

Dec. 24, 1929.

G. G. WESTERFIELD

1,740,757

CROCK MAKING MOLD

Filed Sept. 22, 1927

2 Sheets-Sheet 1

Fig. 1.

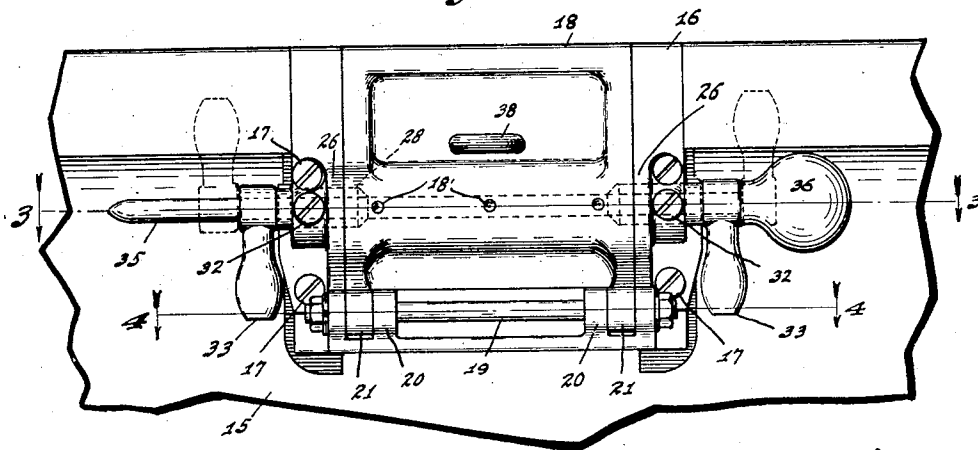


Fig. 2.

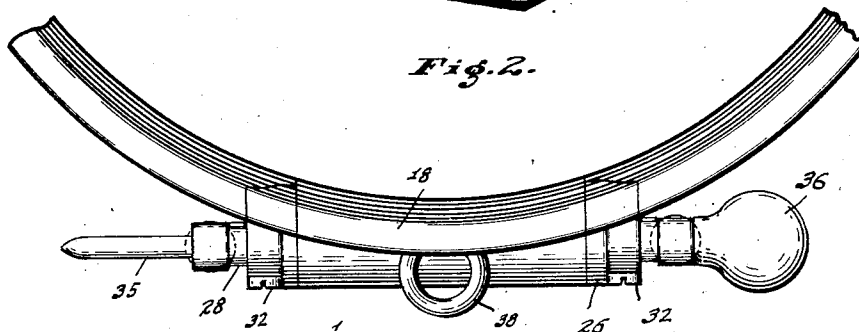


Fig. 3.

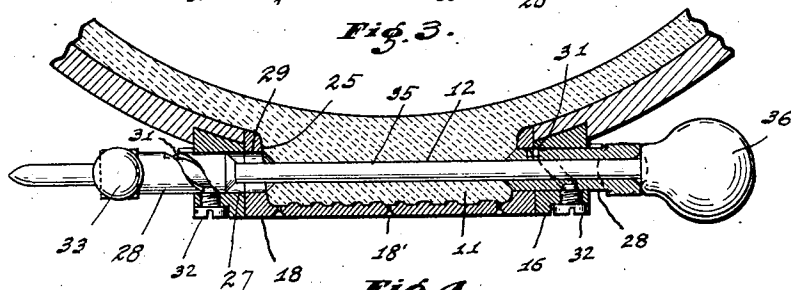
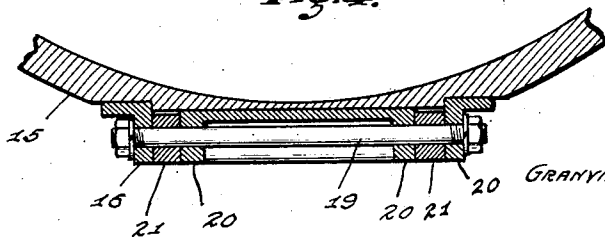


Fig. 4.



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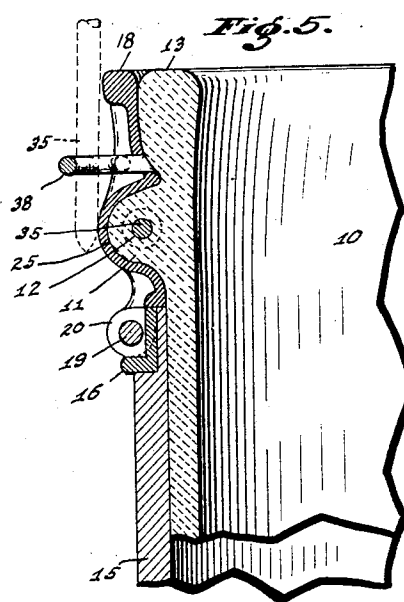
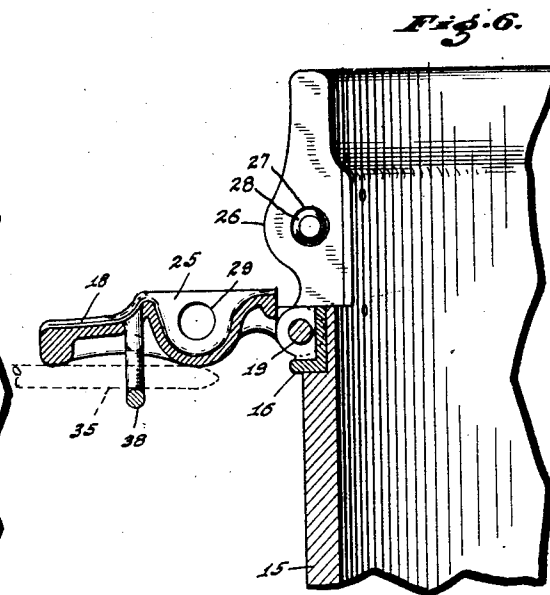
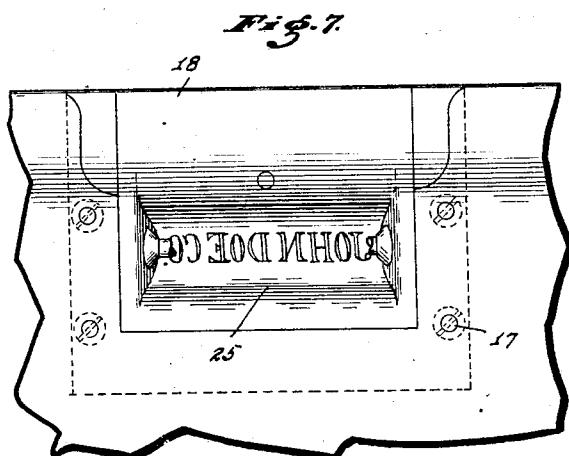
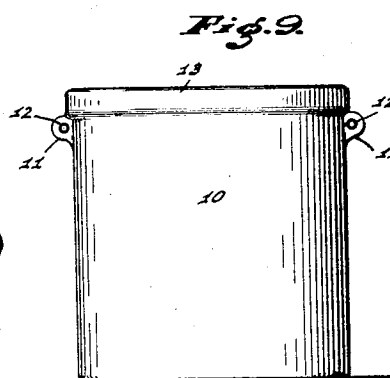
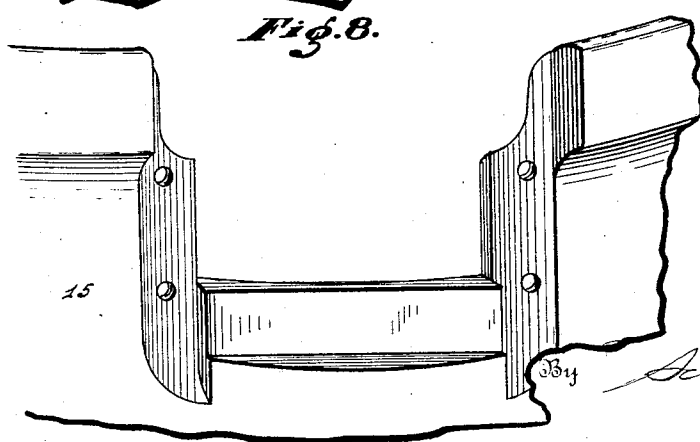
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2 Sheets-Sheet 2



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CROCK-MAKING MOLD

Application filed September 22, 1927. Serial No. 221,172.

My invention is concerned with the manufacture of earthenware jars provided with laterally projecting lugs or ears to which a handle or bail may be attached. Such jars are usually made in hollow rotating dies into which the material for the jars is placed and spread over the interior surface of the die as it rotates. Dies of which I have previously been aware are usually unitary structures; and the jar after it has been shaped as desired is withdrawn from the die by axial movement. The jar, after withdrawal from the die, is placed upon a rotating table and the upper edge of the jar is finished to the desired shape as the jar rotates.

After the jar has dried for a time, the bail-ears or lugs are attached to it. These bail-ears are formed in separate molds and are provided with holes, usually extending through them from end to end, to receive the ends of the wire forming the bail. After being thus formed, the bail-ears are attached to the jar by wetting the engaging faces of each ear and the jar and pressing the ear into place against the outer wall of the jar.

Jars so constructed have the disadvantage that the union between the material of the bail-ear and that of the jar is very frequently faulty with the result that ears frequently break off in use. A further disadvantage of such jars is that bail-ears for jars of various diameters are usually made in the same mold; and when the ear is attached to the jar it is curved more or less to conform to the curvature of the jar, thus deforming the ear and distorting the hole which extends through it. Again, the bail-ears when attached to the jar are frequently inaccurately located, with the result that the jar will tip when lifted by the bails.

Jars with ears formed integral with the jar body have been made in unitary dies by locating the ear at the extreme top of the jar where it will not interfere with withdrawal of the jar from the die. Because of the necessity of providing draft on the ear, the shape of the ear is limited to an undesirable form; and, further, the presence of the ear at the top of the jar interferes with the finishing of the top of the jar.

Among the objects of my invention are to produce a jar in which the bail-ears will be formed integral and simultaneously with the jar body; to provide a jar with ears located below the top edge of the jar in order that they will not interfere with finishing such top edge; to locate the ears accurately at diametrically opposite points; to provide a jar in which the ear may have a pleasing shape not limited by the necessity of providing draft to permit axial withdrawal of the jar; to decrease the cost of manufacture of jars; and to provide bail-ears which are not distorted by the necessity of changing their shape to conform to the curvature of the jar and wall.

I accomplish the above objects by providing a die having a central cavity for forming the body of the jar and cavities or recesses for forming the bail-ears, the last named cavities being located in ear molds which are movable relatively to the body of the die in order to permit their withdrawal from the ear by lateral movement.

The accompanying drawings illustrate my invention: Fig. 1 is a fragmental elevation of a die showing one of the ear molds in place; Fig. 2 is a plan of the parts illustrated in Fig. 1; Figs. 3 and 4 are horizontal sections respectively on lines 3—3 and 4—4 of Fig. 1; Fig. 5 is a fragmental vertical section through the die showing a portion of the jar formed therein; Fig. 6 is a section similar to Fig. 5 but with the jar removed from the die and the ear mold withdrawn from the position it occupies while the jar is being formed; Fig. 7 is an interior view of the die and ear mold; Fig. 8 is a fragmental perspective view of the die-body showing how it is cut out to provide for the mounting of the ear mold; and Fig. 9 is an elevation of the jar made in accordance with my invention.

A jar made in accordance with my invention comprises a jar-body 10, usually cylindrical in form, provided at diametrically opposite points with bail-ears 11 each of which has extending through it a hole 12 for the reception of the ends of the bail (not shown). To strengthen the upper edge of the jar and

to prevent breakage, it is desirably thickened to provide a circumferential flange 13.

To form such a jar I provide a hollow cylindrical die 15, the cavity in which con-
forms generally to the shape of the exterior
surface of the jar body 10. At diametrically
opposite points on the die body and at the top
thereof are cut openings, the walls of which,
as illustrated in Fig. 8, have rabbet grooves
for the reception of a U-shaped bracket 16
conveniently attached to the die body by
means of screws 17. It is in such brackets
that the removable ear molds about to be de-
scribed are located.

Each of the ear molds 18 is desirably piv-
otally attached to its associated bracket 16
by means of a bolt 19 which extends through
overlapping ears 20 and 21 carried respec-
tively by the bracket and mold. In its inner
face, each of the ear molds 18 is provided with
a recess 25 which forms an ear on the mold jar.
Except for the recess 25, the inner surface
of the mold 18 is continuous with the inner
surface of the die body 15.

At points opposite the ends of the recess 25,
the bracket 16 is provided with enlarged por-
tions 26 through which extend alined holes
27 for the reception of sleeves 28, such sleeves
being adapted to be moved into engagement
with holes 29 in the ear mold 18 to hold such
ear mold in place while the jar is being
formed. Desirably, the holes 29 extend
through the wall of the mold 18 at the ends
of the recess 25, and the inner ends of the
sleeves 28 are made conical in form to project
into the recess to form depressions in the ends
of the bail ear. I have found it convenient to
provide each of the sleeves 28 with a helical
cam slot 31 adapted to receive the end of a
screw 32 mounted in the bracket 16. By this
means, the sleeves 28 may be rotated to cause
their engagement with or disengagement
from the ear mold 18. To facilitate rotation
of the sleeves 28, they may be provided with
laterally projecting handles 33.

To form the hole through each of the bail-
ears, I employ a rod 35, which is desirably
provided at one end with a point and at the
other end with a knob 36. This rod 35 is
adapted to pass through alined holes in the
sleeves 28 to form a hole extending from one
end to the other of the bail-ear 11.

Although not essential, I may provide
near the upper end of the ear-mold 18 an eye
or ring 38 of such a diameter that the rod 35
may be inserted therethrough as shown in
dotted lines in Figs. 5 and 6 to facilitate open-
ing of the ear-mold.

In using my die, it is so mounted that it is
rotatable about a vertical axis as are other
types of dies used in the manufacture of
earthenware jars. When a jar is to be made,
the ear molds 18 are placed in the position
shown in Figs. 1 and 5 and are secured in such
position by rotation of the sleeves 28 to the

full-line position shown in Fig. 1. The rod
35, at this time, is removed. The material
from which the jar is to be made is placed in
the rotating die and spread against the walls
thereof as by means of the usual roller. By
this action, the material is forced into the
recess 25 of the ear molds 18, such ear molds
desirably being provided with vents 18'
which serve to prevent the formation of air
pockets. After the material is spread as de-
sired over the inner surface of the die, the
die is brought to rest and the rods 35 forced
through the sleeves 28 to form holes through
the ears. After this operation, the rods are
withdrawn, the sleeves 28 rotated to the
dotted line position shown in Fig. 1, and the
ear molds withdrawn to the position shown
in Fig. 6. The completed jar may now be re-
moved from the mold and finished as de-
sired.

A jar made in accordance with the process
described above has an advantage over other
jars of which I am aware in that the bail-ear
being formed integrally with the body of the
jar will remain in place thereon under con-
ditions which would result in the separation
from the body of ears which have been at-
tached to the jar after the jar was formed and
have been imperfectly united with the jar
body. Further, the completion of the jar
together with both the bail ears at one han-
dling effects a material reduction in the cost
of manufacture. The bail ears are all of the
same shape, since they are not deformed by
attachment to the jar in a subsequent opera-
tion, and they are accurately located at dia-
metrically opposite points on the jar, thus in-
suring that the jar will not be out of balance
when lifted by the bails.

My mold and process make it possible to
form on the jar ear letters, figures, or sym-
bols, the presence of which on the ear not
only serves to identify the manufacture but
also serves as evidence that the ear was
formed integral with the jar; for, if any at-
tempt were made to mark similarly ears
formed separately and then stuck on the jar,
the identifying markings would be badly
distorted and marred if not completely de-
stroyed in the process of attaching the ear to
the jar. Identifying markings such as I con-
template are formed in the bottom of the ear
mold recess as shown in Fig. 7, and may
either be raised from the recess wall to pro-
duce sunken markings on the ear or formed
by depressions to produce raised markings
on the ear.

I claim as my invention:

1. A die for use in forming molded jars
having one or more bail-ears, comprising a
hollow body, an ear-mold arranged to be
mounted on said body and having a recess
adapted to form an outwardly projecting ear
on the molded jar, members movably mount-
ed on said body adjacent the ends of said

ear mold, said ear mold being provided with openings in its ends adapted to receive said members to hold the ear mold in place on said body, said members being arranged when in place in said openings to project into the mold recess to form depressions in the ends of the molded ear, each of said members being provided with a helical cam slot, an abutment on said body arranged to co-operate with the cam slot in each of said members to cause said members to move into and out of engagement with said mold as they are rotated, said members being provided with alined openings, and a rod insertable through said openings to form a hole in the molded ear.

2. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, members movably mounted on said body adjacent the ends of said ear mold, said ear mold being provided with openings in its ends adapted to receive said members to hold the ear mold in place on said body, said members being arranged when in place in said openings to project into the mold recess to form depressions in the ends of the molded ear, each of said members being provided with a helical cam slot, and an abutment on said body arranged to co-operate with the cam slot in each of said members to cause said members to move into and out of engagement with said mold as they are rotated.

3. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, and members movably mounted on said body adjacent the ends of said ear mold, said ear mold being provided with openings in its ends adapted to receive said members to hold the ear mold in place on said body, said members being arranged when in place in said openings to project into the mold recess to form depressions in the ends of the molded ear.

4. A die for use in forming molded jar having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, and members movably mounted on said body adjacent the ends of said ear mold, said ear mold being provided with openings in its ends adapted to receive said members to hold the ear mold in place on said body.

5. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess

adapted to form an outwardly projecting ear on the molded jar, members movably mounted on said body adjacent the ends of said ear mold, said ear mold being provided with openings in its ends adapted to receive said members to hold the ear mold in place on said body, said members being arranged when in place in said openings to project into the mold recess to form depressions in the ends of the molded ear, said members being provided with alined openings, and a rod insertable through said openings to form a hole in the molded ear.

6. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, members movably mounted on said body adjacent the ends of said ear mold, said ear mold being provided with openings in its ends adapted to receive said members to hold the ear mold in place on said body, each of said members being provided with a helical cam slot, an abutment on said body arranged to co-operate with the cam slot in each of said members to cause said members to move into and out of engagement with said mold as they are rotated, said members being provided with alined openings, and a rod insertable through said openings to form a hole in the molded ear.

7. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, members movably mounted on said body adjacent the ends of said ear mold, said ear mold being provided with openings in its ends adapted to receive said members to hold the ear mold in place on said body, said members being provided with alined openings, and a rod insertable through said openings to form a hole in the molded ear.

8. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, members movably mounted on said body adjacent the ends of said ear mold, said ear mold being provided with openings in its ends adapted to receive said members to hold the ear mold in place on said body, each of said members being provided with a helical cam slot, and an abutment on said body arranged to co-operate with the cam slot in each of said members to cause said members to move into and out of engagement with said mold as they are rotated.

9. A die for use in forming molded jars having one or more bail-ears, comprising a

- hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, releasable means for holding said ear mold in place on said body, said ear mold being provided with openings in its ends, and a rod insertible through said openings to form a hole in the molded ear. 70
10. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, said ear mold being provided with openings in its ends, and a rod insertible through said openings to form a hole in the molded ear. 75
11. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, and releasable means for holding said ear mold in place on said body. 80
12. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, and an ear-mold arranged to be removably mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar. 85
13. A die for use in forming molded jars having one or more bail-ears, comprising a hollow body, an ear-mold arranged to be mounted on said body and having a recess adapted to form an outwardly projecting ear on the molded jar, said ear mold being provided with an opening in its end, and a rod insertible through said opening to form a hole in the molded ear. 90
14. A die for forming the ears of molded jars, said die comprising a body having a cavity adapted to form the ear, members mounted in said body at the ends of said cavity and movable to and from a position in which they project into said cavity, said members being provided with aligned openings, and a rod insertible through said openings to form a hole through the molded ear. 95
15. A die for forming the ears of molded jars, said die comprising a body having a cavity adapted to form the ear, a member mounted in said body at one end of said cavity and movable to and from a position in which it projects into said cavity, said member being provided with an opening, and a rod insertible through said opening to form a hole through the molded ear. 100
16. A die as set forth in claim 14 with the addition that each of said members is provided with a helical cam slot, and an abutment on said body arranged to co-operate with the cam slot in each of said members to cause said members to move into and out of the mold cavity as they are rotated. 105
17. A die as set forth in claim 15 with the addition that said member is provided with a helical cam slot, and an abutment on said body arranged to co-operate with the cam slot in said member to cause said member to move into and out of the mold cavity as it is rotated. 110
- In witness whereof, I have hereunto set my hand at Indianapolis, Indiana, this 20th day of September, A. D. one thousand nine hundred and twenty seven. 115
- GRANVILLE G. WESTERFIELD. 120
- 125
- 130