

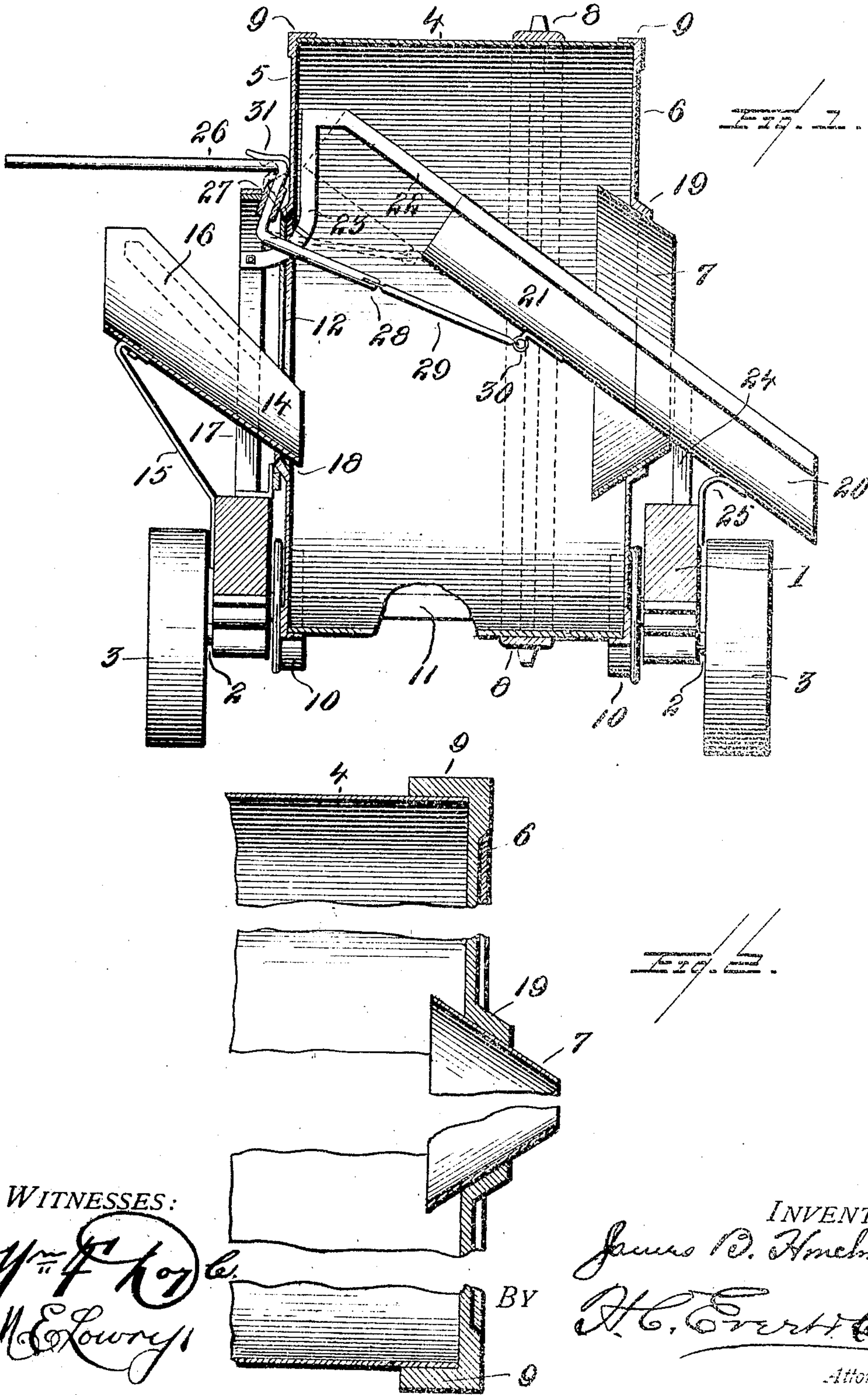
No. 892,518.

PATENTED JULY 7, 1908.

J. B. HINCHMAN.  
MIXING MACHINE.

APPLICATION FILED MAY 28, 1907.

2 SHEETS—SHEET 1.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES B. HINCHMAN, OF DENVER, COLORADO.

## MIXING-MACHINE.

No. 892,518.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed May 28, 1907. Serial No. 376,058.

*To all whom it may concern:*

Be it known that I, JAMES B. HINCHMAN, a citizen of the United States of America, residing at Denver, in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Mixing-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in mixing machines, and relates particularly to that type generally known as "drum mixers."

An embodiment of the particular type of mixer, above referred to is shown in Patent 839,144 for improvement in mixing machine granted to me December 25, 1906, and the present invention relates to certain improvements in the construction of the mixing drum and manner of mounting the same, whereby the cost of manufacture of the mixing drum will be materially reduced, and the longevity thereof materially increased.

The invention has for its further object to provide improvements in the construction of the discharge chute, and in the manner of manipulating or operating the movable section of said discharge chute.

The detail construction of the improvements residing in the present application will appear in the course of the following description, in which reference is had to the accompanying drawings forming a part of the specification, like numerals designating like parts throughout the different views, in which:—

Figure 1 is a central transverse vertical sectional view of a mixing machine embodying my improvements, Fig. 2 is a central longitudinal sectional view of a portion of the drum shell, one of the cast iron ends thereof, and the extension cone carried in one end of the drum, the extension cone and the drum end being partly broken away. Fig. 3 is a front end elevation of a mixing machine constructed in accordance with my invention, Fig. 4 is a top plan view of the mixing machine, partly broken away.

It will be observed, that in the present device, I employ a rectangular frame 1, mounted on axles 2, supported on wheels 3, the said frame 1, axles 2, and wheels 3, constituting a supporting truck for the mixer, though it will be evident that I may dispense with the wheels 3 and employ other supporting means well known in the art, such as skids, etc.

The mixing drum embodies a shell 4, ends 5 and 6, which are preferably cast iron ends, and an extension cone 7. The shell 4 also carries on its periphery a sprocket wheel 8 which receives a driving chain, by means of which the drum can be revolved. As the particular manner of rotating the drum forms no part of the present invention, it has not been shown in detail.

The drum ends 5 and 6 are preferably made of cast iron, each being provided on their peripheries with inwardly turned flanges 9, constituting tires to rest and travel on flanged wheels 10 carried by the rear axle 2 and a shaft 11 carried by the frame 1, of the supporting truck.

The inwardly projecting flanges constituting the tires are enlarged in thickness, as are the drum ends adjacent their peripheries, as clearly seen in Figs. 1 and 2, so as to give desired strength to the drum ends, without having the body portion thereof of undue thickness. The drum end 5 is provided with a central opening 12 into which extends a feed chute 14, suitably supported by braces 15, 16, the former being attached to the supporting truck 1, and the latter being attached to an arched standard 17, which forms a support for the rear end of the discharge chute.

The wall of the opening 12 is increased in thickness as shown at 18, and it is flared outwardly, the wall 19 of the central opening in drum end 6 being also increased in thickness, and flared outwardly, and received in the central opening of said drum end 6, and suitably secured to the flared flange or wall 19 is the cone extension 7, the larger end of which extends into the drum, and the smaller end of which projects beyond the drum, as clearly seen in Figs. 1 and 2.

As heretofore stated, the present invention also relates to improvements in means for operating the movable section of the discharge chute. The discharge chute embodies a stationary or fixed section 20 and a movable section 21. The stationary section 20, projects beyond the drum, and its inner end is approximately on a line with the drum end 6; the cone extension 7 therefore projects beyond the inner end of the stationary section 20 of the discharge chute, and prevents all liability of the material being mixed being discharged into the stationary section of the discharge chute when the chute sections are separated, and it is desired to retain the ma-



terial within the mixing drum. The inner end of the stationary section 20 is cut at an angle so that said inner end will be on a vertical line with the drum end, and the outer end of the movable section 21 is cut at a reverse incline, so as to match and fit with the inner end of the outer section when it is desired to discharge material from the mixing drum. These sections of the discharge chute are supported by inclined bars 22, the inner ends of which are bent downwardly as at 23 and extended out through the opening 12 where they are securely fastened at their ends to the arched standard 17. Near their outer ends, said inclined bars 22 are supported by braces 24 attached to the frame 1, and the discharge spout or chute may be further braced as at 25 at its outer end. The section 21 has side flanges which rest and are slidable on the bars 22, and when moved from the full line position as seen in Fig. 1 to the dotted line position shown in said view, an opening will be presented between the movable section and the stationary section, so that the material carried upwardly by the drum may drop through said opening instead of being discharged through the chute.

In order to conveniently move the section 21 to the open or closed position, I provide an operating lever 26, somewhat Z-shaped in form. The vertical portion of this lever is journaled in a bearing 27 carried by the arched standard 17. The inner end of the lever, which extends into the mixing drum is pivotally connected at 28 to a link 29 connecting with the section 21, by means of an eye 30. The handle portion of this lever when the section 21 is in the position shown in full lines in Fig. 1 projects outwardly from the end of the drum, and when the handle is moved towards the end of the drum, the section 21 is moved to the dotted line position, thus providing the opening between the chute sections, and may be held in this position by means of a catch 31 carried by a brace 32 attached to the arched standard 17. When the handle is released from gravity catch 31, the chute section 21, will move to closed position by gravity.

It will, of course be understood that in operation, the granular material to be mixed is fed into the mixing drum through the feed chute 14, the discharge chute 21 having been moved to open position, so that the material will be retained within the drum until it is thoroughly mixed. When the desired mixing has been effected, the chute section 21 is placed in closed position, and as the material is carried outwardly by the drum during the rotation of the latter it drops from the carrying-wings when the latter have reached a point beyond the center of gravity, into the discharge chute by which it is discharged from the drum, and from whence it is carried away by any suitable conveyer. The cone 7

extends into the drum to prevent the contents from falling into the chute while separated and its extension outward is to catch any of the contents, while discharging, that may overflow the sides of the chute on the discharge end of the drum and return it to the inside of the drum. This operation is the same as in my prior patent, referred to, the improvement herein relating to the drum ends, and the operating of the movable chute section, as defined by the appended claims.

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

1. In a mixing machine a rotatable mixing drum comprising a shell and a pair of heads, means arranged exterior of the shell for revolving it, each of said heads formed with an opening, an extension cone positioned in one of said openings and connected intermediate its ends to a head, a stationary chute section extending through said extension cone, means arranged exterior of said cone for supporting said chute section, a movable chute section adapted to be brought in alinement with the stationary section supporting means extending within the shell for said sections, an upright arranged exteriorly of the shell for supporting said means, and means extending within the shell for shifting the movable section out of alinement with respect to said stationary section.

2. In a mixing machine a rotatable mixing drum comprising a shell and a pair of heads, each of said heads formed with an opening, an extension cone positioned in one of said openings and connected intermediate its ends to a head, a stationary chute section extending through said extension cone, means arranged exterior of said cone for supporting said chute section, a movable chute section adapted to be brought in alinement with the stationary section supporting means extending within the shell for said sections, and an upright arranged exteriorly of the shell for shifting the movable section out of alinement with respect to said stationary section.

3. A mixing machine comprising a revolving drum, a discharge chute therefor embodying a stationary and a movable section, said stationary section extending through the discharge end of the drum, means extending within the drum for supporting said sections, an upright arranged exteriorly of the drum for supporting said means, an operating lever extending within the drum and pivotally connected to said movable section and adapted to shift said section out of alinement with said stationary section, and means arranged exterior of the drum for locking said lever to retain said movable section out of alinement with said stationary section.

4. A mixing machine comprising a revolvable drum, a discharge chute therefor embodying a stationary and a movable section, 130



means extending in the drum from one end and projecting from the drum at the other end for supporting said sections, standards arranged exteriorly of each end of the drum  
5 for supporting said means, and an operating lever pivotally connected with said movable section and adapted to shift said section out of alinement with said stationary section, said operating lever provided with an extension projecting from one end of the drum  
10 whereby said lever can be manipulated.

5. A mixing machine comprising a revoluble drum, a discharge chute therefor embodying a stationary and a movable section,  
15 means extending in the drum from one end and projecting from the drum at the other end for supporting said sections, standards

arranged exteriorly of each end of the drum for supporting said means, and an operating lever pivotally connected with said movable  
20 section and adapted to shift said section out of alinement with said stationary section, said operating lever provided with an extension projecting from one end of the drum whereby said lever can be manipulated, and  
25 means arranged exterior of the drum for locking said lever to retain said movable section out of alinement with said stationary section.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES B. HINCHMAN.

Witnesses:

ROBERT BROWN,  
LYDIA F. SIEVERS.