

No. 750,003.

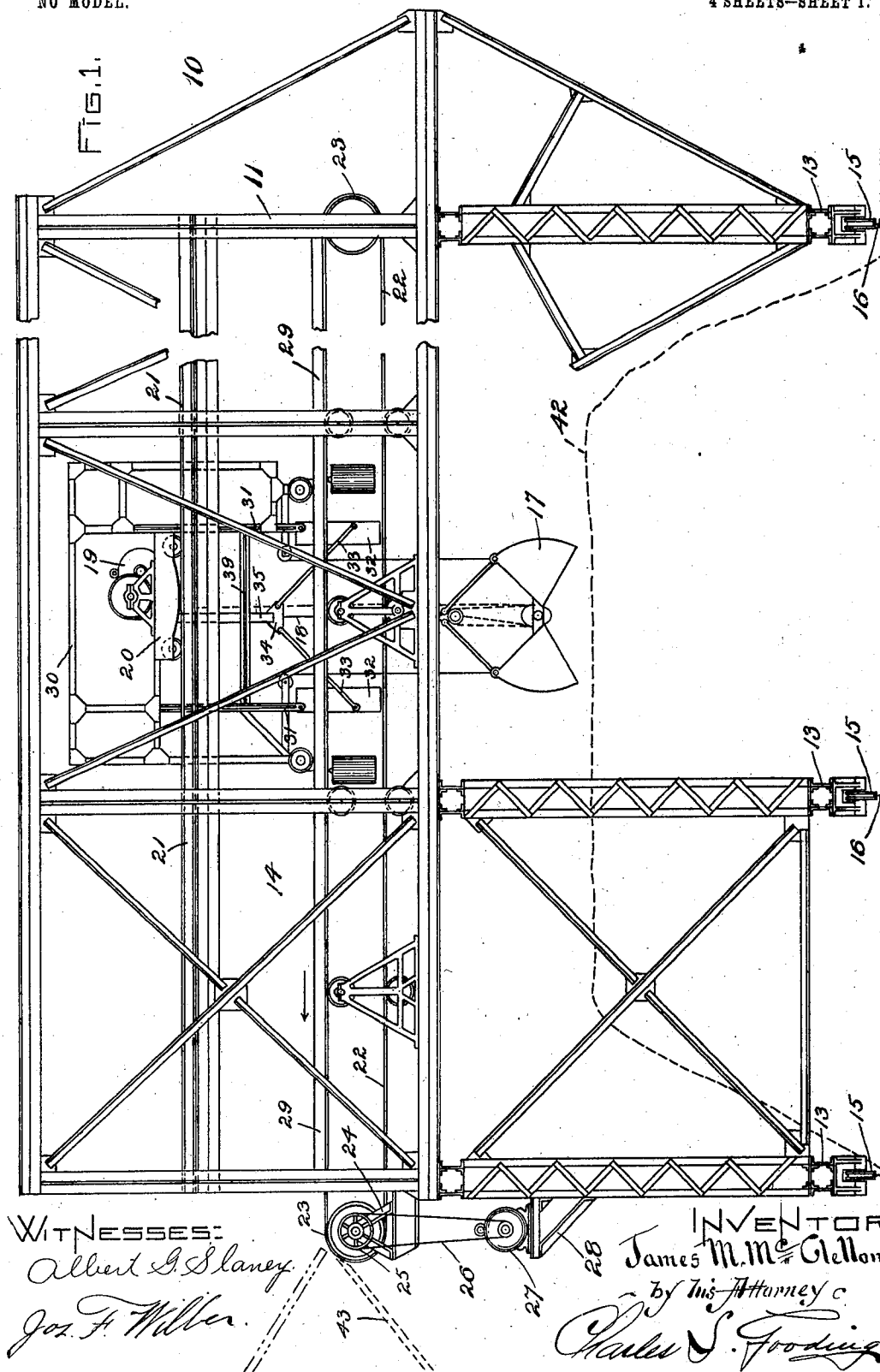
PATENTED JAN. 19, 1904.

J. M. McCLELLON.
COAL HANDLING APPARATUS.

APPLICATION FILED MAY 14, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

Albert G. Slaney.
Jos. F. Miller.

INVENTOR:
James M. McClellon.
by his Attorney
Charles S. Gooding.

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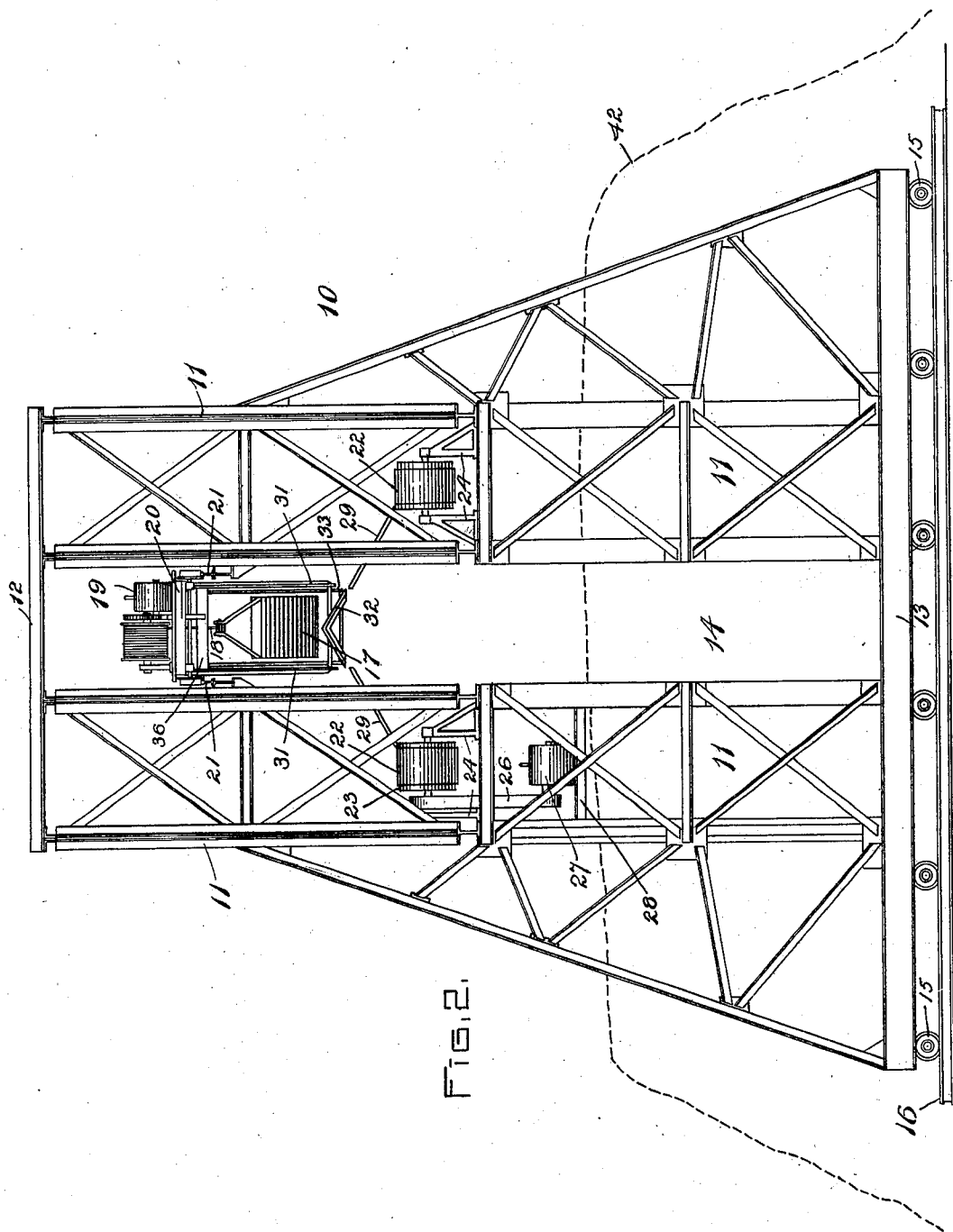
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4 SHEETS—SHEET 2.



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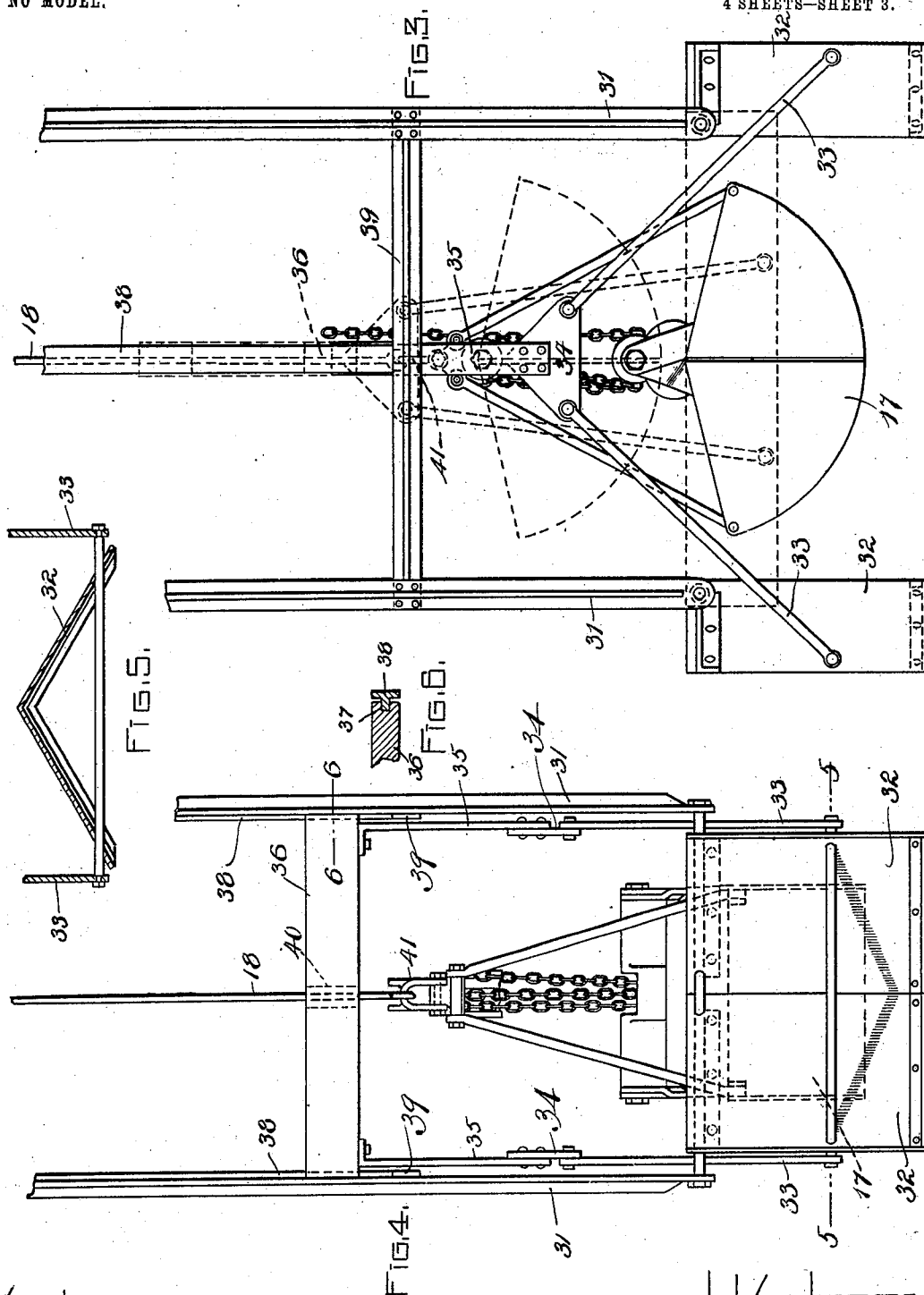
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4 SHEETS—SHEET 4.

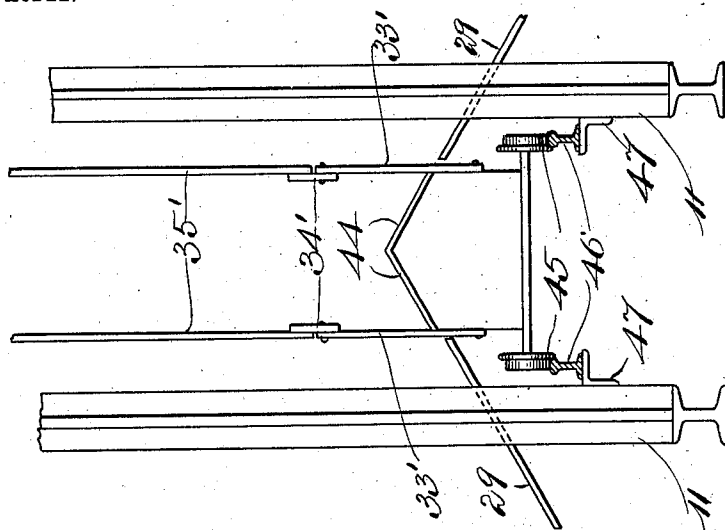


FIG-6-

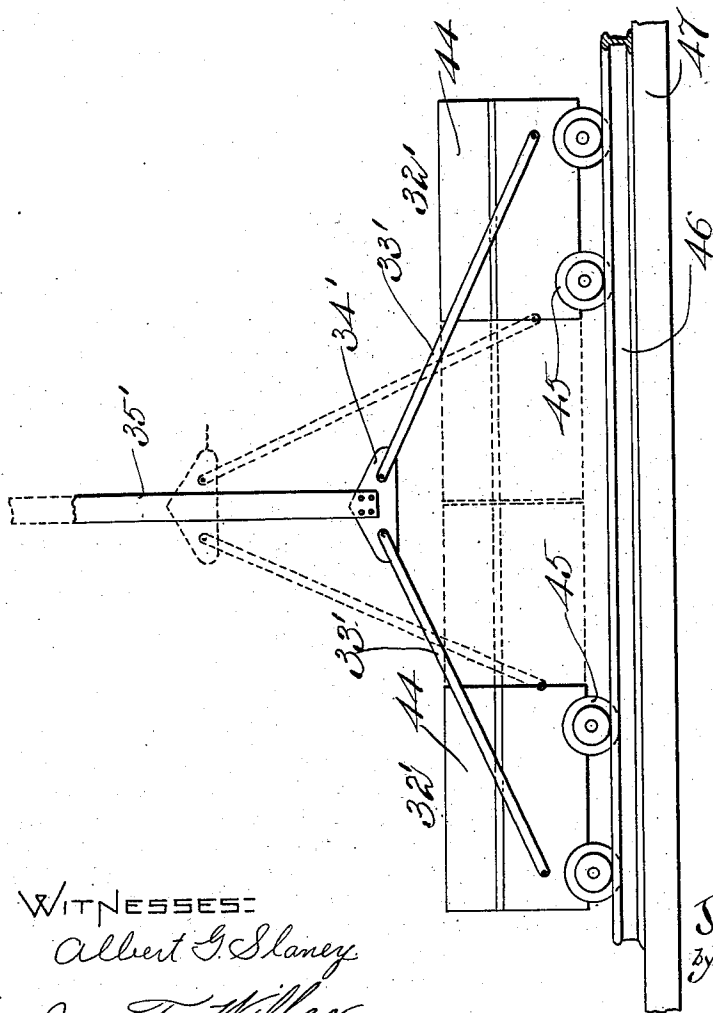


FIG-7-

WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES M. McCLELLON, OF EVERETT, MASSACHUSETTS.

COAL-HANDLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 750,003, dated January 19, 1904.

Application filed May 14, 1903. Serial No. 157,092. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. McCLELLON, a citizen of the United States, residing at Everett, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Coal-Handling Apparatus, of which the following is a specification.

This invention relates to machinery for handling coal, and has for its object to provide an apparatus whereby large quantities of coal may be taken from a pile upon a wharf or other location and carried to and dumped into coal sheds or pockets.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of my improved apparatus for handling coal, partly broken away to save space in the drawings and showing the parts in position when the elevator is lowered. Fig. 2 is an end elevation of the same, partly in section, showing the elevator raised, the portion of the framework by which the movable chute is supported being omitted in order to clearly show the carriage upon which the elevator mechanism is carried. Fig. 3 is an enlarged side elevation of the hoisting-bucket and movable pivoted chute, showing the bucket closed and the two pivoted sides of the chute open, the bucket passing upwardly between said sides of the pivoted chute. Fig. 4 is an end elevation of the parts shown in Fig. 3 as viewed from the left of said figure. Fig. 5 is a detail section taken on line 5 5 of Fig. 4. Fig. 6 is a detail section taken on line 6 6 of Fig. 4. Fig. 7 is a side elevation of a modified form of movable chute, together with a portion of the mechanism by which said movable chute is operated. Fig. 8 is an end elevation, viewed from the right of Fig. 7, of said movable chute, together with a portion of the side sections of the framework.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is the framework upon which the elevator raising and lowering mechanism, the conveyor-belts, and chutes are supported. The framework 10 consists of

two side sections 11 11, properly framed and braced. Said side sections are joined together at the top by cross-ties 12 and at the bottom are supported upon cross-beams 13. A well 14 extends lengthwise of the framework 10 between the two side sections 11 11, and the whole framework may be moved bodily upon the wheels 15, journaled to rotate upon bearings fast to the cross-beams 13 and resting upon tracks 16.

The elevator or hoisting-bucket 17 may be of any desirable style, the particular style shown in the drawings being similar to that shown and described in Letters Patent of the United States to G. W. Rawson, No. 394,297. The elevator 17 is raised by a rope 18 by means of the electric motor and elevator mechanism 19. This mechanism is no part of the invention and may be of any desirable construction or style. The elevator mechanism 19 is supported upon and carried by a carriage 20, arranged to move upon tracks 21, one of each of which is fast to one of each of the side sections 11 and extends lengthwise thereof and of the well 14.

In each of the side sections 11 is a conveyer 22, preferably a rubber belt. Said belts are operated by pulleys 23 23, supported upon brackets 24, and having motion imparted thereto by a pulley 25, belt 26, and motor 27, supported upon a bracket 28. Extending throughout the entire length of the side sections 11 and standing at an angle with the horizontal plane are stationary chutes 29, which extend from each side of the well 14 to the inner edge of each of the belts 22.

The carriage 20 has a framework 30 fast thereto, and extending downwardly at each side thereof are T-shaped supports 31, to the lower ends of which are pivoted two movable chutes 32. Said movable chutes 32 are each connected by links 33 to a triangular-shaped piece 34, fast to the lower end of a support 35, said supports 35 being fast to a reciprocatory slide 36. The slide 36 is grooved at 37 to slide upon the T-shaped guides 38. Said guides are joined by cross-ties 39 to the T-shaped supports 31.

The hoisting-bucket or elevator 17 is raised by means of the rope 18, carrying the coal

upwardly therewith and passing between the pivoted chutes 32 32, as shown in Figs. 3 and 4, said rope 18 passing through a hole 40 in the slide 36, and as the bucket continues its upward motion from the position shown in Figs. 3 and 4 the eye 41, by which the rope 18 is connected to the bucket, abuts against the lower side of the slide 36, carrying said slide upwardly and moving the chutes 32 from the vertical position (shown in Fig. 3) to the horizontal position. (Indicated in dotted lines in the same figure.) As seen in Figs. 2 and 5, the movable chutes 32 when in a horizontal position have an inclined top, highest in the center, and extend downwardly on each side to meet the inner edges of the stationary chutes 29. The movable chutes 32 are of sufficient length to receive the coal dumped by the hoisting-bucket or elevator, and when the several parts indicated assume the position shown in dotted lines in Fig. 3 the coal is dumped from the hoisting-bucket upon the inverted-V-shaped chutes 32, said chutes then conveying it to the stationary chutes 29, the lower edges of the movable chutes 32 being slightly higher than the inner edges of the stationary chutes 29, and from said chutes 29 the coal slides down upon the belt conveyers 22.

The operation of my improved apparatus for handling coal is as follows: Assuming the pile of coal to be indicated by the broken lines 42 in Figs. 1 and 2 and that it is desired to transport said coal from its position, as shown, to sheds or coal-pockets, the elevator 17 is lowered by means of the mechanism 19. Said elevator is filled with coal and raised from the position shown in Fig. 1 to that shown in Fig. 3. Upon a further upward motion the eye 41 abuts against the slide 36 and carries said slide upwardly together with the elevator, swinging the movable chutes 32 from the position shown in full lines in Fig. 3 to that shown in dotted lines in the same figure, the elevator, with its connecting links, also assuming the position shown in dotted lines. The coal is then dumped from the elevator or hoisting-bucket upon the movable chutes 32 and slides down said chutes upon either side thereof to the stationary chutes 29, thence along said stationary chutes to the conveyer-belts 22, whence it is conveyed to the extreme end of the framework 10 in the direction of the arrow, Fig. 1, and dumped upon a chute 43. (Shown in dotted lines at the left of Fig. 2.) The coal slides down the chute 43 and into coal-pockets or to any desired location beneath the upper surface of the belt 22. When the elevator has handled all the coal which it can conveniently reach in one position, the carriage 20 is moved to the right or left, Fig. 1, carrying the elevator and elevator mechanism, together with the movable chutes and their operating mechanism, from one end of the framework 10 to the other, as may be desired, in order to properly handle the coal.

In order to entirely cover the area of the pile of coal, the framework 10 is moved lengthwise of the tracks 16, as the handling of the coal renders it necessary, and thus the entire surface of the pile of coal may be covered by the lengthwise motion of the elevator upon the framework 10 and the lateral motion of the framework itself.

It is evident that if desired the coal may be taken from coal-pockets, and by arranging the chute 43 to incline upwardly instead of downwardly, as shown in broken lines, Fig. 1, the coal may be transferred from pockets onto the conveyer-belts 22, thence dumped from said conveyer-belts by suitable tripping mechanism downwardly into the well 14, and by moving the framework 10 lengthwise of the track 16 the coal may be received from different pockets and conveyed into one large pile upon a wharf or other desirable location.

In Figs. 7 and 8 a modified form of movable chute is illustrated, in which two movable chutes 32' 32', provided with an inverted-V-shaped top 44, are supported upon truck-wheels 45, arranged to travel upon tracks 46, supported upon angle-irons 47, fast to the side supports 11 of the carriage 10. The chutes 32' 32' are connected by links 33' to a triangular piece 34', fast to the lower end of supports 35'.

The operation of the movable chutes (illustrated in Figs. 7 and 8) is as follows: An upward motion is imparted to the supports 35' and to the triangular piece 34' by the elevator, as hereinbefore described, said supports 35' being substantially the same as the supports 35 and the triangular piece 34' substantially the same as the triangular piece 34, hereinbefore described. As said supports and triangular piece are moved upwardly the links 33' are moved from the position shown in full lines, Fig. 7, to that shown in dotted lines in said figure, moving the chutes 32' 32' toward each other and beneath the elevator from the position shown in full lines to that shown in dotted lines, Fig. 7. As the coal is dumped, as hereinbefore described, from the elevator upon the inverted-V-shaped top 44 of said chutes 32' it slides down upon each side of said chutes and the stationary chutes 29 29 upon each side thereof, and from thence passes onto the conveyer-belts 22 22.

Having thus described my invention, what I claim and desire by Letters Patent to secure is—

1. In an apparatus of the character described, a framework, a carriage arranged to run lengthwise of said framework, an elevator supported upon said carriage, means for moving said carriage horizontally lengthwise of said framework, mechanism carried by said carriage to move said elevator vertically, a conveyer, a chute to convey the material raised by said elevator to said conveyer, and mechanism operated by said elevator to move

said chute longitudinally of said carriage and conveyer to an operative position beneath said elevator.

2. In an apparatus of the character described, a framework, a carriage arranged to run lengthwise of said framework, an elevator supported upon said carriage, means for moving said carriage horizontally lengthwise of said framework, mechanism carried by said carriage to move said elevator vertically, two conveyers, two chutes, and mechanism operated by said elevator to move said chutes toward each other to a position beneath said elevator and in position to convey the material raised by said elevator to said conveyers.

3. In an apparatus of the character described, an elevator, a framework upon which said elevator is supported, means for moving said elevator horizontally with relation to said framework, a conveyer-belt, a stationary chute, and a movable chute constructed to be moved lengthwise of said framework and convey the material raised by said elevator to said conveyer.

4. In an apparatus of the character described, an elevator, a framework upon which said elevator is supported, means for moving said elevator horizontally with relation to said framework, a conveyer-belt, a stationary chute, and a movable chute constructed to be moved lengthwise of said framework and convey the material raised by said elevator to said stationary chute, and thence to said conveyer.

5. In an apparatus of the character described, a framework, a carriage arranged to run lengthwise of said framework, an elevator supported upon said carriage, means for moving said carriage horizontally lengthwise of said framework, mechanism carried by said carriage to move said elevator vertically, two conveyers located upon opposite sides, respec-

tively, of said carriage, a chute constructed to simultaneously convey the material raised by said elevator to said conveyers, and mechanism operated by said elevator to move said chute longitudinally of said conveyers to an operative position beneath said elevator.

6. In an apparatus of the character described, a framework, a carriage arranged to run lengthwise of said framework, an elevator supported upon said carriage, means for moving said carriage horizontally lengthwise of said framework, mechanism carried by said carriage to move said elevator vertically, two conveyers located upon opposite sides, respectively, of said carriage, an inverted-V-shaped chute, and mechanism operated by said elevator to move said chute longitudinally of said conveyers to an operative position beneath said elevator.

7. In an apparatus of the character described, a framework, a carriage arranged to run lengthwise of said framework, an elevator supported upon said carriage, means for moving said carriage horizontally lengthwise of said framework, mechanism carried by said carriage to move said elevator vertically, two conveyers located upon opposite sides, respectively, of said carriage, two chutes constructed to simultaneously convey material raised by said elevator to said conveyers, and mechanism operated by said elevator to move said chutes toward each other to a position beneath said elevator and in position to convey the material raised by said elevator to said conveyers.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES M. McCLELLON.

Witnesses:

CHARLES S. GOODING,
ANNIE J. DAILEY.