Oct. 4, 1927. 1,644,649

E. J. LAMY

CONVEYER

Filed March 15, 1926 2 Sheets-Sheet 1

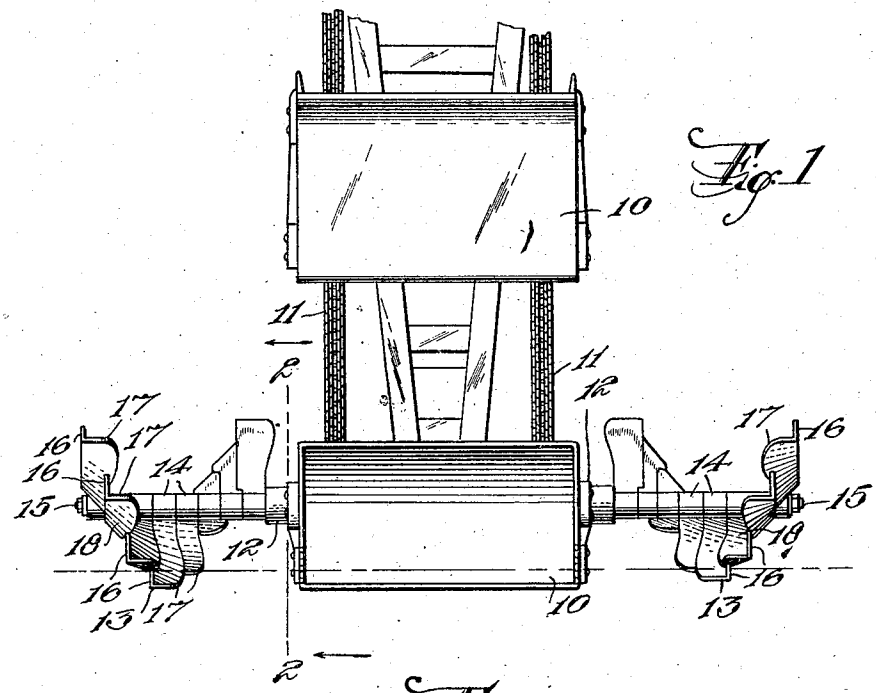


Fig. 1

Fig. 2

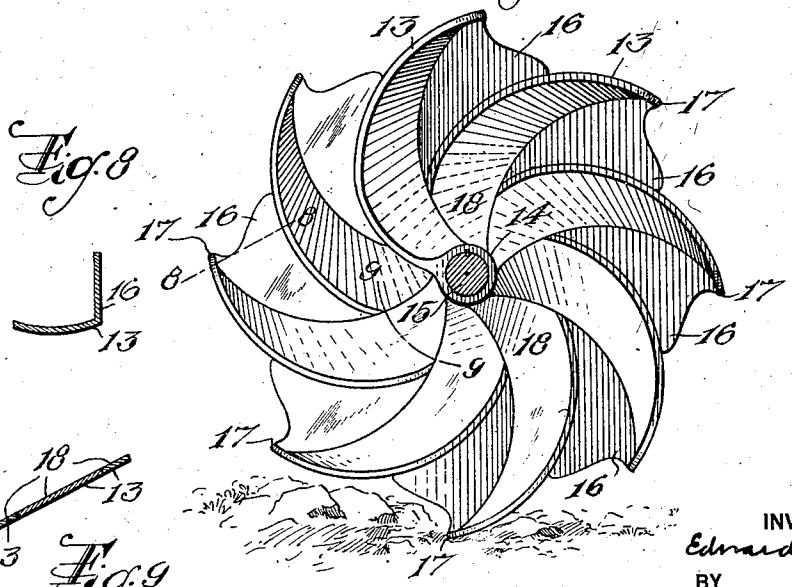


Fig. 8

Fig. 9

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Fig. 3

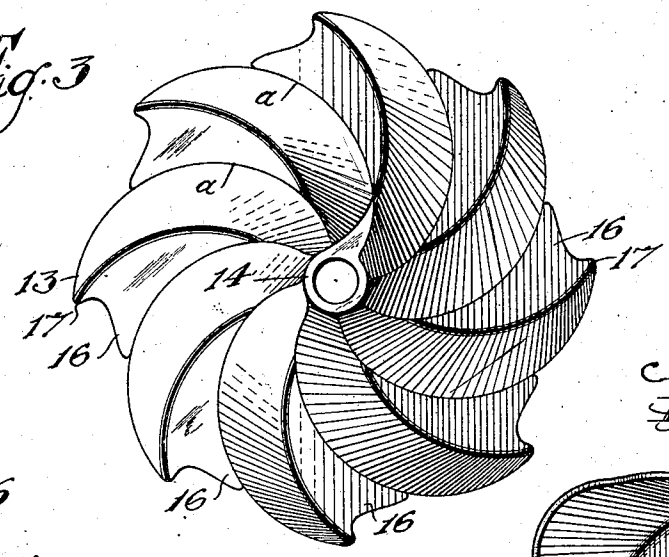


Fig. 4

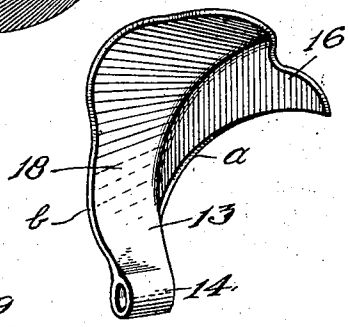


Fig. 6

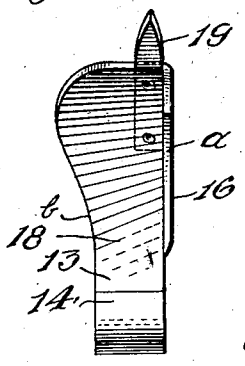
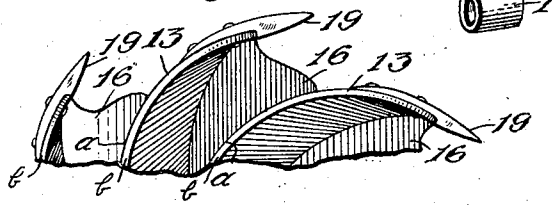


Fig. 5



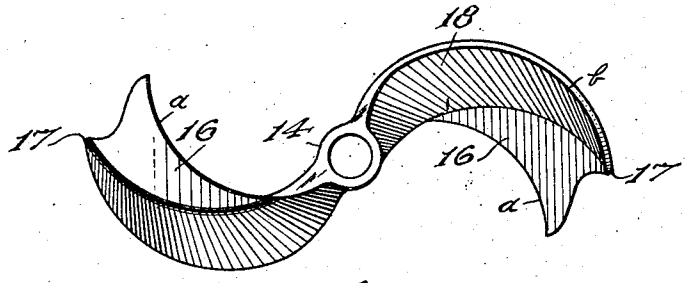


Fig. 7

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UNITED STATES PATENT OFFICE.

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CONVEYER.

Application filed March 15, 1926. Serial No. 94,633.

This invention relates to an improved conveying mechanism which is adapted to pick up material and when the conveyer is rotated, to not only pick the material up, but conduct it substantially parallel with the axis of the conveyer and deposit it at the end thereof.

The invention is designed to provide a simple and inexpensive means for conveying material such as coal, sand, snow and the like and in some material such as coal to provide a means so as not to cause any material loss by any vigorous blows thereon but being adapted to scoop up the material.

The device is adapted to be used for many purposes but for the purpose of clear description it will be described and illustrated herein as applied to the lower belt shaft of a conveyer of the bucket type so that loose material on either side is deposited in the path of the buckets, particularly being used on the smaller types of conveyers for loading coal onto wagons.

The invention further resides in a particular form of conveyer which is adapted for assembling to the desired length so that its capacity can be regulated according to the size of the bucket conveyer on which it is installed.

The invention is illustrated in the accompanying drawings in which Figure 1 is a front view of the lower part of a loader or elevating conveyer of the bucket type, showing on the shaft of the lower pulley a pair of conveyers adapted to convey material toward the buckets. Figure 2 is an enlarged section on line 2—2 in Figure 1 and Figure 3 is a similar view of the conveyer but looking at the other end. Figure 4 is a perspective view of a plate, such plates being assembled side by side to form the conveyer. Figure 5 is a detail of the ends of the circumferential edge of the conveyer provided with teeth or spikes for dislodging material and Figure 6 shows such construction as applied to the plate shown in Figure 4. Figure 7 is a view of a plate of a modified form of construction. Figure 8 is a section on line 8—8 in Figure 2 and Figure 9 is a section on line 9—9 in Figure 2.

I have not illustrated in detail the loader but I have shown it sufficiently to clearly indicate its type, the buckets 10 being shown in Figure 1 mounted on the chains 11, the view being a front view and the lowermost bucket 10 being shown as it appears when scooping up the material. The shaft of the lower pulley over which the chains 11 pass is extended beyond the bearings 12 and is shown as forming the support for the conveyer, one being shown on each side and being disposed so as to move material that is loose alongside the path of the conveyer and deposit it so that the buckets 10 will pick it up.

In this conveying mechanism the conveyer can be made in one piece and of either cast or sheet material but I prefer to build the conveyer up of separate plates which are placed side by side, one being in advance of the other, in a radial direction so that when assembled they form a conveyer with a helical trough having a circumferential edge to pick up material and as the conveyer rotates the material can slide down into the trough and then slide longitudinally, that is, substantially parallel with the axis to the end of the conveyer. When made of separate plates in this way the trough can be made of any desired length, the very short one being for the smaller types of loaders and the long one being for heavier types and for snow removing machinery and the like.

The form shown consists of plates 13, each of these plates being curved and having a hub 14 on one end. These plates are arranged side by side and are securely fastened in this position by set screws or similar mechanical equivalents on a shaft such as the shaft 15 of the conveyer illustrated so that as the shaft rotates the plates all rotate together. The plates are provided with edges that fit one on the other, that is, the edge *a* of one plate will fit against the edge *b* of the next plate, each plate having a wall 16 which is extended slightly as shown in Figure 6 so that its edge *a* fits up against the next adjacent plate. This makes the assembling of these plates easy as after the first plate is fastened, the succeeding plates are simply rotated until they are all abutting as shown in Figures 2 and 3 and then when secured in position they form the conveyer.

The ends 17 of the plates form scoops, that is, the ends of the plates which form the circumferential edge of the conveyer lift up the material and as the plate rises the material slides toward the centre of the conveyer but the plate 13 is inclined to a greater degree toward the centre as will be evident from Figures 2 and 9 so that this portion

forms a trough and as the conveyer rotates the material passes from one to the other of these plates and is thus moved substantially parallel with the longitudinal axis of the conveyer. This sharply inclined portion is shown at 18.

It will be evident from Figure 1 that any material picked up by the conveyer is first moved, after it has been picked up, toward the centre of the conveyer and before that part of the conveyer has picked it up has turned sufficiently to descend on the other side, the material will slide along this trough-like inclined part 18 and will be deposited in the path of the buckets 10.

It will be noted that the material is not moved sidewise along the ground but is picked up and carried and being delivered from a point above the ground, it will fall inward, that is, toward the buckets 10 so that practically all the material within the reach of the conveyer on each side will be lifted up and carried and delivered to the bucket. This is advantageous with some materials which are more or less brittle, such as coal and the pieces are carried intact and are not pulverized or broken up.

If desired, a larger capacity conveyer can be constructed by making the plates shown at Figure 7 in which a curved part extends on both sides of the hub 14.

It is also sometimes advantageous to provide the circumferential edge with small picks or jaws and in Figures 5 and 6 I show the conveyer equipped with teeth or prongs 19 which tend to dislodge the material that is apt to be caked or frozen.

The conveyer, when made of separate plates as illustrated, also has advantages in that the outer edges 17 are staggered longitudinally of the conveyer and are separated regularly so that they have an individual or distinctive effect on the material and make the lifting of the material and its dislodgment assured.

I claim:

1. A conveying apparatus comprising a rotatable conveyer formed so as to provide an open-ended helical trough and having its circumferential edge adapted to engage and lift material into the trough.

2. A conveying apparatus comprising a rotatable conveyer formed so as to provide an open-ended helical trough and having its circumferential edge provided with separated jaws for dislodging and lifting material and conducting it to the trough.

3. A conveying mechanism comprising a rotatable conveyer provided with an open-ended helical trough to cause material in the trough to progress substantially parallel with the axis of the conveyer, the conveyer being provided with an edge to move material engaged by it radially relative to the axis so as to direct said material into the trough.

4. A conveyer comprising a set of curved plates, each plate having a hub on one end and with one edge provided with a wall with its inner edge fitting against the outer edge of the next plate.

In testimony whereof I affix my signature.

EDWARD J. LAMY.