No. 864,451. PATENTED AUG. 27, 1907.

L. K. DAVIS.

CONVEYING AND MIXING APPARATUS.

APPLICATION FILED MAY 19, 1906.

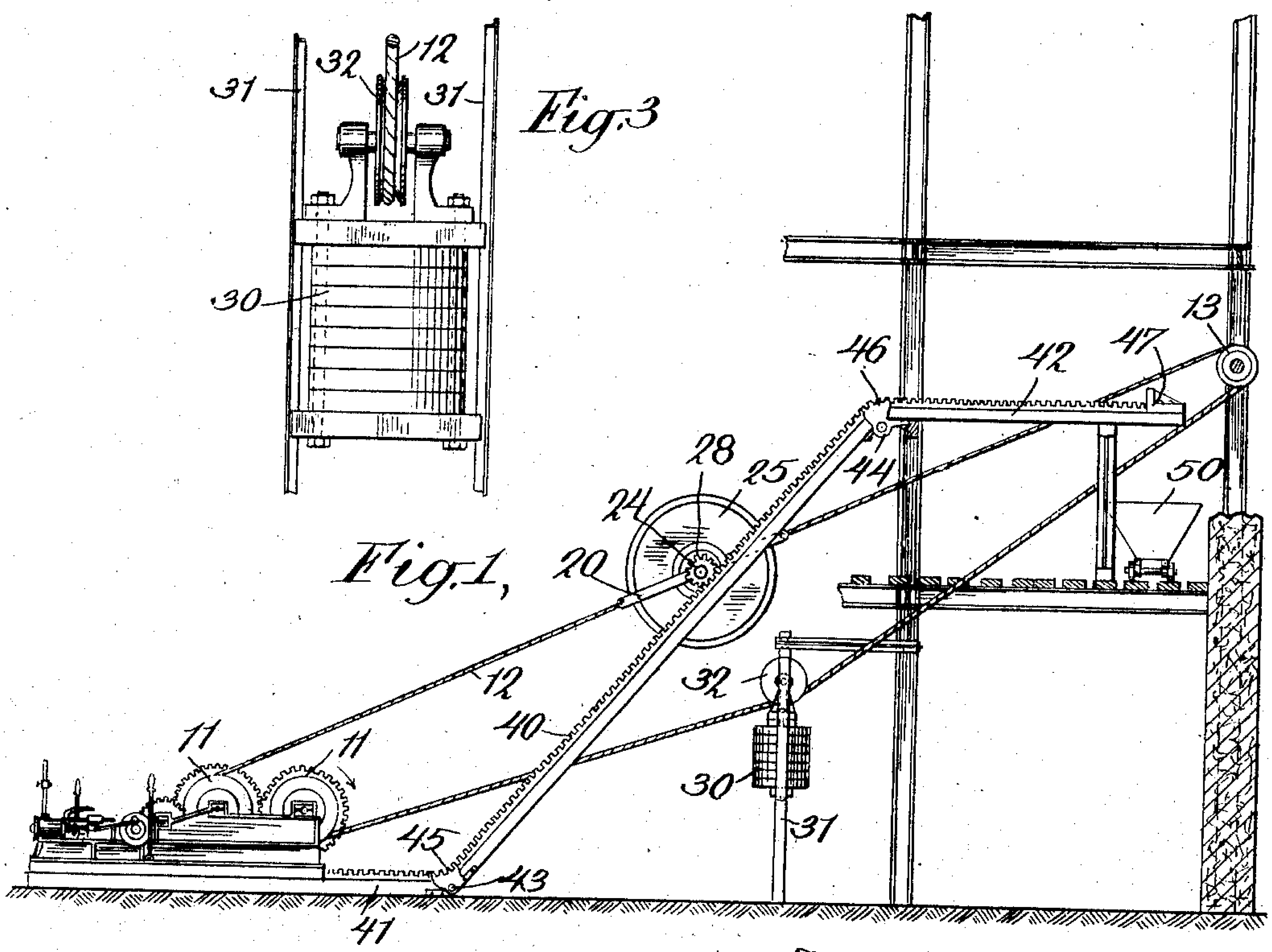

Fig. 3

Fig. 1,

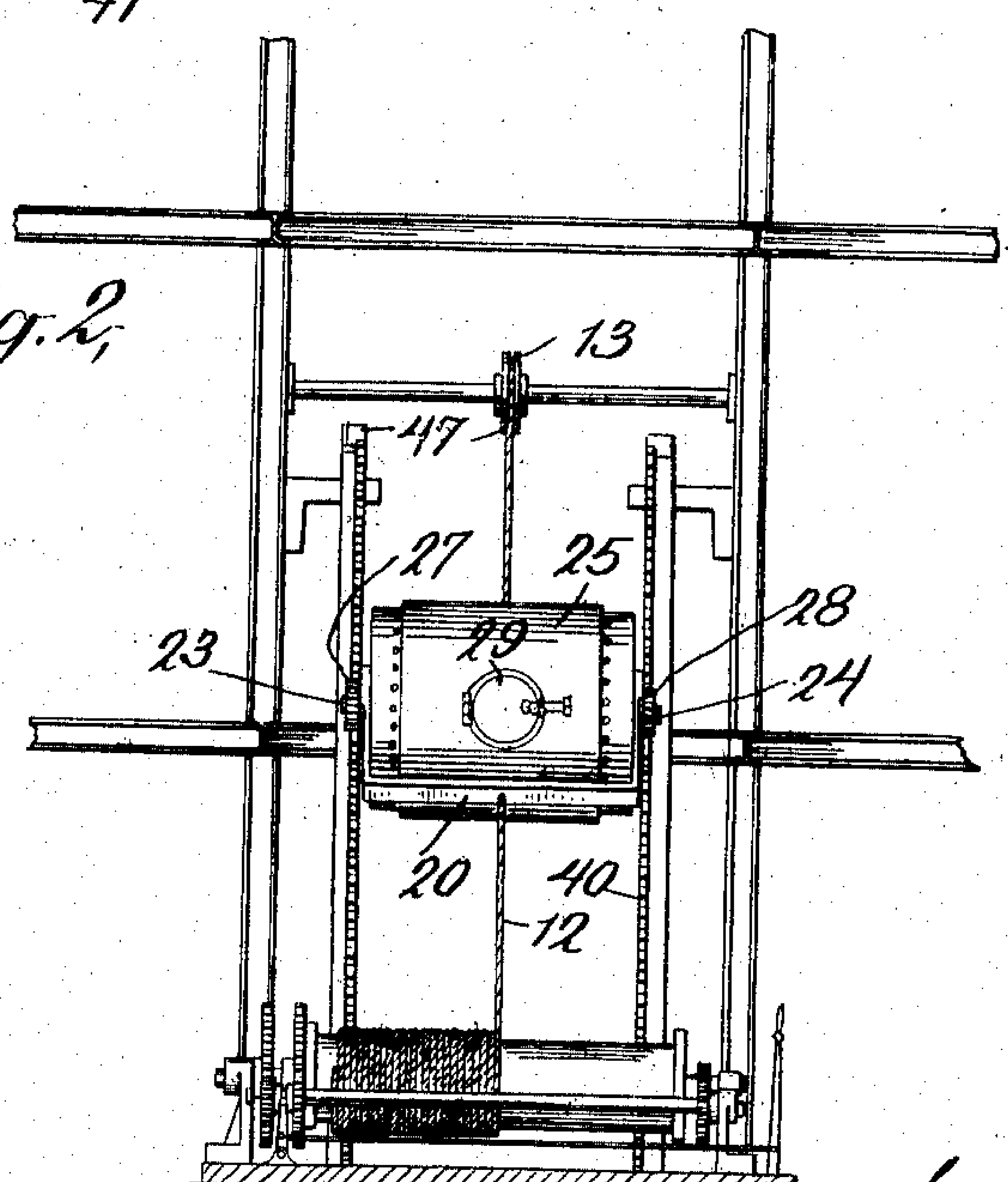

Fig. 2,

WITNESSES:

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CONVEYING AND MIXING APPARATUS.

No. 864,451. Specification of Letters Patent. Patented Aug. 27, 1907.

Application filed May 19, 1906. Serial No. 317,727.

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, 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 simple and efficient arrangement of parts for conveying materials, and at the same time agitating them or mixing them together.

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

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 at right angles to that shown in Fig. 1. Fig. 3 is a detail of a part of the mechanism which I use in carrying out my invention.

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

10 designates an engine which is arranged to rotate a pair of winding drums 11 in either direction and to thereby cause a rope or cable 12 to be driven. This rope or cable passes over a sheave 13 and is connected to the winding drums 11. It is also attached, as shown at 14, to a movable frame or double bail 20. This bail 20 is connected to a receptacle 25. This receptacle may be cylindrical, as shown in the drawings, or it may be of any other desired form or construction. The outer ends of this receptacle are provided with toothed wheels as shown at 27 and 28. These wheels may be directly attached to the ends of the receptacle 25 and they may be supported by trunnions 23 and 24 which are connected to the receptacle and which pass through the bail 20.

40 designates a rack which may be in an inclined or a horizontal position and which may have connected to it similar racks 41 or 42. These various racks may be pivoted together as shown at 43 and 44, and connecting sections 45 and 46 may be connected between these joints for the purpose of providing a continuous path of travel for the toothed wheels 27 and 28 which are arranged to be supported by or to travel over these racks.

47 designates a stop at the outer end of rack 42.

In operating this device the receptacle 25 is moved by the engine or by gravity to one end of its travel, and while in that position the receptacle is opened. This may be accomplished by means of a hinged door 29 on one side of the receptacle. The receptacle may then be filled with the material which it is desired to have conveyed and mixed, such, for example, as concrete, cement or sand, after which the hinged door 29 may be closed and secured. The rope 12 may then be driven by the engine 10 and caused to move the receptacle 25.

In passing through its path of travel the toothed wheels 27 and 28, which are in mesh with the teeth of the racks 41, 40 and 42, will cause the receptacle to have a rotary motion. When the receptacle has been moved to the desired point the hinged door 29 may again be opened and its contents dumped. A car 50 or other device may be arranged to receive the contents of the receptacle 25.

In Fig. 3 I have shown an arrangement for maintaining the rope 12 in proper tension and for taking up any slack which may occur in this rope. This device is also shown in Fig. 1. It comprises a weight 30 which is slidably supported upon stationary guides 31, 31. A loose pulley 32 is mounted upon this weight and the rope 12 is arranged to pass under this pulley.

It may be seen that as the receptacle 25 passes up over the various parts of the racks which are arranged to support and to guide it, the length of the rope-loop will vary. This weighted loose pulley is arranged to automatically compensate for this change of length of the rope-loop and to take up slack which may occur in the rope.

I have shown this invention arranged to run from one floor level to another, but, of course, it may be carried up to other floors or stages and is not limited to the arrangement shown in the drawings. The guiding racks are made up in sections which are hinged together as described and their positions may be varied at will.

This invention is useful in connection with the hoisting or conveying of concrete, mortar or sand during building operations and this is one of its advantageous uses. By its use a great deal of time and labor is saved and the power of the engine which is used to convey the material is also utilized for mixing it at the same time.

What I claim is—

1. A receptacle in combination with toothed guiding racks, hinged joints in said racks, said joints arranged to have uninterrupted toothed surfaces, gears connected with the receptacle and associated with the racks to cause the

receptacle to rotate when it is drawn over the racks, an engine, a rope connecting the engine and the receptacle, and means for taking up slack in the rope.

2. A receptacle in combination with toothed guiding racks, hinged joints in said racks, said joints arranged to have uninterrupted toothed surfaces, gears connected with the receptacle and associated with the racks to cause the receptacle to rotate when it is moved over the racks, an engine, a rope-loop arranged to be driven thereby, a double bail on the receptacle, said bail being connected with and forming a part of the rope-loop, and a device comprising a loose pulley and a guided weight arranged to automatically take up slack in the rope-loop.

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

LEWIS K. DAVIS.

Witnesses:
ERNEST W. MARSHALL,
ELLA TUCH.