(No Model.)

2 Sheets—Sheet 1.

H. U. PALMER.

CONVEYING APPARATUS.

No. 389,242. Patented Sept. 11, 1888.

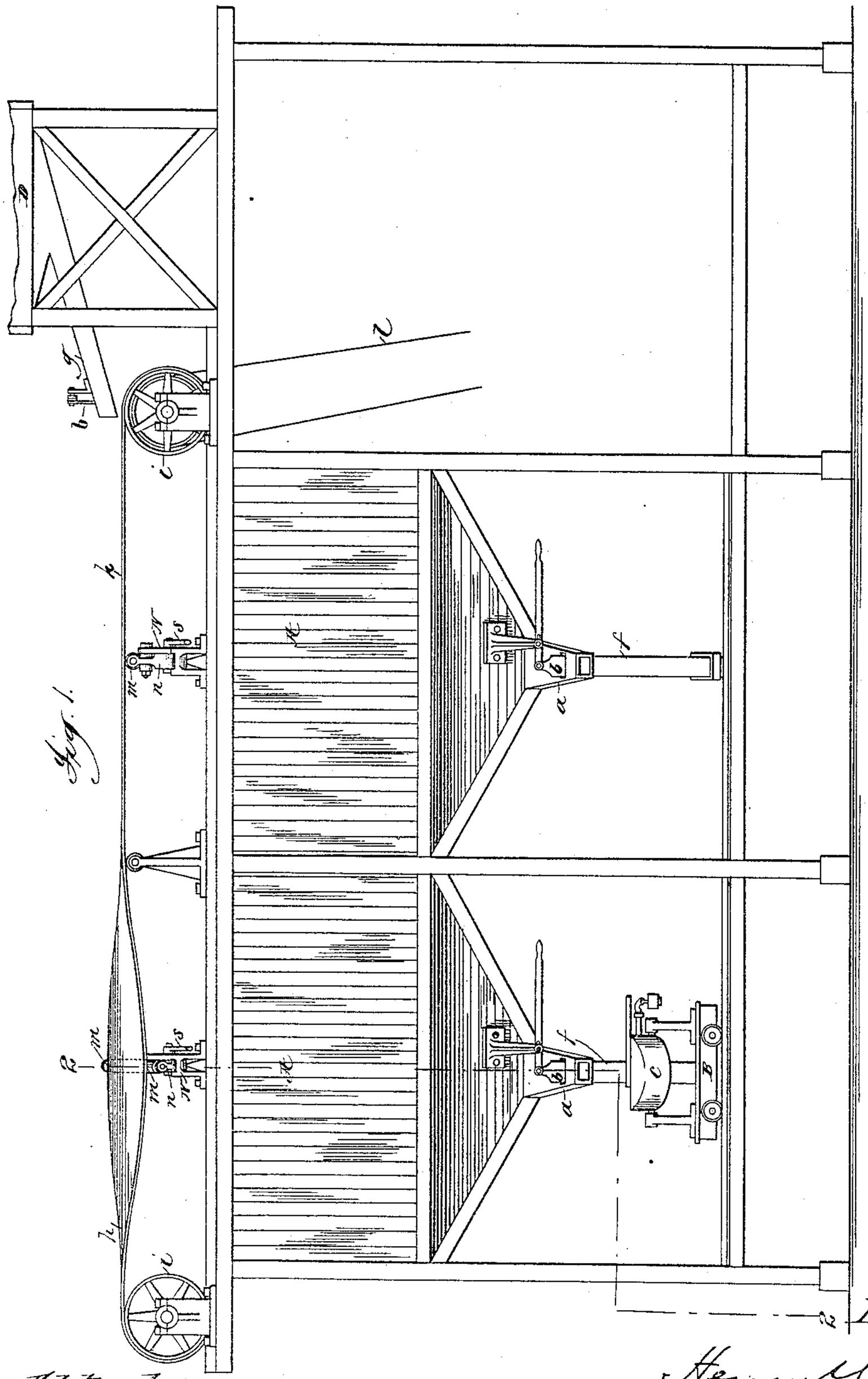


Fig. 1.

Attest:
Geo. H. Strong.
G. M. Boret.

Inventor:
Henry U. Palmer.
by Philip Phelps & Hovey.
Att'ys.

(No Model.) 2 Sheets—Sheet 2.

H. U. PALMER.

CONVEYING APPARATUS.

No. 389,242. Patented Sept. 11, 1888.

Fig. 2.

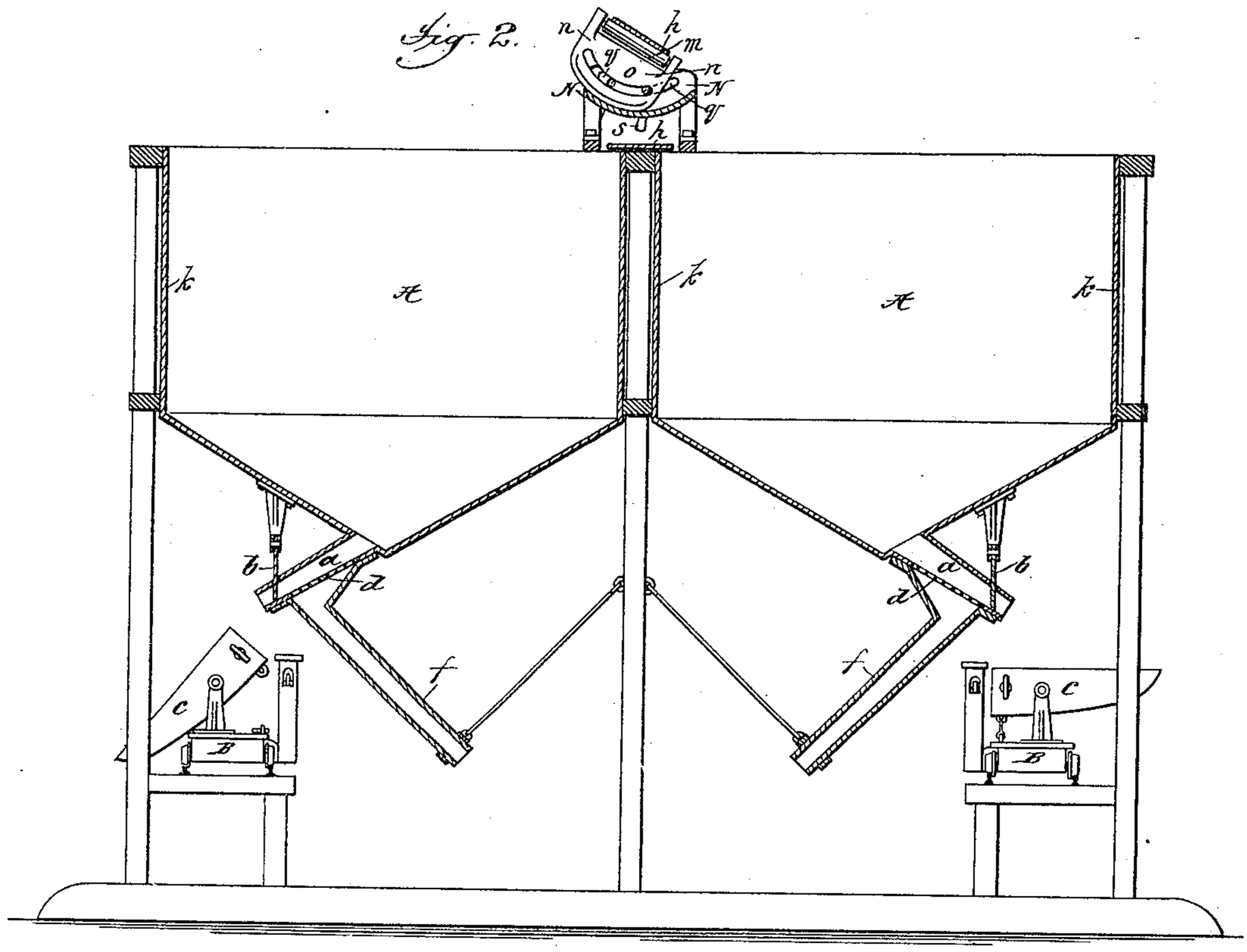


Fig. 3.

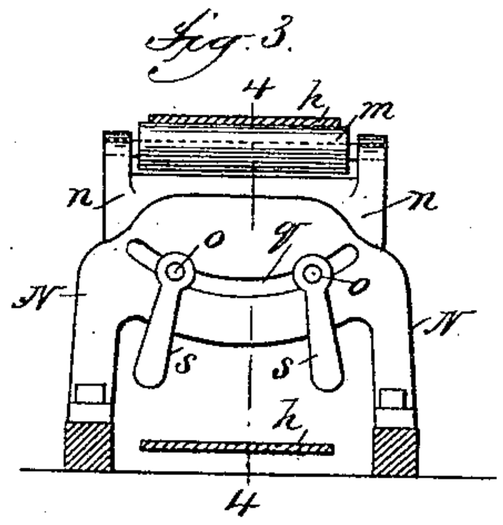
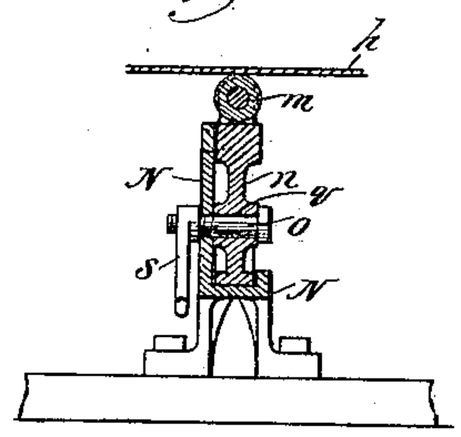


Fig. 4.



Attest:
Geo. H. Botts.
G. M. Borst.

Inventor.
Henry U. Palmer.
by J. Phillips Phelps & Bonney
Atty's.

UNITED STATES PATENT OFFICE.

HENRY U. PALMER, OF BROOKLYN, NEW YORK.

CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 389,242, dated September 11, 1888.

Application filed April 17, 1888. Serial No. 270,901. (No model.)

To all whom it may concern:

Be it known that I, HENRY U. PALMER, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Conveying Apparatus, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to a conveying apparatus for use in coal-yards, warehouses, and similar places for conveying coal and similar substances from one point to another and delivering them into any one of a series of bins.

In the accompanying drawings, Figure 1 is a side elevation of a number of coal-bins provided with a conveying apparatus embodying the present invention. Fig. 2 is a sectional elevation of the same, taken substantially on the line 2 of Fig. 1. Fig. 3 is an enlarged side view of one of the supports upon which the conveyer travels. Fig. 4 is a vertical section of the same, taken on the line 4 of Fig. 3.

Referring to said figures, it is to be understood that A represents a number of elevated bins constructed and arranged in the ordinary manner for the reception of coal or similar substances. These bins are formed at their bottoms in the shape of hoppers, and are provided with chutes *a*, controlled by suitable gates, *b*, through which the coal is discharged either directly into wagons or into a hopper, *c*, mounted upon a movable scale, B, by which it can be weighed and then discharged into the wagons. The chutes *a* are provided with the usual screens, *d*, which operate to screen the dust out of the coal as it passes from the bins A. The dust thus removed from the coal enters chutes *f* and is discharged at any convenient point.

In filling the bins A the coal or other substance is discharged from the cars or boats into an elevated hopper, D, and from this hopper it passes through a suitable chute, *g*, onto a conveyer consisting of an endless belt, *h*, which passes around suitable pulleys, *i*, and is arranged directly over the partition *k*, which separates the two rows of bins A. The belt *h*, forming the conveyer, is driven from any suitable source of power (not indicated) through a belt, *l*, which passes around a pulley upon the shaft of one of the pulleys *i*, or in any other suitable manner.

In those cases where the coal is discharged from cars by means of a conveying and elevating apparatus such as or similar to that shown in my prior application for Letters Patent filed December 9, 1887, Serial No. 258,273, it may be delivered directly onto the belt *h* from the elevating apparatus instead of being delivered into the hopper D.

The belt *h*, forming the conveyer, is supported between the pulleys *i* by means of rolls *m*, arranged at suitable intervals. Some or all of these rolls are journaled in tilting bearings *n*, which are adjustable upon supports N, so as to be capable of being adjusted from a horizontal to an inclined position in either direction. For the purpose of securing the rolls *n* in any position to which they are adjusted the supports N are provided with locking-bolts *o*, which pass through slots *q*, formed in the bearings *n* and supports N, and are provided with nuts *s*, by which they can be tightened, so as to hold the rolls and their bearings in any position to which they are adjusted.

The manner of using the apparatus thus constructed is as follows: When it is desired to fill any one of the bins A, the roll *m* which supports the conveying-belt *h* at a point near the middle of the bin will be adjusted from its horizontal position so that it will incline toward the bin which is to be filled at an angle of about forty-five degrees, as indicated in Figs. 1 and 2, thereby causing the conveying-belt as it passes over the roll to assume a corresponding inclination to that point. The coal as it is delivered onto the conveying-belt will pass forward on the belt over the rolls *m* which are arranged in a horizontal position until it arrives at the roll which has been adjusted to the inclined position, as stated. As the coal upon the belt arrives at or about at this point it will, owing to the inclination of the belt, slide off laterally and pass into the bin which is to be filled, and so the operation will continue.

When one bin has been filled and it is desired to fill another, the roll which has been set at an incline will be returned to its horizontal position and the corresponding roll over another bin will be adjusted to an inclined

position, and the operation will be the same. By adjusting the rolls *m* to a correspondingly-inclined position in the opposite direction the bins upon the opposite side of the conveying-belt may be filled in the same manner.

If preferred, the supports N, which carry the rolls *m*, may be made movable instead of being stationary, or the belt may be supported by a number of rolls *m* which are not adjustable, as described, there being provided one or more of the rolls *m* which are mounted upon movable supports N, so that it or they can be moved from one position to another, and thus be brought into position to incline the belt over any bin that it is desired to fill.

In those cases where the bins are arranged in a single row instead of in a double row, as shown, the conveyer may be located in any convenient position over the bins, instead of being arranged over the partition between the two adjacent rows of bins.

I am aware that it has been proposed to construct a grain-conveyer consisting of two horizontally-moving parallel belts which were connected by a strip of canvas which formed a trough-like apron between the belts for containing the grain, and also that it has been proposed to discharge the grain from the conveyer by means of narrow pulleys which were located at the point of discharge and acted against the under side of the trough at its center and operated to reverse the trough or turn it inside out, and thus cause the grain to fall off at the opposite sides, partly on one side and partly on the other, a structure of this description being shown in United States Letters Patent No. 97,070. The conveyer thus organized differs from mine in several important particulars. The reversal of the trough to discharge the contents caused the contents to be discharged simultaneously upon both sides of the conveyer, and thus rendered it impossible to utilize the conveyer for filling two rows of bins arranged side by side, whereas in my organization, the belt being simply tilted or inclined in one direction or the other, the contents are discharged wholly on one side and the conveyer is available for filling two rows of bins arranged side by side. Again, the reversal of the trough made it necessary for the contents in order to be discharged to pass up a steep incline to arrive in position to slide off at the sides. This caused the contents to constantly fall back and accumulate in the trough just in front of the point of discharge, and this accumulation put great weight and strain upon the conveyer and made it hard to operate. In my organization by simply tilting the belt this difficulty is entirely avoided.

What I claim is—

1. The combination, with the horizontally-traveling conveying-belt *h*, arranged above the bins to be filled, and a chute for directing the coal or other substance onto the belt, of an inclined supporting-roll, *m*, extending across the width of the belt and adapted to tilt or incline the belt at the point of discharge, substantially as described.

2. The combination, with the horizontally-traveling conveying-belt *h*, arranged above the bins to be filled, of a supporting roll or rolls, *m*, extending across the width of the belt and adjustable to incline in either direction, and adapted to incline the belt to discharge the coal or other substance in either direction, substantially as described.

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

HENRY U. PALMER.

Witnesses:
T. H. PALMER,
J. J. KENNEDY.