D TOWNSEND.

Peat-Compressing Machine.

No. 198,256. Patented Dec. 18, 1877.

Fig. 1.

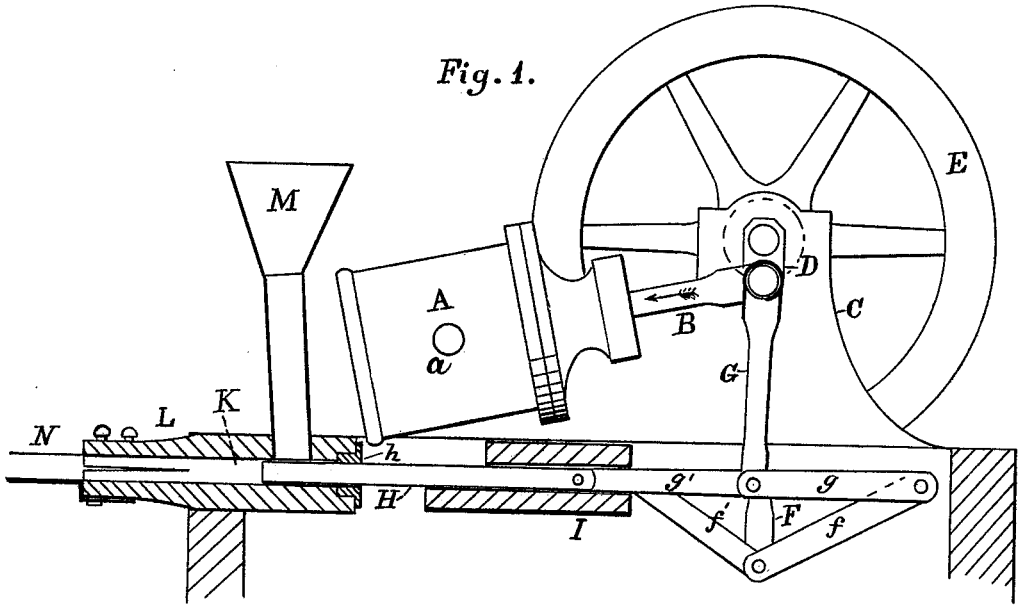
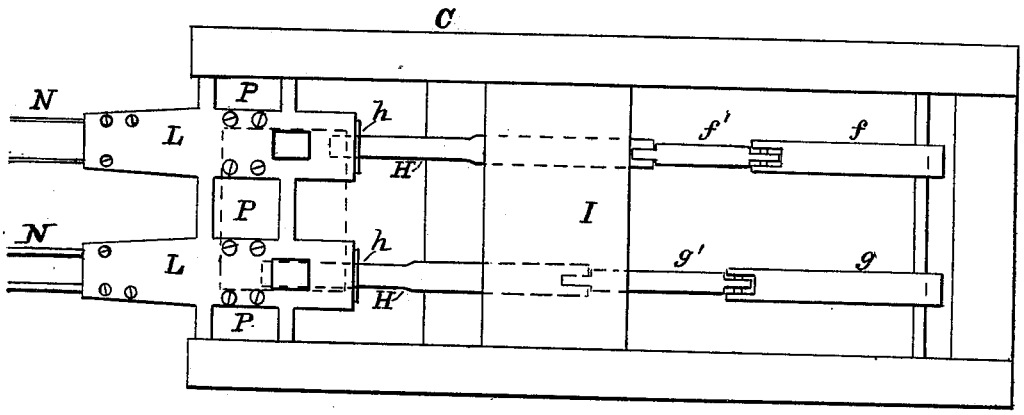


Fig. 2.



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UNITED STATES PATENT OFFICE.

DAVID TOWNSEND, OF CLINTON CITY, IOWA.

IMPROVEMENT IN PEAT-COMPRESSING MACHINES.

Specification forming part of Letters Patent No. **198,256**, dated December 18, 1877; application filed November 12, 1877.

To all whom it may concern:

Be it known that I, DAVID TOWNSEND, of Clinton City, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Machines for Compressing Peat; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to machines for compressing peat; and consists in certain improvements on a certain invention for which Letters Patent of the United States, No. 157,466, were issued to me on the 8th day of December, 1874.

The object of this invention is to so construct and arrange the operating parts of the mechanism as to greatly increase the power and capacity of the machine, and, by continued pressure of the peat after it passes from the machine, to produce a finished article of fuel ready for use.

In the drawings referred to as forming a part of this specification, Figure 1 is a side elevation, partly in section, of my improved machine. Fig. 2 is a plan, showing the relative position of toggle-levers and connecting parts.

A designates a steam-cylinder, and B the piston-rod, the cylinder being provided with trunnions *a*, which have bearings in the frame C, so as to allow the cylinder a swinging or oscillating motion. The piston-rod B connects with the crank D, the shaft of which also has bearings in the frame C, and has the fly-wheels E secured thereto, as shown.

With the crank D is connected a long pitman, F, which also connects with a set of toggle-levers *f*, and *f'*, at the joint of the levers. A short pitman, G, connects another set of toggle-levers *g* and *g'* with the crank D, and the horizontal plungers H connect with the levers *f'* and *g'*, as shown in Fig. 2, the plungers being directed by the guide I, and entering the vacuum-chamber K in the dies L.

It will be observed that as the crank D is revolved, the plungers H, connecting with the crank by means of pitmen and toggle-levers, are driven forward and drawn back alternately. When the crank D is turned upward, the levers *f* and *f'* are on a straight line, and the plunger with which they connect is extended, while the short pitman G causes the levers *g* and *g'* to form an angle upward, withdrawing the plunger to which these levers are connected, and when the crank D is turned downward, the levers *f* and *f'* are caused to form an angle downward, withdrawing the plunger connecting with those levers, while the levers *g* and *g'* are brought to a straight line, extending the plunger with which they are connected.

The direction of the movement of the machine is toward the plungers, as indicated by the arrow, to reduce the friction and increase the power.

M is the hopper communicating with the vacuum chamber in the dies, which are provided with suitable packing *h* for the plungers. N N are conductors, attached to the ends of the dies, for conveying the compressed peat to the storage-room.

These conductors serve the double purpose of conveying the peat away from the machine, and also of keeping the peat under a continuous pressure a sufficient time to allow it to become set, and thus perfecting the peat for use.

The dies being formed of two pieces and joined in the center, the outer ends of the parts are cut away slightly along the joints, to allow them to yield sufficiently under the pressure of set-screws, clamps, or other equivalent devices, to adjust the size of the dies to suit the hygrometric condition of the peat.

P represents water-compartments, supplied with cold water, running through them, surrounding the dies, for keeping them cool while the machine is in operation.

In operation, the peat, being put into the hopper, passes down into the chamber K, and is pressed into the dies and conductors by the plungers. As each plunger is withdrawn, a vacuum is formed in the chamber, which causes the peat to descend rapidly from the hopper above, and the plunger, returning, presses it forward. Meantime a column of pressed peat is being formed, extending from

the machine into the conductors, and the mass is thus subjected to a continuous pressure, and conveyed away from the machine.

Having described my invention, I claim—

1. The combination of a short and a long pitman, operated by the same crank, and connected to toggle-levers, substantially as and for the purpose described.

2. The dies L, provided with vacuum-chambers K and packing *h*, in combination with the hopper M and plungers H, substantially as set forth.

3. The dies L, adjustable by means of set-screws, substantially as and for the purpose specified.

4. The dies L, provided with water-compartments P, substantially as set forth.

5. The combination of long pitman F and short pitman G, crank D, the toggle-levers *f f'* and *g g'*, plungers H, and dies L, as and for the purposes described.

6. The conductors N, attached to the ends of the dies, substantially as and for the purposes described.

In testimony that I claim the foregoing as my own invention I hereunto affix my signature in presence of two witnesses.

DAVID TOWNSEND.

Witnesses:
FRANK P. LEFFINGWELL,
WILLIAM W. SANBORN.