No. 619,463. Patented Feb. 14, 1899.

G. F. BARTLETT & G. A. OVERSTROM.

BELT CONVEYER AND DISTRIBUTER.

(Application filed Mar. 9, 1898.)

(No Model.) 2 Sheets—Sheet 1.

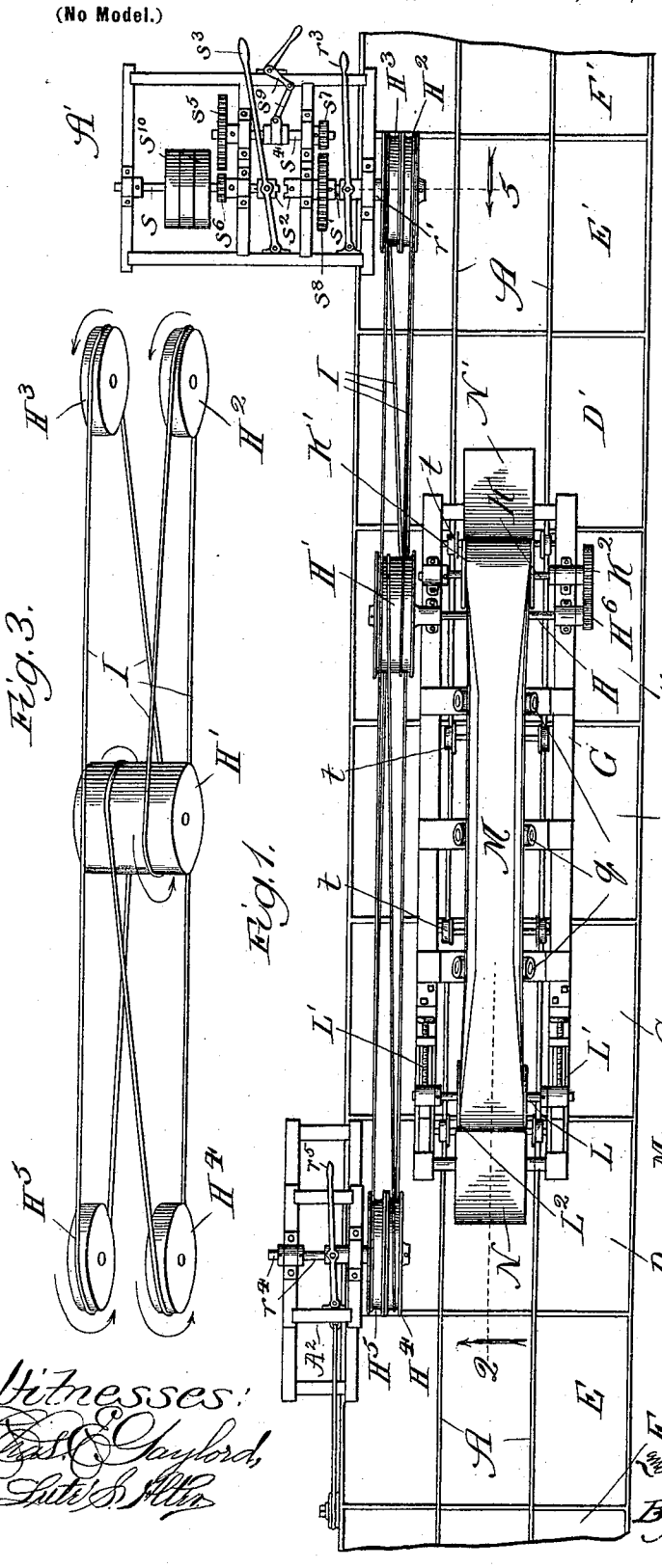


Fig. 1.

Fig. 3.

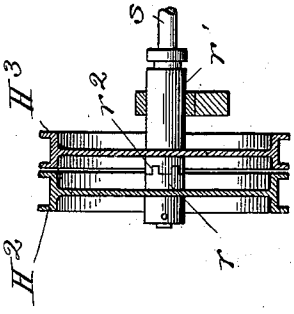


Fig. 5.

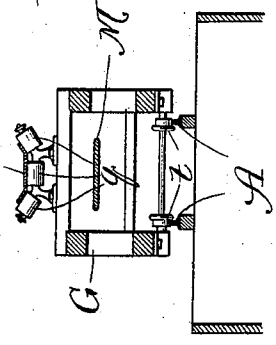


Fig. 4.

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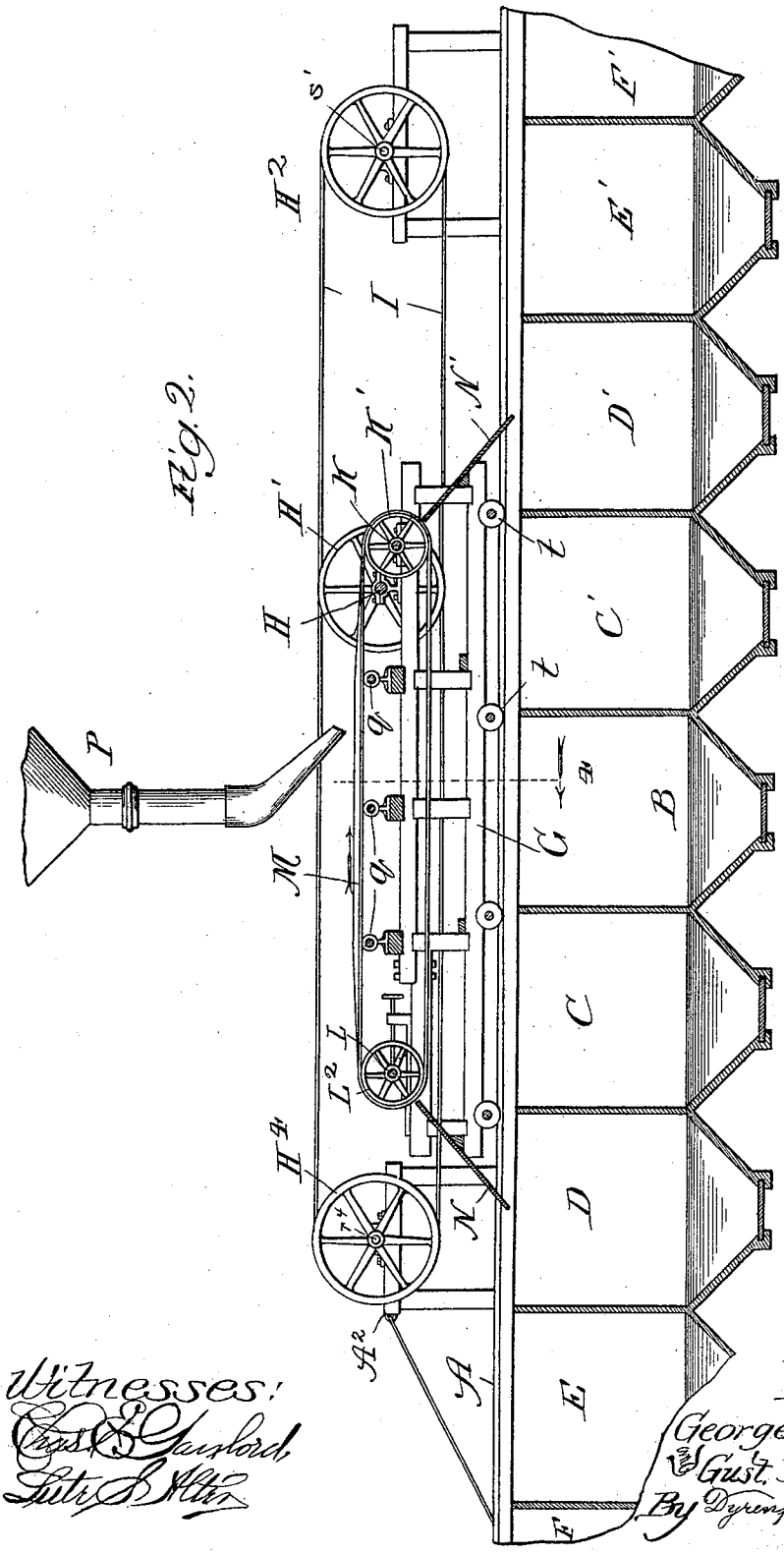
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BELT CONVEYER AND DISTRIBUTER.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE F. BARTLETT AND GUSTAVE A. OVERSTROM, OF PARROT, MONTANA.

BELT CONVEYER AND DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 619,463, dated February 14, 1899.

Application filed March 9, 1898. Serial No. 673,262. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. BARTLETT and GUSTAVE A. OVERSTROM, citizens of the United States, residing at Parrot, in the county of Madison and State of Montana, have invented a new and useful Improvement in Belt Conveyers and Distributers, of which the following is a specification.

Our invention relates to improvements in belt conveyers adjustable at will to deliver materials deposited thereon to any one of a series of points or receptacles. Conveyers of the class to which our invention relates are adapted for delivering grain, ore, or the like materials usually from one receiving-point to one of a series of receptacles and are adjustable to change the point of delivery, whereby, for example, materials of different grades or characters may be conveyed from the one receiving-point to different receptacles for separate storage.

The present improvements are intended more especially, though not necessarily, for use in establishments, such as ore-sampling works, to receive the ore, as from a crusher or pulverizer, and deliver the different runs or samples to different receptacles.

Our object is to provide a generally-improved belt conveyer of the above class and of a particularly simple, durable, and economical construction, which will require comparatively little power to operate it, be readily and quickly adjustable to deliver at different points as required, and be particularly desirable and effective for its purpose. Our object is also to provide rope-driving means particularly adapted for running the conveyer.

In the drawings, Figure 1 is a broken plan view of our improved conveyer operated by a rope-drive and movable over a series of receptacles or bins; Fig. 2, a broken section taken on line 2 of Fig. 1; Fig. 3, a perspective diagrammatic view of the rope-drive we prefer to employ; Fig. 4, a broken cross-section taken on line 4 of Fig. 2 and viewed in the direction of the arrow, and Fig. 5 an enlarged broken section taken on line 5 of Fig. 1.

A is a track, beneath which is a series of bins B C C′ D D′ E E′ F F′.

G is a carriage or conveyer frame mounted upon rollers *t*, which run upon the track A.

H is a drive-shaft journaled in the frame G toward one end thereof and extending at opposite ends beyond opposite sides of the frame. On one end of the shaft H is a rope-drive drum or sheave H′. Journaled in a frame A′, forming part of the structure which supports the track A, are abutting shafts *s s′*, carrying clutch members s^2, which may be thrown into and out of engagement by a shipping-lever s^3. Adjacent to and parallel with the shafts *s s′* is a shaft s^4 in a sliding bearing on the frame A′ and carrying a gear-wheel s^5 to mesh with a pinion s^6 on the shaft *s* and a pinion s^7 to mesh with a gear-wheel s^8 on the shaft *s′*. The shaft s^4 and its gears may be slid into and out of operative position by means of the link and lever s^9. Thus by causing the clutch members s^2 to engage the shaft *s′* is driven directly by the shaft *s* and at the same speed, while when the clutch members are disengaged the shaft s^4 may be slid into position to cause the shaft *s′* to be driven at reduced speed from the shaft *s* through the back gears s^6 s^5 s^7 s^8. Fixed upon the shaft *s′* is a rope-driving sheave H^2, formed at its hub with a clutch member *r*, and H^3 is a rope-driving sheave on a sleeve *r′*, loose on the shaft *s′* and formed with a clutch member r^2, which may be thrown into and out of engagement with the clutch member *r* by means of a lever r^3, which slides the sleeve *r′* longitudinally on the shaft *s′*. Mounted upon the frame of the structure is a tensioning-carriage A^2, in which is journaled a shaft r^4, carrying rope-driving sheaves H^4 H^5 in line with the sheaves H′ H^2 H^3. The sheave H^4 is fixed to the shaft, while the sheave H^5 is loose thereon and capable of clutching or releasing the sheave H^4 by the movement of a lever r^5.

I is an endless driving-rope extending over the sheaves H′ H^2 H^3 H^4 H^5, the wrapping or winding of the rope around the sheaves being as indicated most plainly in Fig. 3. When it is desired to have the carriage remain stationary and to rotate the shaft H, the sheaves H^2 H^3 and H^4 H^5, respectively, are clutched together to cause them to rotate in the same direction, as indicated. Although we show the rope-drive, our invention is not to be limited thereto or to any particular style of driving power. If desired, the shaft H may be driven from an electric or other motor upon the carriage or from a line-shaft along which

the carriage is adapted to move. However, as a rope-drive is in many cases the power most desirable to employ we have shown the construction of rope-drive which we believe to be best adapted for our purpose.

Journaled in the frame G, adjacent to and parallel with the shaft H, is a shaft K, carrying a drum or belt-pulley K′ between the sides of the frame. On one end of the shaft K is a gear-wheel K^2, which meshes with a pinion H^6 on the shaft H, to be driven thereby.

L is a shaft journaled toward the opposite end of the frame G in a tensioner L′ and carrying a belt drum or pulley L^2 between the sides of the frame. Extending over the drums or pulleys K′ L^2 is an endless conveyer-belt M, which between the drums travels across idlers *q q*, which raise the sides of the belt, as shown. Extending at their upper ends, close to the under side of the belt M at the drums K′ L^2, are inclined chutes N′ N, respectively, which extend to the under side of the frame G.

P is one form of delivery device or spout, which may be turned axially to extend at its lower end to the right or left in Fig. 2.

The fast and loose pulleys s^{10} may be geared by means of straight and cross belts to a suitable driving-pulley, (not shown,) whereby by shifting the belts in any common manner the shaft *s* may be driven in either direction. When it is desired to run the conveyer-belt, the shafts *s s′* are released from the back gear and clutched together, and the rope-driving sheaves are also clutched together, as described. If it is desired to shift the carriage along the track, the clutches between the sheaves are released, thus permitting the carriage to be moved, as by manual power, to any desired position on the track without resistance from the rope-drive. If it is desired to shift the carriage by power from the shaft *s*, the sheaves H^3 H^5 may be locked by any suitable means against rotation, the shafts *s s′* disengaged from each other, and the back gear moved into engagement with the shafts *s s′*, whereby the sheaves H^2 H^4 will be rotated at reduced speed and move the carriage slowly in either direction, depending upon the direction of rotation of the shaft *s*.

When the parts are in the position shown in Fig. 2 and the conveyer-belt is run as described, material delivered from the spout P onto the belt M will be discharged into the bin or receptacle D′. By reversing the movement of the shaft *s* and turning the spout P in the opposite direction the material will be delivered into the bin or hopper D. The carriage may be shifted, as described, to cause the chute N′ to extend over any one of the bins to the right in Fig. 2, or the chute N to extend over any of the bins to the left in that figure, whereby the material delivered by the spout P upon the belt will be conveyed to any bin desired.

In our construction we employ a comparatively short belt M, which is an advantage, for the reason that belts of the width and material necessary are expensive. The belt travels a smooth course without being bent back and forth or kinked, as has been the custom hitherto in conveyers of this class and which tends to injure the same and greatly increase the power necessary to run the belt. In sampling ores, particularly of great value, it is essential that all the particles deposited upon the belt shall be discharged into a certain bin or receptacle and none of them in any other receptacle. The chutes N N′ may contact lightly, if desired, with the under surface of the belt and sweep off all particles to prevent any from adhering to the belt and dropping into any of the bins between the chutes.

Any suitable delivery device for depositing the material upon the conveyer-belt may be substituted for the spout P, and it is only necessary that the belt shall be in position to receive the material discharged from the delivery device.

While we prefer to provide the conveyer in all its details as shown and described, the construction may be changed without departing from the spirit of our invention as defined by the claims.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a belt conveyer and distributer, the combination of a series of receptacles, a carriage movably supported above the receptacles, an endless conveyer-belt mounted upon the carriage and adapted by the movement of the latter to be brought into position to discharge at one end or the other into any one of the receptacles, a delivery device in position to discharge upon said belt in any position of the latter, and means for driving the belt, substantially as described.

2. In a belt conveyer and distributer, the combination of a series of receptacles, a track above said receptacles, a carriage movable on said track and provided at opposite ends with chutes, an endless conveyer-belt mounted upon the carriage and extending at opposite ends of its course over and in close proximity to the said chutes to effect the complete discharge of the material at either end, a delivery device in position to discharge upon said belt in any position of the latter, a pulley carried by the carriage the shaft of the pulley being operatively connected with one of the belt-pulleys, and means for driving said pulley in any position of the belt, substantially as described.

3. In a belt conveyer and distributer, the combination of a series of receptacles, a carriage movably supported above said receptacles, belt-pulleys at opposite end portions of the carriage, an endless conveyer-belt extending over the pulleys and adapted to discharge at one end or the other into any one of the said receptacles, means between the pulleys for turning up both edges of the belt, means for driving the belt, and a delivery device in

position to discharge upon the belt, substantially as described.

4. In a belt conveyer and distributer, the combination of a series of receptacles, a carriage movably supported above said receptacles, an endless conveyer-belt mounted upon the carriage, a delivery device in position to discharge upon said belt, a pulley carried by the carriage, the shaft of the pulley having gear connection with one of the belt-pulleys, and a rope-drive connected with the pulley and operating to move the belt and shift the position of the carriage, substantially as described.

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In presence of—
JOSEPH H. HARPER,
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