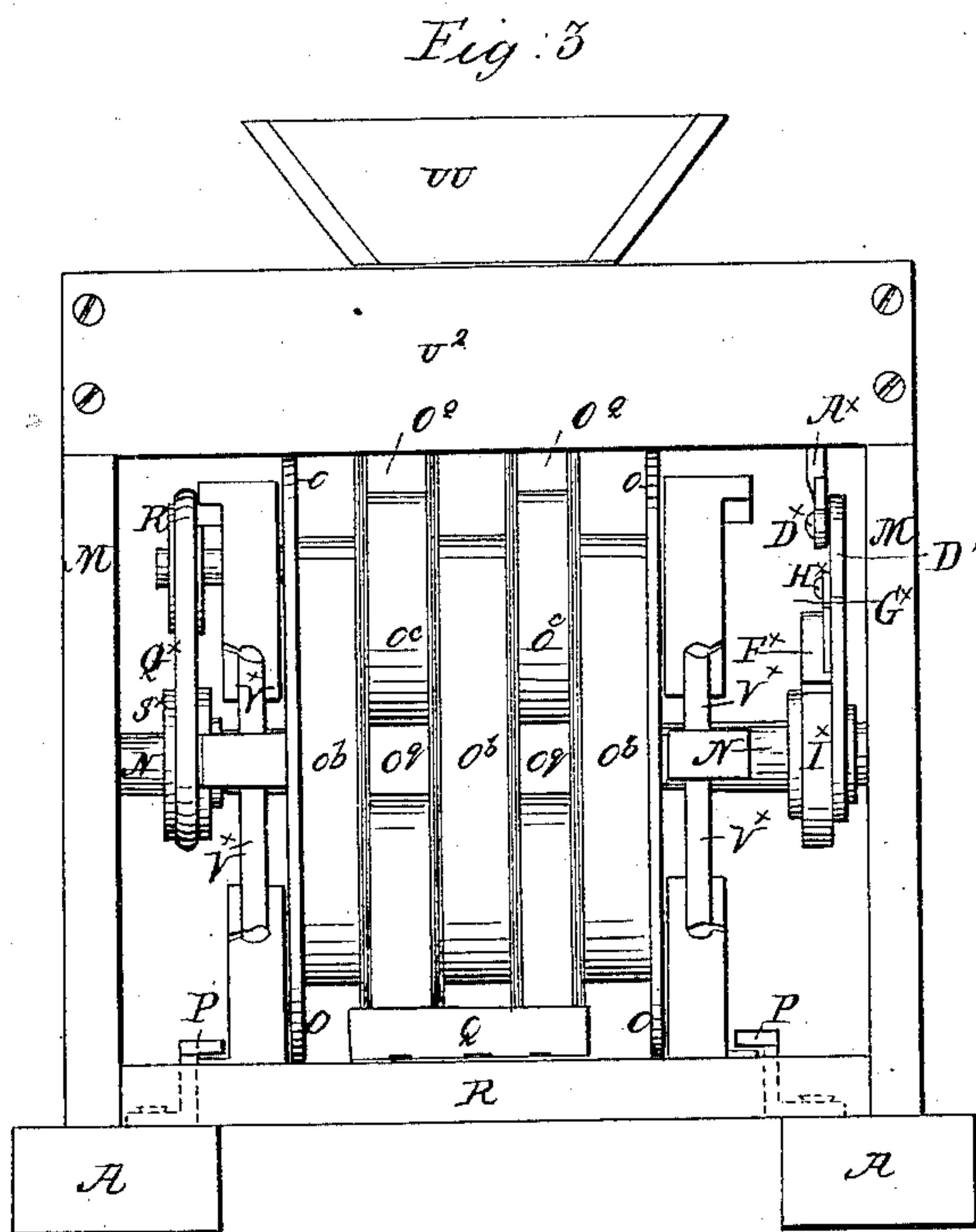
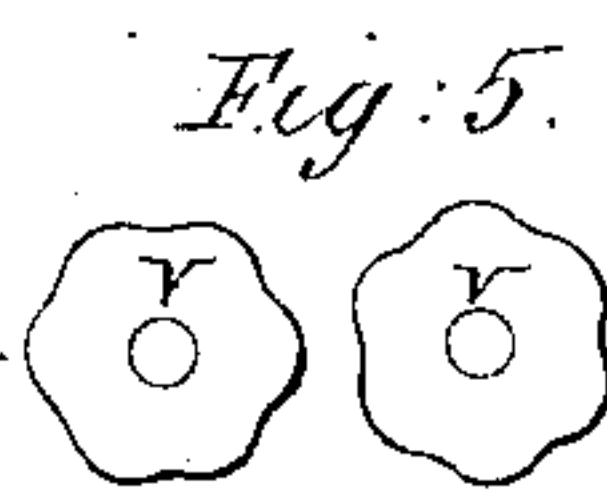
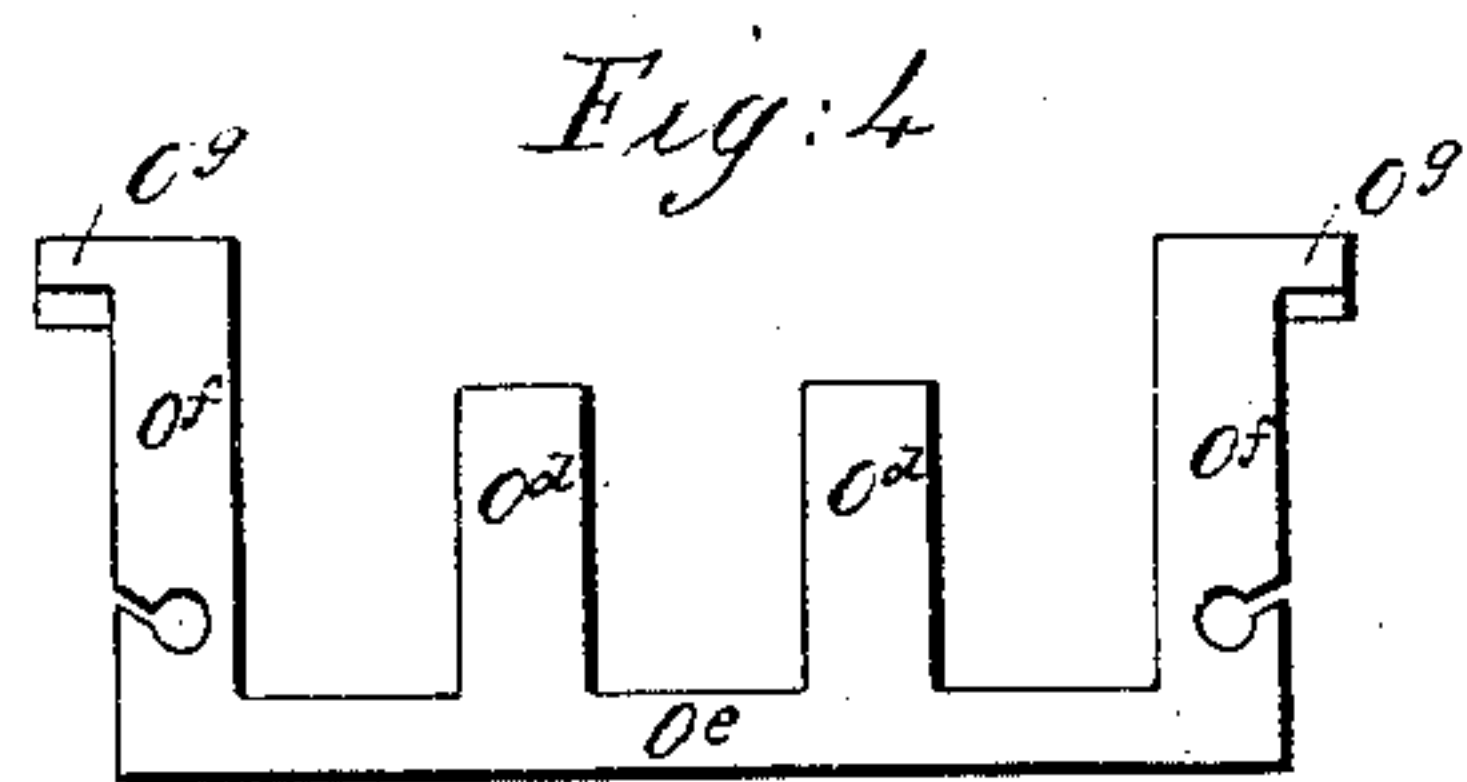




L. P. JENKS.  
Peat Machine.

No. 62,752.

Patented March 12, 1867.



Thos B. Dill  
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Inventor.  
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# United States Patent Office.

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A. GALBRAITH, OF THE SAME PLACE.

*Letters Patent No. 62,752, dated March 12, 1867.*

## IMPROVED PEAT MACHINE.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, LEMUEL P. JENKS, of Boston, Suffolk county, State of Massachusetts, have invented a new and improved Machine for Compressing Peat; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which, taken together, form my specification.

The object of the machine is to take undried peat as it comes from the meadow, and placing it in the machine to compress it, thus depriving it of its moisture, and diminishing its bulk, and fitting it for transportation and for the manufacture of charcoal or for burning at once. And in the drawings annexed—

Figure 1, Plate I, is a view of the machine from the side, (the three supports on that side being marked in dashed lines.)

Figure 2, Plate I, is a view from above.

Figure 3, Plate II, is an end view.

Figures 4 and 5, Plate II, are views of portions of the machinery, hereinafter more particularly explained.

In the drawings, A A, figs. 1, 2, and 3, is a platform on which the machine stands; B, fig. 1, and B B, fig. 2, are two slab-shaped supports rising from the platform; C, fig. 2, is also a support of the same shape and similarly fastened to the platform. The supports A and C, fig. 2, hold in appropriate bearings a shaft, D D, fig. 2, which bears a cog-wheel, E, figs. 1 and 2, through which motion is communicated to the machine by E E, (figs. 1 and 2,) a crank with its handle fitted on the end of the shaft D. The cog-wheel E gears into another cog-wheel, F F, fig. 2, below it, which latter is supported on a shaft, G, figs. 1 and 2, (called the cam-shaft,) borne by the two supports B B, fig. 2. The shaft G bears a band-wheel, I, fig. 2, which carries a band or rope, J, figs. 1 and 2. This band proceeds to another band-wheel, S, fig. 2, supported by a horizontal shaft, T, figs. 1 and 2, which shaft is supported by a square box with a flaring open top, U U, figs. 1, 2, and 3. This box is called the hopper-box, and is held up by a bar, U<sup>2</sup>, figs. 1 and 3, and U<sup>2</sup> U<sup>2</sup>, fig. 2, attached to the two supports M M, hereinafter mentioned, and receives the unpressed and wet peat. V V, fig. 2, are two fluted rollers (seen in section at fig. 5,) which cross the bottom of the hopper-box U U. One of the rollers is placed on the shaft T which carries at the hither end a cog-wheel, W, fig. 1, gearing into another cog-wheel, X, fig. 1. This latter cog-wheel is carried by the shaft Y, fig. 1, which supports the other fluted roller. The rollers rotating crush the unpressed peat and drop it into the "pockets" (hereinafter mentioned) below. The hopper-box has a bottom to it in the centre. The rest of the bottom on each side of the centre over the "pockets" is removed, the only bottom to the hopper-box there being formed by the "drum," hereinafter described. At the same end of the machine M M, figs. 2 and 3, (one is seen in dashed lines in fig. 1,) are two slab-shaped supports rising from the platform A A. These supports hold a shaft N, fig. 1, and N N, figs. 2 and 3, called the drum-shaft, which bears a drum, O O, fig. 1, and O O O O, fig. 3. This drum (called the "pocket drum") is supposed to be made all of metal, and is thus described: It is composed of five cylinders placed side by side, with a circular disk at each end of the drum. The two outside and the middle cylinders O<sup>b</sup> O<sup>b</sup> O<sup>b</sup>, figs. 2 and 3, are about two-thirds the diameter of the two end disks. The other two cylinders O<sup>c</sup> O<sup>c</sup>, figs. 2 and 3, (each one being the second one from the disk nearest to it at each end,) are of diameter equal to that of the end disks. These two cylinders O<sup>c</sup> O<sup>c</sup> have in them each six apertures, (square in section,) which proceed radially from the centre of the drum to its periphery. In these twelve apertures, (four of them are seen in fig. 3, marked O<sup>d</sup> O<sup>d</sup> O<sup>d</sup> O<sup>d</sup>,) called the "pockets," the peat is compressed and moulded into cakes. The sides of these "pockets" are formed by two plates of perforated metal, with a thickness (one or more) of hair or other cloth between them, as seen at fig. 3. The tops of these pockets at the periphery of the drum are open. The bottoms of them are formed by (for each one) a bolt of the same shape as the pocket, (round each of which bolts I sometimes put a washer, the same as with the plungers hereinafter mentioned,) which bolt comes up to a little more than two-thirds the distance from the centre of the drum to the periphery of that portion of it in which the pockets are located. These bolts, called the "pocket-bolts," (see two of them at fig. 4, marked O<sup>d</sup> O<sup>d</sup>,) are fastened at their bases (two each) to a square shaft, O<sup>e</sup>, fig. 4, called the bolt-shafts. There are six of these bolt-shafts, and they rest on the drum-shaft N, figs. 1, 2, and 3, and bear at each end, outside (and at either side) of the drum, a shaft, O<sup>f</sup> O<sup>f</sup> O<sup>f</sup> O<sup>f</sup> O<sup>f</sup> O<sup>f</sup>, fig. 1,



and  $O^f O^f$ , fig. 4, (there are six of these at each end and they are called the "discharging-shafts,") of similar shape to the pocket-bolts, and proceeding, like them, nearly to the periphery of the drum. These discharging-shafts bear at their periphery ends a short horizontal projection or ear, (called the "shaft ears,")  $O^s O^s$ , fig. 4, and  $O^s O^s O^s O^s O^s O^s$ , fig. 1. The object of this arrangement of pocket-bolts, bolt-shafts, discharging-shafts, and shaft ears, is that when the peat has been pressed into shape in the pockets, then by means of the drawing of the discharging-shafts outward, (in the direction of the radius of the drum,) the tops of the bolt-shafts, (which form the bottoms of the pockets) are brought to a level with the outer surface of the drum, thus presenting the cakes of peat, as it were, upon the surface of the drum. The drawing out of the pocket-bolts is effected by means of two curved inclined planes,  $P$ , fig. 1, and  $P P$ , figs. 2 and 3, called the "curves," one at each end of the drum, fastened to the platform  $A A$ , (see fig. 3,) by means of flanges from the lower side of bars of metal set on edge, from the inner or opposite sides of which bars, proceed similar flanges, which form the "curves," being curved as seen in fig. 1. In the rotation of the drum the shaft-ears  $O^s O^s$ , &c., are caught by the upper end of the curves  $P P$ , (see fig. 1,) and the rotation continuing, the ears are drawn from the centre till the tops of the two pocket-bolts come to the outside of the drum, bearing with them the compressed cakes of peat, which latter are here encountered by the "stripping-plate"  $Q$ , figs. 1 and 3, which is a plate of metal fastened to a bar,  $R$ , figs. 1 and 3, fixed to the platform  $A A$ , and called the stripping-bar, which wiping-plate or "stripping-plate"  $Q$  crosses in a line parallel with the axis of the drum across the face of the pockets, and reaches from the stripping-bar  $R$  to close on the surface of the drum. This causes the cakes of peat to be stripped off from the machine. When the shaft-ears  $O^s O^s$ , &c., have quitted the curved inclined planes  $P P$ , the withdrawal of the pocket-bolts to the bottom of the pockets is effected by the contraction of a spring band of India rubber,  $V^x V^x$ , fig. 1, and  $V^x V^x V^x V^x$ , fig. 3, which passes through slots, seen in figs. 1, 3, and 4, in the sides of the discharging-shafts  $O^f O^f$ , &c. The means by which the pocket-drum is rotated are now to be described. The shaft  $G$  bears a cam-wheel,  $K$ , figs. 1 and 2, which has attached to it a cam,  $L$ , figs. 1 and 2. At each rotation of the shaft  $G$  this cam  $L$  strikes an ear,  $Z$ , fig. 1, projecting downward from a rod, (called the "drum-rod,")  $A^x$ , figs. 1 and 2, supported by a pin,  $B^x$ , fig. 1, which is furnished with a washer,  $C^x$ , fig. 1. This pin works in a slot (seen in fig. 1,) of the drum-rod  $A^x$ . The other end of the drum-rod is attached loosely to a pin,  $D^x$ , fastened in the upper part of a metal plate,  $D^a$ , (seen in figs. 1, 2, and 3,) which plate is supported by and rotates on the shaft  $N$ , fig. 1, and is drawn back to the left by the spiral spring  $Z^x$ , figs. 1 and 3. At the right-hand side of this plate  $D^a$ , is seen in fig. 1, a pin,  $E^x$ , which bears a pawl,  $F^x$ , figs. 1 and 3, (kept in place by a spring,  $G^x$ , figs. 1 and 3, supported by its appropriate pin  $H^x$ .) This pawl  $F^x$  plays in a ratchet-wheel,  $I^x$ , figs. 1, 2, and 3, firmly fixed to and rotating with the shaft  $N$ , which ratchet-wheel has six teeth, (corresponding with the numbers of the rows of pockets.) At each rotation of the cam-shaft  $G$ , (see fig. 1,) and the cam-wheel  $K$ , the ear  $Z$  is struck by the cam  $L$ , the drum-rod  $A^x$  being thus drawn to the right, (in fig. 1,) when by means of the pawl  $F^x$  acting on the ratchet-wheel  $I^x$ , the drum-shaft  $N$  and the drum thereon is turned the length of one tooth of the ratchet-wheel  $I^x$ , or one-sixth of a complete rotation. This brings the pair of pockets then under the hopper-box  $U U$  into the position of the pair which preceded it in rotation, which latter pair is at the same time partially rotated also of course, and is thus placed in a horizontal position. The pocket-drum is kept in place after each partial rotation by a spring,  $Z Z$ , figs. 1 and 2, attached to the support  $M$ , proceeding downward from its place of fastening, and bending at right angles. It bears on its under side a projection, seen in fig. 1, which snaps into a notch, one of six on the edge of the disk of the pocket-drum which is at that side, (see fig. 1.) When the pair of pockets comes away from under the hopper-box, the edges of the pockets which are in advance (when rotating) come in contact with the bottoms (at the corners) of two metallic boxes,  $J^x$ , fig. 1, and  $J^x J^x$ , fig. 2, with covers to open and shut. These boxes are suspended by a spring handle from the front side of the hopper-box  $U U$ , (figs. 1 and 2,) and are perforated at the bottom. (The perforations are not shown in the drawings.) These boxes  $J^x J^x$  (called the "dust boxes") are filled with saw-dust, and when the pockets filled with peat strike them, the edges of the dust boxes, pressed up by the solid part of the drum, snap down upon the peat, and continue pressing it, and (to use the expression) smearing the top smooth, at the same time sprinkling the top of the peat with dry saw-dust. This prevents the adhesion to the top of the cake of peat of the "plungers" or compressors which are now to be described. The cam-shaft  $G$ , (fig. 2,) bears two cam-wheels,  $H H$ , fig. 2, (seen in dashed lines at fig. 1.) These cam-wheels at each rotation press forward and then permit the withdrawal of two horizontal bars,  $K$ , fig. 1, and  $K^x K^x$ , fig. 2, called the "plunger-bars," held by two supports  $K^a K^a$ , figs. 1 and 2. At the further end from these cams these bars are armed with a packing,  $K^x$ , fig. 1, fastened in a groove close to their ends, which ends are called the "plungers," and enter into the pockets  $O^a O^a$ , &c., (see fig. 3,) then before them, when by the rotation of the cam-wheels  $H H$ , the plunger-bars are pressed forward.  $L^x$ , fig. 1, and  $L^x L^x$ , fig. 2, are springs working in slots in the plunger-bars, and fastened at their lower ends to the platform  $A A$ , to throw the plunger-bars back from the pockets  $M^x$ , fig. 1, and  $M^x M^x M^x$ , fig. 2, are three bands or belts, called the wiping-belts armed with mops, (seen in figs. 1 and 2,) of hemp or other textile substance, and running on two rollers,  $N^x N^x$ , fig. 1, and  $N^x$ , fig. 2, held by the two upright supports  $P^x P^x$ , fig. 2, (seen in dashed lines at fig. 1,) and rotated by a band,  $Q^x$ , figs. 2 and 3, which plays on the band-wheel  $R^x$ , figs. 2 and 3, and is moved by another band-wheel  $S^x$ , figs. 2 and 3, firmly fixed to the drum-shaft  $N$ . These mops run in the deep grooves in the pocket-drum, seen in figs. 2 and 3, between the pockets, and absorb the expressed moisture exuding through the perforated sides of the pockets. A roller,  $O^x$ , fig. 1, (called the "drying roller,") supported by a spring,  $T^x$ , fig. 1, fastened to the platform  $A A$ , fig. 1, and elevated or depressed by a screw,  $U^x$ , fig. 1, presses against the mops of the wiping-belts.

And the operation of this machine is as follows: The handle  $E E$  of the machine rotating the cog-wheel  $E$ , figs. 1 and 2, the peat is thrown promiscuously into the hopper-box, and being crushed by the fluted rollers falls down into the pair of pockets beneath. The pocket-drum then partially rotating, that pair of pockets is drawn



away from the hopper-box, and comes under the dust boxes, where the top of the peat is smoothed and sprinkled with saw-dust. At the next move of the pocket-drum (when the cam-shaft has rotated again) these two pockets are laid horizontally before the plungers. Immediately thereafter the plungers come forward, compressing the peat in the pockets into compact cakes. The expressed moisture leaves the peat through the perforated sides of the pockets, and is absorbed by the mops on the wiping-belt, whence it is squeezed, as the wiping-belt rotates, by the drying roller below, and runs off by any convenient conduit. In the subsequent intermittent rotation of the pocket-drum the ears of the discharging bolts catching upon the two curved inclined planes below, the cakes of peat emerge from the bottoms of the pockets, coming to the outside of the pocket-drum, and, as they pass the stripping-plate behind the machine, are stripped off and fall into any convenient receptacle. I sometimes effect the withdrawal of the discharging-shafts, also of the plunger-bars, by means of a cam or of a rotating slotted wheel. And I sometimes, instead of a perforated plate or of a wire net-work in the inner sides of the boxes, use a band formed of brass or other wires laid side by side in a direction parallel with the axis of the plunger. And I sometimes arrange the plunger with a face-plate having a projection on the side from which the compression comes, which enters into a cavity in the end of the plunger-bars, so as to admit of advance and recession, the space between the face-plate and the plunger at the sides being filled with a band of India rubber, which, as the compression increases, swells out and packs tightly the sides of the plunger; this to prevent the passage of the peat by the sides of the plunger. And I lengthen the pocket-drum at pleasure, and thus increase the number of pockets indefinitely. And I sometimes arm the cam end of the plunger-bar with a roller.

And what I claim herein as of my own invention, and desire to secure by Letters Patent, is—

1. I claim the combination of pockets or boxes, plungers, and movable bottoms, passing to the top of the pockets, for the compression of peat and other substances, substantially as described.
2. I claim the arrangement of curved inclined planes, discharging-shafts and ears, to bring the compressed cakes of peat to the surface, substantially as described.
3. I claim the arrangement of wiping-belts and mops, pressing by the sides of, and in combination with, the perforated boxes, and the squeezing or drying rollers, to dry the mops, substantially as described.
4. I claim the general combination and arrangement of the whole machine, constructed as and for the purpose substantially as described.

LEMUEL P. JENKS.

Witnesses:

THOS. B. DILL,  
J. H. CLARK.