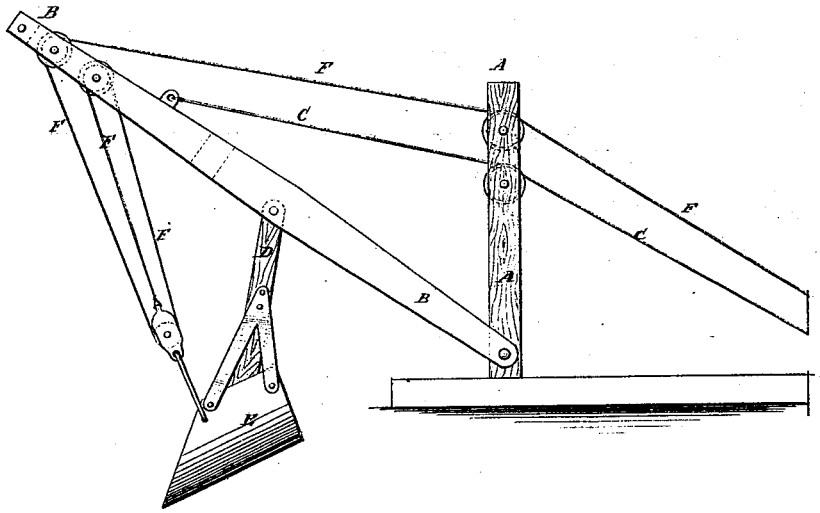
Sage & Alger,

Excavator.

No. 109,764. Patented Nov 29 1870.



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United States Patent Office.

CLINTON H. SAGE AND SAMUEL B. ALGER, OF NORWICH, NEW YORK.

Letters Patent No. 109,764, dated November 29, 1870.

IMPROVEMENT IN EXCAVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, CLINTON H. SAGE and SAMUEL B. ALGER, of Norwich, in the county of Chenango and State of New York, have invented a new and useful Improvement in Excavators; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

The figure is a side view of our improved excavator.

Our invention has for its object to furnish an improved excavator for making excavations for railroads and other purposes, and for dredging in shallow or deep water, and which shall be so constructed as to work at a distance from the frame of the machine and move the material to a distance when required, and which shall, at the same time, be simple in construction and easily and conveniently operated; and

It consists in the construction and combination of the various parts of the machine, as hereinafter more fully described.

A is the mast, the lower end of which should be secured to a turn-table in the usual manner, said turn-table being connected with a foundation-frame which may be mounted upon wheels and which supports the machinery for operating the excavator.

To the mast A, near its lower end, is hinged or jointed the end of the boom B, which may be made solid in one piece or of two or more pieces, as may be desired.

The outer end of the boom B is supported by a rope or chain, C, one end of which is attached to the boom B, or to a pulley-block attached to said boom.

The rope or chain C passes around a pulley or pulleys attached to the mast A, and its other end is connected with a windlass or other machinery for operating it.

D is the dipper-handle, the upper end of which is hinged or jointed to the boom B, and to its lower end is rigidly and securely attached the dipper or scoop E.

The dipper E is provided with a bail, to which is attached a pulley-block.

F is the rope or chain by which the dipper is operated.

The end of the rope or chain F is attached to the bail of the dipper or to a pulley-block attached to said bail, passes around a pulley or pulleys attached to the boom B, and over a pulley attached to the mast A, and extends to the machinery by which the excavator is operated.

The excavator may be operated by a steam-engine placed upon the foundation frame of the machine or in some other convenient position.

The length of the mast A, boom B, and dipper-handle D must depend upon the work to be done, and the length of either or all of them may be varied as required.

In moving the material to a long distance or in excavating in deep water, a long boom and a proportionately long dipper-handle are required.

By this construction of the excavator the work can be done at a greater distance from the body of the machine than with other excavators, thus avoiding the necessity of frequently moving the machine.

The boom and dipper being both operated by ropes or chains, and entirely independent of each other, enable the machine to work to grade with greater certainty, and when a small quantity is to be excavated, by gradually lowering the boom while the dipper is at work at grade, more material can be taken out without going below grade than is possible with other excavators.

With this construction, when the material is hard, the face of the dipper will be held firmly against it, enabling the machine to work effectually in soil so hard that other excavators will not act upon it.

Having thus described our invention,

We claim as new and desire to secure by Letters Patent—

In an excavating-machine having a boom arranged to swing vertically and horizontally, as described, a dipper, the arm of which is pivoted to the boom, and operated by a rope or chain which passes over the outer end of the boom and the post, the said dipper being pivoted at a point intermediate between the ends of boom, the whole constructed and operating as set forth.

SAMUEL B. ALGER.
CLINTON H. SAGE.

Witnesses:
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