

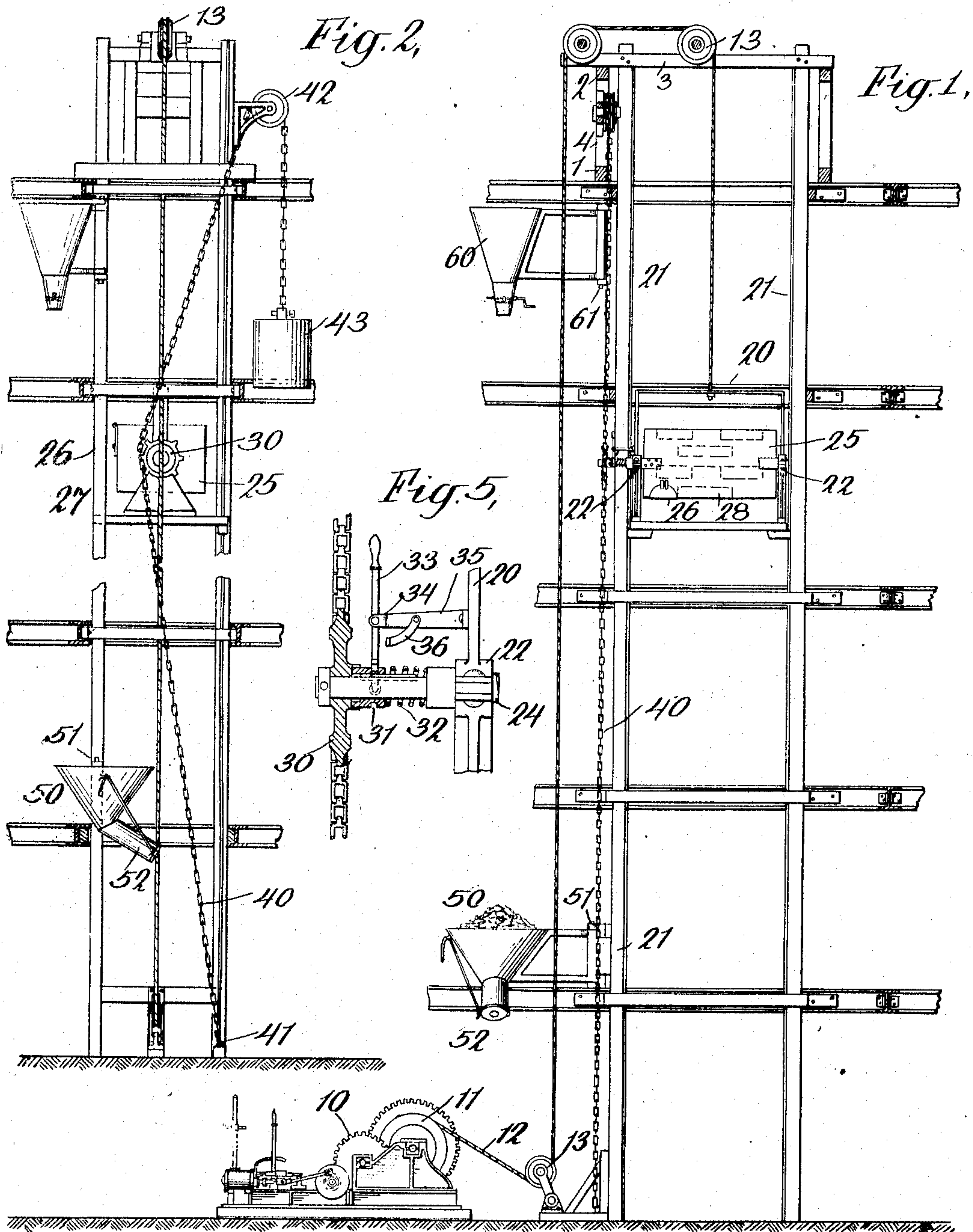
No. 864,449.

PATENTED AUG. 27, 1907.

L. K. DAVIS.
CONVEYING AND MIXING MACHINE.

APPLICATION FILED MAY 19, 1906.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3,

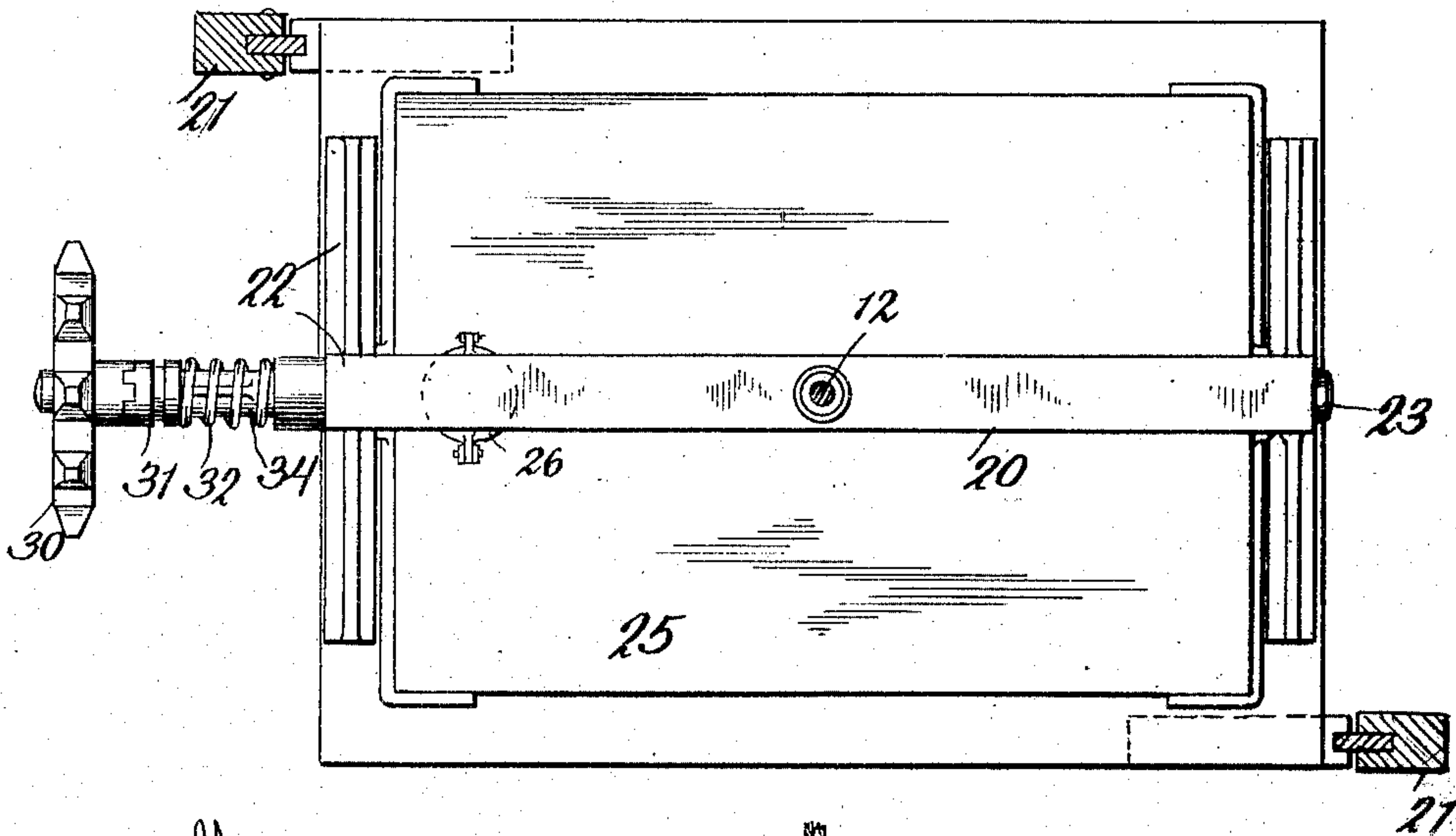
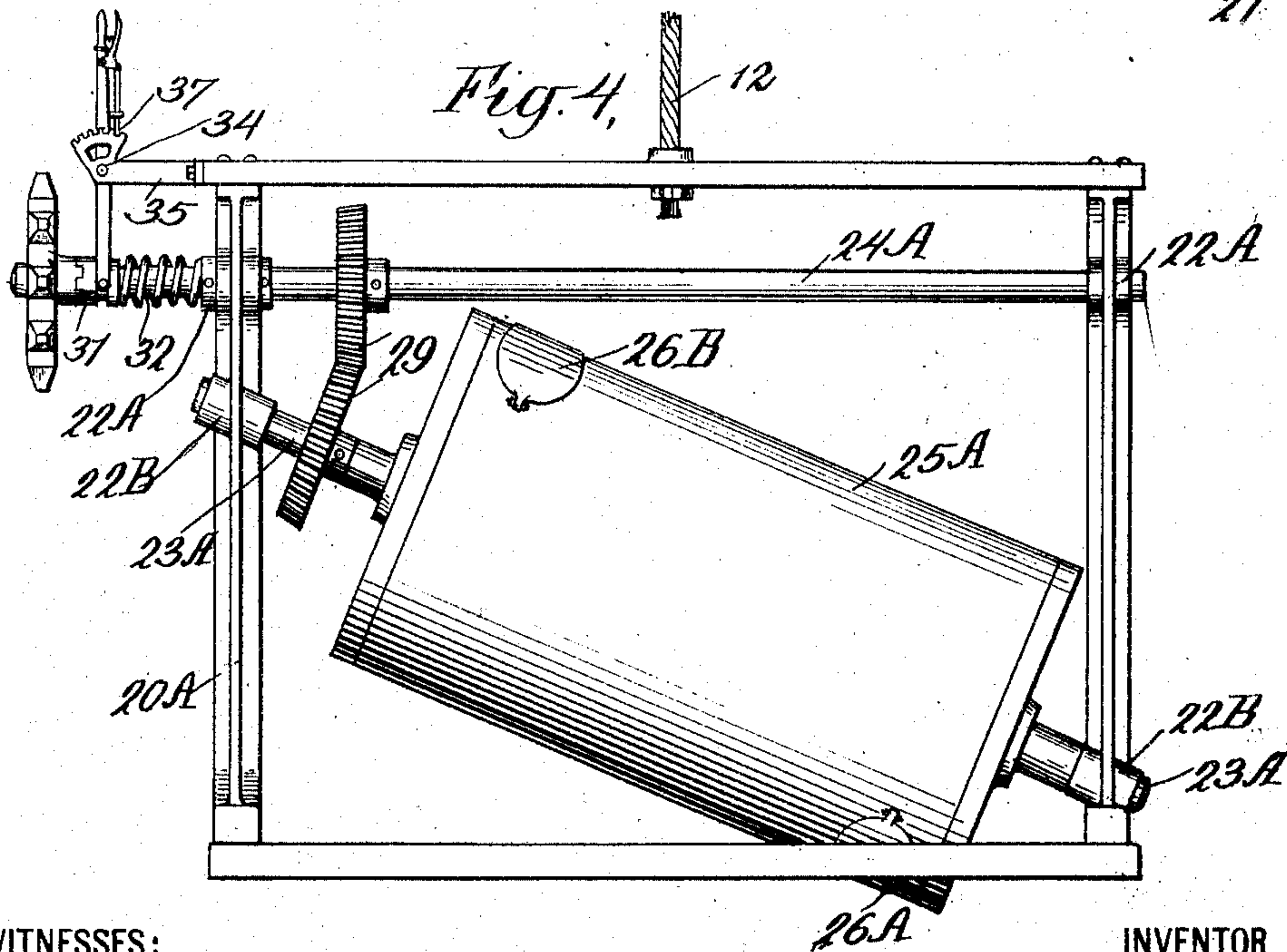


Fig. 4,



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LEWIS K. DAVIS, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO RIBBED CONCRETE BUILDING COMPANY, A CORPORATION OF NEW YORK.

CONVEYING AND MIXING MACHINE.

No. 864,449.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed May 19, 1906. Serial No. 317,725.

To all whom it may concern:

Be it known that I, LEWIS K. DAVIS, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, 5 United States of America, have invented certain new and useful Improvements in Conveying and Mixing Apparatus, of which the following is a specification.

My invention relates to an apparatus for conveying and mixing material, and its object is to provide a 10 simple and efficient arrangement of parts for conveying materials, and at the same time agitating them and mixing them together.

I will describe my invention in the following specification and point out its novel features in claims.

15 Referring to the drawings, Figure 1 is a side elevation of my improved conveying and mixing apparatus, together with some of its connected parts. Fig. 2 is a side elevation of some of the parts shown in Fig. 1, the view being taken at right angles to that shown in 20 Figs. 1. Fig. 3 is a plan view of some of the parts shown in Fig. 1 and 2. Fig. 4 shows in side elevation a modification of my invention. Fig. 5 is an enlarged detail view of a device which I use in carrying out my invention.

25 Like characters of reference designate corresponding parts in all of the figures.

10 designates a hoisting engine which is arranged to rotate a winding drum 11 to which a rope or cable 12 is attached. This rope or cable 12 passes over suitable 30 guiding or supporting pulleys 13, 13, and its other end is attached to a traveling frame 20. This frame 20 is arranged to travel upon and be supported by stationary guides 21, 21 which, in the present instance, are shown in a vertical position, but which may be hori- 35 zontal or inclined if desired.

The traveling frame 20 comprises bearings 22, 22 which support trunnions 23 and 24 which are attached to a rotatable receptacle 25. This receptacle may be of any desired form or construction; for example, it 40 may be a box in the form of a closed cylinder, or it may be rectangular in form. It is provided with a door 26 over an opening in one portion of its outer surface. The shaft or trunnion 24 extends through one of the bearings 22, 22 and has connected to it a sprocket- 45 wheel 30. This sprocket-wheel may be directly attached to the shaft or trunnion 24, but I prefer to mount it loosely upon this shaft as shown in Fig. 5, and to connect it to the shaft 24 through a clutch 31 which may be normally held in its closed position by a spring 50 32, and which may be released by means of a lever 33, which is pivoted at 34 to a bracket 35 which is attached to a portion of the traveling frame 20.

40 designates a sprocket-chain which is attached at 41 to a suitable fastening near one end of the travel of 55 the movable frame 20, and which extends up through-

out the length of the travel of the movable frame to supporting pulley 42 and down to a weight 43 to which its other end is attached.

It may be seen that the fastening 41 and the supporting pulley 42 are placed to one side of the path of travel 60 of the sprocket-wheel 30. The weight 43 maintains a tension on the sprocket-chain 40 and causes it to be held in engagement with the sprocket-wheel 30.

At 50, in Figs. 1 and 2, a hopper is shown which may be pivotally attached, as shown at 51, to one of the 65 guides 21, or to some other part of the supporting structure. 60 designates another hopper similarly pivoted at 61.

In the operation of this device the material to be conveyed and mixed may be first placed in the hopper 50, 70 and when the traveling frame 20 is near the lower end of its travel, this hopper 50 may be swung around its pivots until its mouth 52 is directly over the door 26 in the receptacle 25. When in this position the door 26 over the opening may be opened; then the hopper is opened 75 and may be allowed to discharge its load into the receptacle 25. If the door 26 in the receptacle 25 does not register with the mouth 52 of the hopper 50, the clutch 31 may be released and the receptacle turned around until the door 26 and the opening which it closes is di- 80 rectly above the mouth of the hopper. After the receptacle has thus been filled the door 26 may be closed and fastened and the engine 10 allowed to rotate its winding drum 11 and to hoist the movable frame 20. During its travel the sprocket-wheel 30, passing up over the 85 sprocket-chain 40, will be rotated by the movement of the traveling-frame and will thereby cause the receptacle 25 to be rotated. When the movable frame 20 and its supported parts reach the desired point it may be stopped and the receiving hopper 60 swung about its 90 pivot until it registers with the door 26 in the receptacle 25. The clutch may be released and the receptacle rotated by hand until the door 26 is at the desired point, when the door may be opened and allow the contents to be emptied into the receiving hopper 60. The hop- 95 per 60 may then be swung back out of the way and the frame 20 may again be lowered for another load and this operation may be repeated indefinitely. The clutch 31 may, of course, be released and held out of engagement with sprocket-wheel 30 during any part of the op- 100 eration, and for this purpose a hook 36 or a rack and pawl 37 may be provided.

In Fig. 4 I have shown a modification of my invention, in which case the sprocket-wheel 30 is supported by shaft 24^A which runs in bearings 22^A, 22^A, which are 105 supported by the movable frame 20^A. The receptacle 25^A is in this case supported by the shaft or trunnions 23^A which run in bearings 22^B, 22^B in the frame 20^A. These shafts 23^A and 24^A may be mechanically connected together by a pair of beveled gears 29 or by any 110

other suitable mechanism. When this form of my invention is used I prefer to provide the receptacle 25^A with two doors 26^A and 26^B which may be arranged with closing doors as before described. The operation
5 of this device is similar to that already described.

It is obvious that this invention is useful in connection with the hoisting or conveying of concrete, mortar or sand during building operations, although, of course, it is not limited to this use. The receptacle 25, as I
10 have stated, may be of any desired form. It may be provided with inwardly projecting mixing vanes or plates 28 on its inner surface to provide for the more perfect mixing of the material as they are rotated within the drum.

15 I have illustrated more than one construction of this device to show that it is capable of many modifications and I therefore do not limit myself to the precise form of construction herein shown and described.

It is obvious that when this device is used there is a
20 great saving both of time and labor, and the power of the one engine which is used to convey the materials is also used to mix them together.

What I claim is:—

1. A frame, guides therefor, a receptacle rotatably
25 mounted upon the frame, a sprocket-wheel carried by the frame, a stationary chain associated with the sprocket-wheel, means for moving the frame over the guides and thereby rotating the sprocket-wheel, and means for connecting and disconnecting the receptacle to and from the
30 sprocket-wheel.

2. A frame, guides therefor, a receptacle rotatably mounted upon the frame, a sprocket-wheel carried by the frame, a stationary chain associated with the sprocket-wheel, means for maintaining the chain in engagement
35 with the sprocket-wheel, an engine connected to move the frame over the guides and to thereby rotate the sprocket-wheel, and a clutch arranged to connect or disconnect the receptacle to and from the sprocket-wheel.

3. A frame, guides therefor, a closed mixing receptacle
40 rotatably mounted upon the frame, inwardly projecting blades upon the inner surface of said receptacle, a sprocket-wheel carried by the frame and connected with

the receptacle, a chain associated with the sprocket-wheel, one end of said chain being fixed; a weight arranged to maintain the chain in mesh with the sprocket-wheel, and
45 means for moving the frame with the receptacle and its connected sprocket-wheel over the chain and thereby rotating the receptacle.

4. A closed receptacle, a door therein, guides over which the receptacle is arranged to be moved, a sprocket-wheel connected with the receptacle, a stationary sprocket-chain associated therewith whereby the receptacle is rotated by said movement, and a pivotally supported hopper
50 arranged to be swung into and out of the path of travel of the receptacle.

5. A frame, guides therefor, a closed receptacle rotatably mounted upon the frame, a door in the receptacle, an engine connected to move the frame laterally over the guides, a sprocket-wheel connected with the receptacle, a stationary sprocket-chain associated therewith whereby
55 the receptacle is rotated by its lateral movement, a pivotally mounted hopper near one portion of the travel of the frame and receptacle, and arranged to be swung into and out of the path of travel of the frame and receptacle, and a second pivotally mounted hopper near another portion of the travel of the frame and receptacle, and arranged to be swung into and out of the path of travel of the frame and receptacle.

6. A frame, guides therefor, a closed receptacle rotatably mounted upon the frame, vanes projecting from the inner surface of the receptacle, a door in the receptacle, a sprocket-wheel carried by the frame, a stationary chain associated with the sprocket-wheel, a weight arranged to maintain the chain in engagement with the sprocket-wheel, an engine connected to move the guides, and to thereby rotate the sprocket-wheel, a clutch arranged to connect or disconnect the receptacle to and from the sprocket-wheel, a pivotally mounted hopper near one portion of the travel of the frame and receptacle, and arranged to be swung into and out of the path of travel
60 of the frame and receptacle, and a second pivotally mounted hopper near another portion of the travel of the frame and receptacle, and arranged to be swung into and out of the path of travel of the frame and receptacle.

In testimony whereof I have signed this specification in
65 the presence of two subscribing witnesses.

LEWIS K. DAVIS.

Witnesses:

ERNEST W. MARSHALL,
ELLA TUCH.