

W. S. JACKSON.
 PEAT DRIER.
 APPLICATION FILED MAY 6, 1918.

1,334,495.

Patented Mar. 23, 1920.

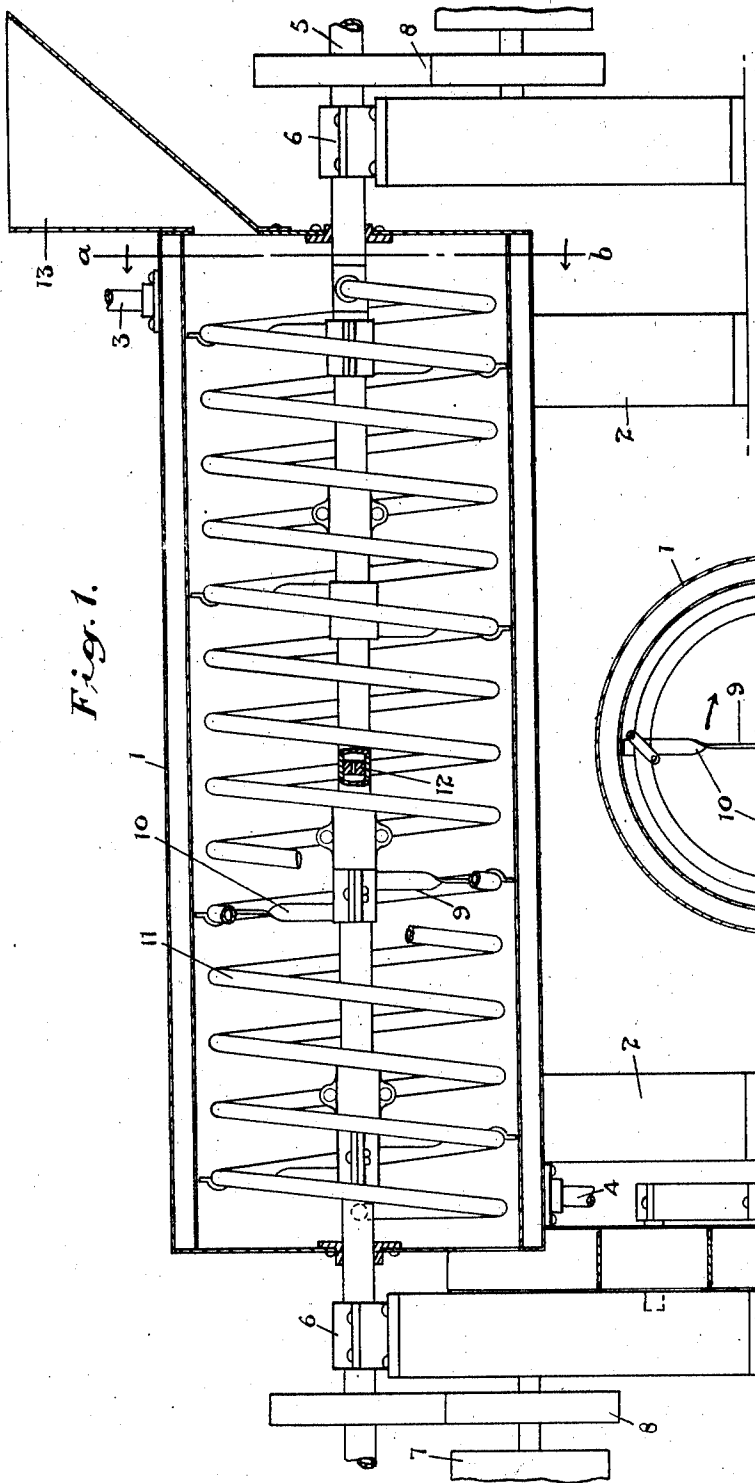


Fig. 1.

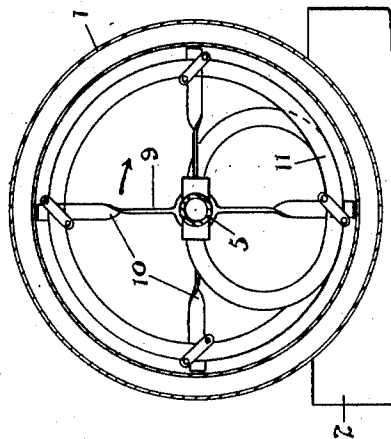


Fig. 2.

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UNITED STATES PATENT OFFICE.

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PEAT-DRIER.

1,334,495.

Specification of Letters Patent.

Patented Mar. 23, 1920.

Application filed May 6, 1918. Serial No. 232,833.

To all whom it may concern:

Be it known that I, WILLIAM S. JACKSON, a subject of the King of Great Britain, and resident of the city of Toronto, county of York, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Peat-Driers, described in the following specification and illustrated in the accompanying drawings, that form part of the same.

The principal objects of the invention are, to effect the rapid evaporation of the moisture from peat without loss of the natural gases and fluid substances, such as tar, creosote, paraffin, etc., contained therein.

A further and important object is to devise a machine which will effectively prevent the wet peat from accumulating in large masses in the drying process.

The principal feature of the invention consists in the novel construction of the drier, whereby the peat is disintegrated and constantly agitated in contact with heated surfaces by a hollow spiral steam heated coil operating within a steam jacketed cylinder.

In the drawings, Figure 1 is a longitudinal sectional elevational view illustrating the application of my invention.

Fig. 2 is a cross sectional view through the line *a-b* of Fig. 1.

Peat in its natural state has a very high moisture content and this moisture is required to be evaporated in order to bring the material to a proper state for combustion.

Many different forms of driers have been devised, most of these involve the application of high temperatures which are detrimental to the product in that the natural gases and fluid carbonaceous matters are separated from the vegetable fiber.

It is the object of this invention to utilize steam heat entirely for effecting the evaporation of the moisture and in order to accomplish this result I have devised a structure in which a steam jacketed cylinder 1 is arranged upon suitable supports 2. The steam is circulated to the jacketed cylinder through the pipes 3 and 4.

A hollow shaft 5 is mounted in suitable bearings 6 arranged at the ends of the cylinder and one end thereof is connected through a suitable connection to a steam supply and the other end to the return. The shaft is rotated by any suitable means, pulleys and

gears 7 and 8 being here shown as the means of operation.

A plurality of spider members 9 are arranged upon the shaft 5 within the cylinder each having the radially extending arms 10 shaped in the form of propelling agitators. These are spaced at intervals throughout the length of the cylinder.

A spiral coil 11 formed of tubing is arranged within the cylinder and supported from the arms 10 of the spiders 9 by being suitably clamped to the said arms preferably a short distance from the outer ends. This spiral coil forms a worm, its periphery being spaced from the inner wall of the cylinder and the ends of this coil or worm are connected with the hollow shaft 5, so that the steam circulated through the hollow shaft will circulate through the tubular worm. A suitable choke is placed within the hollow shaft to prevent the free circulation of the full volume of steam through the shaft and to insure the circulation through the worm and is here shown as a block 12 arranged in the tube and having a small hole through the center to allow sufficient circulation of steam through the center shaft so that all metal parts within the cylinder will be heated to a uniform temperature, though it is not necessary that the steam should circulate through the shaft and the center of the shaft may if desired be closed.

A hopper 13 is arranged at one end of the cylinder and the moist peat is fed into this by any suitable mechanism and is directed into the cylinder. The rotating worm comes into contact with the peat and feeds it longitudinally while the agitators engage it and break it up, keeping the mass constantly disintegrated and carrying the particles around the cylinder in contact with the heated surface thereof.

The effect of bringing the disintegrated peat into contact with the steam heated worm and cylinder is to rapidly drive off the moisture which finds exit through the ends of the cylinder and when the peat reaches the opposite end it has become thoroughly dried. The conditions of course depend upon the diameter and length of the cylinder and the entire heated surface of the cylinder and coil as well as upon the nature of the peat to be treated and in the practical manufacture of peat fuel it is desired to

retain a moisture content of about fifteen per cent.

The operation of the worm carries the peat slowly and evenly through the cylinder and the peat thus treated is delivered into suitable conveyers and formed into briquets in any desirable manner.

What I claim as my invention is:—

1. A peat drier, comprising, a steam jacketed cylinder, a hollow shaft journaled in bearings at the ends of said cylinder and extending therethrough, and connected with a steam supply, a tubular worm arranged within the cylinder and spaced from the inner wall thereof and having its ends con-

nected with said hollow shaft, and radial agitators secured to said shaft and extending outwardly therefrom.

2. A peat drier, comprising, a steam heated cylinder, a shaft journaled at the ends and extending through said cylinder, a plurality of spider members secured at intervals on said shaft and having radial agitating arms extending outwardly, and a steam heated spiral worm secured to said spider arms adjacent to their outer ends and arranged concentric with the shaft and rotating therewith.

WILLIAM S. JACKSON.