L. CORNELISON 2,673,107

SAFETY COVER FOR EXTRACTOR CYLINDERS

Filed July 28, 1950

FIG. 1.

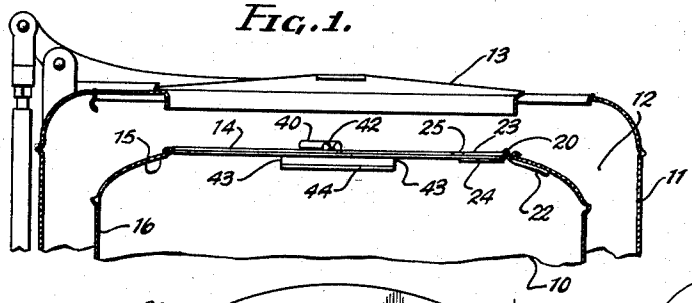


FIG. 5.

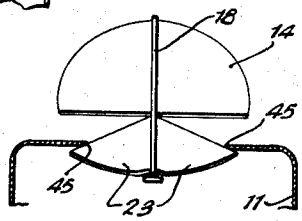


FIG. 2.

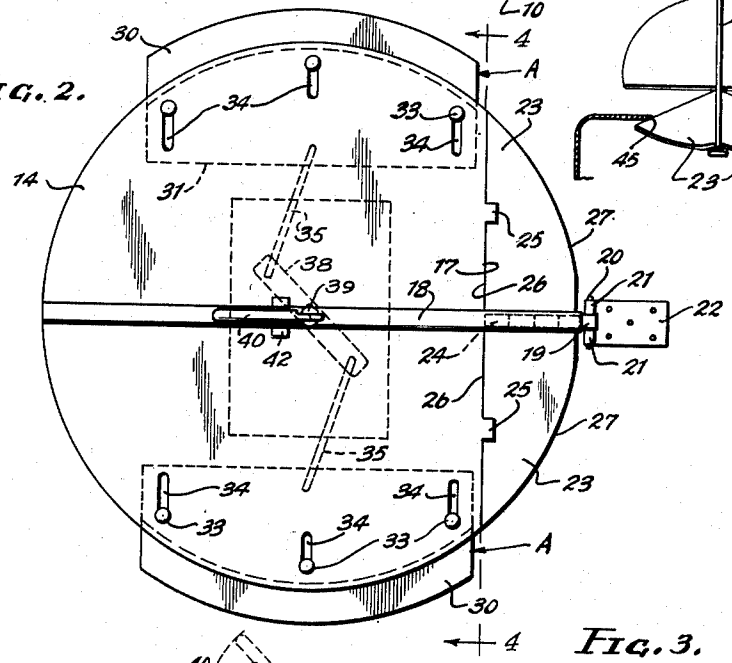
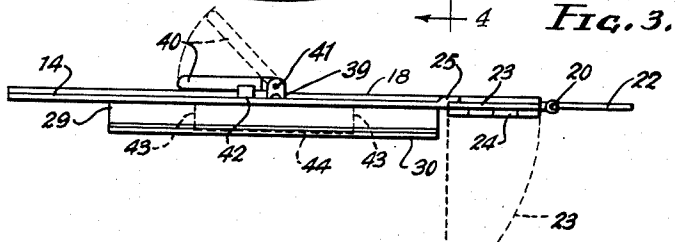


FIG. 3.



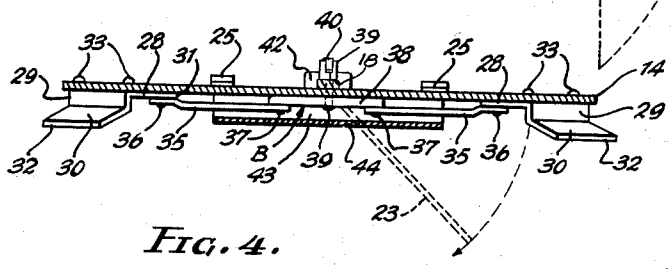


FIG. 4.

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SAFETY COVER FOR EXTRACTOR CYLINDERS

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1 Claim. (Cl. 292—36)

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The present invention relates to improvements in a safety cover for extractor cylinders and has for an object the provision of a device of this kind which is adapted to be applied to the extractor cylinders of dry cleaning and laundry machines.

These dry cleaning machines usually comprise a centrifugal extractor cylinder which is disposed within an outer housing. During operation the extractor cylinder revolves at a high rate of speed in order to extract all surplus cleaning fluids from the garments therein. The outer housing has an opening which is a little larger than the opening of the extractor and is in vertical alignment therewith. Heretofore, the extractor cylinder has not been equipped with a cover and the present invention contemplates providing a cover for the opening in the extractor cylinder.

One of the advantages accruing from the use of such an improved cover is to prevent the clothing contained in the extractor cylinder from being thrown out of the cylinder during rotation thereof so that the clothes will not be caught between the cylinder and the outer cylinder housing or rub against the outer cylinder cover which is standard equipment on all extractors, thereby preventing tears and holes from being ripped in the clothing.

Another advantage flowing from the use of the improved cover is that it serves as an additional safety device for the protection of the operator in the event he fails to close the cover on the outer housing, in fact by using the cylinder cover the cover on outer cylinder housing can be eliminated.

A further object of the present invention is to provide an improved cover of the character which will properly fit the various types of extractor cylinders, that is, whether the upper portion of the side wall of the cylinder is straight, turns inwardly, or turns outwardly.

A still further object of the present invention is to provide an improved structure in which the locking member presents a relatively large area for frictional engagement with the side wall of the cylinder to insure sufficient contact therebetween.

Another object of the present invention is to provide an improved cover in which the locking member is positively held in its locking position during rotation of the cylinder but admits of quick and easy unlocking.

The present invention aims to provide an improved device of this type which comprises relatively few parts and is inexpensive to manufacture.

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In one of its broadest aspects the present invention contemplates the provision of an improved safety cover for extractor cylinders comprising a cover, a pair of locking members movably mounted on said cover and adapted to have engagement with the side wall of the extractor cylinder, and means for moving said members into and out of engagement with the side wall of the extractor cylinder.

With the foregoing and other objects in view, the invention will be hereinafter more fully described and more particularly pointed out in the appended claim.

In the drawings, in which the same parts are denoted by the same reference numerals throughout the several views;

Figure 1 is a fragmentary side elevational view of an extractor cylinder and its outer housing showing the improved safety cover applied to the cylinder, and with parts broken away and in section;

Figure 2 is a top plan view of the improved safety cover;

Figure 3 is a side elevational view of the improved safety cover;

Figure 4 is a view in section along line 4—4 of Fig. 2; and

Figure 5 is a schematic view showing the cover in partially raised position and the cover flaps partially depressed by the outer housing.

Referring more particularly to the drawings, 10 indicates an extractor cylinder and 11 the outer housing therefor of a conventional type of dry cleaning extractor between which there is the space 12. The cylinder 10 and the housing 11 are provided at the top with vertically aligned openings for affording access to the interiors thereof for the introduction of clothing into the cylinder 10. The opening in the housing 11 may be closed by a lid 13 if desired.

The opening in the extractor cylinder is adapted to be closed by the improved safety cover which comprises a cover 14, a pair of locking members, generally indicated at A, movably mounted on the cover 14 and means generally indicated at B for moving the locking members into and out of engagement with the sides of the cylinder 10. The cover 14 is substantially disk-like and is of sufficient diameter to completely mask the opening in the cylinder 10 and to have its peripheral edge portion engage the upper face of the turned in upper portion 15 of the side wall 16 of the cylinder 10 to prevent the cover

14 from falling through the opening of the cylinder into the interior thereof.

On one side the cover 14 has a portion cut away to form a flat edge 17. A rod or bar 18 is secured in any suitable manner throughout the major portion of its length to the upper surface of the cover 14 and the free end portion of the bar 18 extends beyond the flat edge 17 of the cover. The bar 18 is provided at its extreme free end portion with a knuckle 19. A pintle 20 extends through the knuckle 19 and beyond each side thereof to pivotally receive the knuckles 21 of a hinge or securing clip 22. The opposite ends of the pintle 20 are headed. The hinge 22 may be secured to the inner face of the portion 15 of the cylinder 10 by bolts, rivets or the like.

A pair of cover flaps 23 are pivotally mounted on the bar 18 between the flat edge 17 on the cover 14 and the knuckle 19 on the bar by a spring hinge 24. The spring hinge normally urges the flaps 23 upwardly against the lugs or stops 25 which are secured to the cover 14 adjacent its flat edge 17 and project into the path of upward movement of the flaps 23 to prevent the flaps from moving above the plane of the cover. When in their raised position the upper surfaces of the flaps 23 are flush with the upper surface of the cover 14. Each flap 23 is substantially triangular shaped and has a flat edge 26 which engages the flat edge 17 of the cover 14 and a curved edge 27 which conforms to and forms a continuation of the periphery of the cover 14 when the flaps are in their raised position.

Each of the locking members A comprises an elongated plate 28, a step-down portion 29 and a gripper 30. Each plate 28 has a substantially straight inner edge 31 and its outer edge is of a substantially ninety degree arc and is connected to the upper correspondingly shaped edge of the step-down 29. The lower edge of the step-down is also a substantially ninety degree arc and is connected to the inner correspondingly shaped edge of the gripper. The outer edge 32 of the gripper is a substantially ninety degree arc and the gripper is inclined downwardly and outwardly from the lower edge of the step-down 29. Each locking member A may be formed integral or in separate parts which may be connected in any suitable manner.

An arcuate row of pins or rivets 33 is mounted on each plate 28 in angularly spaced apart relation and extend upwardly therefrom to be received by correspondingly arranged elongated slots 34 formed in the cover 14. The upper free ends of the pins 33 are headed to prevent their withdrawal from the slots 34 and to help support the locking members A.

Each plate 28 has one end of a link 35 pivotally attached thereto as at 36 adjacent the inner edge 31 of the plate intermediate the ends thereof. The opposite ends of the links 35 are pivotally connected as at 37 to the opposite end portions of an actuator 38, shown to be in the form of a bar. A bifurcated post 39 has its lower end portion fixed to the bar 38 in any suitable manner and extends upwardly through substantially the central portion of the cover 14 and the bar 18. A handle 40 has one end portion received between the bifurcations of the post and the end portion of the handle 40 disposed therebetween for pivotally mounting the handle on the post. A pair of retaining lugs 42 are secured to the upper face of the cover 14 adjacent the post 39. The lugs 42 preferably are of a spring-like character and are spaced apart a distance less than the diameter of the handle 40 so that when the handle is swung downwardly between the lugs they will frictionally hold the handle therebetween against accidental displacement.

A guard housing for preventing the clothing from becoming entangled with the bar 38 and the links 35 is substantially U-shaped and comprises side walls 43 and a bottom wall 44 to provide an open ended box-like structure. The upper edge portions of the side walls 43 are secured in any appropriate manner to the central portion of the lower face of the cover 14 and the bottom wall 44 is disposed in spaced apart substantially parallel relation to the lower face of the cover 14. The bar 38 is disposed completely within the confines of the guard housing and a portion of the links 35 and their connections with the bar 38 are disposed within the guard housing. The links 35 can freely move through the open ends of the guard housing.

In the use of the device after the clothing has been placed in the extractor cylinder 10, the safety cover will be swung downwardly upon the top of the cylinder to mask the opening therein. In order to permit the application of the safety cover, it is assumed that the grippers 30 have been withdrawn so that their outer edges 32 are disposed within the confines of the periphery of the cover 14.

When the peripheral edge portion of the cover 14 and the flaps 23 engage the upper edge of the cylinder 10, the handle 40 is swung in a clockwise direction. This movement of the handle 40 will cause the actuator bar 38 to swing and to thereby move the links 35 outwardly to force the grippers outwardly under the portion 15 of the side wall 16 of the cylinder 10 until the upper portion of outer edges 32 of the grippers firmly engage the inner face of the portion 15 of the cylinder. At this time the upper faces of the grippers will lie in contact with the under face of the portion 15 due to the inclination of the gripper 30. The handle 40 is then swung on its pivot pin 41 into engagement with the lugs 42 as best shown in Fig. 2. The lugs 42 are so located as to engage handle 40 when the handle is in the position corresponding to the extended position of the plates 28. The locking members will now be locked securely in their operative positions and the extractor cylinder may be started.

In order to open the safety cover, the handle 40 will again be removed from the lugs 42 in the direction opposite to that first described. This will have the effect of withdrawing the locking members A away from the underneath surface of portion 15 of the cylinder 10.

In their movement toward and from the portion 15, the locking members A will be guided by the pins 33 and the slots 34 and the inward movement of the locking members will be restricted by the inner end walls of the slots 34. The cover 14 may then be swung upwardly to afford access to the interior of the cylinder.

The pressure of the spring hinge 24 urges the flaps 23 upwardly against the lug 25. As the cover 14 is raised towards a vertical position, the flaps will engage the wall of the opening of the housing 11 as indicated at 45 in Figure 5 of the drawings. This occurs when the cover 14 is approximately two-thirds open and were it not for the flaps 23, it would be impossible to open the cover to a vertical position. Upon striking the

wall of the opening of the housing 11, the flaps 23 will be swung downwardly on the spring hinge 24 as a pivot. This will cause the flaps to extend into the opening of the extractor 10 and the housing 11 but they do not extend to such an extent as to interfere with the loading and unloading of the extractor.

If the extractor cylinder cover 14 were open and the extractor were put into operation, thereby causing rotation of cylinder 10, the cover 14 would scrape the outer housing 11 and thereby result in damage to both the housing 11 and the cover 14 and possibly to the machine or injury to the operator. The scraping of the cover 14 against the housing 11 would make sufficient noise to warn the operator so that he could stop the operation of the extractor before any damage was done.

An improved safety cover may be made in various sizes so that it will fit different size extractor cylinders and it can be used on laundry as well as dry cleaning extractors. When the improved safety cover is applied to the extractor cylinder it is not necessary to use the lid usually employed on the outer extractor housing.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claim.

What I claim is:

An improved safety cover for an extractor cylinder or the like comprising a cover, a pair of locking members movably mounted on said cover, each of said members comprising an elongated plate portion, a step-down portion having its upper edge connected to the outer edge of said plate portion, an arcuate gripper having its inner end connected to the lower edge of said step-down portion and having a surface inclined downwardly and outwardly from the lower edge of said step-down portion for engagement with an inwardly inclined wall portion of said cylinder, and means for moving said members into and out of engagement with the side wall of the cylinder.

HERBERT L. CORNELISON.

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