

(No Model.)

J. A. LATCHA.

APPARATUS FOR DRYING GRAIN BY MEANS OF AIR CURRENTS.

No. 318,269.

Patented May 19, 1885.

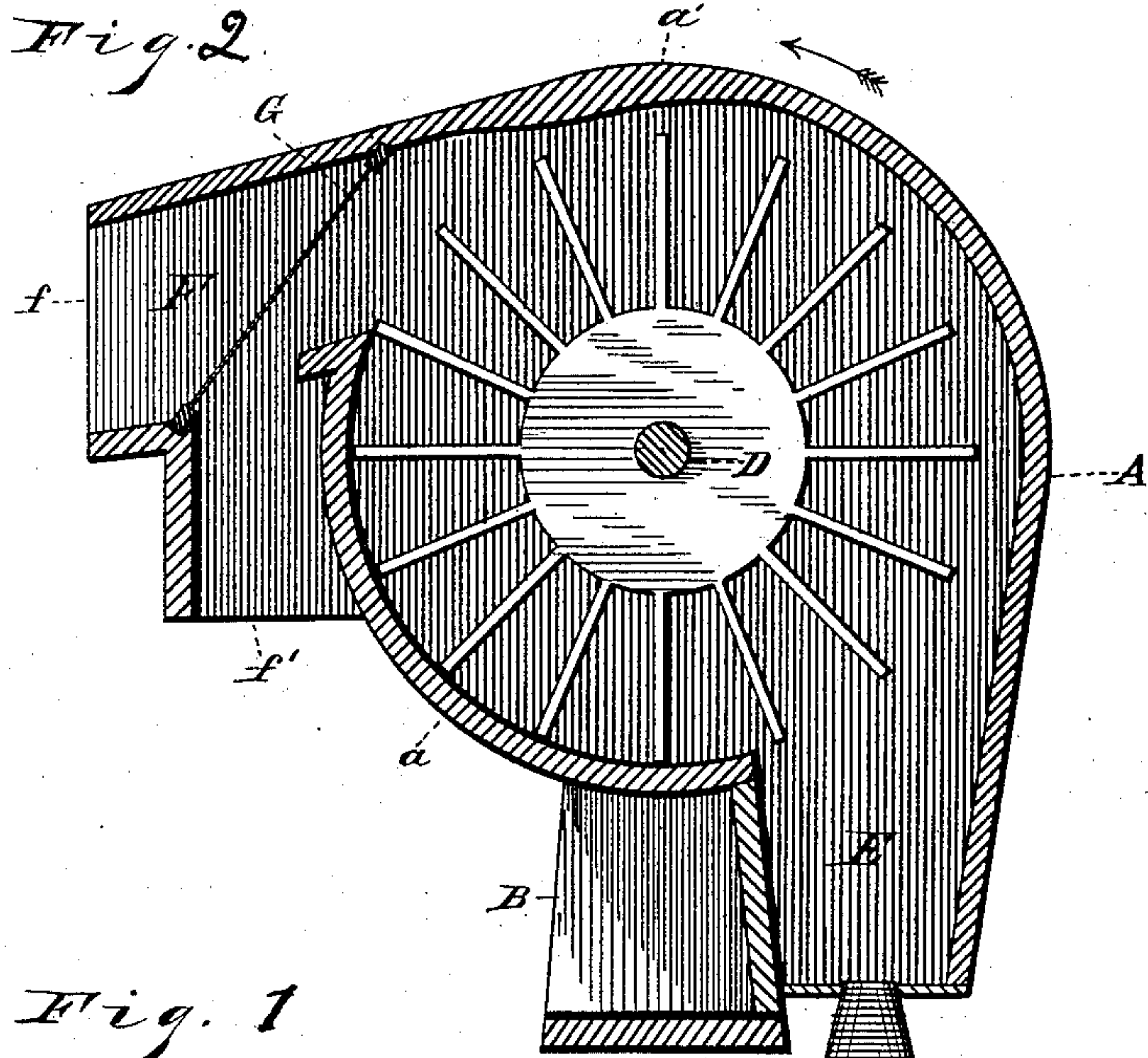
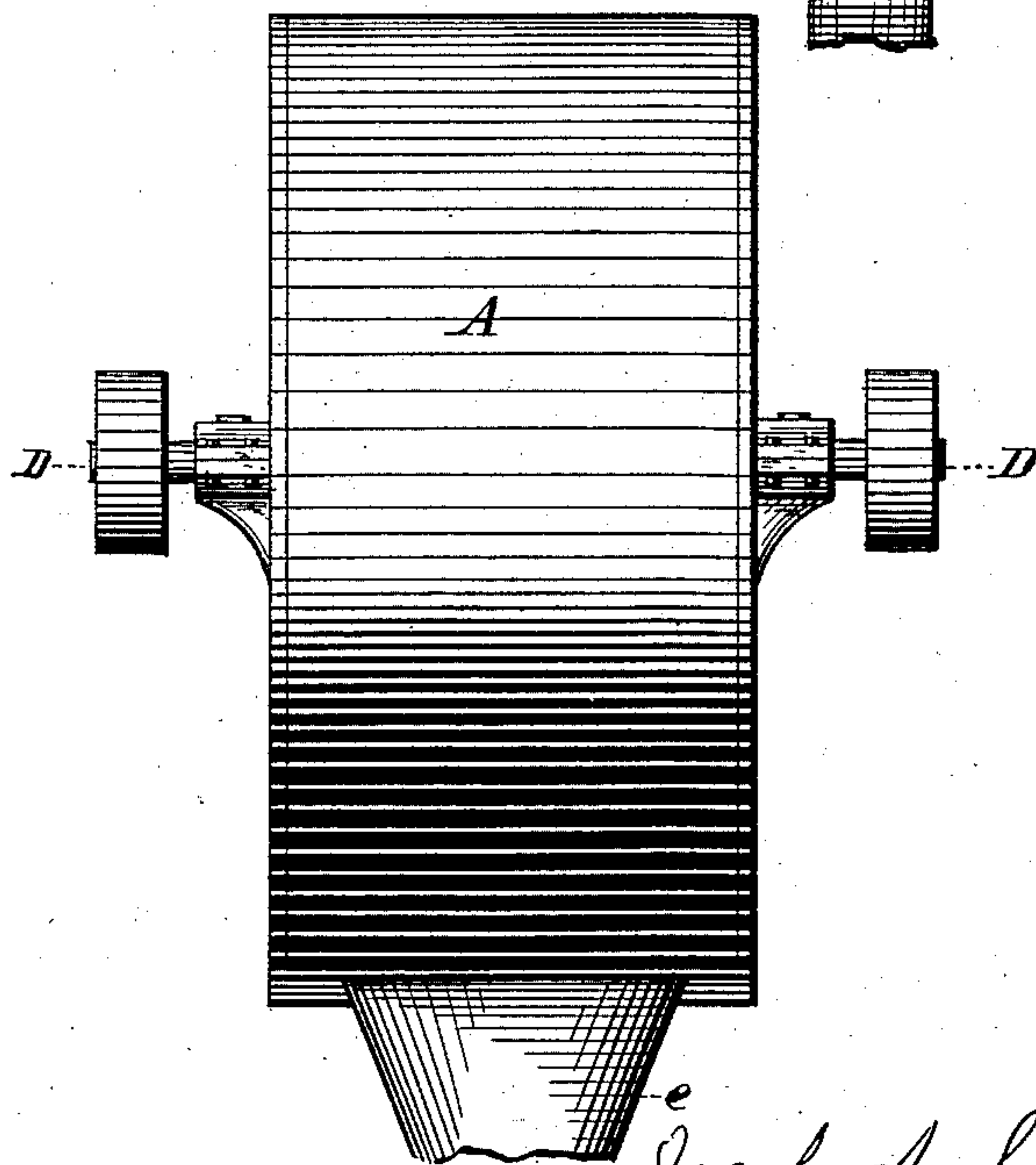


Fig. 1



WITNESSES

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JACOB A. LATCHA, OF CLEVELAND, OHIO.

APPARATUS FOR DRYING GRAIN BY MEANS OF AIR-CURRENTS.

SPECIFICATION forming part of Letters Patent No. 318,269, dated May 19, 1885.

Application filed April 2, 1883. Renewed March 3, 1885. (No model.)

To all whom it may concern:

Be it known that I, JACOB A. LATCHA, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful
5 Improvements in Elevating, Conveying, Purifying, &c., Grain by Air-Currents; 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
10 it pertains to make and use the same.

My invention relates to improvements in the apparatus for simultaneously elevating, conveying, cooling, purifying, and drying
15 grain by means of air-currents; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

The object of my invention is to provide a cheap and expeditious way of renovating
20 grain, or of treating it in any manner desired wherein moving the grain is a consideration and part thereof.

By my invention grain may be taken from a bin and dried, purified, cooled, and dis-
25 charged either into an adjoining bin or into one remote, or, if desired, into the same bin from which the grain was taken, and this too with a mere nominal amount of manual labor expended.

30 In the drawings, Figure 1 is an end elevation. Fig. 2 is a side elevation in section.

A represents the casing of an air-fan terminating in the base B, that is provided with flanges and made suitable for supporting the
35 fan and for fastening it to the floor or other foundation.

C is the fan revolving in the direction of the arrow and supported on the shaft D, that extends through the casing and is journaled in
40 boxes that are attached to either side of the machine, but on the outside of the casing. The shaft D is also provided with one or more driving-pulleys, by means of which power can be applied to the fan. The fan is made, preferably, with a drum or wheel in the center in-
45 stead of arms, and to which the vanes are attached. The casing is so shaped and made as to form the chambers E and F. The former should lead off in the line of a tangent, or
50 nearly so, from the fan, and terminates in the suction-pipe *e*, that may lead in any direction

necessary, avoiding as much as possible sharp elbows, and connects with the discharge-pipe of the grain-reservoir. This pipe as it approaches the said chamber should gradually
55 widen in the direction that is parallel with the shaft, and be made narrower in the other direction, so that whatever is discharged from the said pipe into the fan will be distributed as equally as possible over the entire width of
60 the fan. The chamber F is provided with two outlets, *f* and *f'*. The upper and larger outlet, *f*, has extending across its opening the inclined screen G, that is of sufficient fineness to prevent the grain from passing through it. 65 This screen is made, preferably, with a frame attached, that extends through at least one side of the casing, making it easily detachable, as different screens will be required for different kinds of grain. The outlet *f'* is di-
70 rectly under the screen G, and so situated as to receive whatever falls from the said screen. The lower portion of the casing *a*, extending from the chamber F to the chamber E, is made to fit as close as practicable to the vanes, so
75 that but little air can pass in that direction between the vanes and the casing. The casing on all parts of the sides should be thus well fitted.

That part of the casing marked *a'*, extend-
80 ing from the chamber E to the chamber F, should gradually approach the vanes until at the point where the chamber F commences the casing should be brought as close as practicable to the vanes. 85

The operation of my device is as follows: The displacement of air in the chamber E, made by rapidly revolving the fan, will cause air in a strong current to be forced by atmospheric pressure through the pipe *e* and into
90 the fan. This current of air can be made sufficiently strong, so that it will elevate or convey grain to any desired distance. The grain thus forced or carried by the said current of air through the pipe *e* and into the
95 fan will be delivered by the vanes with force against the screen G. The air, dust, dirt, vapor, and the like will pass through the screen, while the grain being arrested by the fineness of the screen will fall through the outlet
100 *f'*. This outlet may be provided with a discharging-tube to conduct the grain in the di-

rection desired. The grain by this process will not only be purified from dust and dirt, but the free commingling of the grain with such a quantity of air that is in motion will readily separate from the grain any excess of heat or moisture that might have been in the grain while lying in bulk.

In case a bin of grain needs only purifying, cooling, or the like, by this process the grain can be drawn from the discharge-pipe leading from the bottom of the bin, and returns at once to the top of the bin renovated. Such a treatment of grain would require no extra storeroom, and can be accomplished very rapidly.

Various other purposes to which this improvement is applicable will readily be suggested.

I am aware that different devices have been used whereby grain, but more especially middlings, have been freed from dust or purified; but I have no knowledge of any device heretofore in use whereby, in addition to the said purifying, grain has at the same time been

elevated, conveyed, cooled, and dried by air-currents.

What I claim is—

1. In a device for conveying grain, the combination, with a fan, of a fan-casing provided with an induction-opening and with an education-chamber having divergent outlets, substantially as set forth.

2. In a device for conveying grain, the combination, with a fan, of a fan-casing having an induction-opening and a chamber having divergent outlets and an inclined screen covering the upper outlet whereby the grain thrown by the fan and arrested by the screen will fall through the lower outlet, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 9th day of March, 1883.

JACOB A. LATCHA.

Witnesses:

L. ROBECHER,

H. H. MITCHELL.