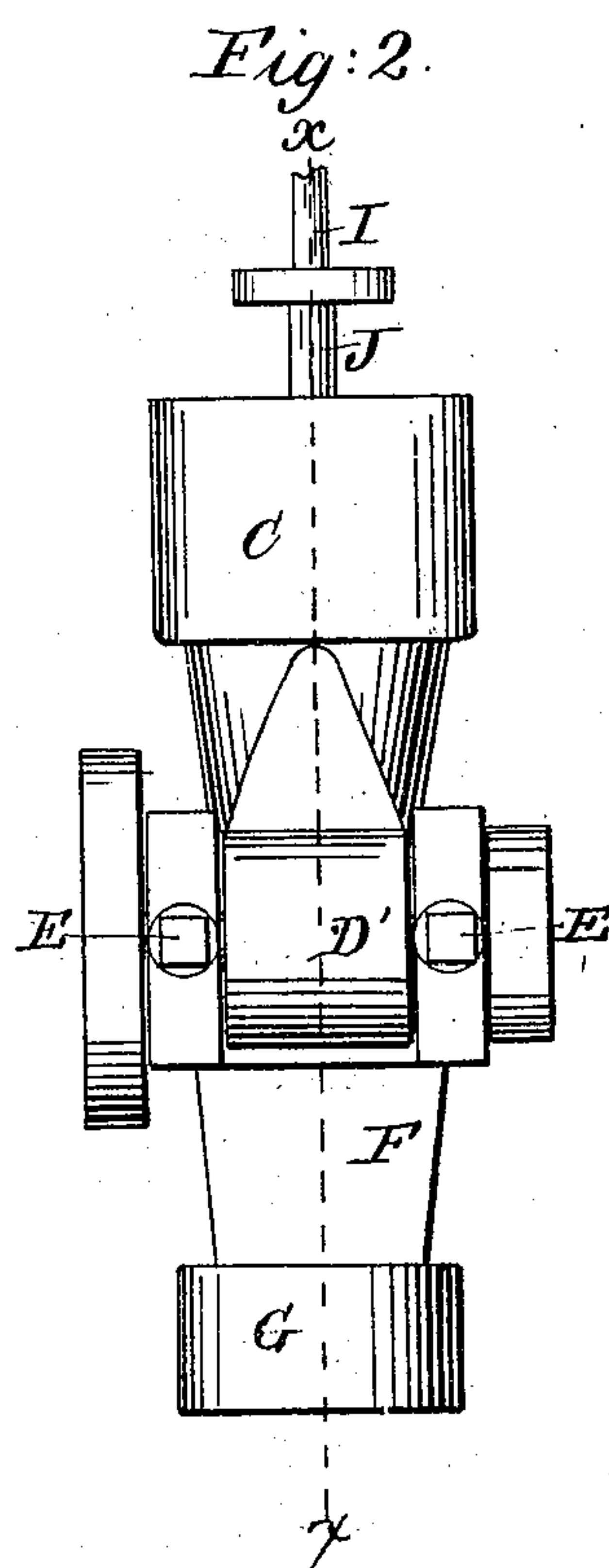
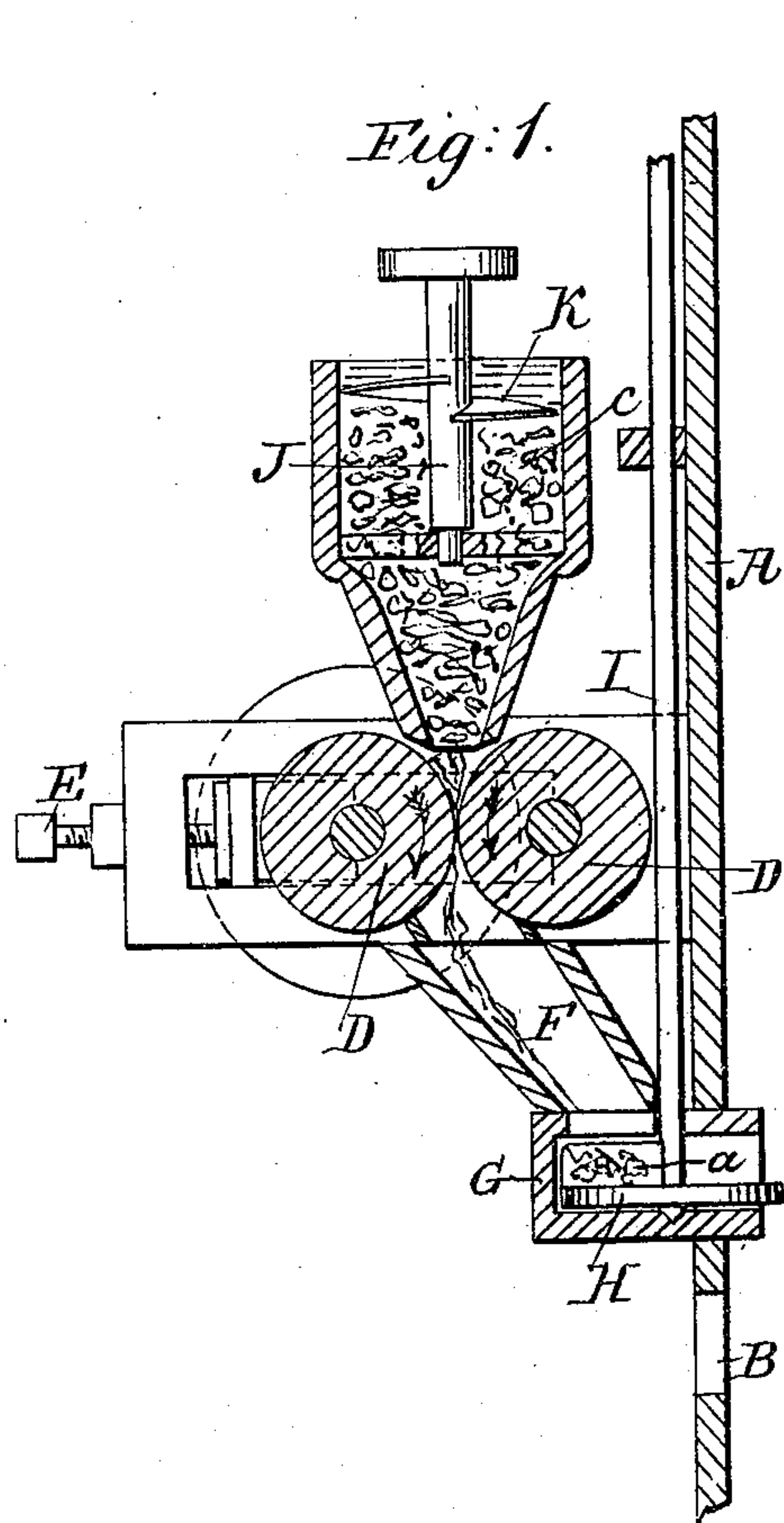


J. YATES.

Method of Preparing Peat and Feeding it to Furnaces.

No. 54,052.

Patented April 17, 1866.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH YATES, OF MOTT HAVEN, NEW YORK.

IMPROVED METHOD OF PREPARING PEAT AND FEEDING IT TO FURNACES.

Specification forming part of Letters Patent No. 54,052, dated April 17, 1866.

*To all whom it may concern:*

Be it known that I, JOSEPH YATES, of Mott Haven, in the county of Westchester and State of New York, have invented a new and useful Improvement in Preparing Peat for Furnaces and Feeding it thereto; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *xx*, Fig. 2; Fig. 2, an end view of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to obtain a means whereby peat may be fed or supplied to furnaces direct from the marsh, or in a wet or green state, without any previous preparation or drying.

There are many localities where furnaces are employed contiguous to large beds of peat, and the feeding of the wet or green peat direct to the furnace would effect a great saving in the way of fuel.

In carrying out my invention I employ pressure-rollers and a screw, or their equivalents, for compressing the principal portion of the moisture from the peat and feeding the latter in a thin sheet to the furnace, into which it is discharged in a fine shower over the fire in a way well calculated to insure perfect combustion, cause a fire of uniform intensity to be in the furnace, and at the same time obtain the advantage of additional heat by the consumption of the hydrogen gas evolved by the decomposition of the vapor arising from the slight moisture contained in the peat.

A represents the end of a furnace, B being the fire-door. C is a hopper placed at the outer side of the furnace, directly over two horizontal pressure-rollers, D D', the former, D, working in fixed bearings, and the latter, D', having its bearings adjusted by set-screws E, so that the pressure of the rollers may be regulated as desired.

The lower end of the hopper C should be of oval or elongated form and directly over the bite of the rollers D D', as shown clearly in Fig. 1, and below the rollers D D' there is a spout, F, the lower end of which communicates with a chamber, G, which extends through the end of the furnace and commu-

nicates with the fire-chamber. (See Fig. 1.) In this chamber G there is placed a horizontal disk, H, having upon it a vertical ledge or strip, *a*, extending across its center. This disk is keyed upon a vertical shaft, I, which extends up through the chamber G at the outer side of the furnace, and when the device is in use is rotated by any proper means.

In the hopper C there is placed upon a vertical shaft, J, a screw, K, which may be composed of a circular plate bent so as to form one spiral convolution. This screw K, as well as the rollers D D', may be rotated in any proper way.

The operation is as follows: The peat is placed in the hopper C, and the screw K forces it down to the rollers D D', and at the same time expresses the most of the moisture from the peat, the water flowing over the top of the hopper. The peat is drawn between the rollers D D' and compressed into a narrow or thin sheet, which is forced down the spout F into chamber G and thrown into the furnace over the fire by the revolving disk H. The peat is thrown over the fire in a shower of thin flakes and about as rapidly as it is consumed. In this state the peat is readily burned, the moisture remaining in it at its advent into the furnace being quickly evaporated, the vapor decomposed, and the hydrogen gas evolved thereby consumed.

I do not confine myself to the precise means or parts herein shown and described for effecting the object set forth, as they may be varied or modified in various ways and the same end attained.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The preparing of peat for fuel and the feeding or supplying of the same simultaneously to furnaces by means of pressure produced by rollers and a screw, or equivalent means, applied directly to the furnace, and arranged to operate in the manner substantially as set forth.

2. The scattering or distributing of the compressed peat over the fire in a shower of thin flakes, in the manner substantially as set forth.

JOSEPH YATES.

Witnesses:

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