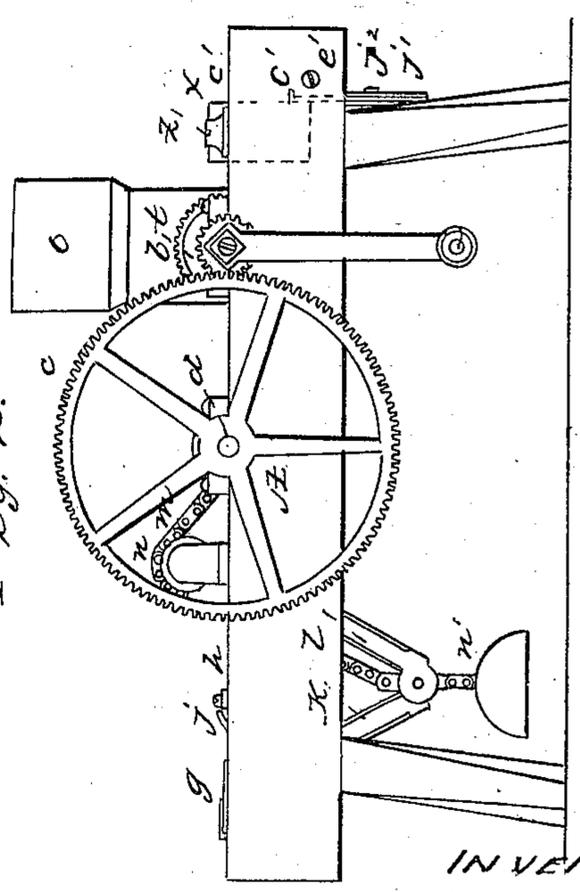
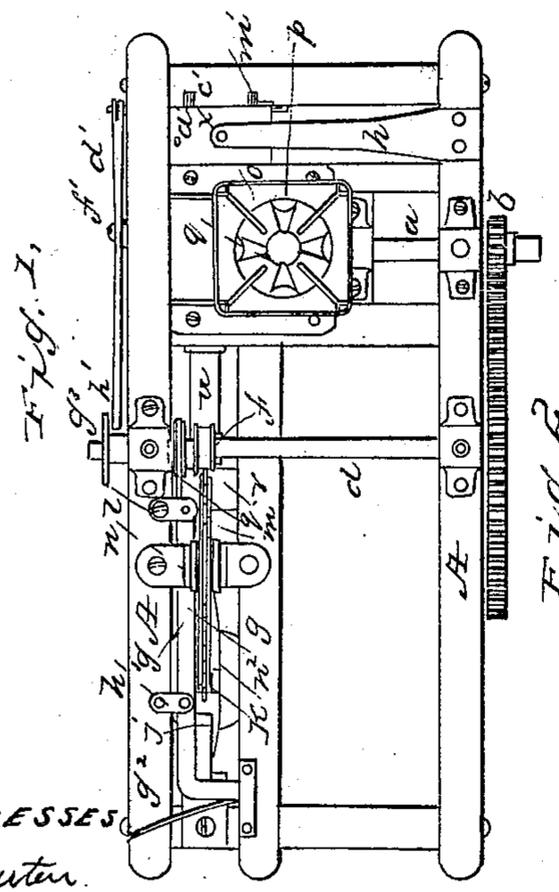
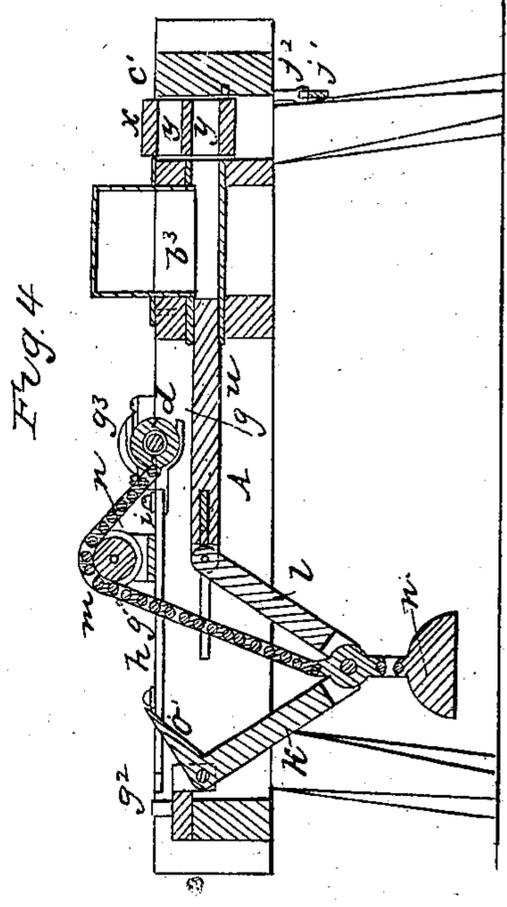
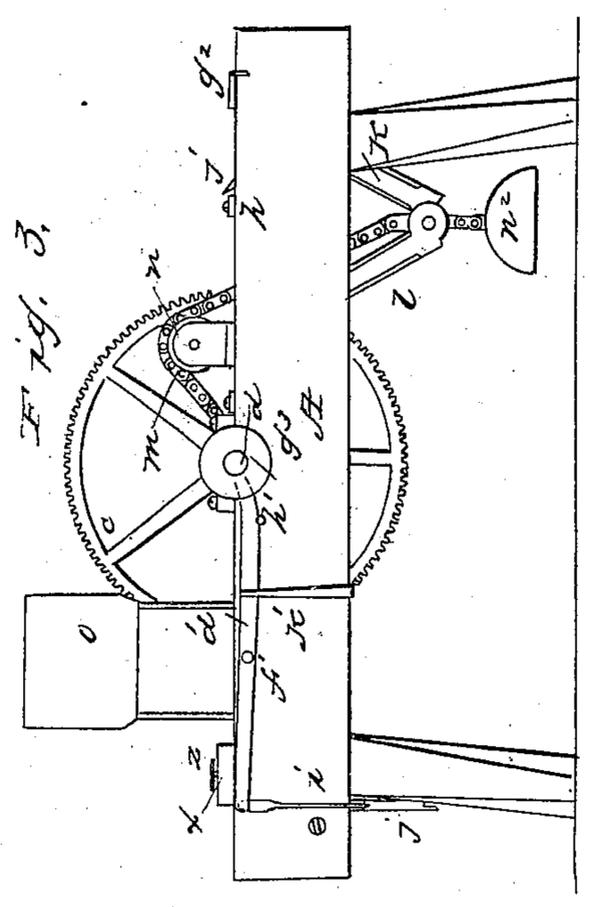


S. MARDEN.
Peat Machine.

No. 55,205.

Patented May 29, 1866.



WITNESSES
J. A. Minton.
E. R. Drake

INVENTOR:
James Marden

UNITED STATES PATENT OFFICE.

SAMUEL MARDEN, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND DUSTIN LANCEY, OF SAME PLACE.

IMPROVED APPARATUS FOR PREPARING PEAT.

Specification forming part of Letters Patent No. 55,205, dated May 29, 1866.

To all whom it may concern:

Be it known that I, SAMUEL MARDEN, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Peat-Machine; 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, making a part of this specification, of which—

Figure 1 is a top view of plan of the invention. Figs. 2 and 3 are side elevations of the same. Fig. 4 is a longitudinal and central section of the same. Fig. 5 is a vertical and transverse section of the same. Fig. 6 is a section of one conduit and cylinder. Fig. 7 is a section of the cylinder. Fig. 8 is a section of the clutch.

A represents the frame of the machine; *a*, its driving-shaft; *b*, its driving pinion, and *c* gear fixed on clutch-shaft *d*; *e*, the clutch; *f*, its loose or sliding portion; *g*, its fork-lever; *g'*, its bent arm or stud, and *g²* its spring; *h i*, its bearings; *j*, tripping-cam, forming one extremity of toggle *k*; *l*, the other toggle; *m*, chain connecting joint of toggles with loose portion *f* of clutch; *n*, pulley on which chain turns; *n²*, weight; *o*, hopper; *p*, its bowl; *p³*, conduit connecting it with cylinder; *q*, its breaker; *r*, breaker-shaft; *s*, beveled pinion on shaft *r*; *t*, beveled gear on driving-shaft *a*; *u*, compressing-plunger; *v*, its cross-head; *w*, its joint with toggle *l*; *x*, chambered cylinder; *y y y*, &c., its chambers; *z*, its holding-spring; *a' a'*, &c., its notches for teat of spring to fit into; *e' e' e'*, &c., its turning studs or teeth; *d'*, reciprocating lever for turning cylinder; *e'*, its vertical slider or actuator with notch in its top; *f'*, fulcrum of lever *d'*; *g³*, tripping-wheel on outer extremity of clutch-shaft; *h'*, its tripping-stud; *i'*, tripping-lever, connected with lever *d'* by pitman *j'*; *j²*, its fulcrum; *k'*, retracting-spring; *l'*, expelling-plunger; *m'*, discharging-opening in frame A to correspond or operate with plunger *l'*.

In order that others may understand the nature and use of my invention and be enabled to construct the same, I will proceed to explain.

Peat is an article of merchandise and its use well known. When taken from the bog it is

porous, bulky, and very much like a sponge. To reduce it to a more solid and merchantable form and in a cheap and expeditious way is the object of my invention.

To illustrate the motive power of the machine as seen in the accompanying drawings, I have made use of the crank applied to the driving-shaft *a*. Any motive power, as horsepower or steam, of course, may be applied. The machine is of any convenient size, and made of wood and iron or any suitable metal or material.

To operate the machine, take the peat from the bog, moist and wet as it is, and throw it into the hopper *o*. The revolution of the breaker *q*, it being furnished with teeth, as also is the hopper, breaks up or grinds the unshapen mass to a paste, and this falls down by the grooves in the breaker into the bowl *p*; and it will be perceived that the bowl is perforated with numerous holes. Through these the mass falls, through the conduit *p³*, into the condensing-cylinder, as seen in Fig. 5, where each stroke of the compressing-plunger drives the mass through into the chambered cylinder *x*. This chambered cylinder revolves. It has four chambers, (more may be made at pleasure by constructing the machine correspondingly,) and as the compressing-plunger drives the mass into one chamber of the cylinder the expelling-plunger *l'* drives a similar mass from another chamber through the opening *y* and from the machine. The great pressure brought to bear upon the mass by the compressing-plunger causes it to cohere strongly, and at the same time the water is expressed and escapes through holes in the cylinder.

By examining Figs. 1, 2, and 3 of the accompanying drawings it will be perceived that two separate motions are communicated at the same time by the driving-shaft *a*. The driving-pinion *b* gives motion to the fixed gear-wheel *c*, which is fastened to one extremity of the clutch-shaft *d*. The revolution of the clutch-shaft winds the chain at the end which is attached to the sliding portion of the clutch, and one revolution straightens the arms of the toggles, which communicates motion both to the driving-plunger and the expelling-plunger at the same time. Also, by one revolution of the clutch-shaft the chain is wound once

around the sliding portion of the clutch, and at the same time, by raising the toggles, causes the tripping-cam to act upon the bent arm g' of the forked lever g , which slides it backward, and this sliding backward of the lever causes the clutch to slip, and the chain is immediately unwound and the toggles spring back to the positions seen in Figs. 2 and 3, and the machine is ready to repeat the revolution. It will be perceived by examining Fig. 1 that the forked lever g has a peculiar motion. It is attached by the bearings h i to the frame of the machine. These bearings are movable both on the screws attached to the frame and the rivets fastened to the lever. The bent arm of the lever is also kept in its place by the spring g^2 . It will be seen, also, that the compressing-plunger has a cross-head, v , which in its driving motion also drives the expelling-plunger l' . The revolution of the clutch-shaft also causes the tripping-wheel g^3 , on its outer extremity, to revolve, and its tripping-stud elevates the reciprocating lever at the end passing over it, which communicates motion at its other extremity, through the pitman j' and the tripping-lever i' , to the vertical slider or actuator e' . This actuator has a notch on its top, which fits onto the studs $e' e' e'$ of the cylinder, and the motion communicated lifts or pushes along the cylinder one notch at each revolution of the tripping-wheel. It also has a retracting-spring, k' , which keeps the actuator in place. These are the motions communicated by the driving-pinion b .

At the other extremity of the shaft a is fast-

ened the beveled gear t , which drives the beveled pinion s , which is on the shaft r . This shaft r causes the breaker to revolve from the motion communicated to it by the beveled gear at the extremity of the driving-shaft a . The appearance of this portion of the machine is clearly indicated by examining the vertical and transverse section thereof, as seen in Fig. 5.

Having thus shown the construction and operation of the machine, I claim that it is novel, more simple, less likely to get out of order, performs its work with greater rapidity, and leaves the article in better merchantable order than any peat-machine now in use. It may be driven with horse-power or steam-power or any sufficient force to perform the work.

What I claim, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the corrugated or grooved breaker q , in connection with the perforated bowl at the bottom of the hopper.

2. The revolving chambered cylinder x , combined with the compressing-plunger u and the expelling-plunger l' .

3. The combination of the lever d' , the pitman j' , the tripping-lever i' , and the vertical slider or actuator e' , connected with the cylinder x , as above arranged and described.

4. The combination and arrangement of the forked lever g' as connected with the frame A .

SAML. MARDEN.

Witnesses:

J. L. NEWTON,
E. R. DRAKE.