

# Ed. J. Hulbert & N. Aubin's Beat Elevator.

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Fig. 1.

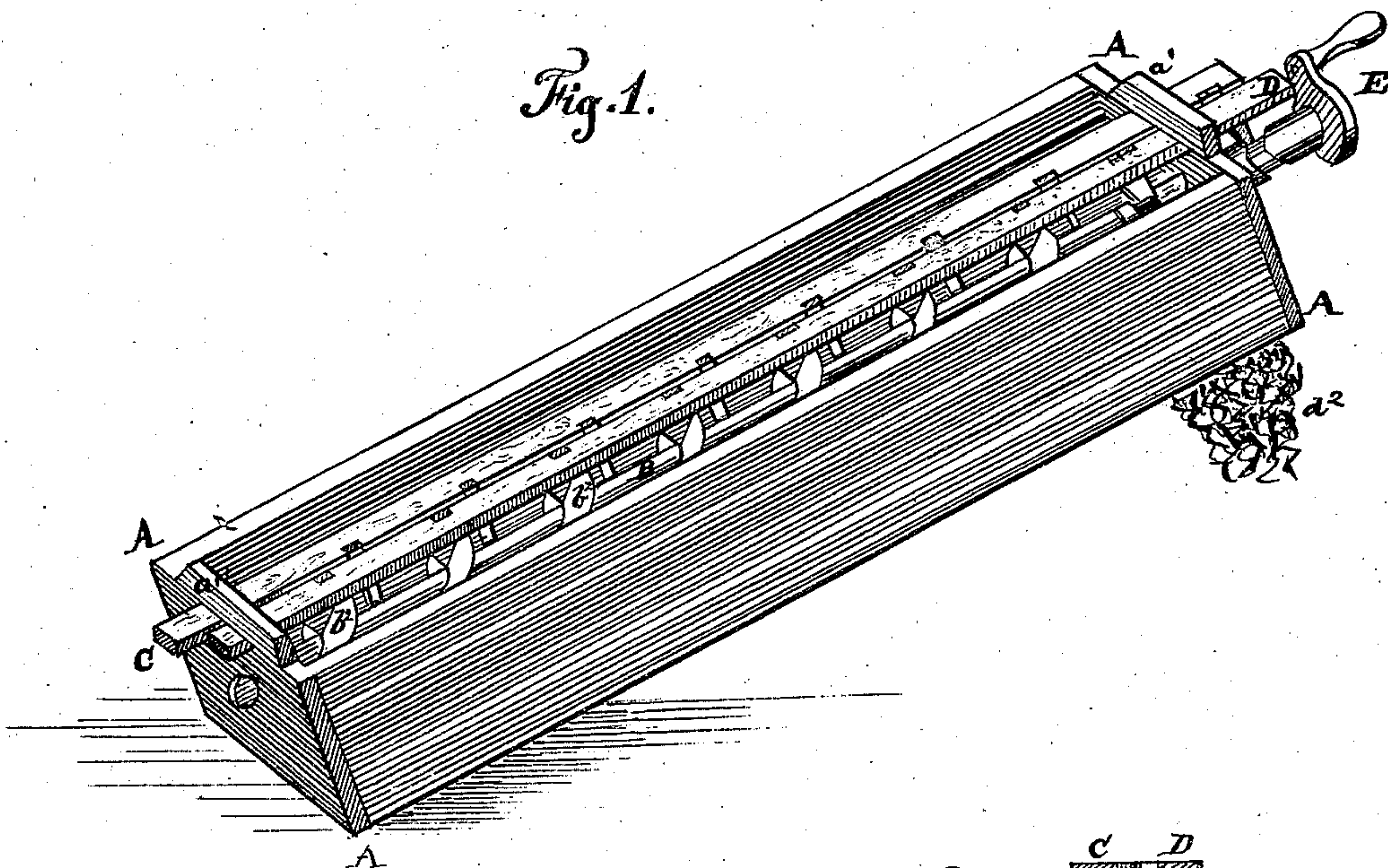


Fig. 2.

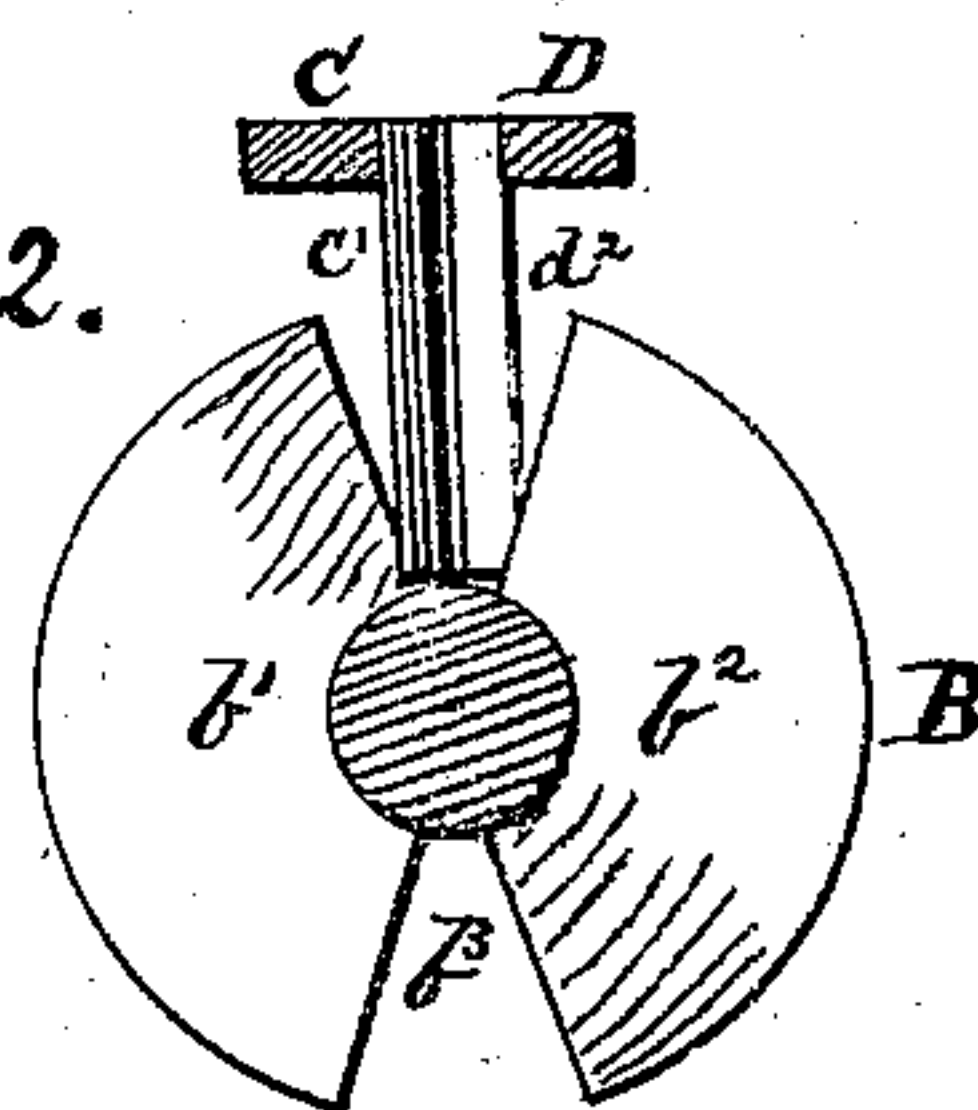
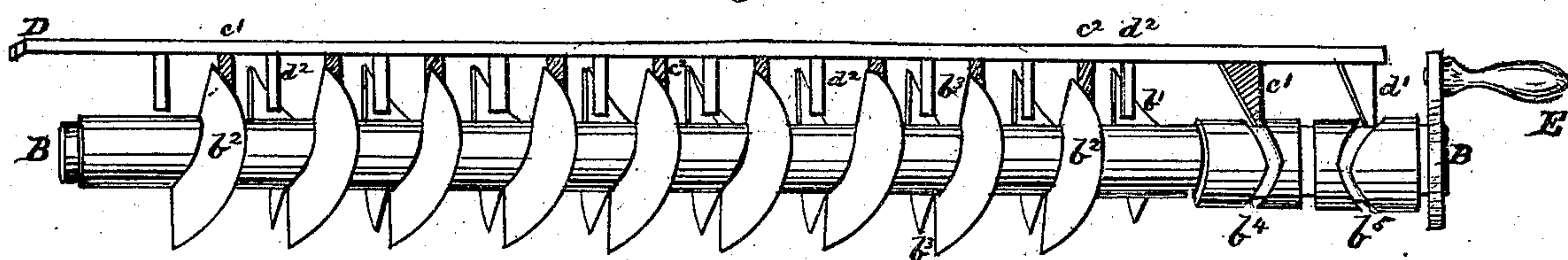


Fig. 3.



*Witnesses.*  
 Geo. S. Willard  
 Frances C. Hulbert

Inventors,  
 Edwin James Hulbert  
 N. Aubin



# UNITED STATES PATENT OFFICE.

EDWIN JAMES HULBERT AND AIMÉ NICHOLAS NAPOLEON AUBIN, OF PORTLAND, CONNECTICUT, ASSIGNORS TO THE AUBIN PEAT-FUEL AND MACHINE COMPANY OF CONNECTICUT, ASSIGNOR TO AMERICAN PEAT-FUEL COMPANY OF NEW YORK.

## IMPROVEMENT IN PEAT-ELEVATORS.

Specification forming part of Letters Patent No. 117,634, dated August 1, 1871.

*To all whom it may concern:*

Be it known that we, EDWIN JAMES HULBERT and AIMÉ NICHOLAS NAPOLEON AUBIN, both of Portland, in the county of Middlesex, in the State of Connecticut, have invented an Improved Crude-Peat Elevator, of which the following is a specification:

The nature of our invention consists in combining a revolving screw with two combs having a rectilineal reciprocating motion for the purpose of preventing the adhesion of the crude peat to the blades composing the screw, and therefore to secure its propulsion and consequent elevation.

Figure 1 is a perspective view of the elevator. Fig. 2 is an end view of the screw and combs. Fig. 3 is a side view of the working parts of the elevator.

A A A A, an oblong box, in which the screw is placed, and upon the upper edges of which the combs are supported and slide up and down, being kept in position by the cross-bars  $a^1 a^1$ . At the upper end of the bottom of the box an opening is left, through which the elevated peat falls into the grinding apparatus, as seen at  $a^2$ . The box is held in an inclined position at an angle varying with the height to which the material has to be delivered. B B is the screw. It is composed of a shaft, upon which is fixed a number of pairs of blades,  $b^1 b^2$ , placed spirally, so that each pair forms a nearly complete turn of the screw. Between each of the blades are left two spaces,  $b^3$ , for the passage of the teeth of the comb in their forward and backward motion. These spaces must, therefore, occur in a straight line and upon two opposite sides of the shaft. At the upper end of the shaft two cam-grooves,  $b^4 b^5$ , are cut in a diagonal position to the plane of the axis of revolution. These cam-grooves are slanting in two contrary directions, so that on one side of the shaft they come nearer to each other, and on the opposite side their distance is greatest. These grooves, by their rotation, cause the two combs to move forward and backward,

each in an opposite direction to the other, by means of the two driving-teeth  $c^1$  and  $d^1$ , which are compelled to follow their curves. C D are what we call the combs. They consist in two bars,  $c d$ , to which are attached the cleaning-teeth  $c^2 c^2 c^2 c^2 d^2 d^2 d^2 d^2$  and the driving-teeth  $c^1 d^1$ . There are as many cleaning-teeth as there are blades on the screw, and each comb cleans the blades on one side of the shaft. In Fig. 3 one set of teeth forming one comb is shaded, so as to distinguish it from the other. E, crank to rotate the screw. It can be replaced by a drum, by a toothed wheel, or by a universal joint, so as to permit any required change in the inclination of the elevator.

Peat in its crude state, when just drawn from the bog, is more or less adhesive, and the use of a screw to move it forward and elevate it would be unavailable, as the material collecting around the blades would revolve with them and soon transform the screw into a cylinder. The combs, traveling backward and forward in the direction of the length of the shaft, are so arranged that each set of teeth moves forward at the same velocity as would be due to the pitch of the blades, and follow their upward surface, while one set of blades is passing under the comb. Each set again travels backward during the time occupied by the blades in completing the other half of their revolution. This double alternate movement is caused by the inclination of the cam-grooves, the distance separating their two respective extreme ends being equal to one-half the pitch of the screw. As the forward end of each blade comes under the comb it passes between two teeth coming nearly together at that moment. It will be easily seen that peat thrown into the lower end of the box is pushed forward by the screw-blades, and, as the comb-teeth prevent the adhesion of the material to the screw, it is regularly pushed from one blade to the other until it reaches the aperture, through which it falls.

This arrangement permits the easy cleaning of

the blades, on the ends of which small roots accumulate. By occasionally reversing the screw these roots are detached by the teeth and thrown into the moving mass of material.

What we claim as our invention is—

The instrument for elevating crude peat herein described, consisting of a series of propelling screw-blades,  $b^1$   $b^2$ , in combination with the re-

ciprocating combs C D, the whole constructed and operating substantially as described.

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N. AUBIN.

Witnesses:

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