(No Model.)

J. M. DODGE.

CHAIN CONVEYER FOR HANDLING COAL.

No. 382,638. Patented May 8, 1888.

Fig. 1

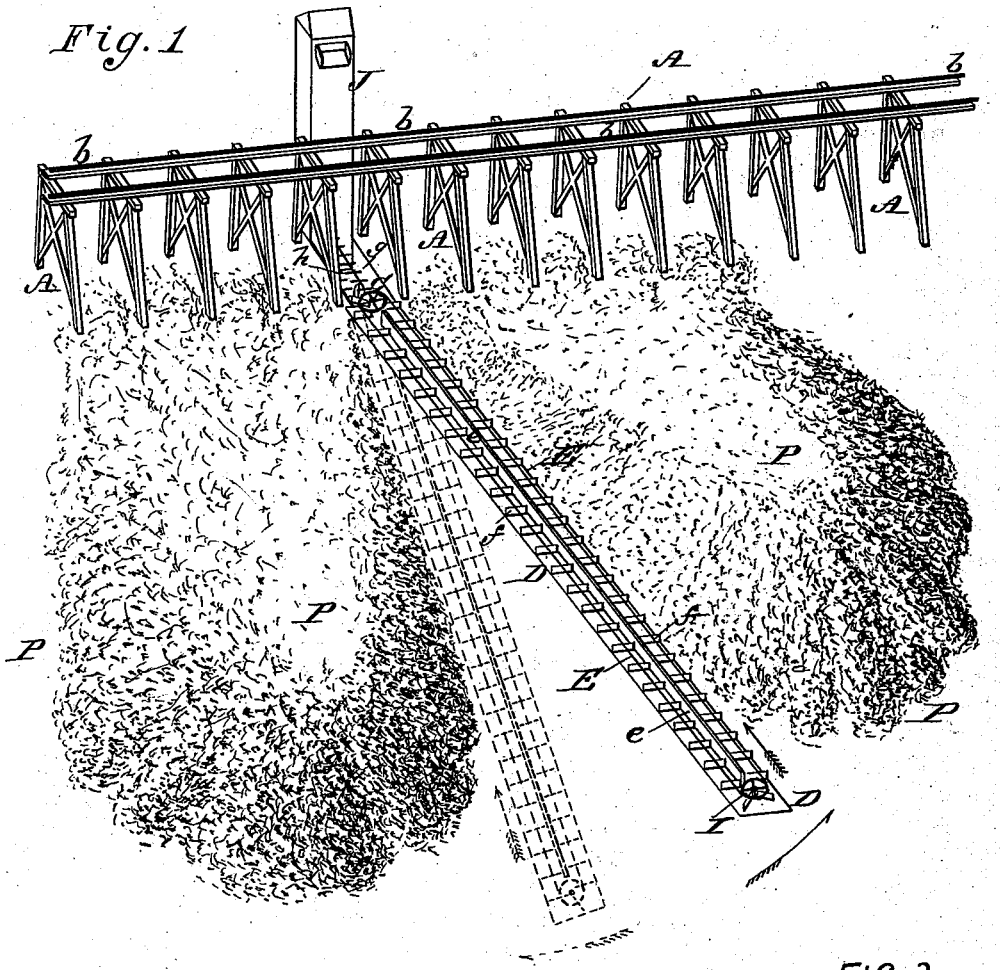


Fig. 2

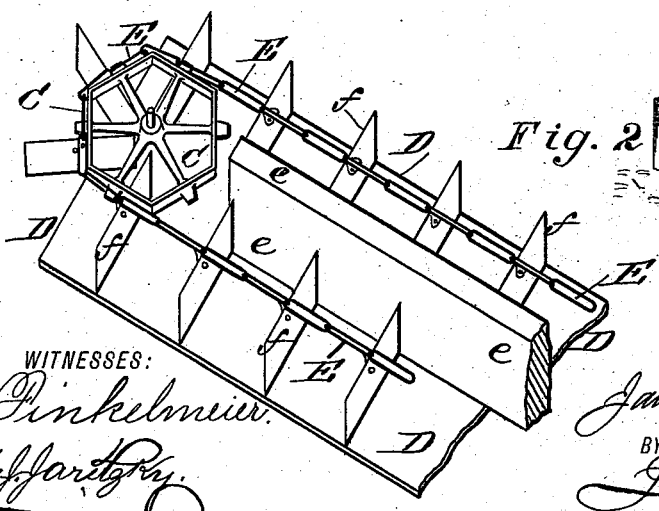
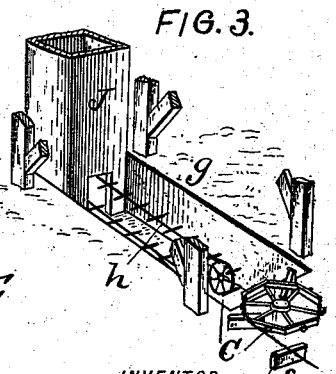


FIG. 3.



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JAMES M. DODGE, OF PHILADELPHIA, PENNSYLVANIA.

CHAIN CONVEYER FOR HANDLING COAL.

SPECIFICATION forming part of Letters Patent No. 382,638, dated May 8, 1888.

Application filed October 15, 1887. Serial No. 252,404. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. DODGE, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improved Chain Conveyer for Handling Coal, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My present invention relates to means for automatically removing or carrying off coal, culm, and other material from the heaps or piles in which it may be amassed and discharging the same at some given point, from which it may be removed for transportation by means of an elevator or otherwise, as may be found expedient.

In another application filed by me, Serial No. 250,896, I have shown and described a chain-conveyer contrivance or apparatus for this purpose, the novel construction and mode of operation of which consist, essentially, in a chain conveyer having a trough that is open at one side, the mode of operation being such that by the placement of the one-sided trough on the ground and near the base of the pile of material and the periodical or continuous movement or adjustment of the conveyer-trough toward the pile the material thereof will be continuously carried off by the flights as the particles of material tumble by gravity into the conveyer.

My present invention involves the use of a conveyer constructed and operating on the same principle; and it consists, essentially, in a duplex conveyer-trough adapted to operate on opposite sides of the same or different piles of material by simply reversing the direction of movement of the conveyer-chain, whereby I am enabled to more expeditiously handle or remove piles of material, all as will be hereinafter more fully explained.

To enable those skilled in the art to which my improvement relates to make and use my invention, I will now proceed to describe it more fully, referring by letters to the accompanying drawings, which form part of this specification, and in which I have shown my invention carried out in that particular form in which I have so far successfully practiced it, although it may be carried into effect under various modifications as to the detail construction of the contrivance shown.

In the drawings, Figure 1 is a perspective view showing part of an ordinary elevated track, two piles of material which have been formed by the discharge of the contents of dumps or cars running on said track in the usual manner, an ordinary elevator for carrying the material from a given point and discharging it into cars (not shown) on said elevated track for transportation, and my improved duplex open-sided trough conveyer arranged and operating according to my present improvement. Fig. 2 is a detail perspective view, on an enlarged scale, of that end of the improved conveyer-trough at which is located the drive-wheel of the conveyer-chain. Fig. 3 is a detail view in perspective with a portion of the frame-work broken away.

In the several views the same parts will be found designated by the same letters of reference.

A is the trestle-work, and *b* the track or rails, of an ordinary elevated railroad, from which material is supposed to be discharged through the medium of dumping-cars, to form extensive heaps or piles, such as illustrated at P. I have shown two of these piles of material, slightly separated, and between these piles is arranged, to rest on the ground in close proximity to the base of one of said piles, a duplex open-sided chain conveyer, which is composed of a base or bottom, D, a centrally-arranged longitudinal vertical portion, *e*, suitable chain-wheels, C and I, located at or near and having their arbors or shafts suitably supported upon the end portions of the bottom board or base, D, of the conveyer-trough, and an ordinary cable-chain, E, provided with conveyer-flights *f*, in the usual manner. At that end of the conveyer which is in close proximity to the base of the trestle-work A is supposed to be the drive-wheel C, which has the necessary power and motion for running the chain conveyer imparted to it in any suitable manner. At the vicinity of this end of the conveyer-trough there is, in the case shown, a pit or depression, *g*, into which the material brought to the base of the trestle-work is discharged, and from which it is supposed to be immediately re-

moved by a suitable ordinary conveyer, *h*, which latter carries it to the base or boot of an elevator, J, by which it is supposed to be carried up, and from the spout of which it is discharged into dumps or cars on the elevated track for transportation.

The arrows at Fig. 1 indicate the directions in which the chain and its flights travel, the direction of motion (as indicated) being reversed whenever the conveyer may have one of its operative edges or portions brought to bear on the base of a pile, as seen in full lines, or may have its opposite side or portion brought to bear on the base of any pile, as indicated by the dotted lines.

In the operation of my improved contrivance or apparatus, the chain conveyer having one edge of its bottom or floor D placed contiguous to the base of a pile, as shown at Fig. 1, and the conveyer-chain, with its flights, set in motion in the proper direction, the particles of coal or other material, which tumble or roll down by gravity and from the agitation of the traveling flights, will pass into that side or portion of the duplex conveyer-trough which is adjacent to the pile of material, and will be carried along by the flights *f* to the point of discharge, and from thence may be continuously removed by the means shown, or otherwise. As the automatic supply of material becomes inadequate or insufficient, the outer end of the conveyer-trough is moved (in any suitable manner) in the direction indicated by the arrow at Fig. 1, said trough vibrating, preferably, about the axis or shaft of the drive-wheel C as a pivotal point, the periodical or continuous swinging round or vibration of the conveyer-trough into or against the lower portion of the pile of material operating to induce a constant and sufficient supply of the latter to the flights of one portion of the duplex conveyer-trough until the contents of the pile shall have been all swept away or carried back to the pit *g*.

As will be readily understood by reference to Fig. 1 and the dotted lines thereon, a simple shifting of the position of the duplex conveyer-trough and a reversal of the direction of travel of its conveyer-chain will bring the contrivance into operative action with another pile of material, which, in a manner similar to that already explained, may be all removed by periodically or continuously swinging the outer end of the trough in the direction indicated by the dotted arrow at Fig. 1.

Of course, in the operation or use of a contrivance such as shown and so far described, the supply to that half or portion of the duplex conveyer-trough which may be in active operation may be increased by treading or shoveling down the particles of material from the upper part of the pile or mass, and, where the exigencies of the case may render it expedient, the whole apparatus may be shifted from one position to another, so as to bring the swinging conveyer-trough into an operative relationship first with one and then with the other side of the base portion of the same pile of material.

It will be seen that by the peculiar and novel construction shown of an open-sided conveyer-trough made duplex, or, in other words, with two operative edges to be used at different times, by simply reversing the direction of travel of the conveyer-chain and its flights, I am enabled to provide for use an apparatus for removing piles of material by operating upon the base thereof, that may be more expeditiously operated and that may be used with greater advantage than one such as shown in and made the subject of my other application for Letters Patent.

Of course the sizes and proportions of the parts, as well as the structural details thereof, may be varied in many ways without departing from the principle of my present invention or improvements, so long as the conveyer has its opposite sides open and is adapted to operate at its opposite edges at different times upon the base portion of a pile or piles of material in substantially the manner which I have hereinbefore explained.

Without, therefore, limiting myself to any peculiarities of detail construction other than that which constitutes the essential feature of novelty of my present improved contrivance, what I claim herein as new, and desire to secure by Letters Patent, is—

A conveyer composed of suitable flights and an endless carrier therefor mounted on suitable wheels, and a duplex conveyer-trough having two opposite open sides adapted to permit the feeding of the particles of material from a pile or piles into either of its compartments, substantially as and for the purpose hereinbefore set forth.

In witness whereof I have hereunto set my hand this 4th day of October, 1887.

JAMES M. DODGE.

In presence of—
M. GETZ,
H. BACON.