

No. 842,567.

PATENTED JAN. 29, 1907.

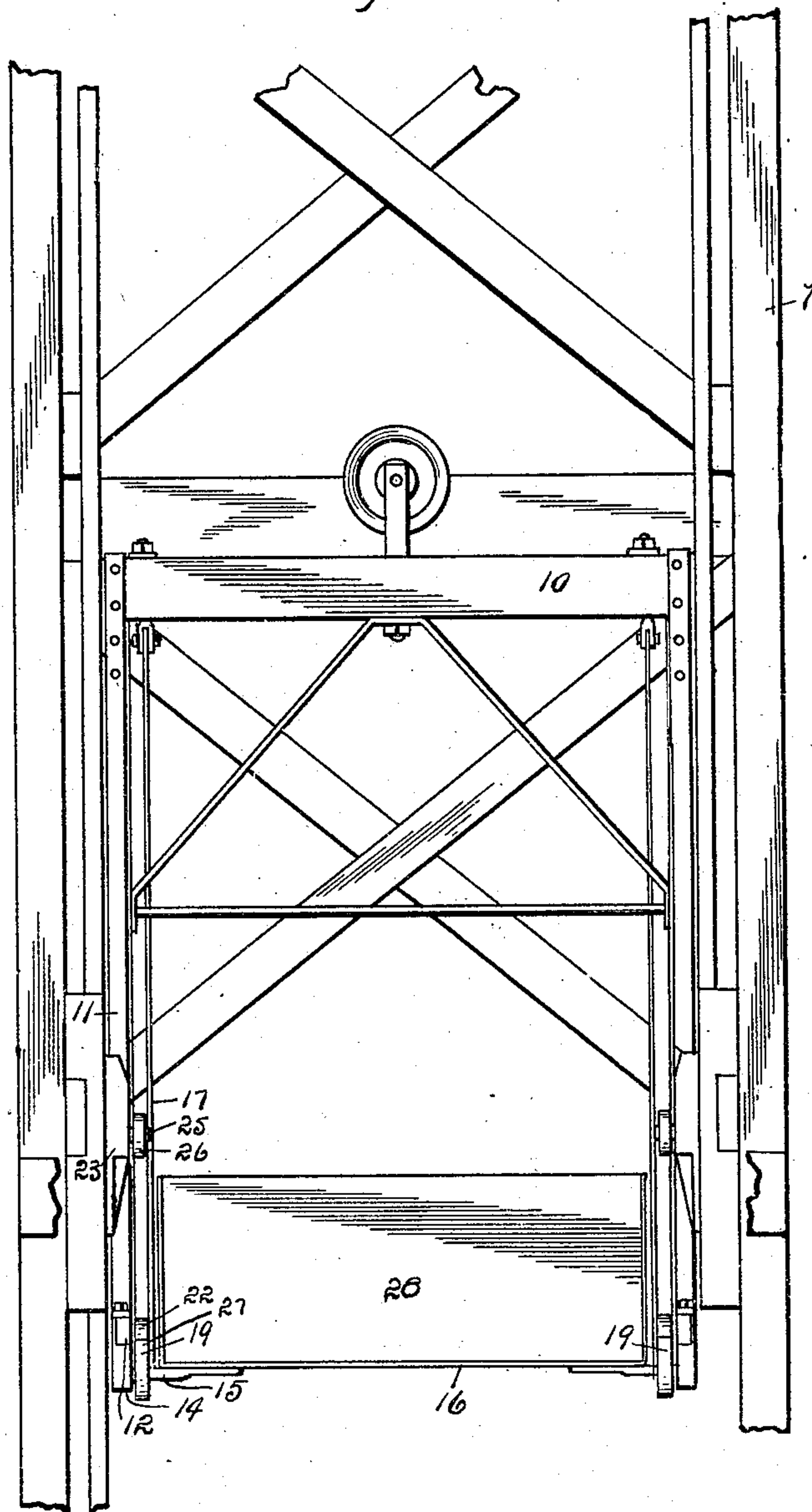
H. C. LINDSEY.

AUTOMATIC DISCHARGING APPARATUS.

APPLICATION FILED MAY 3, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



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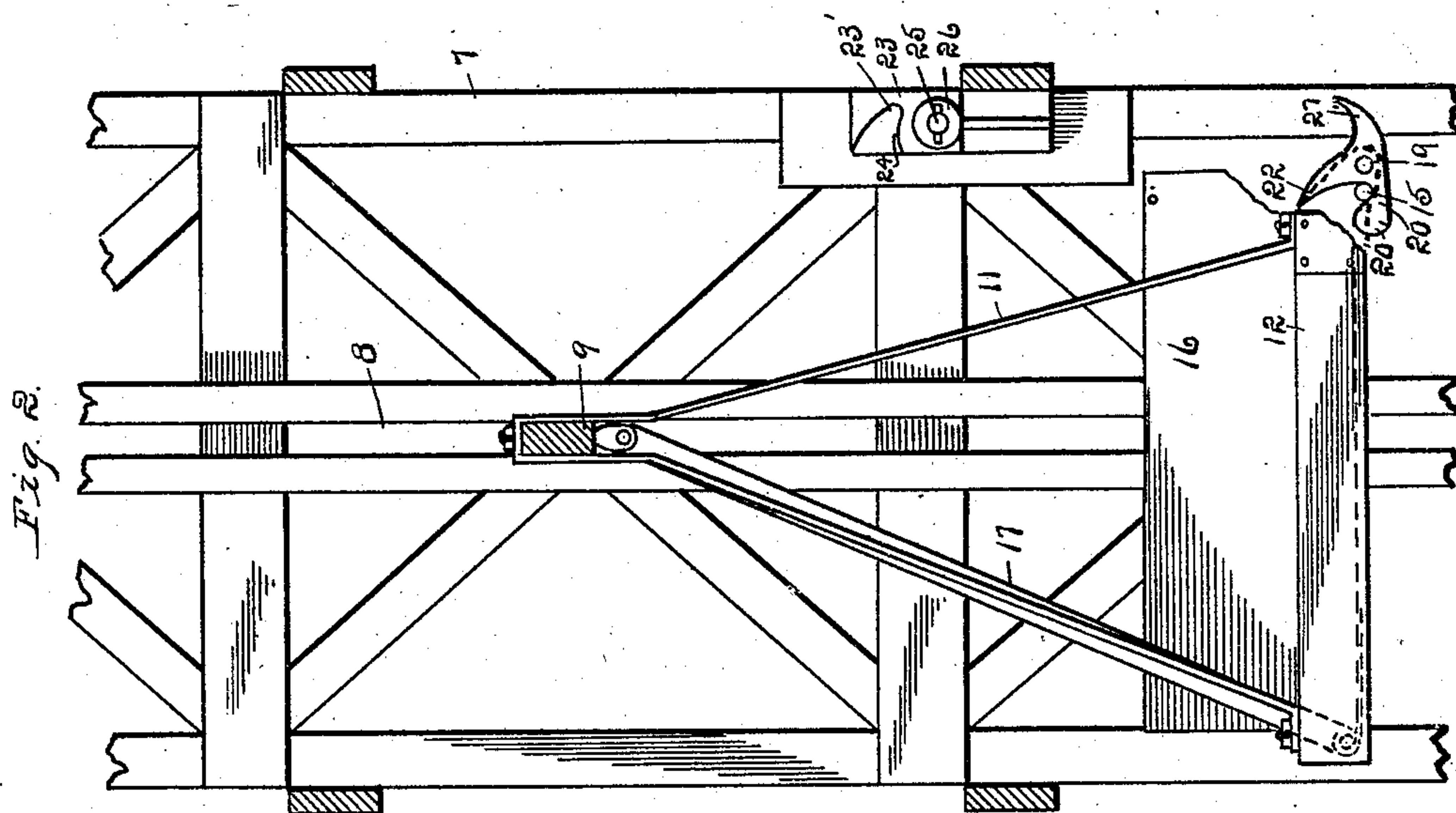
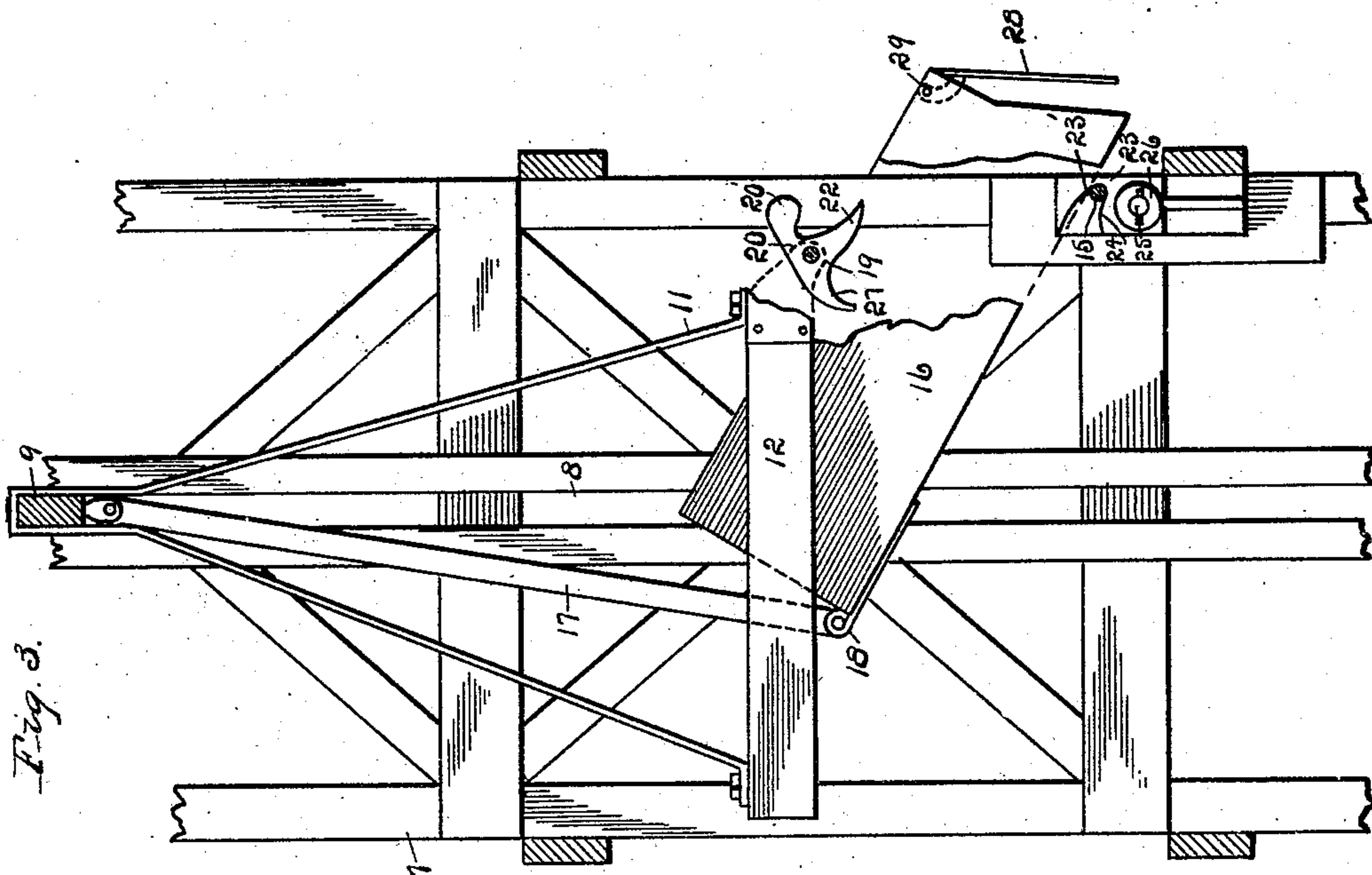
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APPLICATION FILED MAY 3, 1906.

3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 4.

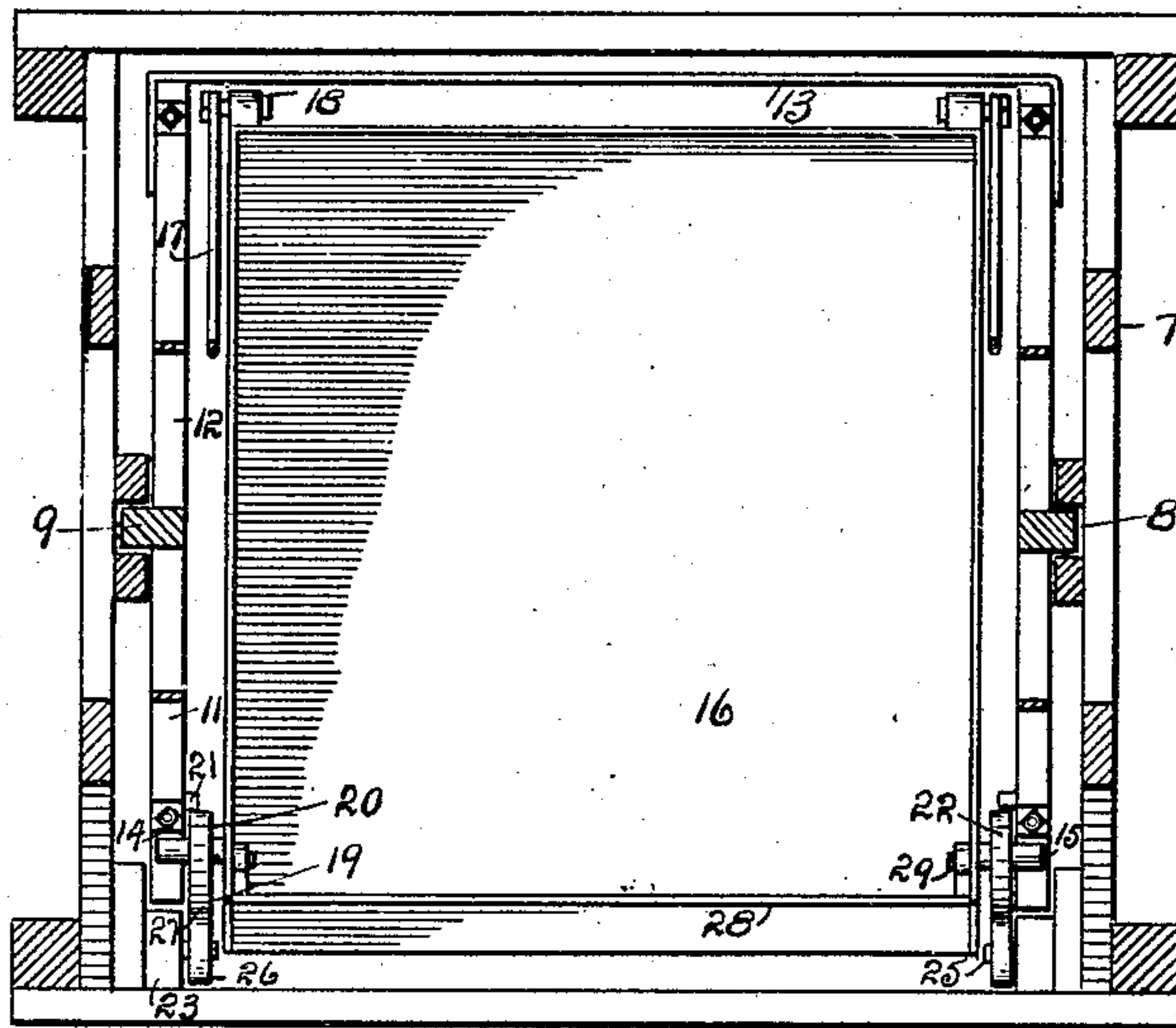


Fig. 5

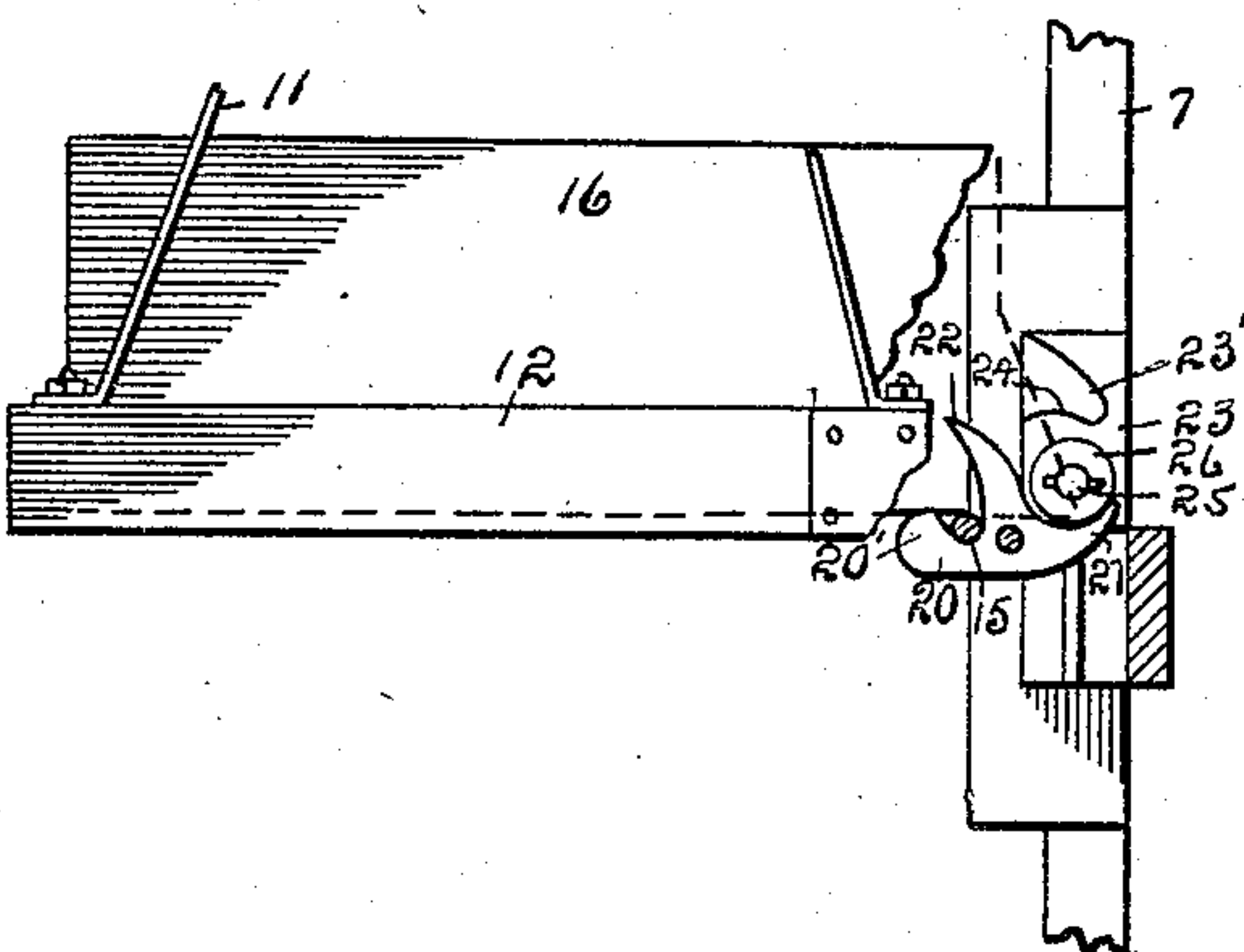
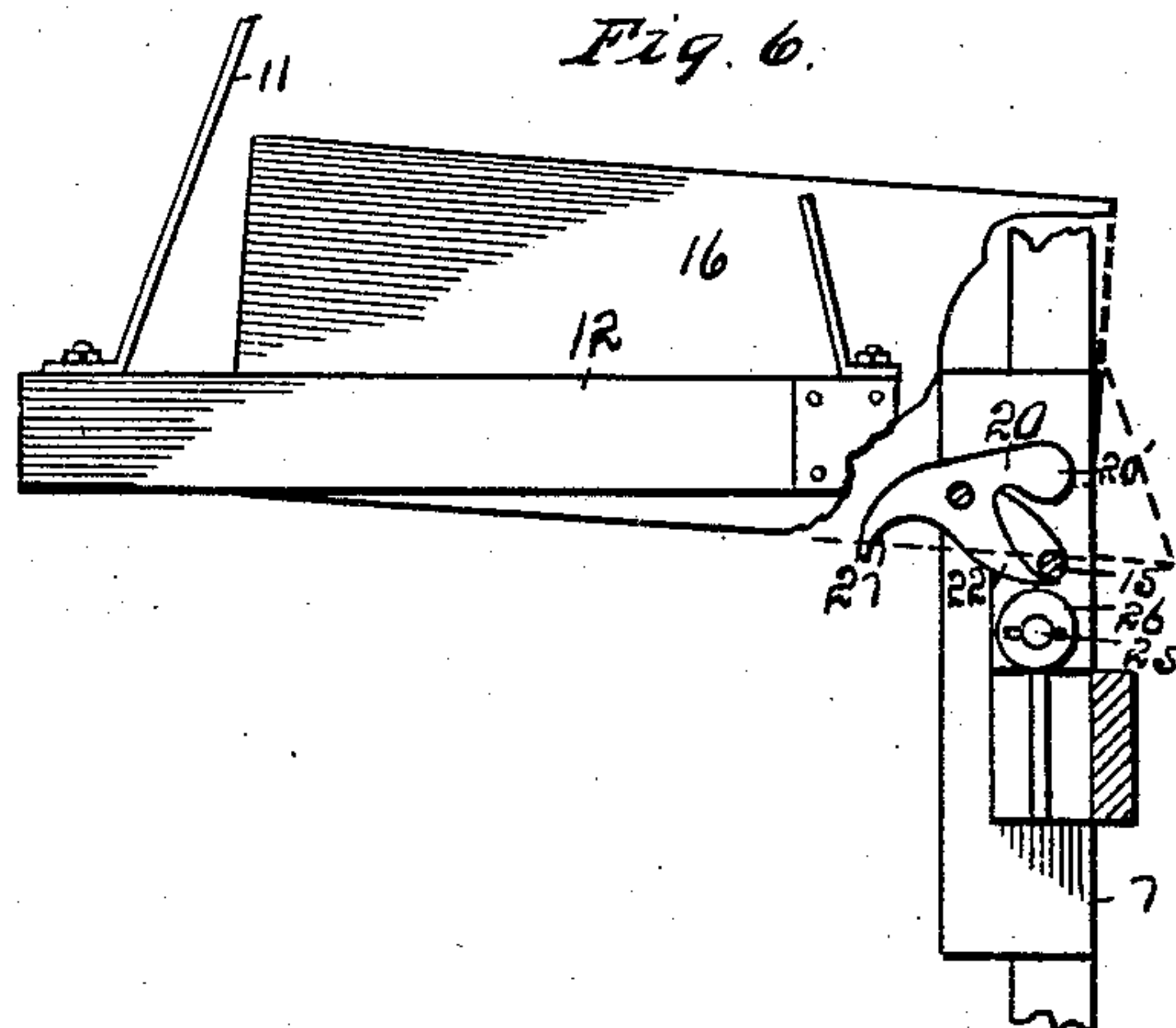


Fig. 6.



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UNITED STATES PATENT OFFICE.

HARRY C. LINDSLY, OF KANSAS CITY, MISSOURI.

AUTOMATIC DISCHARGING APPARATUS.

No. 842,567.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed May 3, 1906. Serial No. 314,972.

To all whom it may concern:

Be it known that I, HARRY C. LINDSLY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Automatic Discharging Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My present invention relates to an automatic discharging apparatus, and more particularly to an apparatus of the class described for use with concrete-mixing machines, the object of my invention being to provide means for raising the material—such as crushed rock, sand, cement, &c.—of which concrete is composed to an elevation convenient for feeding to the mixer and means for automatically discharging the contents of the receptacle forming part of the apparatus into said mixer or onto a suitable receptacle adjacent thereto. Heretofore it has usually been necessary to construct runways from the ground to a platform adjacent to the mixer, up which the material must be conveyed by hand.

The purpose of my invention is to provide means for raising the material mechanically from the ground to the feeding position and when the apparatus has reached said position to provide means for automatically discharging material into the mixer or into the before-mentioned receptacle.

Further objects of my invention are to provide the improved details of structure which will presently be fully described, and pointed out in the claims, reference being had to the accompanying drawings, forming part of this specification, in which like reference-numerals refer to like parts throughout the several views, and in which—

Figure 1 is a front elevation of a device constructed according to my invention, showing a guide-frame, hoist, and receptacle. Fig. 2 is a view in side elevation, illustrating the parts as they appear before reaching the discharging position. Fig. 3 is a similar view illustrating the parts in discharging position. Fig. 4 is a top plan view of a portion of the de-

vice, being in section on the line 4 4, Fig. 2. Fig. 5 is a detail view, in side elevation, of a portion of the device, showing the position of the cam-lever when first engaged by the idler on the main frame. Fig. 6 is a similar view showing the position of the cam-lever as it is about to engage the idler on the main frame upon its descent.

Referring in detail to the drawings, 7 represents the guide-frame, having side channels 8, in which travel the guide-beams 9 of a suitable elevator-cage, having the upper head-beam 10, and carrying-rods 11, which rods extend to and support the platform, which with the present device constitutes merely the side beams 12 and back beam 13. On the forward ends of the side beams 12 are sockets 14, in which are supported the trunnions 15, projecting laterally from the front of a receptacle 16, the forward end of which receptacle is supported in the cage by means of said trunnions, which are carried in the sockets in the side beams, and is supported at its rear end by the arms 17, which are pivoted in a suitable manner to the head-beam 10 and are axially mounted in bearings 18 on the rear of the receptacle. Pivotaly mounted on the forward end of each of said beams 12 and located between said beams and the receptacle is a three-arm cam-lever 19, one arm 20 of which is normally in position below the trunnion 15, which extends from the receptacle 16 and is carried in socket 14, said arm, as stated, being interposed between the receptacle 16 and the side beam 12 and held substantially in engagement with said trunnion by means of a block 21 on beam 12, which is engaged by the second arm 22 of the lever and prevents the lever from rocking backwardly out of the desired position. On the main frame is a socket-plate 23, having a socket 23', with a rounded base 24, facing inwardly toward the elevator-cage and adapted to receive the trunnion 15, as will be described. Revolvably mounted on a stub-axle 25 on plate 23 immediately below the socket is an idler 26, adapted to be engaged by the arm 27 of the lever when the cage is raised or lowered in the frame. The receptacle is provided with a swinging front gate 28, which is hinged at 29 to the body of the receptacle.

When in use, the guide-frame is erected adjacent to the mixer and the cage arranged

as described, suitable means being provided for operating the cage. Material is placed in the receptacle and the cage raised until the arms 27, which are curved, as shown, engage the idlers. As the cage continues to rise the levers will revolve on their pivots, the arms 27 being held by the idlers and the opposite arms 20 being raised against the trunnions of the receptacle which rest in the sockets in the side beams of the cage, raising said trunnions out of their seats. As the support of the trunnions is transferred from the sockets on the receptacle to the cam-lever the receptacle will be swung forward, owing to the angle of the rear supporting-arms, and the trunnions will slide along the lever-arms 22 until they reach a position directly over the sockets 23', into which they are delivered upon the revolution of the cam-levers as before described. The forward end of the receptacle then remains stationary while the cage continues to rise, the rear end of the receptacle being elevated by the arms which are pivoted to the cage head-beam. When the receptacle has reached a sufficient angle, the front gate 28, being hinged at its upper edge, will swing outwardly, permitting the contents of the receptacle to be discharged. When the lever has left its contact with the receptacle-trunnions, the head 20' of arm 20 carries that arm downwardly until the arm 27 strikes against a block 21, suitably located on the cage, so that when the cage is lowered arms 22 will pass the trunnions as they rest in their sockets in the guide-frame and impinge against the top of the idlers 26, the downward pressure of the cage again causing the lever to be revolved in substantially the same manner, but in the opposite direction to the action previously described and causing the arms 22 to pick up the trunnions out of their sockets, the revolution of the lever inclining arms 22, so that the trunnions will travel down its face into the pocket in arm 20, from whence they are delivered to the sockets in the side beams, supporting the receptacle in the cage in a horizontal position while the parts are lowered and supplied with another load and until they again reach the dumping position, when the operations described are repeated.

While I have shown and described a device in which the material is placed in a form of bucket, a car may be placed on a cage-platform and dumped in a manner substantially similar to that described or other forms of cage and receptacle be provided or the arrangement of the levers and operating parts be altered or reversed, and while I have described the device with particular reference to a concrete-mixer its utility as an ash-dumper or loader for other materials is readily apparent.

Having thus described my invention, what

I claim as new therein, and desire to secure by Letters Patent, is—

1. A device of the class described comprising a supporting-frame, a receptacle trunnioned at its forward end on said frame, swinging arms supporting the rear of said receptacle, and means for operating said receptacle, for the purpose set forth.

2. In a device of the class described, a guide-frame, a hoist-cage in said frame, a receptacle having trunnions on its forward end revolubly seated in sockets in said cage, and means for rocking said trunnions off of the sockets in said cage and into engagement with said guide-frame, for the purpose set forth.

3. In a device of the class described, a guide-frame, a hoist-cage in said frame, a receptacle supported at one end by swinging bars suspended from the cage-head and at the other by trunnions carried by the cage sides, and means for automatically rocking said receptacle for the purpose set forth.

4. In a device of the class described, a guide-frame, a hoist-cage adapted to be raised and lowered in said frame, a swinging receptacle supported in said cage, trunnions on said receptacle means on said guide-frame for receiving said trunnions, and means for automatically rocking said trunnions into said receiving means, for the purpose set forth.

5. In a device of the class described, a guide-frame, a hoist-cage adapted to be raised and lowered in said frame, a receptacle trunnioned at its forward end to said cage and supported at its rear by swinging arms, means on said guide-frame for receiving said trunnions, levers pivoted on said cage and adapted for engagement with said trunnions, and means on said guide-frame for operating said lever.

6. In a device of the class described, a guide-frame, a hoist-cage adapted to be raised and lowered in said frame, a swinging receptacle trunnioned at one end in said cage, levers pivoted on said cage and adapted for engagement with said trunnions, socket-plates on said guide-frame, and means for rocking said levers, for the purpose set forth.

7. In a device of the class described, a guide-frame, a hoist-cage adapted to be raised and lowered in said frame, a swinging receptacle having trunnions at one end, seated in sockets in said cage, levers pivoted on said cage and adapted for engagement with said trunnions, means for rocking said levers, and means on said frame for receiving said trunnions.

8. In a device of the class described, a guide-frame, a hoist-cage adapted to be raised and lowered in said frame, a swinging receptacle having trunnions at one end seated in sockets in said cage, means on said

frame for receiving said trunnions, idlers on
said frame adjacent to said receiving means,
and levers having arms adapted to engage
said trunnions and said idlers, for the purpose
5 set forth.

9. In a device of the class described, a
guide - frame, a hoist - cage adapted to be
raised and lowered in said frame, a swinging
receptacle trunnioned at one end on said cage,
10 and means for rocking said trunnions from

their seats in said cage to seats in said frame
during the rise of the cage, and for returning
said trunnions to the cage-seats during the
fall of the cage, for the purposes set forth.

In testimony whereof I affix my signature 15
in presence of two witnesses.

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Witnesses:

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