Dec. 11, 1945. J. C. TRINDL 2,390,753

DRAINER CONSTRUCTION

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Fig. 1.

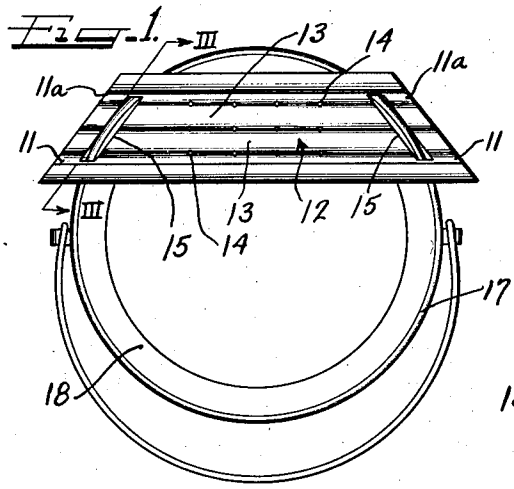


Fig. 2.

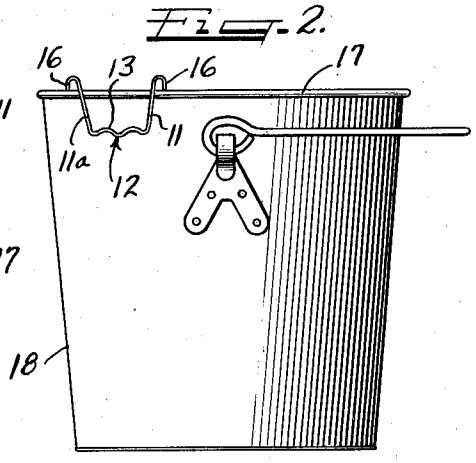


Fig. 3.

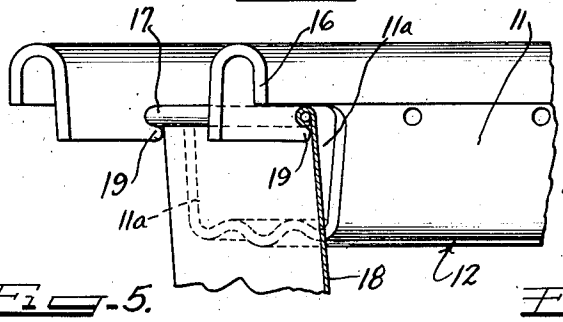


Fig. 6.

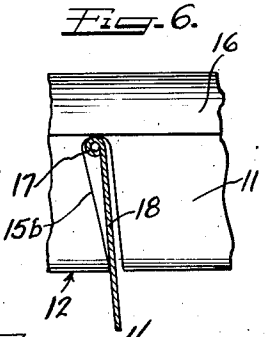


Fig. 5.

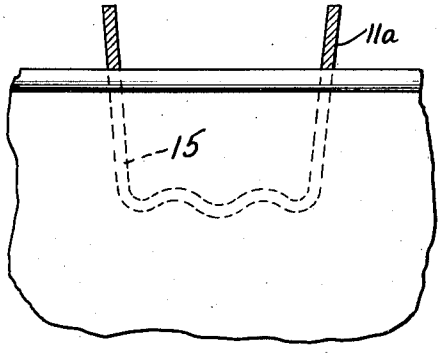
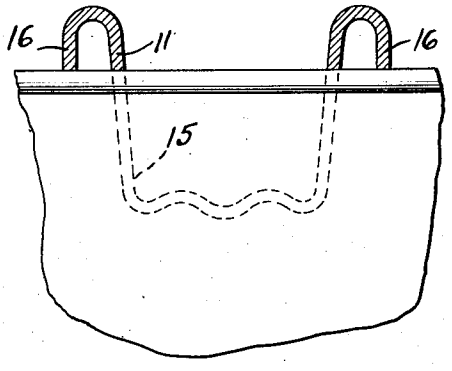


Fig. 4.



Inventor

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Fig-9.

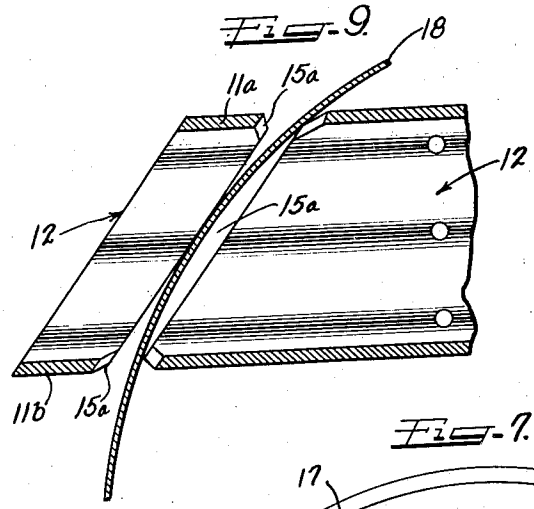


Fig-10.

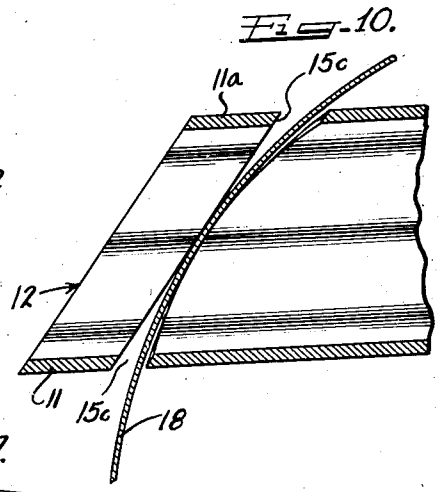


Fig-7.

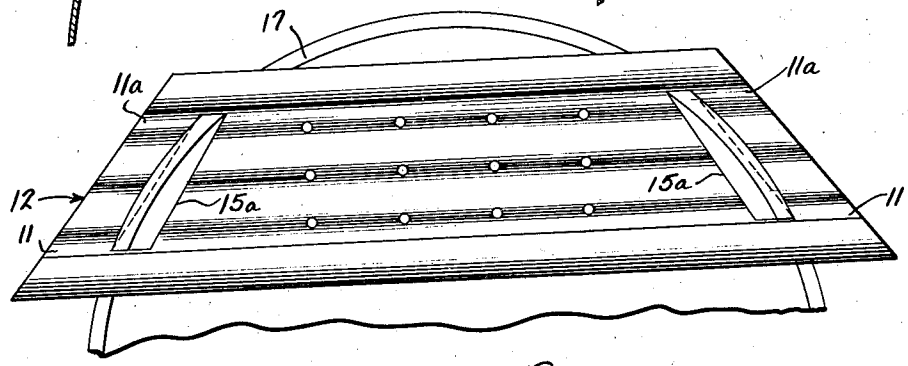
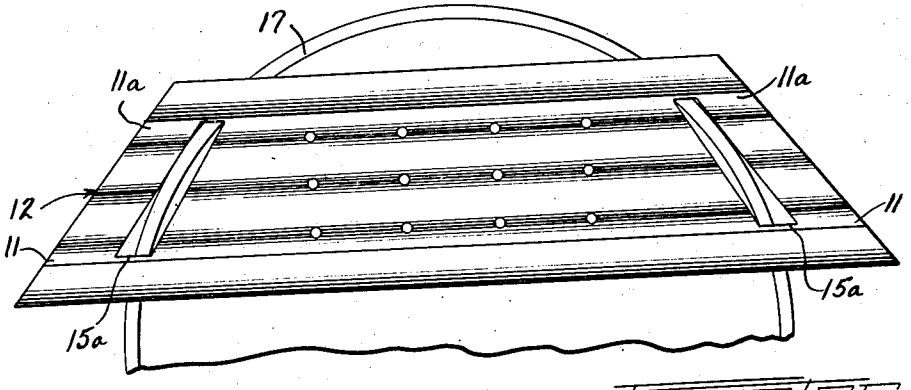


Fig-8.



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UNITED STATES PATENT OFFICE

2,390,753

DRAINER CONSTRUCTION

John Charles Trindl, Chicago, Ill.

Application January 9, 1943, Serial No. 471,904

2 Claims. (Cl. 15—260)

This invention relates to an improved drainer construction and is directed particularly to a drainer for household use which may be easily attached to the usual pail.

An important object of the invention is to provide a drainer which may be manufactured with a minimum of expense; which may be easily attached and detached from the usual pail construction; which may be easily cleaned and stored by the user and which, once attached to the pail, is retained securely thereon during the draining operation.

Still another object of the invention is to provide a drainer which may be constructed from a block of wood or the like, but which may, if desired, be cheaply manufactured from sheet material such as metal or a plastic by pressing, stamping, or, if desired, by casting.

Still another important object of the invention is to provide a drainer construction of the above character which requires no adjustment on the part of the user to adapt it to use with pails of different sizes having different peripheral diameters and different curvatures.

In accordance with the general features of the invention, there is provided herein a drainer member formed from sheet material into a generally U or V-shaped cross-sectional configuration and slotted through the lower portion thereof to receive the rim of pails of different sizes in such a manner that the drainer will not lift away from the pail with the mop after the latter has been pressed downwardly against the drainer to extrude liquid therefrom.

Other objects and advantages of the invention will be readily apparent from the following description and accompanying drawings in which:

Figure 1 represents a top plan view of a pail having the improved drainer attached thereto;

Figure 2 represents a side elevation of the assembly shown in Figure 1;

Figure 3 represents a fragmentary cross-sectional view of a modified form taken substantially along a line corresponding to line III—III of Figure 1;

Figure 4 represents a fragmentary view of the upper part of a pail with the drainer represented partially in cross section to show the manner in which the drainer rests upon the rim of the pail;

Figure 5 is a view similar to Figure 4 and showing a modified form of the drainer;

Figure 6 is a fragmentary side elevation of the drainer with the rim portion of a bucket to which it is attached shown in cross section;

Figure 7 is a fragmentary top plan view of a large diameter pail showing the improved drainer attached thereto;

Figure 8 is a fragmentary top plan view of a small diameter pail showing the improved drainer attached thereto;

Figure 9 is a fragmentary horizontal cross section taken through the side walls of the drainer showing the manner in which the flat surfaces thereof bear against the walls of the pail; and

Figure 10 is a fragmentary horizontal cross-sectional view taken through the side walls of the drainer showing a modified slot arrangement and the manner in which it bears against the wall of the pail.

It will be understood that the embodiments shown herein are for illustrative purposes only and may be changed or modified without departing from the spirit or scope of the invention as set forth in the appended claims.

As best shown in Figures 1 and 2, the drainer is formed from a suitable sheet material such as thin metal, any of the plastic materials, or from a plastic impregnated fabric base, the forming process being accomplished by stamping, heating and pressing or casting, depending upon the particular material used.

The drainer body comprises opposed side walls 11 and a bridging bottom portion 12 which is preferably corrugated as at 13 and provided with draining apertures 14 which may be punched therein during the pressing operation if desired. The bottom 12 and the walls 11 are slotted upwardly, the slots being disposed toward the ends of the drainer and being directed angularly as shown at 15 while the upper edges of the walls 11 are turned outwardly and downwardly to form skirts 16 which terminate in downwardly extending edges that, like the upper edges of the slots 15, bear against the upper surface of the rim 17 on the pail 18 to receive downward pressure when a mop is pressed into the drainer to expel liquid therefrom.

In applying the drainer to a pail, it will clearly be seen from Figures 1 and 2 that it is merely necessary to align the oblique slots with the rim of the pail so that a portion thereof fits into the slot whereupon the drainer is merely forced into the position shown in Figure 4 in which position it is secured against sliding movement toward the center due to the engagement of the curved rim of the pail in the oblique slot 15. Thus it will be seen that the drainer is arranged on the pail at all times when in use so that sufficient room is permitted for entry of a mop head into the liquid within the pail.

As shown in Figure 5, the skirts 16 may be omitted from the drainer if desired.

In providing such a drainer construction the requirements of two important problems must be complied with. First, since the adjustable hooks or hanger members heretofore used have been dispensed with, the pressed sheet members must be so constructed and arranged that the drainer will, without the necessity of adjustment, be accommodated by the various pails having different diameters which are common on the market. Second, since an important feature of the present drainer is its lightness, it must be so constructed and arranged that it will not be picked up by the mop head when the latter is moved upwardly and outwardly thereof after the liquid is expressed therefrom.

It has been found that while slots having like width throughout their lengths and depths, such as those shown at 15 in Figure 1, will, to a degree, accommodate pails having different diameters if these slots are made sufficiently wide, a preferred construction includes slots such as those shown at 15*a* in Figures 7 and 8, the latter being narrow at the end terminating in the shorter vertical wall 11*a* of the drainer which is that farthest from the center of the pail and tapering outwardly to a greater width toward the end terminating in the longer vertical wall 11 which is that closest to the center of the pail. It will be understood, of course, that the portion of the slot in the respective vertical walls is substantially equal to that shown at the respective ends of the slots 15*a* in the bottom section 12, as shown in Figures 7 and 8.

In forming the tapered slots 15*a* shown in Figures 7 and 8 it is found preferable that the narrow ends be of a width to bind slightly on the bead of the pail rim, and that the wide portion be of sufficient width to accommodate variations in the curvature of the rim of a larger pail such as that shown in Figure 7 and the differing variations in the curvature of the rim of the smaller pail as shown in Figure 8. For example, in Figure 7 it will be seen that the rim of the pail having a larger diameter passes snugly through the narrow portion of the slot in the wall 11*a* and passes through the wider slot in the wall 11 by abutting the outer edge thereof. Thus the rim is disposed in and through the respective slots with a friction or press fit which facilitates the attachment and maintenance of the drainer on the pail. Furthermore it will be seen that the outermost portions of the bottom 12 serve as bridge members which underlie the adjacent portion of the rim and abut the same should the drainer be raised as the mop is removed therefrom. On the other hand, from Figure 8 it will be seen that the rim of the smaller diameter pail, having a sharper curvature than that of the larger pail, passes snugly through the narrower portion of the slot in the wall 11*a*, and engages the wider portion of the slot at the inside edge thereof. Here again, a friction or press fit is obtained between the parts. A comparison of Figures 7 and 8 will reveal that the variation in the curvatures between the smaller and larger rims becomes increasingly large toward the terminal of a diameter across the opening of the pail which is parallel to the length of the drainer and consequently the wider portion of the slot 15*a* is that portion in the wall 11 of the drainer which is closer to the aforementioned diameter than that portion of the slot in the wall 11*a* which is further away from that diameter.

Additional expedients are provided herein for further securing the drainer to the pail against accidental removal or lifting thereof when the mop is withdrawn from the drainer. As shown in Figure 3, the bottom 12 of the drainer may be cut away at those portions outside of the slots. In this construction the walls 11 and 11*a* are provided with outwardly disposed inwardly extending ears 19 which may be snapped over the rim bead of the pail to underlie the same and provide a lock against unintentional upward movement of the drainer relative to the pail.

The structures heretofore discussed retain the drainer on the pail by virtue of engagement with the rim bead thereof. However, this attachment may be augmented by or accomplished entirely by the engagement of edge portions of the bottom 12 with the wall of the pail.

As shown in Figure 6, the slot 15*b* may be provided with a vertical taper. That is, the width of the portion thereof in the bottom 12 may be considerably narrower than the width of the upper end of the slot portions in the vertical walls of the drainer at which point the bead 17 of the pail 18 is received. As will be seen from Figures 6 and 9, such a construction may be so arranged that the outer edge of the portion of the slot through the bottom 12 of the drainer provides a press fit or friction abutment against the outer surface of the pail thereby to hold the drainer onto the pail with a pinching action.

A modified form of the foregoing construction is shown in Figure 10 wherein the inner edge of the portion of the slot 15*c* which passes through the bottom 12 of the drainer is formed in curvate configuration so that it cooperates with the opposed edge of the slot to pinch both the inside and the outside surfaces of the wall of the pail 18.

From the foregoing it will be seen that there is provided herein a novel mop drainer construction which may be manufactured with a minimum of expense, which obviates the necessity for adjustable hangers or hooks in order that it may be fitted onto pails of different sizes, which may be easily stored by the user, may be readily kept in a clean and sanitary condition and which, without necessitating additional manufacturing costs, may be made to clampingly engage the pail to prevent accidental removal thereof when a mop is withdrawn therefrom after the liquid expressing operation.

What I claim is:

1. As an article of manufacture, a mop drainer formed from sheet material and including an elongated mop receiving portion and an upwardly extending pail rim receiving portion, said drainer having slots formed in said mop receiving portion, said slots being disposed obliquely relative to the length thereof to conform substantially to the general angle of the tangent to the rim of a pail at portions approximately midway between the diameter across the top of the pail and the tangent point of a tangent which is parallel with said diameter when said drainer extends lengthwise in substantial parallelism with said diameter, said slots having portions extending upwardly into said upwardly extending pail rim receiving portion of the drainer and terminating in downwardly disposed edges adapted to bear against the upper edge of the rim of a pail when the drainer is disposed thereon with the rim extending into said slots.

2. As an article of manufacture, an elongated

drainer for extension across and into a pail and formed integral from sheet material and including a substantially horizontal mop receiving base portion with upstanding wall portions at least at the ends of said drainer, said base portion and said wall portions having slots therethrough extending across said base portion and upwardly into said wall portions and terminating short of the upper ends of said wall portions for receiving the adjacent rim and upper side wall portions of the pail to support the drainer, each of the walls of said upwardly extending portion of said slots being substantially parallel with the vertical extent of the sides of the pail but being restricted in width at predetermined points whereby when the drainer is applied to the pail it will have clamping engagement therewith to be held against displacement therefrom when a mop is withdrawn from the drainer.

JOHN CHARLES TRINDL.