No. 825,110. PATENTED JULY 3, 1906.

J. E. CAMP.

SHIFTABLE CONVEYER.

APPLICATION FILED JUNE 15, 1905.

FIG. 1.

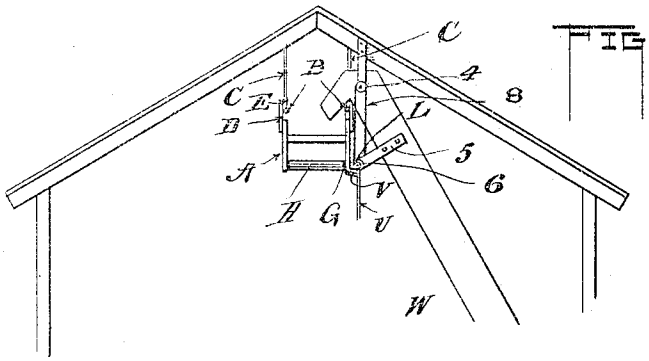


FIG. 2.

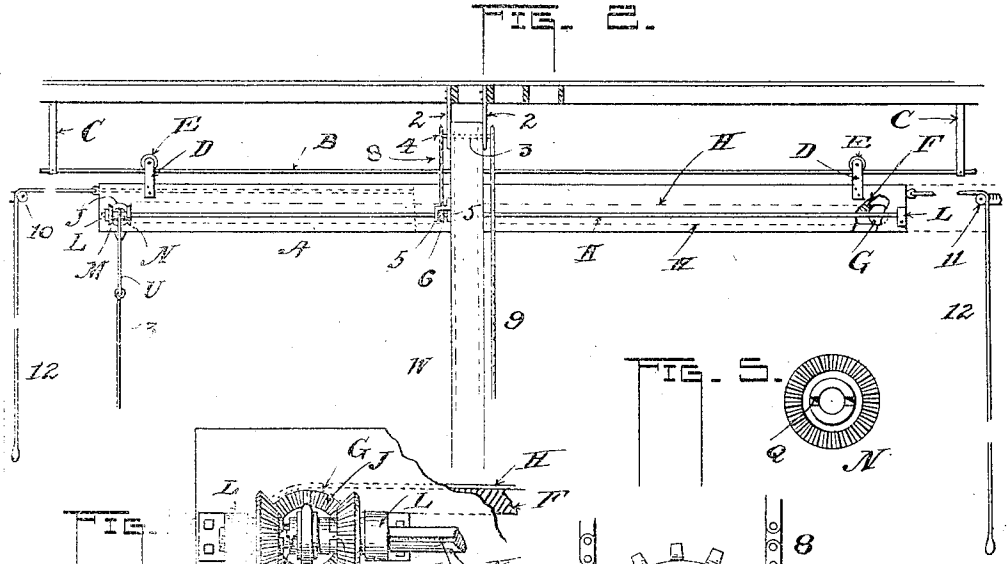


FIG. 5.

FIG.

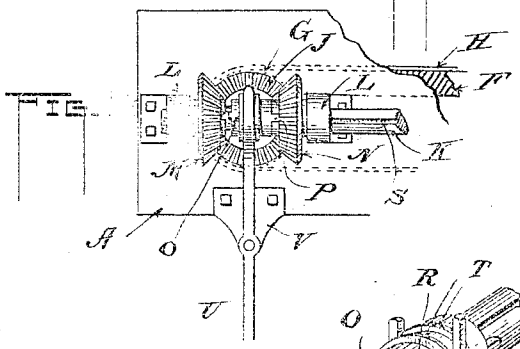


FIG. 4.

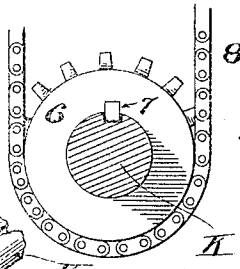
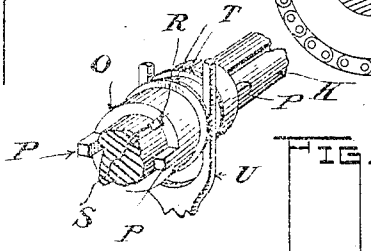


FIG. 6.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH E. CAMP, OF WASHINGTON, ILLINOIS.

SHIFTABLE CONVEYER.

No. 825,110. Specification of Letters Patent. Patented July 3, 1906.

Application filed June 15, 1905. Serial No. 265,300.

To all whom it may concern:

Be it known that I, JOSEPH E. CAMP, a citizen of the United States, residing at Washington, in the county of Tazewell and State of Illinois, have invented certain new and useful Improvements in Shiftable Conveyers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to distributing-conveyers for use in barns, granaries, and other buildings where grain is to be stored in various bins.

The invention has particular reference to conveyers which are shiftable in the direction of their lengths in order to provide for the distributing operation.

The invention is also adaptable to the handling of ores in mining countries, as well as for grain, and may be used for other purposes where distribution of materials is wanted.

The object of the invention is to provide a shifting conveyer of the most simple form to be stationed above the bins to be supplied with grain and driven by means of the elevator which carries grain thereto.

Another object of the invention is to provide a conveyer that may be shifted to any place desired and requiring no locking device for sustaining it in the position placed.

Another object is to provide a shifting conveyer and a shaft extending its entire length to which motion is imparted from the elevator which carries the grain thereto, said shaft adapted to slide through the means that drives it.

A further object is the improvement of this class of conveyers generally.

In the appended drawings, Figure 1 is an end elevation of a portion of a building, showing my conveyer as seen from one end with the head of an elevator overhanging it. Fig. 2 is a side view of the conveyer, showing driving means and an elevator in connection therewith, said figure also showing the ridge-pole of the building, from which a supporting-track is suspended and on which the conveyer slides or travels. Fig. 3 is a side view of gearing and clutch mechanism for reversing the motion of belt travel of the conveyer. Fig. 4 is a side view of a sprocket-wheel mounted on the conveyer-shaft shown in end section, the wheel having a driving-chain thereon. Fig. 5 is a face view of a beveled gear-wheel, showing its slotted hub. Fig. 6 is a perspective view of a shifting-clutch member for reversing the movement of the conveyer-belt.

The conveyer is indicated by the letter A, being of any desired length suspended on a track B B, supported from the top of the building by rod members C C. Said conveyer is suspended on said track by means of hangers D, attached thereto and carrying suitable rollers or wheels E to properly fit said track. A bottom F or belt-support is stationed within the conveyer, and at each end is a roller G, over which runs a belt H, adapted for running in either direction. The rollers are provided with suitable bearings, which are not shown, the shaft of one of them extending through the side of the conveyer and provided with a beveled gear J.

At one side of the conveyer is a shaft K, extending the entire length thereof and mounted in bearings L L. The end of the shaft adjacent to the gear J is provided with two beveled gears M N, each of which meshes with the said gear J, both being loose on the shaft. Upon the latter, between the gears M N, is placed a sleeve O, having projecting lugs P at each end, designed to enter notches Q in the adjacent hubs of the said gears M and N, as indicated. Said sleeve is designed to turn with the shaft, but is shiftable thereon, there being a key R in the sleeve to slide within a key-seat S, extending the entire length of the said shaft K.

The exterior surface of the sleeve has two annular integral collars T, between which a shifting fork U is located, said fork being pivoted to a bracket V, secured to the side of the conveyer. At W is an elevator for raising grain into the conveyer for its distribution to the various bins to be supplied. Hangers 2 are attached to the elevator and secured to the rafters under the roof of the building and serve to rigidly support the elevator in position, the latter being located at about the middle of the building in practice.

The discharge-opening of the elevator overhangs the conveyer, and its shaft 3 carries a sprocket-wheel 4. Below said wheel 4 and carried on the elevator by arms 5, forming a bearing, is a sprocket-wheel 6, through which the shaft K extends, there being a key 7 in the said wheel for engaging the keyway or groove S of said shaft. A sprocket-chain 8 is

provided to run over the wheels 4 and 6 for transmitting motion from the former to the latter.

The elevator is driven by means of a chain 9 or other suitable means, which drives the said shaft 3 and the shaft K through said sprocket 6. The revolution of the latter shaft will not affect the conveyer-belt unless the sleeve O is in engagement with one or the other of the wheels M N. It will be evident that the conveyer will be driven in one direction or the other, depending upon which of the gears is engaged by the continuously-revolving sleeve.

At 10 and 11 are pulleys located, preferably, at each end of the building, but not shown so placed, and over each pulley runs a rope 12, one end being attached to the conveyer and the other hanging down within reach of an operator on the floor of the building. When it is desired to move the conveyer along its track to discharge into a certain bin, the rope is pulled to shift said conveyer in the proper direction, so as to place the latter above the particular bin. A rope 13 is attached to the free end of the fork U and hangs down within reach of the operator, who when he is ready to start the conveyer moves the said fork to engage the desired gear that will drive the conveyer-belt in the needed direction to discharge the grain where wanted.

The elevator may run continuously and may likewise drive the conveyer-belt continuously, if desired, through the gearing described. The gear 6 fits loosely on the shaft K, so that the shaft can shift through it from end to end, the bearing 5 holding the gear in a fixed position. The belt H travels along on top of the member F, and the grain being deposited thereon is carried to the end of the conveyer and discharged. It will be seen that locking means is unnecessary in this conveyer for preventing it shifting along its track, since it will remain where placed by reason of the driving-gears being located on the conveyer, whereas in some conveyers of this class the driving mechanism has been placed on some stationary structure adjacent thereto.

I do not wish to confine myself to the particular arrangement and structure shown in the drawings, since I could employ equivalent means to accomplish the same results, as will be understood.

I claim—

1. A grain-distributer consisting of a conveyer-body, a track from which it is hung and along which it is designed to travel, a conveyer-belt within the conveyer-body, a pair of rollers for carrying the conveyer-belt, a gear-wheel on the shaft of one of the rollers outside the conveyer, a power-driven shaft journaled on the side of the conveyer at right angles to the rollers and extending the full length of the conveyer, a pair of gear-wheels on the shaft separately adapted to engage the gear of the roller-shaft, both said gears being free of the shaft, the latter being free to turn within the gears, a clutch on the shaft adapted to lock with one gear or the other to operate the conveyer-belt in a desired direction, the said clutch and gears having fixed relation with the conveyer and a lever for shifting the clutch on the shaft substantially as described.

2. A grain-distributer consisting of a conveyer-body, an overhead track from which it is hung and along which it is designed to travel, a conveyer-belt within the conveyer-body, a pair of rollers for carrying the belt, a gear-wheel for driving the conveyer-belt, a power-driven shaft journaled on the side of the conveyer-body parallel therewith and extending the full length thereof, a pair of gear-wheels on the shaft in mesh with the gear-wheel of the conveyer-belt and in which the said shaft is free to turn, a clutch on the shaft between the gears and driven by said shaft and adapted to engage either gear, a lever for shifting the clutch to engage the desired gear to cause that gear to turn with the shaft and drive the conveyer-belt in the desired direction, the belt receiving motion whether the conveyer is at rest or shifting along its track.

3. A grain-distributer consisting of a conveyer-body, an overhead track from which it is hung and along which it is designed to travel, a conveyer-belt within the conveyer-body, a pair of rollers for carrying the belt, a gear-wheel for driving the conveyer-belt, a power-driven shaft journaled on the side of the conveyer-body, a pair of gear-wheels on the shaft in mesh with the gear-wheel of the conveyer-belt and in which the said shaft is free to turn, a clutch on the shaft between the gears and driven by said shaft and adapted to engage either gear, a lever for shifting the clutch to engage the desired gear to cause that gear to turn with the shaft and drive the conveyer-belt in the desired direction, the belt receiving motion whether the conveyer is at rest or shifting along its track, an elevator for discharging grain upon the belt, a wheel on the shaft, driving connection between the elevator and the said wheel, there being a key in the wheel and a keyway in the shaft, the latter adapted to shift through the wheel while being driven by said wheel as described.

4. A grain-distributer consisting of a conveyer-body, an overhead track from which it is hung and along which it is designed to travel, a conveyer-belt within the conveyer-body, a pair of rollers for carrying the belt, a gear-wheel for driving the conveyer-belt, a power-driven shaft journaled on the side of the conveyer-body, a pair of gear-wheels on the shaft in mesh with the gear-wheel of the conveyer-belt and in which the said shaft is

free to turn, a clutch on the shaft between the gears and driven by the shaft and adapted to engage either gear, a lever for shifting the clutch to engage the desired gear to cause the gear to turn with the shaft and drive the conveyer-belt in the desired direction, the belt-receiving motion whether the conveyer is at rest or shifting along its track, and a rope at each end of the conveyer for shifting the latter on its track to place said conveyer at any point thereon without locking means.

5. A grain-distributer consisting of a conveyer-body, an overhead track from which it is hung and along which it is designed to travel, a conveyer-belt within the conveyer-body, a pair of rollers for carrying the belt, a gear-wheel for driving the conveyer-belt, a power-driven shaft journaled on the side of the conveyer-body, a pair of gear-wheels on the shaft in mesh with the gear-wheel of the conveyer-belt and in which the said shaft is free to turn, a clutch on the shaft between the gears and driven by said shaft and adapted to engage either gear, a lever for shifting the clutch to engage the desired gear to cause that gear to turn with the shaft and drive the conveyer-belt in the desired direction, the belt receiving motion whether the conveyer is at rest or shifting along its track, an elevator for discharging grain upon the belt, a wheel on the shaft, driving connection between the elevator and the said wheel, there being a key in the wheel and a keyway in the shaft, the latter adapted to shift through the wheel while being driven by said wheel, and a rope at each end of the conveyer for shifting it along its track for the purposes described.

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

JOSEPH E. CAMP.

Witnesses:
E. J. ABERSOL,
L. M. THURLOW.