

No. 858,502.

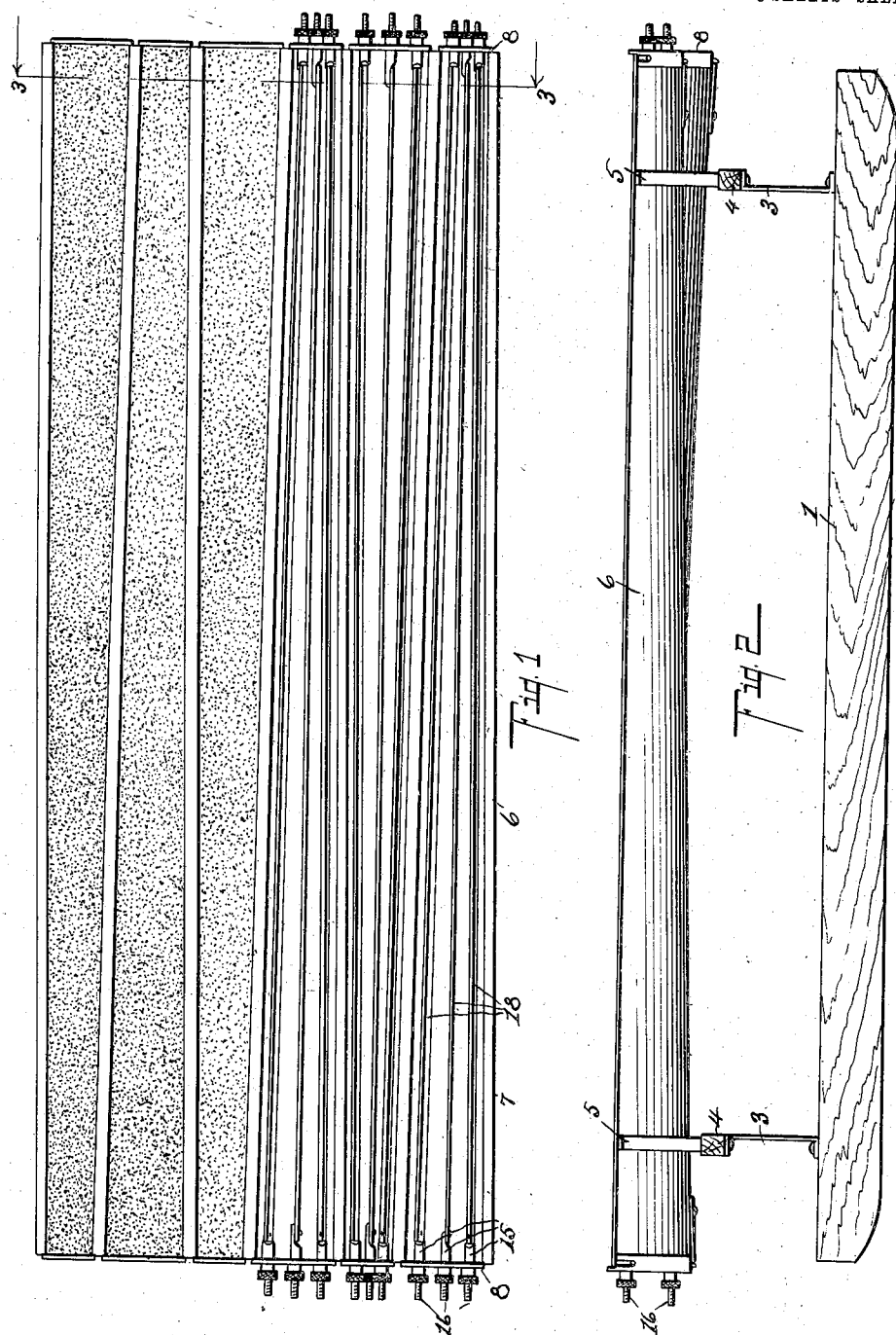
PATENTED JULY 2, 1907.

O. DOUGHERTY & J. W. & A. ARMSTRONG.

MOLD FOR ARTIFICIAL STONE.

APPLICATION FILED NOV. 30, 1906.

3 SHEETS—SHEET 1.



Witnesses:

Lulu Greenfield
Clara E. Craden

Orrville Dougherty, Inventor:
James W. Armstrong & William Armstrong
By Chappell & Earl
Att'ys

No. 858,502.

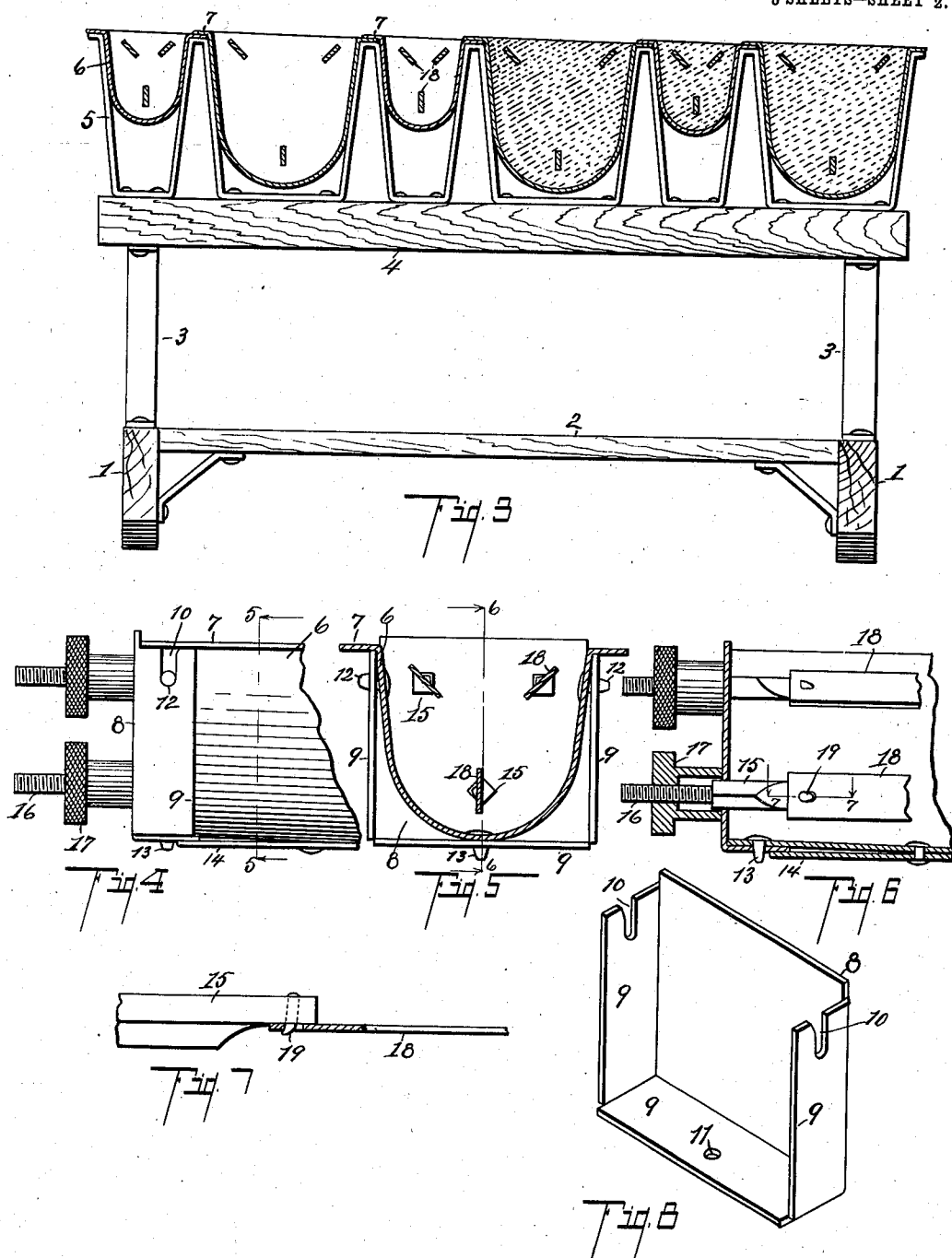
PATENTED JULY 2, 1907.

O. DOUGHERTY & J. W. & A. ARMSTRONG.

MOLD FOR ARTIFICIAL STONE.

APPLICATION FILED NOV. 30, 1906.

3 SHEETS—SHEET 2.



Witnesses:

Lulu Greenfield
Clara E. Braden

Orrille Dougherty Inventor
James W. Armstrong
Adam Armstrong
By Chappell & Earl Att'ys

No. 858,502.

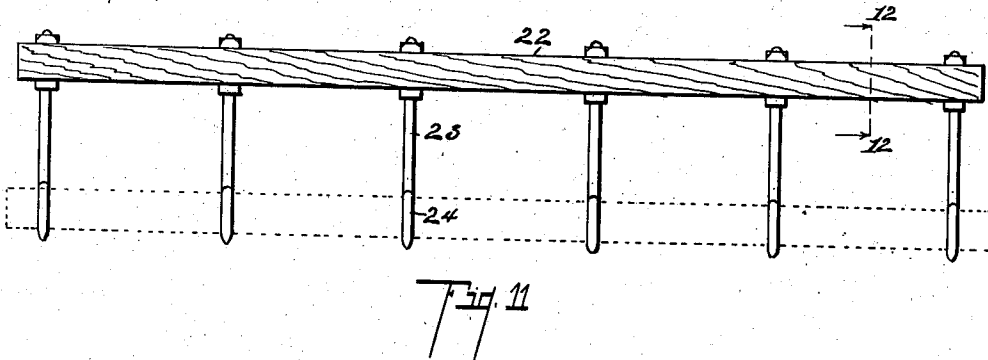
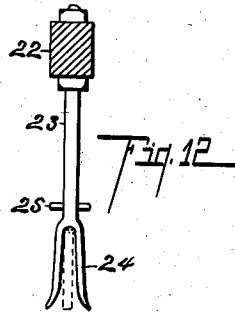
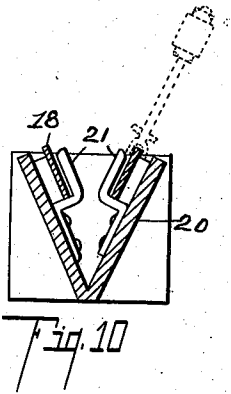
PATENTED JULY 2, 1907.

O. DOUGHERTY & J. W. & A. ARMSTRONG.

MOLD FOR ARTIFICIAL STONE.

APPLICATION FILED NOV. 30, 1906.

3 SHEETS—SHEET 3.



Witnesses:

Lulu Greenfield
Clara E. Braden

Orville Dougherty, Inventor,
James W. Armstrong & Adam Armstrong
By Chappell & East
Att'ys.

UNITED STATES PATENT OFFICE.

ORVILLE DOUGHERTY, JAMES W. ARMSTRONG, AND ADAM ARMSTRONG, OF THREE RIVERS, MICHIGAN.

MOLD FOR ARTIFICIAL STONE.

No. 858,502.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed November 30, 1906. Serial No. 345,797.

To all whom it may concern:

Be it known that we, ORVILLE DOUGHERTY, JAMES W. ARMSTRONG, and ADAM ARMSTRONG, citizens of the United States, residing at Three Rivers, county of St. Joseph, and State of Michigan, have invented certain new and useful Improvements in Molds for Artificial Stone, of which the following is a specification.

This invention relates to improvements in molds for artificial stone or concrete posts.

10 The objects of this invention are, first, to provide an improved mold for artificial stone or concrete posts by the aid of which posts may be very rapidly manufactured or molded. Second, to provide an improved mold for artificial stone or concrete posts which may be
15 readily removed from the post after the same has been permitted to "set" or harden, or to partially "set" or harden. Third, to provide an improved mold for artificial stone or concrete posts by which the metal cores or binding strips are properly supported during the filling
20 of the mold.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

We accomplish the objects of our invention by the
25 devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of our invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which,

Figure 1 is a plan of a structure embodying the features of our invention, showing six of the molds arranged in the support therefor, three of the molds being filled.
35 Fig. 2 is a side elevation of a structure embodying the features of our invention. Fig. 3 is an enlarged cross section thereof, taken on a line corresponding to line 3—3 of Fig. 1. Fig. 4 is an enlarged detail side elevation of one of the molds. Fig. 5 is a cross section
40 taken on a line corresponding to line 5—5 of Fig. 4. Fig. 6 is a longitudinal section taken on a line corresponding to line 6—6 of Fig. 5. Fig. 7 is an enlarged detail partially in section taken on a line corresponding to line 7—7 of Fig. 6, showing one of the
45 core or binding strips 18 and the support therefor. Fig. 8 is an inside perspective of one of the end plates, the same being modified by the omission of the openings for the core strip supports 15. Fig. 9 is a plan view of a rack adapted to support the core strip in position to be engaged by the placing device designed to be used
50 when the supports 15 are omitted. Fig. 10 is an enlarged cross section taken on a line corresponding to line 10—10 of Fig. 9, the placing device being indicated

by dotted lines. Fig. 11 is a side elevation of the placing device, the core or binding strip being indicated by
55 dotted lines. Fig. 12 is an end elevation of the placing device, a core strip being indicated therein by dotted lines.

In the drawing, the sectional views are taken looking
60 in the direction of the little arrows at the ends of the section lines, and similar reference characters refer to similar parts throughout the several views.

Referring to the drawing, the side rails 1 of the mold are preferably adapted to serve as runners for trans-
65 porting the molds and the supports therefor from place to place. These side rails are connected by cross-pieces 2 suitably braced to make a rigid frame. The cross-pieces 4 by which the mold racks 5 are carried are supported on the side rails 1 by means of the blade
70 springs 3. These spring supports for the racks permit of the vibration thereof, to settle the plastic material in the molds when filling the same. The racks 5 are preferably formed of bars of iron bent into suitable shape to receive the molds, as clearly appears in Fig. 3.
75

The molds 6 are formed of sheet metal and are preferably U-shaped in cross section having a rounded bottom and the sides flaring slightly outward. At the upper edge of the sides are laterally projecting flanges 7.

The molds are preferably tapered to secure suitable
80 taper of the post. The end plates 8 are provided with inturned flanges 9 at their sides and bottom. The bottom flanges of the end plates are provided with holes 11 adapted to receive the downwardly projecting stud 13. On the side walls of the mold, towards their upper edges,
85 are laterally projecting studs 12, which are adapted to be engaged by the slots 10 in the upper edges of the side flanges for the end plates. These side flanges are adapted, when the end plates are slipped into place, to slightly compress the side walls thereof. The end
90 plates are preferably secured in position by turn-bolts 14 secured to the bottom of the mold, as clearly appears in Fig. 6. The end plates of the mold are preferably rectangular, so that they provide a suitable base
95 for holding the mold in an upright position when placed upon the floor or ground. The end plates are preferably provided with openings adapted to receive the supports 15 for the binding strips or cores. The outer ends 16 of these supports are threaded to receive the
100 thumb-nut 17. The supports 15 are provided with hooks 19 adapted to be engaged in suitable holes in the core strips. By this means, the core strips 18 are rigidly held in position while the plastic material is being filled into the mold. When the mold is full, the thumb-nuts are loosened and the hooks disengaged and removed.
105 In the structure shown in Fig. 8, the openings for the core strip supports are omitted, it being intended that

where cores are used they shall be inserted after the mold is filled with the concrete material, and we find in practice that this method is very satisfactory.

In Figs. 9 to 12, inclusive, we show apparatus for inserting the binding strips. This preferably consists of a trough or support 20 having rests 21 thereon for the core strips 18. This supports the binding strips, which are preferably strips of flat rolled metal, so that they can be readily engaged by the placing tool. This placing tool preferably consists of a bar 22 having a plurality of fingers 23 thereon with forks 24 at their ends, the forks being adapted to receive the binding strips, the arrangement being clearly indicated in the drawing. In Fig. 10, we illustrate how the strips are picked up by aid of the placing device. This enables the easy grasping of the strips, although they may be quite flexible. The strips, held by the placing device, are forced into the plastic material until they are in proper position. To properly determine the position of and locate the upper binding strips, the fingers 23 are provided with stops 25 adapted to engage the upper edges of the mold. This method of locating the binding strips is of advantage in that it saves time required for securing them when they are held by the supports described.

In filling the molds, we preferably arrange them in the supporting rack illustrated in Figs. 1, 2 and 3. The molds are arranged alternately, as illustrated, and so that the flange of one overlaps the flange of the other. This permits of the shoveling or feeding of the concrete material into the molds, all of them being filled at the same time, and the top smoothed off by a straight edge. During this filling operation, the rack is preferably vibrated on the supporting springs 3, although this settling or shaking down may take place after they are completely filled. This vibrating movement settles the plastic material into the molds effectively, thereby avoiding the necessity of pressing the same therein or tamping. The supporting springs are preferably arranged so that the molds are vibrated longitudinally.

The molds may be quickly removed from the post by removing the end plates, which allows the mold to spring open, thereby freeing it from the post. The mold, to secure the most satisfactory results, should be inverted before removing the end plates, the posts being preferably laid on a level surface of loose earth, as they harden more perfectly when so supported. By this means, we secure posts which have a very smooth surface.

We have illustrated and described our improved mold in detail in the form preferred by us on account of the structural simplicity and convenience in use. We are, however, aware that it is capable of considerable variation in structural details without departing from our invention.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a mold, the combination of a trough-like sheet metal body U-shaped in cross section having outwardly projecting flanges at the top; rectangular end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates; and buttons on said body adapted to engage the bottom flange and said end plates for securing them in position on said body, for the purpose specified.

2. In a mold, the combination of a trough-like sheet metal body U-shaped in cross section having outwardly projecting flanges at the top; rectangular end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; and projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates, for the purpose specified.

3. In a mold, the combination of a trough-like sheet metal body U-shaped in cross section; rectangular end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates; and buttons on said body adapted to engage the bottom flange and said end plates for securing them in position on said body, for the purpose specified.

4. In a mold, the combination of a trough-like sheet metal body U-shaped in cross section; rectangular end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; and projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates, for the purpose specified.

5. In a mold, the combination of a trough-like sheet metal body having outwardly projecting flanges at the top; end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates; and buttons on said body adapted to engage the bottom flange and said end plates for securing them in position on said body, for the purpose specified.

6. In a mold, the combination of a trough-like sheet metal body having outwardly projecting flanges at the top; end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; and projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates, for the purpose specified.

7. In a mold, the combination of a trough-like sheet metal body; end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates; and buttons on said body adapted to engage the bottom flange and said end plates for securing them in position on said body, for the purpose specified.

8. In a mold, the combination of a trough-like sheet metal body; end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates; and buttons on said body adapted to engage the bottom flange and said end plates for securing them in position on said body, for the purpose specified.

9. In a mold, the combination of a trough-like sheet metal body; end plates for said body having inturned flanges at their sides and bottoms adapted to embrace said body, the bottom flanges of said end plates having holes therein and the side flanges having vertical slots at their upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates; and buttons on said body adapted to engage the bottom flange and said end plates for securing them in position on said body, for the purpose specified.

upper edges, said end plates being adapted to compress the side walls of said body when in position thereon; and projecting studs on the bottom and sides of said body adapted to engage the holes and slots in the said flanges of the said end plates, for the purpose specified.

9. In a mold, the combination of a trough-like sheet metal body having outwardly projecting flanges at the top; end plates for said body adapted to engage and compress the side walls of said body when in position thereon; core supports having engaging hooks on their inner ends and threaded outer ends arranged through said end plates; and thumb-nuts for adjusting said core supports whereby the tension is applied thereto and the cores are held in position in the molds, for the purpose specified.

10. In a mold, the combination of a trough-like sheet metal body; end plates for said body adapted to engage and compress the side walls of said body when in position thereon; core supports having core engaging hooks on their inner ends and threaded outer ends arranged through said end plates; and thumb-nuts for adjusting said core supports whereby the tension is applied thereto and the cores are held in position in the molds, for the purpose specified.

11. In a mold, the combination of a trough-like sheet metal body having outwardly projecting flanges at the top; and end plates for said body adapted to engage and compress the side walls of said body when in position thereon, for the purpose specified.

12. In a mold, the combination of a trough-like sheet metal body; and end plates for said body adapted to engage and compress the side walls of said body when in position thereon, for the purpose specified.

13. In a mold, the combination of a trough-like sheet metal body; end plates for said body; core supports having core engaging hooks on their inner ends and threaded outer ends arranged through said end plates; and thumb-nuts for adjusting said core supports whereby the tension is applied thereto and the cores are held in position in the molds, for the purpose specified.

14. The combination with a plurality of tapered trough-like molds having outwardly projecting flanges at the top; a rack therefor adapted to receive said troughs when arranged in alternate relation, with the flanges for said troughs overlapping; and spring supports for said rack whereby the same may be vibrated, for the purpose specified.

15. The combination with a plurality of tapered trough-like molds having outwardly projecting flanges at the top; a rack therefor adapted to receive said troughs, with the flanges for said troughs overlapping; and spring supports for said rack whereby the same may be vibrated, for the purpose specified.

16. In a device of the class described, the combination with a mold, of a supporting rack therefor; and spring supports for said rack whereby the same may be vibrated, for the purpose specified.

In witness whereof, we have hereunto set our hands and seals in the presence of two witnesses.

ORVILLE DOUGHERTY, [L. S.]

JAMES W. ARMSTRONG, [L. S.]

ADAM ARMSTRONG, [L. S.]

Witnesses:

WM. E. BARNARD,

M. W. LOTT.