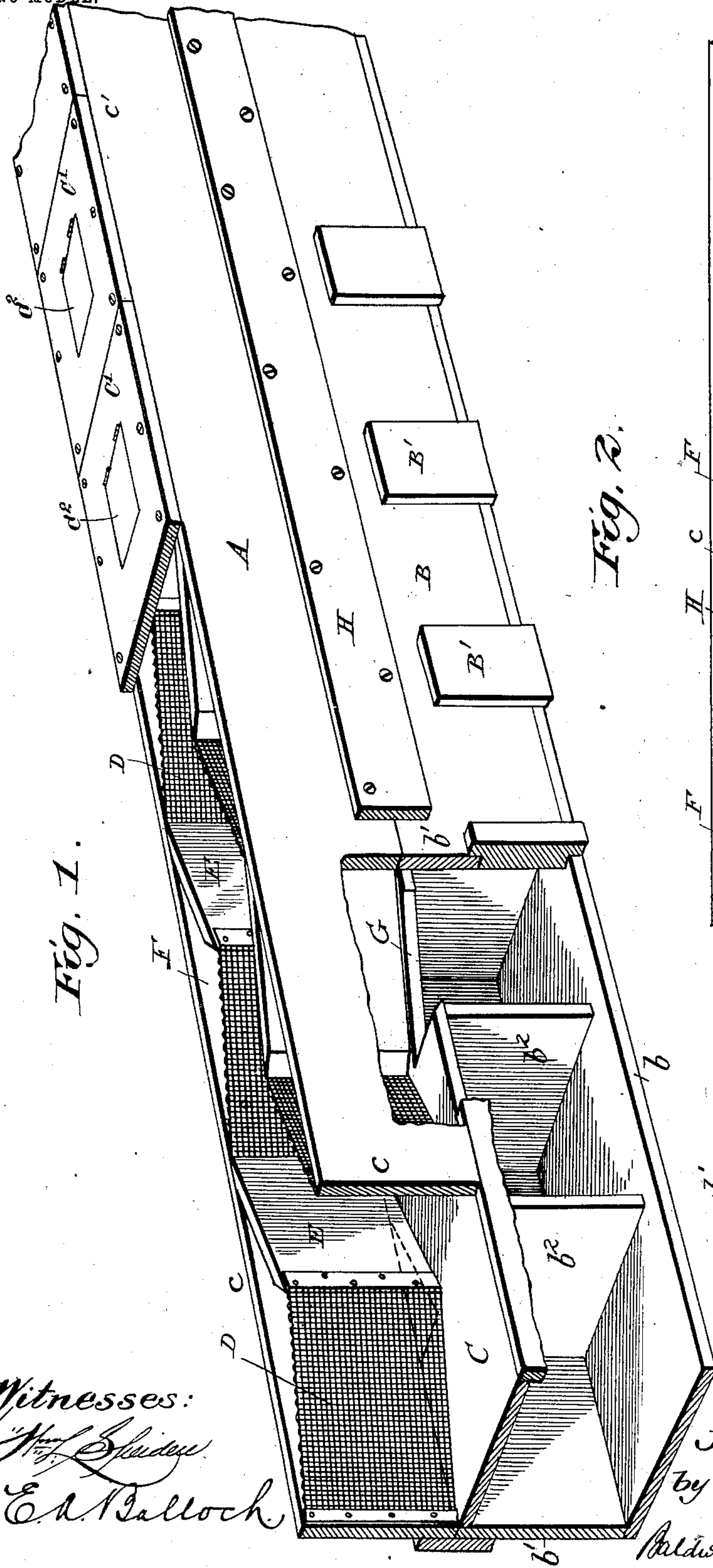


No. 728,917.

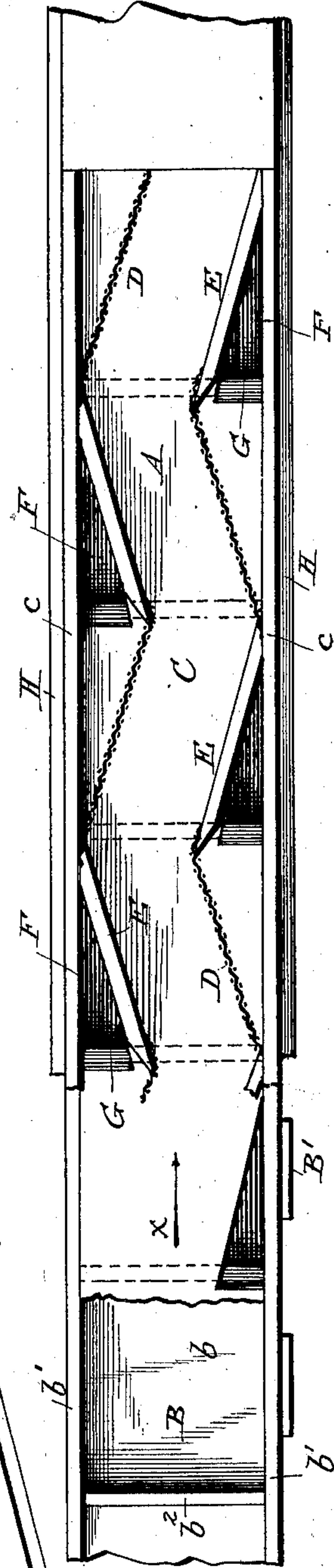
PATENTED MAY 26. 1903.

J. W. HICKS.  
PNEUMATIC ELEVATOR FOR COTTON.  
APPLICATION FILED MAR. 3, 1902

NO MODEL.



*Fig. 2.*



Witnesses:

*Wm. E. Spence*

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by his Attorneys,  
*Baldwin Davidson & Wright*



# UNITED STATES PATENT OFFICE.

JOHN W. HICKS, OF SHREVEPORT, LOUISIANA.

## PNEUMATIC ELEVATOR FOR COTTON.

SPECIFICATION forming part of Letters Patent No. 728,917, dated May 26, 1903.

Application filed March 3, 1902. Serial No. 96,527. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. HICKS, a citizen of the United States, residing at Shreveport, in the parish of Caddo and State of Louisiana, have invented certain new and useful Improvements in Pneumatic Elevators for Cotton, of which the following is a specification.

My present invention relates to pneumatic elevators for cotton, such as shown in my United States Patent No. 667,169, of January 29, 1901. That patent shows a pneumatic elevator in which seed-cotton is carried from a wagon or storehouse to the cotton-gins by a current of air produced in a flue between the opposite ends of which is interposed a separator comprising a flue through which the cotton passes and a box or trough which receives the sand, dust, &c., from the cotton while passing through the separating-flue. The separating-flue is a continuation of the usual flue, and between it and the trough or dust-box is a partition over which the cotton passes. Within the flue are arranged at suitable distances apart a series of vertical sheets of wire-cloth, against which the cotton as it passes through the flue strikes and by which it is made to take a zigzag course, which shakes and stirs it and causes it to deposit its dust into the dust-trough below. The dust-trough is divided in such a manner that air-currents are prevented from circulating in it, and provision is made for opening and cleaning the dust-trough whenever desired. In my patented device the partition between the separating-flue and the dust-trough is of wire-cloth; but I have found that it is better to use a solid partition with a smooth upper surface, as the dust is separated from the cotton when the latter strikes against the vertical partitions and passes through the partitions and down into the dust-trough. In my improved apparatus I have used a solid partition, as I am thereby enabled to provide a smooth surface over which the cotton may pass rapidly, and thus strike the deflectors more forcibly. In the apparatus of my former patent the inner ends of the vertical wire-cloth projections are secured to boards which project out at right angles from the sides of the flue; but I have found that it is desirable to arrange these boards at an in-

clination, as I am thereby enabled to prevent the air carrying dust through the partitions from rebounding into the main flue. In the apparatus of my former patent the dust-trough is divided into sections by means of inclined partitions; but I have found that better results are obtained when the partitions are straight or arranged vertically.

In the accompanying drawings, illustrating my present improvements, Figure 1 is a perspective view, with parts broken away, of so much of a pneumatic elevator for cotton embodying my improvements as is necessary to illustrate them. Fig. 2 is a plan view thereof with the top or cover removed and with some of the parts broken away.

A indicates the separating-flue, and B the dust-trough below it.

C indicates a partition, of wood, arranged between the bottom of the separating-flue and the top of the dust-trough. The bottom *b* of the dust-trough is solid, as are also the sides *b'*, doors *B'*, however, being provided for obtaining access to the different compartments in the dust-trough. The dust-trough is divided into sections by means of vertical partitions *b''*, arranged suitable distances apart, so as to form pockets or compartments, each compartment being provided with a door *B'*. In my former patent, above referred to, the partitions for dividing the dust-trough into compartments were inclined; but I have found that the air-current would often carry some of the sand from the dust-trough back into the separating-flue when the partitions were inclined; but where the partitions are arranged vertically the sand never returns to the separating-flue so as to be mixed with the cotton. The separating-flue has solid sides *c*, and the top is tightly closed by means of boards *C'*. Doors *C''* may be provided, if desired, by means of which access may be had to the flue; but these doors should be made to fit air-tight.

D indicates the wire-cloth deflectors, similar to those shown in my patent above mentioned. The inner ends of the deflectors instead of being attached to boards projecting at right angles from the sides of the separating-flue are attached to inclined boards *E*. These boards are preferably of the same length and are arranged at the same inclina-



tion as the wire-cloth deflectors. This arrangement produces a series of vacuum-chambers F behind the boards E, and these chambers communicate with the pockets or compartments of the dust-trough by means of openings G in the partition C. The dust-trough and separating-flue may be secured together by strips H or may be secured in any other suitable way. By these arrangements the cotton entering at  $x$ , as indicated by the arrow in Fig. 2, passes over the partition C without being obstructed thereby and abuts against the deflectors, throwing the sand into the vacuum-chambers and down through the openings G into the compartments of the dust-trough. The boards E being arranged at an angle, which is preferably obtuse to the deflectors, back currents or rebounding currents are prevented. The deflectors D are so disposed that each of them is arranged to slant toward the central portion of the next succeeding deflector, so that when the cotton abuts against a deflector it is guided in such a manner as to thereafter abut against the next succeeding deflector. This is the same arrangement as is shown in my patent before mentioned, my present improvements now consisting mainly in employing a smooth bottom for the separating-flue and inclined boards in place of straight boards for supporting the inner ends of the deflectors and the use of straight boards for dividing the dust-trough in place of inclined boards.

I claim as my invention—

1. A pneumatic elevator for cotton comprising a separating-flue, a dust-box below it, a partition between the dust-box and the sepa-

rating-flue, having a smooth surface over which the cotton passes, and a series of wire-cloth deflectors arranged in the flue, alternately, on opposite sides thereof, and having chambers behind them, communicating with the dust-box through openings in the partition, each of said deflectors being arranged to slant toward the central portion of the next succeeding deflector, whereby the cotton is caused to strike or abut against the deflectors successively, and the dust is thereby shaken out of the cotton, and caused to pass into the dust-trough through the communications between the dust-box and the chambers behind the deflectors.

2. A pneumatic elevator for cotton, comprising a separating-flue, a dust-box below it, a partition between the dust-box and the separating-flue, a series of reticulated deflectors arranged vertically in the flue alternately on opposite sides thereof, and having chambers behind them communicating with the dust-box through openings in the partition, each of said deflectors being arranged to slant toward the central portion of the next succeeding deflector, and vertical boards arranged at an obtuse angle to the deflectors behind the chambers and connecting the inner ends of the deflectors with the walls of the separating-flue.

In testimony whereof I have hereunto subscribed my name.

JOHN W. HICKS.

Witnesses:

GEO. LUCAS,  
G. B. HARPER.