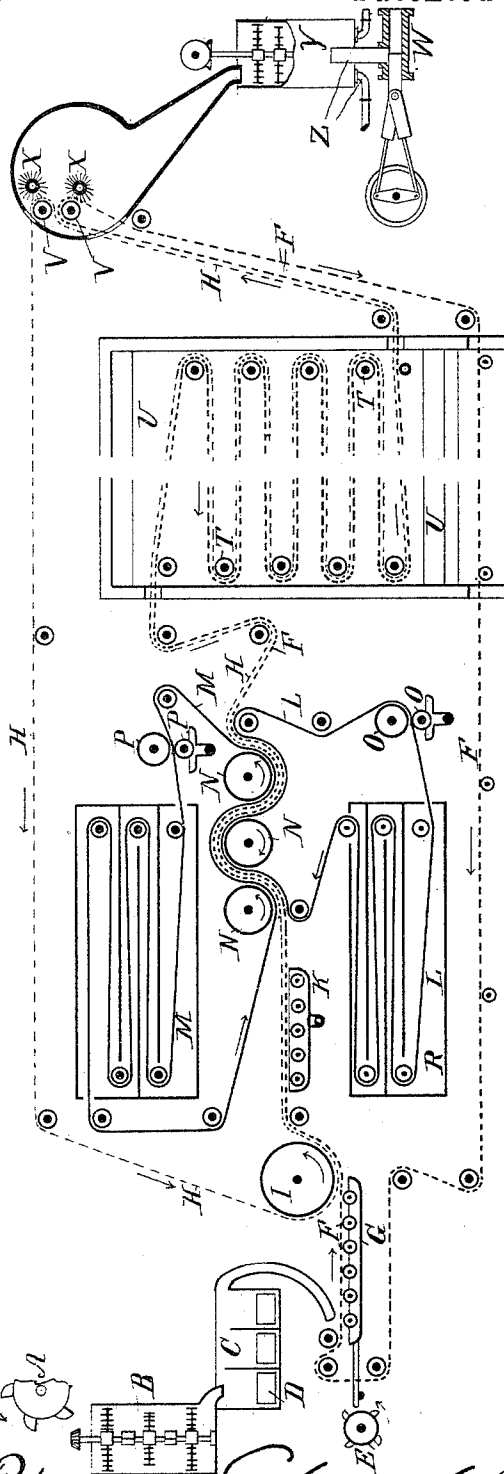


(No Model.)

J. M. A. GÉRARD.
TREATMENT OR DESICCATION OF PEAT.

No. 491,545.

Patented Feb. 14, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

JEAN MARIE ANATOLE GÉRARD, OF PARIS, FRANCE.

TREATMENT OR DESICCATION OF PEAT.

SPECIFICATION forming part of Letters Patent No. 491,545, dated February 14, 1893.

Application filed November 13, 1891. Serial No. 411,815. (No model.) Patented in Germany November 6, 1891, No. 59,640.

To all whom it may concern:

Be it known that I, JEAN MARIE ANATOLE GÉRARD, engineer, a citizen of the Republic of France, residing in Paris, France, have invented certain new and useful Improvements in the Treatment or Desiccation of Peat, (patented in Germany November 6, 1891, No. 59,640,) of which the following is a specification.

The object of this invention is to produce rapidly and economically, from peat, a dense homogeneous agglomerated fuel capable of being used with advantage in every kind of furnace.

My invention relates to a machine or apparatus by and through which is carried on a process which consists essentially in causing a thin layer of peat, previously reduced to a homogeneous paste, to circulate slowly between two endless bands of wire gauze intended to retain it during its entire transit, and to cause it first to traverse draining and drying apparatus and then to pass between two absorbent fabrics, which, under the action of pressure moderately applied by means of cylinders, produce, by their contact, an immediate drying of the paste; after which the metallic gauze bands convey the thin layer of dried peat into a stove where the desiccation and partial carbonization of the material are brought about. It is then detached from the gauze bands by means of metallic brushes, mixed with agglomerating substances and molded into briquettes in the usual manner.

In order that my invention may be fully understood, I will describe such with reference to the annexed sheet of drawings, which show, in outline, a sectional elevation of an apparatus constructed according to my invention.

In this new process, the blocks of peat, brought from the turf pit and tipped into a ditch full of water, are raised by means of a chain of buckets A and are tipped into a horizontal pug mill B intended to disintegrate them completely, then the substance is reduced to the condition of a fluid paste in a second vertical pug mill C. This paste, diluted with water, comes then into purifiers D formed of horizontal vats having divisions forming zigzag barriers so that heavy foreign

substances, such as sand or clay, fall to the bottom of the vats D D, whence they can be removed by means of lateral doors. The liquid paste coming from the purifiers spreads itself on an endless metallic gauze band F traveling on cylinders arranged in a horizontal trough G, which is jointed at one end and at the other end is subjected to the action of a cam shaft E which imparts, to the trough and consequently to the peat circulating on its surface, a series of shocks intended to assist the drainage of the substance. On leaving the trough, G, the thin layer of peat resting on the band F is covered by a second endless wire gauze band H, and it continues to circulate between these two bands throughout the entire apparatus. These two bands pass first around a cylinder I, against which they are pressed by a guide roller J, which causes a certain amount of liquid to run out, then they pass over the surface of a second horizontal trough, K, in which a ventilating fan maintains a sufficient vacuum to cause, by suction, a further expulsion of the water contained in the peat. After this drying the bands F and H, inclosing the thin layer of peat, pass between two cloths of felt or other absorbent material L and M, and travel with these latter round three cylinders N N N by which the material receives a pressure sufficient to cause the extraction of almost the whole of the water still remaining in it, which is immediately absorbed by the pieces of felt L and M, so that the layer of peat is appreciably dried at the end of this operation.

In order to constantly remove, from the felts L and M, the moisture which they have absorbed, they are first passed respectively between pressure rollers O O and P P, which extract the bulk of the water contained in them, then they travel through drying chambers R and S, having zigzag barriers and into which a strong current of hot air is brought from a furnace arranged for this purpose in proximity to these drying chambers. The metallic gauze cloths F and H then convey the layer of peat into a drying stove U, strongly heated by a furnace placed at its lower part, and in which the cloths circulate several times horizontally over carrying rollers T.

The temperature of this stove, and the time during which the peat remains there, must be sufficient not only for producing a complete desiccation of the material but also for driving off therefrom the gas or other volatile substances, contained therein, without, however, completely carbonizing it, in order to preserve the tar, which ultimately will serve, firstly, to assist the agglomeration, and then the combustion of the peat. On emerging from the stove, the cloths raise the material to a sufficient height, and then separate over supporting rollers V, and the peat adhering to them is removed by means of revolving brushes X, and falls into a pipe which brings it into a pug mill Y, where it is mixed with agglomerating substances, brought by tubes Z opening into the bottom of this apparatus; finally, the paste thus rendered plastic falls into a suitable compressor, which molds it into briquettes of suitable shape and dimensions.

It must further be noted that the two cloths F and H, after having been separated from each other by the rollers V, return respectively to their points of departure, passing over guide rollers situated, in the one case, on the floor, and, in the other case, in the upper part of the apparatus.

When peat of good quality is treated, which needs no preliminary purifying, and when the manufacture is not of great importance, a simpler apparatus may be advantageously used. In such a case, the peat shoveled into a funnel may be at once inserted in a thin layer between the two endless bands F and H, then compressed between several pairs of cylinders, the pressure of which yields a sufficient straining of the substance to allow of its being brought in contact with the absorbent felts L and M, intended to absorb the moisture still contained in the peat, which is finally conveyed to the drying stove as before.

The stoves R and S for drying the felts may even be dispensed with, the felts being then simply dried by passing between one or more groups of pressure rollers.

It is, of course, understood that the invention is not limited to the precise forms of ap-

paratus herein described, but, on the contrary, any variations may be introduced which, in practice, may be found to be necessary. For instance, instead of employing endless bands, traveling throughout the entire extent of the apparatus, several groups of cloths F and H could be made use of, placed side by side, between which the material would be seized and conveyed successively; finally, in certain cases, the placing of the peat in a stove could be dispensed with, and it could be molded into briquettes immediately after its passage between the felts.

I declare that what I claim is:—

1. The combination with the endless traveling wire netting bands, inclosing the peat in a thin layer, of the absorbent endless bands running in contact with the first named bands during part of their course, and pressure rollers and stoves for removing the moisture from the absorbent bands.

2. The combination with the endless traveling wire netting bands, inclosing the peat in a thin layer, of the absorbent endless bands running in contact with the first named bands during a part of their course, pressure rollers and stoves for removing the moisture from the absorbent bands, and guide rollers and stove for the carrying bands after they leave the absorbent bands.

3. The combination with the endless traveling wire netting bands, inclosing the peat in a thin layer, of the absorbent endless bands running in contact with the first named bands during a part of their course, pressure rollers and stoves for removing the moisture from the absorbent bands, guide rollers and stove for the carrying bands after they leave the absorbent bands, and brushes bearing against the said last named bands for removing the peat adhering to said bands.

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

JEAN MARIE ANATOLE GÉRARD.

Witnesses:

EUGENE LOUIS DUMAR,
CHARLES BAILLY, Jr.