July 15, 1924. 1,501,721

C. V. PETERSON

CONVEYER

Filed July 13, 1923 2 Sheets-Sheet 1

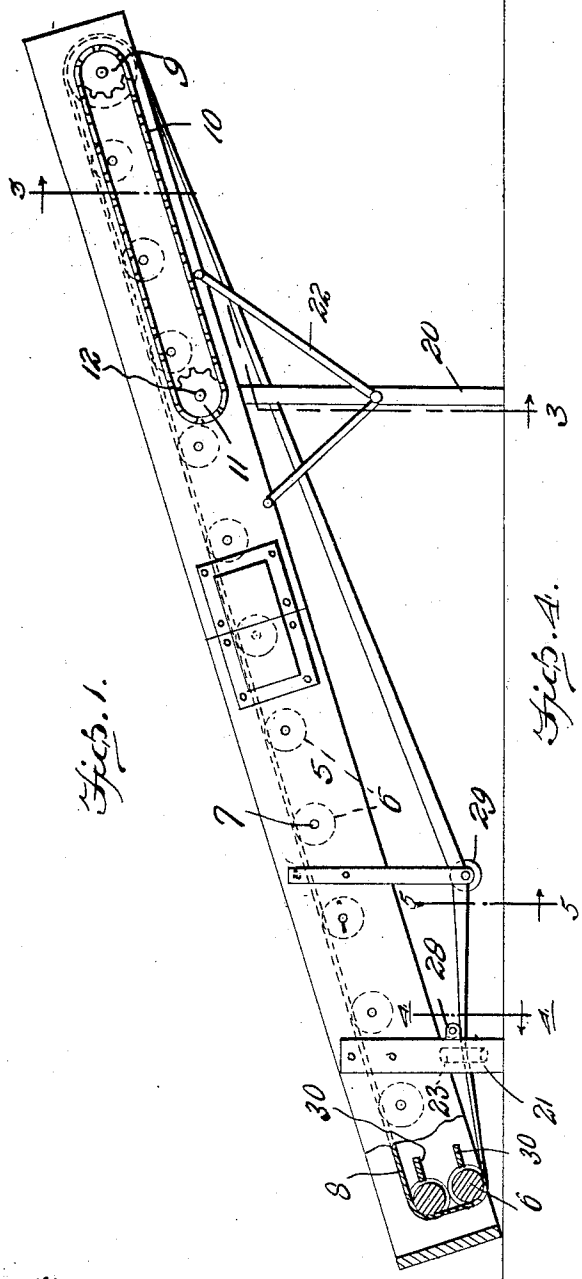


Fig. 1.

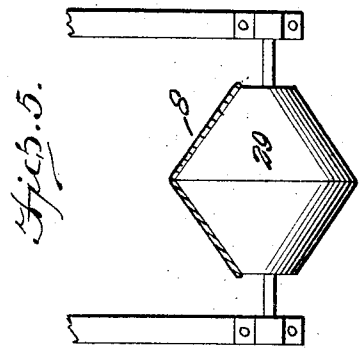


Fig. 5.

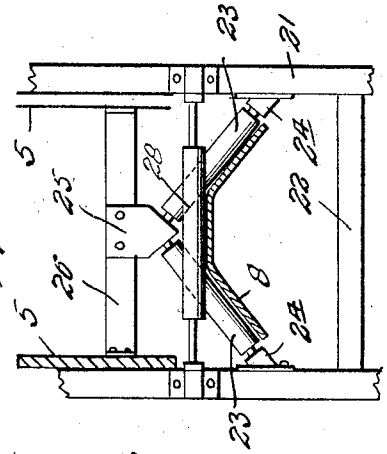


Fig. 4.

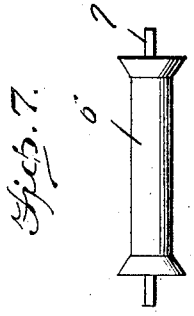


Fig. 7.

Witnesses:
P. M. Hunt.

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Attorney

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CONVEYER

Filed July 13, 1923 2 Sheets-Sheet 2

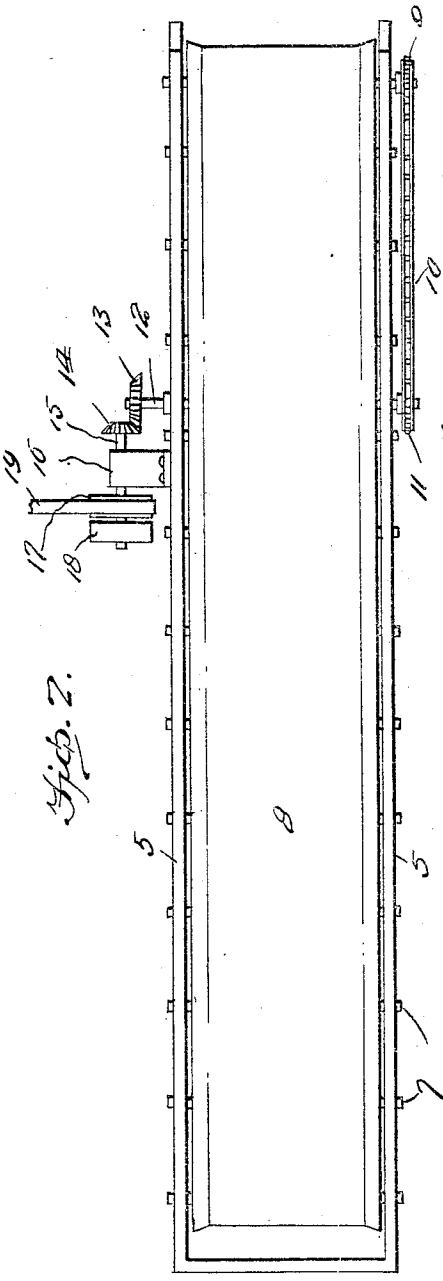


Fig. 2.

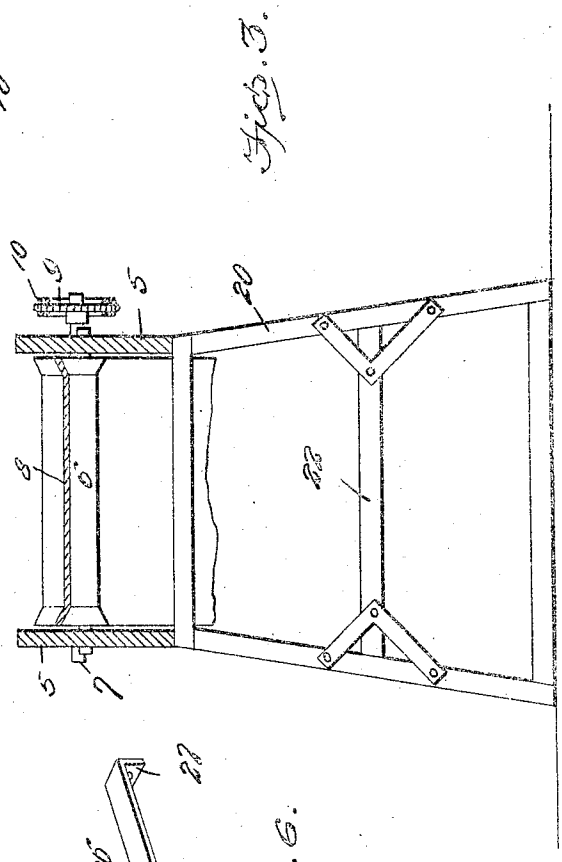


Fig. 3.

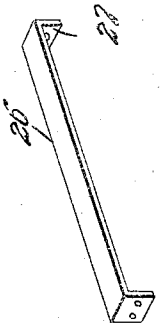


Fig. 6.

Witnesses:

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Patented July 15, 1924. 1,501,721

UNITED STATES PATENT OFFICE.

CHARLES V. PETERSON, OF BRAHAM, MINNESOTA.

CONVEYER.

Application filed July 13, 1923. Serial No. 651,230.

To all whom it may concern:

Be it known that I, CHARLES V. PETERSON, citizen of the United States, residing at Braham, in the county of Isanti and State of Minnesota, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

This invention relates to certain new and useful improvements in conveyers, and has particular reference to conveyers of that type which employs a power driven endless conveyer belt.

An object of the invention is to provide means for flexing the upper flight of the belt into trough-like form so that the same may be effectively employed for elevating dirt, in combination with means for flexing the longitudinal edges of the lower flight of the belt downwardly to insure shedding of dirt therefrom which may fall on to the same from the upper flight of the belt.

A further object of the invention is to generally simplify and improve endless belt conveyers so that the same may be employed in a practical manner for elevating dirt into wagons when excavating cellars or other analogous operations.

Other objects will appear as the nature of the invention is better understood and same consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings, wherein like reference characters indicate corresponding parts throughout the several views,

Figure 1 is a side elevational view, partly in section, of a conveyer constructed in accordance with the present invention,

Figure 2 is a top plan view of the device shown in Figure 1,

Figure 3 is an enlarged transverse sectional view taken substantially, upon line 3—3 of Figure 1,

Figure 4 is an enlarged segmentary sectional view taken substantially upon line 4—4 of Figure 1,

Figure 5 is a view similar to Figure 4 and taken substantially upon line 5—5 of Figure 1,

Figure 6 is an enlarged perspective view showing a detail of the invention, and

Figure 7 is an enlarged elevational view of one of the idler rollers over which the upper flight of the conveyer travels.

Referring more in detail to the drawings, the invention embodies a frame including a pair of spaced parallel longitudinal or side boards 5 between which are positioned a series of idler rollers 6 which have pintles 7 that are loosely journaled in said boards 5. These rollers are preferably of spool shape as shown in Figure 7, and an endless belt 8 passes over the same so that the marginal edges of the belt, at the upper flight of the same, are flexed upwardly so as to be of substantially trough shape in section for the reception of dirt thereon.

The belt 8 is preferably driven by means of power applied to the roller at the upper rear end of the frame, and one means of rotating this roller is shown consisting in a sprocket wheel 9 fixed upon a projecting end of the pintle of the upper roller and about which passes an endless sprocket chain 10 which also passes around another sprocket wheel 11 fixed upon the adjacent end of a transverse shaft 12, upon the other end of which is secured a bevel gear 13 meshing with a bevel pinion 14. The pinion 14 is journaled in a position longitudinally of the conveyer by being mounted upon a shaft 15 which is supported by a bearing 16 secured to the adjacent side board 5, and well known fast and loose pulleys 17 and 18 respectively are carried upon one end of the shaft 15 for selective reception of a driving belt 19 to throw the conveyer into and out of operation at will. The belt 19 may be driven from any suitable source of power such as a gasoline motor, not shown.

The conveyer thus constructed is supported in an inclined position by means of suitable uprights 20 and 21 respectively located adjacent the rear and forward ends of the conveyer frame and rigidly attached to the latter, suitable braces 22 being provided between the conveyer frame and these uprights.

As shown in Figures 1—4—5 and 7, means is provided for flexing the marginal portion of the lower flight of the belt downwardly so as to insure shedding of dirt therefrom should the same drop thereon from the upper flight of the conveyer, and this means preferably embodies a pair of transverse inclined rollers 23 having their lower ends suitably journaled in brackets 24 carried by the uprights 21, and having their adjacent upper ends suitably journaled in a bearing

bracket 25 that is supported by a brace 26. The brace 26 is preferably of the form shown in Figure 6 and comprises a strip of metal with flanged ends 27 formed with suitable apertures for the reception of nails or the like whereby this brace is rigidly attached to the conveyer frame. In order to prevent abrupt bending of the belt at the longitudinal center of the latter, a horizontal transverse roller 28 is journaled in a position directly in back of the rollers 23 and in a plane to retain the central portion of the belt in a flat condition as is clearly shown in Figure 4. In order to prevent the lower flight of the belt 8 from sagging downwardly, or, in other words, to hold the belt against the rollers 23 and 28, a suitable idler roller 29 is supported rearwardly of the rollers 23 and 28 beneath the belt 8 as shown in Figure 1. This roller 29 is preferably of the form shown in Figure 5 having its major diameter mid-way between its ends and tapering smaller toward its ends so that as the lower flight of the belt passes over same, said belt is initially flexed for shedding the dirt which may fall thereon.

As shown in Figure 1, suitable scraping knives 30 may be provided at the rear side of the foremost rollers 6 for scraping dirt from the latter.

It will thus be seen that I have provided a simple and durable form of conveyer which may be effectively employed for the elevating of dirt without the necessity of employing a special form of traveling conveyer member.

Minor changes may be made without departing from the spirit and scope of the invention as claimed.

What I claim as new is:—

1. A conveyer of the class described comprising an elongated frame having a longitudinal series of transverse idler rollers journaled therebetween, an endless belt passing above and below said rollers and having the upper flight thereof resting on said rollers, said rollers being of spool shape in elevation for troughing the upper flight of the belt, transverse oppositely inclined idler rollers above the return flight of the conveyer belt for flexing the longitudinal edges of the return flight of the belt downwardly, and a further idler roller for holding the return flight of the belt in contact with the lower surfaces of said transverse inclined rollers.

2. A conveyer of the class described comprising an elongated frame having a longitudinal series of transverse idler rollers journaled therebetween, an endless belt passing above and below said rollers and having the upper flight thereof resting on said rollers, said rollers being of spool shape in elevation for troughing the upper flight of the belt, transverse oppositely inclined idler rollers above the return flight of the conveyer belt for flexing the longitudinal edges of the return flight of the belt downwardly, a further idler roller for holding the return return flight of the belt in contact with the lower surfaces of said transverse inclined roller, and a horizontal transverse roller for preventing bending of the lower flight of the belt along the longitudinal center thereof, said last named roller being disposed directly behind the transverse inclined rollers.

In testimony whereof I affix my signature.

CHARLES V. PETERSON.