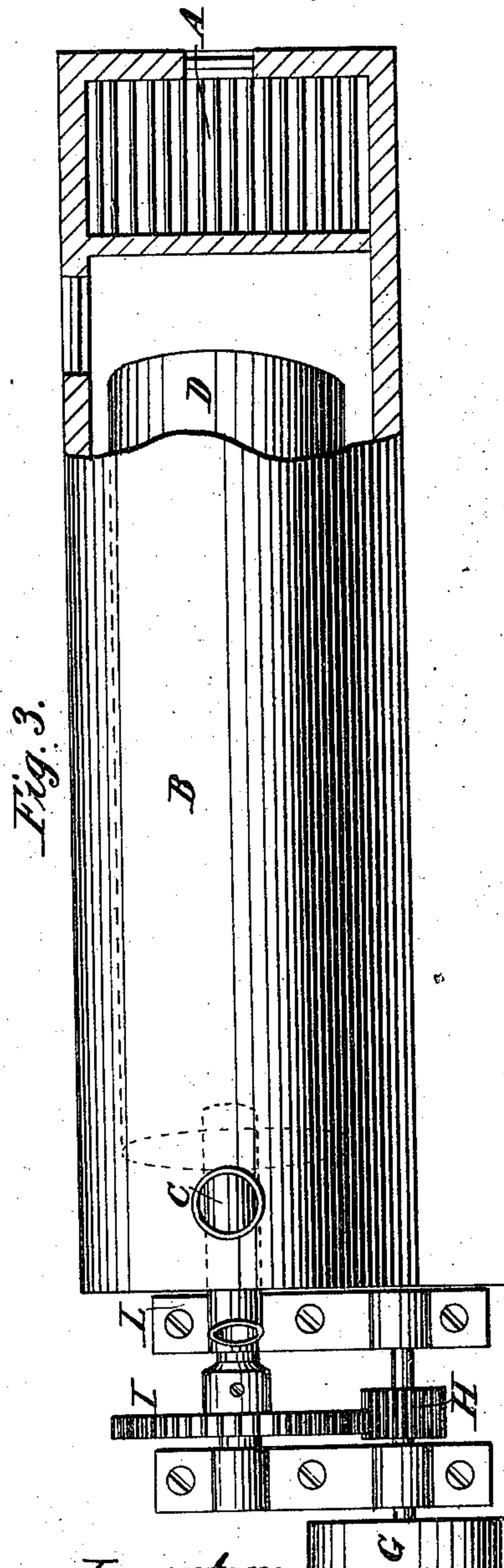
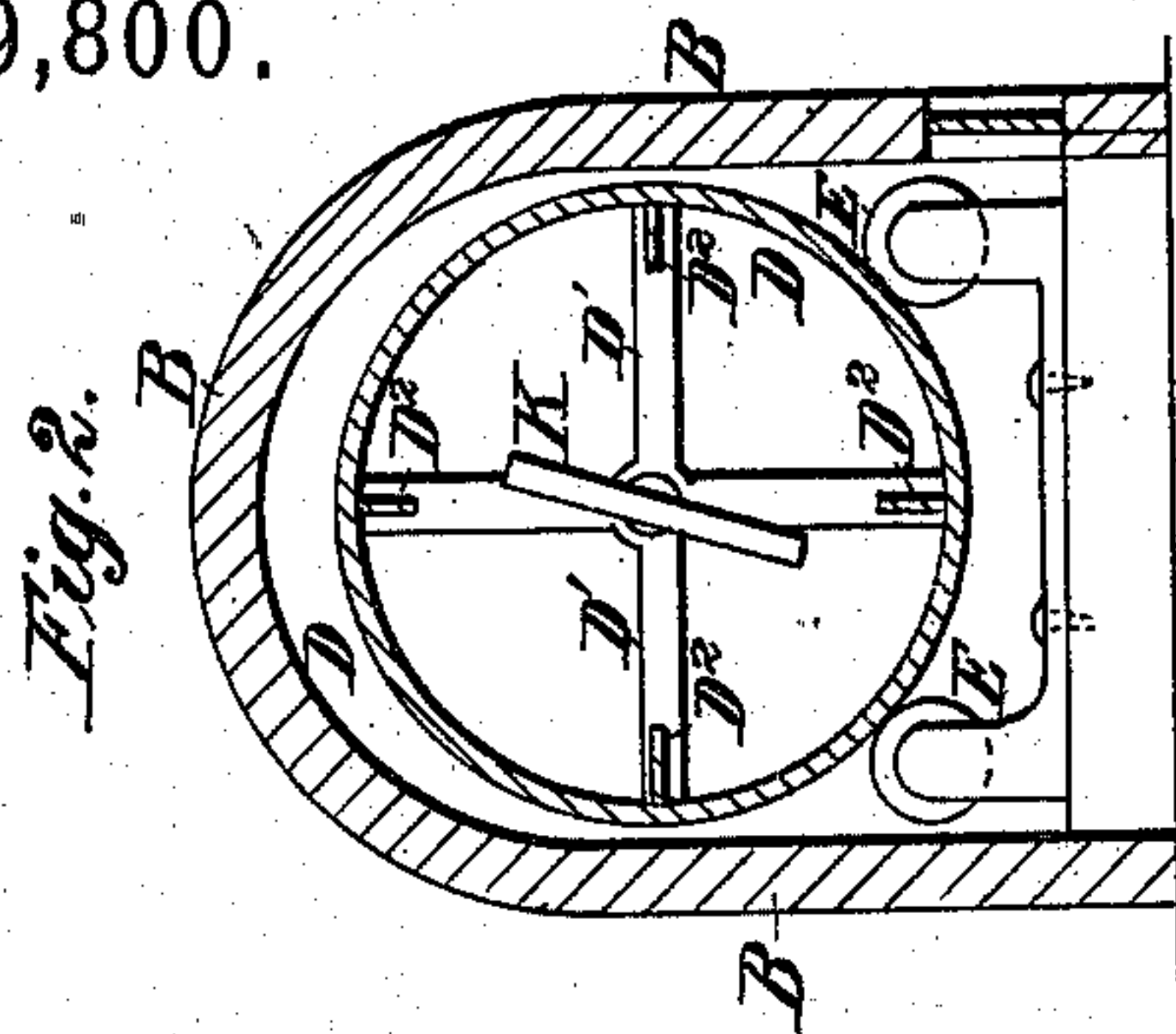
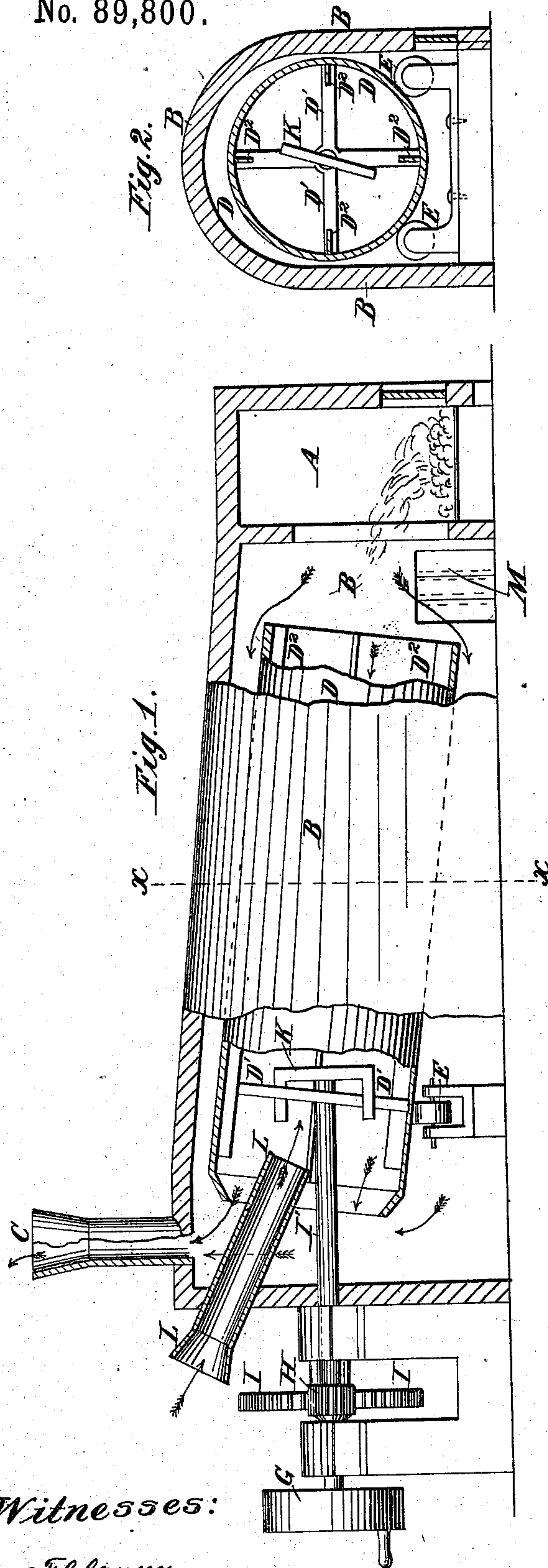


A. SMITH.
MACHINE FOR DESICCATING FERTILIZERS.

No. 89,800.

Patented May 4, 1869.



Witnesses:
F. Clausen
A. Ruppert

Inventor:
Amos Smith
by D. H. Hollaway
his atty

United States Patent Office.

AMOR SMITH, OF BALTIMORE, MARYLAND.

Letters Patent No. 89,800, dated May 4, 1869.

IMPROVED MACHINE FOR DESICCATING FERTILIZERS.

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, AMOR SMITH, of Baltimore, in the county of Baltimore, and State of Maryland, have invented a new and useful Improved Machine for Desiccating Fertilizers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is an elevation, partly in section;

Figure 2 is a vertical section on the line $x x$, fig. 1; and

Figure 3 is a plan.

The same letters in the several figures designate identical parts.

My invention is especially designed for desiccating materials used in the preparations of fertilizers, such as leather that has first been steamed, as set forth in my Letters Patent, of March, 1869, and for other analogous purposes; and

It consists in the construction and arrangement of the revolving cylindrical tube, and the furnace in which the same is placed.

A is the furnace, in which the fuel is burned. The furnace may be of any ordinary or convenient construction.

B is an oven, into which the heat is carried from the furnace, passing through the length of the oven, into the uptake O.

Within the oven is placed a cylindrical metallic tube, D, which is open at both ends, and slightly inclined, and rests upon four friction-wheels, E.

The tube has within it a series of longitudinal metallic ribs, D^2 , sharp upon their edges, so as to act upon the materials which pass through the tube as it revolves, cutting and breaking them so as to reduce, or assist in reducing them to the powdered, or granulated state in which they are required for use.

This tube may be revolved by the following-described mechanism:

The power is applied to the pulley G, on the shaft of which is a pinion, H, meshing into and giving motion to the spur-wheel I, the shaft I' of which extends through the end of the oven, and into the end of the

tube D. On the end of the shaft I' is a clutch, K, which engages the arms of the spider D^1 , within and attached to the tube. The revolution of the gearing will give a rotary motion to the tube.

The cooked leather, or other material to be acted upon, is to be introduced into the upper end of the tube D through the pipe K, which extends through the wall of the oven and into the tube.

The material, thus delivered into the tube, will pass slowly along the entire length thereof, and, by its revolution, be made to fall upon the sharp edges of the ribs, or fins D^2 , and thus be broken up and powdered, while it is exposed to the free action of the heat carried by the draught, which will also carry away the moisture taken up from the material, and discharge it, with the products of combustion, through the uptake.

The material, as thus carried through the tube, will fall from the lower end upon the hearth of the oven, from which, when dried, it may be removed through the door M, formed for the purpose, through the wall of the oven.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the oven B, a revolving tube, D, open at both ends, when arranged to operate substantially in the manner and for the purpose set forth.

2. The combination and arrangement of the oven, the tube, the pipe L, gearing G H I, shaft I' , and clutch K, substantially as set forth.

3. The revolving tube D, open at both ends, and constructed with internal ribs, or fins; but this I claim only when said tube is arranged within an oven, to operate substantially as set forth.

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

AMOR SMITH.

Witnesses:

D. P. HOLLOWAY

C. F. CLAUSEN.