(No Model.)

3 Sheets—Sheet 1.

A. C. DINKEY.

COAL HANDLING DEVICE.

No. 599,036. Patented Feb. 15, 1898.

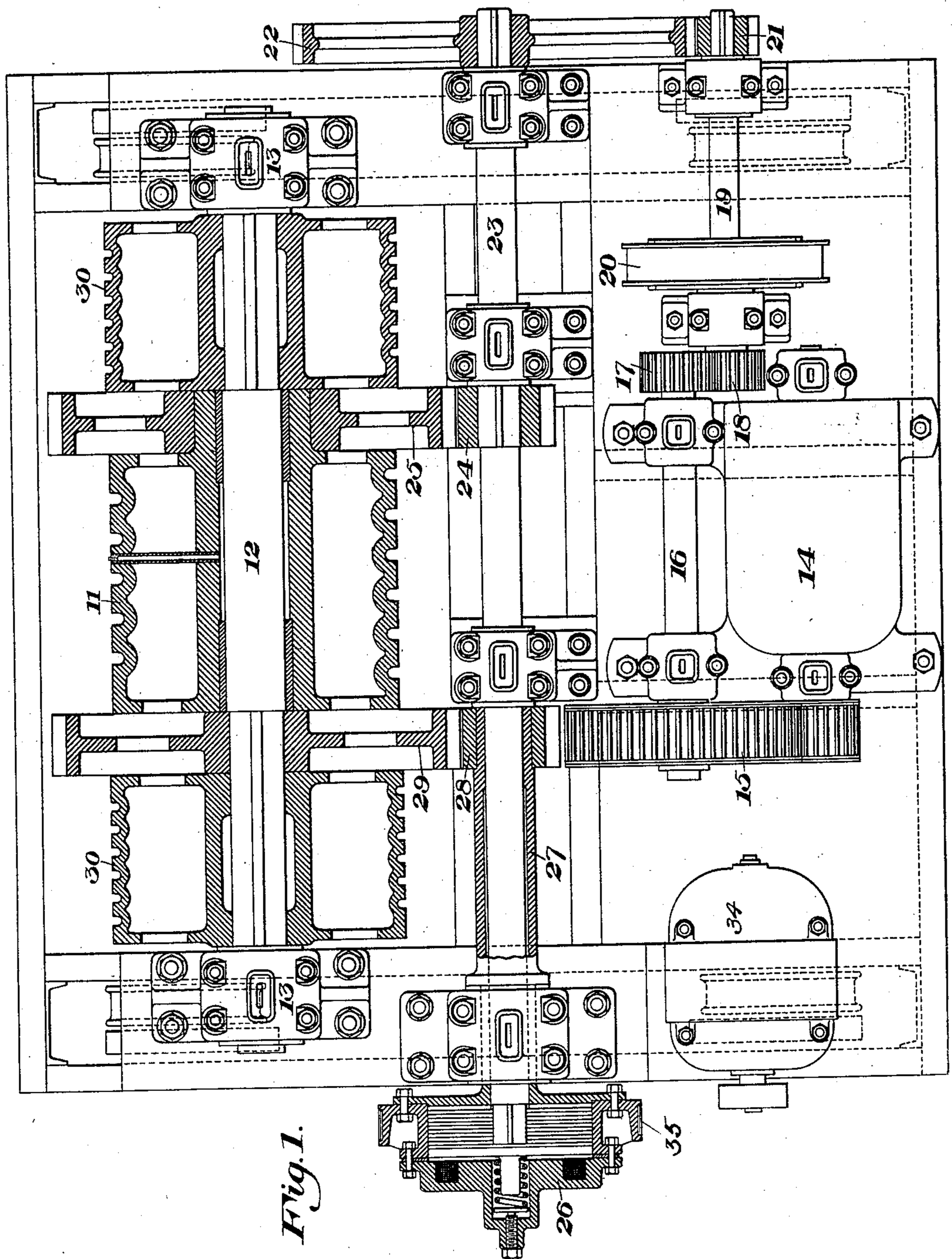

Fig. 1.

WITNESSES

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(No Model.)

3 Sheets—Sheet 2.

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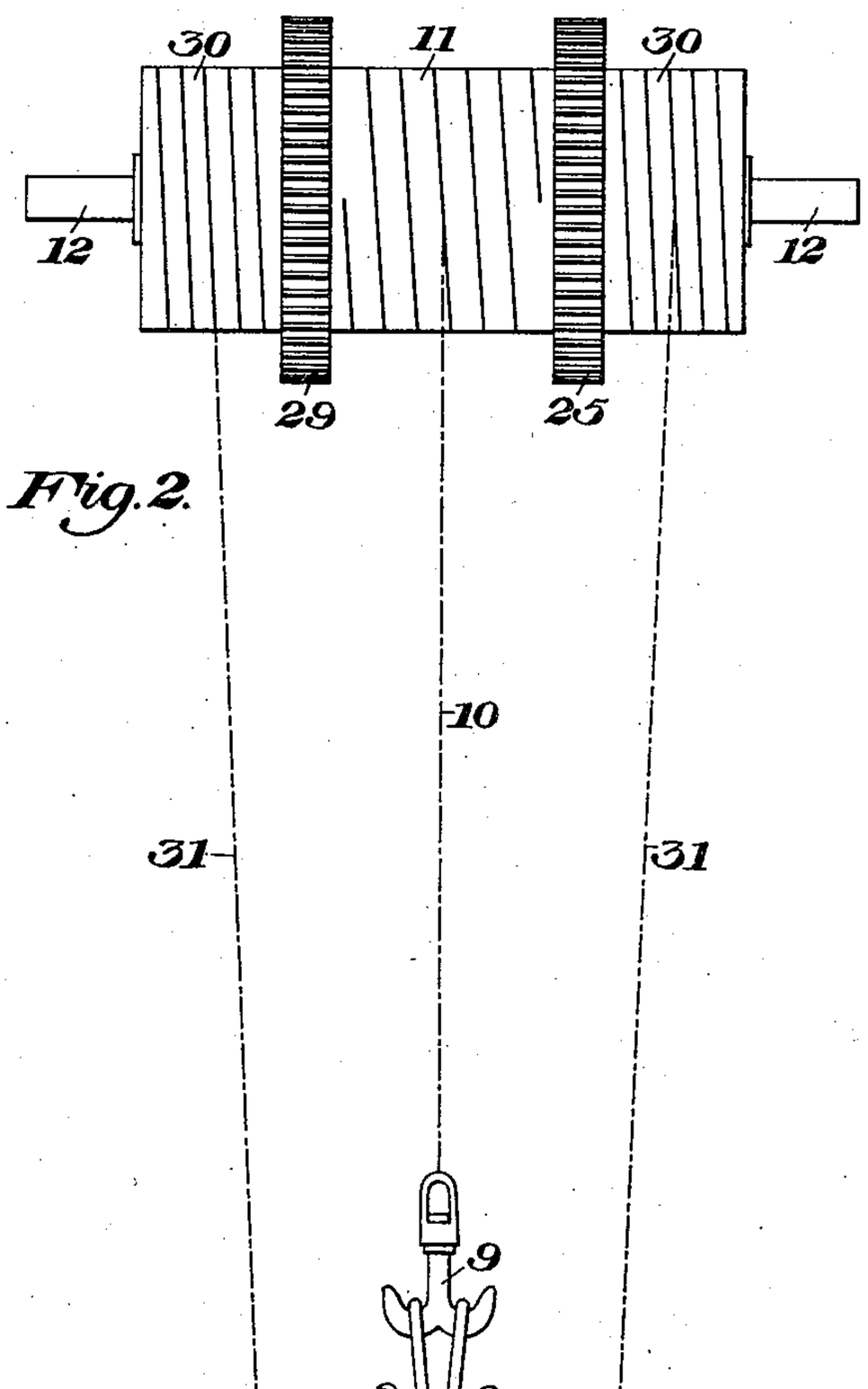
Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

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COAL HANDLING DEVICE.

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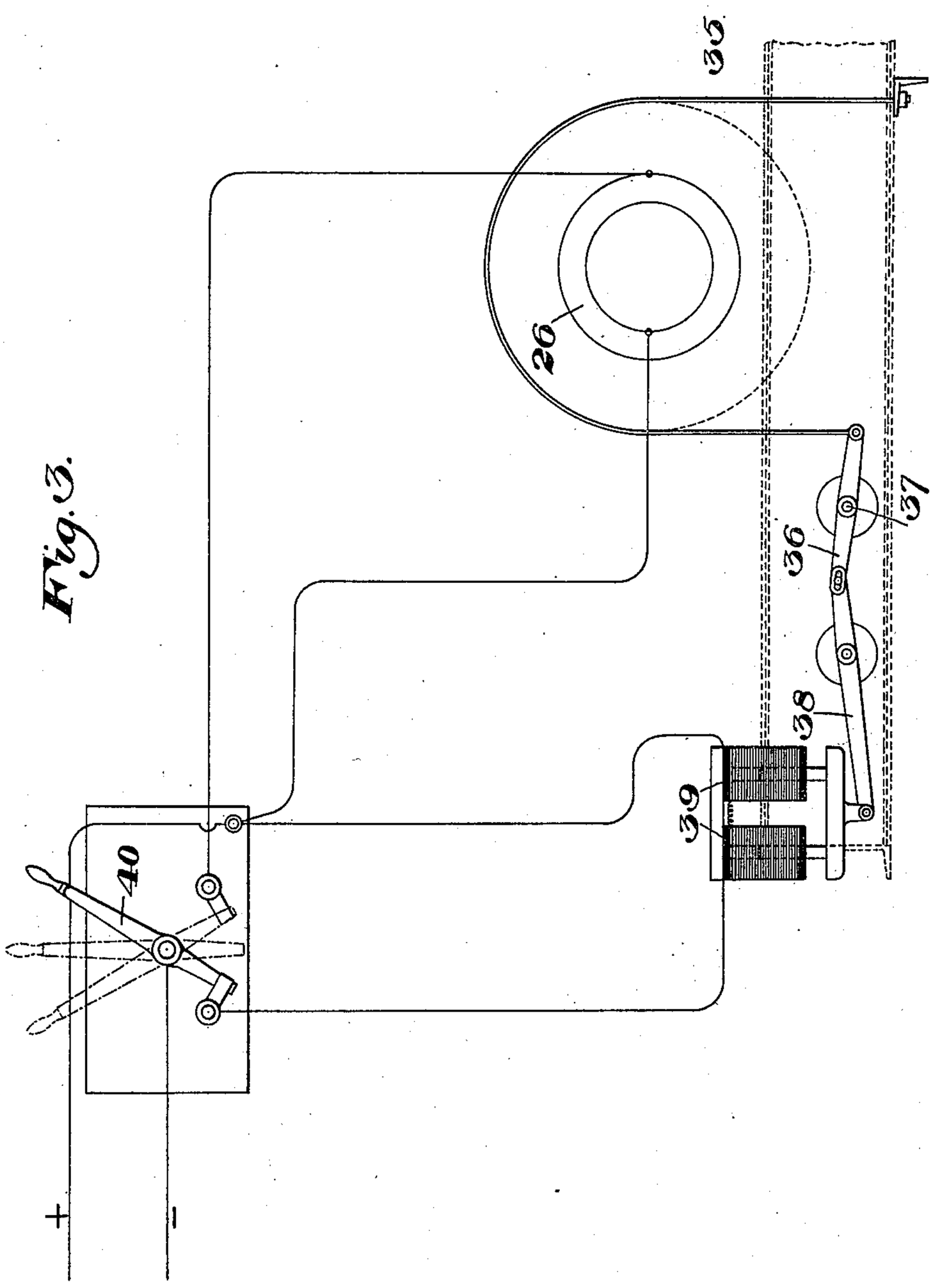
Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALVA C. DINKEY, OF MUNHALL, PENNSYLVANIA.

COAL-HANDLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 599,036, dated February 15, 1898.

Application filed May 28, 1897. Serial No. 638,525. (No model.)

To all whom it may concern:

Be it known that I, ALVA C. DINKEY, of Munhall, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Coal-Handling Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a general top plan view, partly broken away, of an overhead trolley constructed in accordance with my invention. Fig. 2 is a side elevation, partly in section, showing the bucket and its connections to the drums upon the trolley; and Fig. 3 is a diagrammatic view showing the electrical connections for the clutch and brake.

My invention relates to the handling of coal and similar materials from an overhead trolley; and it consists in the combination, with a hoisting-chain, of a hoisting-drum over which the chain passes, an auxiliary chain or chains having suitable drums, a motor connection to one of the drums, this motor having a clutch connection with the other drum or drums, the clutch being operated at any point and means being provided for locking the one drum or drums immediately upon the severing of the clutch connection.

It also consists in the construction and arrangement of the parts, as hereinafter more fully described, and set forth in the claims.

In the drawings, 2 represents a bucket arranged to contain coal or similar material, and 3 a bell-bottom upon which the bucket rests. The bottom is supported upon a rod 4, which moves through a suitable guide 5 in a cross-brace 6 at the top of the bucket, this rod having at its top an eye 7, connected by links 8 to a double hook 9, carried at the lower end of the hoisting-chain 10. The chain 10 extends to a hoisting-drum 11 upon the trolley, this main drum rotating loosely upon a shaft 12, carried in suitable bearings 13.

14 is an electric motor upon the trolley, connected by gearing 15 to a shaft 16, which, through toothed wheels 17 and 18, drives the shaft 19, having thereon the band-brake 20. The shaft 19 is provided with a pinion 21, intermeshing with a toothed wheel 22 upon the shaft 23. The shaft 23 is provided with a pinion 24, intermeshing with a toothed wheel 25, secured to and actuating the main hoisting-drum 11. At the end of the shaft 23 is provided a clutch 26, which I have shown as consisting of an ordinary magnetic clutch, though any suitable construction of clutch may be employed, this clutch serving to connect the shaft 23 to a loose sleeve 27, surrounding the same. Surrounding the clutch is a band-brake 35, one end of which is pivoted to a lever 36, pivotally mounted on the frame at 37 and having a loose pin connection with a similar lever 38, which is provided with an armature coöperating with an electromagnet 39. A switch 40 is provided, this switch having two separate contact-points connected to the clutch and to the magnet 39, as shown, so that when the switch-arm is thrown to one extreme position the clutch is disconnected and the brake applied. When thrown to the other extreme position, the clutch connection is established and the brake thrown off. The shaft 27 is provided with a pinion 28, engaging a toothed wheel 29, which is keyed to the shaft 12. To the end portions of this shaft are secured the auxiliary drums 30, to which are connected the chains 31, having at their lower ends hooks 32, engaging eyes 33 upon the bucket.

34 is a racking-motor upon the trolley, which is arranged to move the trolley upon its track. The gear connections upon the trolley are so arranged that when the clutch 26 is actuated to connect the shaft 23 with the loose sleeve 27 the motor 14 will drive the main and auxiliary drums so as to raise or lower the bell-bottom and the bucket at the same rate of speed. When the bucket is brought to the desired position, the clutch 26 being released, the bell-bottom may be lowered, while the bucket remains stationary and the contents of the bucket thus dumped.

The advantages of my invention result from the fact that a single motor serves to drive both the hoisting-drum and the auxiliary drum or drums, while the connections between the motor and the auxiliary drum or drums may be severed, so as to dump the load at any desired point. The apparatus is very simple and gives the operator perfect control of the load.

The apparatus may be so arranged that the connection between the motor and the main

hoisting-drum may be severed instead of that between the motor and the auxiliary drum or drums, and many other variations will suggest themselves to the skilled mechanic without departure from my invention, since

What I claim is—

1. The combination with a hoisting-chain, of a hoisting-drum over which the said chain passes, an auxiliary operating chain or chains, a drum or drums over which they pass, a motor connected to one of the drums, a clutch connection between the motor and the other drum or drums, means for operating the clutch at any desired point, and means for automatically locking the auxiliary drum or drums immediately upon the severing of the clutch connection.

2. The combination with a bucket having a movable bell-bottom, of a main hoisting-drum connected to said bottom and an auxiliary drum or drums connected to the bucket, a motor connected to the main drum, a clutch connection between said motor, the auxiliary drum or drums, and means for operating the clutch at any desired point and means for automatically locking the auxiliary drum or drums whenever the clutch connection is severed.

3. The combination with a bucket having a movable bell-bottom, of a trolley having a main hoisting-drum thereon, a connection between said hoisting-drum and one of the parts of the bucket, an auxiliary drum or drums thereon connected to the other part of the bucket, a motor arranged to drive said drums, a clutch connection between the motor and one or more of said drums, means for operating said clutch to sever or establish the connection at any desired point and means for automatically locking the auxiliary drum or drums whenever the clutch connection is severed.

In testimony whereof I have hereunto set my hand.

ALVA C. DINKEY.

Witnesses:
H. H. HERVEY,
W. H. CORBETT.