May 1, 1928.

1,667,959

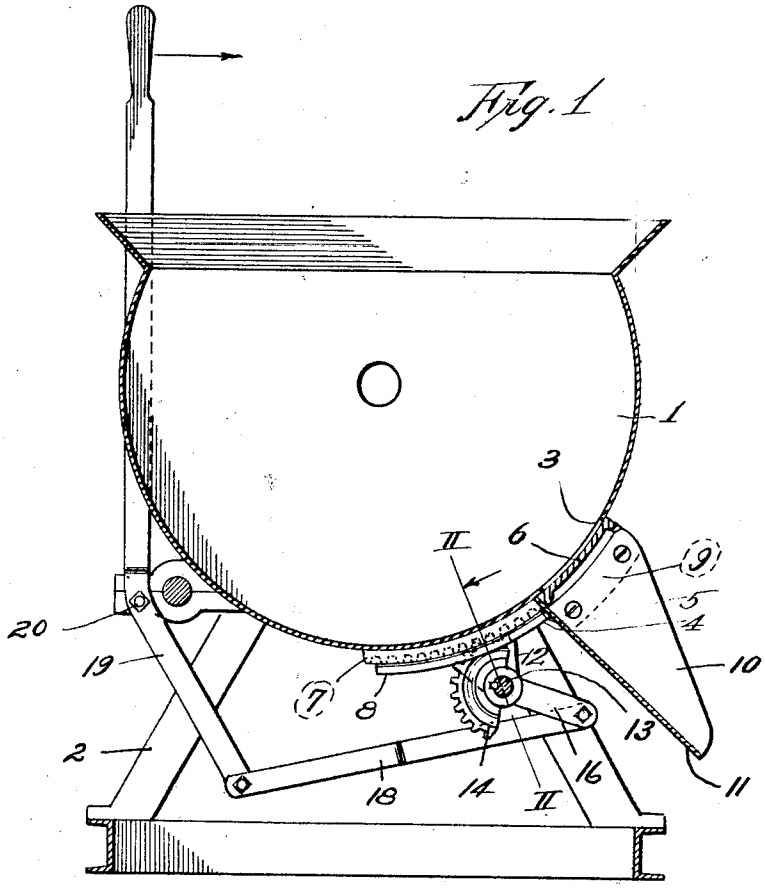
O. C. TALBOT ET AL

DISCHARGE GATE FOR MORTAR MIXERS

Filed Aug. 25. 1926

2 Sheets-Sheet 1

Fig. 1



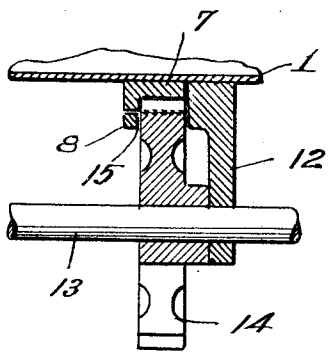


Fig. 2

Witness:

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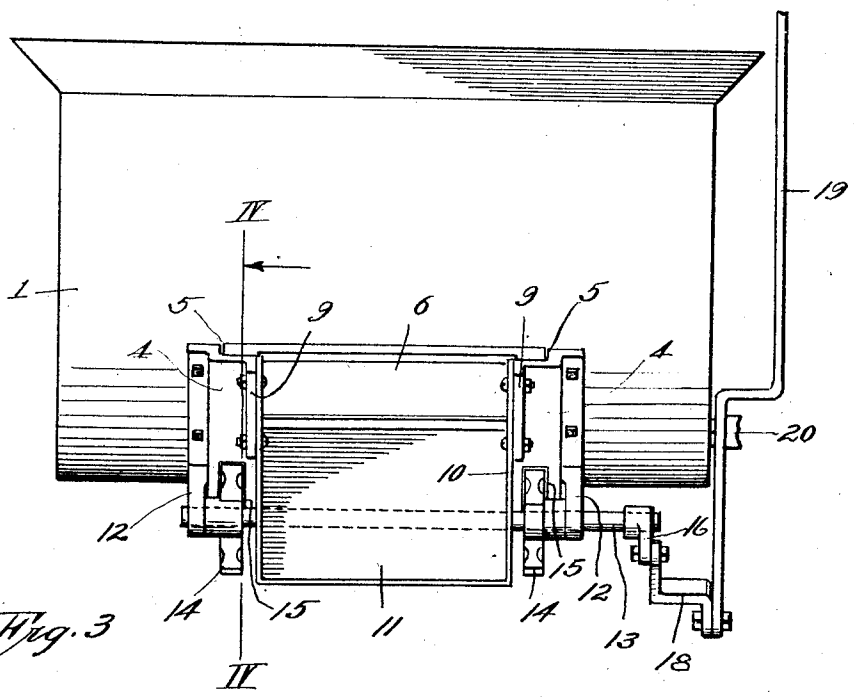


Fig. 3

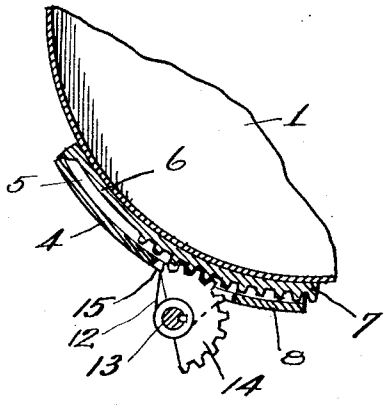


Fig. 4

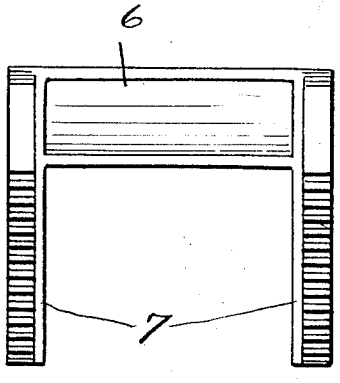


Fig. 5

Witness:

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Patented May 1, 1928. 1,667,959

UNITED STATES PATENT OFFICE.

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DISCHARGE GATE FOR MORTAR MIXERS.

Application filed August 25, 1926. Serial No. 131,504.

This invention relates to discharge gates and is intended primarily for use with mortar mixing machines although it is readily adaptable for any closure. One of our objects is to produce a discharge gate which may be readily and easily opened by the attendant, and which when opened offers no impediment to the free discharge of the contents of the mixer and has no pockets or lodging points in which mortar may accumulate and lead to the faulty operation of the gate.

Another object is to produce a gate which may be readily and easily secured to the side opening in the mixer and be supported by the mixing chamber itself without necessitating the use of auxiliary supports of any kind.

A still further object is to produce a discharge gate of the character outlined of strong, durable, efficient and inexpensive construction; and in order that it may be fully understood, reference is to be had to the accompanying drawings, in which:—

Figure 1 is a central transverse section taken through a mortar mixer equipped with a gate embodying the invention.

Figure 2 is a section on the line II—II of Figure 1.

Figure 3 is a side view of a mortar mixer equipped with the gate embodying the invention.

Figure 4 is a section on the line IV—IV of Figure 3.

Figure 5 is a face view of the gate.

In the said drawings, where like reference characters identify corresponding parts in all of the figures, 1 indicates the mixing chamber of a mortar mixer, said chamber being mounted on any suitable support 2, and being provided at the desired point in its side with a discharge opening 3.

Secured parallel to opposite sides of the discharge opening in any suitable manner and extending transversely of the chamber 1 are a pair of flanges or guides 4 providing guide channels 5 for the reception of a sliding gate 6, conforming in curvature to the curvature of the chamber 1. The gate 6 comprises a rectangular closure portion somewhat greater in area than the opening 3 and therefore overlapping the edges of said opening, and said gate is formed integrally with a pair of curved rack arms 7 slidingly fitted within an extended portion 8 of the guides so that they shall be held against the outer face of the chamber 1 (see Figure 1).

The guides 4 opposite the opening 3 in the chamber 1 are each provided with an outwardly extending flange 9 to which is bolted or otherwise secured, the opposite sides 10 of a discharge chute 11, the bottom of said chute extending between the rack arms 7 of the gate and underlying the bottom of the gate and in abutment with the outer face of the chamber 1 as shown most clearly in Figure 1, to insure that there shall be no gap or space between the chute and the chamber leading to the loss or impedance of mortar escaping through the discharge opening in the chamber 1.

Formed integrally with and projecting downwardly from each guide is an arm 12 in which is journaled the opposite ends of a shaft 13, and keyed on said shaft and in line with the rack arms 7 are a pair of gear segments 14 extending through slots 15 formed in the extensions 8 of the guides 4 and enmeshed with the teeth of the rack arms. From a consideration of the construction thus far described and illustrated, it will be apparent that when the toothed segments 14 are rotated in the proper direction, they will immediately effect an opening of the gate 6 by sliding same upwardly in the guides 4, it being understood that the segments and racks are so proportioned as to insure the full opening movement of the gate.

As a convenient means of operating the gate, a crank arm 16 is keyed to one end of the shaft 13 and said crank arm is connected by a link 18 to one end of an operating lever 19 pivoted as at 20 to a suitable support. It will be apparent that when it is desired to operate the gate, the attendant will merely pull said lever in the proper direction. If the weight of the gate and connections is insufficient to insure positive closing of the gate upon release of the lever, the lever may be used to manually close the gate against the resistance of any commodity which may be passing through the opening in the chamber 1.

From the above description, it will be apparent that we have produced a device which embodies the features of advantage set forth as desirable in the statement of the objects of the invention, and which is susceptible of modification in minor particulars without departing from the principle

of construction and mode of operation involved.

We claim:

1. The combination in a mixing machine having a substantially horizontal cylindrical body provided in its lower portion with a discharge opening, of a pair of arcuate guides secured to the outer side of the body at opposite sides of said opening, and provided with facing grooves, an inclined discharge chute between the guides and abutting at the upper edge of its bottom, the outer face of the body adjacent the lower edge of the discharge opening thereof, the side walls of the chute being spaced from said body; a slidable gate fitting against the outer side of the body for covering the discharge opening, and between the side walls of the chute and the said body, said gate having parallel arcuate rack bar extensions engaging the grooves of the guides, a shaft suitably journaled, spaced segment gears on said shaft and respectively engaging said rack bar extensions, and a manually controlled connection to effect rotation of said shaft to slide the gate out of the chute to uncover the discharge opening and in the reverse direction to reclose said opening.

2. The combination in a mixing machine having a substantially horizontal cylindrical body provided in its lower portion with a discharge opening, of a pair of arcuate guides secured to the outer side of the body at opposite sides of said discharge opening and provided with facing grooves and with openings communicating with said grooves and with outwardly-projecting flanges at the inner edges of the grooves; an inclined discharge chute between and secured to said flanges of the guards and abutting at the upper edge of its bottom, the outer face of the body adjacent the lower edge of said discharge opening, the side walls of the chute being spaced from said body; a slidable gate fitting flatly against the outer side of the body for covering or uncovering said discharge opening, said gate having parallel arcuate rack bar extensions engaging the said grooves, a shaft paralleling the axis of the body and journaled with respect to the guides, a pair of gear segments secured on said shaft and projecting through the said openings in the guides and engaging said rack bar extensions respectively, and a manually controlled mechanism for operating said shaft to effect the opening and closing of the gate.

In witness whereof we hereunto affix our signatures.

OLIVER C. TALBOT.
ANDREW FLOOD.