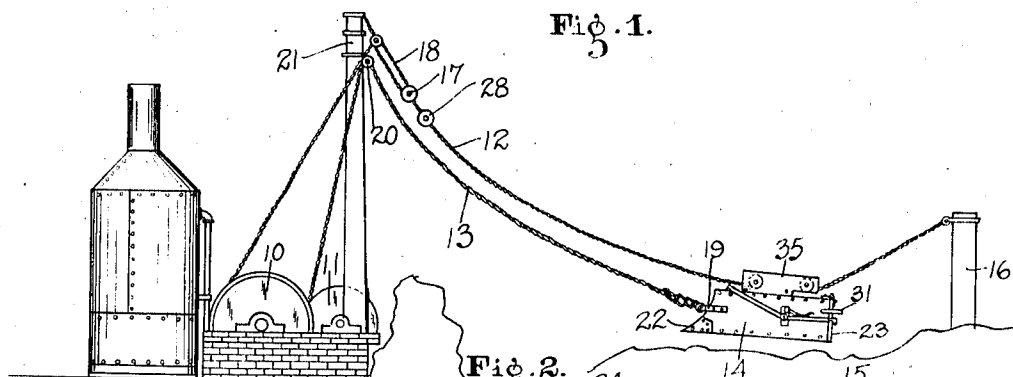
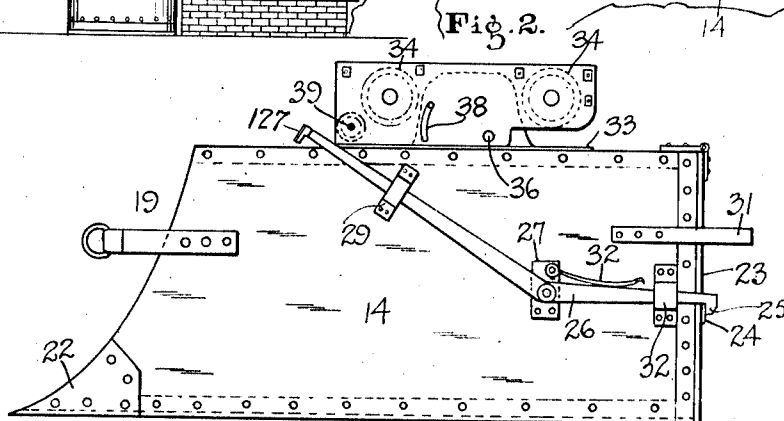
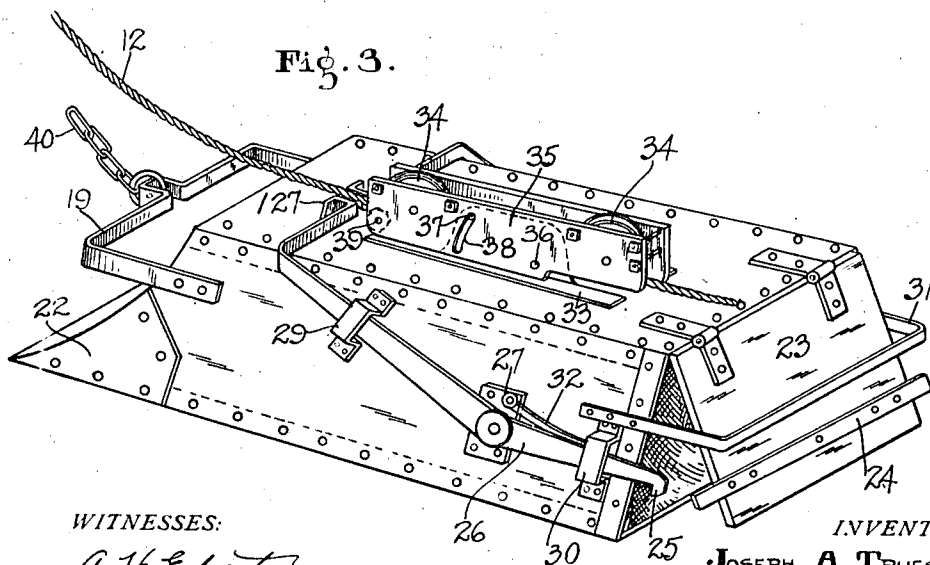


J. A. TRUESDELL.
EXCAVATING APPARATUS.
APPLICATION FILED JUNE 3, 1912.

1,066,683.

Patented July 8, 1913.



WITNESSES:

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EXCAVATING APPARATUS.

1,066,683.

Specification of Letters Patent.

Patented July 8, 1913.

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To all whom it may concern:

Be it known that I, JOSEPH A. TRUESDELL, a citizen of the United States, and a resident of Indianapolis, county of Marion, and State of Indiana, have invented a certain useful Excavating Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to provide an improved bucket for excavating or conveying granular or lump material, such as sand and coal.

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a side elevation of a hoisting and conveying apparatus making use of my invention. Fig. 2 is a side elevation of my bucket. Fig. 3 is a perspective of the same.

In detail there is shown in the drawings a hoisting apparatus having hoisting drums 10 and 11 for controlling a travel cable or runway 12 and drag line 13, respectively, for operating a bucket 14 and causing it to pick up a load from a pile 15 and drop it at any desired place. One end of said travel cable is secured to a dead head 16 to the right of the pile, as shown in Fig. 1, and the other end is secured to a block 17 about which passes a cable 18, one end of which is fixed and the other end of which is secured to the drum 10 in the usual manner. One end of the drag line 13 is secured to the bail 19 of the bucket 14 and passing over a pulley 20, is secured to the drum 11.

The bucket 14 is rectangular in cross section and has a forwardly inclined gathering nose 22 and at the rear end a gate 23 is hinged at its upper edge and near the lower edge a bar 24 is secured which projects beyond the sides of the bucket and is adapted to be engaged by the downwardly projecting ends 25 of the latch levers 26 which are fulcrumed upon blocks 27 secured to the sides of the bucket. The opposite ends of said latch levers extend above the top of the

bucket and are bent toward each other and are joined about midway between the sides of the bucket and the ends are bent forward to form ears 127 for engaging a block 28 on the travel cable for depressing the upper end of said lever and disengaging the latch 25 from the latch bar 24. Said engaging ears lie beneath the cable or runway 12. Guide blocks 29 and 30 limit the movement of said levers and there is a U-shaped bar 31 secured to the sides of the bucket and limiting the rearward movement of the end gate 23. Springs 32 mounted on the block 27 and bearing on the lever 26, tend to keep the ends 25 in latching position. The bail 19 is secured to the forward end of the bucket, as heretofore mentioned, and if preferred, a short length of chain cable 40 may be secured to said bail, and the drag line 13 secured to the end of said cable.

The trolley for the bucket is mounted as follows: Two L-shaped plates 33 are secured upon the upper side of the bucket and are spaced apart a short distance and sheave wheels 34 which ride upon the travel cable 12, are mounted between flat plates 35 which are fulcrumed upon a pin 36 extending through said L-shaped plates 33. Said pin 36 is located slightly forward of the center of gravity of the bucket, such that the right-hand end, as seen in Fig. 3, will hang below the forward or left-hand end and assist in discharging the load. The plates 33 are irregular in outline, as shown by dotted lines in Fig. 2, and there is a pin 37 extending through said plates and through an arced slot 38 in the side plates 35. Said pin is located in front of and above the fulcrum pin 36 and the arced slot 38 is concentric with the fulcrum pin 36. Slightly ahead of the forward wheel 34 there is another sheave wheel 39 mounted between the side plates 35 and shown by dotted lines in Figs. 2 and 3, for the purpose of preventing the travel cable from engaging and depressing the upper end of the latch levers 26.

The operation of my invention is as follows: When it is desired to remove the material from the pile 15, the drum 10 is turned

to wind up the cable 18 and thus tighten the travel cable 12. The drag line 13 is then allowed to unwind from the drum 11 and the bucket 14 will travel down toward the right, as seen in Fig. 1, and when it has reached the desired position, the cable 18 is allowed to unwind from the drum 10 and the drag line is further slackened and the bucket will descend toward the pile 15, gate end first, and said gate in striking against the pile of material, will be closed and held in place by the ends 25 of the latch lever, hooking over the ends of the latch bar 24. Preferably the travel cable will not be slackened enough that it will rest upon the pile, but just enough that the bottom of the bucket will rest upon the pile and the pin 37 will be moved to the bottom of the slot 38 slightly elevating the forward wheel 34. The drag line 13 is now wound upon the drum 11, dragging the bucket toward the left, as seen in Fig. 1, and when filled, the travel cable is tightened, after which the drag line 13 being wound still further upon the drum 11, will pull the bucket toward the point where it is desired to be dumped and at this point the forward ends 27 of the latch levers engaging the stop or disengaging block 28, will depress said latch levers and cause the rear ends to move out of engagement with the latch bar 24 and the load in the bucket will be discharged by gravity. When excavating material from the bed of a creek or river, the operation is similar to that just described, the bucket gate being closed in this case by striking the bed of the stream and discharged in the same manner as heretofore described.

I claim as my invention:

1. Excavating apparatus including a travel cable, a bucket having an open side, a side hinged to the body of said bucket near the edge adjacent said travel cable, a drag line operatively secured to said bucket, latch levers fulcrumed upon opposite sides of said bucket with one end of each lever adapted to hold said hinged side when closed and with the other ends of said levers extending forwardly over the upper side of the bucket with their ends lying beneath said travel cable and adapted when depressed to cause the release of said hinged side, and a trolley for supporting said bucket having a frame operatively secured to said bucket, and a plurality of wheels mounted on said frame and adapted to run on said travel cable.

2. Excavating apparatus including a travel cable, a bucket having an open side, a side hinged to the body of said bucket along the edge adjacent said cable, a drag line operatively secured to said bucket, latch levers fulcrumed upon opposite sides of said bucket with one end of each lever adapted

to hold said hinged side when closed and with the other ends of said levers extending forwardly over the upper side of the bucket and lying beneath said travel cable and adapted when depressed to cause the release of said hinged sides, a trolley having a frame operatively secured to said bucket, a plurality of wheels mounted thereon adapted to run on said travel cable and means on said frame for operatively holding said cable above the upper ends of said levers and preventing their depression thereby.

3. Excavating apparatus including a travel cable, a bucket having an open side, a side hinged to the body of said bucket along the edge adjacent said cable, a drag line operatively secured to said bucket, latch levers fulcrumed upon opposite sides of said bucket with one end of each lever adapted to hold said hinged side when closed and with the other ends of said levers extending forwardly over the upper side of the bucket and lying beneath said travel cable and adapted when depressed to cause the release of said hinged side, a trolley having a frame operatively secured to said bucket, a plurality of wheels mounted thereon adapted to run on said travel cable, and another wheel located in front of said travel cable wheels and located beneath said cable and above the upper ends of said levers for preventing the actuation of said levers by said cable.

4. The combination with a bucket having an open side and a side hinged to the body of the bucket, and means for securing a drag line, of latch levers fulcrumed upon opposite sides of said bucket and with one end of each lever adapted to hold said hinged side when closed and with the other ends of said levers extending over the upper side of said bucket and adapted when depressed to cause the unlatching of said hinged side, a trolley construction for supporting said bucket, said trolley construction having traveler wheels, a frame supporting the same and pivotally mounted in connection with said bucket, and means for limiting the movement of said trolley construction with relation to said bucket.

5. In excavating apparatus, the combination with a bucket having an open side and a side hinged to the body of the bucket, a travel cable, a drag line, and means for securing the same to said bucket, of latch levers fulcrumed upon opposite sides of said bucket and with one end of each lever adapted to hold said hinged side when closed and with the other ends of said levers extending over the upper side of said bucket and adapted when depressed to cause the unlatching of said hinged side, a trolley construction for supporting said bucket, said trolley construction having traveler wheels, a frame supporting the same and pivotally

mounted in connection with said bucket, a stop for limiting the movement of said trolley construction relative to said bucket, and means for holding said travel cable above the upper end of said latching levers when said travel cable is slackened.

In witness whereof, I have hereunto af-

fixed my signature in the presence of the witnesses herein named.

JOSEPH A. TRUESDELL.

Witnesses:

G. H. BOINK,

E. H. MAYO.