

April 23, 1946.

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2,398,936

ASH RECEIVER

Filed June 19, 1940

3 Sheets-Sheet 1

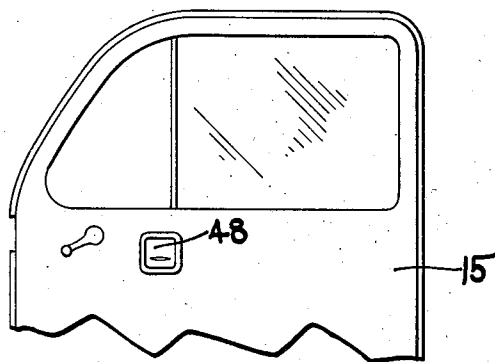


Fig. 1.

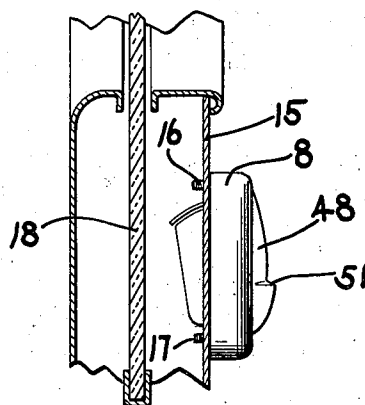


Fig. 2.

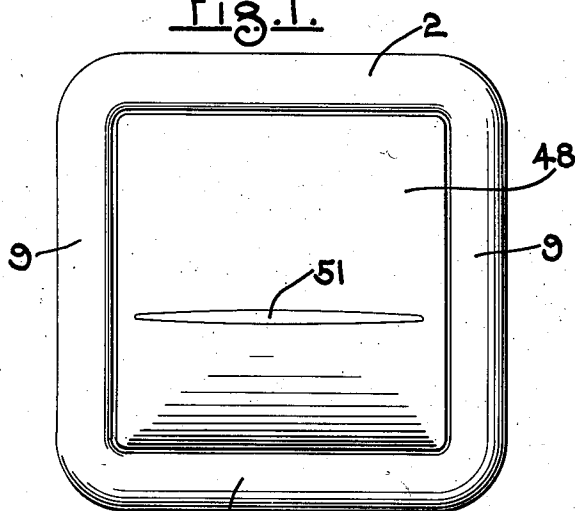


Fig. 3.

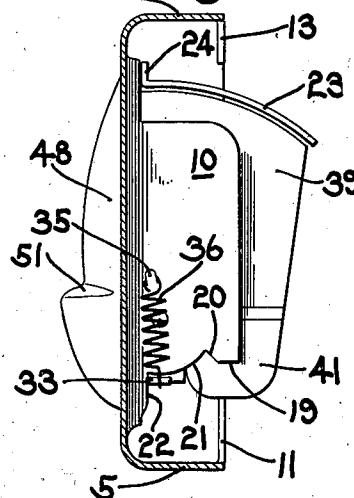


Fig. 5.

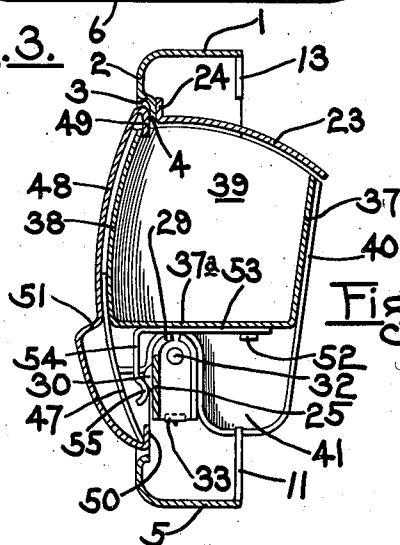


Fig. 4.

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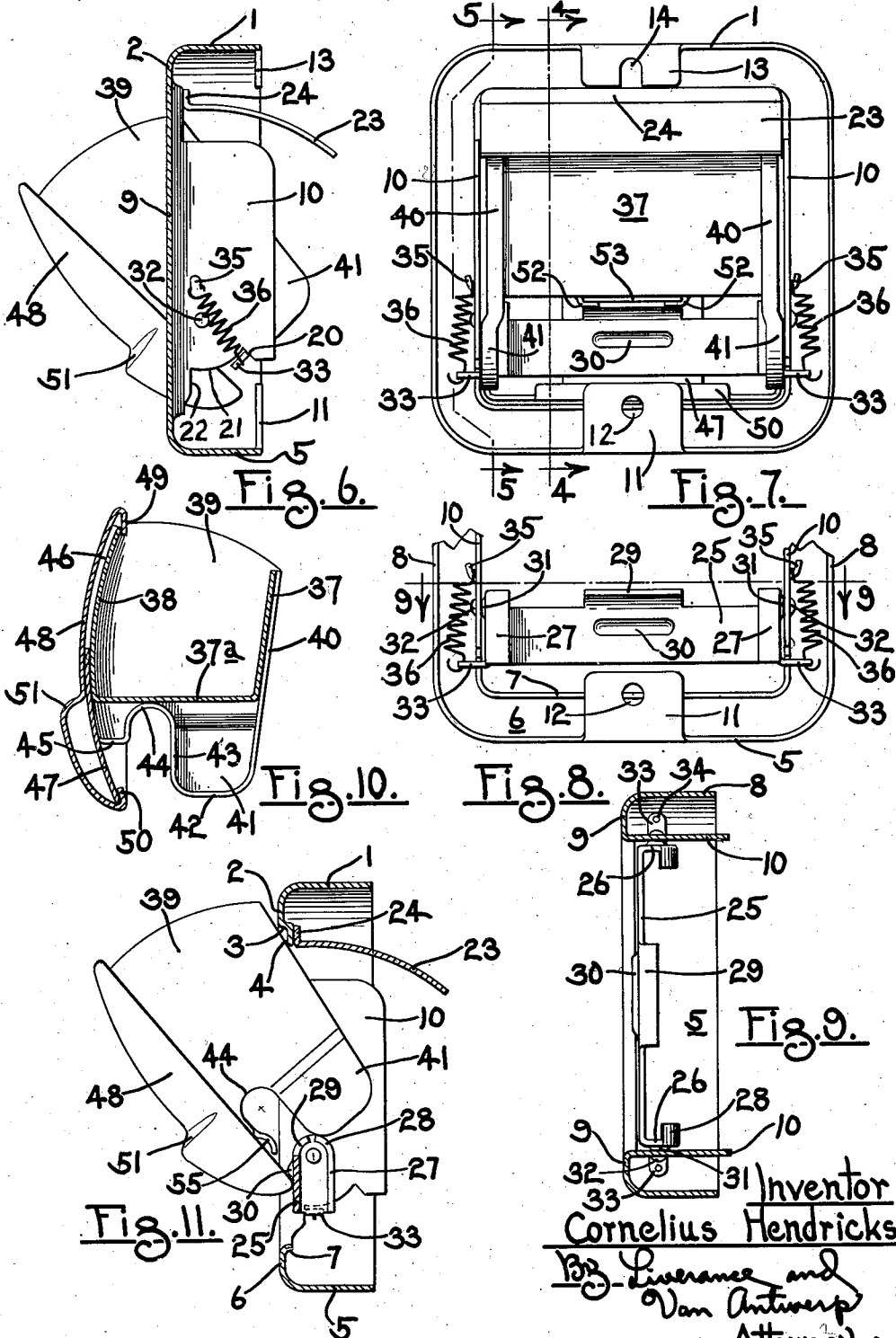
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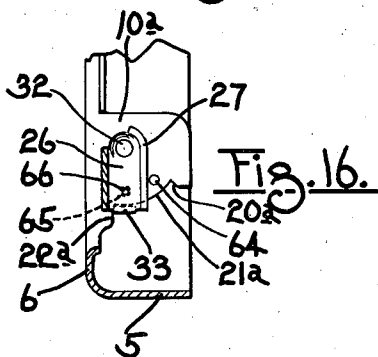
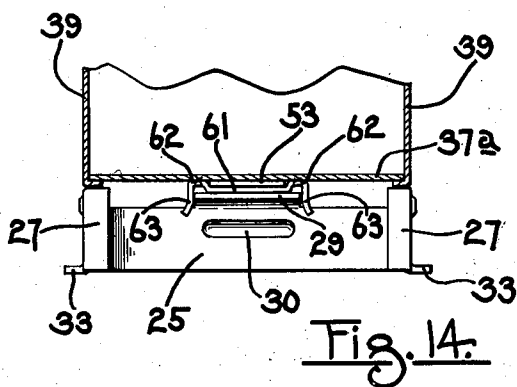
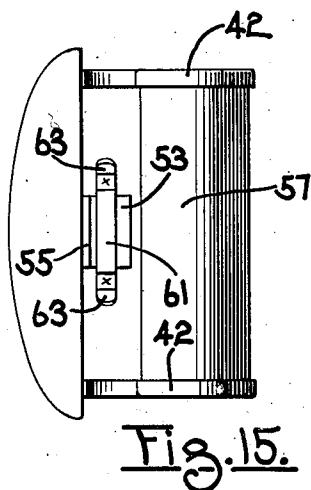
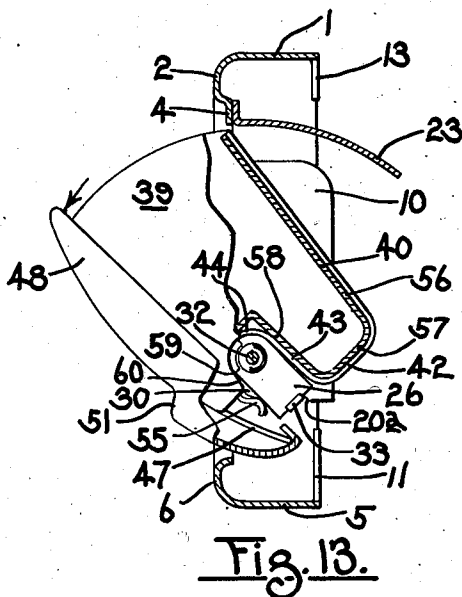
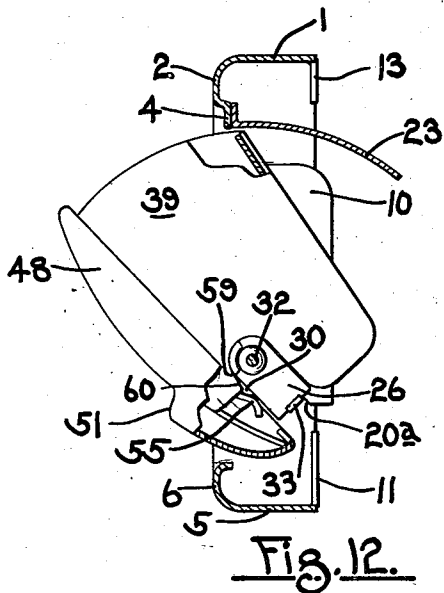
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,398,936

ASH RECEIVER

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Application June 19, 1940, Serial No. 341,240

3 Claims. (Cl. 206—19.5)

This invention relates generally to containers and more especially to ash receivers which are particularly adapted for use either in the dash or in the doors of motor vehicles.

Briefly, the invention resides in the provision of a mounting plate having an opening therein across which opening extends a hinge member. The receptacle or container itself is adapted to be mounted on the hinge member, which is rotatable between certain limits, and which fills the opening when in closed position but which may be easily moved to open position ready for use. Means are also provided for the easy removal of the container from the hinge member when it becomes necessary to empty the contents thereof.

A particular object of the invention is the provision of a hinge member extending across the opening of the mounting plate which is rotatable between certain limits and which is held in either of its two extreme positions either by means of springs which have a toggle action, or by cooperating detents.

Another object of the invention is the provision of cooperating means between the container and the hinge member whereby the container may be securely mounted on the hinge and yet may be easily removed therefrom.

Still another object of the invention is the novel construction of the mounting plate which adapts itself for use in connection with the door of an automobile which heretofore has not been possible with other similar constructions because the ash receiver extended rearwardly beyond the mounting plate a distance so that it would interfere with the raising and lowering of the window.

In the preferred embodiment of the invention as disclosed in the accompanying drawings the invention has been shown with the hinge member in a horizontal position so that the ash receiver will rotate about a horizontal axis, but it is to be understood that the hinge member itself may be located in any other plane, without in any way departing from the spirit of the invention.

Other objects and purposes of the invention will appear more fully as the description proceeds.

To the accomplishment of the foregoing and related ends said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and following description set forth in detail certain means for carrying out my invention, said means constituting

however, but one of various ways in which the principle of the invention may be employed.

In said annexed drawings wherein like reference numerals refer to like parts throughout the various views:

Fig. 1 is a fragmentary elevation of the inner side of an automobile door showing the ash receiver of my invention applied thereto.

Fig. 2 is a somewhat enlarged fragmentary section through the door of Fig. 1 showing my ash receiver in side elevation thereon.

Fig. 3 is a still further enlarged front elevation of the ash receiver in closed position on the mounting plate.

Fig. 4 is a vertical section through the assembly taken substantially on the plane of line 4—4 of Fig. 7.

Fig. 5 is a part elevational part sectional view taken substantially on the plane of line 5—5 of Fig. 7.

Fig. 6 is a view similar to Fig. 5 but showing the container in its open position.

Fig. 7 is a rear elevational view of the assembled container and mounting plate.

Fig. 8 is a fragmentary rear elevation of the mounting plate and the hinge member thereon with the container removed.

Fig. 9 is a horizontal section taken substantially on the plane of line 9—9 of Fig. 8.

Fig. 10 is a vertical section through the ash receiver itself.

Fig. 11 is a vertical section through the mounting plate and the hinge member thereon showing the ash receiver in elevation after it has been removed or as it is being inserted.

Fig. 12 is a view similar to Fig. 11 showing a modified form of the invention wherein the upper rear edge of the container does not move forward as far as the front edge of the cover plate when it is in normally open position.

Fig. 13 is a view similar to Fig. 12 and also showing a portion of the container in section and indicating the position of the container immediately before its removal from the panel.

Fig. 14 is a fragmentary vertical section through the container showing the hinge member in rear elevation and disclosing more particularly a modification of the centering means.

Fig. 15 is an under plan view of the container, and

Fig. 16 is a fragmentary vertical section through the frame and the hinge member disclosing a modification of the means for holding the hinge member in either of its two extreme positions.

The mounting plate in all forms of the invention is made sufficiently thick by extending the flanges thereof rearwardly so that when the assembly is mounted at the inner side of an automobile door, the container will not interfere with the operation of the window. While the particular mounting plate shown and about to be described is particularly adapted for this use, it is to be understood that the assembly may be equally applicable for use in the dash panel of a car. The mounting plate itself consists of a metallic framework which has a rearwardly extending flange therearound which has at the front side thereof substantially flat faces and having an opening within the confines thereof. The upper flange 1 is curved downwardly at the front side thereof to provide the front upper face 2 and which then has a short rearwardly extending portion 3 terminating in the downwardly turned flange 4. The lower flange 5 of the mounting plate is curved upwardly at its front side to provide the lower face 6 which terminates in a short rearwardly curved portion 7. At each side of the container there is provided the rearwardly extending flanges 8, each of which is curved inwardly at its front side to provide the substantially flat face portion 9, and which in turn is provided with the rearwardly extending supporting members 10, as shown in Fig. 9. These supporting members 10 each define the vertical edges of the opening within which the container rests when not in use.

At substantially the central portion of the bottom flange 5 is an upwardly extending ear 11 which has an opening 12 therein. At substantially the center of the upper flange 1 there is provided a downwardly extending ear 13 which is provided with a slot 14. When the assembly is to be secured to the inner side 15 of an automobile door, a screw 16 may be first secured in place so that the slot 14 may receive said screw. The lower screw 17 may then be inserted through the opening 12 in the lower ear so as to secure firmly the assembly in place. It will be seen by referring to Fig. 2, which shows the general construction of a door which has a slidable window therein, that the various flanges of the mounting plate extend rearwardly a sufficient distance so that when the receptacle is in closed position it will not extend inwardly far enough to contact the glass 18 thereby affording free movement of the window and at the same time not interfering with the operation of the ash receptacle.

For a purpose which will be explained more fully hereinafter the bottom edge of each of the supporting plates 10 are shaped substantially as shown in Figs. 5, 6, and 11. The height of each plate is less than the height of the mounting plate and has at its lower rear edge a short inwardly extending edge portion 19 which edge then continues forwardly and upwardly as at 20 and is then curved downwardly substantially in the arc of a circle toward the front of the plate as at 21. The front of this arcuate portion 21 then extends downwardly as at 22 and then again forwardly to the front of the mounting plate.

In order to provide a covering means for the upper open side of the receptacle, a curved cover plate 23 is provided which has an upwardly extending flange 24 at its forward edge and is welded or otherwise secured to the downwardly extending flange 4 at the upper portion of the mounting plate. This cover plate is made arcuate to conform substantially to the shape of the ends of the receptacle so that when it is in closed position

the open upper end thereof will be completely covered.

Referring now more particularly to the form shown in Figs. 1 to 11, the hinge member consists of a substantially flat piece of metal 25 which extends across the opening in the mounting plate and between the supporting members 10. At each end of the plate 25 there is a rearwardly extending flange portion 26 which is in turn terminated in the upwardly extending portion 27. Each of these portions 27 is curved upwardly and forwardly as at 28 and as clearly shown in Fig. 11. At substantially the center of the plate 25 of the hinge member, there is provided an upwardly and rearwardly curved section 29 which is curved in substantially the arc of a circle. Immediately below the section 29 and extending forwardly from the forward face of the plate 25 is a detent 30, the purpose of which will be more fully explained hereinafter.

At each end of the hinge and at the outer sides of the flange 26 is an embossing 31 having a central opening therethrough which is in alignment with an opening in each of the supporting plates 10. When the openings in the plate 10 and the flange 26 are in alignment they receive the pin members 32, the inner ends of which may be flattened, if desired, to form a riveted connection so that the hinge member will thereby be pivotally and rotatably mounted on and between the supporting plates 10.

At the bottom of each of the flanges 26 there is also provided integral therewith an outwardly extending ear 33 which has an opening 34 therein. Also, struck upwardly and outwardly from the outer sides of each supporting plate 10 are the tongues 35. The springs 36 are then secured, one at each end, to extend between the ears 33 and the tongues 35.

When the hinge member is rotated about the pins 32 as its pivotal axis, the ears 33 will move in the arc of a circle about the pins 32 as a center, and since they extend outwardly adjacent the arcuate edge portions 21 of the supporting plates 10, their movement will be substantially in conformity with said edge portion 21. In the vertical position of the hinge member the ears 33 will bear against the edge portions 22 so as to limit its movement in that direction. Likewise, when the hinge is rotated in a counter-clockwise direction the ears 33 will come against the edge portions 20 of the plate 10 so as to limit its rotative movement in that direction. It will be noted that the tongues 35 are so located with respect to the pivotal point of the hinge and the ears 33, that the center lines of the springs 36 will move past the pivotal point when the hinge is rotated a distance in either direction. In other words, this construction has a toggle action so that the springs 35 will hold the hinge member in either of its two extreme positions because in these positions the springs will have moved past dead center.

The container or ash receiver comprises a single length of sheet metal which is bent to provide the back 37, the bottom 37a and the slightly arcuate front 38. At each end of the container an end piece is provided which consists of a flat member 39 provided with inwardly turned flanges at all of its edges except the top edge. The configuration of each end piece 39 is substantially as shown in Fig. 10 wherein the inwardly extending flange at the back side thereof is indicated by the numeral 40. This edge extends downwardly a distance beyond the bottom 37a and is provided

with a slightly outwardly offset section 41. The edge and flange then continues in the substantially horizontal portion 42, which then extends upwardly substantially in a vertical direction as at 43, and is then curved upwardly, forwardly and downwardly as at 44 in substantially the arc of a circle. The circular portion 44 does not extend downwardly as far as the lower edge 42 but it extends forwardly as at 45 and then upwardly as at 46 in an arcuate portion to follow the contour of the front face 38 of the container. As above pointed out, all edges except the top edges of the end plates 39 are flanged inwardly so that they may be secured by means of welding, or in any other desired manner, to the receptacle itself by means of the flange at the rear side to the back 37 and by means of the flanged portion 46 at the front thereof to the portion 38.

A tail piece 47 which is arcuate in shape, is then secured near its upper end to the lower part of the front 38 and extends downwardly below the bottom 37a a considerable distance as shown in Fig. 10. This plate is sufficiently narrow so that it is located between the inwardly extending flanges 48 on each of the end plates. A front decorative panel 48 is then located at the front of the structure which is also substantially arcuate and which has a downwardly extending flange 49 at its upper edge and a rearwardly and upwardly extending flange 50 at its lower edge. These respective flanges 49 and 50 are adapted to hook over the upper edge of the front 38 and the lower edge of the tail piece 47 so that it may be thereby secured in place. It is preferable, though not necessary, to provide the decorative plate 48 with a forwardly offset portion 51 to enable the operator to more easily open the receptacle for use. A slight pressure downwardly on this offset portion 51 is all that is necessary to open the ash receiver.

At each side of the center of the bottom 37a downwardly and inwardly extending ears 52 are provided to receive the horizontal portion of a spring steel member 53. This spring member, as clearly shown in Fig. 4, at its forward edge is bent downwardly as at 54 and terminates in a rearwardly and then forwardly curved portion 55.

In the assembly of the receptacle within the opening of the mounting plate and onto the hinge member, it is to be noted that the curved portion 44 of the end members 39 have substantially the same curvature as the combined curves of the central section 29 and the upwardly and forwardly curved portions 28 on the hinge member. The assembly will be made from the position of the various parts as shown in Fig. 11 where the hinge member is shown in its vertical position. When the receptacle is first inserted within the opening, the bottom edge of the decorative plate 48 will first contact the plate 25 of the hinge member below the central outwardly extending section 30 thereof and below its pivotal point which will force the hinge member to rotate in a counter-clockwise direction or it can be manually moved to this position before insertion of the receptacle. When in this position, the curved portions 28 and 29 of the hinge will be received within the curved section 44 of the receptacle while the portion 55 on the lower edge of the spring 53 will pass over and below the detent 30. The outwardly offset lower portions 41 on the end plates 39 will bear against the supporting plates 10 and will not only cause sufficient friction to aid the cooperation between the spring steel member 53 and the detent 30 in

maintaining the receptacle in place but will also cause the container to be centered within the opening. This frictional engagement will also aid in preventing any rattle in the structure as well as preventing the parts from becoming loosened.

After the receptacle has thus been inserted in the opening of the mounting plate and is securely received by the hinge member, the receptacle will then be moved either to outer open position or to closed position merely upon applying pressure to the bottom or top of the decorative plate 48. When the receptacle is closed, a pressure at the lower front side thereof will rotate the hinge member in a counter-clockwise direction, will move the springs 36 past the pivotal point thereof and will retain the container in open position after the ears 33 have come against the edge portions 21 of the supporting plates which limits the outer movement thereof. When it is desired to empty the contents of the container it is merely necessary to move it to open position where it may be grasped either at its front or at the ends thereof and pulled outwardly to overcome the friction between the offset portion 41 and the supporting plates 10 and the force of the spring 53 against the detent 30.

Reference will now be had more particularly to the modified forms of my invention as disclosed in Figs. 12 to 16 inclusive. If it is desired to provide more room within the container a construction like that shown in Fig. 13 may be provided on all forms wherein the rear of the container may conform to the contour of the flanges on the end pieces. Here, instead of the bottom 37a of the container extending in a substantially horizontal plane from the front to the rear, the rear 56 may extend downwardly a greater distance than the back 37 shown in previous figures, then curved forwardly to provide the portion 57 and then again upwardly to provide the portion 58, the top of the portion 58 may then be continued forwardly to the front of the container. This additional length to the rear of the container and lowering of the rear portion of the bottom will provide more space in the container.

In the description of the earlier figures of the drawings, when the container was in its normally open position, the rear upper edge thereof would be either adjacent or just in front of the lower edge of the downwardly extending flange 4, so that it would be in a position to be pulled directly outwardly for removal. In this modified form, the arc 21a at the lower edge of each supporting plate 10a (Fig. 16) is shorter than the one shown at 21 (see Fig. 5) so that the edge 20a which provides stop means against which the ears 33 bear when the container is in its open position, will be nearer the front edge of the frame. In other words, the length of the arc 21a does not permit the container to rotate about its pivotal point 32 as great a distance as previously described so that, as shown clearly in Fig. 12, when the container is normally open and the ears 33 have come against the rear edges 20a, the upper rear edge of the container will stop a short distance behind the flange 4. This form of the invention may be somewhat neater in appearance since the necessary space between the upper edges of the container and the lower edge of the flange 4 will not be so obvious. If it is then desired to remove the container for purposes of emptying the contents thereof the container itself must be able to be moved forwardly a sufficient distance so that its upper rear

edge will clear the flange 4. Since the hinge member itself can be moved no further because of its bearing against the stop edges 29, a certain amount of play must be provided between the hinge member and the container itself.

In order to accomplish this result, the end members 39 together with the flanges thereon will have a rear and bottom contour similar to that described before and indicated at 40, 42, 43, and 44, however, when the portion 44 is curved downwardly and forwardly at the front side thereof, the circular curvature thereof must terminate at a point above the pivotal point 32. This point where the circular arc must have a break is indicated in Figs. 12 and 13 by the numeral 59.

The contour of the end pieces below and beyond the point 59 is immaterial as far as this phase of the invention is concerned. It may either extend directly forwardly and terminate at the front of the container or it may continue downwardly and outwardly as shown at 60. This, then, will leave a small space between the edges 60 and the hinge member to permit a small movement of the container relative to the hinge. As previously described, the lower rearwardly curved portion 55 of the spring member will bear against the front face of the hinge at a point below the detent 30 to maintain the container in position on said hinge. Referring now specifically to Fig. 13, I have there shown the manner of removing the container for this particular embodiment of the invention. Pressure will be exerted on the upper forward edge of the front decorative panel at the point indicated by the arrow. This will cause a relative rotation of the container with respect to the hinge which movement if permitted by reason of the termination of the arcuate portion 44 of the end members at substantially the point 59 which is above the pivotal point 32. As will be seen in Fig. 13 the upwardly extending portion 43 of each end member has been moved a slight distance away from the rear side of the hinge, and the upper rear edge of the container will have moved forwardly so that it can be removed directly out of the opening and clear the lower edge of the flange 4. No inadvertent removal of the container will be possible with this form of the invention since an extra effort must be made to move the container to a position where it will clear the upper edge of the opening.

Figs. 14 and 15 show a modification of the centering device. In this form of the invention instead of the end pieces being flared outwardly as at 41 to bear against the supporting plate 10, they may extend downwardly in a straight line. The centering member as shown in these figures consists of a brace having a central substantially horizontal portion 61 which is bent upwardly at each end and then outwardly to form the flat ends 62, each end is then bent downwardly and flares outwardly as at 63. The flat portions 62 are either welded, or secured in any other desired manner, to the bottom of the container 37a. This type of centering device may obviously be used with either form of container that is, whether the bottom 37a thereof extends rearwardly as shown in Fig. 4 or extends rearwardly only part of the distance as shown in Fig. 13. The spring 53 rests within the space provided between the bottom and the flat horizontal portion 61 of the centering member as more clearly shown in Fig. 15. If the form of container shown in Fig. 13 is utilized with this combination, then the spring 53 cannot extend rearwardly as great a distance as shown in Fig. 4,

but must terminate short of that portion of the container indicated at 58 in Fig. 13. The ends 63 of this centering member are spaced apart a distance equal to the length of the central upwardly and rearwardly curved portions 29 of the hinge member. When the container is then inserted within the opening, the space between the ends 63 will receive this portion 29 and will guide the container to within the opening and automatically center it properly.

In the modification particularly shown in Fig. 16 the springs 36 at each end of the hinge member are dispensed with together with their toggle action and detents are substituted to maintain the container in its open or closed position. In this figure the rearwardly extending supporting plates are indicated at 10a inasmuch as they do not need to extend upwardly the full length as shown in previous figures of the drawings. However, the bottom edge of the supporting members 10a are still provided with the stop edges 20a and 22a which are connected by the intermediate arcuate portion 21a. In each of the supporting plates 10a near the bottom edge thereof they are provided with small outwardly extending portions or detents. The one, indicated at 64, is located adjacent the stop edge 20a while the other indicated at 65, is located adjacent the forward stop edge 22a. Each outer end 26 of the hinge member is also provided with a similar detent 66 which is adapted to fit into and cooperate with each of the detents 64 and 65. Fig. 16 shows the hinge member in its normal closed position as far as the container is concerned, and discloses the detent 66 thereon as being received in the detent 65 on the supporting plate 10a. The detents 65 and 66 will maintain the hinge member in the position shown in Fig. 16, and when it is desired to open the container for use, the detent 66 on the end of the hinge member will be moved to the position where it will be received in the detent 64. During the intermediate movement of the hinge member from open to closed position, each end supporting member 10a will be forced outwardly a very slight distance so that the container may also be maintained in any position to which adjusted between these limits.

It will be clear that the various modifications disclosed in Figs. 12 to 16 inclusive, may either be all combined in a single device or may be substituted separately for the corresponding forms in the preferred embodiment of the invention disclosed in Figs. 1 to 11.

Other modes of applying the principle of my invention may be used instead of the one here explained, change being made as regards the structure herein disclosed, provided, however, that the means stated by any of the following claims, or the equivalent of such stated means, be employed.

I claim:

1. An ash receiver comprising, a mounting plate having an opening therein, a pivot bar rotatable between two predetermined limits above the lower edge of said opening, supporting means for said pivot bar, a container removably mounted astraddle of said pivot bar, and means for centering said container within said opening comprising an upwardly extending centrally disposed portion on said pivot bar, and downwardly diverging means on said container to receive said portion on the pivot bar.

2. An ash receiver comprising, a mounting

plate having an opening therein, a pivot bar rotatable between two predetermined limits above the lower edge of said opening supporting means for said pivot bar, a container removably mounted astraddle of said pivot bar, and means for centering said container within said opening comprising an upwardly extending centrally disposed portion on said pivot bar, and a bracket secured to said container having downwardly diverging end portions, said centrally disposed portions on the pivot bar being received between said end portions.

3. An ash receiver comprising, a mounting plate having an opening therein, a pivot member pivotally supported by said mounting plate and extending horizontally at the rear and intermediate the vertical dimension of said opening, the pivot member being elongated in cross section in a generally vertical direction and having its axis near its upper edge and a receptacle having a recess in its lower portion to removably and unrotatably receive said pivot member.

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