

(No Model.)

F. F. LANDIS.

FAN AND REGULATOR FOR THRASHING MACHINES.

No. 482,846.

Patented Sept. 20, 1892.

FIG. 1.

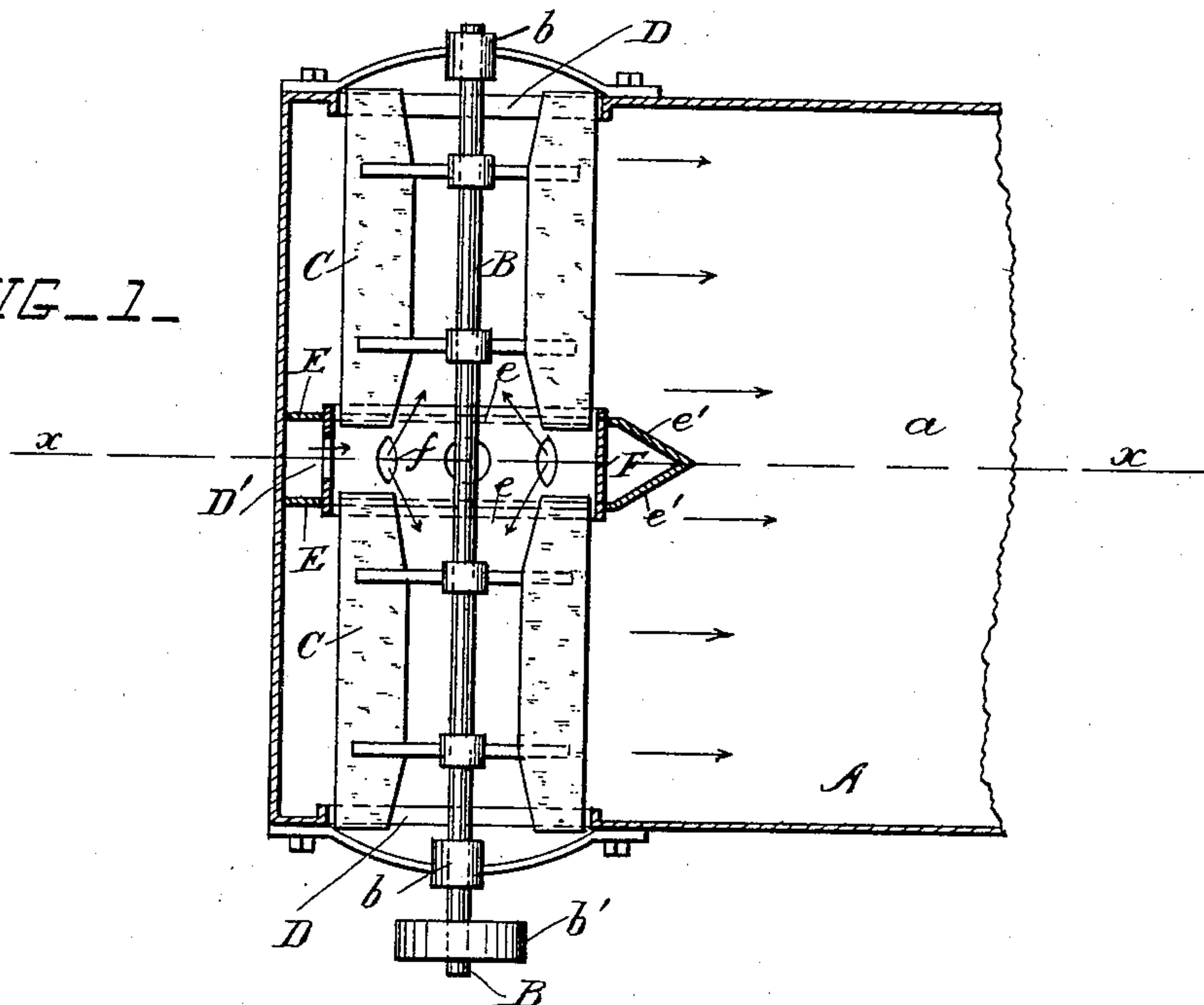


FIG. 2.

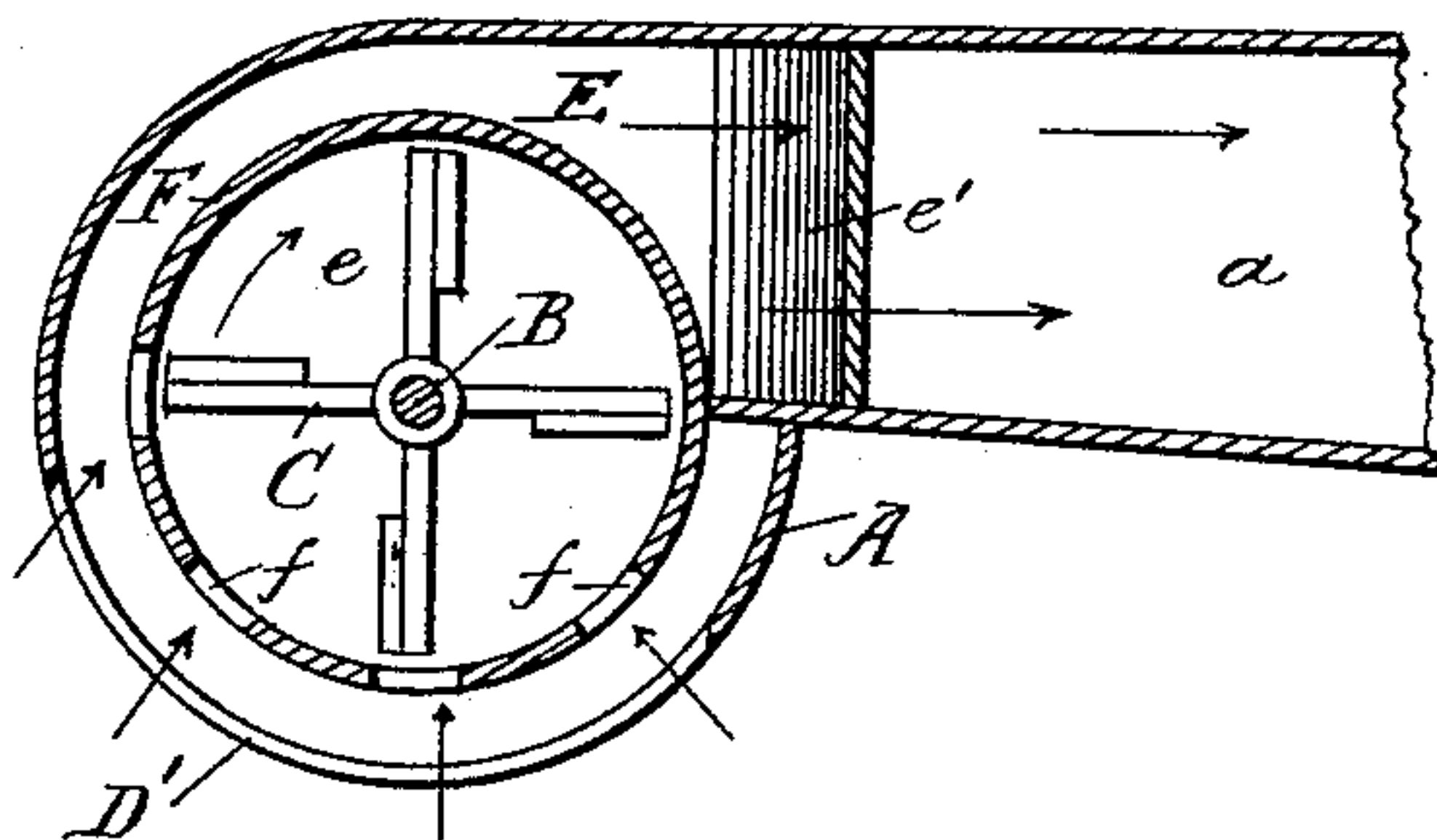
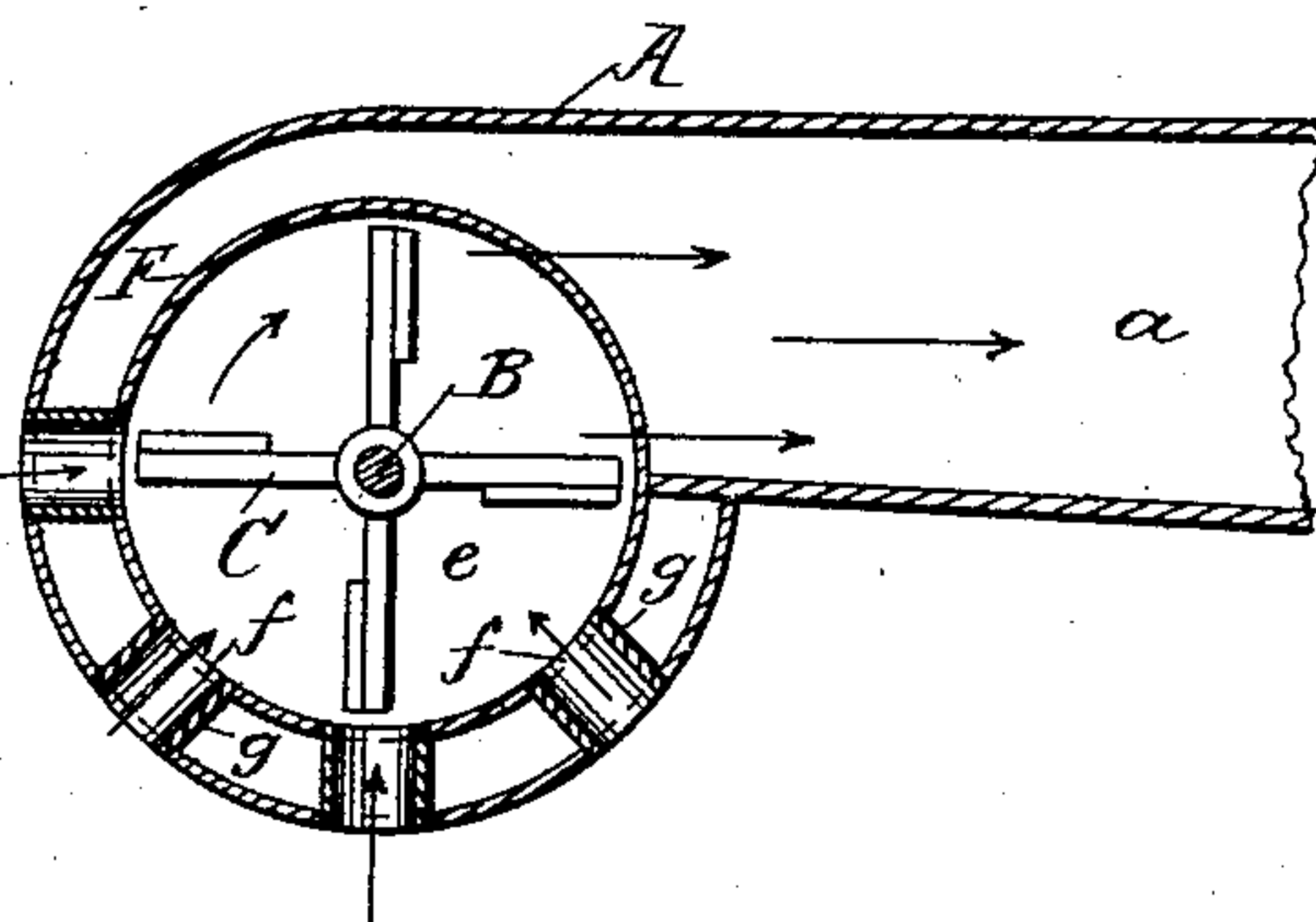


FIG. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

FRANK F. LANDIS, OF WAYNESBOROUGH, PENNSYLVANIA.

## FAN AND REGULATOR FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 482,846, dated September 20, 1892.

Application filed April 2, 1892. Serial No. 427,525. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK F. LANDIS, a citizen of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Fans and Regulators for Thrashing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the fans and blast-regulators used in thrashing-machines; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a plan view of the fan, showing the casing in section. Fig. 2 is a cross-section taken on the line  $xx$  in Fig. 1. Fig. 3 is a similar cross-section and shows a modification.

Thrashing-machines of large size have to be built of considerable width, and in making long fans of the width of these machines it has been found difficult to secure a uniform pressure of blast all across the machine, because the air which enters at the ends of the fan is driven off before it reaches the central parts of the fan-blades, and this difficulty is not satisfactorily overcome by making the middle of the fan of larger diameter than its ends. According to the present invention the fan is made in sections and works in a casing of peculiar construction, as hereinafter described, so that the blast is regulated and kept uniform in pressure all across the machine.

A is the fan-casing, provided with a single outlet-passage  $a$  of the full width required by the machine.

B is the fan-shaft, journaled in the bearings  $b$ , secured to the sides of the machine, and provided with a pulley  $b'$  for driving it in the usual manner.

C are the sections of the fan. These sections are alike and consist of blades and arms securing the blades on the shaft B in the usual manner. Two sections C are shown in Fig. 1 of the drawings; but it is obvious that more than two sections can be used, if desired.

Inlet-openings D for air are provided in the fan-casing A at the outer ends of the sections

of the fan, and an inlet-opening D' for air is provided in the casing A between each two sections. This opening D' is preferably on the lower side of the casing and extends as far around it as is necessary to obtain the requisite area. The air is drawn in by the sections of the fan and is forced up the outlet-passage  $a$ , common to both sections, as indicated by the arrows in the drawings.

E are heads inside the casing on each side of the opening D', and  $e$  are the inlet-openings in the heads. Two inclined boards  $e'$  are secured to each other and to the said heads and project within the passage  $a$ , so that the air cannot escape backward from the said passage; but these boards  $e'$  may be dispensed with, if desired.

The ends of the fan-blades preferably revolve within the inlet-openings D, and each inlet-opening is preferably provided with an internally-projecting flange to prevent the escape of air from the casing.

The projecting flanges of the heads E are similar to the flanges on the ends of the casing, and they may be formed on the heads or they may be the ends of the ring F carried by the heads E. The ring F is provided with holes  $f$  to admit the air to the inlet-openings  $e$ .

Fig. 3 shows a simple modification in which the heads E are dispensed with, and the ring F is carried by short pipes  $g$ , which connect the holes  $f$  with the air outside the casing. The pipes  $g$  are carried by the casing, and the cutting of a single large opening D' is avoided and the casing is not weakened.

What I claim is—

1. The combination, with the sections of the fan secured upon the fan-shaft, of a fan-casing provided with an outlet common to the said sections and inlets at the ends of the fan and between its sections and a perforated ring supported in the casing and arranged between the said fan-sections, substantially as set forth.

2. The combination, with the sections of the fan secured upon the fan-shaft, of a fan-casing provided with an outlet common to the said sections and inlets at the ends of the fan and between its sections, a ring provided with holes, and short pipes supporting the said ring in the casing and connecting the holes in



the ring with the said inlets in the casing between the sections, substantially as set forth.

3. The combination, with the sections of the fan secured upon the fan-shaft, of a fan-casing provided with a single outlet common to the said sections and a ring encircling the adjacent ends of the fan-blades of each two sections, said ring being provided with holes

between the sections for the admission of air, substantially as set forth. 10

In testimony whereof I affix my signature in presence of two witnesses.

FRANK F. LANDIS.

Witnesses:

ALF. N. RUSSELL,

ALEX. S. ENGLE.