

(No Model.)

2 Sheets—Sheet 1.

A. H. ROBERTS.
CULM LOADER.

No. 564,937.

Patented July 28, 1896.

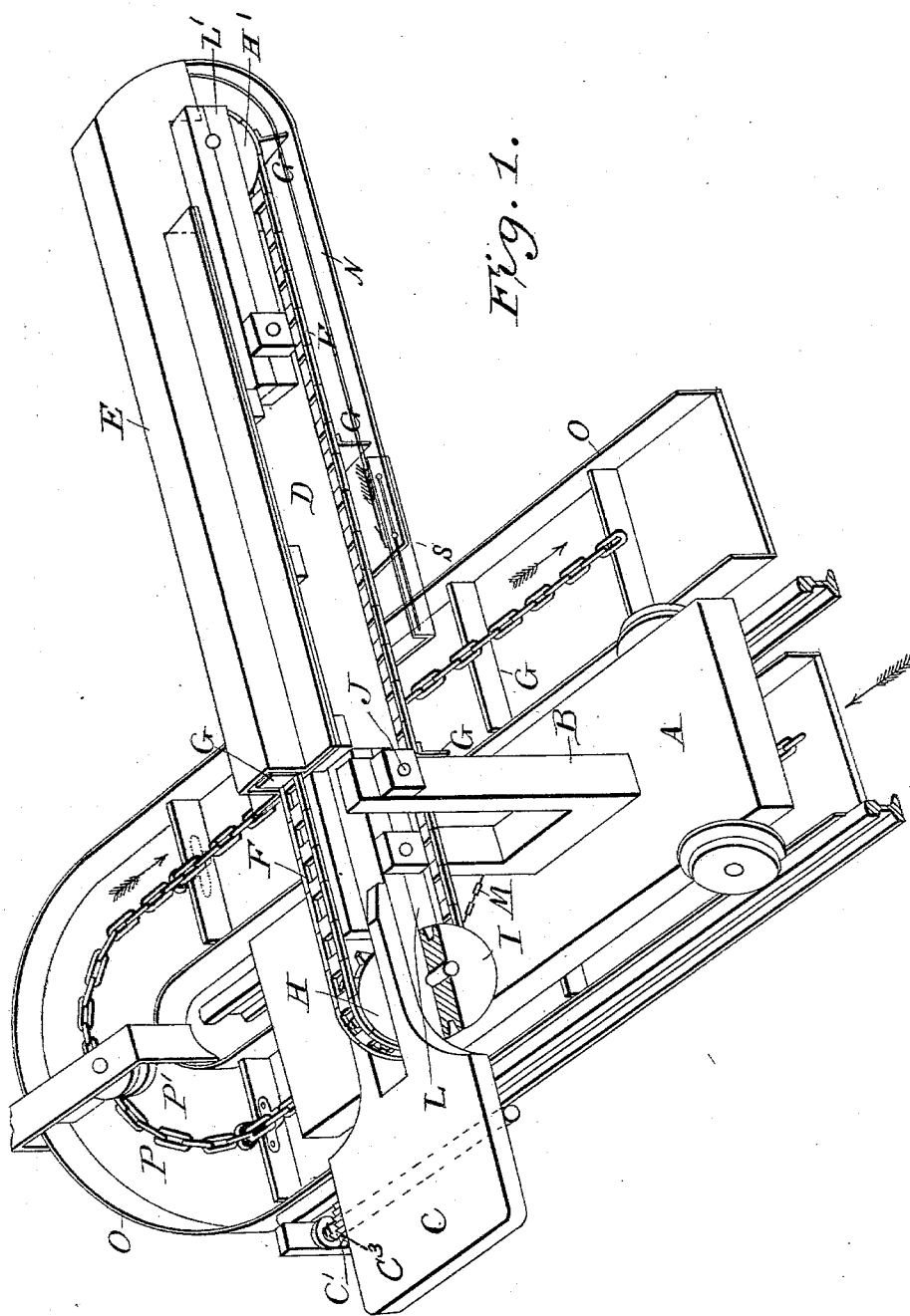


Fig. 1.

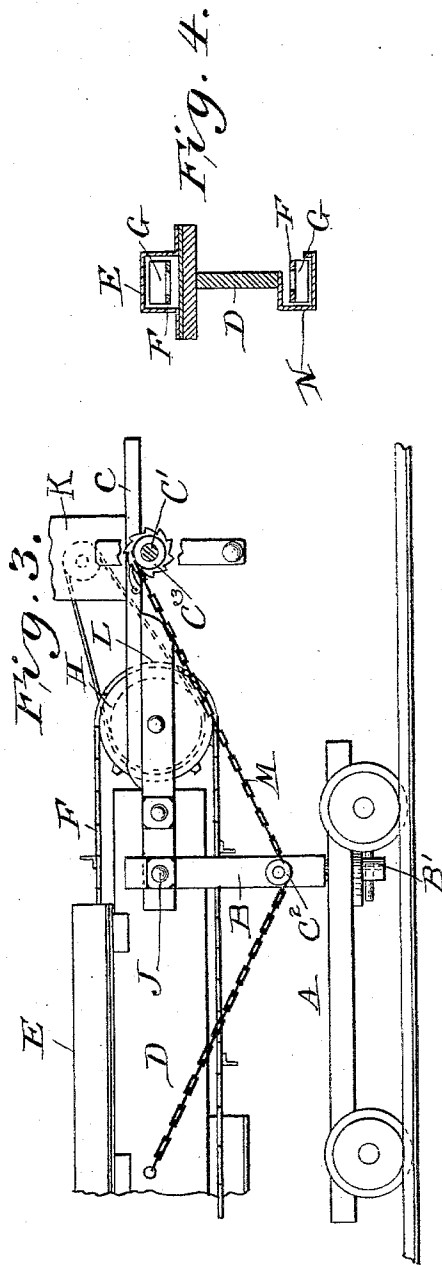
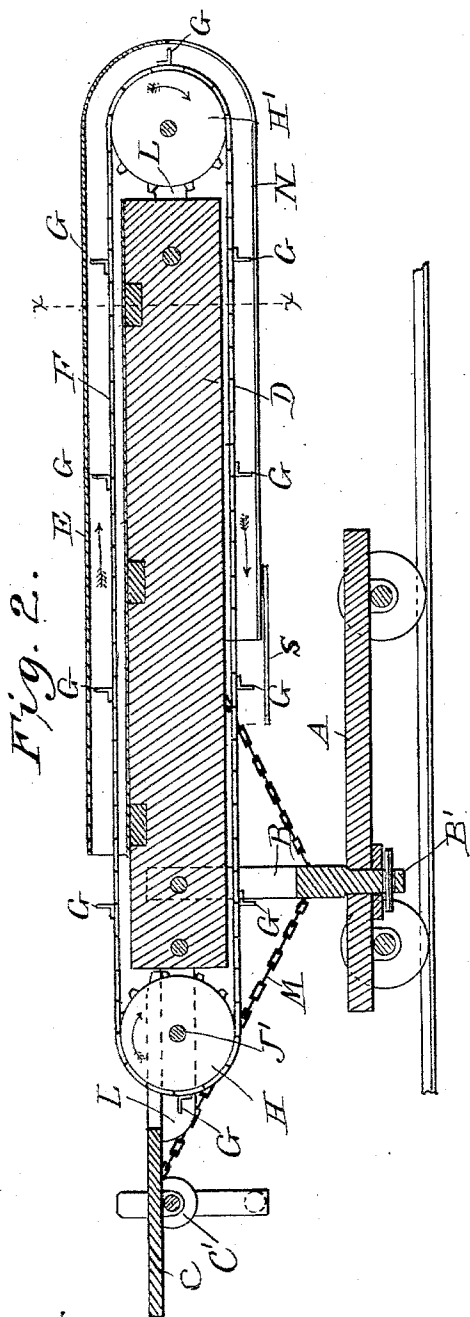
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Albert B. Blackwood

Inventor
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UNITED STATES PATENT OFFICE.

ADEN H. ROBERTS, OF BERNICE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
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CULM-LOADER.

SPECIFICATION forming part of Letters Patent No. 564,937, dated July 28, 1896.

Application filed January 10, 1896. Serial No. 574,956. (No model.)

To all whom it may concern:

Be it known that I, ADEN H. ROBERTS, a citizen of the United States, residing at Bernice, in the county of Sullivan and State of Pennsylvania, have invented certain new and useful Improvements in Culm-Loaders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in culm-conveying apparatus, and has for its object to provide improved means for transferring culm from the culm-pile to the conveyers.

At coal-mines are accumulated great banks of waste coal, usually called "culm." It consists principally of coal-dust and small lumps of coal that have passed through the screens at the coal-breakers and then been cast off as waste. Of recent years the small lumps of coal in these banks have been profitably utilized by conveying the culm to mills provided with machinery especially adapted for the purpose, where it is thoroughly washed and freed from dust and dirt and rescreened through finer sieves, thus producing a fine quality of clean coal in small sizes, suitable for steam-generating and other purposes. This culm is usually conveyed from the banks to the mills by chain-belt conveyers, which are loaded at the culm-banks by men with shovels, or with steam-shovels.

My invention provides machinery for loading the culm directly from the banks to the conveyer. It is illustrated in the drawings, in which—

Figure 1 is a perspective; Fig. 2, a central longitudinal section; Fig. 3, a detail side elevation of the rear end of the apparatus, and Fig. 4 a cross-section on line *xx* of Fig. 2.

Referring to the drawings, A is a car-truck mounted on rails; B, a standard pivotally mounted on the truck and carrying a strong beam D, which is mounted on the standard B and which swings on a fulcrum J between the arms of the standard B. The pivot shown

for standard B consists of a round post B', which extends through the truck-platform, and is there provided with a key and washer, but I do not wish to restrict myself to this particular form of standard and its pivotal support. One end of the beam D is provided with a platform C, adapted to carry an engine, (indicated by K.) At each end of the beam D is mounted a sprocket-wheel H H', carrying a chain belt F, secured to which at intervals are sweeps or scrapers G. The wheels H H' are carried by and between arms L L', firmly bolted to the sides of the beam D. The arms L also carry the platform C. The sprocket-wheel H next to the platform C has a pulley I, shown as partly broken away to give a better view of other parts, and over which pulley is passed a belt to an engine, and by which the chain belt F is driven.

On the opposite side from the pulley I is a brake and balancer which consists of a chain M, extending from the bottom of the platform C, where it is attached to a windlass C', downward to a pulley C², secured to the side of the standard B just above the platform of the car-truck A, and then after passing around the pulley C² extends upward at about the same angle to the beam D, to which it is firmly secured. Connected to the windlass is a ratchet and pawl C³ to hold the windlass and maintain the beam in the position set. The upper part of the beam D and the rear wheel H' are capped over with a sheet-metal cover E to protect the chain belt F and prevent the culm falling upon it as it moves toward the culm-bank. The under part of the beam D is provided with a sheet-metal half-trough N, which extends from the front end of cover E to the main conveyer, and in which the chain belt and sweeps G move in the direction shown by the arrows.

O is the main conveyer-trough, into which the half-trough N empties. The trough O extends between the rails and under and beyond the truck, then takes a bend, and returns alongside of the truck and rails and under the end of the half-trough N.

P is the main conveyer-chain, which runs from the mill through the main trough O, around a pulley P', placed at the bend at the

end of the rails and is also provided with sweeps G', which are attached at their middle to said chain by the well-known method.

In operation the car-tracks are laid close to the base of a bank of culm, upon which the truck A is placed, having mounted on it the standard B, the beam D, and its machinery, and provided with a small engine secured to the platform C at one end of the beam D. The standard B is turned sufficiently to swing the opposite end of the beam and its wheel H' in contact with the bank of culm, which end of the beam is slightly forced into it, when the culm by gravity caves downward and fills the half-trough N. Power is transmitted from the engine to the pulley I by a band, as indicated in Fig. 3. The chain belt F moves in the direction indicated by the arrows. The scrapers G convey the culm along the half-trough N to its end, where it is then discharged into the main conveyer-trough O, leading from the culm-bank to the mill, where it is washed and prepared for use. It will be observed that the main conveyer is to be constructed to run between the car-truck A and the discharging end of the half-trough N, which is provided with an extension S, that its length may be varied so it will discharge into the main conveyer at any angle at which the beam may be set.

The beam and its trough may be swung so as to strike the culm-bank at an angle and then gradually swung on the pivot of the standard B farther into the culm-bank until the beam D stands at right angles to the car-truck. A large amount of culm is thus reached without moving the truck on its track. The beam D is nearly balanced on the fulcrum-roller J in the standard B, and by the action

of the chain M and its windlass and pawl and ratchet the end of the beam D is raised or lowered and set in the culm-bank, as may be desired.

Having thus described my invention, what I claim is—

1. In combination with a truck and standard mounted thereon, a beam hinged near one end to said standard, an overhanging cover projecting over and beyond its receiving end, a trough under said beam, the sides of said trough extending beyond the sides of the beam, whereby the material falls on said cover and over its sides onto said trough, a chain belt and sweeps protected from the falling material by said cover, and a main conveyer into which the material is conveyed by said sweeps from said trough, substantially as described.

2. In a culm-conveyer, a truck on which said conveyer is mounted, said conveyer provided with sprocket-wheels and chain and with a cap and hood on top and at one end covering said wheel and chain, adapting said conveyer to be forced into a body of culm, said conveyer provided with a bottom half-trough projecting beyond the side of the beam to catch the falling culm, and said chain provided with sweeps to carry the culm out of said trough, and said half-trough provided with an extension substantially as and for the purpose described and shown.

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

ADEN H. ROBERTS.

Witnesses:

A. C. BLACKWELL,
R. H. WILLIAMS.