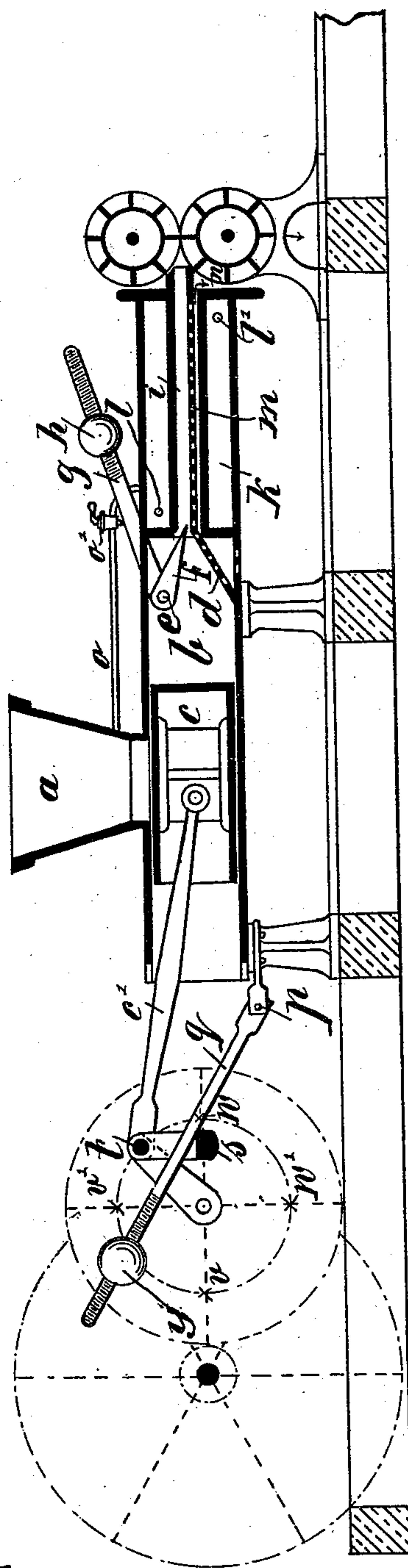


(No Model.)

E. STAUBER.
MACHINE FOR FORMING PEAT BRIQUETS.

No. 531,478.

Patented Dec. 25, 1894.



Witnesses:

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UNITED STATES PATENT OFFICE.

EMANUEL STAUBER, OF HAMBURG, GERMANY.

MACHINE FOR FORMING PEAT BRIQUETS.

SPECIFICATION forming part of Letters Patent No. 531,478, dated December 25, 1894.

Application filed September 5, 1893. Serial No. 484,837. (No model.) Patented in Germany June 17, 1891, No. 60,627, and February 2, 1892, No. 63,923, and in England May 29, 1892, No. 10,448.

To all whom it may concern:

Be it known that I, EMANUEL STAUBER, a subject of the King of Hungary, Emperor of Austria-Hungary, residing at Hamburg, in the German Empire, have invented certain Improvements in Machines for Forming Peat Briquets, (patented in Germany June 17, 1891, No. 60,627, and February 2, 1892, No. 63,923, and in England May 29, 1892, No. 10,448,) of which the following is a specification.

This invention relates to certain improvements in apparatus for compressing wet or saturated peat or turf as raised from the bog into briquets or cakes whereby the moisture is partially removed therefrom and the peat or turf itself is left in a form convenient for thorough drying and coking or such other operations as may be necessary to render the same suitable for use as a fuel, and the object of the invention is to provide an apparatus of a simple and inexpensive character efficient in operation and possessed of certain novel and useful features all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawing illustrating my invention I have shown in longitudinal vertical section an apparatus embodying my improvements, and I will now proceed with a detailed description of the construction and use of the same.

The wet or saturated turf from the bog is fed into the hopper *a* of the continuous press and passes from the hopper *a* into a chamber *b* and is there pressed forward by a slowly moving piston *c*, the surface of which is perforated and covered with jute or gauze so that with each forward movement the pressed material is freed from water which can flow away through the open back part of the piston *c*. At the opposite end, the chamber *b* is provided with an adjustable resistance device consisting of the fixed sloping plate *d* and the plate *f* fixed to a shaft *e* and adjustable about the axis of the shaft. The plate *d* is perforated and covered with jute or gauze so that the expressed water can pass through it also. The water flows away through channels beneath. A lever *g* is attached to the shaft *e*

outside the chamber *b* and is provided with an adjustable weight *h* which constantly presses the movable plate *f* against the material under pressure. The pressure can be increased or diminished and the compression of the material thus regulated by adjusting the position of the weight on the arm. The wet peat meets with a resistance from plates *d* and *f* and can only pass between such plates when it is able from its state of compression, to raise the loaded plate *f*. The pressed peat then passes through a number of tubes *i* arranged closely side by side across the whole width of a closed chamber *k* forming a continuation of the chamber *b*, said chamber *k* being heated by steam in order to vaporize the moisture contained in the pressed peat. Such steam enters chamber *k* through an inlet *l* and the water of condensation escapes at the outlet *l'*. In order to remove the condensed water given up by the material in consequence of the steam heating, the tubes *i* are divided by a sieve partition *m* covered also with jute or gauze. The peat under pressure passes through the tubes above the perforated partition *m* while the condensed water passes through the partition *m* and flows away at the back.

Instead of the perforated partition *m* several small overflow tubes may be arranged leading downward and opening into a general collecting pipe.

In order to warm the material for compression and make it suitable for treatment, the hopper *a* is connected to a small steam tube *o*, which is preferably connected at its opposite end with the heating chamber *k* and is provided with a cock or valve *o'*.

The work performed by the piston or disk *c* is unequal on the backward and forward strokes. On the forward stroke the work of the piston is at first light, increasing afterward on account of the increased compression of the material. On the back stroke the work of the piston is at first heavy, owing to the adhesion of the material thereto and afterward when this is overcome, the work is light. The change in the load lies at about half the stroke. This inequality which in spite of the fly wheel prevents a smooth action of the piston is removed in the following manner: The

lever *q* is pivoted at *p* to the front part of the frame and is provided with an adjustable weight *r*. Said lever *q* rests loosely in a stirrup *s* mounted loosely on pin *t* of the connecting rod *c'*. Piston *c* is moved backward and forward by the revolution of the pin *t* around the crank shaft. In the forward stroke of the piston the pin *t* first travels from *v* to *v'*. During this period as previously mentioned, the work of the piston is light but it is increased as the pin *t* must raise the weighted lever *q* the height traveled. During the movement from *v'* to *w* and from *w* to *w'*, the work of the piston is heavier but it is here lightened as the weighted lever *q* draws the pin *t* down. In the movement from *w'* to *v* the piston work is again light but it is increased as the pin *t* must again raise the weighted lever *q*. In this manner a regular action of the machine is obtained. From the heated tubes *i* the peat issues in the form of rods against the two shaping rollers *x*, which are provided on their peripheries with sharp edged dividing partitions or cutters *y*. The crossing partitions or cutters *y* form small chambers equal in size and shape to the peat briquets to be produced and the rollers *x* are preferably in the nature of hollowed drums which may be heated. By means of these continuously moving rollers the peat issuing from tubes *i* is formed into single briquets and is discharged at *z*.

Having thus described my invention, I claim—

1. In an apparatus for forming peat briquets and the like, the combination with a cylinder having a feed-hopper, of a piston mounted in the cylinder and adapted to be reciprocated past the hopper opening, an outlet-tube arranged at the end of the cylinder opposite the hopper-opening and elevated above the base wall thereof, a partition ar-

ranged across said tube longitudinally of the same and an inclined perforated partition arranged in the cylinder and extending from the partition in the tube to the bottom of the cylinder, substantially as set forth.

2. In an apparatus for forming peat briquets and the like, the combination with a cylinder having a feed-hopper, and having a partition whereby a steam chamber is formed therein at the end of the cylinder opposite the hopper-opening, of a piston arranged in the cylinder and adapted to be reciprocated past the hopper-opening, a series of open-ended outlet-tubes extending longitudinally through the said steam chamber, perforated partitions arranged across said outlet-tubes longitudinally of the same, an inclined perforated partition arranged in the end of the cylinder and extending from the partitions in the tubes to the bottom of the cylinder, the shaft *e*, pivoted in the cylinder, the plate *f* secured thereto and adapted to partially cover the open ends of the outlet-tubes, and an adjustable weight connected to said shaft *e*, substantially as set forth.

3. In an apparatus for forming peat briquets and the like, the combination with a cylinder having a feed-hopper, of a piston arranged therein and adapted to be reciprocated past the hopper-opening, a crank-shaft having a crank-pin, a connecting rod coupled at one end to the crank-pin and at the other end to the piston, and a weighted lever suspended from the crank-pin, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMANUEL STAUBER.

Witnesses:

MAX SCHÖNING,
KARL RUST.