J. B. LYONS.

APPARATUS FOR GRINDING PEAT.

No. 60,398. Patented Dec. 11, 1866.

Fig. 2.

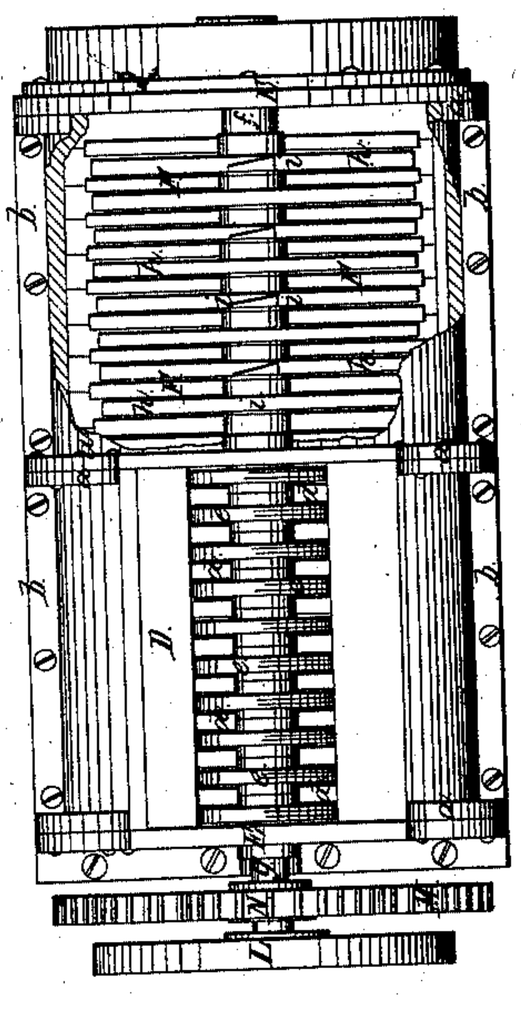


Fig. 3.

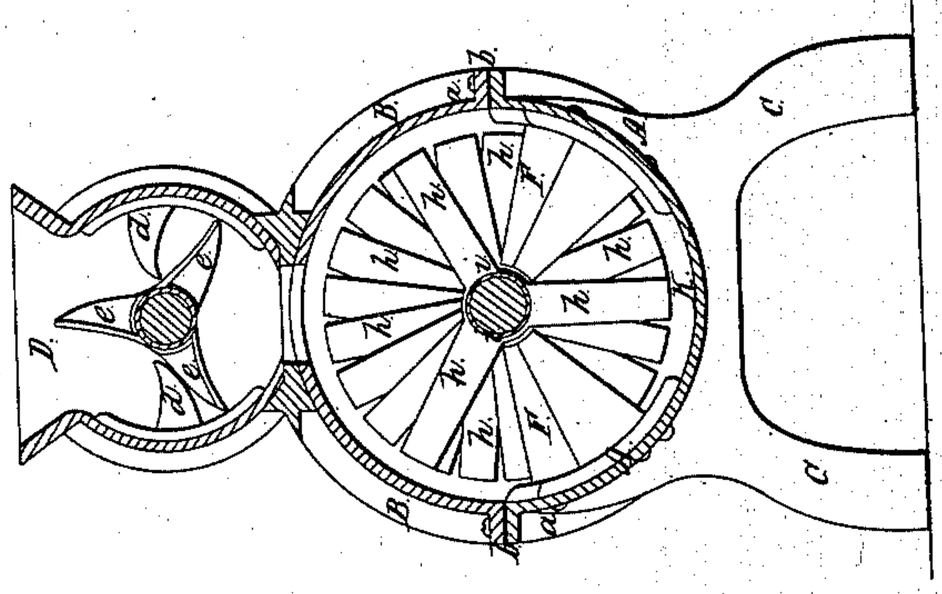


Fig. 5.

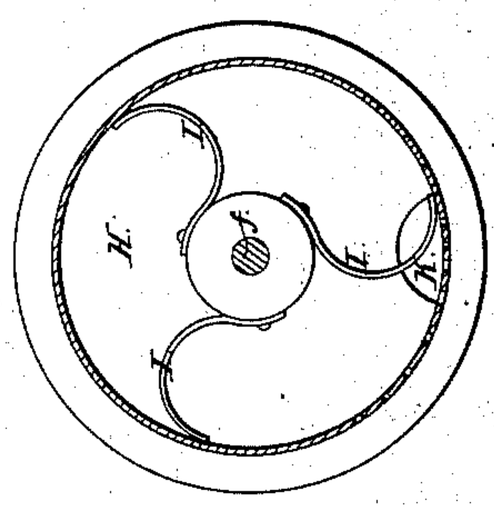


Fig. 1.

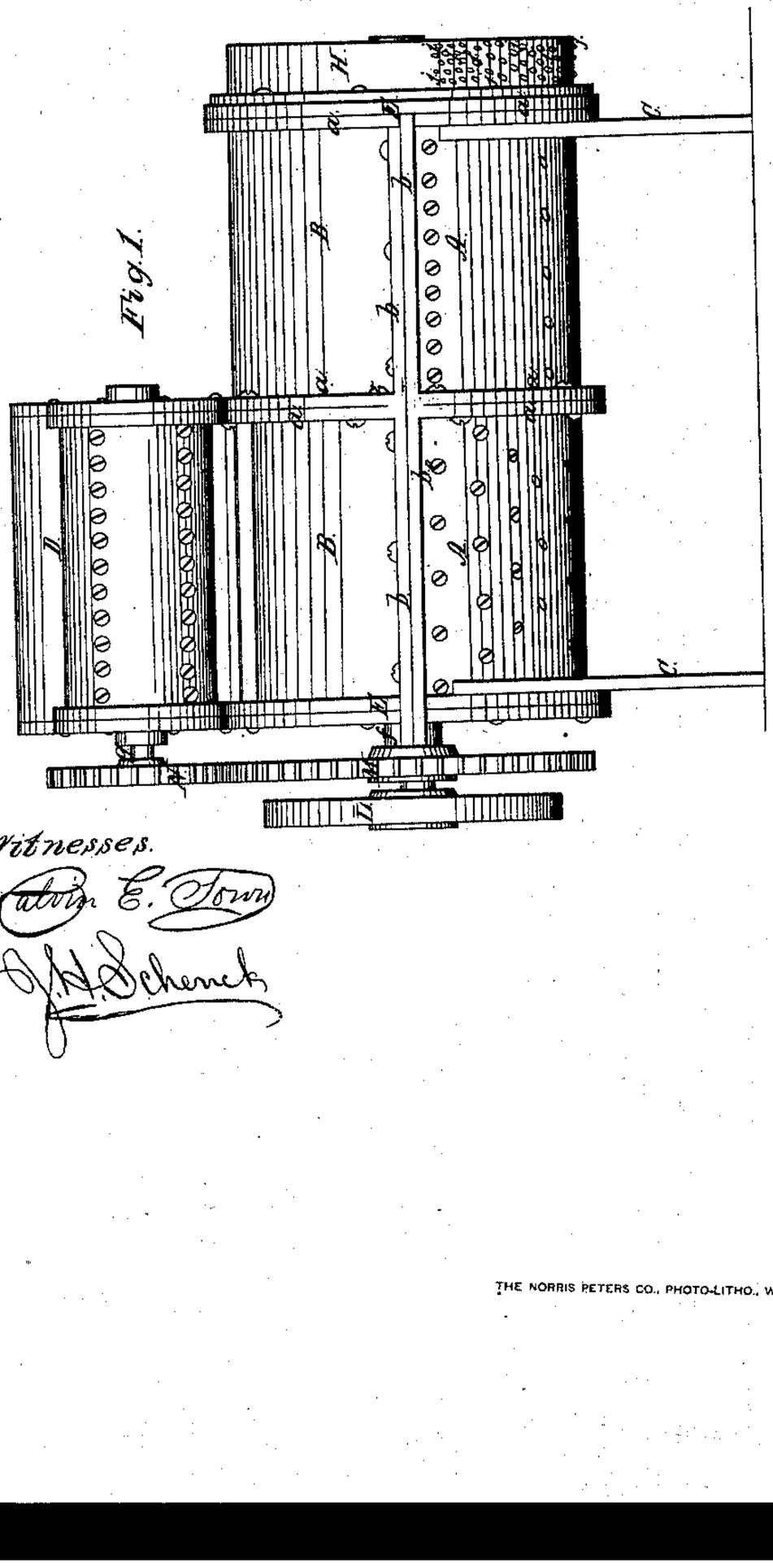
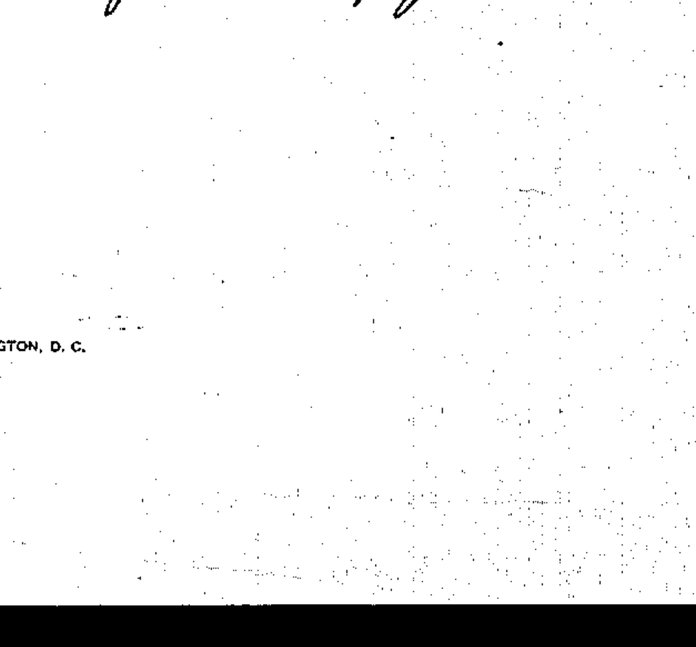


Fig. 4.



Witnesses.

Calvin E. Town

J. N. Schenck

Inventor.

James B. Lyons.

By his Attorneys J. B. Woodruff & Son

United States Patent Office.

IMPROVED APPARATUS FOR GRINDING PEAT.

JAMES B. LYONS, OF CORNWALL, CONNECTICUT.

Letters Patent No. 60,398, *dated December* 11, 1866.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES B. LYONS, of the town of Cornwall, in the county of Litchfield, in the State of Connecticut, have invented certain new and useful improvements in Machinery for Grinding Peat; and the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a side elevation of the machine.

Figure 2 shows a plan or top view, with a portion of the top cover broken, showing a longitudinal section of the interior working mechanism.

Figure 3 shows an end view section, through the crushing and grinding mechanism and the hopper.

Figure 4 shows an end section, through the cutting and pulverizing portion of the machine.

Figure 5 is an end view of the delivery or wiping out mechanism.

The object of my invention is to effectually cut up the fibrous portions of peat, and to grind and pulverize the substance, reducing it to the finest paste or powder.

My invention consists in the arrangement and combination of the crushing cylinder and forks, with the long series of spiral cutting blades and angular brakes, and the spiral wiping wings and perforated discharging cap-cylinder.

To enable others to make and use my improved machine for grinding peat, I will describe it more fully, referring to the drawings and to the letters marked thereon.

I make an iron cylinder, A A and B B, in any desired number of sections, by having flanges *a a*, through which they may be bolted together, the sections being cast in halves or semicircles, with projecting flanges *b b* on both edges, to screw the upper half B to the under portion A, which is supported, at a suitable height, on iron brackets C C. Over one section of the cover is the hopper D, in which is the crushing mechanism, which consists of the stationary forks *d d* and the revolving hook breakers *e e e e*, as seen in the top view in fig. 2 and end view fig. 3. Under the crushing apparatus is a large opening into the cutting and grinding cylinder A B, the operating mechanism, which consists of a long iron shaft *f*, extending longitudinally the whole length of the cylindrical case, having its bearings in boxes in the ends E of the case A B. On both sides of the lower section A are secured the angular brakes F F, a portion of which are set zig-zag. There is also a part of the space in which some of the brakes F′ are set perpendicular, all of them reaching near the hubs *i i i* on the cutting blades near the centre, they forming supports to prevent the revolving cutter-blade shaft from vibrating. The cutter blades *h h h h* are cast with three blades or strong knives *h h h*, sharp on the forward edge, and broad enough on the back, to nearly or quite fill the spaces between the brakes F F F, their bevel or inclinations being so that when set on the shaft *f* in a spiral their tendency is to force the material back, to be delivered into the perforated discharging cap-cylinder H, to be discharged through the perforations *j j j j j j* by the action of the scrapers I I I, they being outside of the grinding cylinder, and working close in the perforated cap-cylinder H, so as to force out all of the substance through the perforations; that is, forced in through the aperture K, and comes in contact with the wings of the scraper.

The machine, as above described, may be driven at a high speed by a belt on the band wheel L, which is on the main shaft *f*, and motion is communicated to the breaking apparatus shaft S by the spur gear-wheels M and N, the break shaft revolving twice to the cutting and grinding shaft once, so that the breaking apparatus will take in a supply sufficient to keep the cutting, grinding, and pulverizing parts at work to their fullest capacity.

It has been recently discovered that peat, when the fibers can be cut, and the mass suitably ground or pulverized, can be made very useful and available for other purposes besides for fuel; and it is in view of preparing it for a new and useful article of trade and commerce that I have invented and constructed a working machine, as above described, capable of preparing a large quantity in the most perfect manner. It is well known that most peat is composed in part of small fibers, which are nearly as tough and hard to break as a copper wire of the same size; and it will readily be seen that, by my arrangement and combination of mechanism, it can be reduced to a fine paste, or when dried, to a very fine powder.

Having thus fully described my invention and improvements in a grinding mill or apparatus for reducing peat to a fine consistence or powder, preparatory to manufacturing a new article of trade and commerce, what I claim as new, and desire to secure by Letters Patent, is—

The perforated end cylinder H, in combination with the wiping wings I I I, cutting and grinding mechanism F F *h h*, operating to discharge the pulverized mass, substantially as and for the purposes herein set forth.

Witnesses:

EGBERT E. PARDEE,

HARRY J. THOMPSON.

JAMES B. LYONS.

Assorto Edwin McNeill, Gideon H. Hollister and Henry B. Graves of Litchfield and H. Tudor Brownell of Hartford Conn.