C. W. LEVALLEY.

MIXING MACHINE.

APPLICATION FILED AUG. 25, 1910.

1,067,180. **Patented July 8, 1913.**

Fig. 2.

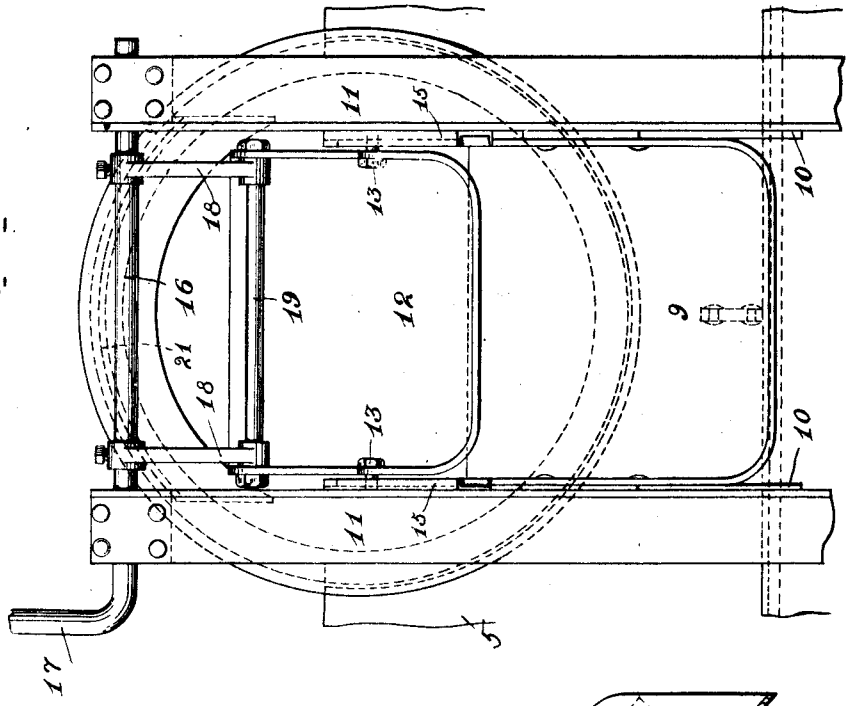
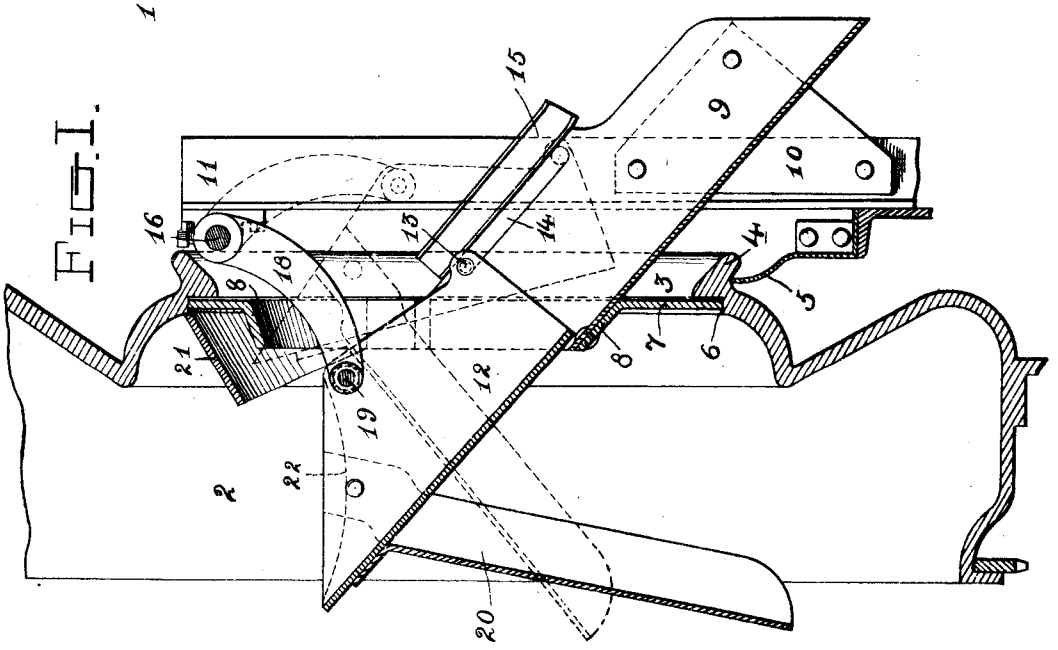


Fig. 1.



Inventor

Witnesses

Geo. B. Pitts

V. Curtis Lammond

Christopher W. Levalley

By

J. S. Barker,

his Attorney

UNITED STATES PATENT OFFICE.

CHRISTOPHER W. LEVALLEY, OF MILWAUKEE, WISCONSIN.

MIXING-MACHINE.

1,067,180. Specification of Letters Patent. Patented July 8, 1913.

Application filed August 25, 1910. Serial No. 578,957.

To all whom it may concern:

Be it known that I, CHRISTOPHER W. LEVALLEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Mixing-Machines, of which the following is a specification.

My invention relates to mixing machines in which are employed revolving drums or cylinders adapted to receive and act upon the materials to be treated, and the improvements to be described relate particularly to the means employed in connection with such drums for effecting their discharge. They have been devised with particular reference to being applied to machines for mixing concrete, though they are not limited, in their useful applications, to machines of this specific character.

In the accompanying drawings—Figure 1 is a longitudinal sectional view of the discharge end of a concrete mixing machine to which my improvements are applied. Fig. 2 is a rear end view of the same.

In the drawings, 2 designates a revolving drum or cylinder in which the concrete or other material to be treated is acted upon or mixed. This element of the machine may be of any usual or preferred construction, and in the drawings accompanying this case I have merely represented a small portion of the discharge end of the drum in which end is formed an axial opening 3. The cylinder is preferably provided with a drip flange 4 surrounding the opening, and a stationary drip shield or apron 5 is represented as being located so as to catch and carry off any material which may drop from the said flange. The end wall of the drum is formed with an internal rabbet 6 concentric with the discharge opening 3 and into which is set a closing plate 7, formed with an inward turned flange 8 that surrounds an opening formed to receive the discharge spout or chute. This latter element consists of two parts, a stationary section 9 suitably supported, as by means of brackets 10 carried by upright frame pieces 11 and an adjustable section 12. The inner end of the stationary section of the chute extends through the discharge opening 3 and preferably a short distance into the revolving drum where it is secured to the flange 8 of the closing plate 7 which latter is thus supported. The other section, 12, of the discharge chute is movable and is so mounted as to be adjustable from a position in which it constitutes in effect a continuation of the chute section 9 extending into the drum, as indicated in full lines in Fig. 1, to the position indicated in dotted lines in Fig. 1, and vice versa. The adjustable chute section when occupying the first-mentioned position is adapted to receive the material within the drum which has been acted upon thereby and has been advanced to the delivery end of the machine, and to deliver it to the stationary spout section by which it is passed out of the drum. To facilitate the delivery of the material to this chute section, that side wall which is next to the lifting side of the drum is preferably cut away along its upper edge as indicated at 22. When the adjustable section 12 is moved into the position indicated in dotted lines it does not catch material lifted by the drum, but rather acts as a screen or shield to close the upper part of the opening 3. The lower outer corners of the movable section 12 of the chute are provided with studs or projections 13 arranged to move in inclined guide ways 14, preferably formed between the upper edges of the stationary section of the chute and flanged plates 15 secured to the upright stationary frame pieces.

16 refers to a shaft suitably mounted upon the frame pieces 11 and provided with a crank handle 17, or other means, for manipulating it, and a pair of arms 18 which are connected with the adjustable chute section 12, preferably by means of a shaft 19 extending through the side walls of the chute section at its upper outer corners.

When the shaft is turned into the position indicated in Fig. 1, carrying the arms 18 inward, the adjustable section of the chute is moved into the position represented in full lines in Fig. 1, the studs or projections 13 then occupying the upper inner ends of the guide ways 14. About these studs the chute section has tilted in its inward movements, until it occupies such inclined position that it constitutes in effect a continuation of the chute section 9. In other words, the inner adjustable section of the chute in moving from the inactive position represented in dotted lines in Fig. 1 to its active

position, shown in full lines, is slid bodily inward and at the same time is tilted downward.

As already stated and as will be seen by reference to the drawings, the adjustable section of the chute when in inactive position is situated so as to form a shield or cut-off plate for the upper segments of the discharge opening. I have, however, found it desirable to provide this section of the chute with a catch and deflecting plate 20 secured to its underside and near its upper end and arranged at such angle thereto that when the chute section is in inactive position the plate extends inward therefrom in a downward direction, thus serving to catch and direct back toward the longitudinal center of the machine material which is elevated and then let fall by the portion of the drum adjacent to the discharge opening. When the chute section 12 is adjusted inward into receiving position, the deflecting plate is below the chute and is inactive. I have also found it desirable to provide a stationary shield 21 under which sets the upper inner edge of the adjustable section of the discharge chute when it is moved into its inactive position. This shield is preferably supported by the flange 8 of the plate 7 and is curved so as to be substantially concentric with the upper bounding segment of the discharge opening. Its outer edge lies close to the end wall of the drum and its upper face inclines inward so as to direct material which may fall thereupon, either to the return plate 20 when the chute is not in action, or to the section 12 thereof when the parts are adjusted to discharge the drum.

What I claim is:—

1. The combination of a revolving mixing drum provided with an axial opening in its end wall, such wall being provided with an internal rabbet concentric with the said opening, a stationary closing plate seated in the said rabbet, and a stationary discharge chute extending through and supporting the said plate.

2. The combination with a revolving drum having an opening in one of its ends, of a discharge chute supported adjacent to the said opening, the said chute being arranged to be slid bodily into the drum to receive the material lifted thereby and to be slid bodily out of the drum to operate as a cut-off for the upper segment of the discharge opening therein, the chute being also tiltable, and means located above the pivot about which the chute turns and connected with the chute, for directing it into and maintaining it in the upper portions of the discharge opening of the drum when it is moved outwardly to operate as a cut-off.

3. The combination with a revolving drum having an opening in one of its end walls, of a discharge chute supported adjacent to the said opening, the chute being arranged to be slid bodily into the drum to receive the material lifted thereby, and to be slid bodily out of the drum so as to operate as a cut-off for the upper segment of the said opening, the chute being also tiltable, and means for operating the chute to cause it both to slide outwardly and tilt upwardly to occupy the said cut-off position.

4. The combination with a revolving drum having an opening through one of its end walls, of a movable discharge chute mounted adjacent to the said opening, guide ways for directing the movements of the chute toward or from the interior of the drum, pivotal supports carried by the chute and mounted in the said guide ways, and means for both tilting the chute upon the said supports and also moving it bodily relative to the drum, substantially as described.

5. The combination with a revolving drum having an opening through one of its end walls, of a stationary chute section mounted adjacent to the discharge opening, stationary guide ways, an adjustable chute section, pivotal supports for the adjustable section mounted in the said guide ways, the section being bodily movable toward or from the interior of the drum and directed in its movements by the guide ways, and also tiltable about its said pivotal supports, and a rock shaft connected with the tiltable section arranged to move the section outward and to tilt it upward when the discharge chute is not to be used, and to move it inward and to tilt it downward when it is to be brought into operation.

6. The combination with a revolving drum having an opening through one of its end walls, of an adjustable discharge chute, means for moving the discharge chute into the drum to catch the material lifted thereby and deliver it out of the machine or for moving it outward to an inactive position, and a stationary shield within the drum under which the inner edge of the discharge chute is adapted to lie when adjusted into inactive position.

7. The combination with a revolving drum having an axial discharge opening in one of its end walls, a stationary closing plate set in the said opening provided with an inturned flange, a stationary discharge chute secured to the said flange, an adjustable discharge chute movable from an active position within the drum in line with the said stationary section, to a position tilted upward and outward relative to said stationary section, and a shield supported by the flange of the closing plate arranged to cover the inner edge of the discharge chute when adjusted to inactive position.

8. The combination with a revolving drum having an opening through one of its end walls, of an adjustable discharge chute

mounted adjacent to the said opening, guideways for directing the bodily movements of the chute toward or from the interior of the drum, pivotal supports carried by the upper outer portions of the chute mounted and slidable in the said guideways, a rock-shaft mounted above the chute and connected therewith inside the said pivotal supports, the rock-shaft being arranged to both tilt and bodily slide the chute.

C. W. LEVALLEY.

Witnesses:
DONALD FRASER,
W. W. COCHRAN.