A. L. COPLEY.

COAL CONVEYING MECHANISM.

APPLICATION FILED SEPT. 16, 1913.

1,193,124.

Patented Aug. 1, 1916.

5 SHEETS—SHEET 1.

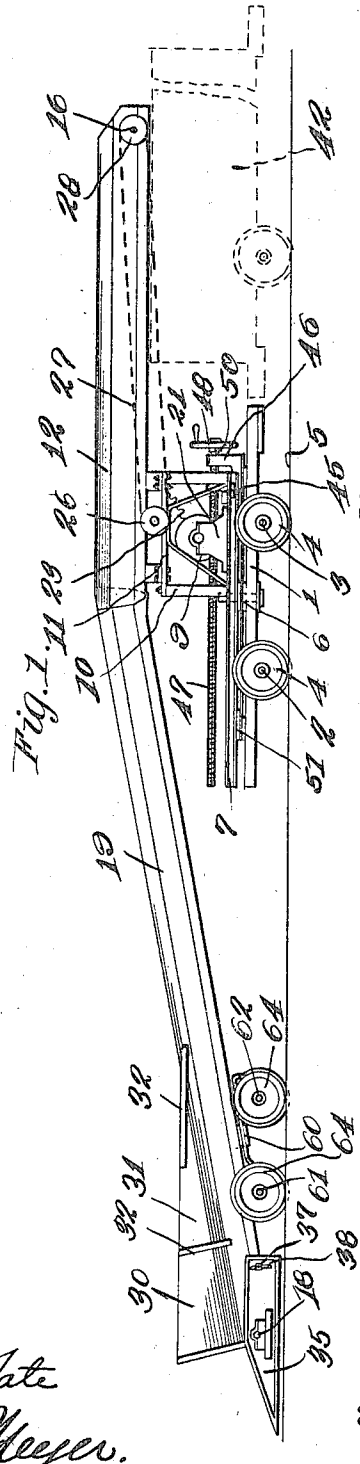


Fig. 1.

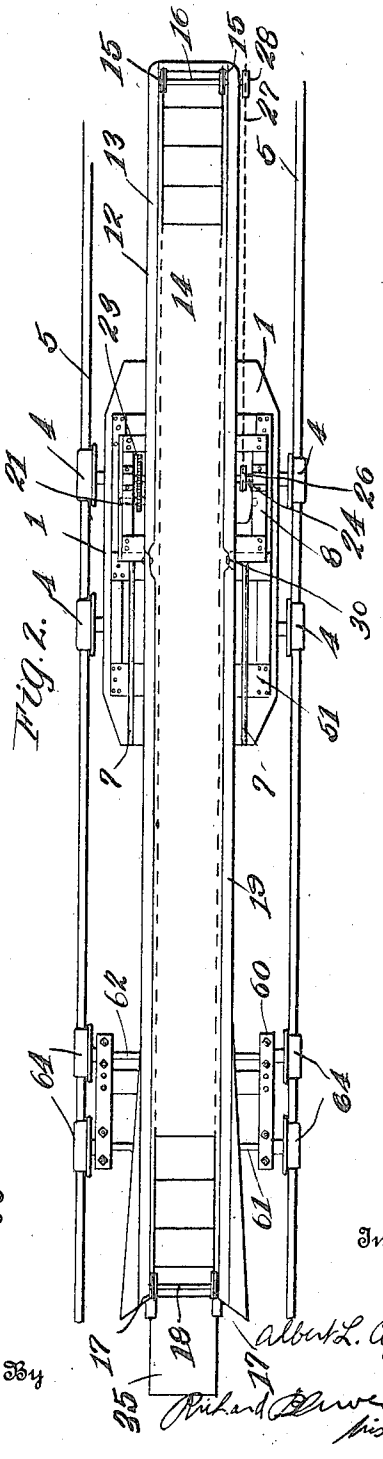


Fig. 2.

Witnesses

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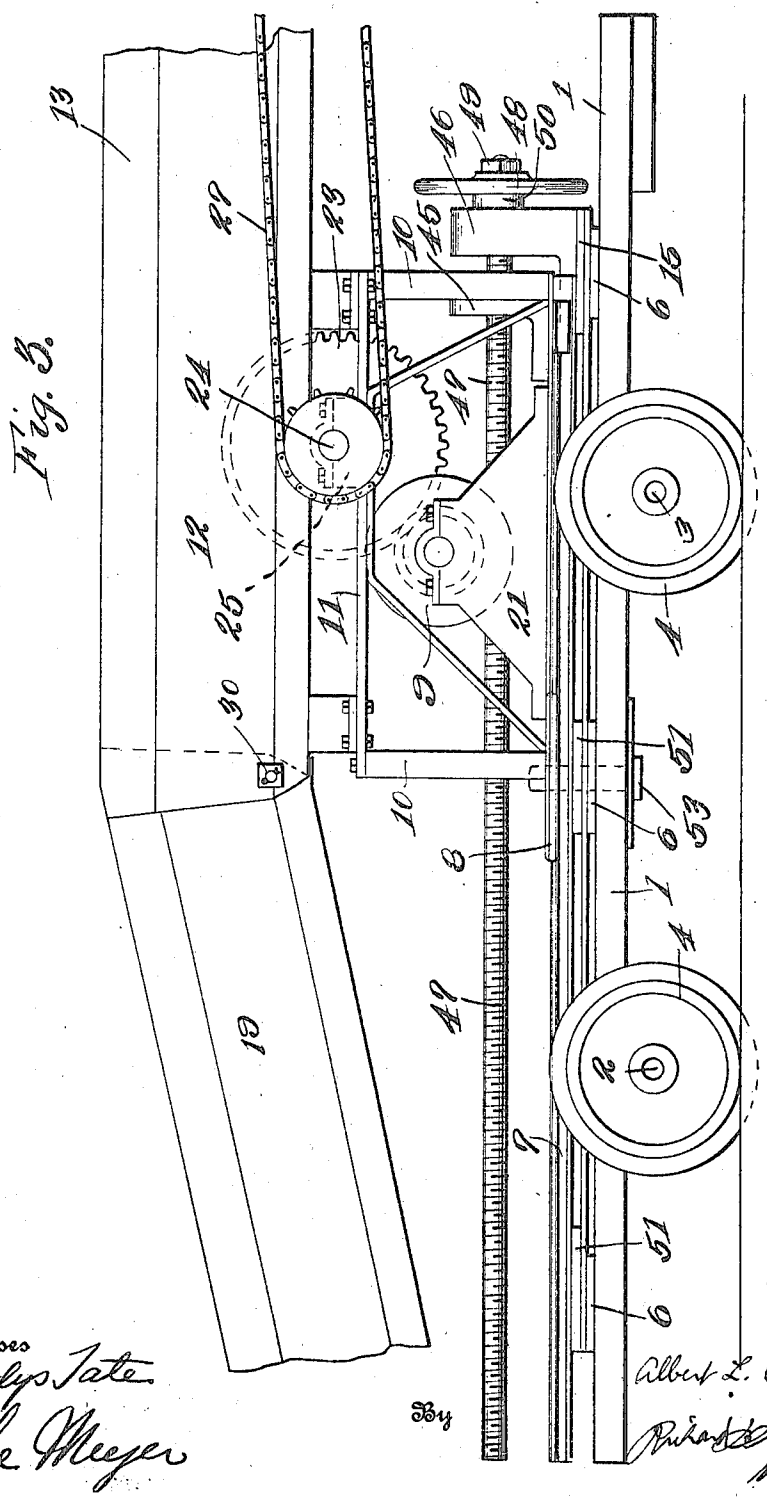
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5 SHEETS—SHEET 2.

Fig. 5.



Witnesses

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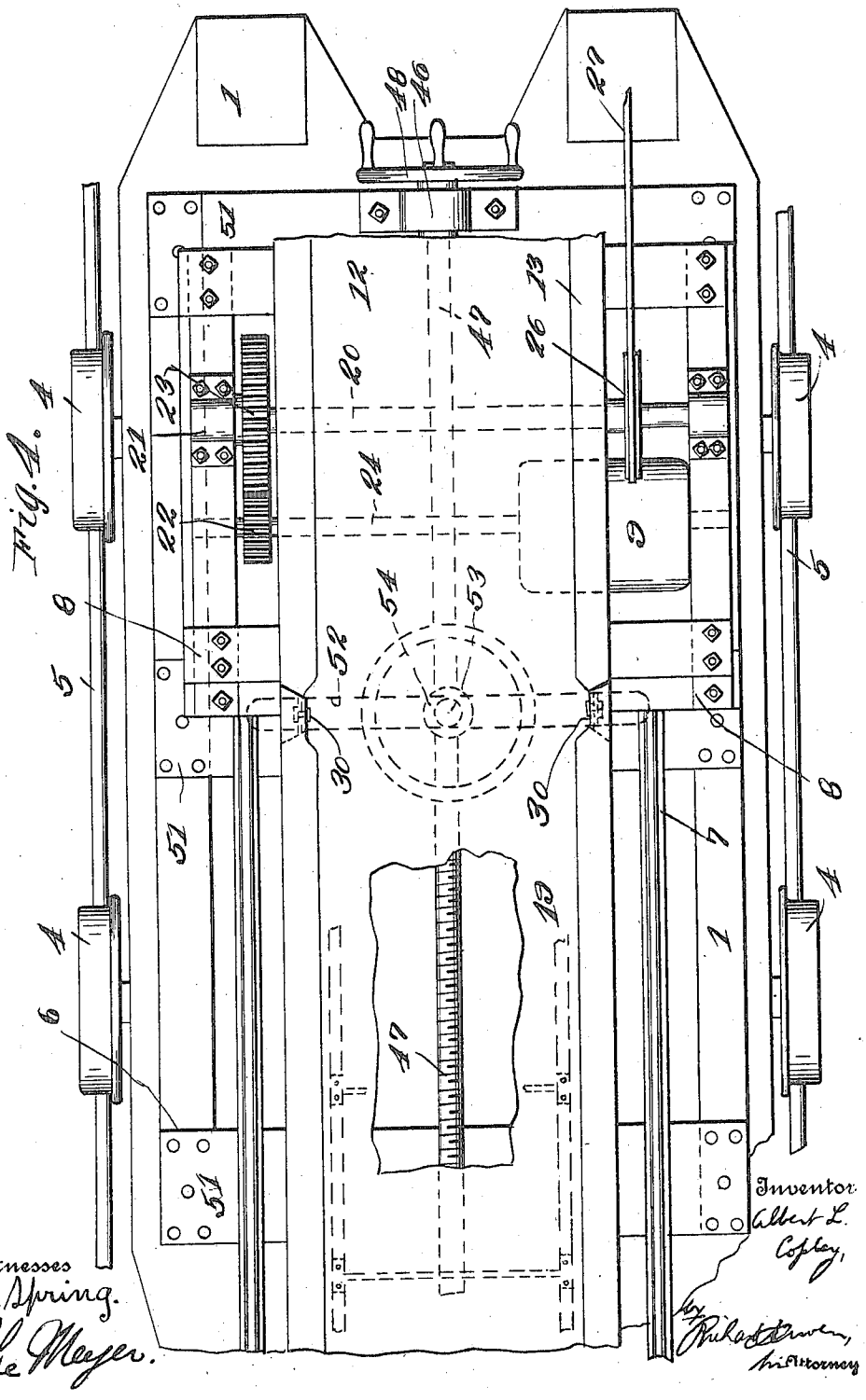
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5 SHEETS—SHEET 3.



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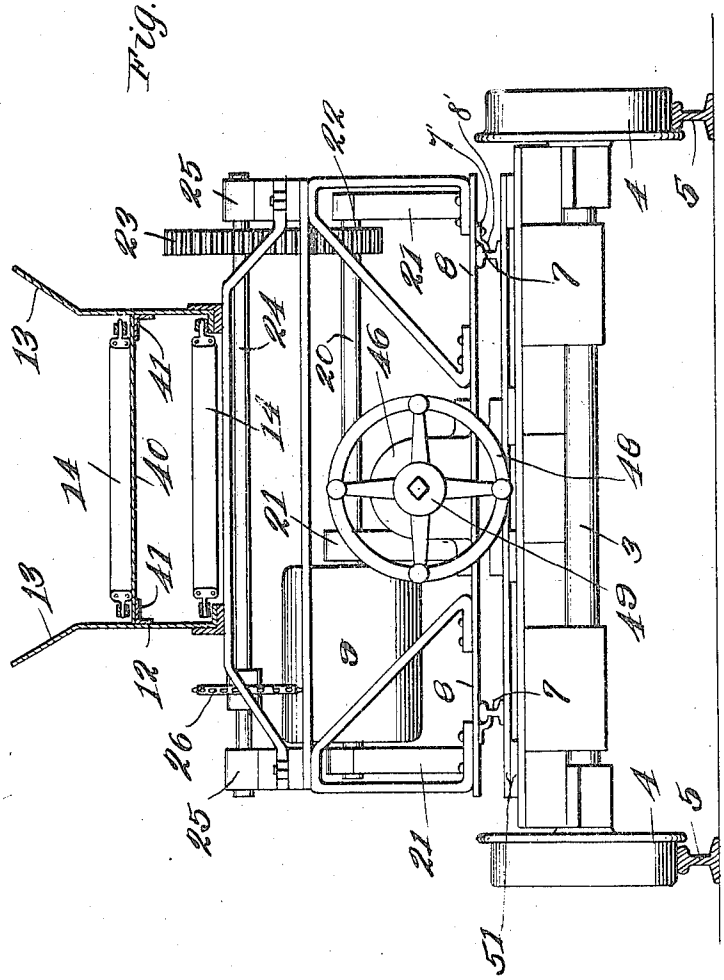
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5 SHEETS—SHEET 4.

Fig. 5.



Witnesses

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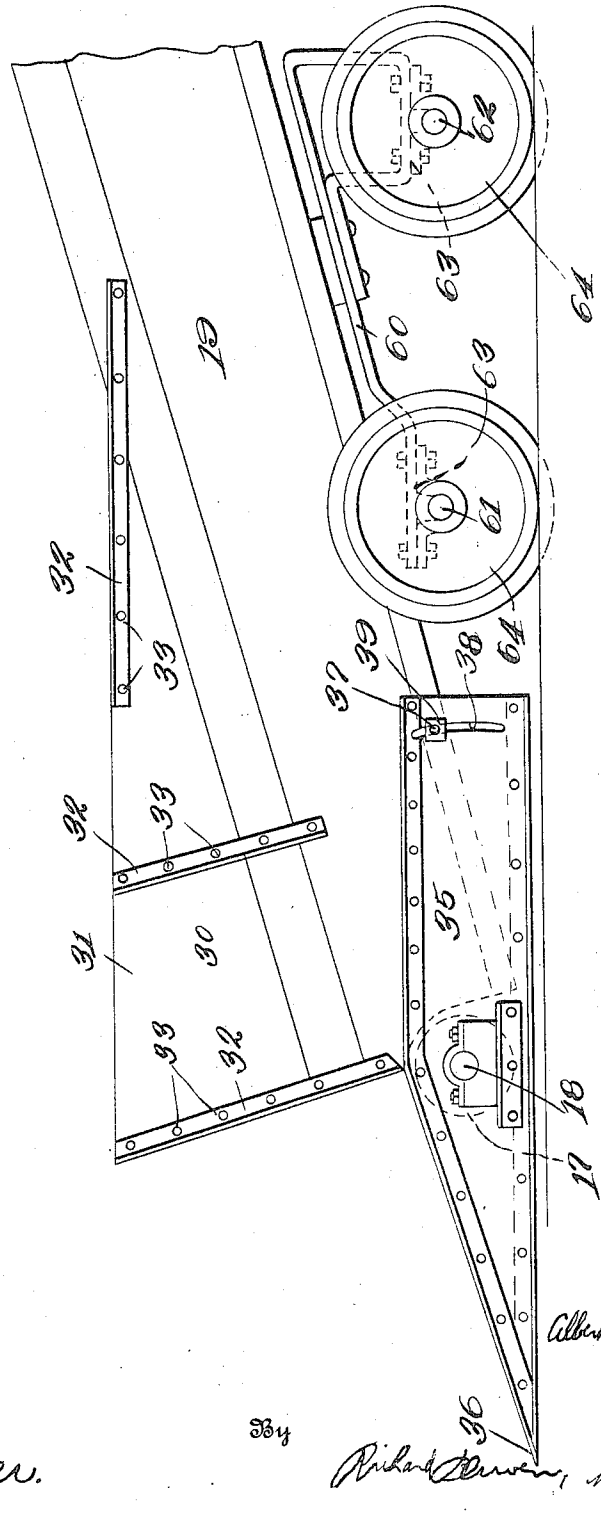
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5 SHEETS—SHEET 5.



Witnesses
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UNITED STATES PATENT OFFICE.

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COAL-CONVEYING MECHANISM.

1,193,124. Specification of Letters Patent. Patented Aug. 1, 1916.

Application filed September 16, 1913. Serial No. 790,114.

To all whom it may concern:

Be it known that I, ALBERT L. COPLEY, a citizen of the United States, residing at Glenalum, in the county of Mingo and State of West Virginia, have invented certain new and useful Improvements in Coal-Conveying Mechanism, of which the following is a specification.

This invention relates to mechanism for the handling of coal or other similar minerals and more particularly to a mechanism to be used for loading coal into cars for transportation out of the mines.

The object of this invention is the provision of an elevating mechanism, as above specified, which is designed for the purpose of materially decreasing the amount of labor contingent with the mining of coal or similar minerals and embodies a car which has a conveyer and motor mounted thereupon, the motor coacting with gearing and sprockets for the propulsion of the conveyer and also providing power for the transportation of the car and conveyer from place to place; a supporting frame for the motor and a conveyer which is adjustable both laterally and longitudinally of the car, means for securely holding the supporting frame in adjusted positions; a shoe for efficiently receiving the coal or other mineral from the floor of the mine and passing the same on to the conveyer and various other details of construction which will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters of reference designate like or corresponding parts throughout the several views, and in which,

Figure 1 is a side elevation of the improved coal loading mechanism; Fig. 2 is a top plan view of Fig. 1; Fig. 3 is a side elevation of the car upon which the motor is mounted showing the means for adjusting the motor and conveyer supporting frames both longitudinally and laterally; Fig. 4 is a top plan view of Fig. 3; Fig. 5 is an end view of the cars and supporting frame showing the conveyer in section; Fig. 6 is a detailed side elevation of one end of the conveyer showing the shoe for receiving the coal or other mineral from the floor of the mine.

Referring to the drawings by numeral 1 designates the frame or trucks of a car which has axles 2 and 3 carried thereby. The axles 2 and 3 have flanged wheels 4 mounted upon their outer ends which flange wheels are of the ordinary type of construction and travel over T-rails 5 of which the various tracks running into or out of the mines or the like are constructed.

The frame 1 has a plurality of laterally extending metallic cross pieces 6 which have slidably mounted upon their upper surfaces transverse plates 51, the latter carrying T-rails 7.

The T-rails 7 have a frame 8 slidably mounted thereupon. The frame 8 forms a supporting structure for a motor 9. The motor 9 may be of any type of electric or internal combustion motor now upon the market, no specific type being claimed in connection with this invention. The frame 8 has a support including upstanding posts 10 secured to the frame, which posts have cross pieces 11 connected to their upper ends upon which is rigidly mounted the section 12 of the conveyer. The section 12 of the conveyer has a body portion constructed of any suitable type of sheet metal which has its upper edges 13 flared outwardly as is clearly shown in Fig. 5 of the drawings. The sides of the body portion of the section 12 of the conveyer have any suitable type of traveling conveyer 14, preferably of the scraper type now in use but it is to be understood that any suitable type of conveyer may be employed such as a belt or any of the various other types now in use. The conveyer 14 passes about sprockets 15 which are carried by a shaft 16 and also about sprockets 17 carried by a shaft 18. The shaft 16 is journaled in bearings formed in the sides of the end of the section 12 of the conveyer and the shaft 18 is journaled in bearings which are carried by the extreme lower end of the inclined portion 19 of the conveyer.

The shaft 20, which is the power shaft of the motor 9, extends outwardly and is journaled in bearings 21 which are supported by the frame 8 and has a gear 22 rigidly mounted thereupon. The gear 22 meshes with a gear 23 which is carried by a shaft 24. The shaft 24 is rotatably journaled in bearings 25 which are supported by cross pieces 11.

The shaft 24 has a sprocket 26 about which a sprocket chain 27 passes mounted thereupon. The sprocket chain 27 also

passes about a sprocket 28 which is mounted upon the shaft 16. The gears 22 and 23 form means for imparting the rotation transmitted to the shaft 20 by the motor 9 to the shaft 24, and the sprockets 26 and 28 and the sprocket chain 27 in turn transmit the motion to the shaft 16 and the sprockets 15 over which the conveyer 14 passes. In this manner the power of the motor 9 is transmitted directly to the conveyer 14.

The inclined section 19 of the conveyer is hingedly connected to the section 12 as is shown at 30 in Figs. 1 and 3 of the drawings and has auxiliary flaring sides 31 secured to its lower end by means of angle irons 32 and other suitable fastening means such as rivets or the like 33. The extreme lower end of the frame of the inclined section 19 of the conveyer has a shoe 35 pivotally connected thereto. The shoe 35 is constructed of sheet metal and has the portion of its sides which extend beyond the end of the conveyer, inclined and terminating in a point 36. A bolt 37 extends laterally through the frame of the section 19 of the conveyer and through slots 38 which are formed in the sides of the shoe 35. The bolt 37 has nuts 39 mounted upon its outer ends which engage the outer surface of the sides of the shoe 35. By means of the bolts 37 and slots 38 the point 36 of the shoe 35 may be either raised or lowered so as to suit the conditions of the surface of the floor of the mine room from which it is desired to take the coal or other minerals. When it is desired to tilt the shoe 35 so that the bottom of the same and the point 36 will be at different elevations the nuts 39 are loosened upon the ends of the bolt 37 and the shoe 35 is tilted to the desired level when the bolts are again tightened and the frictional engagement between the inner sides of the bolt and the outer surface of the sides of the shoe securely hold the shoe in the adjusted position.

The body portion of the conveyer which is constructed of sheet metal and forms the sides to prevent the coal or other minerals from falling off of the conveyer proper 14 has a plate 40 extending laterally thereacross and supported by angle irons 41 which are secured to the sides of the conveyer in any suitable manner. The upper part of the conveyer 14 which is traveling in one direction passes over the plate 40 and the lower surface of the same engages the plate 40. The coal or other minerals which are being mined are scooped up, by the shoe 35, and deposited on the plate 40 and the conveyer 14 engages the mineral carrying it upwardly through the inclined portion 19 and out through section 12 of the conveyer and dumps the same into a mine car such as is shown in dotted lines of Fig. 1 of the drawings. The mine car 42 which is shown in dotted lines in Fig. 1 of the drawings may be of any of the ordinary types of mine car which are so commonly employed for the conveying of coal or other minerals from the interior of the mines to the railway cars for transportation.

The frame is guided during its sliding movement on the rails by securing elements 7′ connected to the bottom of the frame on opposite sides thereof, the offset portions 8′ of which elements are engaged under the heads of the rails as illustrated to advantage in Fig. 5 of the drawings. A bracket 45 is securely attached thereto which bracket is provided with a screw threaded bearing. A bearing 46 is rigidly mounted upon one of the cross pieces 6 and has a feed bar 47 journaled therein. The feed bar 47 is provided with screw threads which engage the screw threads formed on the bearing carried by the bracket 45 and has a hand wheel 48 rigidly mounted upon its outer end and held in place by a nut 49. The feed bar 47 is prevented from longitudinal movement in the bracket 46 by means of a collar 50 which is disposed about the feed bar 47 between the hand wheel 48 and one side of the bracket 46 as is clearly shown in Fig. 3 of the drawings. When it is desired to move the frame 8 longitudinally upon the T-rails 7 the hand wheel 48 is rotated and consequently the feed bar 47, therefore the frame 8 and consequently the conveyer which is carried thereby will be moved either forwardly or rearwardly upon the T-rails according to the direction of the rotation of the hand wheel 48, by means of the feeding engagement between the screw threads formed upon the bar 47 and the bearing of the bracket 45. In this manner the shoe may be pushed forward into any desired position ready to receive a cut of coal after transferring the same from the mine room to the mine car.

T-rails 7 are carried by plates 51 which are slidably mounted upon the cross pieces 6. The central one of the plates 51 and the central cross piece 6 are provided with slots 52 extending longitudinally therein which coincide and a king bolt 53 is inserted through the slots 52 in the cross pieces 6 and the plate 51 and forms a means for securely holding the plates 51, the T-rails 7, which are carried thereby, and the frame 8 in various laterally adjusted positions upon the frame 1 of the car. The king bolt is provided with screw threads upon its upper end which engage screw threads formed in a washer, nut or the like 54 which is mounted upon the upper side of the central one of the plates 51, and when the T-rails 7 and the various mechanism carried thereby have been adjusted to the desired position on the frame 1 of the car the king bolt 53 is turned so that the washer or nut 54 and the head 55 of the king bolt will be firmly and securely held in engagement with the plates

51 and the cross pieces 6 respectively and hold the cross pieces 51 and the T-rail 7 securely in the adjusted position.

The inclined portion 19 of the conveyer has trucks 60 secured thereto near the lower end of the same. The trucks 60 have axles 61 and 62 journaled in suitable bearings 63 which are carried thereby and the axles 61 and 62 have flanged wheels 64 mounted upon their outer ends. The flanged wheels 64 are identical in construction to the flanged wheels 2 and form means for more conveniently moving the conveying mechanism from place to place about the mine as is desired for the gathering of coal or other minerals from the various rooms within the mine.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation of the improved coal conveying mechanism will be readily apparent to those skilled in the art to which this invention appertains and while in the foregoing description the principle of the operation of the invention has been described together with various features of construction, it is to be understood that certain minor features of the construction, combination and arrangement of parts may be altered to suit practical conditions provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:

1. In a conveying mechanism, a car, a frame carried by the car, rails associated with the frame, another frame slidably mounted on the rails, means for guiding and retaining the sliding frame on the rails, a support carried by the sliding frame, a motor mounted on the sliding frame and disposed within the support, a conveyer mounted upon the support, means associated with the conveyer and motor for operating the conveyer, a bracket mounted on the stationary frame, and a screw rod mounted in the bracket and associated with the sliding frame for adjusting the sliding frame longitudinally of the stationary frame.

2. In a conveying mechanism, a car, a frame carried by the car, rails associated with the frame, another frame slidably mounted on the rails, securing elements mounted adjacent the opposite sides and on the bottom of the frame for association with the rails for guiding the frame during movement for preventing accidental displacement of the frame, means for adjustably connecting the rails and sliding frame laterally of the stationary frame, a conveyer associated with the sliding frame, and means for adjusting the sliding frame longitudinally of the stationary frame.

3. In a conveying mechanism, a car, a stationary frame on the car, transversely disposed cross pieces on the stationary frame, transversely disposed plates on the cross pieces one of which is provided with a plurality of openings, rails mounted on the plates, another frame slidably mounted on the rails, a king bolt carried by one of the transverse cross pieces on the stationary frame and associated with one of the openings in the transverse plate for adjustably connecting the rails and sliding frame laterally of the stationary frame, means associated with the bolt for retaining the bolt in position, means for adjusting the sliding frame longitudinally of the stationary frame, and a conveyer associated with the sliding frame.

4. In a conveying mechanism, a car, a stationary frame on the car, transversely disposed cross pieces on the stationary frame, transversely disposed connected plates one of which is provided with a plurality of openings, rails mounted on the plates, another frame slidably mounted on the rails, securing elements connected to the bottom of the frame adjacent the respective sides and arranged in engagement with the rails for guiding and retaining the sliding frame while the frame is being slid, a king bolt carried by one of the transverse cross pieces on the stationary frame and associated with one of the openings in the plate for adjustably connecting the rails and sliding frame laterally of the stationary frame, a nut associated with the bolt for retaining the bolt in position, brackets carried by the stationary and sliding frames, and a screw rod associated with the brackets for adjusting the sliding frame longitudinally of the car.

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

ALBERT L. COPLEY.

Witnesses:
WM. H. TRIPLETT,
WM. PONTIOUS.