N. G. SIMONDS.

CONVEYORS FOR GRAIN.

No. 169,662. Patented Nov. 9, 1875.

Fig. 1.

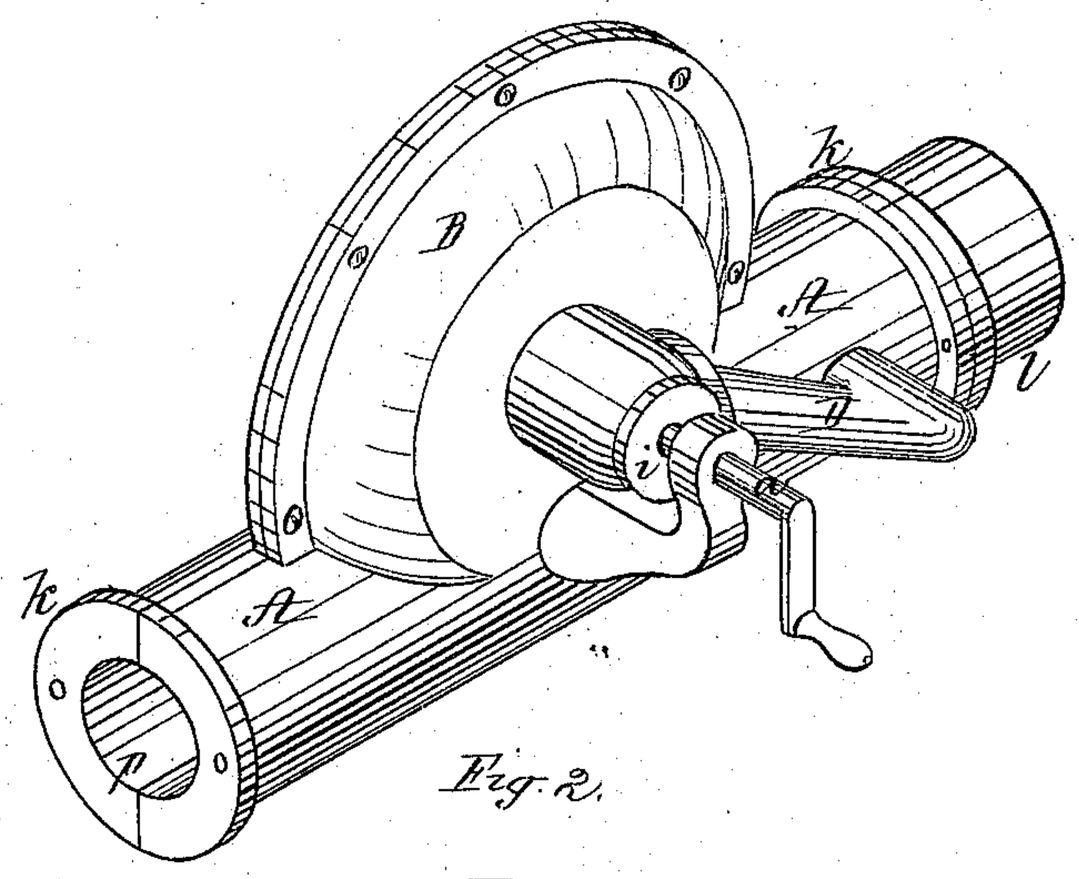


Fig. 2.

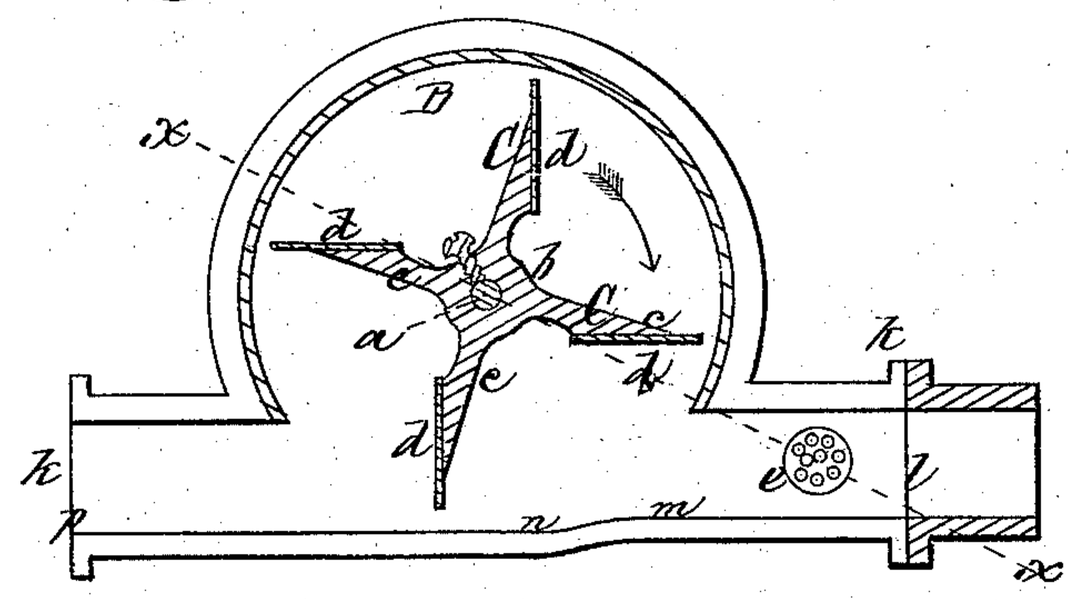
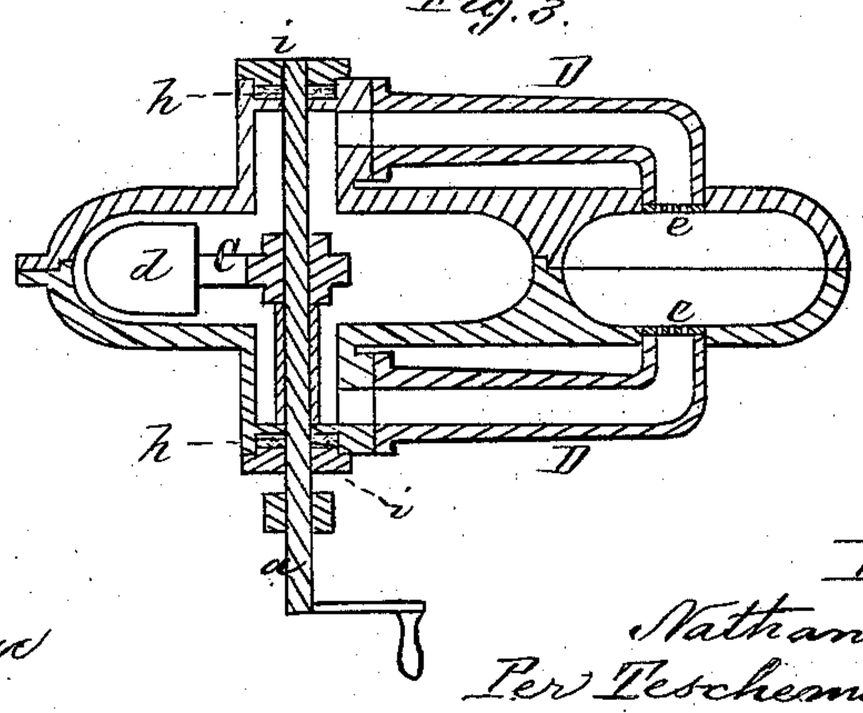


Fig. 3.



Witnesses,
W. J. Cambridge
A. F. Haynes.

Inventor,
Nathaniel G. Simonds,
Per Teschemacher & Stearns,
Attorneys.

UNITED STATES PATENT OFFICE.

NATHANIEL G. SIMONDS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CONVEYERS FOR GRAIN.

Specification forming part of Letters Patent No. **169,662**, dated November 9, 1875; application filed July 20, 1875.

To all whom it may concern:

Be it known that I, NATHANIEL G. SIMONDS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Conveyers for Grain, Water, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a grain-receiving pipe and its fan-blower with my improvements applied thereto. Fig. 2 is a longitudinal central section. Fig. 3 is a transverse section on the line *x x* of Fig. 2.

My present invention relates to certain improvements in grain-conveying apparatus for which Letters Patent of the United States No. 157,423 were granted to me on the 1st day of December, A. D. 1874. In the construction of the fan-blower described therein the casing was made to fit air-tight around the sides of the fan, which was objectionable for the reason that, owing to the suction being greater at the center (or around the axis of revolution) than at the periphery of the fan, (where the blades are located,) a portion only of the power of the blower was utilized.

To render effective this portion of the suction heretofore inoperative is the object of my present invention, which consists in an auxiliary pipe leading from the conveying-tube up into the casing around the axis of the revolving fan, by which construction the greatest percentage of the power of the fan is realized, a suitable strainer being provided to prevent the grain from being carried from the conveying-tube into the fan.

My invention also consists in inclining the bottom of the inside of the inlet portion of the conveying-tube from a point at a distance a little greater than the inner radius of the casing from its center, by which means the fan may be placed lower relative to the inlet portion of the tube without increasing its diameter, the effect of which is to augment the exhaust.

My invention also consists in making the conveying-tube in sections provided with flanges, whereby, when an increase of power is required, an additional section, with its fan-blower, may be readily connected therewith by bolts or otherwise, care being taken to render the joints between the sections air-tight, a flexible hose at each end of the conveying-tube being found most convenient to employ.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings is represented a length or section of the conveying-tube A, made in two equal portions or halves, so bolted or otherwise secured together as to insure an air-tight joint. At or near the center of the conveying-tube is formed a segmental enlargement, which forms a casing, B, within which, upon a shaft, *a*, revolves a fan, C, consisting of a hub, *b*, arms *c*, and blades *d*. From each side of the casing, at its center and communicating with its interior, proceeds the upper end of an auxiliary tube or pipe, D, the lower end of which enters the conveying-tube A, near its inlet end, the opening by which they are made to communicate with each other being covered by a strip of wire-gauze, which serves as a strainer, *e*, to prevent the grain drawn into the conveying-tube from being carried up into contact with the center of the fan. Each end of the shaft *a* of the fan passes through an air-tight packing, *h*, kept in place by a cover, *i*, screwed down thereon. At each end of a section of the conveying-tube A is formed a flange, *k*, provided with holes for the passage of bolts, should it be found desirable to connect another section and blower therewith in order to increase the exhaust power through the tube A. The bottom of the conveying-tube does not form one and the same straight line, but is straight and horizontal from the inlet end *l* of the tube to a point, *m*, situated a little farther from the center of the fan than the radius of the inner diameter of the casing, from which point *m* a slight curvature or depression occurs in the bottom of the tube to a point, *n*, from which latter point the line of its bottom is straight and horizontal to the outlet end *p*, the said construction admitting of the fan being placed lower relative to the inlet portion of the tube without requiring its diameter to be increased, whereby a greater exhaust power is obtained.

The opposite ends of the conveying-tube A

are intended to be provided with flexible hose, so that the position of the inlet and outlet ends may be changed from place to place to receive and distribute the grain more readily.

The apparatus above described is intended to be located on a truck or carriage, to facilitate its being moved about to a convenient position between the storehouse or car and the vessel or other receptacle into which the grain is to be deposited.

It is evident that the tube and blower, with my improvements applied thereto, may be employed to good advantage in moving or conveying water, gravel, sand, &c.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The auxiliary pipe D, in combination with and connecting the conveying-tube A and the interior of the casing B of the fan-blower, substantially as described, for the purpose set forth.

2. The conveying-tube A, when its bottom is composed of two horizontal portions, *l m* and *n p*, connected by a curved portion, *m n*, substantially as and for the purpose described.

Witness my hand this 16th day of July, A. D. 1875.

NATHL. G. SIMONDS.

In presence of—
N. W. STEARNS,
W. J. CAMBRIDGE.