

No. 756,170.

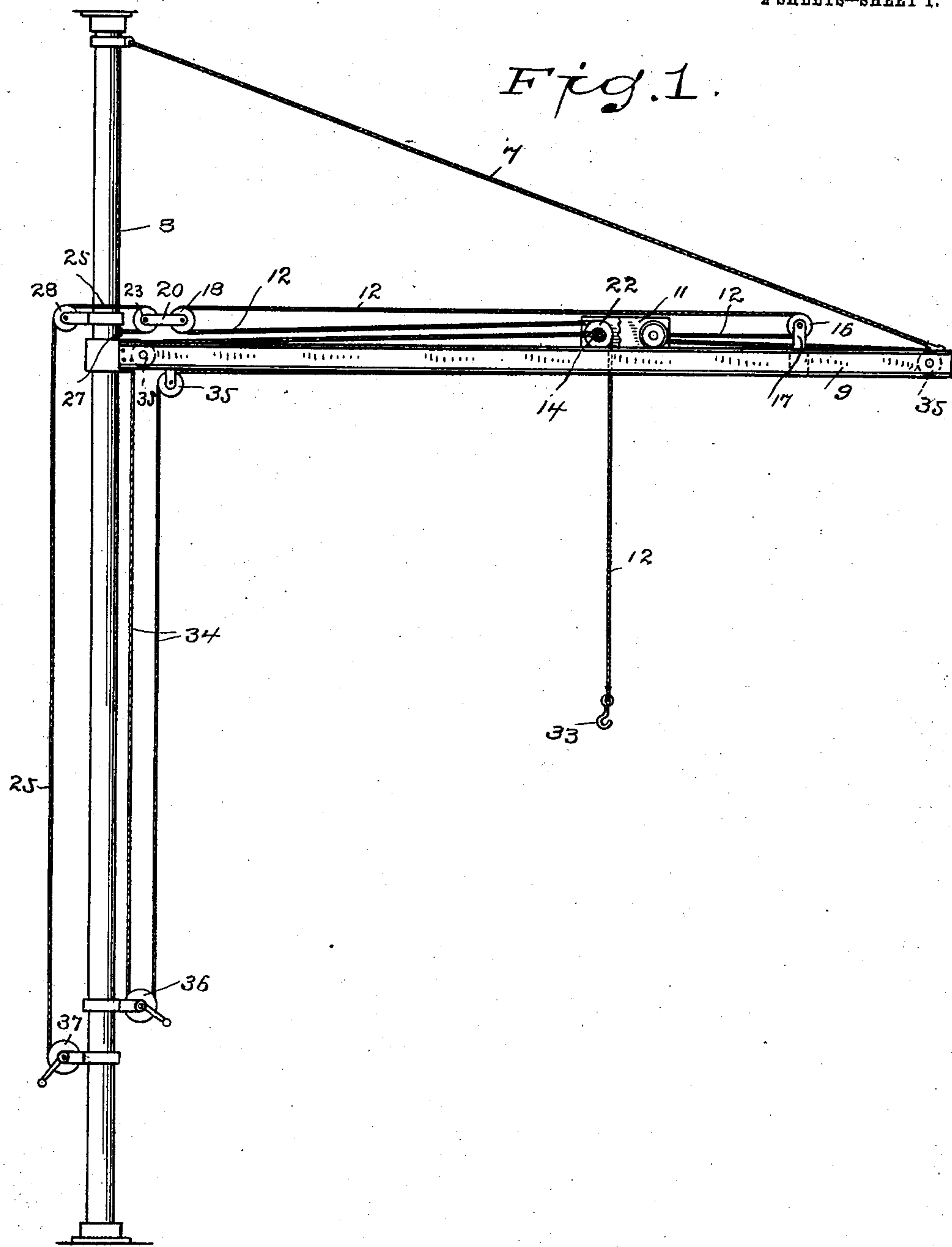
PATENTED MAR. 29, 1904.

**D. A. KEATING.**  
**CONVEYER SYSTEM.**

APPLICATION FILED DEC. 12, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES.

H. A. Lamb,  
S. W. Atherton

INVENTOR.

Daniel A. Keating  
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2 SHEETS—SHEET 2.

Fig. 2.

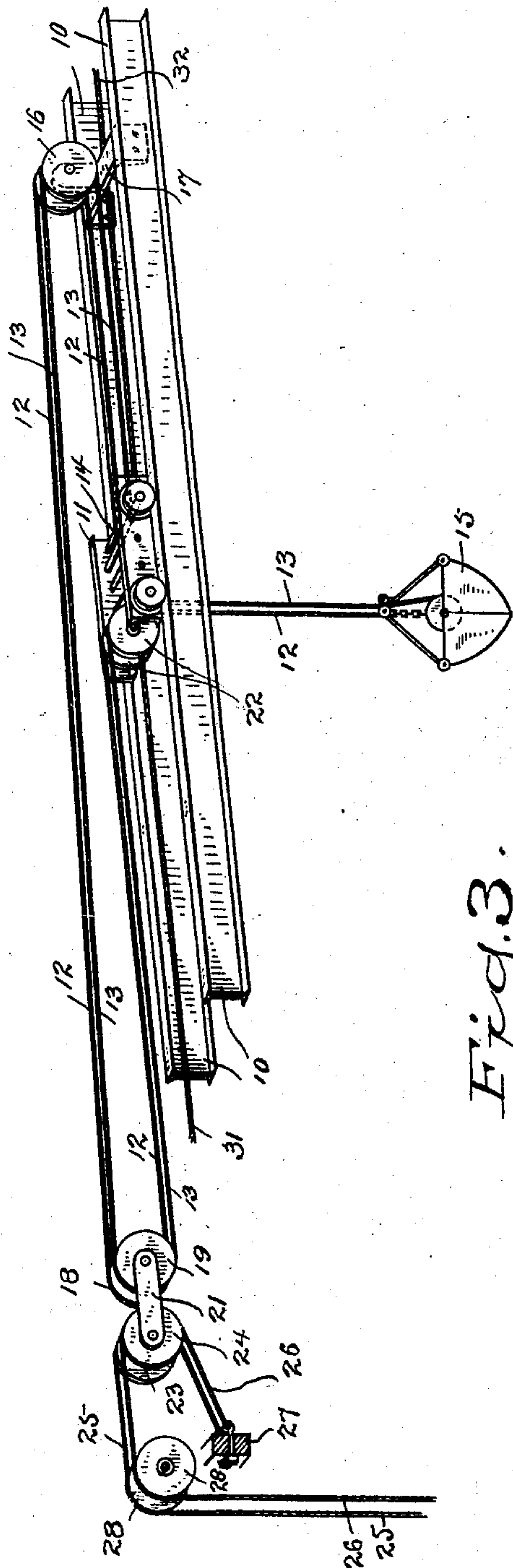
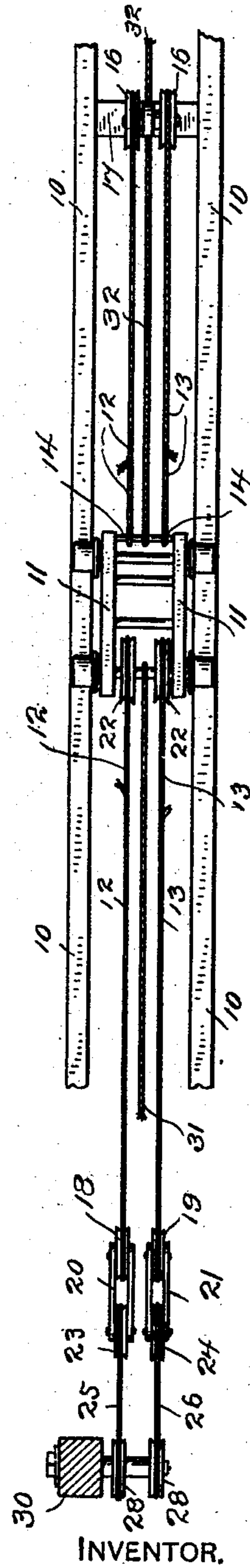


Fig. 3.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## CONVEYER SYSTEM.

SPECIFICATION forming part of Letters Patent No. 756,170, dated March 29, 1904.

Application filed December 12, 1903. Serial No. 184,889. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL A. KEATING, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented a new and useful Conveyer System, of which the following is a specification.

My invention is applicable to cranes, conveyers, dredgers, &c.—in brief, to any of the various uses in which it may be required to move a bucket or other weight horizontally without raising or lowering it, to raise or lower it in any position in which it may be placed in the horizontal plane, and in the case of a conveyer or dredger to close the bucket in any position in which it may be placed—as, for example, in unloading and conveying coal, in dredging, and wherever it may be required to move earth, sand, gravel, &c.; and my invention has for its object to provide a system of ropes and pulleys whereby a car with a bucket or other weight suspended therefrom may be moved in the horizontal plane either on a boom or on tracks without raising or lowering the weight. The weight may be raised and lowered at will, and in case the weight is a bucket the bucket may be closed at the will of the operator, the mode of operation being so simple, durable, and reliable in use as to obviate and do away with numerous objections to the various crane, conveyer, and dredger systems now in use.

With these and other objects in view I have devised the simple and novel conveyer and crane system, of which the following description, in connection with the accompanying drawings, is a specification, reference characters being used to indicate the several parts.

Figure 1 is an elevation illustrating in a simple manner the application of the principle of the invention to a boom-crane; Fig. 2, a perspective illustrating the application of the principle of the invention to a coal-conveyer, and Fig. 3 is a plan view corresponding therewith.

11 denotes a car adapted to travel on any suitable support, as on a boom 9 or on rails 10, as shown in the drawings. The style of boom or rails upon which the car travels and the structure of the car are matters of no im-

portance whatever so far as the principle of the invention is concerned.

In Figs. 2 and 3, 12 and 13 denote ropes which are connected to the car, as at 14. From the car these ropes pass horizontally, then upward and over pulleys 16, mounted on any suitable fixture, as a bracket 17, which is shown as bolted to the rails, although the special manner in which these pulleys are supported forms no portion of the invention. From pulleys 16 ropes 12 and 13 pass horizontally backward over and past the car, then downward over pulleys 18 and 19, carried, respectively, by sliding blocks 20 and 21, then forward again under the upper laps of said ropes, and then downward over pulleys 22 on the car to the weight, in the present instance a bucket, which is indicated by 15 and may be of the ordinary clam-shell or self-opening type. The construction of the bucket is not illustrated in detail, as specifically it forms no portion of the present invention. In addition to pulley 18 sliding block 20 carries a pulley 23, and in addition to pulley 19 sliding block 21 carries a pulley 24.

25 and 26 denote operating-ropes connected to any suitable fixture, as at 27. These ropes pass upward and over pulleys 23 and 24, respectively, then horizontally in the direction away from the car and downward over pulleys 28, which are mounted on any suitable fixture, as at 30. Operating-ropes 25 and 26 extend to an engine or to suitable winding-drums, which are not shown, as they form no portion of the present invention. 31 and 32 denote controlling-ropes which are connected to the car and extend horizontally in opposite directions and are used to move the car in either direction, in the present instance upon the tracks. These ropes in practice extend to an engine (not shown in the drawings) or to a suitable winding-drum, as in Fig. 1.

In applying the principle of the invention to a crane the duplication of sliding blocks, pulleys, and ropes is of course unnecessary, as there is no bucket to be opened. In Fig. 1 I have illustrated the simplest form of the invention as applied to a boom-crane, the standard being indicated by 8, the boom by 9, and



the guy-rope by 7. In this form sliding block 21, with pulleys 19 and 24, one of the pulleys 16 on bracket 17, one of the pulleys 22 on the car, one of the pulleys 28, and ropes 5 26 and 13 are dispensed with, the operation, however, being the same in every respect and the parts dispensed with only those required when there is a bucket to be opened. In this form a hook 33 is provided to receive the 10 weight. In lieu of ropes 31 and 32 I use one rope, which is designated as 34. The ends of this rope are both connected to the car, from which they pass in opposite directions over pulleys 35 on the boom and around a winding- 15 drum 36, mounted on the standard. The fixed support to which rope 25 is connected is the standard itself. This rope after passing over pulley 23 on sliding block 20 passes over pulley 28, mounted on the standard, and to a 20 winding-drum 37, also mounted on the standard.

The operation of my novel system is simplicity itself. To move the car longitudinally without raising or lowering the weight, the 25 controlling rope or ropes are manipulated as may be required. In the form illustrated in Fig. 1 rope 12 will pass freely over pulley 16 (shown as mounted on the boom) and over pulley 18 on sliding block 20, but will remain 30 stationary as to pulley 22 on the car, the action being the same as though rope 12 was endless. To raise or lower the weight, operating-rope 25 is manipulated. If said rope is pulled, the car being of course held station- 35 ary, the action will be to draw the sliding block toward the left, as shown in the drawings, which will raise the weight. If said rope is released, the effect will be to permit the sliding block to move toward the right, and 40 the weight will descend.

When the principle of the invention is applied to a coal conveyer or dredge, as in Figs. 2 and 3, the ropes, sliding blocks, and pulleys are duplicated in order to provide for 45 closing the bucket. To move the car longitudinally without raising or lowering the bucket, the controlling rope or ropes are manipulated as may be required. Ropes 12 and 13 will pass freely over pulleys 16, which 50 are mounted on a fixture, and over pulleys 18 and 19 on the sliding blocks, but will remain stationary as to pulleys 22 on the car, the action being the same as though both ropes were endless. To raise or lower the bucket, oper- 55 ating-ropes 25 and 26 are manipulated evenly. If said ropes are pulled, the car being of course held stationary, the action will be to draw sliding blocks 20 and 21 toward the left, as shown in the drawings, which will raise 60 the bucket. If the operating-ropes are both released, the action will be to permit the sliding block to move toward the right and the bucket will descend. In this form it is of course necessary that one of the "operating- 65 ropes," so called, serve as a closing-rope. In

the present instance rope 26 is shown as the closing-rope. To close the bucket in any position in which it may be placed, rope 25 is held firmly and rope 26 is pulled. This will draw sliding block 21 toward the left, as shown 70 in the drawings, sliding block 20 remaining stationary, and will pull rope 13 correspondingly toward the left, rope 12 remaining stationary, the effect of which will be to close the bucket in the usual way. As the inven- 75 tion is not limited to any special make of the self-opening type of bucket and as the special closing mechanism on the bucket may be of the ordinary or any preferred construction, I have simply illustrated the closing mechan- 80 ism in a general way. When it is desired to have the bucket open, it is simply necessary to release rope 25, rope 26 being of course held firmly until it is desired to raise or lower the bucket. Then both operating-ropes are 85 released simultaneously to lower the bucket or pulled to raise it.

Having thus described my invention, I claim—

1. In a system of the character described the 90 combination with a car having a pulley, a pulley 16 on a fixture and a sliding block having a pulley at each end, of a rope connected to the car and extending over pulley 16, then backward past the car and over the pulley at the 95 forward end of the sliding block and then forward and downward over the pulley on the car, the free end thereof being adapted to receive a weight, and an operating-rope connected to a fixture and extending over the pulley 100 at the rear end of the sliding block whereby the car may be moved in either direction, rope 12 passing freely over pulley 16 and the pulley at the forward end of the sliding block but remaining stationary relative to the pul- 105 ley on the car and the weight remaining stationary.

2. In a system of the character described the combination with a car having a pulley, a pulley 16 on a fixture, a sliding block having a 110 pulley at each end and a pulley 28 on a fixture, of a rope connected to the car and extending over pulley 16, then backward past the car and over the pulley at the forward end of the sliding block and then forward and downward 115 over the pulley on the car, the free end thereof being adapted to receive a weight, and an operating-rope connected to a fixture and extending over the pulley at the rear end of the sliding block and over pulley 28, said rope acting 120 when pulled to move the sliding block and the car in one direction and when released to permit said parts to be moved in the opposite direction.

3. In a system of the character described the 125 combination with a car having pulleys, pulleys 16 on a fixture and sliding blocks carrying pulleys at both ends, of ropes 12 and 13 connected to the car and extending over pulleys 16, then backward past the car and over the pulleys at 130



the forward ends of the sliding blocks and then forward and downward over the pulleys on the car, their free ends being adapted for the attachment of a bucket and operating-ropes 5 connected to a fixture and extending over the pulleys at the rear ends of the sliding blocks, substantially as shown, for the purpose specified.

4. In a system of the character described the combination with a car having pulleys, pulleys 16 on a fixture, sliding blocks carrying pulleys at both ends, and pulleys 28 on a fixture, of ropes 12 and 13 which are connected to the car, extend over pulleys 16, then backward 5 past the car and over the pulleys at the forward ends of the sliding blocks and then forward and downward over pulleys 22, their free ends being adapted to receive a bucket and operating-ropes 25 and 26 connected to a 10 fixture and extending over the pulleys at the rear ends of the sliding blocks and over pulleys 28, substantially as shown, for the purpose specified.

5. In a system of the character described the combination with a car having pulleys, pulleys 25 16 on a fixture and sliding blocks carrying pulleys at both ends, of ropes 12 and 13 connected to the car and extending over pulleys 16, then backward past the car and over the pulleys at the forward ends of the sliding 30 blocks and then downward over the pulleys on the car, a self-closing bucket attached to said ropes below the car and operating-ropes connected to a fixture and extending over the pulleys at the rear ends of the sliding blocks, 35 said operating-ropes acting together to raise and lower the bucket and one of said ropes acting as a closing-rope when pulled, the other rope being held stationary.

In testimony whereof I affix my signature in 40 presence of two witnesses.

DANIEL A. KEATING.

Witnesses:

A. M. WOOSTER,  
S. W. ATHERTON.