L. C. ROBERTS.

ENDLESS CONVEYER.

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1,066,658.

Patented July 8, 1913.

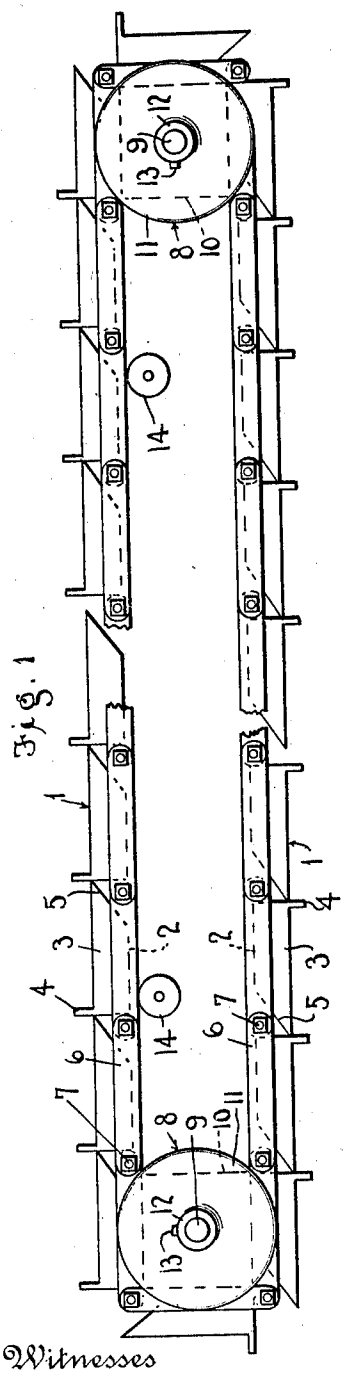


Fig. 1.

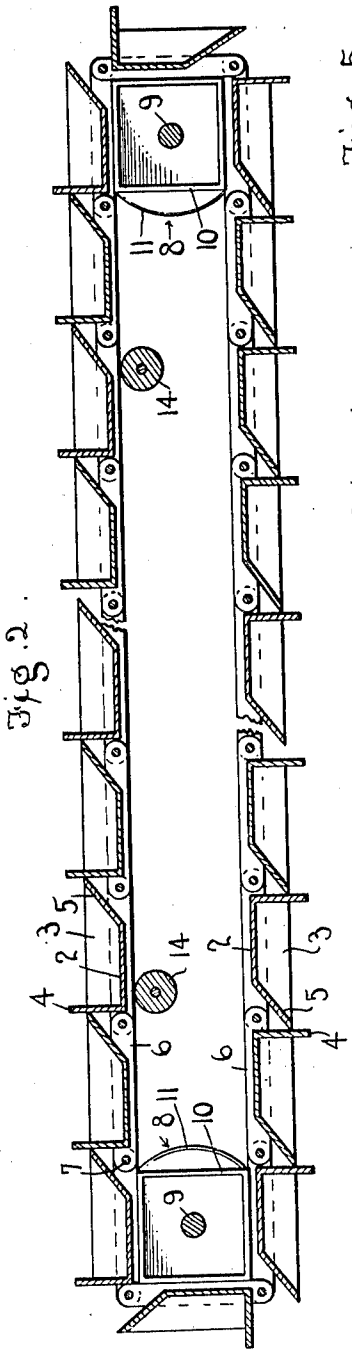


Fig. 2.

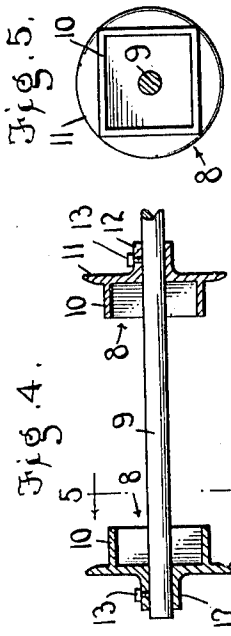


Fig. 4.

Fig. 5.

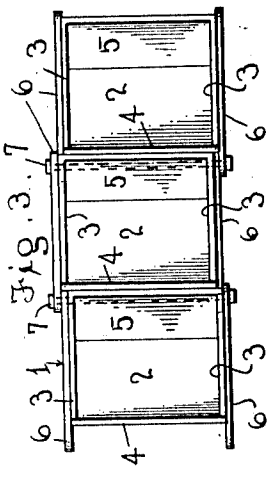


Fig. 3.

Witnesses

L. B. James

C. E. Hunt.

Inventor

L. C. Roberts

by A. B. Williamson & Co

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D

UNITED STATES PATENT OFFICE.

LEONARD C. ROBERTS, OF NUNDA, NEW YORK.

ENDLESS CONVEYER.

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To all whom it may concern:

Be it known that I, LEONARD C. ROBERTS, a citizen of the United States, residing at Nunda, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Endless Conveyers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in endless belt conveyers.

One object of the invention is to provide a conveyer of this character having an improved construction and arrangement of buckets and means for hingedly connecting the same together to form a conveyer, thus dispensing with the necessity of employing separate chains or belts for the buckets.

Another object is to provide an improved form of conveyer guiding and supporting pulleys whereby the conveyer is kept in perfect position at all times and whereby a vibrating action will be imparted to the discharging bucket thus insuring the discharge of any material which may have a tendency to cling to the bucket.

A further object is to provide an endless conveyer of this character which will be simple, strong, durable and inexpensive in construction, efficient and reliable in operation and which may be operated at any desired angle or inclination.

With these and other objects in view the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings; Figure 1 is a side view of an endless conveyer constructed in accordance with my invention; Fig. 2 is a central longitudinal sectional view thereof; Fig. 3 is a plan view of a portion of one end of the conveyer; Fig. 4 is a longitudinal sectional view through the guide pulleys at one end of the conveyer; Fig. 5 is a cross sectional view on the line 5—5 of Fig. 4.

My improved conveyer comprises a plurality of buckets 1 which are preferably of rectangular form and may be of any desired depth. The buckets 1 are preferably formed of sheet metal and comprise a flat bottom 2, parallel right angularly projecting sides 3, a right angularly projecting end 4 and an inclined end 5.

Rigidly secured to the sides of the buckets and projecting a short distance beyond the ends thereof are link bars 6. The link bars project a slight distance beyond the bottom or inner sides of the buckets as shown. The projecting ends of the link bars 6 of one of the buckets overlap the ends of the links of the adjoining bucket and said overlapping ends of the link bars are pivotally connected together by transversely disposed pivot rods 7 which are secured in engagement therewith in any suitable manner. When thus secured together the inclined discharge end of one bucket will closely engage the right angular end of the adjoining bucket on the straight stretches of the conveyer, said buckets thus forming a close engagement which will prevent any of the material carried by the conveyer from falling between the buckets. The right angular ends of the buckets are of preferably slightly greater width than the sides and project a slight distance beyond the inclined or discharge end of the adjoining bucket as shown. The link bars 6 of one side of the buckets overlap the ends of the bars of the adjoining buckets, while the corresponding link bars on the opposite sides of the buckets under-lap or engage the inner sides of the ends of the bars of the adjoining buckets as clearly shown in Fig. 3 of the drawing, thus enabling the buckets to be made of uniform size or width. The buckets and link bars when thus connected together form the endless conveyer and said links are adapted to be engaged with guiding and supporting pulleys 8 fixedly mounted on supporting and operating shafts 9 at the opposite ends of the conveyer. The pulleys 8 comprise polygonal or flat sided frames or hollow body portions 10, said frames or body portions being here shown and are preferably four sided. The outer sides of the body portions 10 of the pulleys have formed thereon an annular flange 11 which projects a suitable distance beyond the flat sides of the body portion of the pulleys as clearly shown in Figs. 4 and 5 of the drawings to prevent lateral displacement of the conveyer. The pulleys have also formed thereon centrally disposed hubs 12 which are preferably arranged on the

outer sides of the pulleys and are adapted to receive the shaft 9 to which the pulleys are secured by set screws or other suitable fastening devices 13. By thus constructing and arranging the buckets it will be seen that the usual sprocket chains or belts and sprocket wheels employed in this form of conveyer are dispensed with and the chain of the conveyer is made up of the buckets 1 and the link bars 6 secured thereto.

By providing pulleys having a plurality of flat sides as herein shown and described the conveyer may be operated at any desired angle or inclination with much less power than is required for operating the usual or ordinary drag or screw conveyer as the friction of the parts is reduced to a minimum. This rectangular construction of the conveyer pulleys also tends to facilitate the discharge of the material from the buckets when brought into discharging position or around the pulley at the discharge end of the conveyer as the engagement of the link bars and buckets with the flat sides of the pulley will vibrate the discharging bucket, thus shaking out any material which might stick or cling to the sides and bottom of the buckets.

When the conveyer is of considerable length and employed in a substantially horizontal position the link bars and buckets in the upper or working stretch of the conveyer are preferably supported upon suitable supporting rollers 14 which are revolubly mounted in any suitable manner beneath the upper or working stretch of the conveyer as shown.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is;

1. An endless conveyer comprising a plurality of flat bottomed rectangular buckets each having one end inclined outwardly and the other end arranged at right angles and extending above the sides and said inclined end, the outer edges of the inclined ends contacting with the straight rectangular ends of adjacent buckets at points below the upper edges of said straight ends on the straight stretches of the belt, and link bars on the outer sides of the buckets having their ends projecting beyond the ends of the buckets and pivotally connected.

2. An endless conveyer comprising a plurality of links pivoted together, a plurality of buckets rigidly secured to said links with the ends of said buckets in contact with each other on a plane above that upon which the pivots of said links lie when traveling in alinement, and means for imparting motion to said links and buckets.

3. An endless conveyer comprising a plurality of flat bottomed rectangular buckets each having one end inclined outwardly and the other end arranged at right angles and extending above the sides and said inclined end, link bars on the outer sides of the bucket at the bottom thereof and having their ends projecting beyond the ends of the bucket, pivot rods engaged with the ends of the link bars, whereby the buckets are pivotally connected in operative position and positioned to cause the outer edge of the inclined end of one bucket to closely engage the rear face of the right angular end of an adjacent bucket on the straight stretches of the conveyer and guiding and supporting pulleys for said conveyer.

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

LEONARD C. ROBERTS.

Witnesses:
MARY F. STEVENS,
C. A. NORTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."