No. 761,453. PATENTED MAY 31, 1904.

A. L. DEAN.

GRAIN CLEANING ATTACHMENT FOR ELEVATORS.

APPLICATION FILED MAR. 23, 1903.

NO MODEL.

Fig. 1.

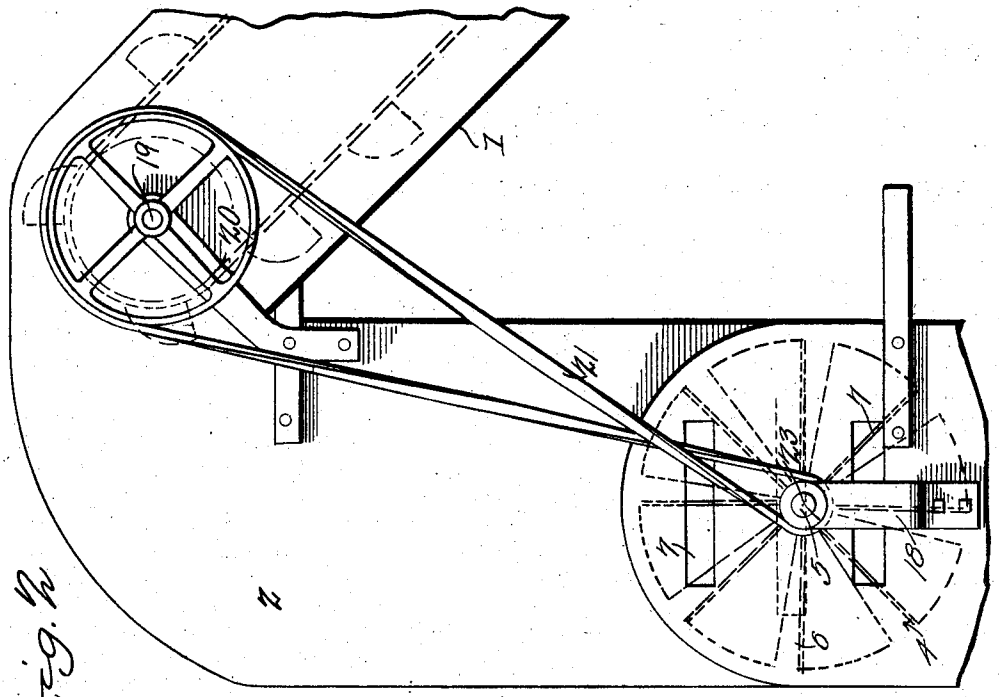
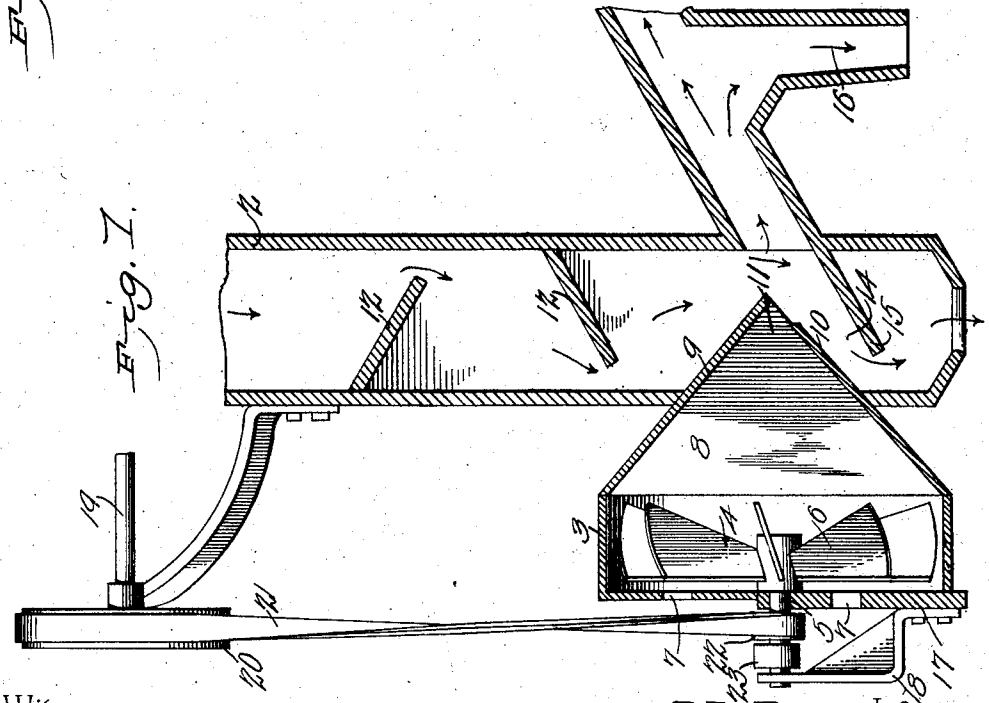


Fig. 2.



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No. 761,453. Patented May 31, 1904.

UNITED STATES PATENT OFFICE.

ARTHUR L. DEAN, OF BROWN VALLEY, MINNESOTA.

GRAIN-CLEANING ATTACHMENT FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 761,453, dated May 31, 1904.

Application filed March 23, 1903. Serial No. 149,171. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR L. DEAN, a citizen of the United States, residing at Brown Valley, in the county of Traverse and State of Minnesota, have invented a new and useful Grain-Cleaning Attachment for Elevators, of which the following is a specification.

This invention relates to an improved device which is in the nature of an attachment for grain-elevators, said attachment being a cleaning device for the purpose of effecting the separation from the grain of dust, smut, chaff, and other light and worthless particles and having for a further object the cooling and drying of the grain.

My invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a vertical sectional view of an elevator-chute having my invention applied thereto. Fig. 2 is a side elevation of the same.

Corresponding parts in the several figures are indicated by similar numerals of reference.

1 designates the upper end of the leg of a grain-elevator, and 2 is the discharge-chute of the same. This elevator is of the kind which are generally used in buildings usually termed "elevators," where grain is stored, and it may be of any suitable approved construction.

My present improvement consists in suitably attaching to the discharge-chute 2 the casing 3 of a fan or blower, which latter may be of any suitable and well-known construction.

In the accompanying drawings I have for purposes of illustration shown a fan 4 of the propeller order, said fan comprising a shaft 5, upon which a plurality of blades 6 are set slantingly, the air entering through openings 7 in the front side of the fan-casing and being discharged through a spout 8, which enters into the discharge-chute of the elevator and which preferably comprises upper and lower sides 9 and 10, converging at the discharge end, the under side 10 being provided with a slot 11, opening into the discharge-chute of the elevator. The top board 9 of the wind-spout of the fan-casing thus forms a deflecting-board, upon which the grain discharged by the endless carrier of the elevator into the chute 2 is dropped and spread, as will be readily understood, prior to being acted upon by the current of air coming through the opening 11. One or more additional baffles or deflecting and spreading boards, as 12, may be suitably arranged in the discharge-spout 2 above the fan-casing.

14 designates an exit-spout from the discharge-chute, which is inclined upwardly from the said chute and which has a downward extension 15 disposed below the discharge-opening of the fan-casing. The spout 14 is extended upwardly for some distance and has a downward-extending branch 16 for the purpose of intercepting the smut, chaff, and other comparatively heavy matter, while the dust continues through the chute 14 and is finally ejected from the same, while the matter passing through the branch spout 16 may be saved.

The fan-casing 3, in addition to being supported by the discharge-spout 2, is preferably provided with an additional support 17, having a bracket 18, affording a bearing for the fan-shaft 5. The latter is driven from a shaft 19 in the hood of the elevator, which carries the wheel or wheels over which the endless carrier is run, said shaft 19 being extended and provided with a pulley 20, from which motion may be transmitted, by means of a belt 21, to the fan-shaft 5, which is provided with fixed and loose pulleys 22 23 in order that the fan may be started or stopped, as occasion may demand. It is obvious that when this means for transmitting motion is employed a suitable belt-shifting device is to be included; but this is so well understood that I have not considered it necessary to show the same in the drawings.

I desire it to be distinctly understood that I do not limit myself with regard to the kind or character of fan employed nor with regard to the means for transmitting motion to said fan, my invention consisting, broadly, in the combination, with the discharge-chute of a grain-elevator, of a fan discharging its blast

into or transversely through said chute without regard to the detailed construction or arrangement of the parts of the device.

When grain is delivered to the place of storage known as "elevators," it is frequently found that its quality might be greatly improved by recleaning, as well as by cooling and drying. Sometimes the grain after being delivered to the elevator is "aired" by transferring from one bin to another; but in the busy season this is not always possible, and consequently grain is frequently injured by being permitted to remain in a bin even for a short time when delivered into such bin in a heated and somewhat damp condition.

By my improved attachment to the discharge-chute of the elevator the grain instead of being delivered directly to the storage-bin is subjected to the cooling and drying action of the blast of air passing from the fan-casing into the chute. The spreading boards or deflectors, one of which is in the present case constituted by the top board of the discharge-spout of the fan-casing, serve to spread and loosen the grain, so that it may to the fullest extent receive the benefit of the action of the air-blast to which it is subjected. From the top board 9 of the fan-casing the grain drops directly through the blast emitted through the opening 11 upon the deflecting-board 15, formed by the downward extension of the chute 14, and thence to the discharge-opening of the chute, from which it is conveyed to the desired place of deposit.

It will be understood from the foregoing description that my invention is capable of being modified in a great many particulars without in anywise detracting from its utility and general efficiency for the purposes for which it is intended, and I therefore desire it to be understood that I do not limit myself to the structural details herein described, but reserve the right to any changes, alterations, and modifications within the scope of my invention which may be resorted to without departing from the spirit of the same.

Having thus described my invention, I claim—

In a device of the class described, a grain-discharge chute, a plurality of baffles within the same, an upwardly-inclined passage extending laterally from the discharge-chute and having a depending branch, a baffle formed by an inward extension of the bottom of said passage into the grain-chute, a blower and a casing for the latter, said casing including converging top and bottom members extending into the grain-chute above the baffle formed by the inwardly-extended end of the bottom of the laterally-extending passage, said top member forming an intermediate baffle and said bottom member being provided with a slot through which the blast is directed against the bottom of the passage.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ARTHUR L. DEAN.

Witnesses:
A. LUDKE, Sr.,
HENRY W. LUDKE.