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MACHINE FOR CONDENSING PEAT.  
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Fig. 1

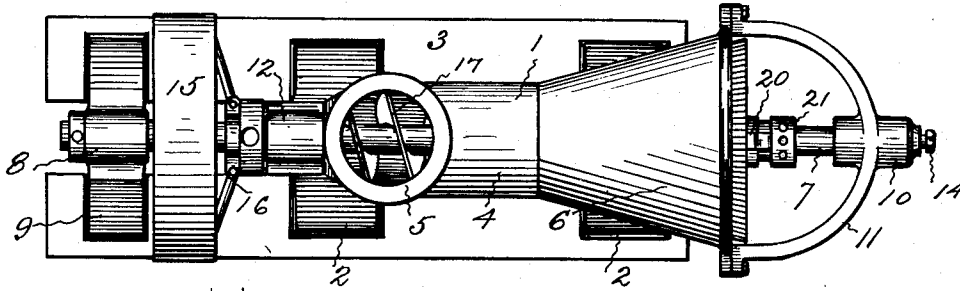


Fig. 4

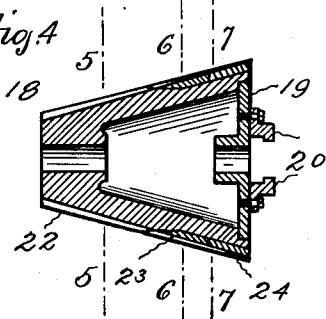


Fig. 5

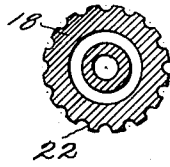


Fig. 6

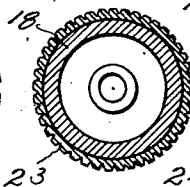


Fig. 7

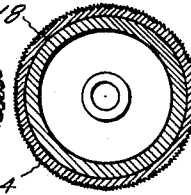


Fig. 2

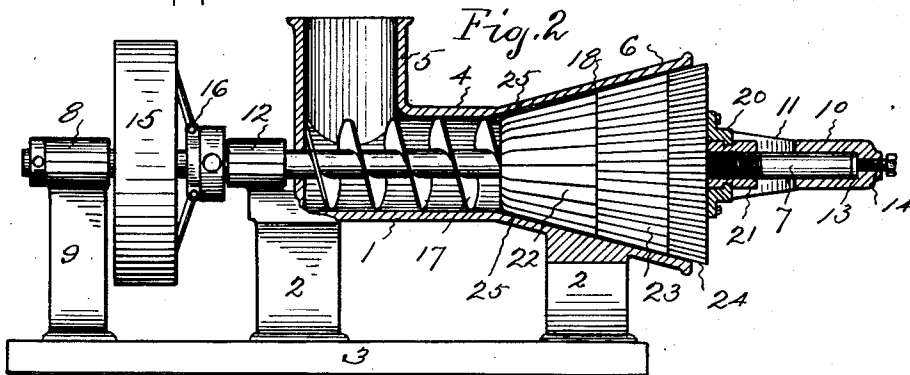
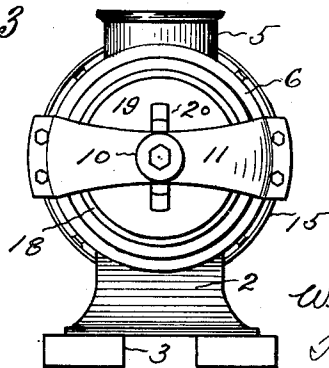


Fig. 3



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# UNITED STATES PATENT OFFICE

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## MACHINE FOR CONDENSING PEAT.

940,944.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed January 4, 1909. Serial No. 470,580.

*To all whom it may concern:*

Be it known that I, WILBUR L. SHEPARD, a citizen of the United States, residing at Elmwood, in the county of Hartford and State of Connecticut, have invented a new and useful Machine for Condensing Peat, of which the following is a specification.

This invention relates to a machine which is designed for the purpose of cutting or breaking up and mixing or making of a uniform constituency and more dense, peat that is received from a bog or peat bed and is to be transformed by subsequent operations into fuel.

Peat from the bog, which has been partially dried by exposure to the atmosphere or by artificial heat, is in a somewhat lumpy condition and contains a small quantity of water. In such a state peat is fed into this machine and is forced therein past rotatory cutters which grind or break up the lumps, and discharge the substance in a plastic condition of uniform density and consistency, and in a more compact state than it was before being put into the machine.

The object of this invention is to provide a simple machine of this nature which can be constructed cheaply and operated rapidly for continuously feeding raw, moist, lumpy peat, and after disintegrating and mixing it, discharging it in the condition desired for future treatment.

The machine illustrated has a cylindrical casing with an inlet spout or hopper on top at one end and an outwardly tapering discharge at the other end. Extending longitudinally through the casing is a shaft provided with suitable driving means. Mounted upon the shaft beneath the hopper is a feed screw or worm, and mounted upon the shaft in the tapering part of the casing is a conical body having on its outer surface cutters which decrease in size, from the small to the large end of the cone. The peat is fed by the worm and forced with great pressure past the rotating cutters, which gradually disintegrate the material until it is discharged about the large end of the cone in the desired plastic condition having uniform density and consistency.

Figure 1 of the accompanying drawings shows a plan of a machine which embodies this invention. Fig. 2 shows a side elevation with the casing cut in central vertical section. Fig. 3 is an elevation of the dis-

charge end of the machine. Fig. 4 is a longitudinal section of the rotatory conical cutter or disintegrating cone. Fig. 5 is a transverse section of the cutter on the plane indicated by the dotted line 5—5 on Fig. 4. Fig. 6 is a transverse section on the plane indicated by the dotted line 6—6 on Fig. 4. And Fig. 7 is a transverse section on the plane indicated by the dotted line 7—7 on Fig. 4.

The casing 1, which is desirably an iron casting of suitable strength, is mounted upon standards 2, arranged upon any convenient base 3. This casing has a cylindrical section 4 with a circular hopper 5 on top at one end. The other end of the casing expands uniformly from the cylindrical section and is largest at the outer or discharge end 6.

A shaft 7 is mounted so as to extend longitudinally through the center of the casing. This shaft is supported at one end by a bearing 8 arranged at the upper end of a standard 9. At the other end the shaft is supported by a bearing 10 arranged in a yoke 11, the ends of which are bolted to the casing at the discharge end. The shaft is also supported between the two end bearings by a bearing 12 arranged adjacent to the hopper. A bearing plate 13 and thrust screw 14 are desirably arranged in the bearing held by the yoke for the purpose of resisting the end thrust of the shaft when the machine is in operation. On the shaft is a pulley 15 which is designed to be made fast or loose by manipulating the clutch 16 in the usual way.

The section of the shaft that lies in the cylindrical portion of the casing and beneath the hopper is provided with a feed screw or worm 17, the diameter of which is approximately the same size as the interior diameter of the cylindrical section of the casing. Mounted upon and splined to the section of the shaft that lies in the tapering portion of the casing is a cone 18. This cone at its large end is closed by a plate 19, secured to which are two fingers 20 which project into a groove in a nut 21 that is screwed upon the shaft. By turning this nut the cone can be adjusted into or out of the conical section of the casing as desired.

The outer surface of the cone is provided with cutters of varying sizes. The cutters 22 on the smaller end of the cone are the largest, and these are desirably formed by milling

grooves of the proper shape in the body of the cone. The cutters 23 are somewhat smaller, and the cutters 24 are still finer. The cutters 23 and 24 are preferably formed  
 5 on the outer surface of bands or collars which are slipped upon and secured to the larger end of the cone. The cutters are shaped so that they gradually taper in depth from the small end of the cone where they  
 10 are the deepest to the outer end of the cone where they are shallowest. It is desirable, but not essential, that the inner walls of the conical part of the casing be provided with teeth, cutters or ribs 25, which act in con-  
 15 junction with the cutters on the cone in disintegrating the peat.

Peat as it comes from a bog, in its lumpy, irregular condition, and partially dried in the atmosphere or by artificial means to re-  
 20 move the free moisture, is fed into this machine through the inlet spout or hopper. When the machine is in operation such masses of peat are forced forwardly by the very powerful pressure of the feed screw,  
 25 and driven out through the casing around the exterior of the cone, the cutters of which, as it is rotated disintegrate, break up and grind the peat and so mix it with the water which remains, that it flows out in a plastic

or semi-fluid condition of uniform density. 30  
 This peat is then in condition to be fed to an apparatus for extracting the gas and other volatile products and converting it into fuel.

The invention claimed is:

35 A machine having a casing with an inlet hopper at one end, a cylindrical intermediate section, and a tapering discharge section at the other end, a shaft extending through the casing, means for rotating the shaft, a feed  
 40 worm mounted on the shaft below the hopper and in the cylindrical section of the casing, the diameter of said worm being approximately the same as the interior diameter  
 45 of the said cylindrical section, a cone with cutting blades on its exterior splined on the shaft in the tapering section of the casing with its small end adjacent to the end of the feed worm, means turning on the shaft  
 50 for adjusting the cone longitudinally thereof and independently of the feed worm, a yoke supporting the discharge end of the shaft, and an adjustable thrust bearing for the shaft arranged in the yoke.

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