Sept. 7, 1926. 1,598,665

J. P. URBAN

MOLD FOR CONCRETE GARBAGE RECEPTACLES

Filed Oct. 12, 1923 6 Sheets-Sheet 1

Fig. 1.

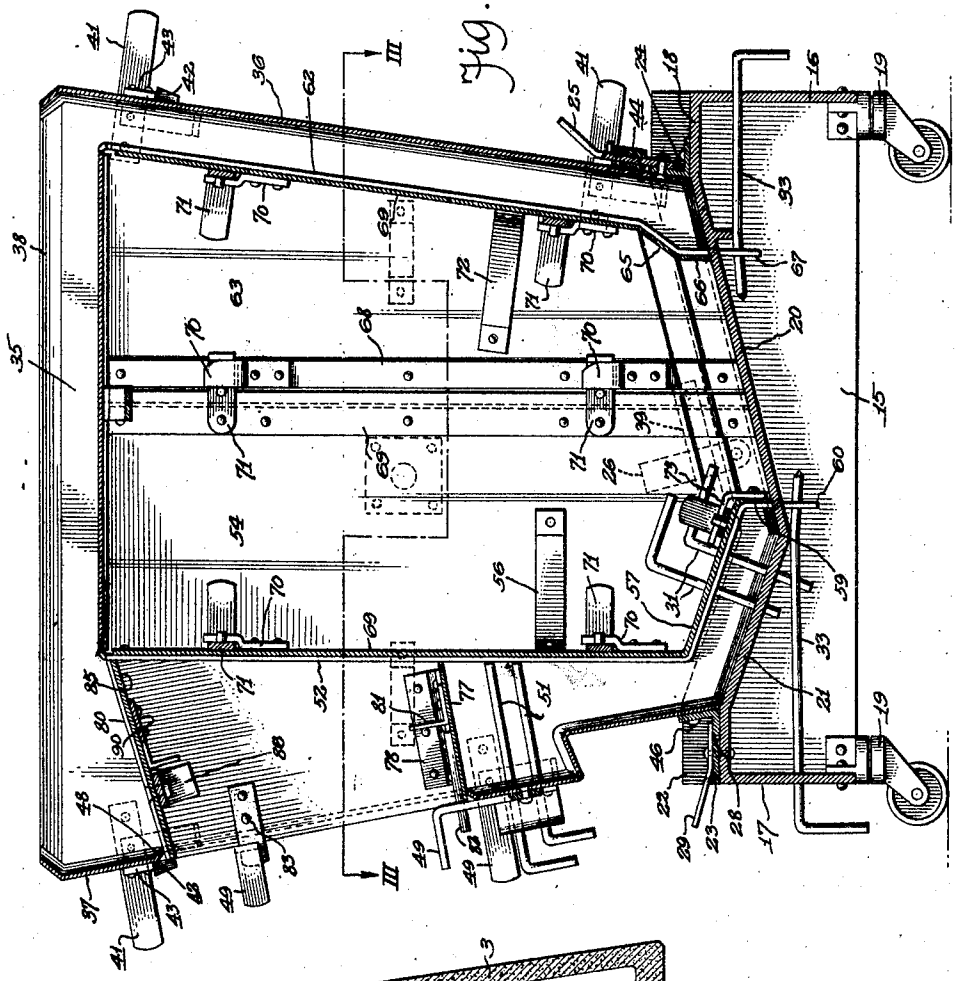
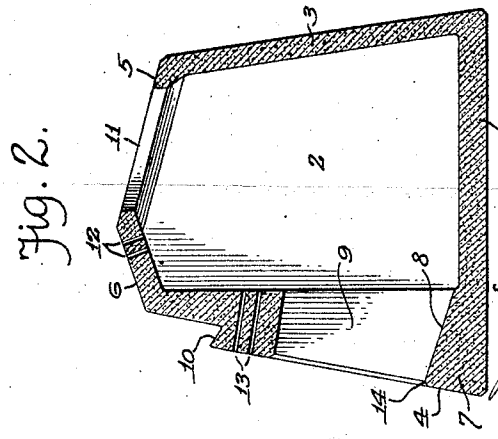


Fig. 2.



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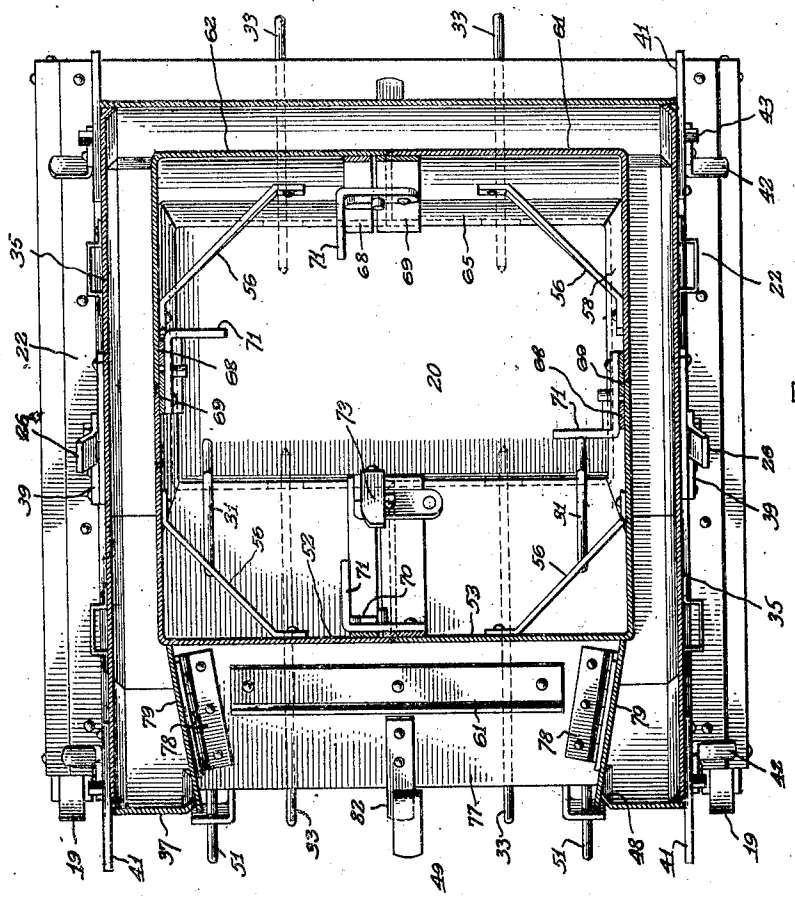


Fig. 3.

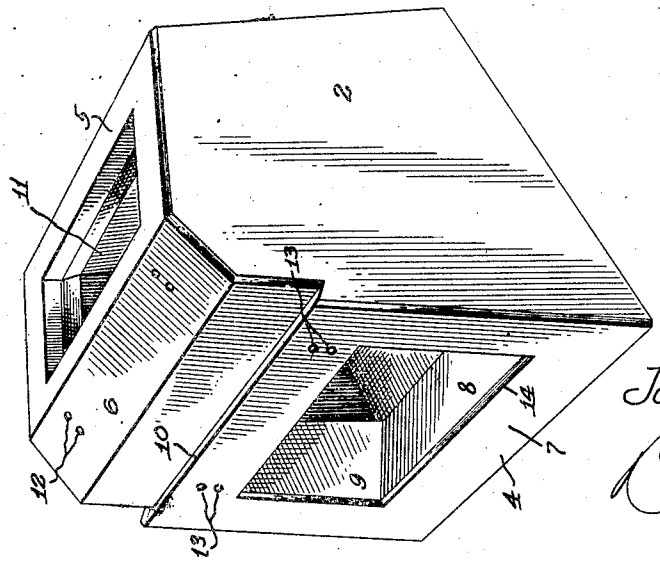


Fig. 4.

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MOLD FOR CONCRETE GARBAGE RECEPTACLES

Filed Oct. 12, 1923 6 Sheets-Sheet 3

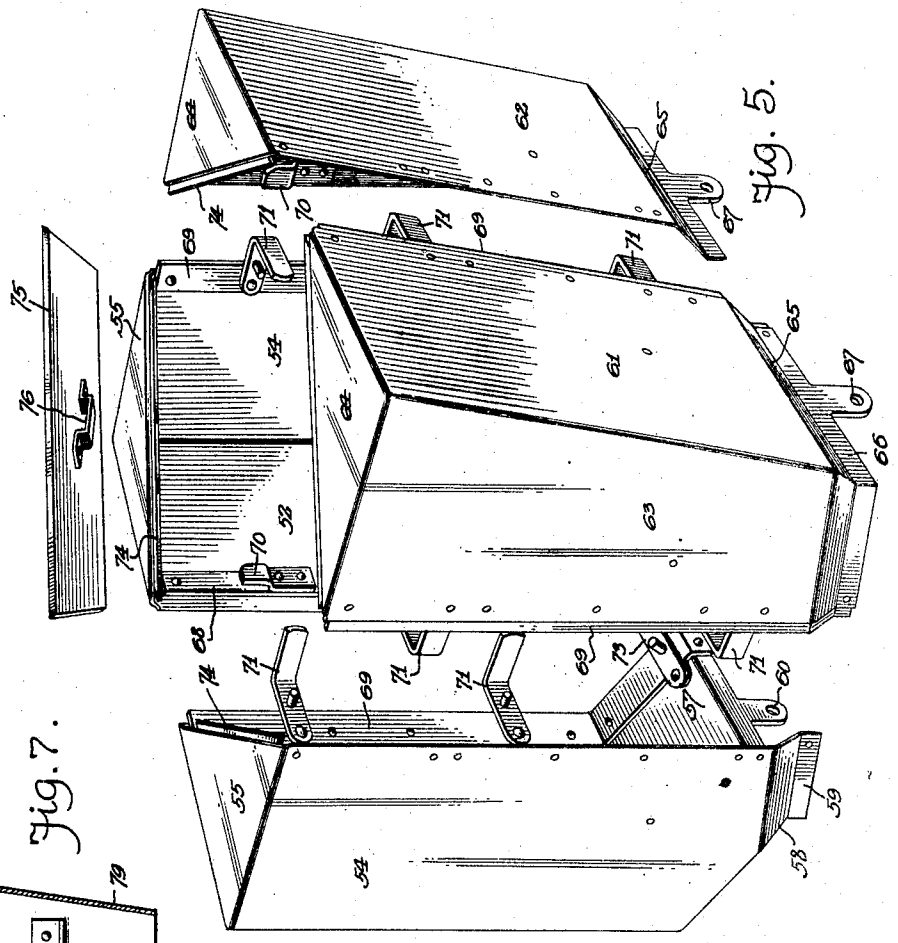


Fig. 5.

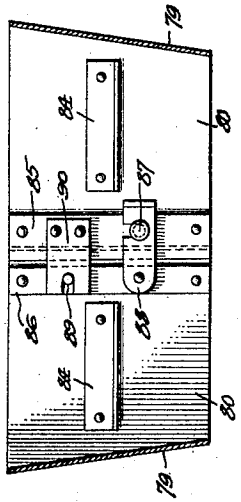


Fig. 7.

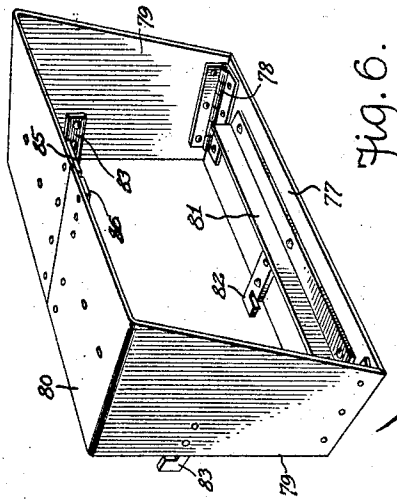


Fig. 6.

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MOLD FOR CONCRETE GARBAGE RECEPTACLES

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Fig. 9.

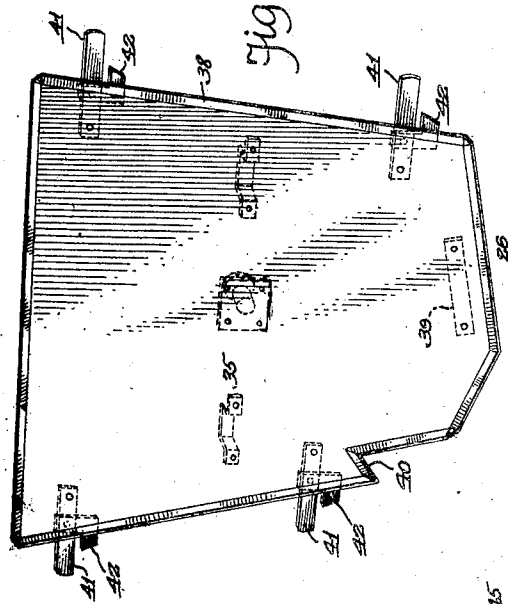


Fig. 8.

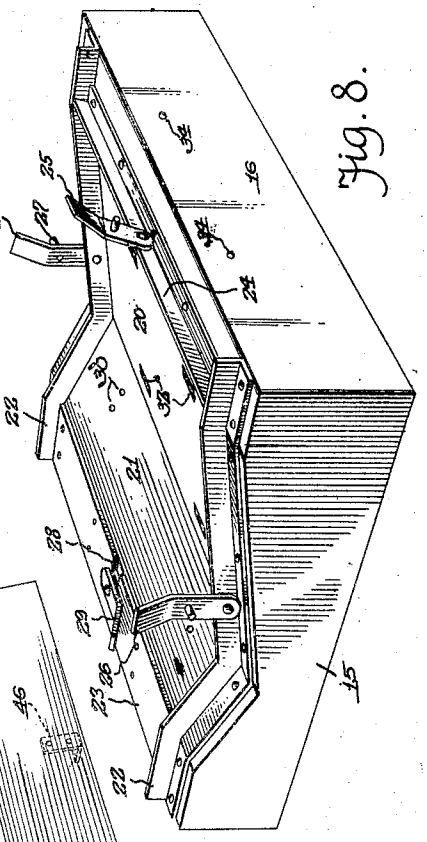


Fig. 10.

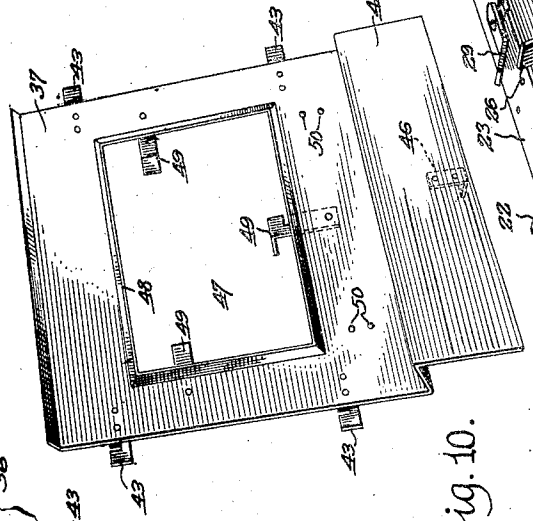
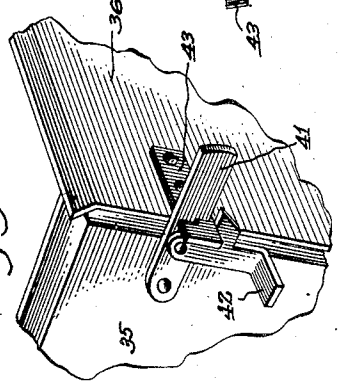


Fig. 11.



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MOLD FOR CONCRETE GARBAGE RECEPTACLES

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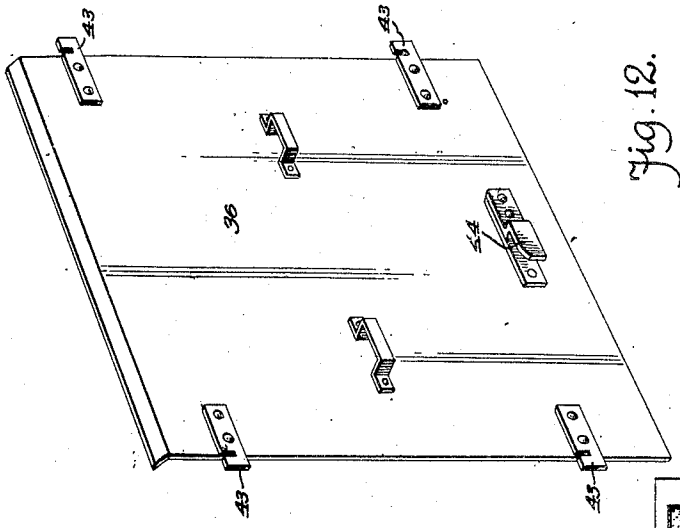



Fig. 12.

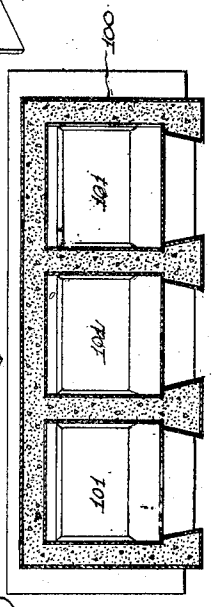



Fig. 17.

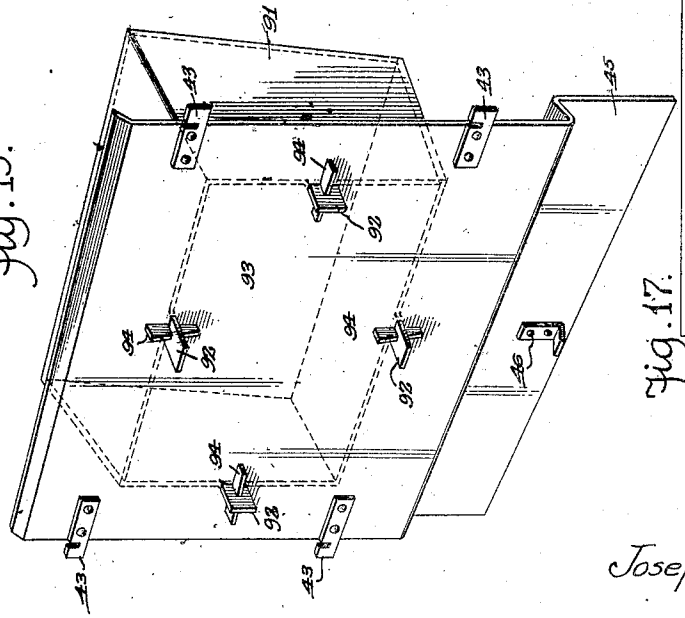



Fig. 13.

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MOLD FOR CONCRETE GARBAGE RECEPTACLES

Filed Oct. 12, 1923 6 Sheets-Sheet 6

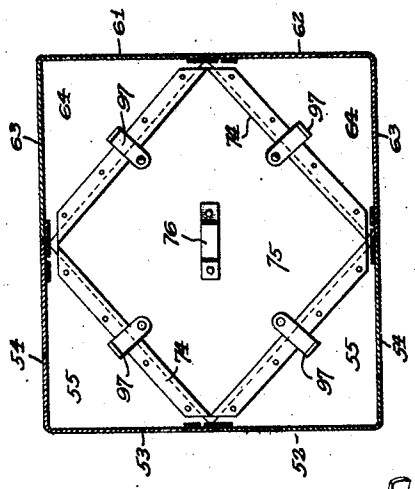


Fig. 15.

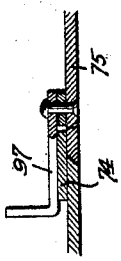


Fig. 16.

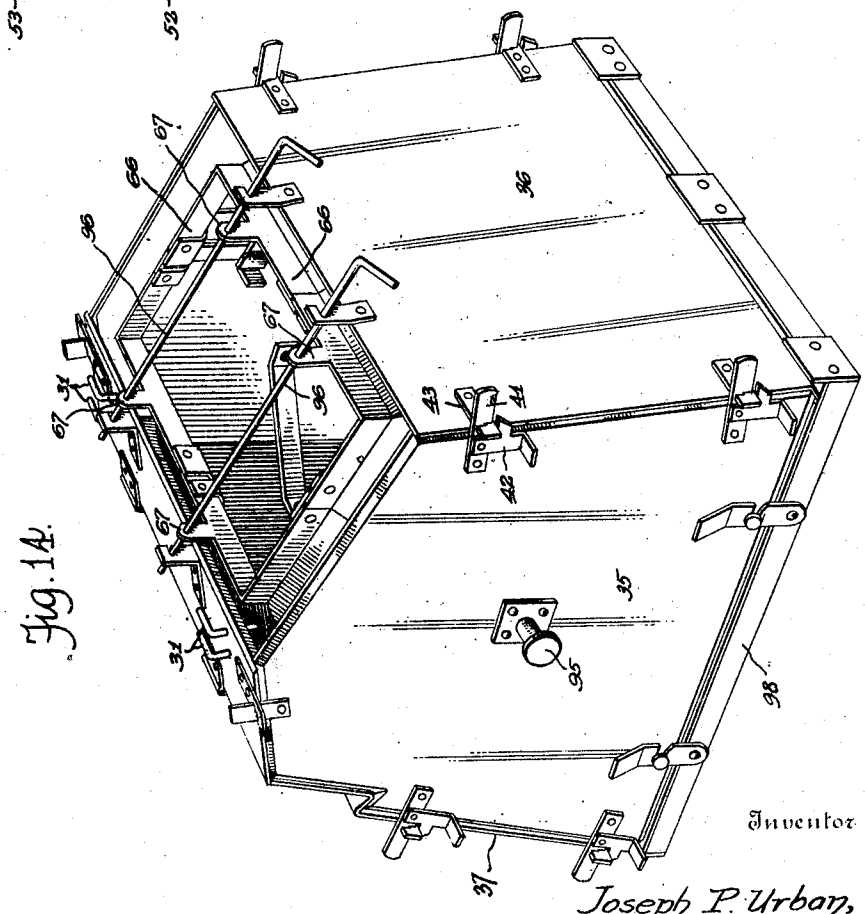


Fig. 14.

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# UNITED STATES PATENT OFFICE.

JOSEPH P. URBAN, OF DETROIT, MICHIGAN, ASSIGNOR TO DETROIT CONCRETE RECEPTACLE CO., OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

## MOLD FOR CONCRETE GARBAGE RECEPTACLES.

Application filed October 12, 1923. Serial No. 668,141.

This invention relates to a mold for concrete garbage receptacles and my invention aims to provide a mold by which receptacles, boxes or containers may be expeditiously and economically manufactured from concrete or other plastic material. The receptacles or boxes have been especially designed for holding garbage, but may be made to hold ashes and other matter. For garbage and ashes the receptacles are adapted to be located on the alley fence line of a piece of property so that the outlet portion of the receptacle or box is exposed at the alley and the greater part of the receptacle or box on the property of the receptacle owner. The receptacle or box can therefore be filled on the inner side of the fence or wall and the contents of the receptacle removed at the outer side of the fence or wall. On account of the alley side of the receptacle or box being exposed to vehicular traffic and rough handling by garbage or ash collectors, it is essential that the receptacle or box be made as strong and durable as possible. Such is also essential in order that the receptacle or box may withstand the elements and permit of thorough cleaning or flushing for sanitary reasons. It is in this connection, that the receptacle or box is made practically water proof with liquid shedding walls and gutters so that no water may enter the receptacle and set up an unsanitary condition. The receptacle is also constructed so that the contents thereof may be easily removed and the interior of the receptacle left reasonably clean.

My invention further aims to provide a collapsible mold consisting of an outer wall form; an inner wall form or core; an outlet opening form or core, and a movable mold base, all of which may be readily assembled to form a durable structure in which concrete or other plastic material may be poured, tamped and operated upon to insure a perfect article for seasoning or curing, after the mold parts are removed.

My invention further aims to provide molds which will permit of molding operations being performed in two ways, namely, molding the article in an inverted position or molding the article in an upright position. The mold in either instance makes provision for the installation of various pieces of hardware by which doors, lids or other metallic parts may be readily attached to the molded article to complete the same, the manner of attaching such hardware permitting of the metallic pieces being readily renewed should occasion so require.

In order that my invention may be clearly understood I will hereinafter describe, under different captions, the article; the mold base; the outer wall form; the inner wall form or core; the outlet opening form or core, and then briefly review a molding operation.

Reference will now be had to the drawings, wherein

Figure 1 is a vertical longitudinal sectional view of the mold parts assembled and ready to receive concrete for producing an inverted article;

Fig. 2 is a vertical sectional view of the concrete receptacle which I produce as a new article of manufacture;

Fig. 3 is a horizontal sectional view taken on the line III—III of Fig. 1;

Fig. 4 is a perspective view of the concrete article;

Fig. 5 is a similar view of the inner wall form or core showing the parts thereof separated and in relative positions for assembling;

Fig. 6 is a perspective view of an outlet opening form or core;

Fig. 7 is a horizontal sectional view of the same looking towards the top of the form or core;

Fig. 8 is a perspective view of a portion of the mold base;

Fig. 9 is a similar view of one of the side walls of the outer wall form;

Fig. 10 is a similar view of the front wall of the outer wall form;

Fig. 11 is a similar view of a portion of the outer wall form showing one of the wall clamping devices;

Fig. 12 is a perspective view of a rear wall of the outer wall form;

Fig. 13 is a similar view of a modified form of front wall and outlet opening core;

Fig. 14 is a perspective view of assembled mold parts for producing an article in upright position.

Fig. 15 is a horizontal sectional view of a portion of such mold showing a closure therefor;

Fig. 16 is a detail sectional view of the closure; and

Fig. 17 is a horizontal sectional view of a multi-compartment receptacle.

*The article (Figs. 2 and 4).*

As stated in the beginning the receptacle is made of concrete or other plastic material and the receptacle comprises a bottom wall 1, vertical side walls 2, an inclined rear wall 3, an inclined front wall 4, and a top wall having a rear inclined portion 5 and a front inclined portion 6. The walls 1, 2 and 3 are practically the same thickness, although the bottom wall 1, at the front wall 4, has a thick portion 7 affording an inclined way 8 meeting the inner face of the bottom wall 1, the inclined way 8 forming the bottom wall of an outlet opening 9 which serves as a doorway to the receptacle to permit of a shovel being placed on the inclined way 8 and pushed along the bottom wall 1 to scoop up any garbage in the receptacle and thus permit of practically the entire contents of the receptacle being removed without garbage lodging in corners of the receptacle.

The front wall 4 is of greater thickness than the other walls on account of being more exposed than the other walls, also on account of having the outlet opening or doorway 9, said front wall tapering outwardly from the top inclined portion 6 to the bottom wall 1, with the inner face of the front wall 4 substantially vertical above the outlet opening 9. The opening 9 is rectangular and above the outer end of said opening is a transversely disposed gutter or drain ledge 10 which will prevent rain from draining off of the top of the receptacle into the opening 9. The gutter or ledge 10 is substantially V-shaped in cross section and may be slightly inclined from one side wall of the receptacle to the other so that any collected water may drain to one side of the receptacle.

The inclined portion 5 of the top wall is provided with a rectangular inlet opening 11 through which garbage is deposited in the receptacle, and the inclined portion 6 of the top wall is formed with small openings 12 to facilitate securing hardware to the concrete receptacle for hingedly holding a lid that will close the opening 11.

The front wall 4 has openings 13 so that hinges may be attached to the concrete receptacle for a lid that will close the outer end of the outlet opening or doorway 9, and the walls of said outlet opening are beveled, as at 14 to avoid sharp edges.

I have used the terms "front" and "rear" when referring to the walls 3 and 4 for the convenience of describing the article when made in the mold, but in reality the wall 4 is an outer wall and the wall 3 an inner wall, since the concrete receptacle is ordinarily installed in the opening of a fence or the wall of a shed or other building, with the wall 4 facing on an alley and the wall 3 projecting into a yard, whereby garbage may be deposited in the receptacle and readily removed therefrom by garbage collectors.

The hardware used in connection with the concrete receptacle includes strong and durable hinges anchored by means of nut equipped bolts or other fastening means extending through the openings 12 and 13, and the hinges are adapted to support metallic lids which will remain closed over the openings 9 and 11 with the lid of the opening 9 remaining open by resting against the upper portion of the wall 4, while garbage is removed from the receptacle. The lids are adapted to prevent water from entering the openings 9 and 11 and it is obvious that various kinds of lids may be employed for this purpose.

The article when finished may have beveled or rounded edges, smooth walls, and in some instances provided with bottom drain openings to facilitate flushing and cleaning the receptacle.

*Mold base (Figs. 1, 3 and 8).*

The base of the mold comprises side walls 15, rear walls 16, a front wall 17 and a top wall 18. These walls may be integral as in a casting. The base is substantially rectangular in plan and at the juncture of the walls 15, 16 and 17 may be secured casters 19 to facilitate moving the base about.

The top wall 18 has converging inclined portions 20 and 21 throughout the width thereof and mounted on the top wall throughout the length thereof, are angle braces 22 which are located in proximity to the side walls 15. Connecting the forward ends of the side braces 22 and suitably secured to the top plate 18 is a ledge plate 23. Mounted on the top wall 18, adjacent the rear wall 16 is an angle brace 24 connecting the side braces and intermediate the ends of the rear brace 24 and the ends of the side braces 22 are pivoted latches 25 and 26 provided with pins 27.

The ledge plate 23 is notched intermediate its ends, as at 28 and adjacent said notch is a pivoted latch 29.

The inclined portion 21 of the top wall 18 has openings 30 to receive pins 31 which will eventually produce the openings 12 in the inclined portion 6 of the article, as will hereinafter appear, and the inclined portion 20 of the top wall 18 has slots 32 to facilitate positioning the inner wall form or core relative to the mold base. Such form of core may be held in position by rods 33 ex-

tending through openings 34 in the walls 16 and 17 of the base.

*Outer wall form (Figs. 1, 3, 9, 10 and 11).*

The outer wall form comprises side walls 35 which are identical in construction, the rear wall 36 and the front wall 37. The walls 35 have beveled or flanged marginal edges 38 adapted to produce beveled or rounded edges on the walls of the finished article and these side walls are adapted to be placed in vertical positions on the mold base at the inner sides of the side braces 22, the side walls 35 having lower angular edges conforming to the inclined portions 20 and 21 of the mold base. Adjacent the lower edges of the side walls 35 are keepers 39 adapted to be engaged by latches 26 with the pins 27 of said latches riding on to the keepers to hold the lower edges of the side walls 35 down on the mold base.

The front edges of the side walls 35 are inclined inwardly from the upper edges of said side walls to the bottom edges thereof, and are furthermore recessed, as at 40, to contribute towards the formation of the front wall 4 at the gutter 10 of the article.

The front and rear edges of the side walls 35 are provided with fixed latches 41 and pivoted latches 42, the fixed latches adapted to engage in slotted keepers 43 carried by the rear wall 36 and the front wall 37, while the pivoted latches 42 engage under the keepers 43, as best shown in Fig. 11, and positively hold the edges of the walls 35, 36 and 37 in adjoining relation.

The rear wall 36 is disposed at an inclination to the mold base, at the inner side of the rear brace 34, and adjacent the lower edge of the rear wall 36 is a keeper 44 in and over which the pinned latch 25 may engage to hold the lower edge of the rear wall 36 in engagement with the mold base.

The front wall 37, as well as the rear wall 36, has side edges which fit against the beveled or flanged edges of the side walls 35, as best shown in Fig. 3, and the front wall 37.

The lower portion of the front wall 37 is inset to form an angular portion 45 which fits in the recesses 40 of the side walls 35 and contributes to the formation of the gutter 10 in the front wall 4 of the finished article. At the lower edge of the angular portion 45 is a keeper 46 adapted to fit in the notch 28 of the ledge plate 23, carried by the mold base, and the latch 29 of the mold base is adapted to be swung over the keeper 46 to retain the lower edge of the front wall 37 on the mold base.

In the upper portion of the front wall 37 is a rectangular opening 47 and the material at the marginal edges of said opening is beveled or flanged, as at 48, and provided with pivoted latches 49. The front wall 37 is also provided with openings 50 for pins 51 adapted to produce the openings 13 in the finished article.

*Inner wall form or core (Figs. 1, 3 and 5).*

The inner wall form or core, like the outer wall form, is collapsible and is made of two front sections and two rear sections with one of the rear sections serving as a key adapted with other devices to maintain the four sections assembled to form a hollow body that may be erected in the outer wall form to cooperate therewith in producing the article, the inner wall form being collapsed within the article and removed through the opening 11 thereof.

The front sections have front walls 52 and 53 with each front wall provided with a side wall 54 and a top wall 55. The walls 54 are disposed at a right angle to the walls 52 and 53 and the top walls 55 are triangular in plan. Connecting the inner faces of the walls 52 and 54, and the walls 53 and 54, are braces 56. The side walls 54 are practically straight throughout their length and the front walls 52 and 53 are of less length than the side walls and adjoin inclined walls 57. The lower ends of the side walls 54 terminate in inclined walls 58 and the walls 57 and 58 have depending flanges 59 with the flanges of the walls 57 provided with depending apertured tongues 60 adapted to extend through slots 32 of the mold base and be held by the pins 33.

The rear sections of the inner wall form or core have rear walls 61 and 62, side walls 63 and top walls 64. The rear sections are somewhat similar to the front sections and the lower ends of the walls 61, 62 and 63 adjoin inclined walls 65 having flanges 66 with some of said flanges provided with depending apertured tongues 67 adapted to extend through the remaining slots 32 of the mold base and be held by the pins 33 of the wall 16.

In order that the front and rear sections may be properly assembled and firmly held in place, the edges of all of the section walls which are placed in adjoining relation are beveled and stiffened or reinforced by longitudinal strips 68 and 69 riveted or otherwise fixed to the inner faces of the section walls with the strips 69 of greater width than the strips 68 so that the former will overlap the beveled joint between the walls 52, 53, 61, 62, 54 and 63. The strips 68 and 69 extend on to the inclined walls 57, 58 and 65 and on to the flanges of said wall, and on the strips 68, adjacent the upper and lower ends thereof, are keepers 70 for pivoted pinned latches 71 carried by the strips 69.

The walls 61 and 63 have braces 72, similar to the braces 56, and an additional latch

and keeper, generally designated 73 is used in connection with the inclined walls 57 of the front sections.

The hypothenuse edges of the top walls 55 and 64 are provided with projecting strips 74 forming a seat for a core closure 75 which has beveled edges to meet the beveled edges of the walls 55 and 64. The inner face of the closure 75 may have a handle 76.

When the front and rear sections of the core are assembled there are smooth exterior walls confronting the walls of the outer form and in spaced relation thereto so that concrete or other plastic material may be poured or otherwise placed about the core and over the top thereof. The concrete placed on top of the core is adapted to form the bottom wall 1 of the article and the concrete under the core forms the inclined top walls 5 and 6 of the article with the flanges 59 and 66 producing the opening 11.

The inclined walls 57 have openings for the pins 31 which produce the openings 12 in the article, and the manner of articulating the four sections of the core prevents collapse thereof by pressure of concrete or during manipulation of the mold.

*Outlet opening form or core (Figs. 1, 3, 6, 7, 12 and 13).*

This form of core comprises a bottom wall 77 and hingedly connected to the ends thereof, as at 78, are end walls 79 provided with integral top walls 80, all of said walls cooperating in forming a form or core which is substantially oblong or rectangular with the open ends thereof disposed at an angle to each other, so that the rear edges of the walls may fit against the front walls 52 and 53 of the inner core, and the front edges of the outlet opening core fit in the opening 47 of the front wall 37 of the outer wall form.

The bottom wall 77 has its inner face provided with a longitudinal stiffening strip or brace 81 and with a keeper 82 adapted to receive the latch 49 of a wall 37. On the inner faces of the end walls 79 are keepers 83 to receive the side latches 49 of the wall 37.

On the inner faces of the walls 80 are stiffening strips or braces 84 and strips 85 and 86 at the adjoining edges of the walls 80 so as to form a lap joint. The strip 85 has a keeper 87 for a pivoted latch 88 on the strip 86 and said strip has a pin or keeper 89 for a slotted fixed latch 90 on the strip 85. It is by virtue of these keepers and latches that the walls of the outlet opening form may be held in rectangular formation and yet easily collapsed when the outlet opening form is to be removed from a molded article.

Instead of using a collapsible outlet opening form or core, I may use the rigid one-piece form or core 91 shown in Fig. 13, this form having its front end provided with slotted tongues 92 extending through openings in a front wall 93, which may be substituted for the wall 37. Tapered keys 94 are adapted to extend through the tongues 92 and anchor the form 91 relative to the walls 93 and this wall may be devoid of the opening 47.

*Molding operations.*

As shown in Fig. 1 the article is adapted to be molded in an inverted position and with all of the forms properly assembled there is a strong and durable structure, composed of inner and outer shells, between which concrete or other plastic material may be poured, tamped and otherwise operated upon to insure a structure between the shells which is devoid of air gaps and other imperfections. Comparatively dry concrete or plastic material can be used so that in a short period of time the outer wall form can be removed and then the article with the base still attached to the inner wall form, inverted. The pins 31 can then be driven inwardly, the pins 33 removed, and the base removed from what is now the top of the article, thus exposing the opening formed by the flanges 59 and 66 of the inner wall form. It is an easy matter to reach the latches in the core and release said latches so that the key section formed by the walls 61 and 63 may be pulled inwardly and lifted out of what is now the top of the core. Each of the other core sections may be removed and after this is accomplished the outlet opening form or core is collapsed and removed from the opening or doorway 9 of the article.

If the article has not been cured or seasoned with the cores therein, it is now ready to be cured or seasoned and eventually the hardware applied to the article to complete the same.

Instead of molding the article in an inverted position, as shown in Fig. 1, I may use the mold shown in Figs. 14 and 15 to produce an article in an upright position, in which case a flat base 98 is used and the side walls of the outer form provided with trunnions 95 to facilitate handling the mold. The inner wall form or core is suspended in the outer form by means of rods 96 and to prevent the closure 75 from dropping away from the bottom of the inner core pivoted latches 97 may be employed for engagement with the walls 55 and 64. Other slight changes may be made to facilitate manufacture of the article in this manner, and as an instance of such change, I show in Fig. 17 a multi-compartment receptacle which is made by using a large outer mold 100 and cores 101 which are adapted to form compartments for garbage, ashes, tin cans or

other matter, each compartment having inlet and outlet openings such as previously described.

To facilitate handling various parts of the mold suitable handles may be provided and I reserve the right to make such changes in the details of construction as are permissible by the appended claims.

What I claim is:—

1. A mold for maufacturing concrete receptacles having top wall front and rear inclined portions with the rear inclined portion provided with an inlet opening and the receptacle front wall provided with an outlet opening, said mold comprising a base having inclined portions adapted for forming an outer wall form on said base, an inner wall form in said outer wall form and on said base cooperating therewith in the formation of the receptacle inlet opening, and an outlet opening form between said outer and inner wall forms, all of said forms being collapsible.

2. A mold as called for in claim 1, characterized by the outer wall form being composed of walls fastened to said base at the inclined portions thereof with one of said walls having an opening for said outlet opening form.

3. A mold as called for in claim 1, characterized by said inner wall form being composed of four walls resting on said base and portions of said walls extending into said base.

4. A mold as called for in claim 1, wherein said outlet opening form is composed of walls hingedly held so that the hinged walls may be collapsed.

5. A mold as called for in claim 1, wherein the outer wall form has an angular portion adapted for producing a gutter in the front wall of the concrete receptacle.

6. A mold as called for in claim 1, and pins extending from inner wall form into said base and adapted for producing openings in the concrete receptacle to facilitate attaching hardware thereto.

7. A mold as called for in claim 1, wherein the inner wall form has apertured tongues extending into said base, and pins in said base extending into the tongues of said inner wall form.

8. A mold for manufacturing concrete receptacles, having an inlet opening and an outlet opening, said mold comprising a collapsible outer wall form, a collapsible inner wall form adapted to cooperate with said outer wall form in forming receptacle walls with one of said walls having an inlet opening, a collapsible outlet opening form between said wall forms and adapted for producing the outlet opening of the concrete receptacle, and devices for said opening form for maintaining it in a rigid extended position between the inner and outer wall forms.

9. A mold for the manufacture of concrete receptacles wherein the receptacle is produced by placing concrete in an inverted mold, said mold including a base, an outer wall form, an inner wall form, tongues carried by said inner wall form, and means carried by said base adapted to be engaged by said tongues to retain the inner wall form on said base, said wall form being secured to said base so that the inner wall form may cooperate with said base in the formation of a top wall for said receptacle.

10. A mold for manufacturing concrete receptacles having an inlet opening and an outlet opening, said mold comprising a movable base having inclined portions, an outer mold form mounted on said base, latches connecting said outer mold form to said base, an inner mold form mounted on an inclined portion of said base and adapted to cooperate therewith in forming a top receptacle wall having an inlet opening, and an outlet opening form mounted between said outer and inner wall forms and adapted to produce an outlet opening in a concrete receptacle.

11. A mold as called for in claim 10, wherein the outlet opening form is collapsible and is latched to said outer wall form.

In testimony whereof I affix my signature.

JOSEPH P. URBAN.