

L. W. BOYNTON.
Peat-Machines.

No. 146,746.

Patented Jan. 27, 1874.

Fig. 1.

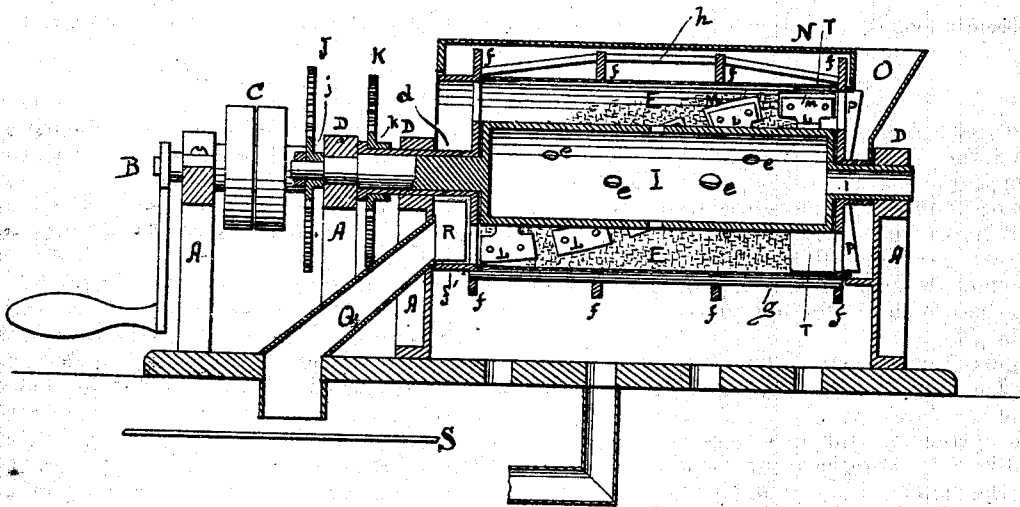
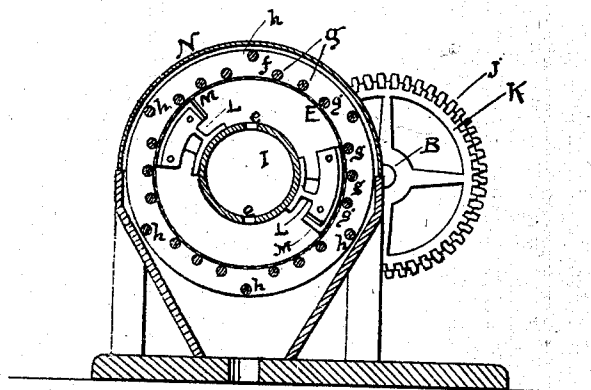


Fig. 2.



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IMPROVEMENT IN PEAT-MACHINES.

Specification forming part of Letters Patent No. **146,746**, dated January 27, 1874; application filed July 2, 1873.

To all whom it may concern:

Be it known that I, LEANDER W. BOYNTON, of Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Drying Peat; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of my machine. Fig. 2 is a vertical cross-section of the same.

The principal difficulty heretofore experienced in converting peat into a useful fuel has been the impossibility of drying it with sufficient rapidity by the usual methods.

The desideratum is a method of artificially removing a large percentage of the water contained in the native peat with rapidity, so that it may be quickly reduced to a condition suitable for pressing. This may be accomplished by centrifugal force; and my invention, therefore, consists principally in a centrifugal machine adapted to operate upon wet peat; secondly, it further consists in the admission and employment of hot air in connection with said machine; thirdly, in providing the feed screw or wings with elastic wipers upon their outer edges; fourthly, in the manner of constructing the frame of the centrifugal basket; fifthly, in the arrangement of receiving and discharging devices, &c.

That others may fully understand my invention, I will particularly describe it.

A is the frame which supports the operative mechanism of my machine. B is the driving-shaft of the same, receiving motion by a belt upon the pulley C, or by any other proper and convenient means. The frame A has bearings D D for the shaft *d* of the centrifugal cylinder E. The cylinder E is constructed of a framework consisting of rings *f f*, connected by longitudinal bars *g g*, firmly secured to said rings; and for the purpose of further strengthening said frame, I place the truss-rods *h* across or near the backs of said rings, and secure their ends to the terminal rings by means of screw-nuts. The bars *g* are laid in notches cut in inner edges of the rings *f*, and are so adjusted therein that the surface of each of said bars is flush with the surface of the inner edge of

said ring, and said bars are permanently secured in place by means of solder. The rods *g* are placed within about one inch of each other, and a lining of small-meshed wire-cloth is laid upon the inner surface of said rings and bars, and firmly soldered thereto. This cylinder is connected at its ends to its shaft by radial arms. Through the center of the cylinder E is another cylinder, I, mounted upon the same bearings, but having an independent motion, slightly exceeding in rapidity the motion of the cylinder E. These motions are produced by the wheels and pinions *J j K k*. The wheels *J K* may be equal, and are both driven by the main driving-shaft B. The pinions *j k* are unequal in the number of their teeth, and are mounted, respectively, upon the bearings of cylinders E and I. Upon the outer surface of the cylinder I the standards L are mounted in lines passing spirally around said cylinder. These standards extend outward from the cylinder I, nearly to the inner surface of cylinder E, and they are faced with some flexible material, such as leather, as shown at M, and this facing extends to and wipes the inner surface of the cylinder E. The cylinder E is inclosed in a stationary casing, N, and the peat is fed through the hopper O, and descends to the induction end of the said cylinder, where it is caught and swept inwardly by small oblique wings P, attached to the radial arms at that end. The peat as it enters the cylinder E immediately partakes of its rapid rotary motion, and a large percentage of the water with which it is saturated is quickly expelled by centrifugal force through the interstices of the wire covering of cylinder E. The cylinder I moves at a speed slightly greater than the speed of the cylinder E, and the spiral wipers M, therefore, travel over the inner surface of said cylinder E, and gradually feed the peat toward the discharge end, and so expel it into the chamber formed by the annular flange *f'*; whence it is discharged into the chute Q by means of the stationary scraper R. The chute Q delivers the peat upon an endless apron, S, whereby it is conveyed to the pressing-machine.

The axis of I is hollow, and I is provided with lateral perforations *e*, so that hot air may be introduced to assist in heating and drying the peat. The expelled water passes down to the

bottom of the case N; from whence it is conducted, by a suitable spout or trough, to a tank or tanks, for the purpose of settling, so that the small portion of the peat which may escape through the wire lining of cylinder E may be saved.

It will be readily understood that the centrifugal pressure upon the frame of the cylinder E and its wire lining will be very considerable; and in machines of large size it is contemplated that it may be necessary to re-enforce said wire by a coarser netting of wire, placed under and secured to the frame in the same manner and at the same points with the inner wire. It is necessary to protect the wire at the point of first impact of the entering peat, before the same has acquired its full rotation; and a lining, T, of sheet metal is, therefore, placed within the induction end of the cylinder E, and extends about six inches within said cylinder.

Having now described my invention, what I claim as new is—

1. The centrifugal cylinder E, mounted upon a horizontal shaft, and combined with differential spiral wipers, to constitute a continuous horizontal centrifugal peat-drier, substantially as set forth.

2. The frame of the centrifugal cylinder, constructed with rings *f*, bars *g*, truss-rods *h*, and a wire lining soldered to the rings and rods, as set forth.

3. The spiral standards L, provided with flexible facings M, to form wipers to cleanse the inner surface of cylinder E, and feed the peat through the said cylinder, as set forth.

4. In combination with the cylinder E and hopper O, the oblique radial wings P, for the purpose described.

5. In combination with the cylinder E and annular flange *f'*, the chute Q and stationary scrapers R, as set forth.

6. In combination with the centrifugal cylinder E, the hollow shaft *d* and perforated cylinder I, for the purpose of introducing hot air to the interior of said cylinder.

7. In combination with the cylinder E and its woven-wire lining, the lining-sheet T, as and for the purpose set forth.

In testimony that I claim the above as my invention, witness my hand.

LEANDER W. BOYNTON.

Witnesses:

JOHN W. BOYNTON,
GEORGE KNOWLES.