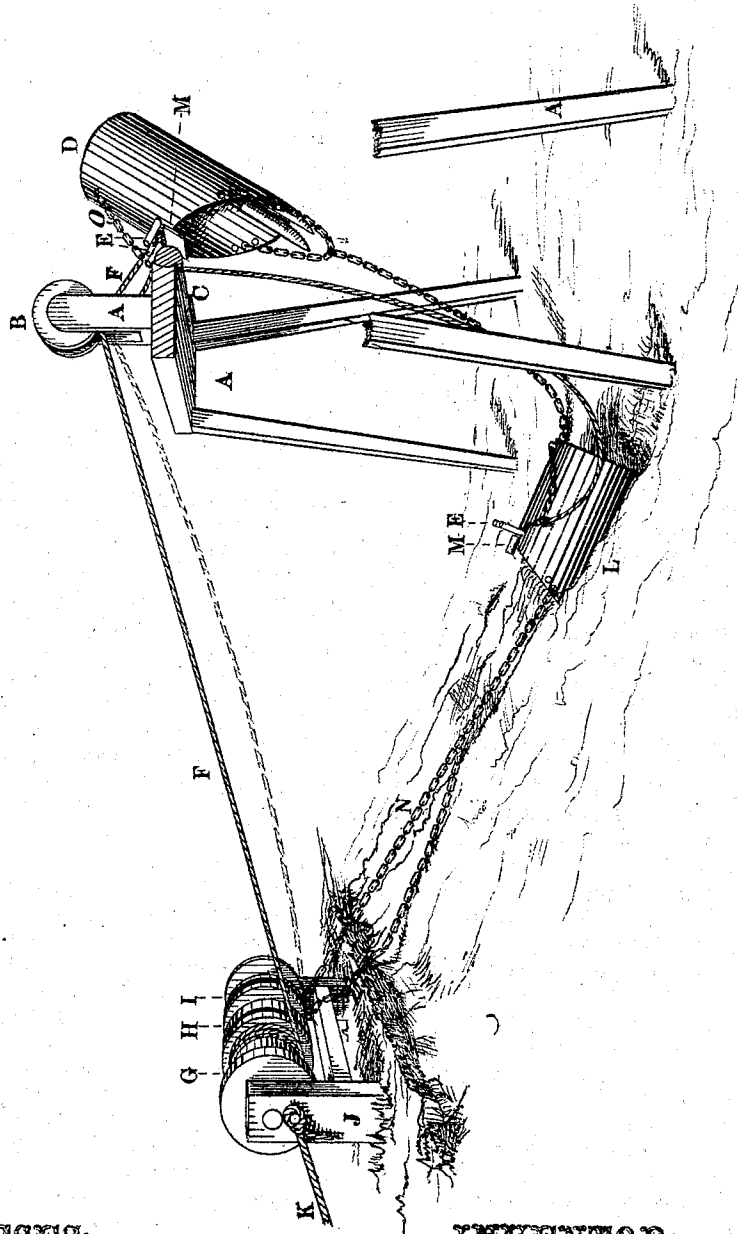


M. D. MARCY.

Excavators.

No. 147,508.

Patented Feb. 17, 1874.



WITNESSES:

C. F. Maym.
H. V. Smith.

INVENTOR:

Merrick D. Marcy.
PER. *W. R. Stevens.*
ATTY.

UNITED STATES PATENT OFFICE.

MERRICK D. MARCY, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN EXCAVATORS.

Specification forming part of Letters Patent No. **147,508**, dated February 17, 1874; application filed December 13, 1873.

To all whom it may concern:

Be it known that I, MERRICK D. MARCY, of the city and county of Worcester and State of Massachusetts, have invented an Excavator, of which the following is a specification:

The object of my invention is to shovel dirt from the bank into carts or cars, by the combination and arrangement of the mechanism shown in the accompanying drawings, and hereinafter described.

It has not been deemed necessary to show the devices by which the winding-drums are driven, since any known mode of applying steam or other power may be employed.

One shovel or scoop only is used in my machine, but it is twice shown in the drawing. At L it is in the act of filling, at D in the position for discharging its load.

The stand A is planted or anchored in a convenient spot near the bank to be excavated, so as to allow the cart or car to back under it, and serves as a supporting-bearing to the sheave-pulley B and the reversing-roll C. Over the sheave B and roll C runs a rope, F, which is fastened at one end to the chain-bail O on the side of the scoop, and at the other end to a drum, G, on which it is wound. In the side edges of the front of the scoop are formed a series of holes, into which another bail-chain is hooked, and to the center of this bail is attached one end of the drag-chain N, the other end being wound upon drum I. Drums G and I revolve freely upon a shaft which is supported in the frame J, said frame being anchored to the bank by the rope K or other suitable attachment. Between the drums G and I is a clutch, H, upon the same shaft, and caused to revolve therewith by means of a spline. The clutch H has a longitudinal motion upon the shaft, by which studs in the ends of the clutch are thrown into and out of holes in the ends of the drums G and I. Thus the drums are caused to revolve alternately at the will of the operator by his sliding the clutch to engage one or the other. The shipper for working this clutch is not shown, it being a simple and common device. When the clutch engages with either drum, the other revolves freely upon the shaft.

In operation, the clutch H engages with the drum I, thus winding up the chain N, by

which the scoop is drawn into the bank and scoops up a load, while the rope F falls slack behind. Then the clutch releases the drum I and engages with the drum G, and the drum-shaft, always revolving in the same direction, now winds up the rope F, drawing the loaded scoop backward and upward to the stand A, where it is temporarily held by means of suitable brakes controlled by the operator, and working against the winding-drums, while the cart or car is brought under it, when the drum G is started again, causing the plate M upon the scoop to strike against the roll C, thus dumping the load, as shown at D. E E are two guide-pins, firmly secured upon the top of the scoop, for the purpose of turning it into a square position with the stand A by the striking of the guide-pins against the roll C as the scoop is rising. When the scoop has been emptied, the load is hauled away, the clutch is released from the drum G, and the scoop drops to the ground ready for a repetition of the aforesaid work.

The stands A and J may be moved at will to suit the work, and it is evident that the winding-drums may be located at any point convenient to the steam-engine or other motor, their present position relative to the work being occupied by guide sheaves or pulleys, around which the chain and rope may be carried.

The brakes by which the winding-drums are controlled have not been shown in the drawings, as any of the various kinds in use may be applied.

Having thus described my invention, I claim, and desire to secure by Letters Patent—

1. The stand A, supporting the sheave B and roll C, in combination with the scoop and chains or ropes F N and winding-drums G I, all constructed and operating as and for the purpose set forth.

2. The scoop provided with plate M, bail-chain O, and guide-pins E, in combination with the rope F and roll C, substantially as shown and described.

MERRICK D. MARCY.

Witnesses:

C. F. MANN,
H. V. SMITH.