

LE ROY P. CLUTTER.  
 DITCHING OR EXCAVATING MACHINE.  
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1,317,431.

Patented Sept. 30, 1919.

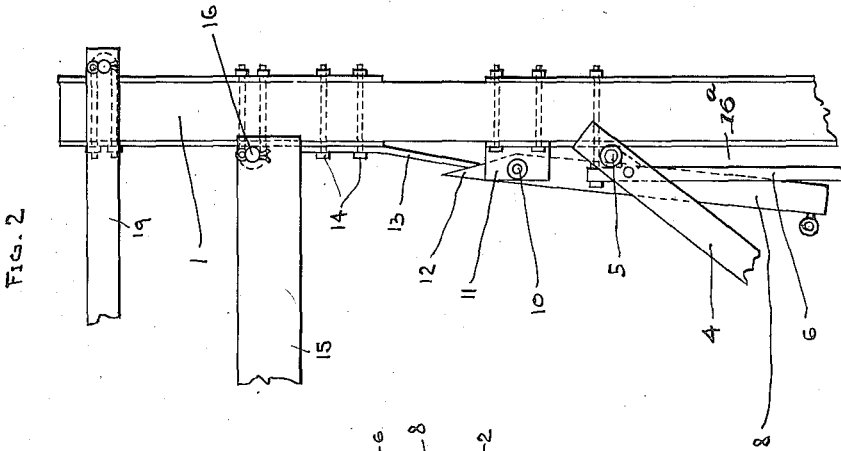


FIG. 2

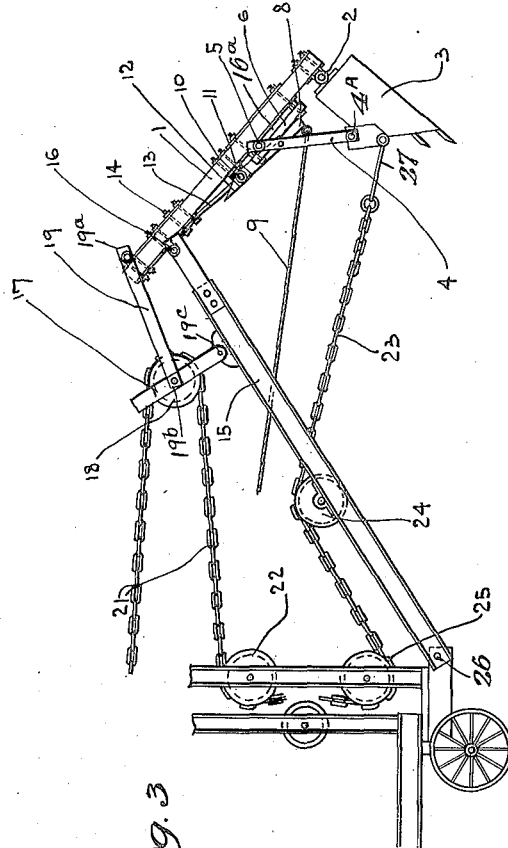


FIG. 1

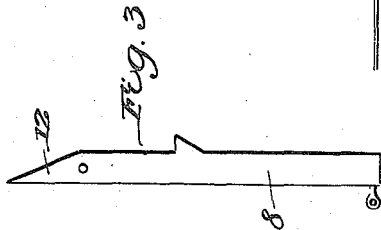


FIG. 3

WITNESSES  
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LE ROY P. CLUTTER, OF BEAVER FALLS, PENNSYLVANIA.

DITCHING OR EXCAVATING MACHINE.

1,317,431.

Specification of Letters Patent. Patented Sept. 30, 1919.

Application filed February 11, 1915. Serial No. 7,539.

*To all whom it may concern:*

Be it known that I, LE ROY P. CLUTTER, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Ditching or Excavating Machines, of which the following is a specification.

This invention relates to excavating machines chiefly used for excavating cellars, trenches and in deepening and widening water courses, and has for its object to provide a simply constructed and operated mechanism for loading, elevating and emptying a scoop and which may be attached to any suitable machine available for the character of the work referred to.

The invention consists mainly in the arrangement of the scoop, the scoop-carrying member, and boom for the two pulling members making it possible for the operator, to extend the scoop beyond the end of the boom, to raise and lower the boom or fill the scoop by manipulating the two pulling members.

With the foregoing and other objects in view the invention consists of the novel construction, combination, and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is an elevation of a ditching or excavating machine showing the adaptation therewith of the elements in accordance with this invention.

Fig. 2 is an enlarged view of the scoop-carrying member with the means for maintaining the latch in position.

Fig. 3 is a detail view of the latch.

Referring to the drawings in detail 1 denotes a scoop-carrying member having pivotally connected therewith as at 2 a scoop 3. The latter is provided with braces 4, connected by a pin 5, which is movably mounted in a slot 16<sup>a</sup>, between guides 6 and the scoop-carrying member 1. Said braces 4 are pivotally connected with scoop 3 as at 4<sup>a</sup>.

Associated with the pin 5 and normally holding it immovable in the upper end of the slot 16<sup>a</sup>, is a latch member 8 having a pulling

member 9 connected to the end thereof. Near the upper end of the latch member 8 it is pivotally connected, as at 10, between supports 11. The said upper end of the latch member 8 is beveled as at 12. Engaging with the beveled end of the latch member 8, is a flat spring 13, which is secured as at 14, to the scoop-carrying member 1.

The function of the spring 13 is to maintain the latch member 8 closed until the same is released by pulling upon the flexible member 9.

The function of the pin 5, when released by latch member 8, is to slide down slot 16<sup>a</sup>, carrying braces 4 and dropping the open end of the scoop 3, dumping its load.

A pulling member 21 is pivotally connected with the scoop-carrying member 1, at 19<sup>a</sup>, by rods 19 and sheave 18. The said sheave 18 is also pivotally connected with the boom 15, at 19<sup>c</sup>, by supports 17. Said supports 17 extend beyond the sheave 18 to form a guide for pulling member 21. Said pulling member 21 may be operated by any suitable means. Said boom 15 is adapted to be pivotally connected with the machine, as at 26. A pulling member 23 is connected with the scoop 3, by a bail 27, and passes between the sides of the boom 15, over sheaves 24 and 25 to any suitable machinery.

The function of the pulling member 21 is to retract the upper end of the scoop-carrying member 1, causing the scoop 3 to reach out, or to lift the boom, or both at the will of the operator and the function of the pulling member 23 is to pull the scoop 3 through the material or to prevent pulling member 21 from extending the scoop 3 farther than is desired by the operator.

It will be observed that by holding pulling member 23 immovable and operating pulling member 21 that the boom 15, the scoop 3 and scoop-carrying member will all be elevated on the axis of the pivot at 26.

In the operation, assuming the device to be in the position shown in Fig. 1, the pulling member 21 is gradually released lowering the boom 15 until the scoop 3 is in contact with the material to be removed, then pulling member 23 is operated to move the scoop through the material in the direction of the sheave 24, pulling member 21 being operated fast enough to lower or raise the boom to gage the depth of the cut. After the scoop 3 has been moved to a position near the sheave 24, and kept there by pulling

member 23, pulling member 21 is then operated and elevates the boom 15, with the scoop 3, on the pivot 26. It is then adjusted laterally over the dump and the scoop is unloaded by operating pulling member 9. After the scoop has again been placed over the cut pulling member 23 is released causing the scoop 3 to reach out for another stroke.

The point of the scoop 3 coming in contact with the material will cause the pin 5, to slide to the top of the slot 16<sup>a</sup>, and engage with the latch member 8.

What I claim is:—

1. An excavating machine including a boom, a scoop carrying member pivotally connected with the boom intermediate the ends of said carrying member with the greater portion of the length of the carrying member depending from the boom, a scoop attached to the scoop carrying member, a pulling member connected with the scoop for shifting it into the material operated upon, and means operatively pivotally attached to and connecting together the upper adjacent portions of said boom and carrying member adapted for simultaneously shifting said boom and scoop carrying member.

2. In an excavating machine a pivoted boom, a scoop-carrying member pivotally connected therewith, a pulling member for elevating and lowering the boom, a scoop carried by the scoop-carrying member and projecting toward said pulling member, and means carried by the boom for connecting the pulling member therewith and with said scoop-carrying member, a pulling member connected with said scoop, a latch carried by the scoop-carrying member for said scoop, and a pulling member for releasing the latch.

3. In an excavating machine, a pivoted boom, a scoop-carrying member pivotally connected therewith, a pulling member for elevating and lowering said boom, a pivoted means carried by the boom and connecting the pulling member therewith, and with said scoop-carrying member.

4. In an excavating machine a pivoted boom, a scoop-carrying member pivotally connected therewith, a pulling member for elevating and lowering said boom, a pivotal means carried by the boom and connecting the pulling member therewith, and said scoop-carrying member, a scoop connected with the scoop-carrying member and projecting toward the boom, and a pulling member connected with said scoop.

5. In an excavating machine a pivoted boom, a scoop-carrying member pivotally connected upon the outer end of said boom, a scoop pivotally connected with the lower end of said scoop-carrying member and projecting toward the inner end of the boom, a

pulling member, and means pivotally supported on the boom for connecting said pulling member with the boom and with said scoop-carrying member, and a pulling member connected with the scoop.

6. In an excavating machine a boom pivotally supported at its rear end, a scoop-carrying member pivotally mounted upon the forward end of the boom, a scoop pivotally connected with the lower end of said scoop-carrying member, a pulling member, and means pivotally mounted upon the boom and connected with the upper end of the scoop-carrying member for connecting said pulling member with the boom and with the scoop-carrying member.

7. In an excavating machine a boom pivotally supported at its rear end, a scoop-carrying member pivotally mounted upon the forward end of the boom, a scoop pivotally connected with the lower end of said scoop-carrying member, a pulling member, and means pivotally mounted upon the boom and connected with the upper end of the scoop-carrying member for connecting said pulling member with the boom and with the scoop-carrying member, and a releasable latch device for the scoop, said device carried by the said scoop-carrying member.

8. An excavator of the class described including a pivoted boom, a scoop carrying member pivotally connected with the boom, a scoop having one end pivotally connected with said carrying member and its other end pivotally slidably connected with the carrying member, a latch member for the scoop, means for operating said latch member for releasing the slidable end of the scoop, a pulling member for operating said scoop, and pulling means pivotally connected with the boom and carrying member adapted for raising said boom and scoop carrying member.

9. An excavator including a boom, a scoop carrying member pivotally connected intermediate the ends of said carrying member with the said boom and with the greater portion of said carrying member depending below the boom, a scoop connected with the carrying member adjacent the lower end of said member, a pulling member attached to the scoop, and a pulling means operatively pivotally attached to and connecting together the said boom and the adjacent end of said carrying member positioned thereabove, adapted for simultaneously operating said boom and carrying member during the elevating of the scoop.

10. An excavating machine having a boom, a scoop-carrying member connected therewith having the greater portion thereof depending below the boom, a scoop carried by the inner side of said carrying member, and an operating pull means for the scoop pivotally connecting said boom and

carrying member together adapted for shifting the scoop toward the base of the boom into the material to load during the operation of the device.

- 5 11. An excavating machine comprising a pivoted boom, a scoop-carrying member pivotally connected therewith, a scoop having one end pivotally connected with said member, means including a latch member for  
10 suspending the other end of the scoop from the carrying member, means for operating

the latch member to cause the forward end of the scoop to lower for discharge, a pulling member for operating the scoop, and means for raising the boom and scoop carrying member. 15

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

LE ROY P. CLUTTER.

Witnesses:

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