A. T. PERKINS.

BUCKET CONVEYER.

APPLICATION FILED JUNE 18, 1909.

1,040,005.

Patented Oct. 1, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

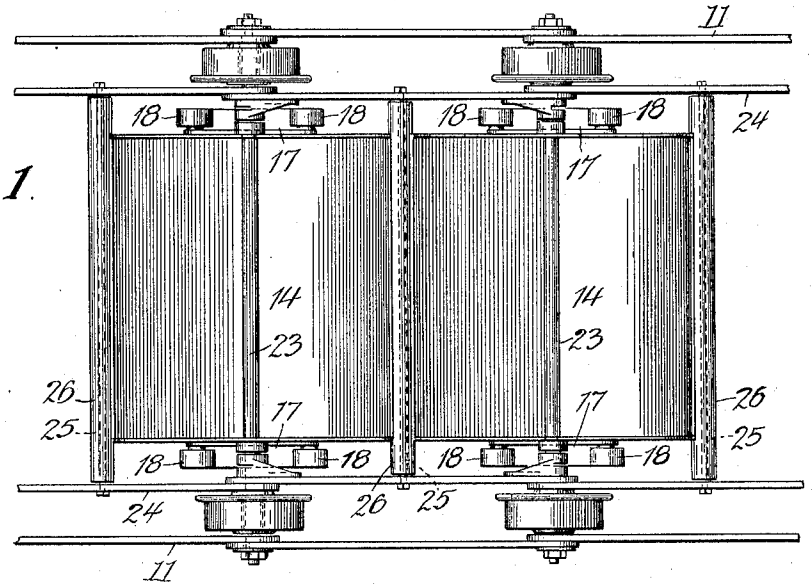


Fig. 2.

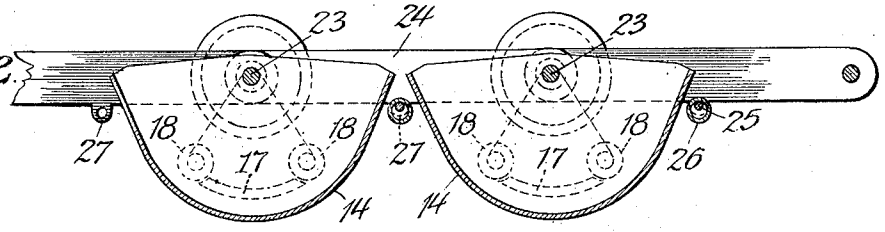


Fig. 3.

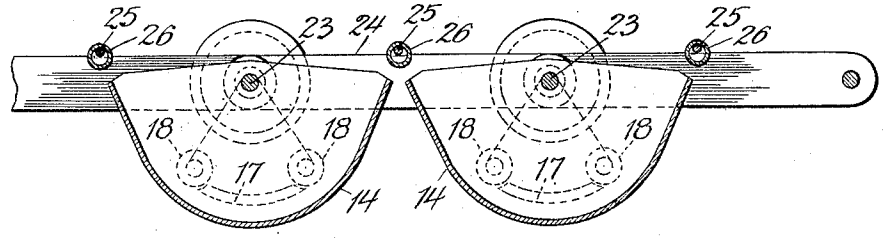
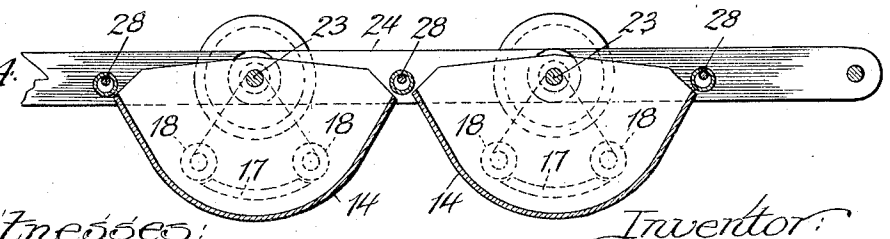


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

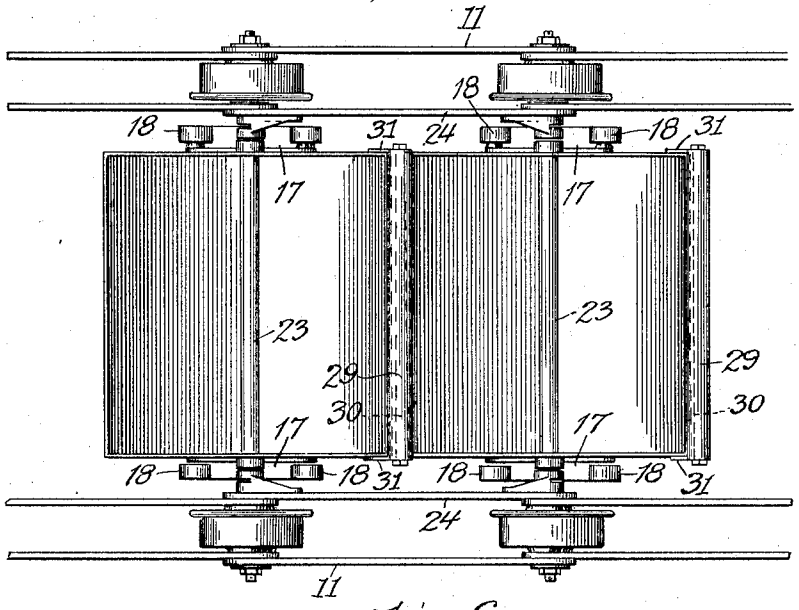
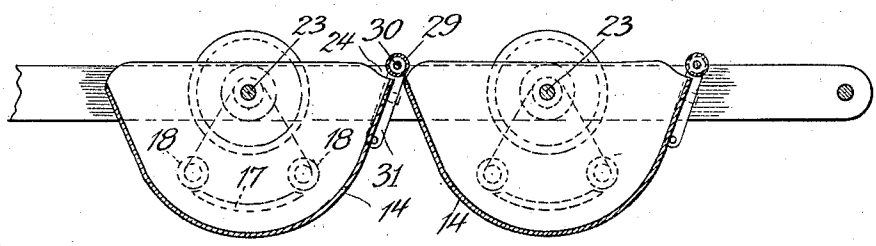


Fig. 6.



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UNITED STATES PATENT OFFICE.

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BUCKET CONVEYER.

1,040,005. Specification of Letters Patent. Patented Oct. 1, 1912.

Application filed June 18, 1909. Serial No. 502,882.

To all whom it may concern:

Be it known that I, AUGUSTUS T. PERKINS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Bucket Conveyers, of which the following is a specification.

This invention relates to conveyers of the kind comprising a plurality of buckets carried by endless chains and which are used for transferring material such as coal and ashes from one place to another. The buckets are suspended from the chains in different ways and are adapted to be operated to dump the material therefrom at certain points. The material is usually delivered in bulk from one or more chutes to the buckets while the conveyer is traveling and to avoid waste the buckets are located as close together as practicable, but necessarily some space is left between the buckets to enable them to move and dump freely and this is especially true of gravity suspended buckets. Heretofore buckets have been provided with lips to bridge the space between the buckets, and sometimes the buckets have been made in special shapes in an endeavor to prevent the material from falling between the buckets and wasting during the filling operation, but these efforts have not accomplished the desired results in a satisfactory manner and they have furthermore rendered the conveyer impracticable for many purposes.

The object of my invention is broadly to prevent the material from escaping between the buckets of a conveyer and wasting during the operation of filling the buckets, and to this end to provide means of simple character for deflecting the material from the space between adjacent buckets and directing it into the buckets and away from said space.

Another object is to provide a deflector above the space between adjacent buckets adapted to automatically discharge into said buckets any material that may be delivered thereon and adjust itself to the positions assumed by the buckets in traveling in different levels. And a further object is to provide a deflector for this purpose of simple and inexpensive construction and support it loosely in position to operate freely and automatically to accomplish the desired results.

In the accompanying drawings Figure 1 is a plan view of a section of a conveyer showing one form of my invention. Figs. 2 and 3 are vertical sectional views on the upper and lower levels respectively of its travel of the form of conveyer illustrated in Fig. 1. Fig. 4 illustrates a modification of the form shown in Figs. 1–3. Fig. 5 is a plan view of a section of a conveyer showing another form of the invention. Fig. 6 is a vertical sectional view of the form shown in Fig. 5.

To illustrate my invention I have provided a conveyer 11 composed of a plurality of conveyer chains 24 from which are suspended a series of buckets 14 provided with the usual dumping mechanisms comprising the projections 17 and the rollers 18 adapted to tilt the buckets sufficiently when engaged with a dumping device (not shown) to discharge their loads.

The preferred form of my invention is shown in Figs. 1–3, in which it appears embodied with buckets pivotally suspended at 23 from the conveyer chains 24 in any suitable manner. A spindle 25 is mounted on the chains opposite the space between adjacent buckets and a cylindrical deflector 26 is loosely hung on the spindle. This deflector may be a section of ordinary iron pipe which is inexpensive and easily provided and replaced. It should be of sufficient diameter to bridge the space between the buckets without interfering with their pivotal action, and it is suspended in such proximity to the buckets that any material falling thereon will be deflected into the buckets. In practice the material is delivered into the conveyer as the latter travels and more or less falls upon the deflector and is directed thereby into the buckets instead of escaping between the buckets. The deflectors are self-cleaning, in effect, because of their cylindrical surface and their loose engagement with the spindles, the latter preferably being round rods, so that all the material falling upon said deflectors will immediately slide off and into the buckets. This keeps the deflectors clean and prevents the accidental escape of material therefrom during the travel of the conveyer. In Figs. 1–3 the spindles are engaged at their ends with ears 27 at the edge of the conveyer chains but they may be engaged with the chains

between their edges, as shown at 28, Fig. 4. With these loosely suspended cylindrical deflectors shown in Figs. 1–4 the buckets may be located very close together, even so that they will engage the deflectors during their tilting or pivotal movement, because the deflectors may move a limited distance on and relative to their spindles to enable the buckets to swing past the deflectors. Of course, the deflectors must be so located with relation to the buckets that the pivotal movement of the latter will not be interfered with and this will be accomplished even though the bucket must push the deflector out of the way to swing if the deflector is permitted sufficient play on its spindle for that purpose.

Instead of supporting the deflector loosely, as heretofore described, I may provide a spindle 29 (Figs. 5, 6) which approximately fills the cylindrical or tubular deflector 30 so that the latter may move rotatively but not radially on the spindle. In this construction I have also shown that the deflector may be supported on the buckets, the spindles being mounted at their ends in brackets 31 carried by the buckets.

What I claim and desire to secure by Letters Patent is:

1. In a conveyer, the combination of a plurality of endless conveyer chains, a series of buckets spaced apart and pivotally suspended from said conveyer chains, spindles fixedly secured at each end to the conveyer chains between adjacent buckets, and cylindrical deflectors of larger diameter than the spindles loosely suspended from said spindles to seal the space between the buckets and prevent the escape of material therebetween.

2. In a conveyer, the combination of endless conveyer chains, a plurality of buckets pivotally suspended from said chains, a spindle extending transversely of the buckets and secured at each end to a chain intermediate the pivotal attachment thereto of the adjacent buckets, and a deflector loosely mounted upon each of said spindles, said deflector being of larger diameter than the spindles.

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