Nov. 20, 1928. 1,692,374

G. JAEGER

HOPPER CONCRETE MIXER

Filed Feb. 10, 1926

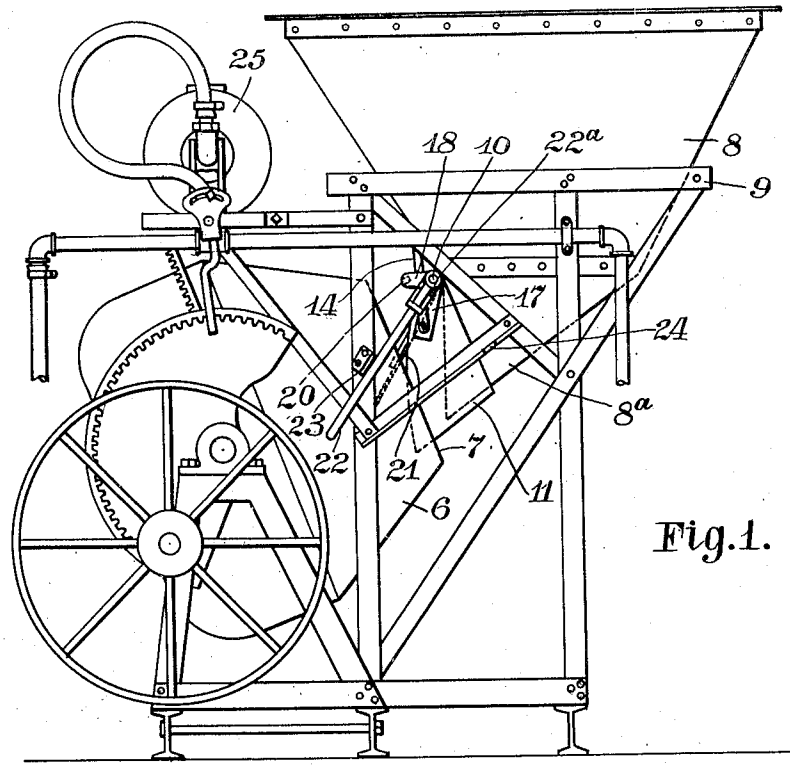


Fig.1.

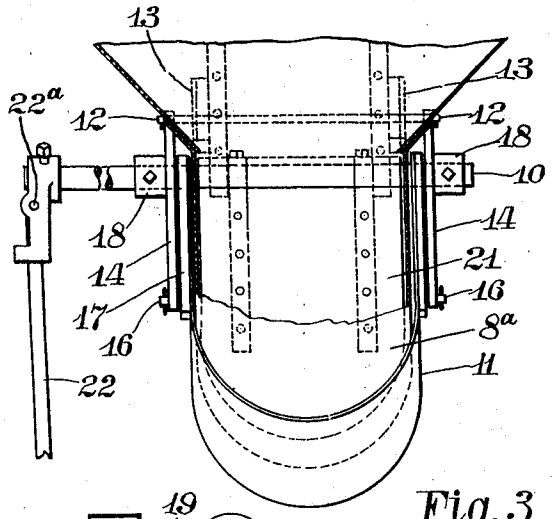


Fig.3.

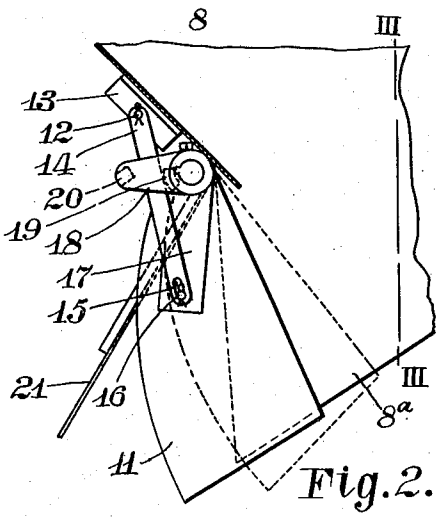


Fig.2.

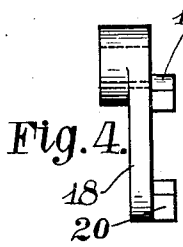


Fig.4.

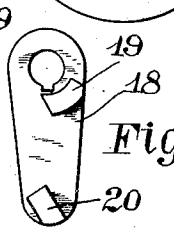


Fig.5.

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UNITED STATES PATENT OFFICE.

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HOPPER CONCRETE MIXER.

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Heretofore some varieties of concrete mixers have been provided with a loader resting on the ground to receive the dry components of the concrete said loader provided with means for raising it to and lowering it from mixer-vessel charging position.

In the erection of tall buildings where the floors and other parts are molded of concrete the concrete is raised by means of an elevator, the preparation of the concrete taking place outside of the building and involving the use of power to raise the materials to the mixer and much transportation of the mixed materials in wheel barrows. Moreover there is not alway sufficient room in a cellar to receive a concrete mixer having a power operated loader.

The object of this invention is to provide a mixing apparatus including a hopper that can be located in the cellar of the building near the lower end of the elevator so that the batch or materials to be mixed can be dumped from a wheel barrow from the first floor into a hopper the materials flowing thence by gravity from the hopper to the mixing vessel and thence discharged when fully mixed to a receptacle on the elevator lift to be raised by the latter to the floor where to be used.

The invention is embodied in the example herein shown and described, the features of novelty being finally claimed.

In the accompanying drawings—

Figure 1 is a view in side elevation of a mixing machine according to the present invention.

Fig. 2 is an enlarged detail side view of the discharge portion of the hopper showing the stationary and movable portion of the spout and the gate in open or discharging position.

Fig. 3 is a detail view of the same looking into the structure from the right hand side as seen in Fig. 2, a portion of the stationary spout being in section on the line III—III of said figure and parts being broken out.

Figs. 4 and 5 are edge and face views respectively of the crank arm of the shaft for operating the gate and movable spout.

In the views 6 designates the mixing vessel which in the instance shown is of the variety that has a single charging and discharging opening at 7. Such a mixing vessel has ordinary or suitable means for rotating on its axis and also for oscillating it to charging and discharging position it being unnecessary here to refer in further details to the same, as such details are now in wide use.

8 designates the hopper which is stationarily mounted at the upper end of a suitable extension 9 of the main frame of the machine. Said hopper 8 has formed at its lower end a stationary spout or discharge portion 8^a the bottom of which is directed toward the open end of the mixing vessel when the latter is in its charging position as shown in Fig. 1. Journaled across the bottom or small end of the hopper proper above the open end referred to is a shaft 10 upon which is loosely hinged at its wings a supplemental or movable spout 11 adapted to have its snout swing into and out of the feed opening of the mixing drum.

Pivoted on the opposite ends of a suitable rod 12 above the shaft 10 and supported in brackets 13 fixed on the hopper are links 14 having their lower ends provided with slots 15 engaged with pins 16 extending from plates 17 secured on the outer faces of the wings of the supplemental spout. By the application of appropriate pressure to the links 14 the snout of the supplemental spout can be swung into and out of the feed opening of the mixing vessel, the slots 15 making allowance for the difference between the arcs of movement of the spout and said links.

The shaft 10 has affixed to it two crank arms 18 each of which is provided with lugs 19 and 20 spaced apart to engage each of said links 14 at its opposite edges first one edge and then the other, but with a lost motion between the engagements so that the supplemental spout is not moved with the whole of the movement of the shaft 10.

Fixed to the shaft 10 is a gate 21 adapted to close the fixed portion of the spout and retain the contents of the hopper until the mixing vessel is brought into position to receive them. Because the gate 11 is fixed to the shaft 10 it swings farther than the supplemental spout and thus provides an opening as shown for the passage of the batch into the feed opening 7 of the mixing drum.

The shaft 10 has a suitable hand lever 22 pivoted at 22^a but fixed to swing with the shaft on one end thereof and by swinging this lever to the left as viewed in Fig. 1, the gate can be opened and the supplemental spout projected or by swinging which to the right spout is withdrawn and the gate closed as before indicated thereby providing a clear space for the swing of the feed end

of the mixing vessel to the left or discharging position. A stop 23 on one part of the frame limits the swing of the lever to the left, and a notch 24 on another part of the frame engaged by the pivoted handle 22 when swung to the right holds the gate latched in closed position to retain the contents of the hopper.

Water to mix with the batch is supplied from the tank at 25 when the mixing vessel is turned to upright position from the batch-feeding position shown in Fig. 1.

The forms of the parts can be changed without departing from the invention as claimed.

What I claim is:

1. A hopper to receive components of a mixture, said hopper having its discharge end provided with a movable spout and a discharge closing gate and means for imparting a greater movement to the gate than to the movable spout.

2. A hopper to receive components of a mixture, said hopper having its discharge end provided with a movable spout and a discharge closing gate end means common to said spout and gate or imparting a greater movement to the gate than to the movable spout.

3. A hopper to receive components of a mixture, said hopper having its discharge end provided with a movable spout, a discharge closing gate and means for imparting a greater movement to the gate than to the movable spout and means for latching the gate in hopper discharge closing position.

4. A hopper to receive components of a mixture, said hopper having its discharge end provided with a movable spout and a discharge closing gate and means for imparting a greater movement to the gate than to the movable spout consisting of a shaft connected with the gate and lost motion devices operating the spout.

5. A hopper to receive components of a mixture, said hopper having its discharge end provided with a movable spout and a discharge closing gate and means for imparting a greater movement to the gate than to the movable spout consisting of a shaft connected with the gate and lost motion devices operating the spout, said lost motion devices including a crank on the shaft provided with spaced lugs and a pivoted link connected with the spout and engaged by said lugs.

6. A hopper to receive the components of a mixture, said hopper having an outlet provided with a movable spout and a movable outlet gate, and operating means common to said spout and gate adapted to impart a greater movement to the gate than to the spout.

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