

M. U. BERNHEIM.
CONVEYER.

APPLICATION FILED MAY 13, 1909.

1,064,431.

Patented June 10, 1913.

Fig. 1.

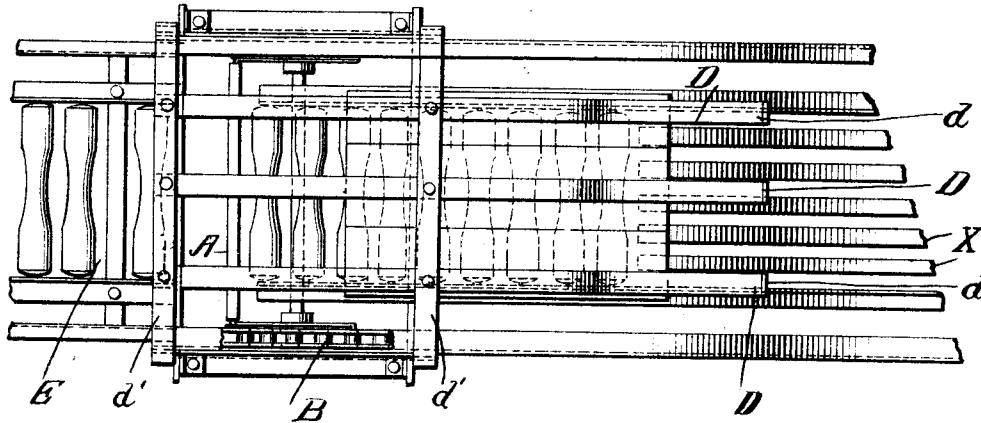
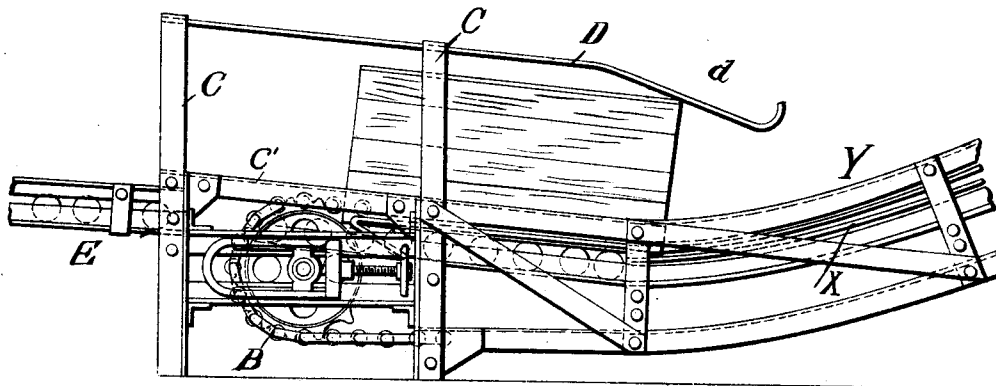


Fig. 2.



Witnesses

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CONVEYER.

1,064,431.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed May 13, 1909. Serial No. 495,708.

To all whom it may concern:

Be it known that I, MORRIS URI BERNHEIM, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

This invention relates to certain improvements in carriers or conveyers and particularly to the type thereof shown, for example in Patent No. 790,811, granted May 23, 1905, to Benjamin H. Alvey, in which packages are propelled along a way or bed by an endless traveling means having propelling or pushing devices to engage the packages.

In these conveyers it has been found that the propelling or pushing devices frequently get under the packages at the receiving end of the conveyer and hence do not properly propel the packages up the inclined portions of the conveyers. To overcome this serious disadvantage it has been proposed to provide conveyers of this type with a pair of spring arms which are secured to the side of the conveyer immediately over the bed thereof and have free ends which project inclinatorily toward each other part way across the path of the package. These spring arms exercise a retarding effect on a package which is improperly engaged with a propelling or pushing device, holding the same and permitting the propelling or pushing devices to pass from under it. Their elasticity is such that they yield to a package which is properly engaged with a propelling or pushing device and permit the same to pass by. The construction last referred to is disclosed and claimed in Letters Patent No. 881,042, granted March 3, 1908, for the invention of B. H. Alvey.

The present invention relates to a means which having a retarding function similar to that of the spring arms in the patent last referred to, may be used to supplement said arms or may be employed without the spring arms in constructions wherein the use of such arms is not practicable or necessary, and will serve the additional purpose of restricting canting or tilting of a package

caused by the rising and forward movement of a propelling device engaged with the bottom of said package.

It consists in certain peculiarities in the construction and arrangement of parts and in certain combinations of elements substantially as hereinafter described and particularly pointed out in the subjoined claims.

In the accompanying drawings illustrating the invention: Figure 1 is a plan view of the receiving end of an elevator provided with my improvements; Fig. 2 is a side view of the same.

The same characters of reference designate the same parts in both of the views.

It is considered to be unnecessary to a full understanding of the present invention to describe in detail the construction of elevator to which the yieldable elements of the present invention are associated. It will be understood, however, that the elevator essentially comprises a suitable bed or way and means for forcing packages along said bed or way, said means comprising package propelling elements which are so associated with the bed or way as to travel above the latter from the receiving end to the delivering end of the same and thence below the latter from the delivering end to the receiving end, rising at the receiving end from their lower plane of travel to their upper plane of travel. These package propelling elements ordinarily comprise a pair of endless flexible chains B arranged at opposite sides of the floor or way of the elevator and carrying devices as A for engaging the packages. These propelling devices A are arranged at intervals along the length of the chains and preferably connect the latter with each other and also by preference are in the form of rollers whereby their disengagement from the packages which are improperly engaged with them is facilitated. The floor of the elevator is composed partly of rollers and partly of a stationary section, the stationary section being located in that part of the elevator wherein an approximately horizontal section merges into an upwardly inclined section. The approximately horizontal section referred to forms the receiving portion

of the elevator and is so correlated with a gravity conveyer or other suitable feeding means E that packages may be delivered from the end of the latter to the receiving section. The propelling devices hereinbefore referred to successively rise at the extremity of the approximately horizontal section and in rising they traverse a plane which is intersected by the path traversed by a package which is being fed to the receiving end of the elevator by the feeding conveyer E.

In the present improvements the receiving end of the frame of the elevator is provided at its opposite sides with standards or supports C which carry one or more spring arms D. It is preferred to employ three of these arms, as shown. These arms D are arranged longitudinally over the approximately horizontal receiving end of the elevator at a height therefrom sufficient to clear packages which enter the elevator from a gravity way E. Their other, free, extremities *d*, which preferably are arranged at or near the base of the inclined portion Y of the elevator are bent downward as shown more clearly in Fig. 2 so as to give yieldability thereto and cause them to be in the path of the upper forward edge of the packages. It will thus be seen that if the package is being moved by the propelling or pushing device while it is on top of the latter instead of immediately in front of the same, the downwardly bent portions *d* of the spring arms will exercise a restraining influence on the package sufficient to hold it from movement up the inclined portion of the elevator with such propelling device: while they will yield to the force exercised by a package when the pushing or propelling device is behind the latter, and will thus permit the package to pass. Moreover, the described arrangement of the spring arms enables them to act to restrict the canting or tilting movement of any package to a dangerous or disadvantageous extent which sometimes is caused by the rising and forward movement of a propelling device engaged with the bottom thereof. In order to give rigidity to the rear portions of the arms and efficiently secure them in place, it is preferred to secure each to a support at a plurality of different places in the length thereof. For this reason a plurality of standards, C, is secured at each side of the conveyer, and each standard is provided with a device which extends laterally therefrom, over the floor or way, and to which the contiguous arm is secured. This device is preferably a cross piece C', which connects the standard with its companion on the opposite side of the conveyer, and each arm is secured to each of these cross pieces, at *d'*, as clearly shown in Fig. 1.

Having thus described the invention what I believe to be new and desire to secure by Letters Patent is:—

1. In a conveyer having a bed or floor and traveling devices for propelling packages along the same, means arranged above the receiving end of the bed or floor in such relation thereto as to permit a package to pass between it and the bed or floor, said means being yieldable upwardly to a package which is properly engaged with a propelling device and serving to restrain movement of a package improperly engaged with a propelling device.

2. In a conveyer having a bed or floor whose end at the receiving part of the conveyer is approximately horizontal, said bed or floor also having an upwardly inclined section leading from said approximately horizontal portion, means traveling above and below the bed or floor for propelling packages along the same, said means traversing an upward path at the receiving end of the approximately horizontal portion of the bed or floor, and upwardly-yieldable means arranged over said approximately horizontal part of the bed or floor in such relation to the package and bed or floor as to permit a package properly engaged with a propelling device to be forced through the space bounded above and below by said means and the bed or floor, respectively, and to restrain movement of a package improperly engaged with a propelling device.

3. In a conveyer having a bed or way and traveling devices for propelling packages along the same, one or more arms arranged over the bed or floor in position to permit a package to pass beneath the same, said arms having yieldable extremities arranged in the path of the upper forward edge of the package.

4. In a conveyer having a bed or way and traveling devices for propelling packages along the same, and also with standards rising above its bed or way from each of its opposite sides, devices carried by the standards and projecting therefrom transversely over the floor or way, and arms secured to said devices and extending longitudinally over the floor or way and having yieldable extremities arranged in the path of the upper forward edge of a package on the floor or way.

5. In combination with a conveyer having a bed or floor provided with an approximately horizontal section at the receiving end of the conveyer and with an upwardly-inclined section leading from said approximately horizontal section, means traveling above and below the bed or floor for propelling packages along the same, means for feeding packages to the approxi-

mately-horizontal receiving-section of the bed or floor, the propelling devices in their travel from the delivering end to the receiving section of the conveyer traversing a path which is intersected by the path of travel of a package to said receiving section, and upwardly-yieldable means arranged over the approximately-horizontal section of the conveyer, in such relation to the package and bed or floor as to permit a package whose rear end is properly engaged with a propelling device to be forced along the bed or floor while it will restrain movement up the inclined part of the conveyer of a package whose bottom is improperly engaged with a flight.

6. A conveyer having a bed or floor whose end at the receiving part of the conveyer is approximately horizontal, said bed or floor also having an upwardly inclined section leading from said approximately horizontal portion, means traveling above and below the bed or floor for propelling packages along the same, said means traversing an upward path at the receiving end of the approximately horizontal portion of the bed or floor, means for feeding packages to the receiving section of the bed or floor in a plane which is intersected by the path of travel of the propelling devices in the rising movement of the latter at the receiving end of the conveyer, and means arranged over the bed or floor at the receiving end of the conveyer, for restraining canting or tilting movement of a package which is improperly engaged with a propelling device.

7. A conveyer having a bed or floor whose end at the receiving part of the conveyer is approximately horizontal, said bed or floor also having an upwardly inclined section leading from said approximately horizontal portion, means traveling above and below the bed or floor for propelling packages along the same, said means traversing an upward path at the receiving end of the approximately horizontal portion of the bed or floor, means for feeding packages to the receiving section of the bed or floor in a plane which is intersected by the path of travel of the propelling devices in the rising movement of the latter at the receiving end of the conveyer, and means arranged over the bed or floor at the receiving end of the conveyer, for restraining canting or tilting movement of a package which is improperly engaged with a propelling device, said means being yieldable.

8. A conveyer having a bed or floor whose end at the receiving part of the conveyer is approximately horizontal, said bed or floor also having an upwardly inclined section leading from said approximately horizontal portion, means traveling above and below the bed or floor for propelling packages

along the same, said means traversing an upward path at the receiving end of the approximately horizontal portion of the bed or floor, means for feeding packages to the receiving section of the bed or floor in a plane which is intersected by the path of travel of the propelling devices in the rising movement of the latter at the receiving end of the conveyer, and means arranged over the bed or floor at the receiving end of the conveyer, for restraining canting or tilting movement of a package which is improperly engaged with a propelling device, said means having downwardly bent ends which are yieldable upward and are normally disposed in the path of the upper forward end of the package.

9. A conveyer having a bed or floor whose end at the receiving part of the conveyer is approximately horizontal, said bed or floor also having an upwardly inclined section leading from said approximately horizontal portion, means traveling above and below the bed or floor for propelling packages along the same, said means traversing an upward path at the receiving end of the approximately horizontal portion of the bed or floor, means for feeding packages to the receiving section of the bed or floor in a plane which is intersected by the path of travel of the propelling devices in the rising movement of the latter at the receiving end of the conveyer, and means arranged over the bed or floor at the receiving end of the conveyer, for restraining canting or tilting movement of a package which is improperly engaged with a propelling device, said means comprising a plurality of arms arranged over the receiving section of the bed or floor in position to permit a package to pass beneath the same, said arms having yieldable extremities arranged in the path of the upper forward edge of the package.

10. A conveyer having a bed or floor whose end at the receiving part of the conveyer is approximately horizontal, said bed or floor also having an upwardly inclined section leading from said approximately horizontal portion, means traveling above and below the bed or floor for propelling packages along the same, said means traversing an upward path at the receiving end of the approximately horizontal portion of the bed or floor, means for feeding packages to the receiving section of the bed or floor in a plane which is intersected by the path of travel of the propelling devices in the rising movement of the latter at the receiving end of the conveyer, and means arranged over the bed or floor at the receiving end of the conveyer, for restraining canting or tilting movement of a package which is improperly engaged with a propelling device, said means comprising standards

which extend upward above the bed or floor from opposite sides of the end of the receiving section thereof, devices connecting the standards with each other and extending
5 transversely over the bed or floor, and spring arms secured to said devices and extending longitudinally over the bed or floor and having downwardly bent free rear ends

arranged in the path of the upper forward edge of a package on the floor.

In testimony whereof I affix my signature, 10
in presence of two witnesses.

MORRIS URI BERNHEIM

Witnesses:

ROY R. WOKKALL,

R. GOTTHARDT.