

B. W. & B. F. TILLEY.
 PNEUMATIC COTTON SEED CONVEYER.
 APPLICATION FILED SEPT. 24, 1909.

957,126.

Patented May 3, 1910.

Fig. 1.

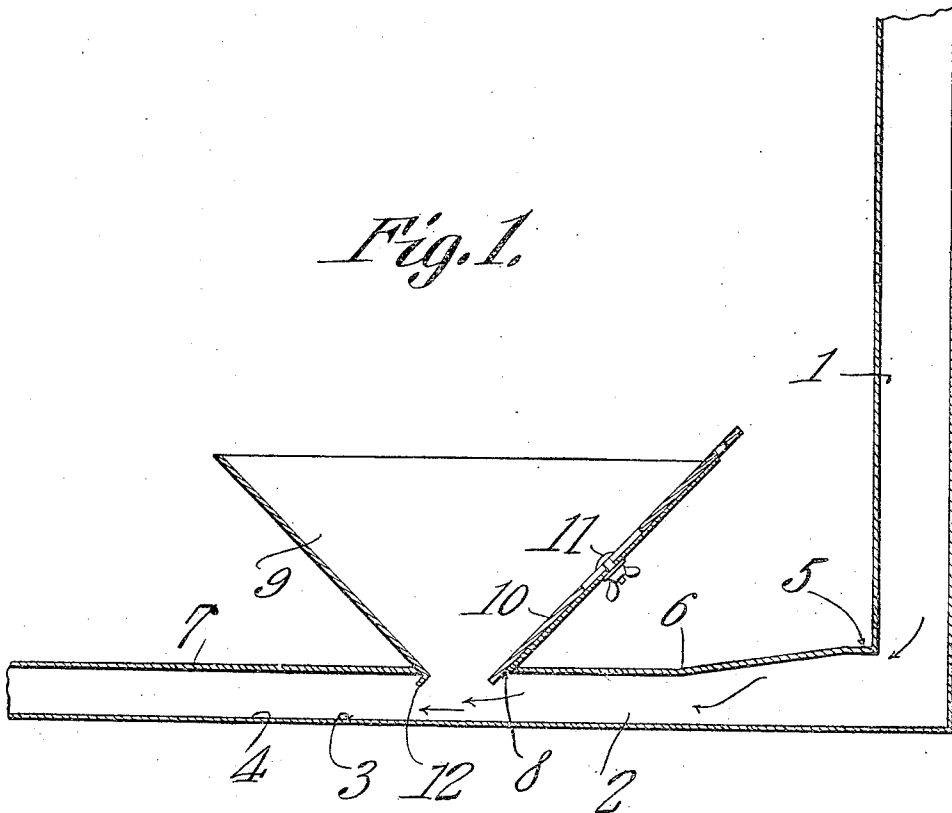
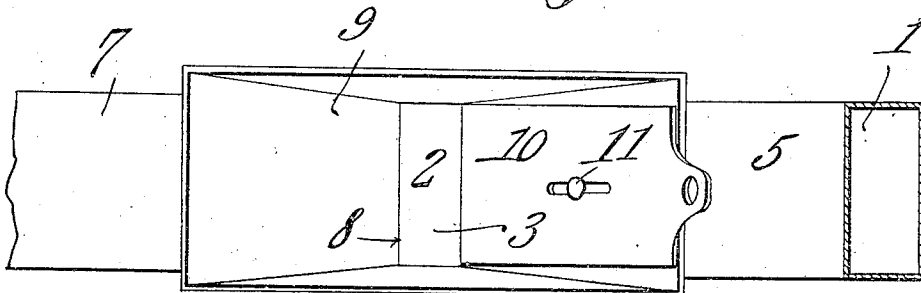


Fig. 2.



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UNITED STATES PATENT OFFICE.

BENJAMIN W. TILLEY AND BENJAMIN F. TILLEY, OF BEARCREEK, LOUISIANA.

PNEUMATIC COTTON-SEED CONVEYER.

957,126.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed September 24, 1909. Serial No. 519,384.

To all whom it may concern:

Be it known that we, BENJAMIN W. TILLEY and BENJAMIN F. TILLEY, citizens of the United States, residing at Bearcreek, in the parish of Bienville, State of Louisiana, have invented a new and useful Pneumatic Cotton-Seed Conveyer, of which the following is a specification.

This invention has relation to pneumatic cotton seed conveyers and it consists in the novel construction and arrangement of its parts hereinafter shown and described.

By reason of the fact that delinted cotton seed forms a compact body or mass and is comparatively heavy especially when compared with the lint or fiber stripped therefrom it cannot be handled or moved as readily by pneumatic means as can the lint. The lint being of a fluffy nature presents more surface against which a blast of air may operate than does the smooth seed.

It is therefore the object of the present invention to provide a pneumatic conveyer especially adapted to be used for handling delinted cotton seed.

In the accompanying drawing: Figure 1 is a vertical sectional view of the pneumatic cotton conveyer. Fig. 2 is a top plan view of the same showing the vertical trunk in section.

The conveyer consists of an approximately vertical trunk 1 through which a blast of air may be forced. At its lower end the trunk 1 communicates with a horizontal trunk 2 which is provided with an imperforate bottom 3 having a level and flat upper surface 4 lying in a horizontal plane. That portion of the trunk 2 adjacent the point of connection thereof with the trunk 1 is of the same transverse sectional area as the trunk 1 as illustrated at 5 but beyond the portion 5 the top of the trunk 2 is provided with an inclined section 6 which joins with a lower top section 7. The section 7 is provided with an opening 8 and over the said opening is located a hopper 9. A valve 10 is located in the hopper 9 and is adapted to project through the opening 8 in the top section 7 into the body of the trunk 2 any suitable means as for instance a clamp nut 11 may be provided for holding the valve 10 in an adjusted position. The valve 10 is inclined downwardly in the direction of the course of the air through the trunk 2. At its opposite edge the hopper 9 is provided with an inclined lug or flange 12 which is approxi-

mately parallel with the plane of the valve 10. The said lug or flange also projects into the body of the trunk 2.

From the above description it will be seen that as a column of air passes down through the trunk 1 it may enter the portion 5 of the trunk 2 without resistance and thus during the change of the course of direction no hindrance or obstruction is presented. Thus the air will travel through the portion 5 of the trunk 2 at the same rate of speed as it travels through the trunk 1. When the air encounters the inclined section 6 in the top of the trunk 2 it is retarded at its upper strata and compressed to a greater degree than is its condition while in the trunk 1 and the section 5 of the trunk 2. This retardation and suppression however occurs in the upper strata while the lower stratum of air in the trunk 2 is accelerated in its speed and to a limited degree is further compressed. The lower stratum of air in the trunk 2 sweeps directly along the level horizontal plane surface 4 of the bottom 3. When the column of air in the trunk 2 arrives at the valve 10 the upper strata are again deflected in a downward direction and compressed as before described. All of which tend to further accelerate the rate of speed of the lower stratum of air as it passes under the lower edge of the valve 10 and as streams from the upper strata pass under the lower edge of the valve they are relieved of the compression above described and mingle with the bulk of seed coming down from the hopper 9 through the opening 8 and spread the seed out over the lower stratum which at this point is traveling through the trunk 2 at a highly accelerated rate of speed and will have the effect of sweeping the separated seed along the plane horizontal surface 4 of the bottom 3. The space behind the lug or flange 12 forms a pocket under the top of the trunk 2 and in this pocket is retained a plenum of comparatively still air which will have a tendency to prevent the air which is passing through the trunk from having a tendency to pass up out of the trunk 2 through the outlet 8 and hopper 9 at that edge of the hopper opposite the edge thereof upon which the valve 10 is located. It is of course understood that by adjusting the valve 10 the space between the lower edge thereof and the bottom of the trunk 2 may be increased or diminished and

thus the air as it passes under the valve may be drawn to greater or less degree as the conditions of the seed may require.

By this arrangement a simple and effective pneumatic cotton seed conveyer is effected and one in which the air may be economically employed and at the same time the air will be so compressed at predetermined strata and points along the conveyer trunk 2 as to effectually disintegrate the mass of cotton seeds when they are liberated therein and permit the separated seed to fall upon a stratum of air traveling at an accelerated rate of speed but by reason of the elasticity of the fluid not subjected to as great compression as the superposed strata.

Having described the invention, what we claim as new and desire to secure by Letters-Patent is:

A pneumatic conveyer comprising a horizontal air trunk and an approximately vertical air trunk communicating therewith, said horizontal trunk having a lower imperforate side provided with a flat, level, horizontal, plane upper surface, the horizontal trunk for a distance from its point

of juncture with the vertical trunk being of the same cross sectional area as the vertical trunk, the top of the horizontal trunk at a point removed from the vertical trunk having a section inclined downwardly away from the vertical trunk whereby the cross sectional area of the horizontal trunk is reduced, the horizontal trunk at its reduced length having in its top an opening, a hopper located over said opening, an adjustable valve located in the hopper against that side thereof toward the vertical trunk and projecting into the horizontal trunk and inclined downwardly away from the vertical trunk, said hopper having at its lower edge opposite the valve a flange which projects into the horizontal trunk and lies approximately parallel to the plane of the valve.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

BENJAMIN W. TILLEY.

BENJAMIN F. TILLEY.

Witnesses:

J. E. CURRIE,

W. J. MURPHY.