Oct. 22, 1946. P. E. GOODWIN 2,409,752

LOAD PICK-UP HAULING AND DUMPING CONVEYANCE

Filed June 9, 1945 2 Sheets-Sheet 1

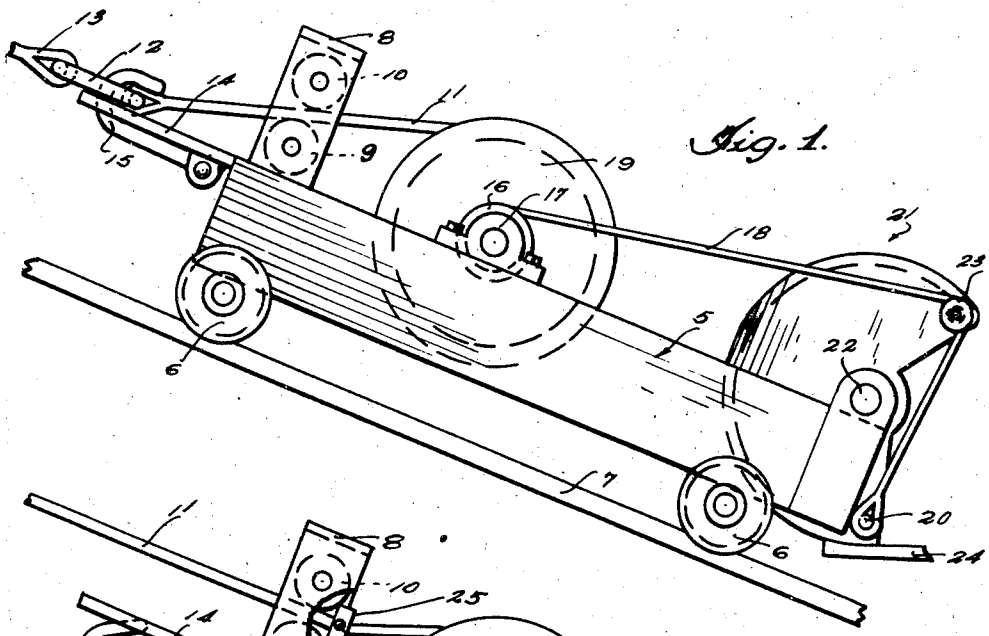

Fig. 1.

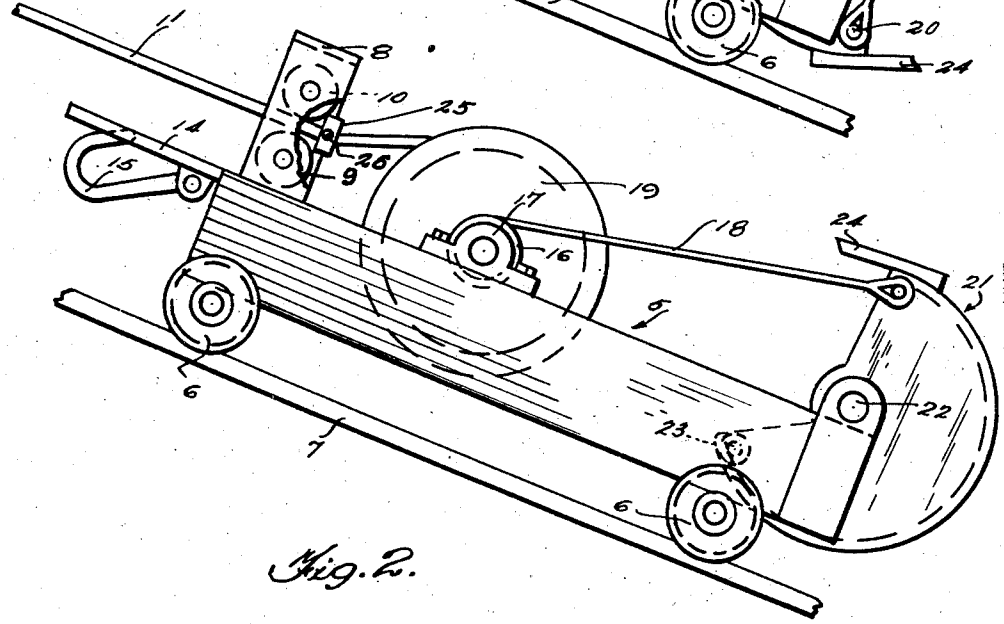

Fig. 2.

Inventor

PERCY E. GOODWIN,

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Oct. 22, 1946. P. E. GOODWIN 2,409,752

LOAD PICK-UP HAULING AND DUMPING CONVEYANCE

Filed June 9, 1945 2 Sheets-Sheet 2

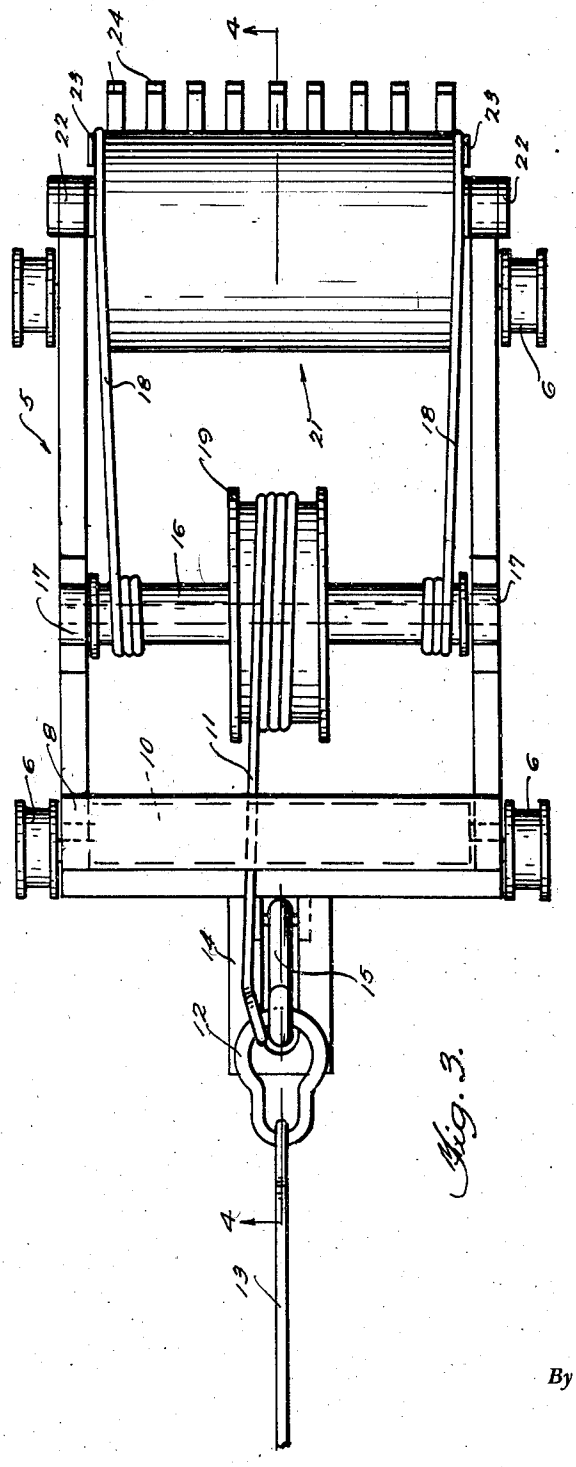

Fig. 3.

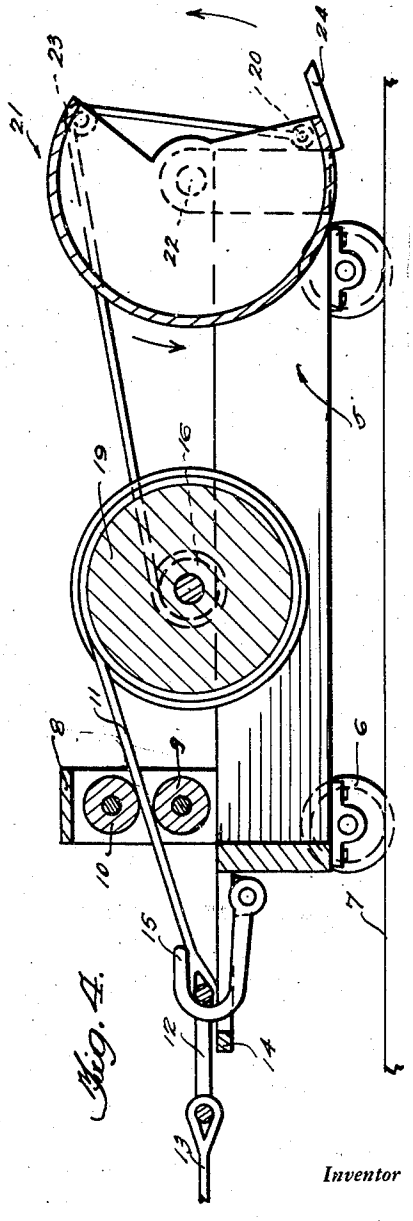

Fig. 4.

Inventor

PERCY E. GOODWIN,

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Patented Oct. 22, 1946 2,409,752

UNITED STATES PATENT OFFICE

2,409,752

LOAD PICKUP HAULING AND DUMPING CONVEYANCE

Percy E. Goodwin, Salmon, Idaho

Application June 9, 1945, Serial No. 598,434

3 Claims. (Cl. 214—130)

1

This invention relates to a liftable and lowerable wheeled conveyance with special equipment to adapt it for scooping and loading ore waste and so-called muck from predetermined areas in mining operations.

More specifically, the invention has reference to a portable vehicle of an appropriate type which is adapted to run back and forth on inclined tracks, the same having an oscillatory scoop-like bucket at the pick-up and loading end, cable and drum means being provided, whereby to regulate and adjust the bucket to gouge into the muck, scoop it up, and then poise it for subsequent dumping, the conveyance being then hauled up to a suitable point to complete the dumping step.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views;

Figure 1 is an elevational view of the track guided wheel supported conveyance equipped with a scoop and other accessories constructed in accordance with this invention, the same being shown ready to dig in and pick up a load of muck.

Figure 2 is a view like Figure 1 showing the scoop or bucket rotated around to load-holding and return position.

Figure 3 is a top plan view of Figure 1.

Figure 4 is a longitudinal section taken centrally on the plane of the line 4—4 of Figure 3.

In the drawings, the so-called conveyance or vehicle is more in the nature of a U-shaped frame, that is, a frame that is U-shaped in top plan view, the same being denoted, as a unit, by the numeral 5. This frame is provided at suitable points with appropriate grooved wheels 6 to engage the tracks 7 on the chute structure on which the device is mounted to function. At the front, there is an arch 8 fixedly mounted and carrying guide rollers 9 and 10 for a cable 11, the latter being connected at its free end with a link 12 to which the main control cable 13 is connected. The latter cable is located above the surface for utilization by the attendant. There is a slotted plate or bracket 14 on the front end of the frame 5 through which a hooked latch 15, pivoted on the bottom of the plate, functions. The bill of the hook is engageable with the link 12 to hold the parts in a pre-determined set relationship shown, for example in the scooping and vehicle lowering operation.

A shaft 16 is mounted between suitable bearings 17 on the side members of the frame and the end portions thereof serve as winding drums for a pair of auxiliary cables 18. There is a main flanged drum 19 on the center of the shaft 16 which serves to wind and pay-out the adjacent end portion of the cable 11.

2

The auxiliary cables 18 connect as at 20 to the end walls of the scoop-like dredging and pick-up bucket 21. This is more or less conventional in form and is pivotally mounted as at the points 22 between suitable brackets on the frame structure. The end members are provided with pulleys or guide sheaves 23 over which the cable-ends 18 pass, as shown in Figures 1 and 2. The mouth of the bucket is provided with suitably arranged and pointed digging teeth 24.

The structure, when ready for use, is arranged as depicted in Figure 1. Here the frame or conveyance is allowed to roll down the chute provided by the tracks or other platform arrangement. Due to the inclination, the descent is easily accomplished, this under the influence of gravity of the weight of the conveyance plus the paying-out of the control cable 13. Then the device acts, when it strikes the pile of muck, to dig in and load the scoop or bucket. This is accomplished by the excavating action of the digging fingers 24. Then by releasing the latch, the cables 18, 11 and 13 collectively coordinate their functions to provide the desired reeling and winding operation and to swing the bucket over from the loading position to the loaded dumping position in Figure 2, whereupon the structure is pulled up the chute for discharging the load. The open framework 5 conveniently allows for ultimate dumping of the bucket.

Reference being had to Figure 2 it will be seen that the numeral 25 designates a stop collar which is fastened on the cable 11 by a set screw or the like 26. This collar serves as a stop motion check for the cable 11 and limits the amount it is permitted to pay out. Thus at a pre-determined time as the cable 11 is unwound from its drum, the stop collar engages the guide rollers 10. This is, however a somewhat optional feature and is perhaps not absolutely essential.

A careful consideration of the foregoing description in conjunction with the invention as illustrated in the drawings will enable the reader to obtain a clear understanding and impression of the alleged features of merit and novelty sufficient to clarify the construction of the invention as hereinafter claimed.

Minor changes in shape, size, materials and rearrangement of parts may be resorted to in actual

practice so long as no departure is made from the invention as claimed.

I claim:

1. In a waste ore handling conveyance of the class described, a substantially U-shaped frame, supporting and maneuvering wheels thereon, a toothed scooping and loading style bucket pivotally mounted between the rear ends of the side members of said frame, a drum rotatably mounted between said side members, cables windable on said drum and having their free ends connected with the end portions of said bucket, and further cable means for simultaneously maneuvering said conveyance and controlling said drum.

2. In a waste ore handling conveyance of the class described, a substantially U-shaped frame, supporting and maneuvering wheels thereon, a toothed scooping and loading style bucket pivotally mounted between the rear ends of the side members of said frame, a drum rotatably mounted between said side members, cables windable on said drum and having their free ends connected with the end portions of said bucket, a second drum, a second cable wound on said last named drum, an eye attached to the free end of the cable, a latch hook on said frame engageable with said eye, and further cable means connected to said eye for simultaneously maneuvering said conveyance and controlling said second cable.

3. In a waste ore and muck pick-up and disposal conveyance of the class described, an open frame of general U-shaped form provided with track engaging and maneuvering wheels, a scoop-type bucket mounted for oscillation between the ends of the side members of said frame, said bucket being provided with teeth, the bucket being closed at its outer end, sheaves mounted on said closed ends, a pair of parallel cables attached at their free ends to the ends of the bucket and trained over the sheaves, a shaft mounted transversely between the side members of the frame and forming cable winding and unwinding drums, the other ends of said cables being mounted on said drum, a second drum on said first-named drum, a cable wound thereon, an arch mounted on said frame, rollers mounted in said arch constituting idling and guide members, said second cable being passed between said rollers, a plate on said frame, a hook forming a latch associated with said plate, said second-named cable being provided with an eye, the bill of the latch being engaged with said eye, a third cable connected to said eye, said last mentioned cable simultaneously maneuvering said conveyance and controlling said bucket through the medium of the remaining of said cables.

PERCY E. GOODWIN.