No. 620,270. Patented Feb. 28, 1899.

# C. BRADFORD.

## VENT DEVICE FOR PNEUMATIC ELEVATORS.

(Application filed May 17, 1898.)

(No Model.)

Fig. 1.

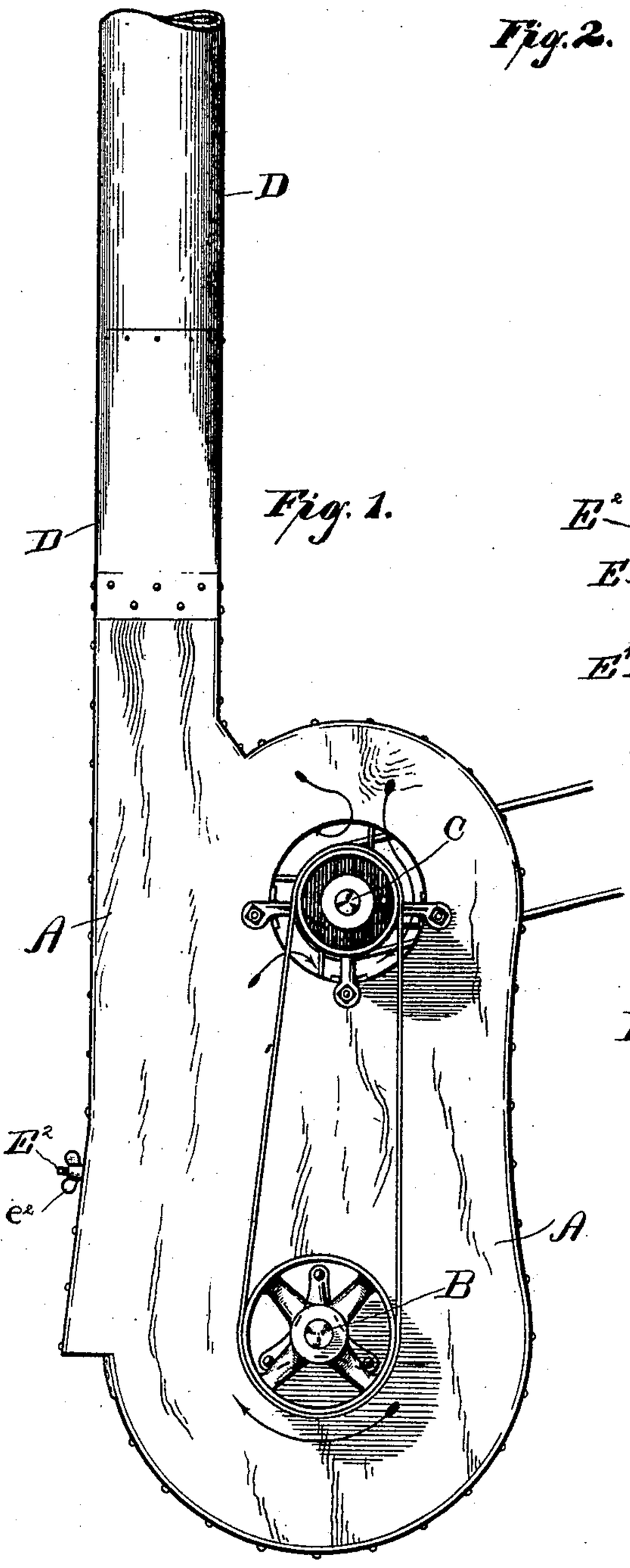



Fig. 2.

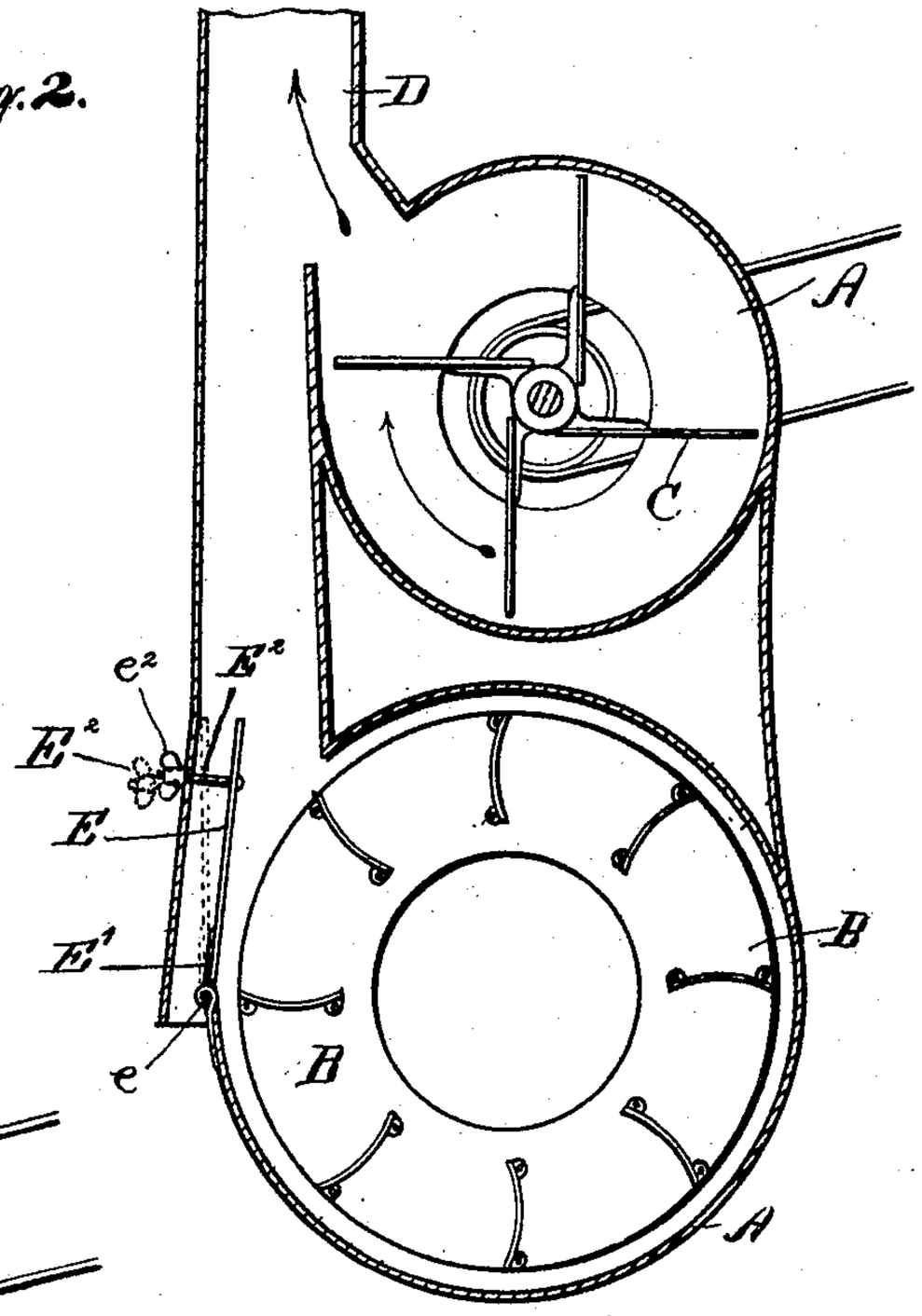
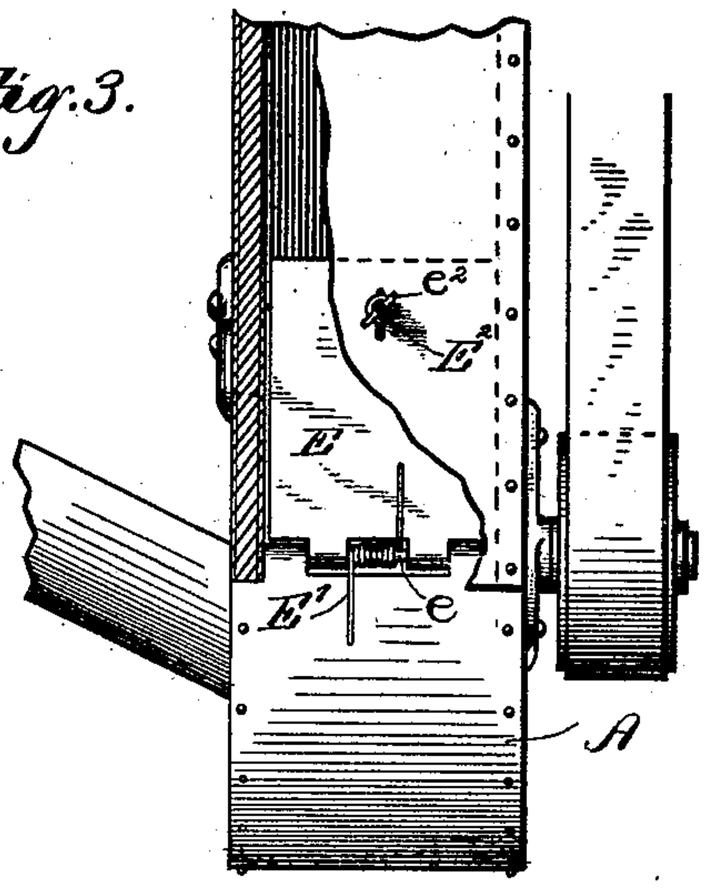



Fig. 3.




WITNESSES:

J. A. Walsh,

Joseph H. Sharpe Jr

INVENTOR

Chester Bradford,

# UNITED STATES PATENT OFFICE.

CHESTER BRADFORD, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE PNEUMATIC ELEVATOR AND WEIGHER COMPANY, OF SAME PLACE.

## VENT DEVICE FOR PNEUMATIC ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 620,270, dated February 28, 1899.

Application filed May 17, 1898. Serial No. 680,911. (No model.)

*To all whom it may concern:*

Be it known that I, CHESTER BRADFORD, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Vent Devices for Pneumatic Elevators, of which the following is a specification.

My invention relates to that variety of apparatus whereby an accumulation of material in the boot of a pneumatic elevator may be discharged by the throwing-wheel as it starts into operation and any clogging of said throwing-wheel thus prevented. It especially consists in certain improvements whereby the vent-opening is enabled to be automatically closed during the time when the machine is running at full speed, while permitted to remain open when the machine is running slowly or is at rest, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of the boot and adjacent parts of an elevator to which my invention is applied; Fig. 2, a central sectional view of the same, showing a preferred construction and arrangement of my invention; and Fig. 3, a rear elevation thereof, a portion of the outside casing being broken away to show the interior.

In said drawings the portions marked A represent the casing or elevator-boot proper; B, the elevating-fan or throwing-wheel, including its shaft; C, the blast-fan and its shaft; D, the elevator-tube, and E a hinged door, constituting the principal feature of my present invention. All these parts are or may be of any desired construction, except the hinged door E and its attachments and the immediately-adjacent parts. Said door E is hinged at *e* and is held inwardly by a spring E′, while its inward movement is limited by a suitable stop. In order that the opening may be rendered adjustable, I prefer to use this bolt or threaded rod and to place thereon a thumb-nut $e^2$, which serves both as a stop and as a means of adjustment.

The operation is precisely as usual in this machine, (which is, generally speaking, the invention of James B. Schuman, as shown in and described in Letters Patent of the United States No. 603,925, issued May 10, 1898, upon his application,) except that any material which may be in the elevator-boot during the time before sufficient speed has been attained to properly elevate it is thrown over the upper edge of the hinged door E and falls to the outside instead of remaining to clog and retard the operation of the throwing-wheel. When, however, full speed has been attained, the air-pressure overcomes the pressure of the spring E′, and the door E is thus thrown back against the wall of the casing behind it, closing the opening, so that there shall be no escape either of the material or of air during the time the machine is running at its normal speed. Immediately the speed begins to decrease this door, actuated by the spring, will begin to open, and thus any material which enters the elevator-boot during the time the machine is stopping will be thrown out of the opening covered by said door instead of being permitted to remain and clog the machine.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a pneumatic elevator, of the elevating-fan or throwing-wheel, the elevator-boot forming the casing therefor and having a vent-opening therein, a door to said opening arranged to normally remain open but adapted to be closed by the internal pressure in said boot caused by said elevating-fan when running at an operative speed.

2. The combination, in a pneumatic elevator, of the throwing-wheel and its casing, the latter having an opening through which material may be discharged while the machine is running at a slow speed and which would otherwise clog the machine, one of the walls bounding said opening being hinged and adapted to be swung so as to close the opening by the air-pressure when the machine attains full speed, and means for holding it open while the machine is running at a slower speed.

3. The combination, in a pneumatic elevator, of the casing A having a vent-opening, the throwing-wheel B, the elevator-tube D, the hinged door E to said opening, a suitable spring whereby the door is held inwardly, and a stop whereby its inward movement is limited, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 11th day of May, A. D. 1898.

CHESTER BRADFORD. [L. S.]

Witnesses:

JOSEPH H. SHARPE, Jr.,

JAMES B. SCHUMAN.