E. C. GLEDHILL.

CAR UNLOADING APPARATUS.

APPLICATION FILED MAR. 31, 1914.

1,126,748.

Patented Feb. 2, 1915.

3 SHEETS—SHEET 1.

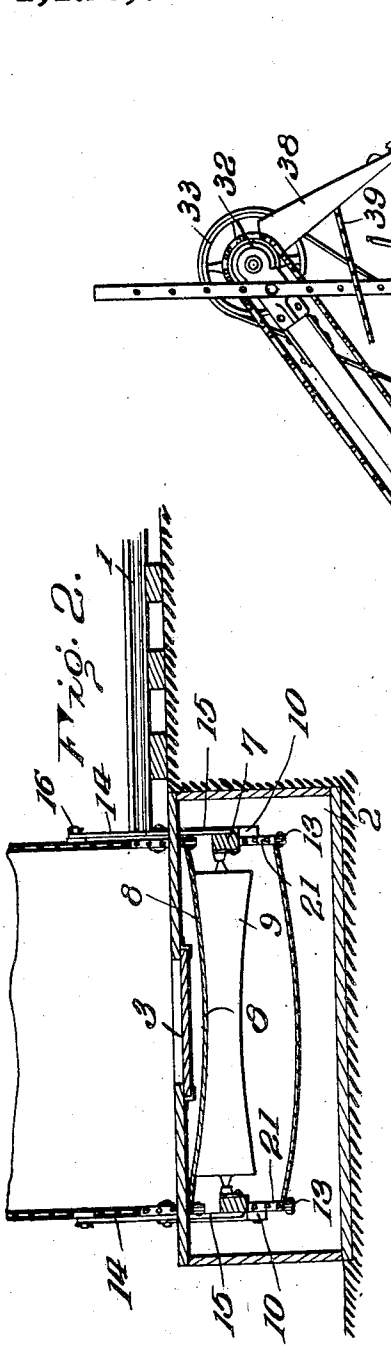


Fig. 2.

Fig. 1.

Witnesses:

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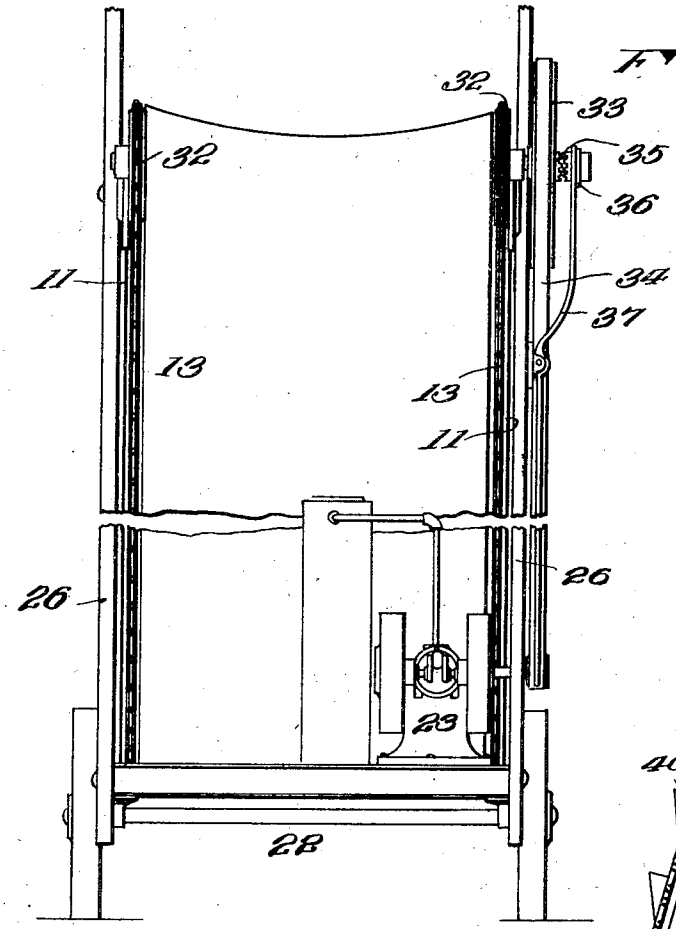
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3 SHEETS—SHEET 2.

Fig. 3.



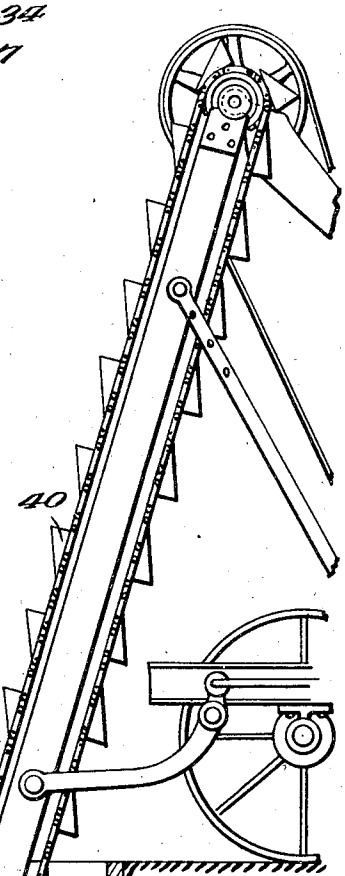
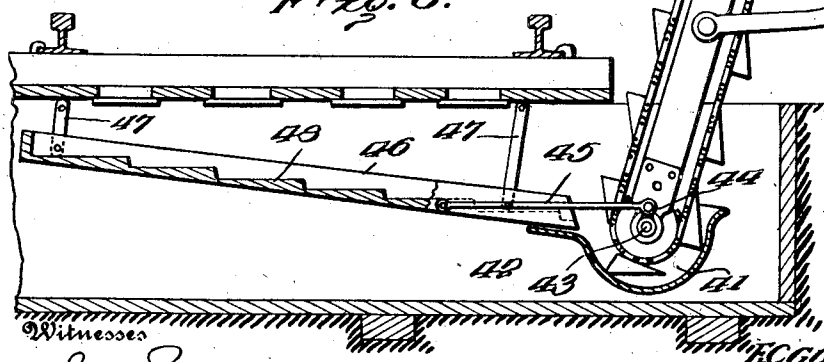


Fig. 6.



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3 SHEETS—SHEET 3.

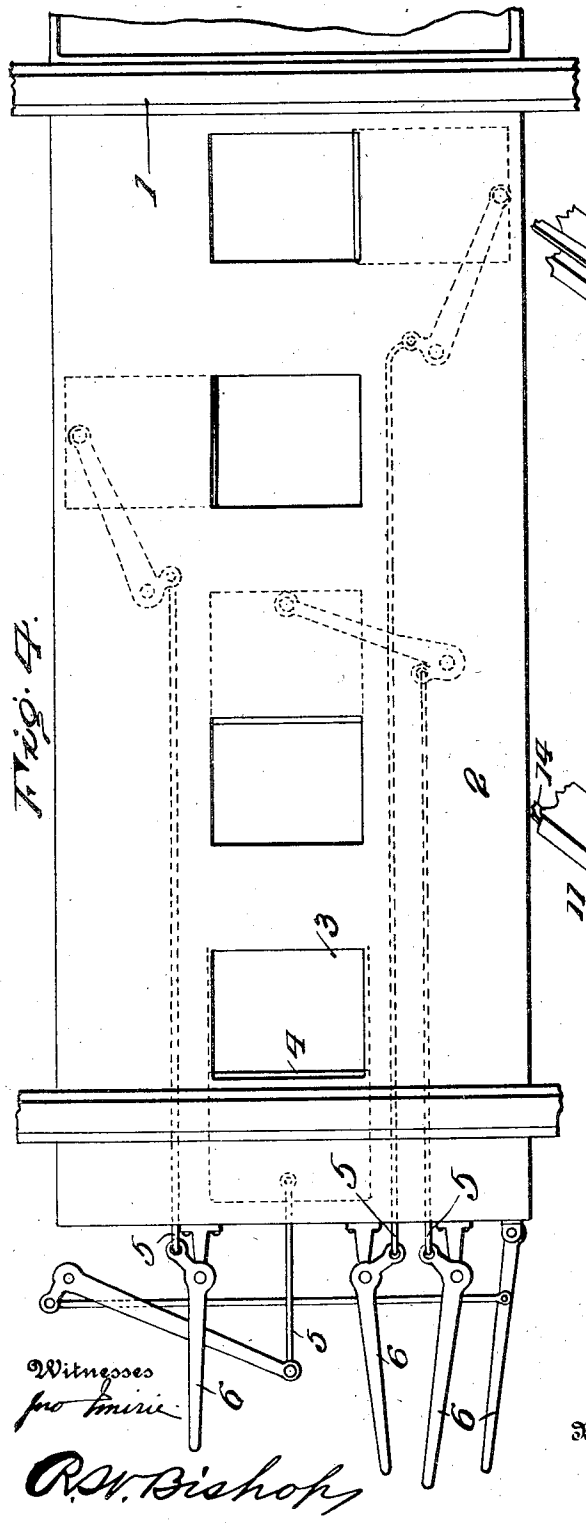


Fig. 4.

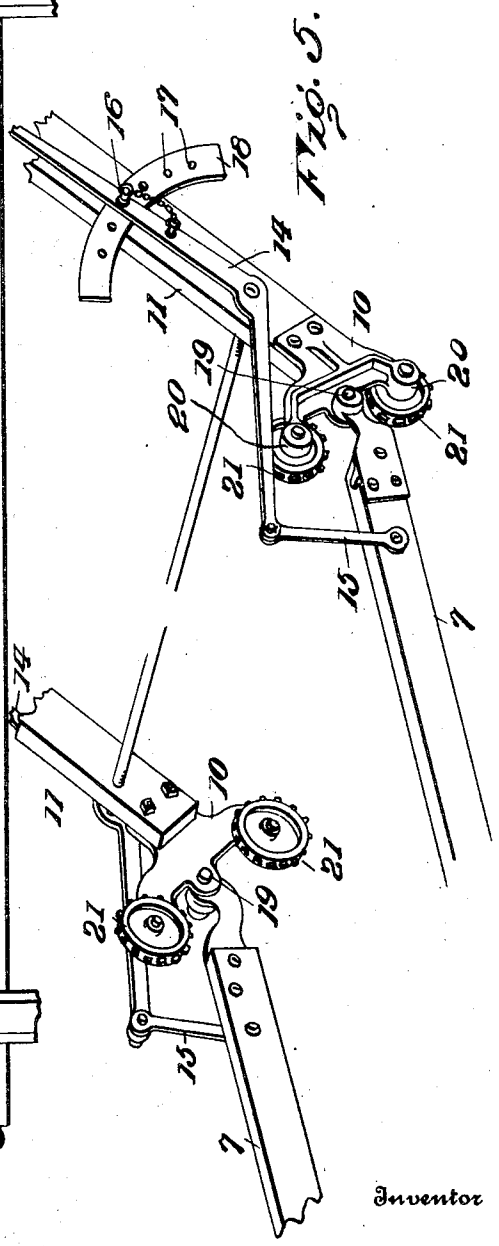


Fig. 5.

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UNITED STATES PATENT OFFICE.

EDWARD C. GLEDHILL, OF GALION, OHIO.

CAR-UNLOADING APPARATUS.

1,126,748. Specification of Letters Patent. Patented Feb. 2, 1915.

Application filed March 31, 1914. Serial No. 828,551.

To all whom it may concern:

Be it known that I, EDWARD C. GLEDHILL, citizen of the United States, residing at Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Car-Unloading Apparatus, of which the following is a specification.

My invention relates to means for transferring from a railroad car, broken stone, coal, or other material, and delivering the same into a wagon or storage bin.

One object of the invention is to provide simple means whereby a load of stone, coal, or other material may be quickly transferred from a railroad car to a bin or wagon, and a further object of the invention is to provide an apparatus for the stated purpose which may be set up in operative relation to a railroad track without necessitating excessive excavation under the track or at the side of the same.

A further object of the invention is to provide means whereby the material may be taken up gradually so that choking of the conveying mechanism below the railroad car will not be apt to occur.

Other incidental objects of the invention will appear as the description of the same proceeds and the invention consists in certain novel features which will be hereinafter first fully described and then more particularly pointed out in the claims following the detailed description.

The invention is illustrated in the accompanying drawings, in which:

Figure 1 is a sectional elevation of a complete apparatus embodying my improvements. Fig. 2 is a transverse section through the lower portion of the conveyer belt or apron. Fig. 3 is a rear end elevation with parts broken away. Fig. 4 is an enlarged plan view of the receiving box which is arranged beneath the railroad track. Fig. 5 is an enlarged detail perspective view of a portion of the frame for supporting the conveyer. Fig. 6 is a sectional elevation showing a modification.

In carrying out my present invention, I arrange below the railroad track, indicated at 1, a box or hopper 2, which will be of such dimensions that it may fit between two of the railroad ties and extend beyond the side of the track so as to accommodate the lower portion of an endless apron of the conveyer. In the top of this box is provided a plurality of openings 3 which may be independently closed or opened by means of sliding covers or doors 4 mounted on the under side of the top of the box and connected by links 5 with levers 6 at one side of the track. This arrangement permits any one of the openings to be uncovered while retaining all the others in closed condition.

Within this box I support a frame 7 which carries the lower portion of an endless belt or apron 8 constituting a conveyer. The frame consists of suitable side bars having rollers 9 mounted therein and extending between the same at intervals so as to support the belt and the rollers are preferably reduced in diameter at their centers so that the apron will be slightly dished and thereby more effectually support the stone or other material deposited thereon. This arrangement will be readily understood by reference to Fig. 2 of the drawings.

The side bars of the frame 7 are each pivoted at one end to a bracket 10 which is secured to the lower end of a side bar 11 of the frame for supporting said upper portion of the conveyer. At the opposite end of the side bars of the frame 7 I arrange an idle roller to support the apron or conveyer and on the ends of this roller I provide sprockets 12 around which the operating chains 13 are trained. Upon the side bars 11, near the lower ends thereof, I fulcrum levers 14 which extend beyond the brackets 10 and are connected by links 15 with the frame 7. By manipulating these levers I am enabled to bring the frame 7 into alinement with the side bars 11 or arrange the same at an angle to the said side bars so that the conveyer may be easily inserted through the open top of the box 2 at the side of the track and extend under the top of the box in the position shown in Fig. 1. After the lower portion of the conveyer, that is to say, the part supported by the frame 7, is arranged within the box 2, the side bars 11 are adjusted to the proper inclination and the two frames are then held in a set angular relation by inserting a locking pin or similar device 16 through the lever 14 into any one of a series of openings 17 in a bar 18 which is secured to the side of the frame 11, as will be readily understood. The bracket 10 is extended above and below the pivotal connection 19 between the same and the frame 7 and at the upper and lower extremities of the bracket are provided eyes

or bearings 20 to receive the shafts of sprocket wheels 21 which engage the chains 13, as shown in Fig. 1, and hold the same in the proper position for the successful operation of the conveyer.

The entire device is preferably portable so that when it is not in use it may be moved within a shed to be protected from the weather, and also, in order that a single conveying apparatus may be used in connection with any one of a plurality of receiving boxes. To this end I employ a wheeled truck 22 and in the drawings this truck is shown as supporting a gas engine 23 and also supporting a plurality of standards 24, 25 and 26. The standards 24 are in the form of rack bars engaged by pinions 27 mounted in suitable bearings on the truck and operated by a crank-handle 28 whereby the frame 11 may be set at any desired height above the truck and at any desired inclination with respect to the lower portion of the conveyer. The intermediate standard 25 rises from the truck at about the center of the same and is provided with a series of openings 29 through any one of which a suitable locking bolt or pin may be inserted into the body of the truck so as to secure the standard in any desired adjustment.

The standard 26 is disposed at the end of the truck more remote from the receiving box and is also provided with a plurality of openings 30 through any one of which a locking bolt or pin may be inserted into the truck. This latter standard 26 is adjustably connected to a brace 31 which extends to and is adjustably connected to the truck, as clearly shown. This arrangement permits me to readily adjust the frame 11 to any desired inclination and to hold it in the position to which it may be adjusted.

In the upper end of the frame 11, I journal a shaft carrying an idle roller and also equipped with sprocket wheels 32 around which the chains 13 are trained. A band wheel 33 is also mounted upon this shaft and is connected by a driving belt 34 with the driving shaft of the engine 23 so that motion may be readily imparted to the conveyer. The band wheel 33 is preferably loose on the shaft and is equipped with a clutch hub 35 adapted to be engaged by a clutch member 36 which is splined upon the shaft and engaged by a lever 37 fulcrumed upon the frame, as shown most clearly in Fig. 3. When the clutch member 36 is thrown into engagement with the clutch-hub 35, the rotation of the band wheel 33 will be transmitted to the shaft and the conveyer consequently set in motion. The conveyer belt may be of any preferred and well-known form and I have deemed it unnecessary to specifically illustrate and describe the details of its construction.

Pivotally hung in any convenient manner upon the upper end of the frame 11 is a chute 38 which may be supported at any desired angle to the conveyer by braces 39 which extend to the standards 26 and are adjustably secured thereto, as will be readily understood upon reference to Fig. 1. If the apparatus is employed to transfer material from a railroad car to a storage bin it will be set up so that the chute 38 will be just over the bin and, consequently, the material delivered to the chute, by the conveyer, will be directed into the bin. If it is intended to transfer the material to wagons by which it may be carried to the place of use, the wagons are driven to a position below the chute and the apparatus then operated so as to transfer the material from the car into the chute which will direct it into the wagon.

It is thought the operation and advantages of my improved apparatus will be readily understood from the foregoing description taken in connection with the accompanying drawings. The car to be unloaded is drawn to a point over the receiving box 2 and the material within the car permitted to flow slowly therefrom onto the top of the box. One of the openings 3 in the top of the box is uncovered and the material will then drop through said opening onto the conveyer. As the conveyer will set close to the top of the box, as shown clearly in Fig. 1, a small quantity of material will be caught by the conveyer and will be carried by it to the top of the frame 11 where it will be discharged into the chute 38. When all of the material over one of the openings in the receiving box has been taken up by the conveyer another opening is uncovered and a second quantity of material will be transferred to the bin or wagon. This operation is repeated until the entire car load of material has been transferred.

The apparatus is exceedingly simple in the construction and arrangement of its parts and will be found highly efficient for the purposes for which it is designed. The receiving box need not be very large and will be found of sufficient capacity if it be of such width that it may be placed between two of the railroad ties if the same are ordinarily spaced apart. As the material will be taken up by the conveyer in a thin stream, clogging of the parts is not apt to occur and the entire load may be quickly transferred to the warehouse or to the waiting wagon.

In Fig. 6 I have shown another form of apparatus in which the conveyer is in the form of an endless chain of buckets 40 operating in a pocket or boot 41 carried by the lower end of the conveyer supporting frame and disposed within a receiving box 42 which extends beneath the track. The shaft 43 which carries the lower roller for the elevator is equipped with a crank

44 at one end and a pitman 45 is pivoted to the outer end of said crank, the opposite end of said pitman being pivoted to the side of a feed table or box 46 which is hung within the receiving box 42 by means of links 47 and is provided with a series of stepped surfaces 48 on its bottom. The feeding table is disposed with the end more remote from the elevator higher than the end nearer the elevator so that there will be a tendency of the material disposed on the feeding table to gravitate to the elevator. This tendency of the material is increased by the oscillations imparted to the table through the crank 44 and the pitman 45 which will cause the steps 48 to positively feed the material into the pocket or boot 41 from which it will be taken up by the elevator.

Having thus described the invention what is claimed as new is:—

1. In a car unloading apparatus, the combination of a receiving box, a supporting frame having one end disposed in said box at one end thereof, brackets secured to the lower end of the said frame, a supplemental frame extending longitudinally of the receiving box and having its side bars pivoted to said brackets, means on the supporting frame for moving the supplemental frame in a vertical plane and for locking the frames in a set relation, a conveyer mounted on and traveling over both said frames, and guides for said conveyer mounted upon the bracket adjacent and above and below the pivotal connection between the brackets and the supplemental frame.

2. In a car unloading apparatus, the combination of a receiving box extending under a railroad track, a supporting frame having one end disposed in said receiving box at one side of the railroad track, a supplemental frame pivotally connected to the said end of said supporting frame and extending therefrom longitudinally of the receiving box, means on the main frame for locking the supplemental frame, in a set relation to the said frame, a conveyer mounted on and traveling over both said frames, and guides for said conveyer at the sides of the frames above and below the pivotal connection between the same, said guides being disposed in an oblique plane with the pivotal connection between the frames, and the upper guide being located over the supplemental frame and the lower guide being disposed below the lower end of the supporting frame.

3. The combination of a main frame, a supplemental frame pivoted thereto, means for locking the frames in a set relation, brackets secured to the main frame adjacent the pivotal connection of the supplemental frame therewith, pinions carried by said brackets above and below said pivotal connection, sprocket chains trained around the frames and engaged by said pinions, an endless belt connected to said chains, and means for imparting motion to the chains.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD C. GLEDHILL. [L. S.]

Witnesses:
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