July 12, 1938. A. GALANTE 2,123,600

MIXER CAN

Filed Feb. 11, 1937 2 Sheets-Sheet 1

Fig. 1.

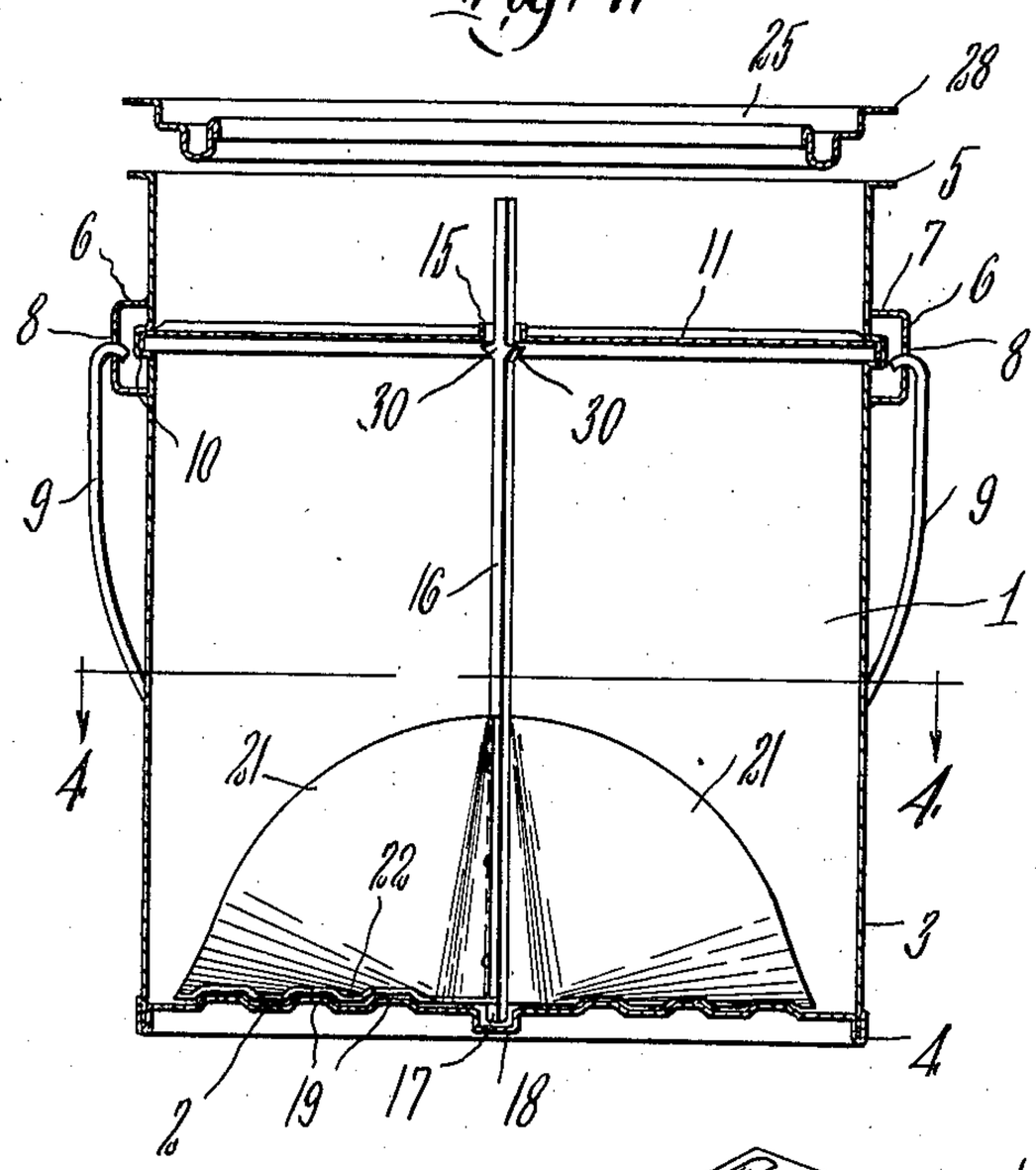


Fig. 2.

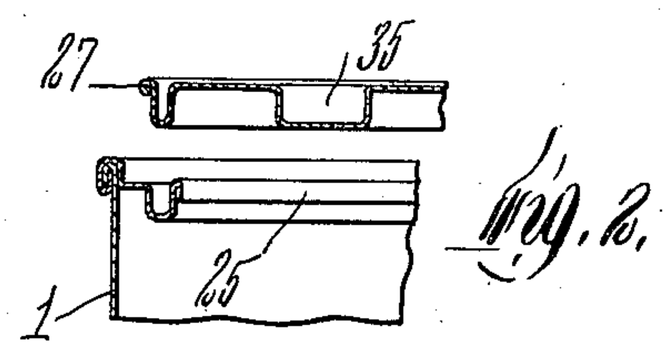


Fig. 3.

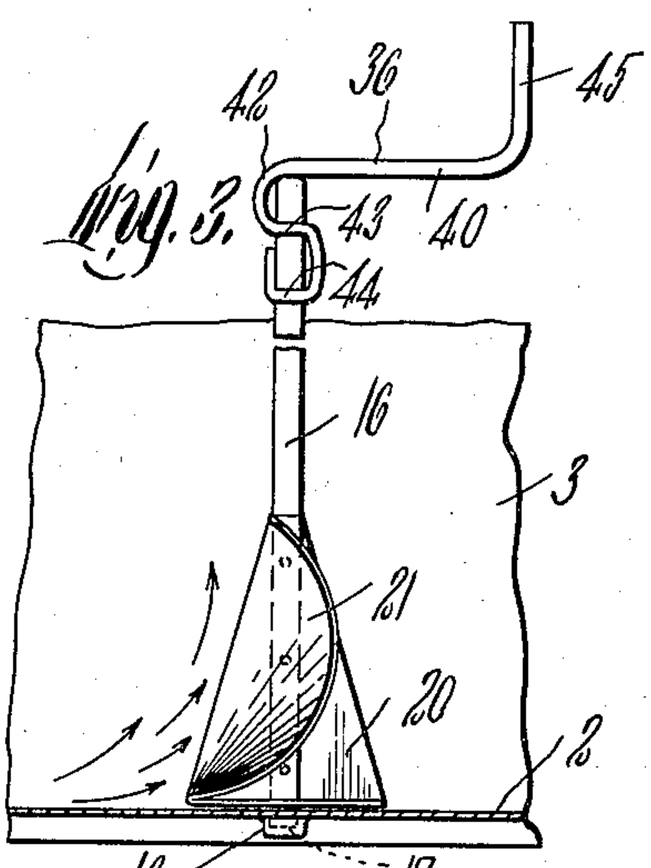


Fig. 4.

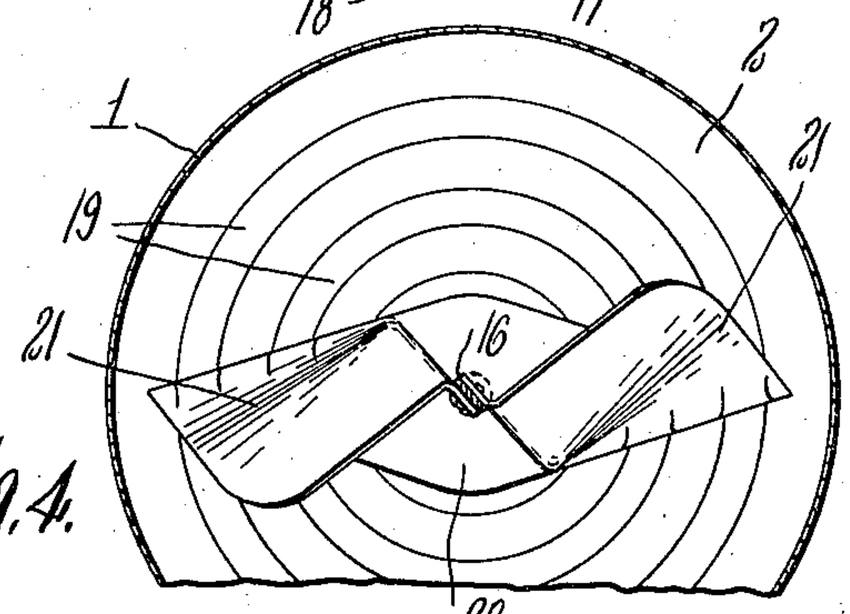


Fig. 5.

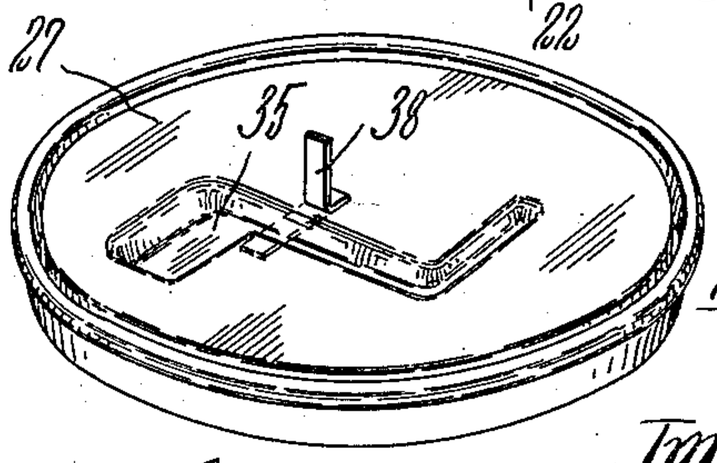


Fig. 6.

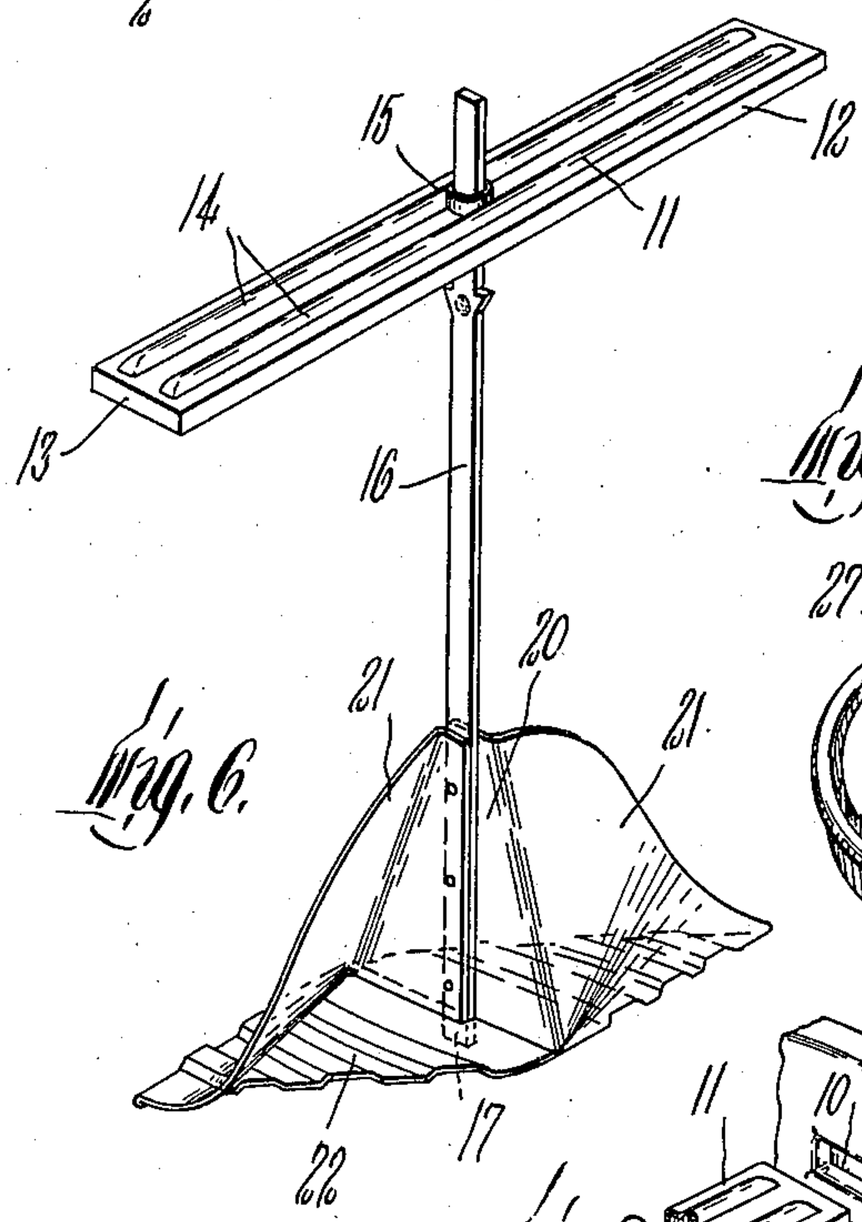
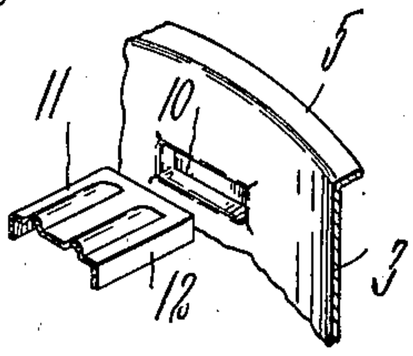


Fig. 7.



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MIXER CAN

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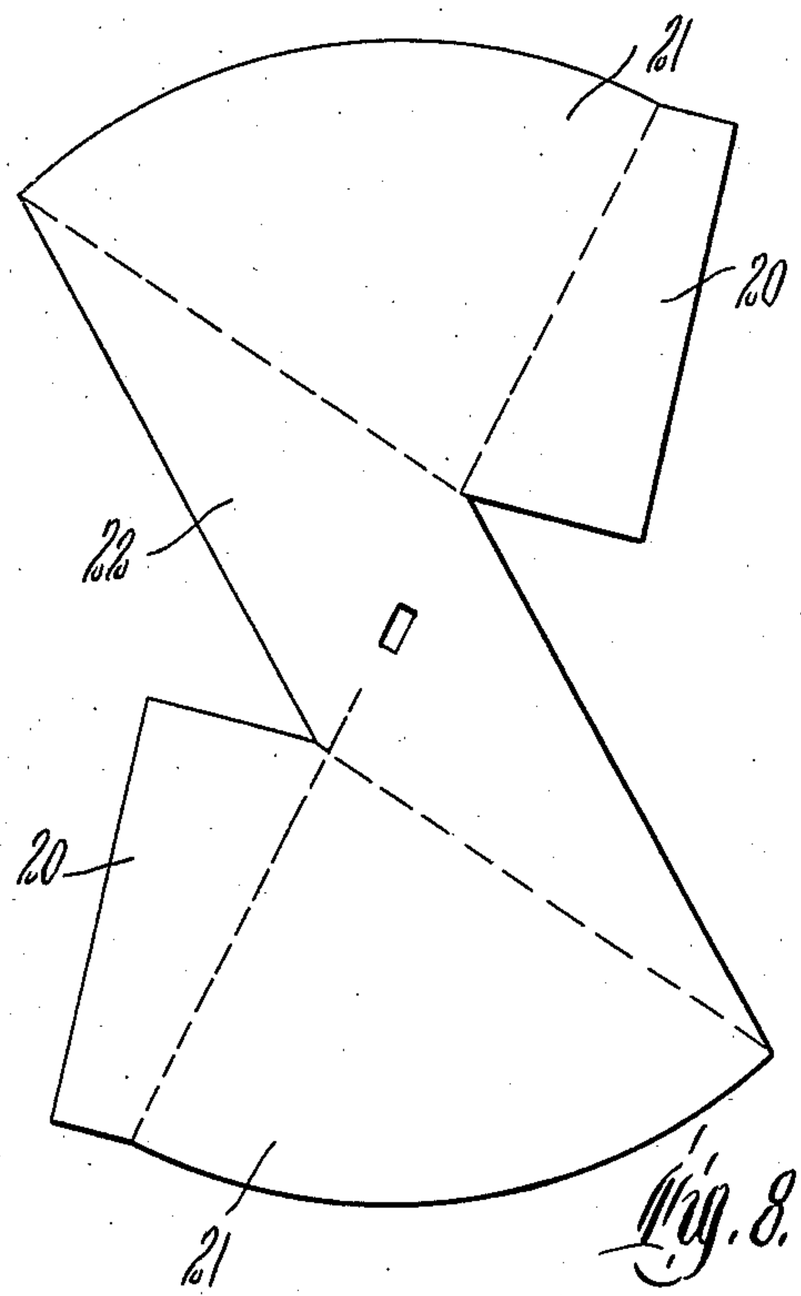

Fig. 8.

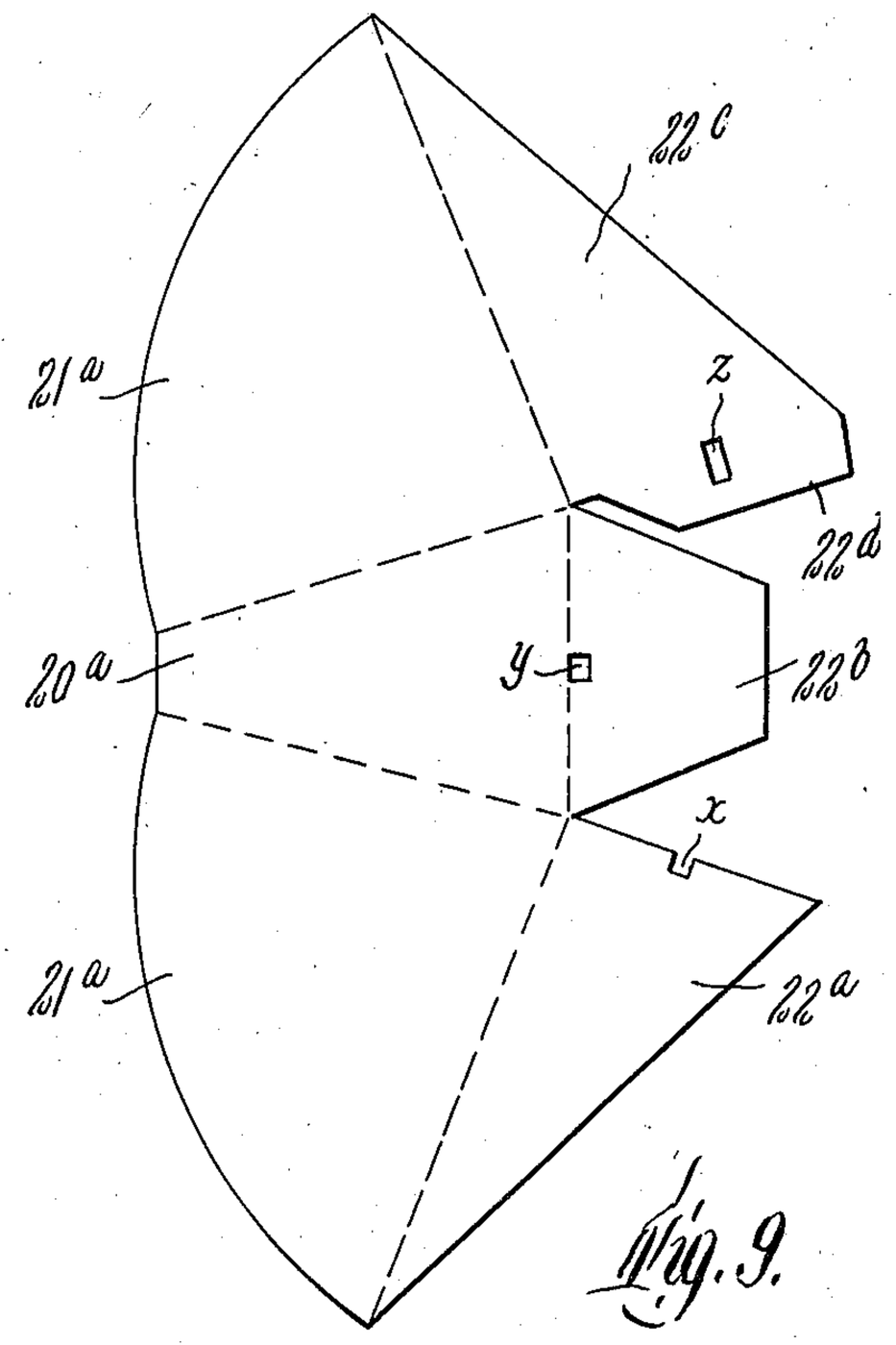

Fig. 9.

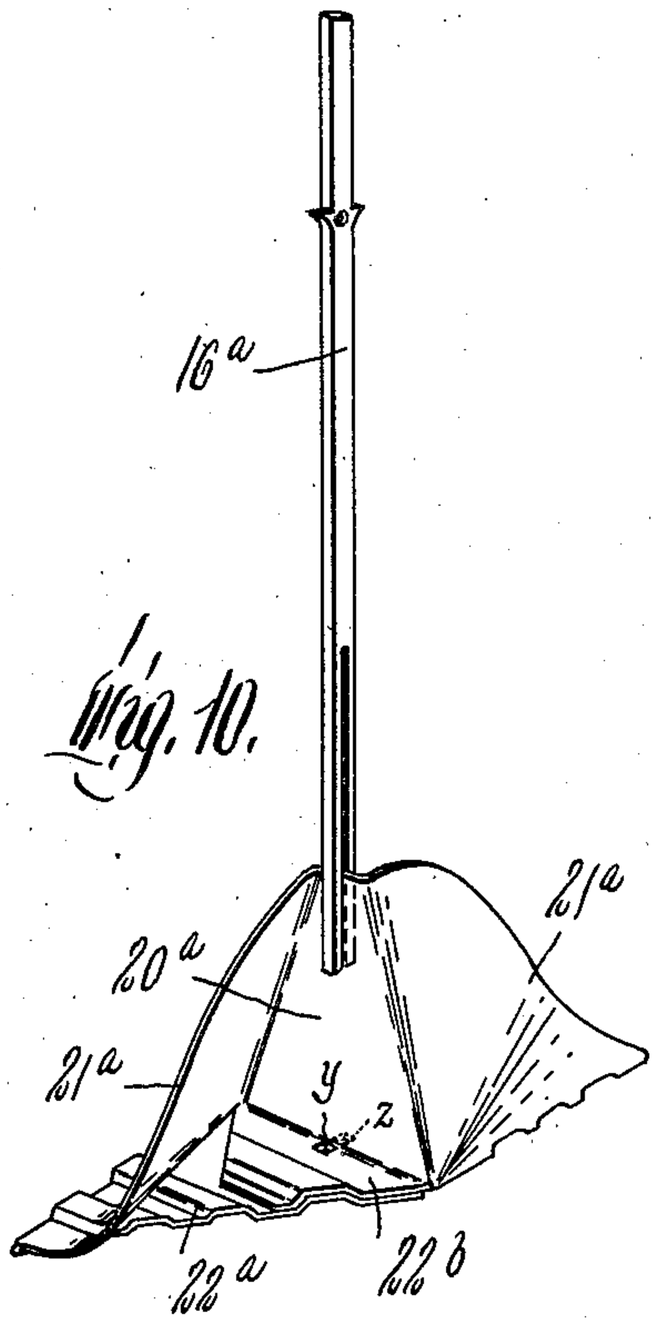

Fig. 10.

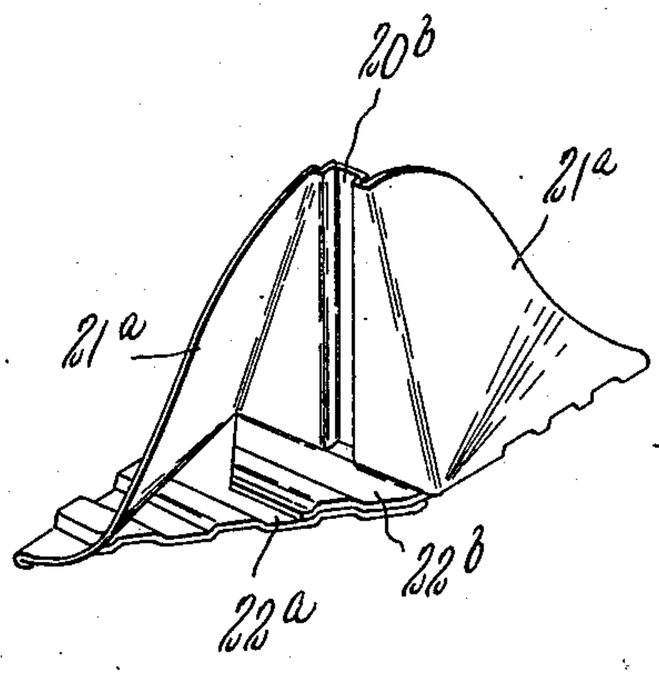

Fig. 11.

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UNITED STATES PATENT OFFICE

2,123,600

MIXER CAN

Antonio Galante, Medford, Mass.

Application February 11, 1937, Serial No. 125,178

6 Claims. (Cl. 259—107)

This invention relates to cans such as are suitable for packaging, shipping and selling paint or other material of a nature that when it is allowed to stand, settling of some constituents occurs, this invention having for its purpose to provide a mixing device in the can by which mixing of the constituents before use may be readily effected.

One of the objects of this invention is to provide a mixer of efficient construction.

Another object is to provide a structure including the mixer which will add little to the cost of the can, so that it may be freely used for its intended purpose without the additional cost due to the presence of the mixer becoming an important item in the entire cost of the package.

For a more complete understanding of this invention, reference may be had to the accompanying drawings in which

Figure 1 is a central vertical section through a can embodying the invention and before the annular top rim for receiving the can cover has been assembled therewith.

Figure 2 is a fragmentary section through the top edge of the can showing the top rim assembled and the cover in position to be applied.

Figure 3 is a detail section similar to a portion of Figure 1, but showing the handle for the mixer in operative position.

Figure 4 is a section on line 4—4 of Figure 1.

Figure 5 is a perspective view of the can cover.

Figure 6 is a perspective view of the mixer and a bearing brace therefor.

Figure 7 is a fragmentary perspective view showing the cooperative securing portions of the can and the bearing brace.

Figure 8 is a development of the mixer blade member shown in Figures 1, 3, 4, and 6.

Figure 9 is a development of a modified construction of mixer blade.

Figure 10 is a perspective view showing the blade made up from the blank of Figure 9 and showing one method of securing the mixer shaft thereto.

Figure 11 is a perspective view somewhat similar to Figure 10, but showing a further modification.

Referring first to Figure 1, at 1 is indicated a pail or can which may be formed of sheet material and provided with a bottom wall 2 and a side wall 3 which may be joined as by crimping, as at 4. The top edge of the wall 3 is formed with an outwardly extending flange 5. Oppositely disposed on its outer face are a pair of bail-receiving ears 6. These may be of the well known construction, comprising dished elements having their inwardly flanged margins 7 secured to the outer face of the wall member 3, as by soldering, or in any other suitable manner, and having perforations 8 in their ends to receive the ends of a bail 9. These bail ears not only serve to receive the bail 9, but they also serve to house and conceal sockets 10 (see Figures 1 and 7) which are formed by pressing the wall material 1 outwardly and within the areas covered by the bail ears. These depressions 10 form sockets for receiving opposite ends of a transverse brace member 11 which extends across the can below its flanged top 5. As shown this brace is a sheet metal stamping having marginal side flanges 12, end flanges 13, and corrugations 14. The corrugations 13 and the flanges 12 form longitudinal stiffening ribs, so that relatively light and inexpensive sheet metal may be employed for this member. Between the corrugations 14 it is shown as provided with a bearing opening 15 within which may be journaled a shank 16 of a mixing device. This shank may be journaled at its lower end 17 in a depression 18 in the can bottom 2 and this can bottom may be provided with concentric reinforcing circular corrugations 19.

The member 16 carries at its lower end and in close proximity to the bottom 2 of the can, a mixing device shown best in Figure 6. This comprises a sheet metal member having an intermediate portion 20 which may be attached by any suitable means to the shank 16 and which, as shown, is tapered in width, its narrower end being uppermost. From this intermediate portion extend the oppositely disposed wings 21, and a reinforcing bottom plate 22 may bridge the lower ends of both the wings 21 and the intermediate portion 20. The wing portions 21 may be curved, as shown best in Figure 3, so that as the mixer is turned it has a tendency to cut away any material which may have settled in the can and force it upwardly as shown by the arrows in this figure, thus to lift the settled material and stir it into the other contents of the can, while the lighter, unsettled material may flow in beneath the lifted portion so that a thorough mixing action is produced when the shank 16 is turned.

The base member 22, the wings 21 and the intermediate portion 20 may be formed up in various ways from a single sheet of material. As shown in Figures 3, 4, 6 and 8 the wings 21 are bent upwardly and backwardly from opposite edge portions of the member 22 and the portion 20 is formed by overlapping edges extending from the wings 21.

As shown in Figures 9, 10, and 11, the wings 21*a* extend from opposite edges of a one piece intermediate portion 20*a*, the base being formed in three portions 22*a*, 22*b* and 22*c*. The blank is folded up with the portion 22*b* overlapping the portion 22a and an edge extension 22*d* from the portion 22*c* underlapping both, the notch *x* and the openings *y* and *z* being brought into registry. These lapping parts are secured together by any suitable means such as spot welding or the like. The shaft or shank 16*a*, as shown in Figure 10, may be split at its lower end to take over opposite sides of the section 20*a* and then be extended through the openings *x*, *y* and *z*, after which the parts are closed together to firmly grip the sheet metal piece, or instead of splitting the shank the member 22*a* may be formed with a laterally offset channel 20*b*, as shown in Figure 11, in which the shank may be suitably secured as by riveting or spot welding or by any other suitable method.

The bottom member 22 and the adjacent lower edges of the wings 21 may be corrugated to substantially fit the corrugations 19 of the bottom wall of the can.

The mixer and the brace 11 are assembled in the can, it being an easy matter to spring outwardly the side wall 1 along the diameter of the brace 11 until the brace may be sprung into position in the sockets 10. Thereafter a top rim member 25 shaped to receive the friction cover 27 shown in Figure 2 may be placed in position at the top of the can, and its outwardly extending top flange 28 and the flange 5 may be turned and crimped as shown in Figure 2 to secure the top member 25 in position. This member so stiffens the top portion of the can as to prevent accidental distortion of the side wall 1 sufficiently to disengage the brace 11, so that the parts are held firmly in position. The shank 16 below the brace 11 is preferably provided with laterally extending portions 30, which may be struck out therefrom, in position to prevent the mixer from being pulled upwardly out of journaled engagement with the can bottom after the brace 11 has been assembled in the can.

The cover 27, as shown in Figure 5, is preferably provided with a depression 35 for the reception of a handle or crank 36 which may be employed to rotate the mixer after the can has been opened. A flap 38 may be secured to the top face of the can cover and normally be extended over the depression 35, as shown in dotted lines in Figure 5, to hold the crank member 36 in place until it is desired to use it, whereupon the free end of the strip 38 may be pried up and the crank released. As shown in Figure 3, this crank comprises a shank 40 terminating at one end in an S-shaped portion 42. The cross portions 43 and 44 of this S-shaped part are perforated for the non-rotatable reception of the top end of the member 16, which is non-rounded in cross section, so that the handle may be placed in position over the top end of the member 16 with its end resting against the shank portion 40, thus to limit the extent to which the crank handle may be pressed down onto the member 16. By grasping the handle portion 45 of this crank, the mixer may be turned to effect the desired mixing operation.

It will thus be seen that when the can has been filled and closed, the mixer is entirely concealed therein, but as soon as the can has been opened by prying off the top, and the crank has been removed from the top, it can be assembled with the mixer and the contents of the can thoroughly mixed in an expeditious manner. Moreover, the entire construction is simple and cheaply made so that it does not add materially to the cost of the can.

From the foregoing description of an illustrated embodiment of this invention, it should be evident to those skilled in the art that various changes and modifications may be made without departing from the spirit or scope of this invention as defined by the appended claims.

I claim:

1. A mixer comprising a shaft, and a sheet metal piece secured to said shaft and comprising an intermediate portion of tapered width lying along said shaft, wing portions bent in opposite directions from said intermediate portion, and a base binding the lower edges of said intermediate and wing portions together, certain parts of said piece being arranged in lapping relation.

2. A mixer comprising a shaft, and a sheet metal piece cut and bent into partly lapping relation to form a base, wing portions extending back and up from said base, and an intermediate portion extending from said wing portions, said intermediate portion being secured to said shaft.

3. A mixer comprising a shaft, and a sheet metal piece cut and bent to form a base, wing portions extending back and up from said base, and an intermediate portion extending from said wing portions, said shaft being split for the reception of said intermediate portion and extending through a perforation in said base.

4. A mixer comprising a shaft, and a sheet metal piece having an intermediate portion secured to said shaft, wings integral with said intermediate portion, and base portions integral with said wings and intermediate portion and secured together in overlapping relation.

5. A can having a side wall provided with oppositely disposed external bail-receiving ears, the material of said wall being outwardly pressed to form a pair of sockets concealed on the outside of said can by said ears, a reinforcing and stiffening annular member secured to said side wall above said ears, and a brace member extending across within said can and having its ends seated in said sockets.

6. A can having a side wall provided with oppositely disposed external bail-receiving ears, the material of said wall being outwardly pressed to form a pair of sockets concealed on the outside of said can by said ears, a brace member extending across within said can and having its ends seated in said sockets, a bearing at the bottom of said can, a reinforcing and stiffening annular member secured to said side wall above said ears, and a mixer having a portion journaled in said bearing and in an opening through said brace member.

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