A. W. FOX.

Improvement in Blast-Regulator for Grain-Separators.

No. 131,870. Patented Oct. 1, 1872.

Fig. 1.

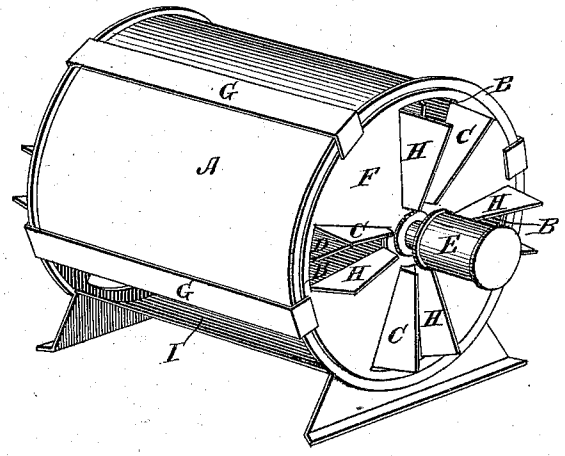


Fig. 3.

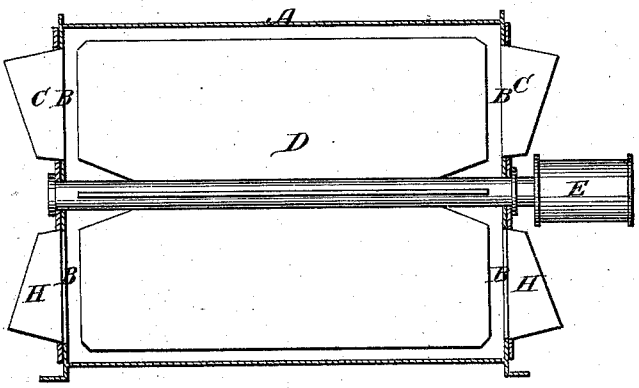
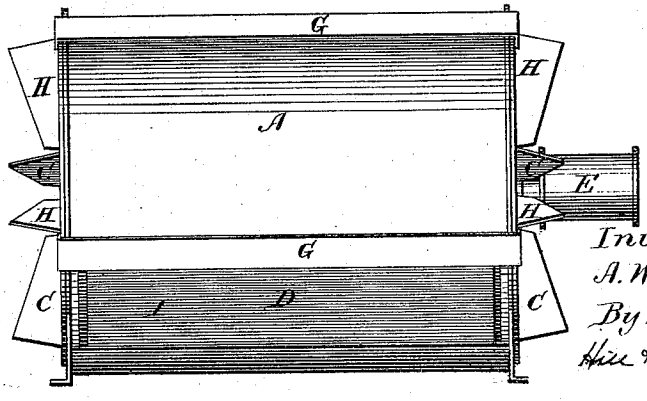


Fig. 2.



Witnesses.
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

ABRAHAM W. FOX, OF McCONNELLSBURG, PENNSYLVANIA.

IMPROVEMENT IN BLAST-REGULATORS FOR GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **131,870**, dated October 1, 1872.

To all whom it may concern:

Be it known that I, ABRAHAM W. FOX, of McConnellsburg, in the county of Fulton and State of Pennsylvania, have invented a new and improved Blast-Regulator for Grain-Separators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a perspective view of my improved blast-regulator; Fig. 2, a front elevation of the same; and Fig. 3, a vertical longitudinal section.

Similar letters of reference in the accompanying drawing indicate the same parts.

My invention has for its object to provide improved means for automatically regulating the fan-blast of a grain separator or fanning-mill irrespective of the speed of the fan. To this end, the invention consists in constructing the fan-case in the form of a cylinder with radial openings in its ends, each opening having an exterior radial wing, and in combining therewith two circular end gates having corresponding openings and wings, such gates being so arranged that, when the speed of the fan increases to form a partial vacuum within the fan-case, their wings shall approach those of the cylinder and close or partially close the openings, the gates being adjusted in any suitable manner to open the passages for the introduction of a greater volume of air as the speed of the fan decreases.

In the accompanying drawing, A is the fan-case, constructed in the form of a cylinder with one or more radial openings, B, in its ends, which are each provided upon one edge with an outwardly projecting radial wing, C. D is the fan, the shaft of which has its bearings in the ends of the case, and is provided upon one end with the driving-pulley E or a suitable gear-wheel. F are the circular gates, mounted loosely upon the fan-shaft, so as to bear against the ends of the case upon the outside, and connected to each other by strips G passing longitudinally over the case, as shown. The gates are also constructed with radial openings to register with the openings in the case, and with radial wings H along the edge of each opening opposite the wings of the case.

When the machine is in operation the air is drawn into the case through the openings B, between the wings C H, and as the speed of the fan increases a partial vacuum is produced within the fan-case, causing the wings to approach each other at each opening, so as to decrease the size of the latter and reduce proportionately the strength of the blast. The gates are opened, for the admission of a larger volume of air to the fan as the speed decreases, by weights attached to one of the strips G or to the gates themselves. The gates should be so weighted or adjusted that the passages B shall open when the machine is at rest or at a low rate of speed, and close gradually as the speed increases.

By this construction a uniform blast is maintained automatically irrespective of the variable speed of the fan, and all danger of blowing the grain over the sieves of the machine, or of cleaning it improperly, is consequently avoided.

The winged gates are sensitive to the slightest variations in speed, and the openings are therefore closed and uncovered with the utmost ease, so that any sudden change of speed does not affect the uniformity of the blast.

I is an opening in the front of the case through which the blast is driven by the fan to the sieves of the machine, as will be readily understood.

The regulator may be attached to any ordinary fanning-mill or grain-separator, or form a part of their construction.

Having thus described my invention, what I claim is—

1. The fan-case A, constructed in cylindrical form and provided with the radial openings B and rings C, substantially as described, for the purpose specified.

2. In combination with the radial openings and wings of the fan-case, I claim the circular gates, having corresponding openings and wings, substantially as described, for the purpose specified.

3. A blast-regulator for grain-separators, consisting of a circular fan-case having radial end openings and wings, and circular end gates having corresponding openings and wings, said gates being arranged to automatically close or partly close the wind-openings when a partial vacuum is produced within the fan-case, substantially as described, for the purpose specified.

ABRAHAM W. FOX.

Witnesses:
W. A. SLOAN,
JOHN R. FOX.