L. GRIESER.

Devices for Transporting Grain.

No. 149,114. Patented March 31, 1874.

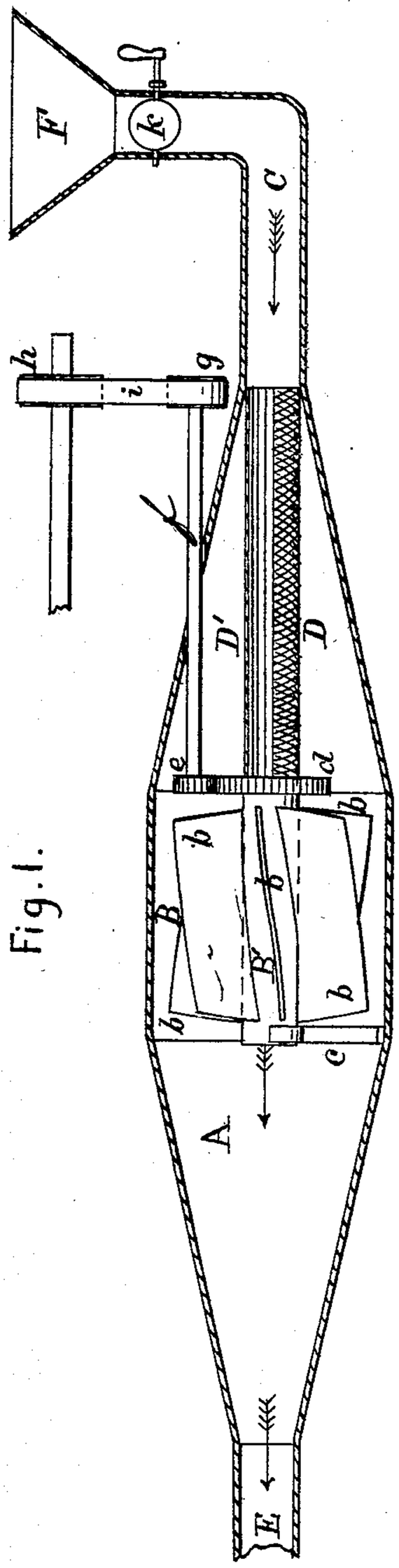

Fig. 1.

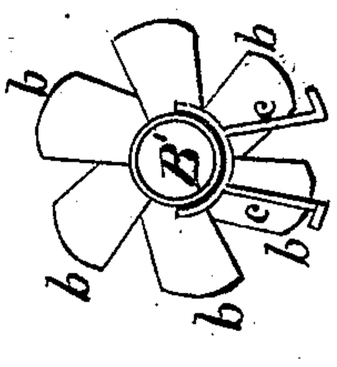

Fig. 2.

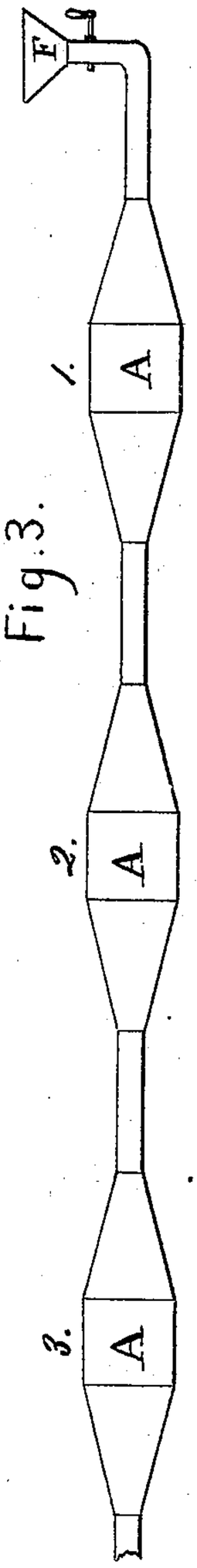

Fig. 3.

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UNITED STATES PATENT OFFICE.

LOUIS GRIESER, OF RUSHFORD, MINNESOTA.

IMPROVEMENT IN DEVICES FOR TRANSPORTING GRAIN.

Specification forming part of Letters Patent No. **149,114**, dated March 31, 1874; application filed February 16, 1874.

To all whom it may concern:

Be it known that I, LOUIS GRIESER, of Rushford, in the county of Fillmore and State of Minnesota, have invented certain new and useful Improvements in Devices for Transporting Grain, &c.; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to that class of devices by which grain and other merchandise is transported from one point to another by the aid of an overground or underground pneumatic tube; and it consists in the novel and improved combination and arrangement of the several parts, as hereinafter set forth.

On the drawing, Figure 1 represents a longitudinal section of my improved apparatus, showing, also, parts of the ingress and egress pipes, and the hopper attached to the former, through which the grain or other merchandise is fed. Fig. 2 represents a front view of my peculiarly-constructed propeller-fan, showing the blades *b* and the hollow axle B′, and Fig. 3 represents, on a reduced scale, a side view of a section of a pneumatic transportation-line provided with my improved apparatus at each of the stations (1, 2, and 3) shown.

In all of these figures similar letters of reference indicate corresponding parts.

A is the fan-chamber, which is constructed as shown in the drawing, with a central cylindrical part, in which revolves the propeller-fan or blower B, and tapering down on both sides so as to form a double cone, whose bases are separated by a central cylinder of equal diameter, or nearly so. The two faces of the blower B face, respectively, the mouths of the ingress-pipe C and egress-pipe E. The blades *b*, on this blower, are arranged like the blades on a propeller, with a pitch approximating one-half of the circumference of the cylinder, as shown in Figs. 1 and 2. The axle or shaft of the blower B (B′) is hollow, and lies in the same axis as the tubes C and E, and that of the fan-chamber A, so that if these tubes were continued straight through the fan-chamber they would pass longitudinally through the hollow axle B′ of the blower B. D is a tube made of wire-gauze or fine netting, which extends within the fan-chamber from the mouth of the ingress-pipe C and through the hollow axle of the blower B to the rear face of the same, fronting the egress-pipe E. This wire tube D is preferably covered with a sheet-iron roof, D′, so as to form a passage or duct perforated on the sides and bottom, but covered on the top, as shown. The journal-boxes for the blower B may be suspended, by means of rods and braces, from the roof of the fan-chamber, or they may rest in uprights *c*, as shown in the drawing, and the blower is propelled by means of the cog-wheel *d*, pinion *e*, and shaft *f*, which latter communicates with a steam-engine, and is propelled by suitable machinery, such as the drums *g h* and belt *i*, or any other suitable manner may be used for propelling the blower B within the fan-chamber A. F is the hopper through which the grain is fed into the ingress-pipe C, and is provided with a regulating-valve, *k*, for regulating the admission of the grain into the tube. A hopper is placed at each station, which, when not in use for feeding the grain into the apparatus, is closed by the valve *k*.

From the foregoing description, compared with the drawing, the operation of my improved apparatus will be readily understood. The stations, each provided with an apparatus, are placed at a distance of about forty miles (more or less) from each other. Grain or other merchandise is fed into the apparatus marked 1, on Fig. 3, which apparatus is shown in section in Fig. 1. By the revolutions of the fan or blower B a suction is created in the ingress-pipe C, by the vacuum established in that portion of the fan-chamber into which it opens out. This suction continues through the wire tube D and to the opposite side of the hollow axle B′, where the suction is replaced by propulsion, so that the grain is forced or blown from out of the hollow axle B′ into that portion of the conical fan-chamber, and, by the tapering shape of this, into the egress-tube E, which carries it, by the combined action of propulsive force of blower in station No. 1, Fig. 3, and of suction created in the intermediate tube by the blower (similarly constructed) in station No. 2, and so on, through the entire line of tubes

and of apparatus, until the final station has been reached, where the grain or other merchandise is discharged.

Having thus described my invention, and a mode in which it may be carried into operation, what I claim, and desire to secure by Letters Patent, is as follows:

The herein-described apparatus for transporting grain or other merchandise from one point to another, and along and through an entire line or series of stations, consisting of the fan-chamber A, blower B with its hollow axle B′, wire tube D, ingress and egress pipes C and E, and hopper F, all constructed and arranged substantially as and for the puporse set forth.

In testimony that I claim the foregoing, I have hereunto set my hand.

LOUIS GRIESER.

Witnesses:
E. E. WEBSTER,
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