

No. 750,837.

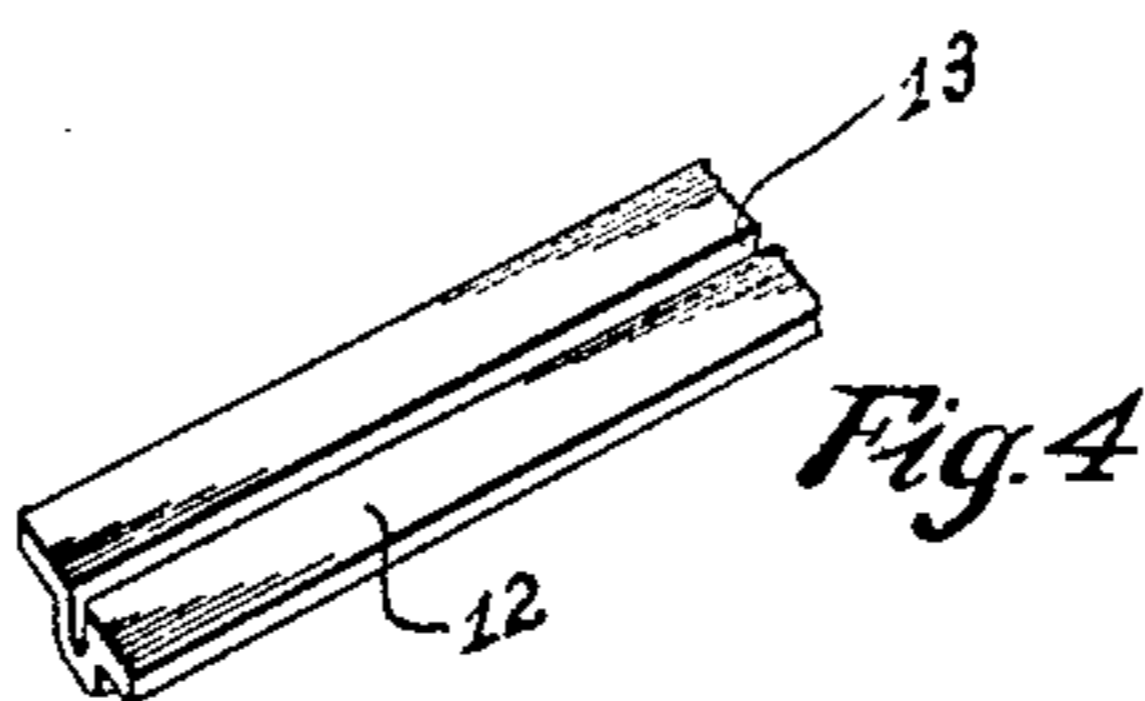
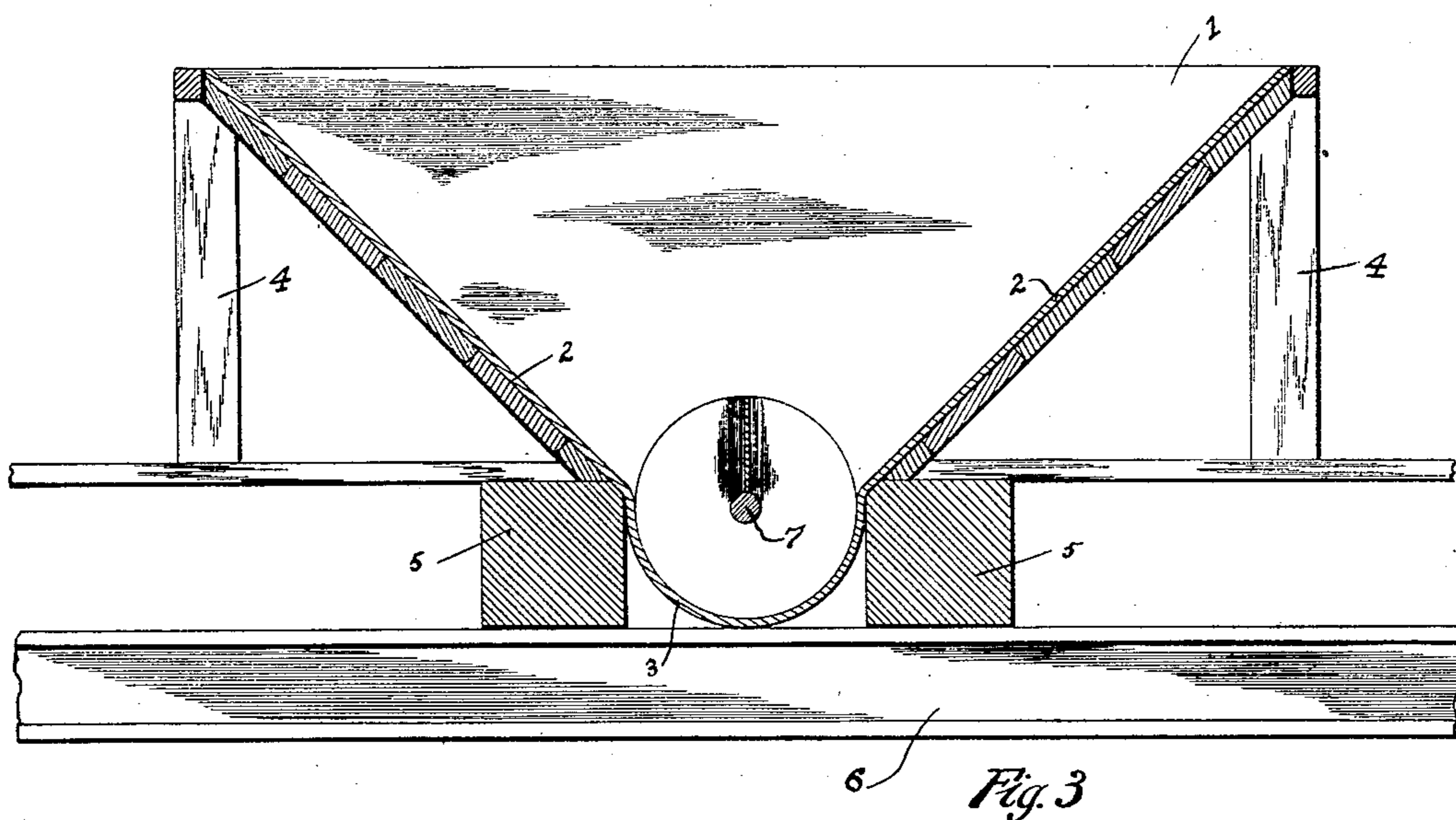
PATENTED FEB. 2, 1904.

F. C. FERRIS.
MORTAR HOLDING AND DISCHARGING DEVICE.

APPLICATION FILED MAY 10, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:
F. L. Guerner
A. L. Phelps

INVENTOR.
Frank C. Ferris
BY
C. C. Shepherd
ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK C. FERRIS, OF COLUMBUS, OHIO,

MORTAR HOLDING AND DISCHARGING DEVICE.

SPECIFICATION forming part of Letters Patent No. 750,837, dated February 2, 1904.

Application filed May 10, 1902. Serial No. 106,750. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. FERRIS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Mortar Holding and Discharging Devices, of which the following is a specification.

My invention relates to the improvement of mortar holding and discharging devices; and the objects of my invention are to provide a mortar-holding reservoir or hopper with improved means for discharging the contents thereof into wagon-beds or other receptacles and to produce certain improvements in details of construction and arrangement of parts, which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation of the mortar-hopper, showing the outlet open in position for discharging and showing, for the sake of clearness in illustration, the discharging trough or conductor raised to an inoperative position. Fig. 2 is a central sectional view, on line *x x* of Fig. 1, through a portion of the mortar-reservoir and showing the conductor lowered to an operative position. Fig. 3 is a transverse section on line *y y* of Fig. 2, and Fig. 4 is a detail view in perspective of one of the gate guide-plates which I employ in the manner hereinafter described.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention I provide a mortar reservoir or hopper 1, the side walls of which converge to impart thereto a substantially V shape in cross-section. The inner surface of the reservoir or hopper thus formed is provided with a metallic lining 2, and between the lower converging ends of the side walls is formed throughout the length of the hopper a depending semicylindrical trough or channel 3, which is preferably of metal and which may be formed by the production of a rounded channel-like bend in the metallic lining 2 throughout the center thereof. The hopper-body 1 is supported by a suitable framework, of which 4 represents vertical

standards, 5 parallel beams arranged horizontally beneath the hopper and on opposite sides of its channel or trough 3. These beams may bear upon transversely-arranged I-beams 6 or other suitable supporting structure, and said I-beams are preferably supported by desirable framework at such height as to bring the discharging end of the channel 3 at a point above the height of a wagon-bed.

Within the channel 3 I provide a horizontal and longitudinally-arranged screw conveyer, the shaft 7 of which is journaled at opposite ends in the framework. The forward or outer end of the shaft is preferably journaled in a boxing 7^a, which depends from a horizontal frame-bar 8, which is secured on the outer side and at the base of the hopper-body, preferably being supported upon the outer projecting ends of the beams 5.

9 represents a mortar-conductor which is in the form of a channel-shaped box or trough, the inner end of this conductor being hinged upon a horizontal hinge-rod 10, which is supported upon the upper side of one of the frame-bars 8 at a point above the outer and open end of the central channel 3. In effecting this hinge connection I provide on each side of the inner end portion of the conductor 9 a hinge-bar 11, these hinge-bars having their outer ends pivotally connected with the sides of the conductor 9 and the remaining ends pivoted on the hinge-rod 10. The conductor thus constructed and hinged is designed, as indicated in Fig. 1 of the drawings, to be supported in a substantially vertical position above the frame-bar 8 and against the corresponding end of the reservoir 1. In order to provide means for closing the otherwise open outer end of the reservoir-channel 3, I employ on the inner sides of the outwardly-projecting portions of the beams 5 opposite the end of said channel downwardly-extending vertical guide-plates 12, these guide-plates being, as indicated more clearly in Fig. 4 of the drawings, formed with central longitudinal grooves 13, which are adapted to receive the ends of a vertically-movable gate or plate 14, which when raised to the proper height in said guides 12 serves to close the otherwise open end of the channel. Depend-

ing from the lower portion of the gate 14 is a short bar-arm 15, with the lower end of which is pivotally connected a laterally extending and inclined lever-bar 16, which is pivotally supported upon a hanger 17, depending from the upper framework. The outer end of the lever 16 is through the medium of a connecting-bar 18 connected with one arm of a bell-crank lever 19, which is pivoted at the junction of its arms to the upper framework. By forcing the upwardly-extending arm of the lever 19 in the proper direction to lower the connecting-bar 18 it is obvious that the gate-plate 14 will be moved upward in its guides to close the channel. Assuming that the channel is thus closed and that the reservoir is sufficiently filled with mortar, the manner of discharging or withdrawing the mortar therefrom to a wagon-bed or other receptacle is as follows: The gate 14 being lowered to the position indicated in Fig. 1 of the drawings, by manipulation of the lever 19 the conductor 9 is swung outward and downward until its inner end engages the under side of the outer open end of the channel 3, said conductor being held in this slightly-inclined position by the hinge-bars 11. This being accomplished, rotary motion is communicated to the screw conveyer 7 from any desirable source of power, with the result that the mortar from the reservoir is fed through the channel 3, thence out in the conductor 9, from which it may drop into a wagon-bed or other receptacle below said conductor. Owing to the fact that the reservoir converges toward said channel, it is obvious that substantially all the mortar contained within the reservoir may be forced out of the same through the medium of the

rotating conveyer-blades. Through this operation it will be seen that not only may a wagon-bed be rapidly filled from the reservoir, but that the rotation of the conveyer-blades within the body of mortar contained within said reservoir serves to impart thereto a final mixing or agitation, which is particularly desirable in cases where the mortar stands in the reservoir for an unusual length of time. It is obvious that when the desired amount of mortar has been discharged from the reservoir the conductor 9 may be thrown upward to the position shown in Fig. 1 and the gate 14 raised to its closed position.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In a mortar holding and discharging device, the combination with a reservoir 1 having converging sides and a central bottom channel 3 connecting said sides, said channel being open through one end of said reservoir and a rotatably-mounted screw conveyer running through said channel, of a sliding gate 14, means connected therewith for operating said gate to open and close the end of the channel and a conductor 9 having its sides hinged in connection with the framework, said conductor adapted to be swung downward to a position to receive the material discharged from the open end of the channel or to be swung upward to a position above said channel and on the outer side of the reservoir, substantially as specified.

FRANK C. FERRIS.

In presence of—

C. C. SHEPHERD,
W. L. MORROW.