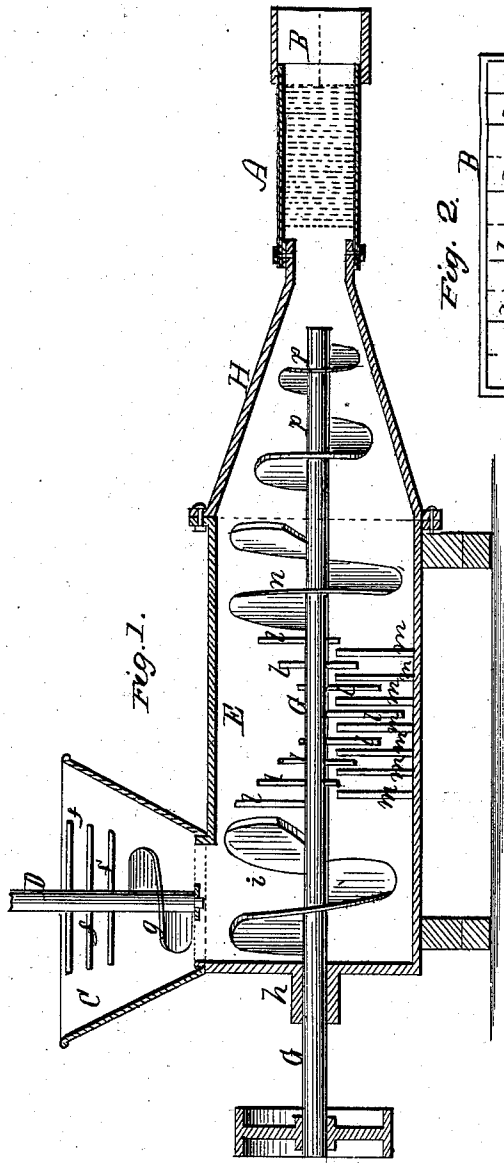
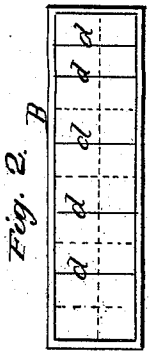
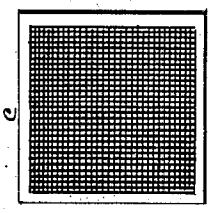
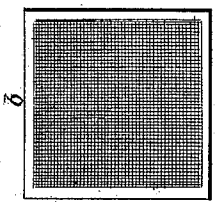
E. P. HUDSON.
Peat-Machine.

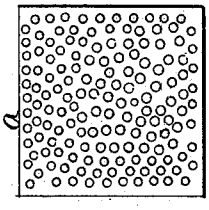
No. 216,958. Patented July 1, 1879.











Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD P. HUDSON, OF NEW YORK, N. Y.

IMPROVEMENT IN PEAT-MACHINES.

Specification forming part of Letters Patent No. **216,958**, dated July 1, 1879; application filed October 31, 1878.

To all whom it may concern:

Be it known that I, EDWARD P. HUDSON, of the city, county, and State of New York, have invented an 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, making part of this specification—

Figure 1 being a longitudinal vertical section of the machine; Fig. 2, a cross-section of the discharging-nozzle; Figs. 3, 4, and 5, views in detail of the parts composing the filtering-tube, straight or tapering.

Like letters designate corresponding parts in all of the figures.

The first and principal feature of my invention consists in a filtering-tube, through which the pulped peat is forced by pressure, the said tube having its walls so constructed as to allow water expressed from the peat to pass through fine perforations or meshes therein, but fine enough to retain the particles of peat and cause them to be directed along the tube to its outlet.

The tube either has a degree of taper which, while it allows the peat to pass under pressure to its smaller discharging end, at the same time compresses the same in the act of passing sufficiently to express as much of the water contained in the peat as necessary or desirable, thereby reducing it to a degree of compactness and dryness suitable for handling and rapid curing, or it is of uniform size or diameter throughout its length, which is sufficient to produce the necessary friction and retardation of the peat passing through it to reduce it to the same condition of dryness and compactness as the taper form produces. In the drawings this tube A is represented as of uniform size or diameter, since, even when of taper form, the degree of taper may vary according to the quality or condition of the peat to be prepared, or the degree of dryness or compactness desired.

For very moist peat the taper form is preferable; but for peat comparatively dry the straight or uniform tube is best. In order to practically construct this filter-tube so as to allow the water only to filter through its walls, thus retaining the peat, and at the same time to give the tube the requisite strength to resist the pressure required to force the peat through the tube and reduce it to the desired degree of compactness, as well as to protect the fine filtering-meshes, and to avoid unnecessary friction between the peat and its inner surface, I construct the tube of three thicknesses, as shown or indicated in Figs. 3, 4, and 5.

The inner thickness, *a*, Fig. 3, is made preferably of perforated sheet metal, such as sheet-zinc, the perforations being as fine and numerous as practicable, and allow the sheet-metal to retain its form and present sufficient smoothness of surface to the passing peat; but the perforations need not be so small as to absolutely exclude particles of peat.

The real filtering material is the middle thickness, *b*, Fig. 4, which is made of muslin or very fine-meshed wire-cloth or equivalent material, which will practically filter the water through and retain the peat under the pressure applied to the peat in driving it through the tube. This thickness fits close around the inner tube, *a*, of perforated sheet metal.

The outer thickness, *c*, Fig. 5, is or may be made of strong wire-cloth or equivalent material of the requisite strength for its use, and it fits close around the filtering thickness *b*, thus holding the latter firmly in its place, retaining its form, and sustaining it against the outward pressure of the water and peat, as well as protecting it against outside violence or damage.

I employ interchangeable discharging-nozzles attached to or located at the discharge end of the filtering tube or passage, for the purpose of delivering the compressed peat in a web or rope of any desired size without diminishing the production or changing the speed of the machine. The different discharging-nozzles, which replace one another, as desired, have all the same exterior dimensions, so as to fit the same filtering or discharge tube, to which each one is readily attached and as readily removed therefrom.

To obtain various sizes of the peat web each nozzle B, Fig. 2, is divided by thin metallic partitions *d d* across its longitudinal dimensions or otherwise, as desired, these partition-plates serving as knives to split the web and

separate the divisions longitudinally, so as to discharge two, five, ten, twenty, or any number of webs, of the forms and sizes required, the compression and consistency of the peat being such at its discharge that these severed webs will not reunite in handling or curing. The webs are to be cut off, after emerging from the nozzle, by any suitable means and into any desired lengths of peat-blocks for use.

The natural peat is first put in a suitable hopper or pug-mill, C, in which knives *f f* work suitably on a vertical revolving shaft, D, or otherwise, as preferred. There is or may be, also, a suitable forcing-screw, *g*, on this shaft, near the lower part of the hopper, to insure the regular and uniform transfer of the peat at the requisite speed into the working-receptacle E below. In this receptacle which may properly occupy a horizontal position and be of cylindrical form, I prefer to employ a screw action to force the peat forward to the filtering tube and out through the same; but any equivalent means may be employed. With the forcing-screw, however, since the peat should also be worked in the receptacle, I can conveniently combine knives and working-arms. Thus I employ a central driving-shaft, G, reaching out through the forward end of the receptacle, where it has a bearing, *h*, either long enough to sufficiently support and hold the shaft in position, or may be assisted by another bearing outside of the receptacle, as it is best not to impede the movements inside of the receptacle by bearings. On this shaft, in the forward end of the receptacle, I first locate a forcing-screw, *i*, directly beneath the hopper D. Back of this screw I locate knives *l l* on the shaft, at small distances apart, along the length of the shaft and spirally around the same. These knives revolve between stationary bars or fingers *m m*, secured to the interior surface of the receptacle. Back of these working-knives is another forcing-screw, *n*.

At the rear end of the cylindrical receptacle E is attached a conical extension, H, forming a part or extension of the same. The base or large end of this conical extension is secured by suitable flanges to the rear end of the cylindrical receptacle, and to the rear small end of the extension is attached the filtering-tube A, which may properly be oblong in cross-section, corresponding in form and dimensions with the discharging-nozzle at its rear end. This conical extension of the receptacle serves to retain the peat in the receptacle and cause its proper compression, and also guides it into the smaller filtering-tube. Into this extension, also, the driving-shaft G extends, and on this shaft are forcing-screws *p p*, conforming in sweep to the shape of the conical extension H, and increasing in the angle of their pitch in proportion as they become smaller in diameter, to force the peat along at a more rapid speed as the passage narrows in size. The screws *n* and *p* run loosely in but nearly fill the diameters of the receptacle.

The form of the filtering-tube A in cross-section may be rectangular, either square or oblong or round, or any other suitable or desirable shape.

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

1. A peat-machine having a filtering tube or passage, either of uniform size or tapering, through which the peat is continuously forced, for the purpose of separating water therefrom and compressing it into a coherent rope or web, substantially as herein specified.

2. A peat-machine having a tube or passage through which the peat is continuously driven by pressure, the said tube or passage having its walls finely perforated, so as to allow the passage of water through the perforations, but to retain the peat therein till discharged at the outlet, substantially as and for the purpose herein specified.

3. A peat-machine having a filtering tube or passage through which the peat is continuously forced under pressure, and which is composed of an inner thickness of perforated sheet metal, a thickness of fine wire gauze or cloth outside of that, and a thickness of strong wire-cloth or its equivalent outside of the other two thicknesses, substantially as and for the purpose herein specified.

4. A peat-machine having a peat working and forcing device, a device for continuously separating water from the peat by filtration, and a web compacting and shaping nozzle or discharge-opening, substantially as and for the purpose herein specified.

The foregoing specification signed by me this 18th day of October, 1878.

EDWARD P. HUDSON.

Witnesses:

GEO. L. HUGGINS,

J. B. MOORE.