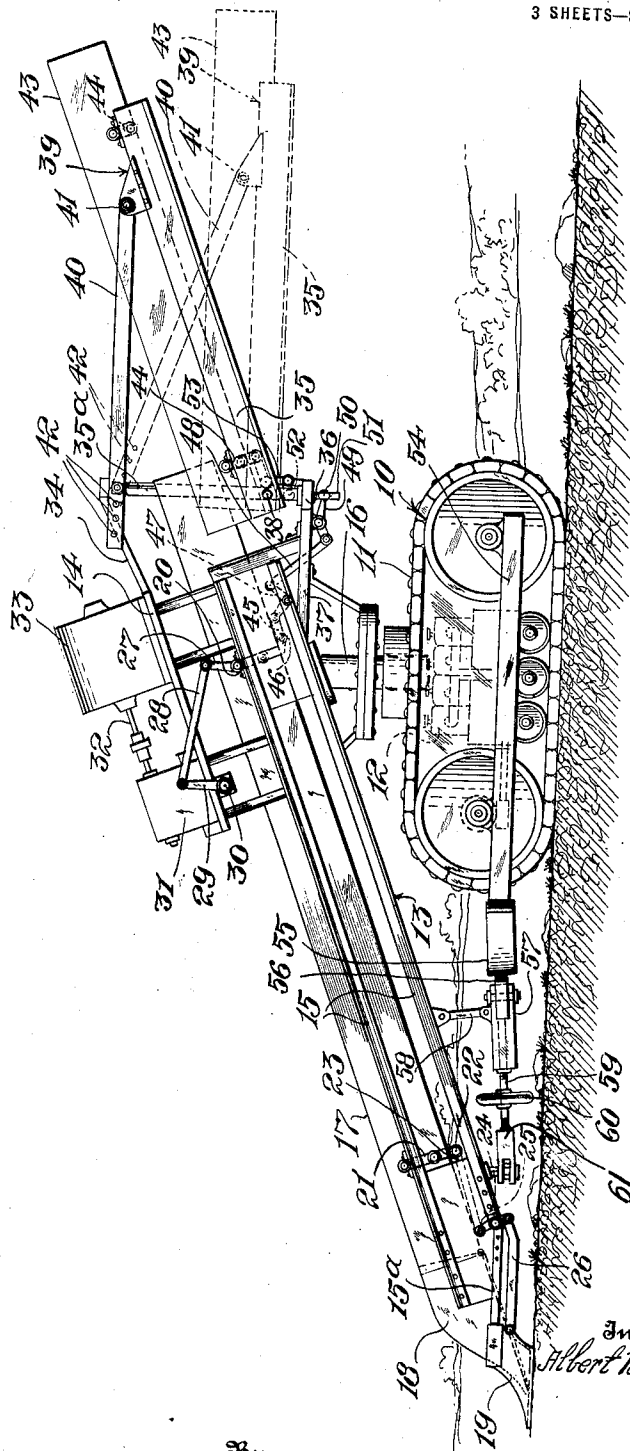


1,408,299.

A. B. HOLLEY,
CONVEYER LOADER,
APPLICATION FILED SEPT. 8, 1920.

Patented Feb. 28, 1922.
3 SHEETS—SHEET 1.

Fig. 1



Inventor
Albert B. Holley

Thomas J. Harney Attorney

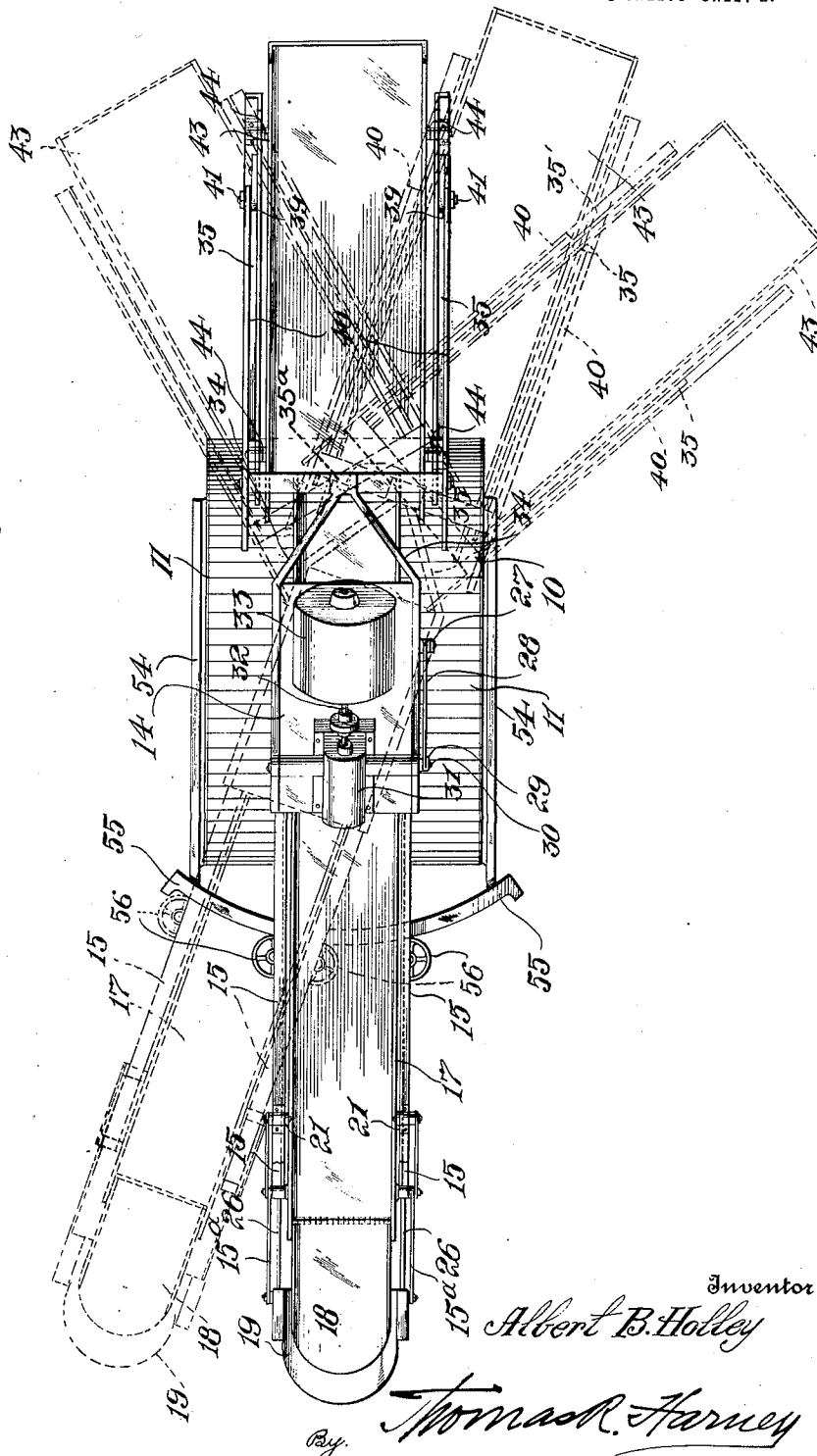
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3 SHEETS—SHEET 2.

Fig. 2



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3 SHEETS—SHEET 3.

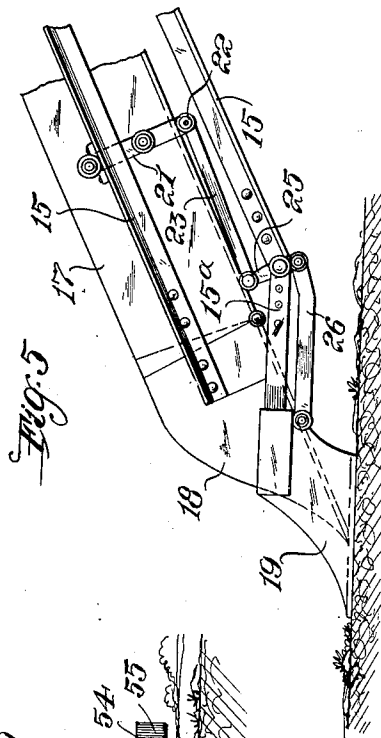
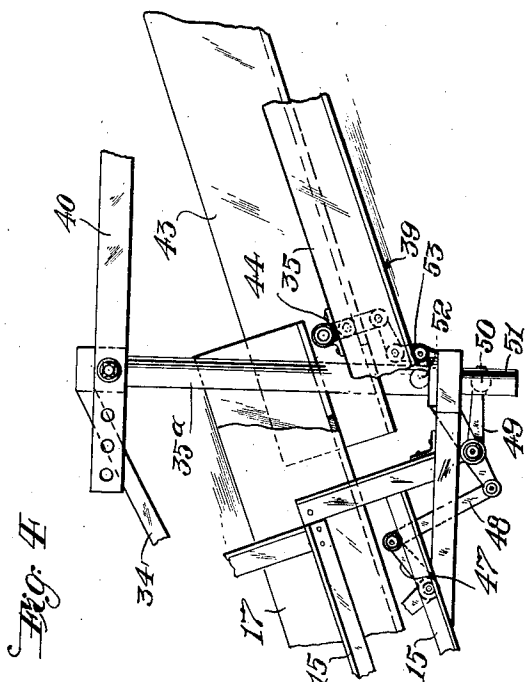
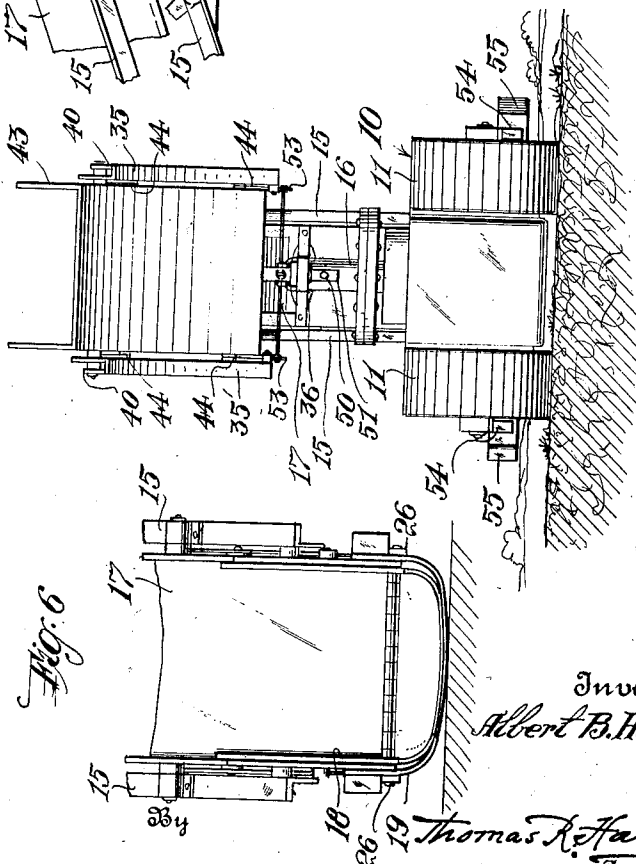


Fig. 3



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UNITED STATES PATENT OFFICE.

ALBERT B. HOLLEY, OF VIRGINIA, MINNESOTA.

CONVEYER LOADER.

1,408,299.

Specification of Letters Patent. Patented Feb. 28, 1922.

Application filed September 8, 1920. Serial No. 408,827.

To all whom it may concern:

Be it known that I, ALBERT B. HOLLEY, a citizen of the United States of America, residing at Virginia, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Conveyer Loaders, of which the following is a specification.

My present invention relates generally to conveyer-loaders, and more particularly to an apparatus of the general character, and operating along the lines, of my Patent 1,280,032 dated September 24, 1918, wherein the material of whatever its nature is conveyed by rocking movements of a conveyer trough having in its swing a rearward conveying movement during which the material moves with the conveyer, and a forward accelerated movement during which the material falls but is relatively stationary in so far as lengthwise movement of the trough.

As compared with my patent above referred to, my present invention embodies considerable operating advantage in respect to more ready portability, greater range of adjustment and consequently of use, and is in many other respects more convenient, useful and practical, and it is the bringing about of these improvements and advantages that my present invention aims.

Referring to the accompanying drawings, which illustrate the improvements and form a part of this specification,

Figure 1 is a side elevation of the complete machine,

Figure 2 is a top plan view thereof,

Figure 3 is a rear elevation,

Figure 4 is an enlarged view, partly in elevation and partly in section, of the adjacent portions of the two conveyer troughs, showing their connections,

Figure 5 is an enlarged side view of the lower end of the main trough,

Figure 6 is a front elevation of the parts shown in Figure 5.

In Figures 1 and 3 in particular I have shown a tractor 10, including caterpillar treads 11 and having thereon an internal combustion or other motor 12, and while I have thus shown a tractor of somewhat definite type, it is to be understood that other types may be readily employed.

Inclined forwardly and downwardly with its upper rear end above the tractor 10 is the conveyer frame 13 whose said upper portion supports a super-structure or motor

platform 14 and whose forwardly and downwardly inclined sides 15 are rigidly connected and support at their extreme lower ends forwardly projecting guides 15^a disposed in angular relation thereto and approximately parallel with the surface on which the tractor travels, for a purpose which will be presently described. The upper portion of frame 13 is supported in vertically spaced relation above tractor 10, upon the upper end of a king post 16 journaled vertically in the tractor frame, so that the conveyer frame is thus capable of assuming various angular positions with respect to the tractor as seen by a comparison of the full and dotted lines of Figure 2.

Within the conveyer frame 13 and inclined substantially in parallelism therewith between its sides 15, is the main elevating conveyer trough 17, whose lower end has a hinged extension lip 18 yieldingly engaging the upper surface of the relatively movable digger 19, and whose support is accomplished by bell-cranks 20 and 21 respectively at the upper and lower sides of the trough. The upper ends of these levers 20 and 21 have bearings on the frame sides 15, and the lower ends of the lower levers 21 are pivotally connected at 22 with the forward ends of links 23. These links connect at their rear ends by pivots 24 with the upper ends of bell-cranks 25 fulcrumed in the lower portions of the frame sides 15 as best seen in Figures 5 and 6, and the lower ends of bell-cranks 25 connect by forwardly extending links 26 with tubular side portions of the digger 19 slidably disposed on the before-mentioned guides 15^a. It thus becomes evident that upward and downward lengthwise swinging movements of the trough 17 will be communicated to the digger 19 in similar directions and to a somewhat greater extent, making one move differentially with respect to the other.

The upper bell-cranks 20 are connected at their upper ends to rigid arms 27 and these arms are in turn connected by forwardly and upwardly inclined links 28 with the rigid arms 29 of a cam shaft 30, the latter passing through a cam housing 31 wherein cams of the nature described in my patent above, or any other suitable nature, act to oscillate shaft 30 in order to swing the trough 17 lengthwise in uniform rearward motions and accelerated return motions. The cams used for this purpose are actuated through a

shaft 32 from a suitable motor 33 on the motor platform 14, the latter of which has a rearwardly extending portion 34 supporting the upper central pivot 35^a of a rectangular upright and transversely disposed frame 35 having a lower hollow pivot 36 in a rearwardly extending portion 37 of the main frame 13.

At the lower side portions of upright frame 35, which latter swivels angularly on its upper and lower pivots 35^a and 36, are the pivots 38 of a second trough frame 39 which extends rearwardly from the main frame and is permitted to swing vertically on its pivots 38. Frame 39 is supported by means of rearwardly and downwardly inclined side hangers 40 whose rear ends are pivoted to the sides of frame 39 at 41, and whose forward ends have lengthwise series of apertures 42 providing for adjustable connection with the upper side portions of frame 35.

Suspended in the rear trough frame 39, with its forward receiving end beneath the overlapping vertically spaced rear discharging end of the main conveying trough, is a rear trough 43 whose rear end projects rearwardly of the tractor frame so as to provide the necessary underneath clearance for wagons, cars and the like into which said rear end of the rear trough is intended to discharge in use. Trough 43 is suspended in trough frame 39 by pivoted suspension hangers 44 and this trough is thus free to receive and maintain the same operating movements before described in connection with the forward inclined trough 17.

Movement is communicated from trough 17 to trough 43 by connections leading from the upper bell-cranks 20 of the former, having links 45 extending rearwardly therefrom and connected to the ends of a cross shaft 46. At its center, cross shaft 46 has pivoted thereto one arm of a bell-crank 47, the other arm of which is pivoted to the upper forward end of a rearwardly and downwardly inclined link 48, as most clearly shown in Figure 4. The lower rear end of link 48 connects pivotally with the forward end of a bell-crank 49 fulcrumed beneath the rear extension 37 of the main frame and the rear arm of which is universally jointed at 50 with the lower end of a connecting rod 51 extending upwardly through the hollow lower pivot 36 of frame 35. The upper end of rod 51 is universally jointed at 52 with one end of a bell-crank 53 whose opposite end is pivoted to the trough 43 in about the line of the pivots 38 on which the trough frame may be shifted vertically.

It is thus obvious that during the uniform rearward material shifting movements of trough 17, similar movements will be imparted to trough 43, likewise accelerating forward movements, and that these movements will be in the same direction and will

bring about uniform step by step rearward and upward movement of the material along the trough 17, from the rear end of this trough to the forward end of trough 43 and finally from the rear discharged end of this latter trough into wagons, cars and the like, to effectively clear which the rear end of the rear trough can be swung vertically.

The entire conveyer frame can swivel angularly on the king post journaled vertically in the tractor frame, and in addition to this, the rear trough and its frame can swivel to the angular positions shown in dotted lines in Figure 2 independent of the forward main trough and its frame.

In operation, the tractor advances the entire apparatus as this becomes necessary, and in order to avoid entire dependence of the king post, I provide an arrangement by which the tractor pushes against the lower forward portion of the main trough frame and at the same time permits the latter to be turned with respect thereto. For this purpose the tractor has horizontal side bars 54 rigidly supporting at their forward ends a segmental push bar 55. The forward surface of this bar 55 is engaged by the rear rollers 56 of an adjustable bracket 57 suspended by a pivoted hanger 58 from the frame 13 and connected by an oppositely threaded adjusting screw 59, having a hand wheel 60, with a beam 61 pivotally attached to the lower forward portion of frame 13. By turning hand wheel 60 the lower forward end of the conveyer trough 17 and also its digger 19 may be adjusted vertically so as to compensate, for instance, for inequalities of the ground over which the tractor may be travelling or positioned.

It is obvious from the foregoing that my invention provides a readily portable machine of its character capable of continuous effective and speedy operation as well as one which will be particularly efficient in loading, and evenly loading, wagons, cars and the like from end to end without angular shifting of the main frame. It is also obvious that by virtue of the relatively movable digger, the digging operation will be especially effective and advantageous along with the other improvements over my prior patent of which previous mention has been made.

I claim:

1. A machine including a portable frame, a normally inclined trough having lengthwise and vertically shifting movements in the frame, means to vertically and longitudinally shift the trough, a second trough the inner end of which is disposed beneath the first trough, connected to and movable similarly with the latter and an upright pivot to which the said inner end of the second trough is connected.

2. A machine including a portable frame,

a normally inclined trough having lengthwise and vertically shifting movements in the frame, means to vertically and longitudinally shift the trough, and a second trough one end of which is disposed beneath the first trough, connected to and movable similarly with the latter, and means to support said second trough in horizontally swingable relation to the first trough.

3. A machine including a portable frame, a normally inclined trough having lengthwise and vertically shifting movements in the frame, and a second trough one end of which is disposed beneath the first trough, connected to and movable similarly with the latter, and vertically and horizontally swingable supports for the second trough.

4. A loading conveyer comprising a portable main support, a frame carried by and swingable horizontally with respect to the said support, a lengthwise and vertically shiftable conveyer trough inclined in said frame, and bearing means extending horizontally from said support and movably engaging the said frame adjacent to the lower end of the said trough.

5. A loading conveyer comprising a portable main support, a frame carried by and swingable horizontally with respect to the said support, a lengthwise and vertically shiftable conveyer trough inclined in said frame, and bearing means extending horizontally from said support and movably engaging the said frame adjacent to the lower end of the said trough, and including adjustable means whereby the said lower end of the trough may be raised and lowered.

6. A loading conveyer comprising a movable main support, an inclined conveyer frame, a king post depending from the upper portion of said frame and journaled in said support, an inclined conveyer trough vertically and longitudinally movable in said frame, and a movable bearing connection between the support and the lower end of said frame.

7. A loading conveyer comprising a movable main support, an inclined conveyer frame, a king post depending from the upper portion of said frame and journaled in said support, an inclined conveyer trough vertically and longitudinally movable in said frame, a transverse bearing segment rigidly carried by the support, and a roller

bracket adjustably connected to the lower portion of the frame and engaging said segment bar.

8. A loading conveyer comprising a portable frame, an inclined trough having lengthwise and vertical movement in the frame, and a digger having guided movement angularly of, and relative to, the lower end of said trough.

9. A loading conveyer comprising a portable frame having an inclined portion, a trough having lengthwise and vertical operative movement in the said inclined portion of the frame, guides angularly of the lower end of said angular portion of the frame, and a digger movably mounted on said guides and operatively connected to the trough.

10. A loading conveyer including a portable main support, a forwardly and downwardly inclined conveyer frame having a horizontally swingable connection with the support and a rear extension, a trough having vertical and lengthwise operative movements in said frame, a trough frame projecting at its outer end beyond the support and mounted at its inner end on said frame extension to swing vertically and horizontally, and a trough having vertical and lengthwise operative movements in said trough frame and operatively connected to the first trough, as described.

11. A loading conveyer including a portable main support, a forwardly and downwardly inclined conveyer frame having a horizontally swingable connection with the support and a rear extension, a trough having vertical and lengthwise operative movements in said frame, a trough frame projecting at its outer end beyond the support and mounted at its inner end on said frame extension to swing vertically and horizontally, and a trough connected to and movable similarly with the first trough, mounted in said trough frame with its inner end beneath the upper end of the first trough.

12. A conveyer including a bodily shiftable conveyer trough in inclined position, a relatively movable digger at the lower end of said trough, and an extension lip hingedly connected to the lower end of the trough and yieldably engaging the digger, as described.

In testimony whereof I have affixed my signature.

ALBERT B. HOLLEY.