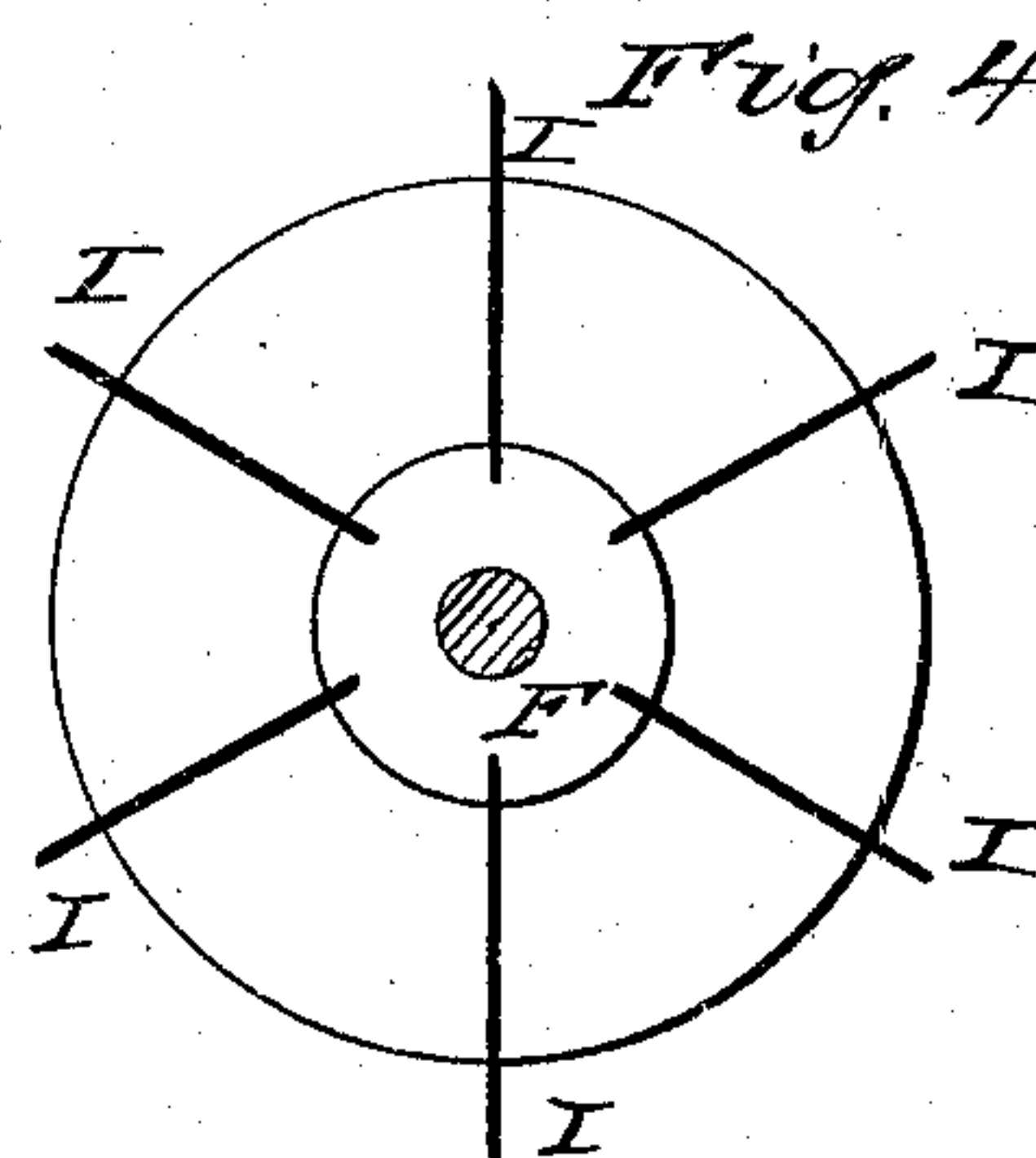
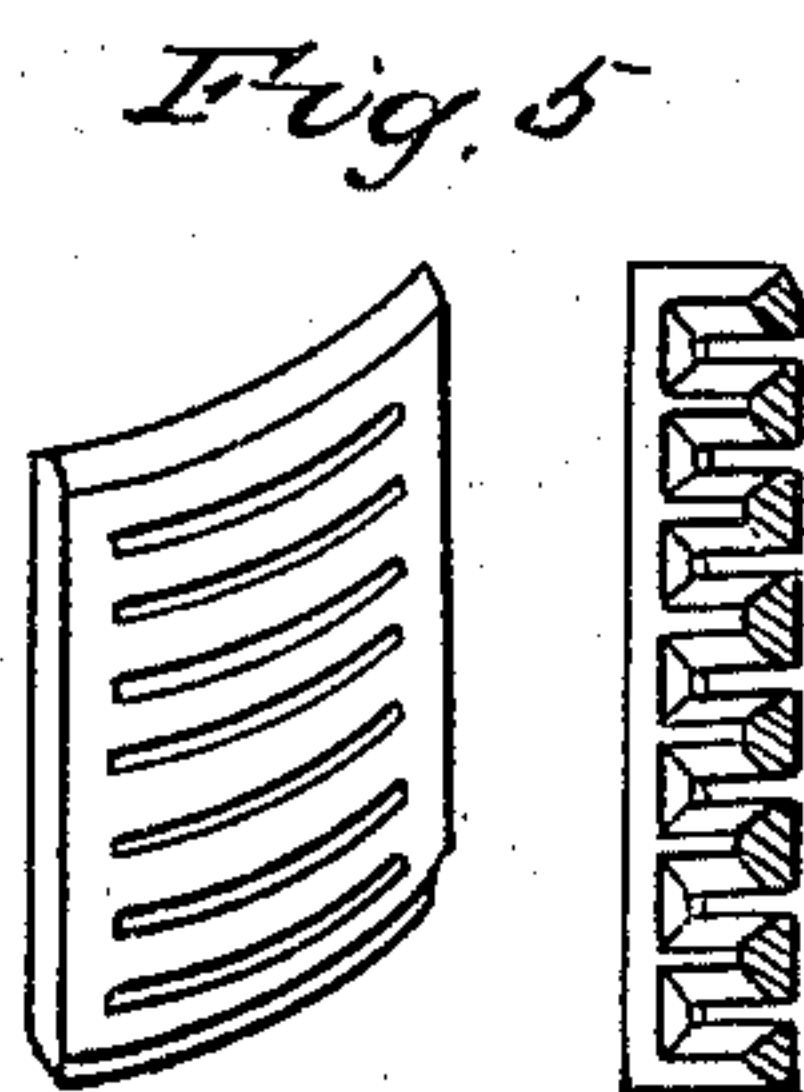
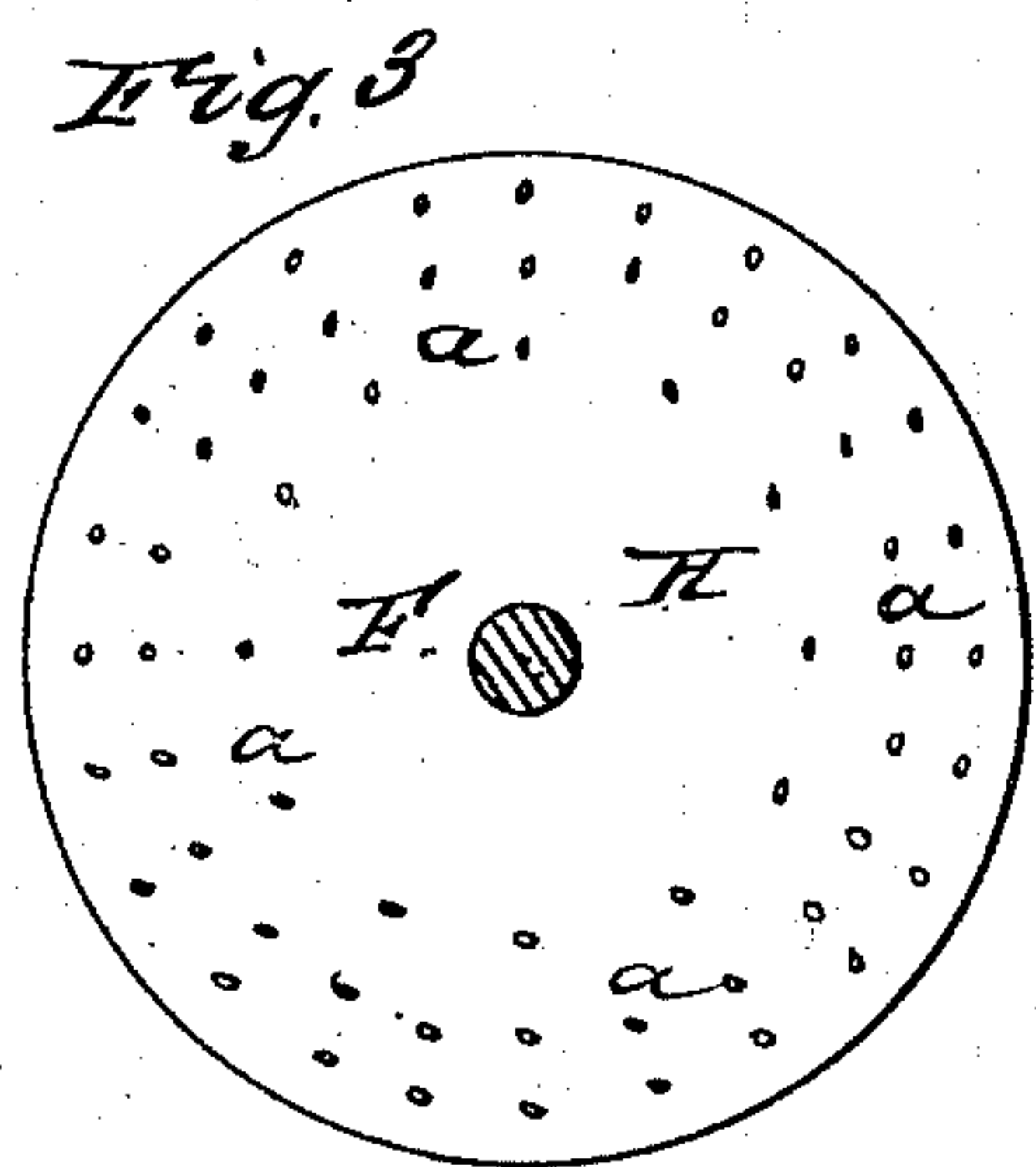
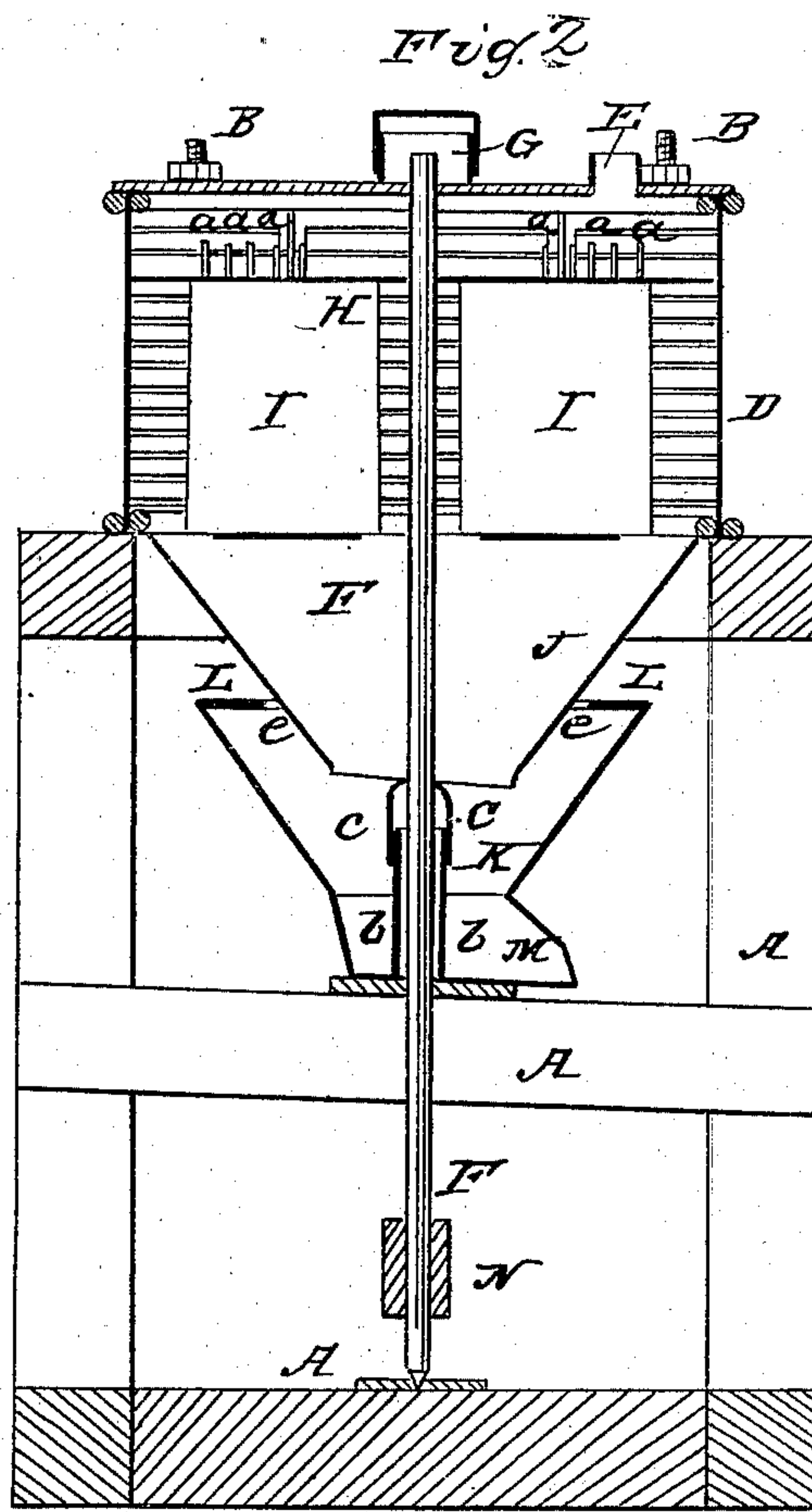
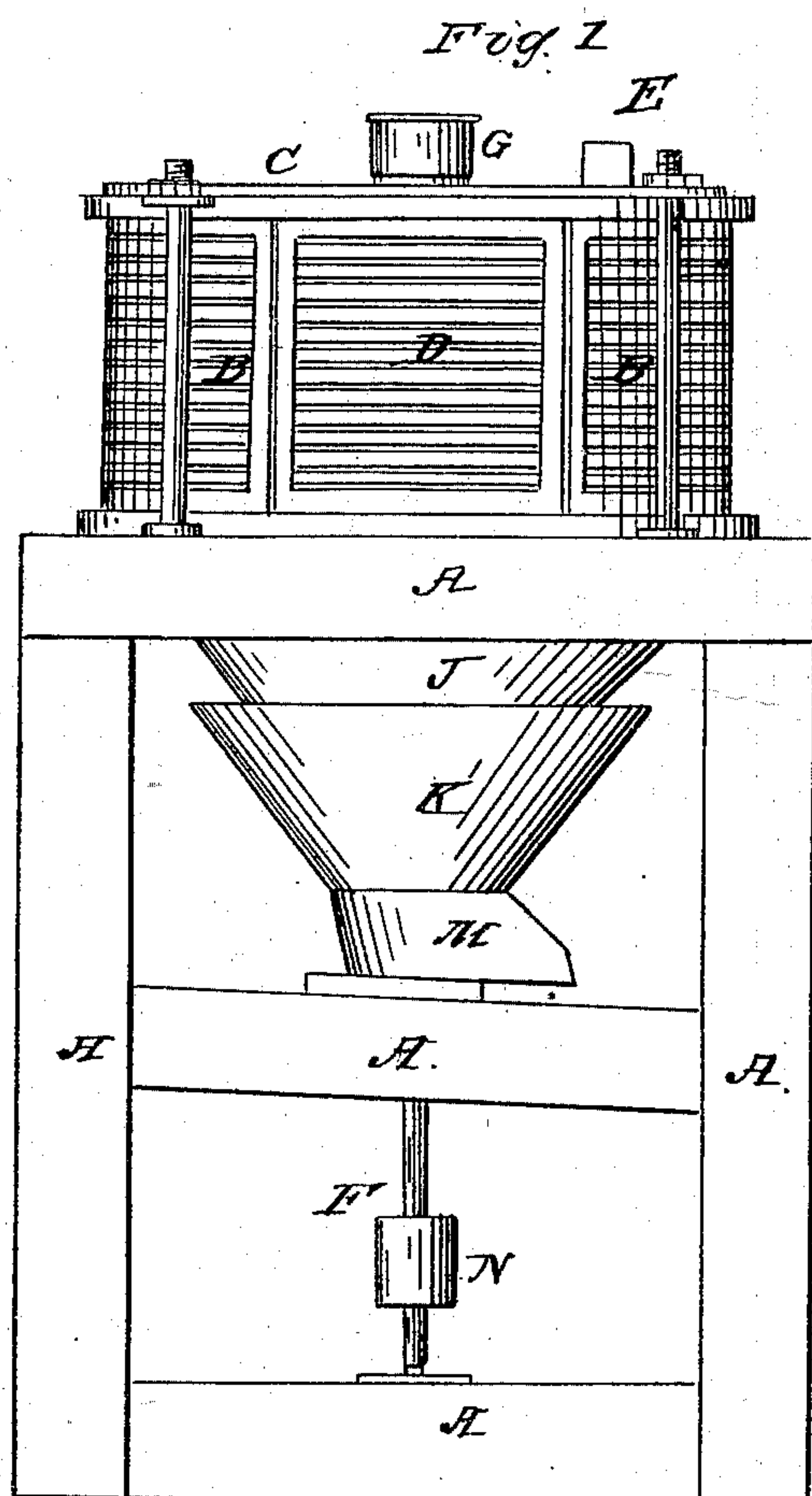


I. KEPLER.

Smut Mill.

No. 16,980.

Patented April 7, 1857.





# UNITED STATES PATENT OFFICE.

ISRAEL KEPLER, OF MILTON, PENNSYLVANIA.

## SMUT-MACHINE.

Specification of Letters Patent No. 16,980, dated April 7, 1857.

*To all whom it may concern:*

Be it known that I, ISRAEL KEPLER, of Milton, in the county of Northumberland and State of Pennsylvania, have invented certain new and useful Improvements in Smut-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1 represents an elevation of the machine. Fig. 2 represents a vertical section through the same. Fig. 3, represents a top view of the revolving toothed-disk, detached from the machine. Fig. 4, represents a similar view of the fan and beater. Fig. 5, represents on an enlarged scale one of the ribs or staves, detached.

Similar letters of reference where they occur in the several figures denote like parts in all.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a substantial frame upon the top of which is secured (by the screw bolts B, or otherwise, which pass through lugs on the upper head C,) a cylinder D, composed of series of ribbed staves with suitable openings between said ribs to allow the smut, dirt, and other impurities, which are knocked off, or separated from the grains, to pass through. These openings run horizontally around the cylinder, and are made flaring on the inside (as more particularly seen in Fig. 5) to allow a more free current from the inside to the outside of said cylinder.

E, is a hopper into and through which the grain that is to be divested of its smut &c., is fed to the machine.

A shaft F, which has its step in the lower cross piece of the frame A, passes upward through the cylinder, and has an upper bearing G, on the upper head C thereof, which box or bearing may be capped to protect it from the dirt. Upon this shaft F, underneath the upper head C, is placed so as to rotate with said shaft, a disk H, provided with a series of pins *a, a, a*, which tend to brake the smut balls, and prevent the grain from being thrown too violently and suddenly by its centrifugal force against the ribs or staves of the cylinder. Underneath the disk H, are wings I, which are also attached to, and rotate with the shaft F.

These wings create a strong current of air from the inside to the outside of the cylinder, and as the grains drop from the disk H, they are thrown against the ribs, the blast of air created by said wings driving the smut through the openings, while the grain rebounds is again thrown up against the ribs until it drops below the ribs, and falls into the conical hopper J, below the cylinder, from whence it drops into a second hopper K, which is placed below the hopper J, but so that the lower end of the hopper J, shall extend into hopper K below it. A flange or rim L, surrounds the top of the lower hopper K, which flange nearly closes up the space between said hoppers leaving just enough space *e* to admit air to the cylinder through the hopper J, but not space enough to allow the grain to be thrown out.

A shoe or spout M, is connected to the lower end of the lower hopper K, through which the cleaned grain passes out. To make a tight joint where the shaft F passes through the spout M, a tube *b*, is fastened to the bottom of the spout surrounding the opening therein through which the shaft passes. An inverted tube *c* is then secured to the shaft F, which fits over the top of the other one *b*, and thus effectually covers the opening through which the shaft passes.

N, is a pulley on the shaft F, around which may pass a belt for driving the machine.

A more particular construction of the stave, is seen in Fig. 5, the right hand figure representing a vertical section through the ribs thereof. The ribs are so beveled, or cut away on their inside, as to concentrate the blast through the openings between them. Besides it leaves no obstruction to the passage of air, and the smut and other impurities carried through by the air. When the openings in the staves are vertical, they each and everyone oppose and check the current of air which is forced by the fan and beaters against the inside of the cylinder which they constitute, and obstruct the action of the machine. To vertical ribs therefore, I lay no claim, as they will not serve my purpose, retarding as they do, the current of air.

Having thus fully described the nature of my invention I would state that, I do not claim vertical ribs or openings of any kind, nor do I claim horizontal ribs of wire, nor the openings between the wires, as neither

of these effects the object I have in view, but

What I do claim as new and desire to secure by Letters Patent is—

- 5 In the construction of the stave, the horizontal ribs and openings, when said ribs are cut away on their inner faces so as to facilitate and concentrate the blast of air

that is to pass through them, to carry off the smut and other impurities, in the manner set forth. 10

I. KEPLER.

Witnesses:

L. D. EVELAND,  
JACOB WHEELAND.