

APPLICATION FILED MAY 31, 1910.

3 SHEETS—SHEET 1.

The image contains six technical drawings labeled Fig. 1 through Fig. 6, illustrating a mechanical device, likely a typewriter or printing press mechanism.

- Fig. 1:** A side view of a mechanical assembly. It shows a horizontal bar with various components labeled: *i*, *k¹*, *i²*, *u*, *k*, *k²*, *g*, *k*, *a*, *u¹*, *c*, *b*, *u¹*, *k¹*, *j²*, *k¹*, *u*, *k*, *k²*. A vertical line is labeled *i*.
- Fig. 2:** A side view of a mechanical assembly, similar to Fig. 1 but with different component labels: *j*, *i*, *k²*, *l*, *k²*, *a*, *h*, *g*, *k*, *l*, *a*, *i*, *j*. A vertical line is labeled *i*.
- Fig. 3:** A side view of a mechanical assembly, similar to Fig. 1 but with different component labels: *j*, *i*, *k²*, *l*, *k²*, *a*, *h*, *g*, *k*, *l*, *a*, *i*, *j*. A vertical line is labeled *i*.
- Fig. 4:** A side view of a mechanical assembly, similar to Fig. 1 but with different component labels: *j*, *i*, *k²*, *l*, *k²*, *a*, *h*, *g*, *k*, *l*, *a*, *i*, *j*. A vertical line is labeled *i*.
- Fig. 5:** A side view of a mechanical assembly, similar to Fig. 1 but with different component labels: *j*, *i*, *k²*, *l*, *k²*, *a*, *h*, *g*, *k*, *l*, *a*, *i*, *j*. A vertical line is labeled *i*.
- Fig. 6:** A side view of a mechanical assembly, similar to Fig. 1 but with different component labels: *j*, *i*, *k²*, *l*, *k²*, *a*, *h*, *g*, *k*, *l*, *a*, *i*, *j*. A vertical line is labeled *i*.

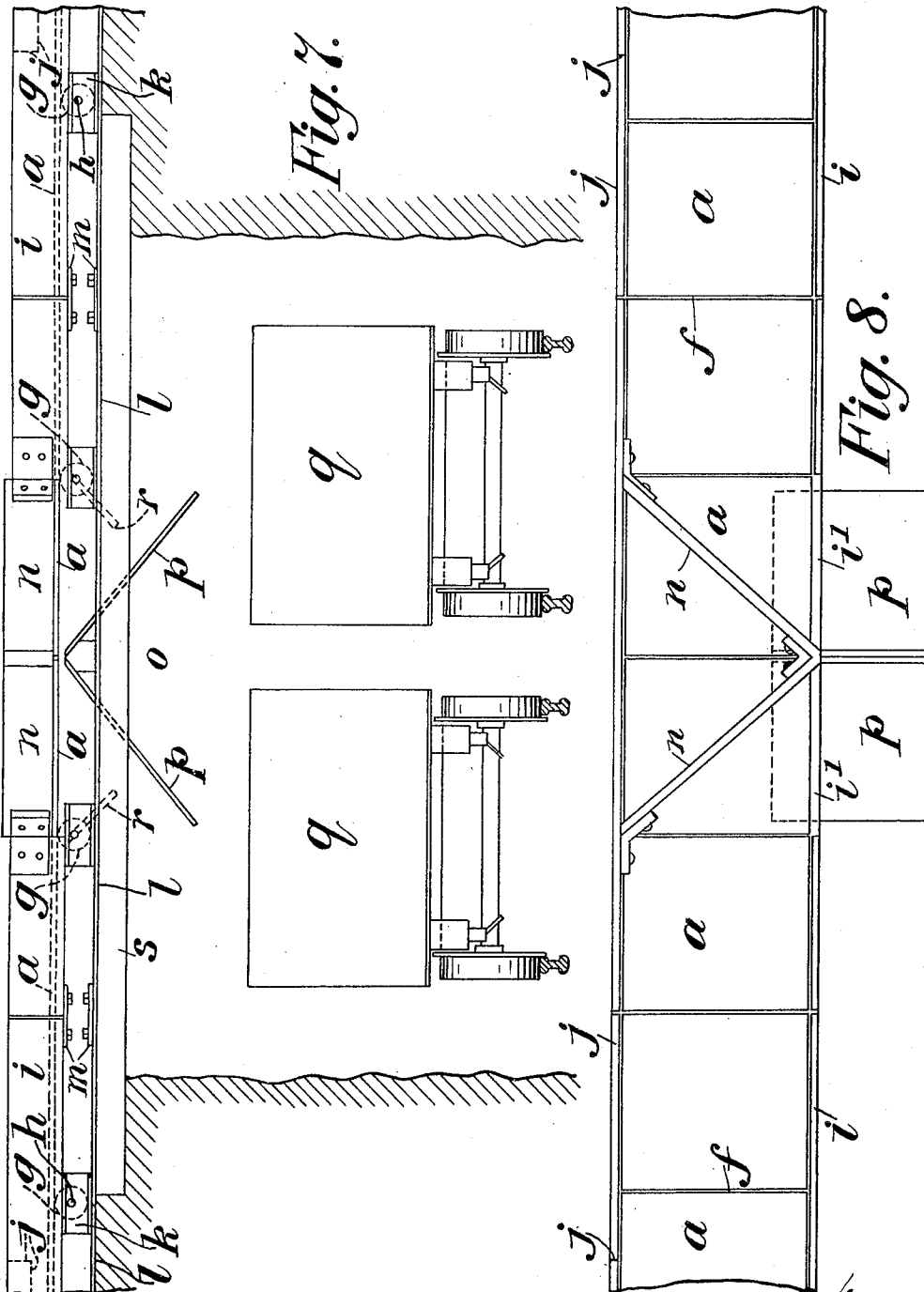
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COAL CONVEYER.
APPLICATION FILED MAY 31, 1910.

Patented July 21, 1914.

3 SHEETS—SHEET 2.

1,104,481.



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3 SHEETS—SHEET 3.

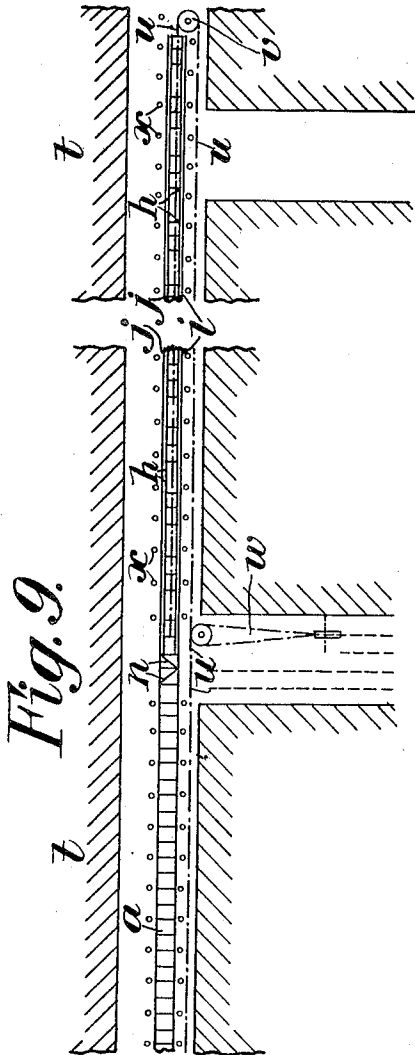


Fig. 9.

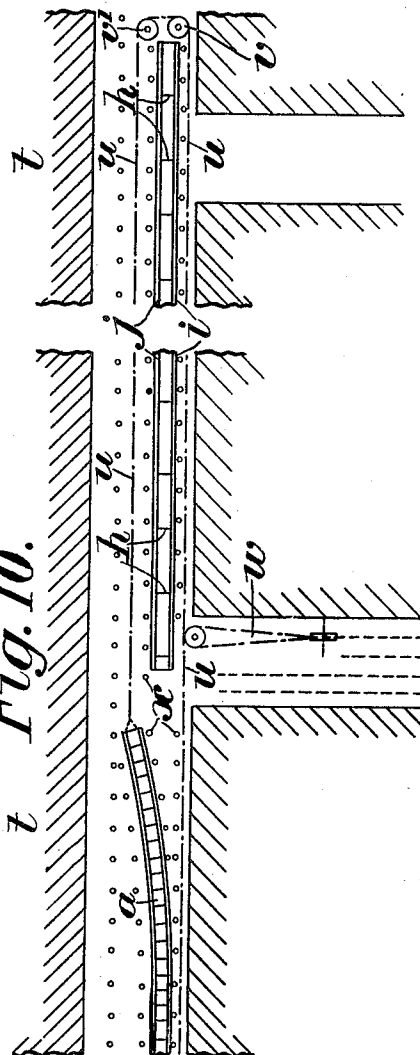
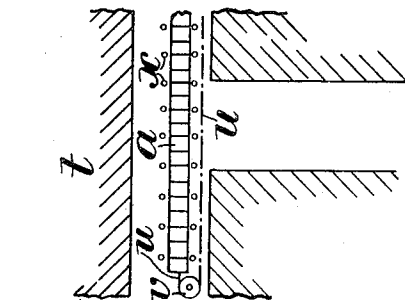
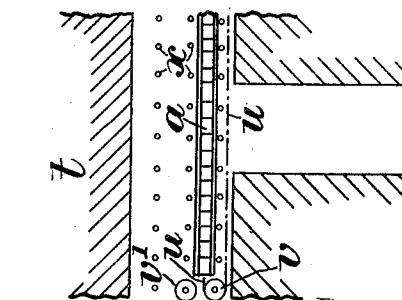


Fig. 10.



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UNITED STATES PATENT OFFICE.

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COAL-CONVEYER.

1,104,481.

Specification of Letters Patent.

Patented July 21, 1914.

Application filed May 31, 1910. Serial No. 564,191.

To all whom it may concern:

Be it known that we, JOSEPH DODDS, a subject of the King of Great Britain, residing at Fauldhouse, Scotland, and WILLIAM BROWN, a subject of the King of Great Britain, residing at Cambuslang, Scotland, have invented certain new and useful Improvements in Coal-Conveyers, of which the following is a specification.

This invention relates to conveyers of the reciprocating type as used in coal mines for the purpose of conveying the coal from the coal face and discharging it into the usual wagons or hutches or elsewhere, as required.

Under this invention the conveyer consists of a series of flat plates, connected together as usual, and adapted to run upon rollers a track comprising parallel rails having anti-friction devices carried thereby and side plates attached thereto and adapted to prevent material passing off the conveyer plates during the conveyance thereof.

In order that our invention may be clearly understood we have hereunto appended explanatory sheets of drawings, whereon:—

Figure 1 is a cross section of our improved conveyer on the line X—X, of Fig. 2. Fig. 2 is a side view showing two sections of the conveyer. Fig. 3 is a plan view showing two conveyer plates and Fig. 4 is a side view of Fig. 3. Fig. 5 is a plan view of Fig. 2 showing the track with the conveyer plates removed. Fig. 6 is a similar view to Fig. 3 but showing conveyer plates of somewhat shorter length. Fig. 7 is a side view showing the means for discharging the conveyer. Fig. 8 is a plan view of Fig. 7. Fig. 9 is a view showing the complete conveyer in position and showing a section of the coal working face. Fig. 10 is a view showing the method of shifting the conveyer.

In carrying out this invention we employ a series of flat conveyer plates *a* of suitable lengths varying from, say, eighteen inches to six feet according to requirements, these plates *a* being connected together by means of a central draw bar, rope or chain *b* which is made in sections of somewhat shorter length than the conveyer plates, and is bolted or otherwise secured thereto, as at *c*, each section *b* being formed with a hook *d* at each end thereof, and the sections of the draw bar being connected together by means of a link *e* which engages with each pair of adjacent hooks *d*. Between each of the conveyer

plates a slight clearance is left, as shown at *f*, thereby enabling the conveyer to conform to the contour of the working face in the mine.

The conveyer is adapted to move on a 60 track consisting of rails or flange plates *i*, *j*, arranged at suitable distances apart and preferably made of angle iron. The plates *i*, *j*, are raised somewhat from the ground and are supported at intervals by blocks *k* 65 which are bolted or riveted at *k*¹ to the horizontal flanges *i*², *j*² of the flange plates and at *k*² to flat track rails *l* which rest on the ground. The conveyer plates *a* run on a series of 70 rollers *g* which are loosely mounted upon fixed transverse shafts or axles *h* having tubular distance pieces *h*¹, the axles *h* being screw threaded at their outer ends and passing through the blocks *k* preferably formed of I-section metal, the axles *h* being secured 75 to the blocks by means of nuts *u* and *w*¹.

The side plate *j*, which is nearest the working face is preferably made lower than the side plate *i* so as to enable the coal to be readily loaded upon the conveyer from the 80 working face and the side plates *i*, *j*, and track rails *l* are formed in suitable short lengths, laid on the mine floor and are secured together by means of fish plates *m* bolted thereto, or by any other equivalent 85 means. The whole track is portable and can be joined up or taken apart at any section as desired. The axles *h* securely bind the side plates or rails together.

The discharging arrangement comprises a 90 pair of fixed plates *n* set at an angle (see Figs. 7 and 8) and which are arranged immediately above the main road *o*, these plates *n* being adapted to push the coal off the conveyer plates *a* when the latter are 95 drawn over the rollers *g* carried by the girders *c*. The coal swept off the conveyer plates falls on to the deflecting plates *r* and *p* into the hutches *q*; or the guide plates *p* may be arranged to discharge the coal on 100 to a second conveyer or into other desired receptacles. The side flange plates *i*, *j*, are carried over the main road but a gap is left at *i*¹, *j*¹, where the coal has to be swept off the conveyer by the plates *n*, *n*. The side 105 flange plates are laid along the floor of the mine at a suitable distance from the working face *t* (see Figs. 9 and 10) and between the rows of pit props *x*, and the shafts *h* and rollers *g* are then arranged in position. 110

The track is carried over the road on the girders or beams *s*.

In operation, the conveyer is drawn forward over the rollers *g* into position for filling by means of a rope or chain *u* passing around end pulleys *v* and connected to each end of the draw bar, rope or chain *b*, the rope *u* being driven by any suitable means, as indicated diagrammatically at *w*, from an electric motor or other convenient source of power. When the conveyer has been filled it is drawn back again by the rope *u* and over the road *o*, being, at the same time automatically discharged by one of the plates *n*. The conveyer can be readily drawn backward and forward upon the rollers *g*, in order to be filled and discharged.

The conveyer is moved, in a known manner, nearer to the coal face, as the work progresses, a second pair of end pulleys being provided and certain of the props *x* being removed, as shown at Fig. 10. The conveyer and its track is then divided into two or more portions at any convenient point or points and the rope or chain *u* is passed around the pulleys *v* and around one of the pulleys *v'*, and is then attached to each portion in turn thereby transposing the portions bodily and bringing them nearer to the coal face, when the conveyer may be again connected up in position. As the conveyer and its various parts are wholly built up of short lengths or sections, they may be

readily dismantled for transportation when desired.

Having now fully described our invention what we claim and desire to secure by Letters Patent is:—

1. A track for a portable conveyer having flat conveyer plates coupled together, comprising, in combination, track rails, blocks secured in pairs at intervals to the track rails, an axle removably secured to each pair of blocks, rollers loosely mounted upon each axle, a tubular distance piece on each axle and which retains the rollers in position thereon, and side plates on the blocks adapted to constitute sides to the conveyer.

2. A track for a portable conveyer having flat conveyer plates coupled together, comprising, in combination, pairs of plates, blocks secured to and between the said plates and arranged in pairs, angled side plates secured to the blocks for preventing material, during conveyance, moving off the conveyer plates, an axle secured to each pair of blocks, a pair of rollers loosely mounted upon each axle and a tubular distance piece on each axle and which retains each pair of rollers in position thereon.

In testimony whereof we affix our signatures in presence of two witnesses.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."