C. A. PERFECT.

COMBINATION LOADER AND UNLOADER.

APPLICATION FILED AUG. 22, 1918.

1,346,381.

Patented July 13, 1920.

2 SHEETS—SHEET 1.

Fig. 2.

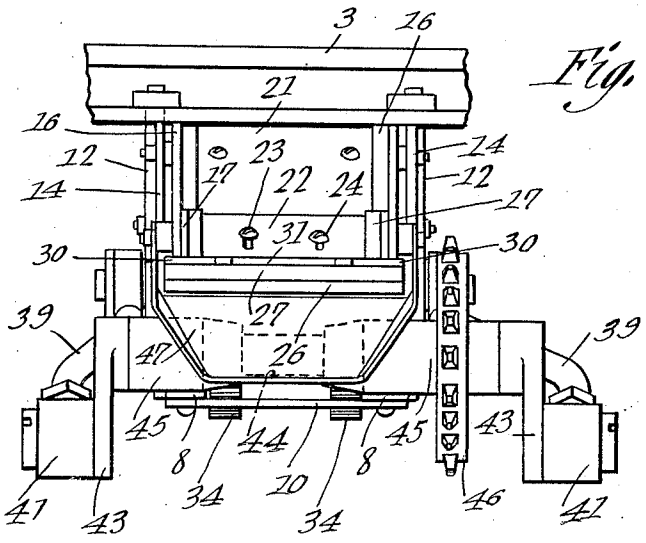


Fig. 3.

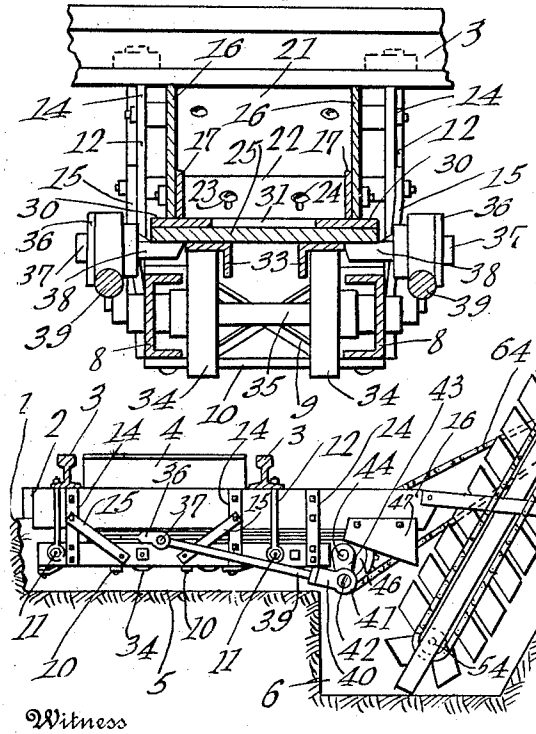
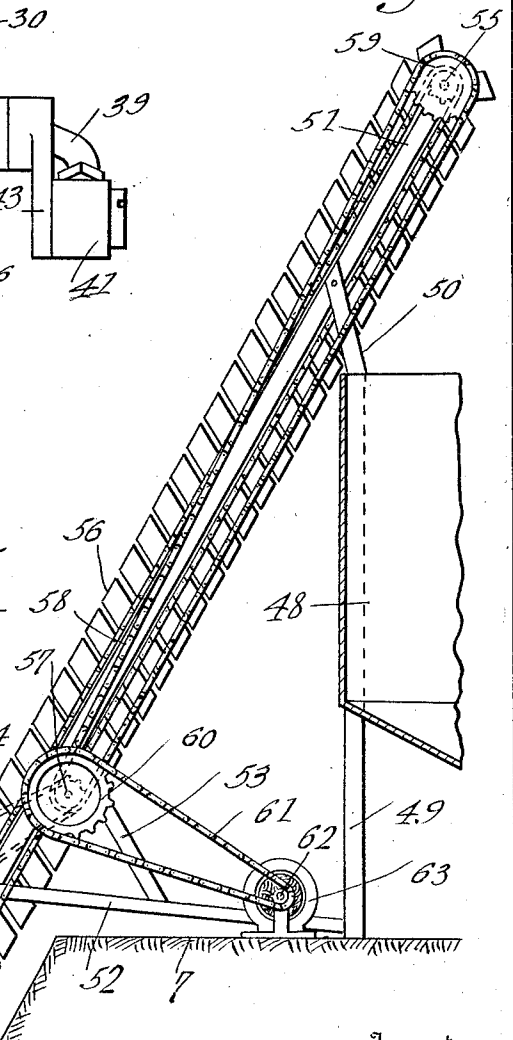


Fig. 1.



Witness

Inventor

Charles A. Perfect

By

Attorney

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2 SHEETS—SHEET 2.

Fig. 4.

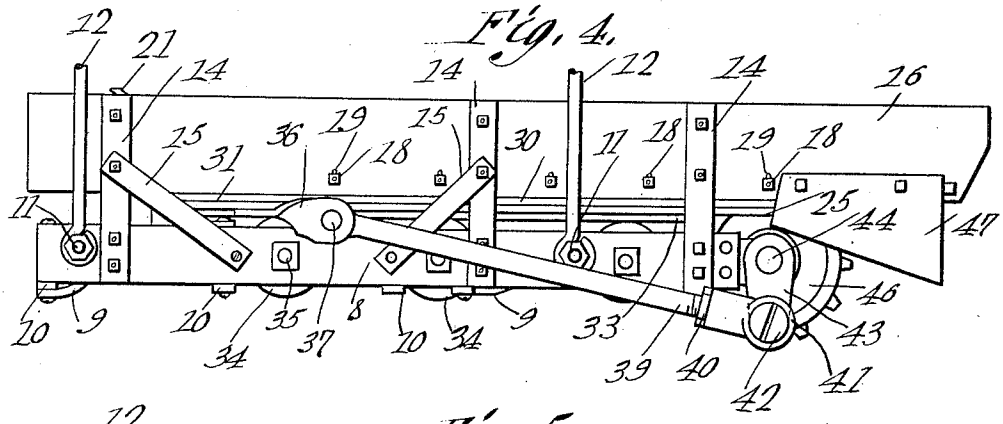


Fig. 5.

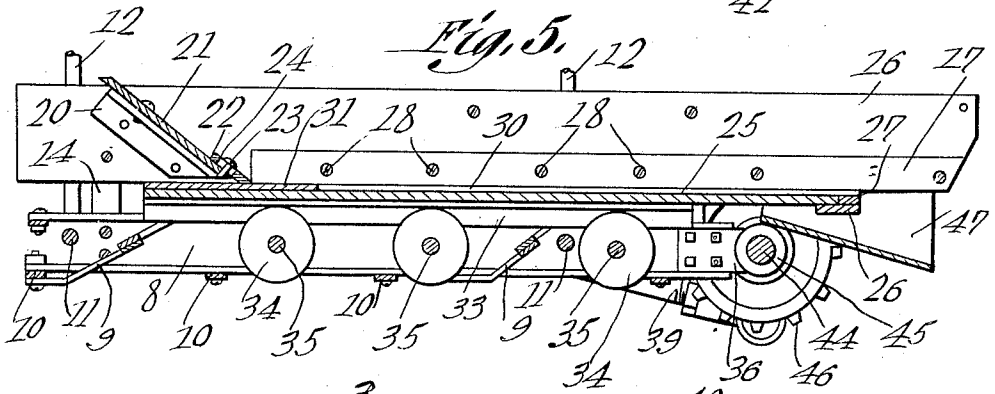
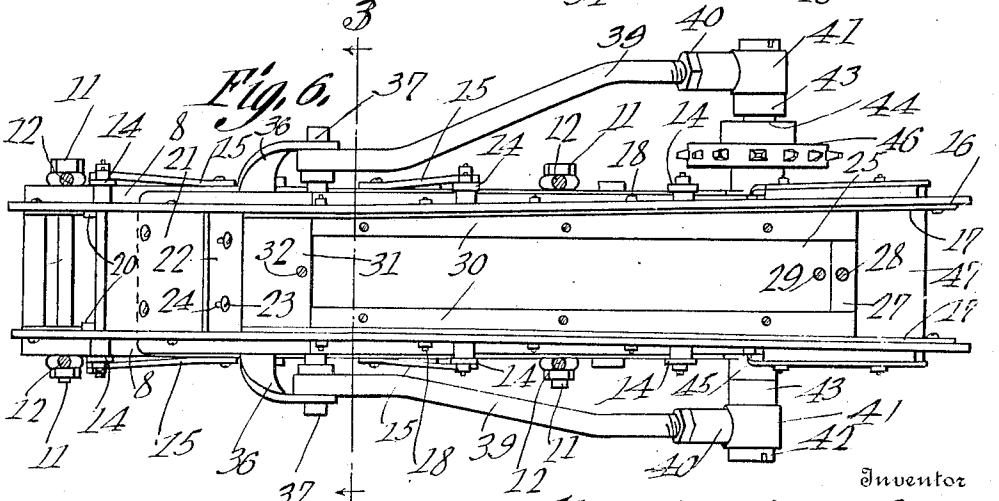


Fig. 6.



Witness

J. R. Tomlin

Inventor

Charles A. Perfect

By C. A. Snow & Co.

Attorneys

UNITED STATES PATENT OFFICE.

CHARLES A. PERFECT, OF SUNBURY, OHIO.

COMBINATION LOADER AND UNLOADER.

1,346,381. Specification of Letters Patent. Patented July 13, 1920.

Original application filed October 20, 1916, Serial No. 126,739. Divided and this application filed August 22, 1918. Serial No. 250,997.

To all whom it may concern:

Be it known that I, CHARLES A. PERFECT, a citizen of the United States, residing at Sunbury, in the county of Delaware and State of Ohio, have invented a new and useful Combination Loader and Unloader, of which the following is a specification.

This application discloses and claims matter which was ruled to be divisible from what is claimed in my prior application No. 126,739, filed Oct. 20, 1916, that application having now matured into Patent No. 1,218,580, granted on the 6th day of March, 1917. The patent alluded to covers sundry improvements in a reciprocating feeder *per se*, whereas this present application is based on an elevator comprising a reciprocating feeder and an endless conveyer, as shown and described in my said patent, but not claimed therein.

The invention aims to provide novel connections between a right-line feeder and an inclined conveyer, whereby these instrumentalities may be operated from a single source of power, and to combine the feeder and the conveyer in a novel way, to produce a machine which is more compact and efficient than those which have preceded it.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herewith disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings,

Figure 1 is a transverse sectional view showing an automatic loader embodying the improvements hereinafter described, certain parts appearing in elevation;

Fig. 2 is an end elevation showing the receiver and attendant mechanisms;

Fig. 3 is a cross section taken through the receiver on the line 3—3 of Fig. 6;

Fig. 4 is a side elevation of the receiver;

Fig. 5 is a longitudinal section of the receiver; and

Fig. 6 is a top plan of the receiver.

In the accompanying drawings, the numeral 1 indicates a suitable support, such as a road bed, upholding cross ties 2, carrying rails 3 of a track or tramway. Mounted on adjacent cross ties 2 are inclined deflectors 4. When the material is dumped out of a car, the deflectors direct the material between the cross ties 2. Between the cross ties 2, a channel 5 is formed in the road bed 1, transversely of the rails 3, the channel 5 communicating with a pit 6 formed in the road bed 1 on one side of the track rails 3. Beyond the pit 6 and to one side of the track 3—3 is a support 7.

A receiver is located between the cross ties 2, and the material dumped from a car is directed by the deflectors 4 into the receiver. The receiver is a composite structure, and its construction will now be set forth.

The receiver embodies a bed frame including a pair of side bars 8 preferably in the form of channels, the side bars 8 being connected by upwardly inclined crossed braces 9 and by transverse braces 10. The side bars 8 carry bolts 11 supporting hangers 12 which may be connected by the rails 3. Any other desired means, however may be employed for holding the channels or side bars 8 in place. Secured to the side bars 8 are uprights 14 sustained from the side bars by means of braces 15. Attached to the uprights 14 are side plates 16. Guide strips 17 are attached to the inner faces of the side plates 16 by means of securing elements 18. The slots 19 in the side plates 16 through which the securing elements 18 pass preferably are elongated vertically as clearly indicated in Fig. 4 so that the guide strips 17 may be adjusted vertically.

Connected with the side plates 16 near to their rear ends are angle bars 20 to which is secured a forwardly and downwardly inclined wall 21 supporting a foot 22 held in place on the wall 21 by securing elements 23. The slots 24 in the foot 22 through which the securing elements 23 pass are elongated vertically, so as to permit an adjustment of the foot 22.

The receiver above alluded to includes a reciprocating feeder embodying a base plate 25 in slidable coöperation with the guide strips 17 which are secured to the side plates 16. Attached by means of a securing element 29 to the forward end of the base plate 25 is a bar 26 supporting a removable lip 27 held in place by a securing device 28, the

construction being such that the lip may be renewed readily when worn. Extended longitudinally of the base plate 25 and secured thereto are wear strips 30 which bear immediately upon the lower edges of the guide strips 17. Secured to the rear end of the member 25 is a plate 31 held in place by securing elements 32, the plate 31 operating beneath the lower end of the inclined foot 22.

At this place it may be noted that the foot 22 is so mounted on the wall 21 that the foot may be raised and lowered to coöperate with the plate 31, it being possible to adjust the guide strips 17 vertically so that they will coöperate with the wear strips 30, and all of these elements may be detached and replaced when worn.

Fixed to and depending from the base plate 25 of the feeder are angle members 33, the vertical flanges of which lie between rollers 34, the horizontal flanges of which constitute tracks coöperating with the rollers as shown best in Fig. 3. The rollers 34 are carried by axles 35 supported in the channels or side bars 8. It will now be clear that when the feeder comprising the plate 25 and attendant parts is reciprocated, the plate slides to and fro on the rollers 34, the rollers constituting an anti-frictional mounting for the plate.

Attached to the base plate 25 of the feeder are laterally offset brackets 36 carrying pins 37 which are mounted upon the base plate 25 of the feeder, as indicated at 38 in Fig. 3. The pins 37 support pivotally, the rear ends of pitmen 39 united by adjustable connections 40 with eyes 41 pivoted on wrist-pins 42 carried by cranks 43 constituting a part of a shaft 44 journaled in bearings 45 secured to the forward ends of the channels or side bars 8. Fixed to the shaft 44 is a sprocket wheel 46. A downwardly inclined chute 47 is attached to the forward ends of the side plates 16 of the receiver.

In Fig. 1 of the drawings there is shown a bin 48 supported on posts 49, the upper ends 50 of which are connected to a conveyer-supporting frame 51. Braces 52 are connected at one end to the posts 49 and at their other ends are connected to the side plates 16 of the receiver, as clearly shown in Fig. 1. Braces 53 extend between the braces 52 and the conveyer frame 51. Journaled for rotation in the lower end of the conveyer frame 51 (which projects into the pit 6) is a shaft 54. A shaft 55 is journaled in the upper end of the conveyer frame 51. Trained about the shafts 54 and 55 and operatively connected therewith is a belt conveyer 56 adapted to operate in the pit 6. Journaled in the conveyer frame 51 intermediate its ends is a shaft 57 connected by means of a chain 64 with the sprocket wheel 46 on the shaft 44 whereby the feeder plate 25 is actuated. A sprocket chain 58 forms an operative connection between the shaft 57 and a sprocket wheel 59 carried by the shaft 55. The shaft 57 carries a sprocket wheel 60 connected by means of a sprocket chain 61 with the shaft 62 of a motor 63 mounted on the support 7.

In practical operation, the material dumped from a car is received by the deflectors 4 and is directed between the side plates 16 of the receiver. When the feed plate 25 is reciprocated, the material is advanced into the chute 47, owing to the fact that the material tends to bank up on the inclined wall 21, and because the tendency of the inclined wall is to coact with the feeder plate 25 in advancing the material. From the chute 47, the material is received by the belt conveyer 56 and is carried upwardly by the belt conveyer and dumped into the bin 48.

When the motor 63 is operated, motion is transmitted to the shaft 57 by the sprocket chain 61, and from the shaft 57, motion is transmitted to the shaft 55 and the belt conveyer 56 by the chain 58. From the shaft 57, motion is transmitted by the sprocket chain 64 to the sprocket wheel 46 on the shaft 44 and when the shaft 44 is rotated, the pitmen 39 will be actuated, the same imparting a sliding movement to the feeder plate 25 through the pins 37.

One end of the receiver overhangs the lower end of the conveyer 56, and the receiver discharges downwardly, directly into the conveyer. The feeder, embodying the plate 25, has a right-line movement in a fixed plane, and the pitmen 39, the crank shaft 44, the chain 64, the shaft 57, the shafts 54, the chain 58, and the chain 61, form a simple but efficient means whereby the feeder and the conveyer 56 may be driven from a single source 63 of power.

I claim:—

In a device of the class described, an approximately horizontal feeder including a reciprocating element; a conveyer frame; first shafts journaled at the ends of the frame; a bucket conveyer carried by the shafts and extended beneath the delivery end of the feeder; a drive shaft journaled in the frame between the first shafts; means for operatively connecting the drive shaft with the reciprocating element of the feeder independently of the bucket conveyer; a belt connection between the drive shaft and one of the first shafts, the belt connection being independent of the bucket conveyer; and means for operating the drive shaft.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES A. PERFECT.

Witnesses:

FRANK W. BENNETT,

ROBERT J. GELSTON.