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W. C. ALLEN.

PNEUMATIC GRAIN ELEVATOR.

APPLICATION FILED MAY 10, 1905.

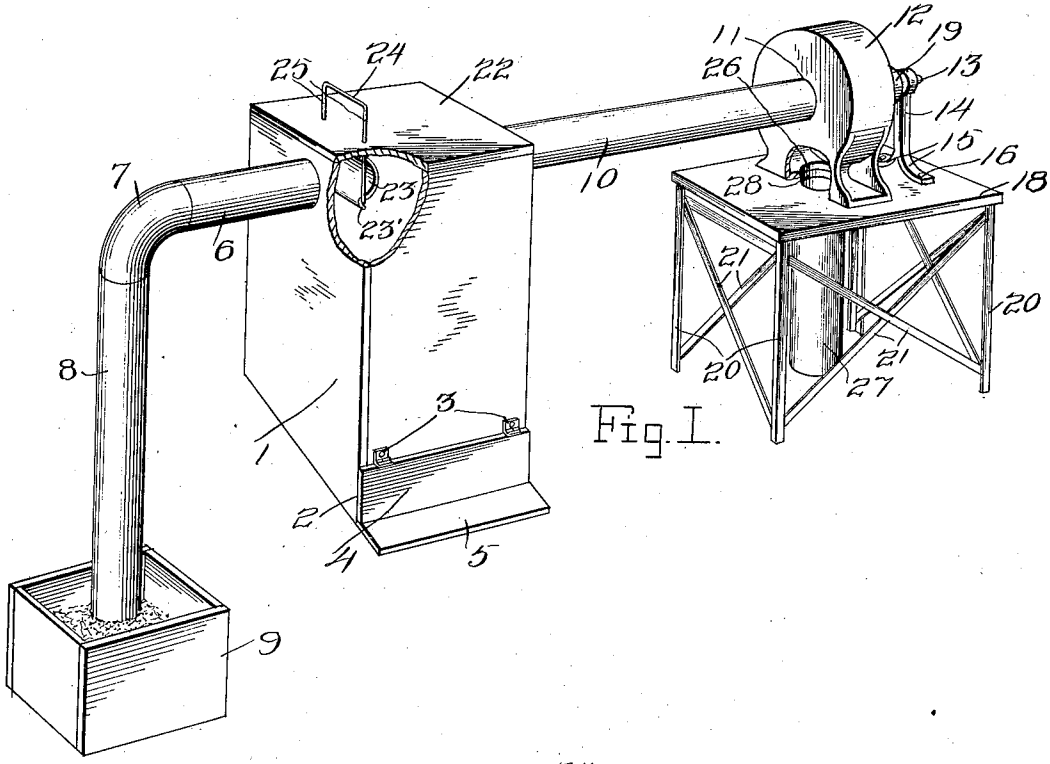


Fig. 1.

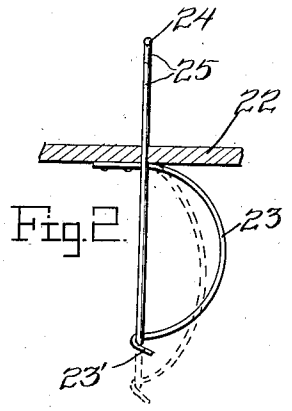


Fig. 2.

Witnesses
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PNEUMATIC GRAIN-ELEVATOR.

No. 813,073. Specification of Letters Patent. Patented Feb. 20, 1906.

Application filed May 10, 1905. Serial No. 259,744.

To all whom it may concern:

Be it known that I, WILLIAM C. ALLEN, a citizen of the United States, residing at Gurley, in the county of Madison, State of Alabama, have invented certain new and useful Improvements in Pneumatic Grain-Elevators; 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 appertains to make and use the same.

This invention relates to pneumatic grain-elevators.

The object of the invention is to provide means for relieving vessels, cars, or bins of grain and elevate the latter into a vacuum-chamber in such manner that dust, &c., may be withdrawn from the vacuum-chamber at the time the grain is being conveyed into the latter.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the present invention.

In the drawings, Figure 1 is a view illustrating my invention partly in perspective and partly in section. Fig. 2 is a detail view of the baffle-plate, illustrating its connections for adjusting the same.

Referring now more particularly to the accompanying drawings, the reference character 1 designates a vacuum-chamber having an opening 2 in its front and at the bottom thereof, over which, as at 3, is hingedly connected a door or closure 4, there being a platform 5 extending outwardly from beneath the opening 2.

Connected to one side of the vacuum-chamber 1, through an opening therein, is a horizontal elevator pipe or tubing 6, having an elbow 7, to which the vertical conveyer pipe or tubing 8 is connected, the latter being disposed over the grain within the car, vessel, bin, or the like, as is well understood. For the purpose of illustration I have illustrated a bin 9 into which the lower end of the pipe or tubing 8 projects. Connected through another opening in the opposite side of the vacuum-chamber from that in which the aforesaid opening is formed is another opening, into which is fitted a second horizontal pipe 10, which leads to an opening 11 in one side of the fan-casing 12, in which latter is mounted a shaft 13, having one end journaled in the upper end of the bracket 14, whose feet 15 are pierced by a spike or other suitable element 16 for securing the bracket upon the platform 18, upon which latter the fan-casing is also secured, as clearly shown in the drawings. The shaft 13 has a pulley-wheel 19 fixedly secured thereupon, to which may be connected a belt, (not shown,) whereby the fan may be driven for a purpose hereinafter explained. It will be observed that the platform 18 is supported upon legs 20, which are connected by the cross-braces 21, whereby the platform may be held rigidly against accidental displacement by reason of the motion of the fan-motor.

Depending from the under face of the top 22 of the vacuum-chamber 1 and fixedly secured thereto in any suitable manner is an arched baffle-plate 23, whose lower free end 23′ is turned backwardly toward the latter thereof. It will be observed that the lower end of the baffle-plate is arranged substantially on a line with the bottom of the pipe 16, the baffle-plate being constructed and arranged in a manner stated for the purpose of preventing the grain being thrown directly over the pipe 6 into the pipe 10 and directing the grain downwardly toward the bottom of the vacuum-chamber. This baffle-plate 23 is composed of spring material, so that its lower end may be raised and lowered by a lift or push upon the cross-piece 24 at the upper ends of the spaced parallel arms 25, whose lower ends are connected to the corresponding side edges of the baffle-plate 23.

From the foregoing it will be understood that when the fan is set in motion a vacuum is created in chamber 1, causing the grain to be thrown upwardly through the pipes 8 and 6 thereinto, and it will be appreciated that if it were not for the baffle-plate 23 the grain would have a tendency to be thrown over the upper portion of the vacuum-chamber 1 into the pipe 10; but by reason of the baffle-plate the grain is caused to fall toward the bottom of the vacuum-chamber, where it may be removed, if desired, through the opening 2, closed by the door 4. Now as the grain falls to the bottom of the vacuum-chamber the fan, through suction, causes the light sub-

stance from the grain to be drawn through the pipe 10 into the fan 12, through which latter it may drop through the opening 26 into the pipe 27, fitted through an opening 28 in the platform 18 and communicating with an opening in the bottom of the fan-casing.

In the use of my apparatus the grain is elevated and cleaned simultaneously, the cleanings or light substance being conveyed through the fan and the pipe 27 to a suitable receptacle (not shown) in a manner now well understood.

What is claimed is—

1. In an apparatus of the class described, a vacuum-chamber, a feed-tubing connected therewith, a rotary fan, connections between the fan and the vacuum-chamber, means for rotating the fan, a discharge-tube arranged beneath the fan, and a flexible baffle-plate adjustably mounted in the upper end of the vacuum-chamber.

2. In an apparatus of the class described, a vacuum-chamber, a rotary fan, connections between the fan and the vacuum-chamber, means for rotating the fan, a discharge-tube arranged beneath the fan, a baffle-plate composed of spring metal and secured to the top of the vacuum-chamber, and spaced arms connected at the top by a cross-piece and at the bottom to the lower edge of baffle-plate to adjust the said baffle-plate.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM C. ALLEN.

Witnesses:

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