

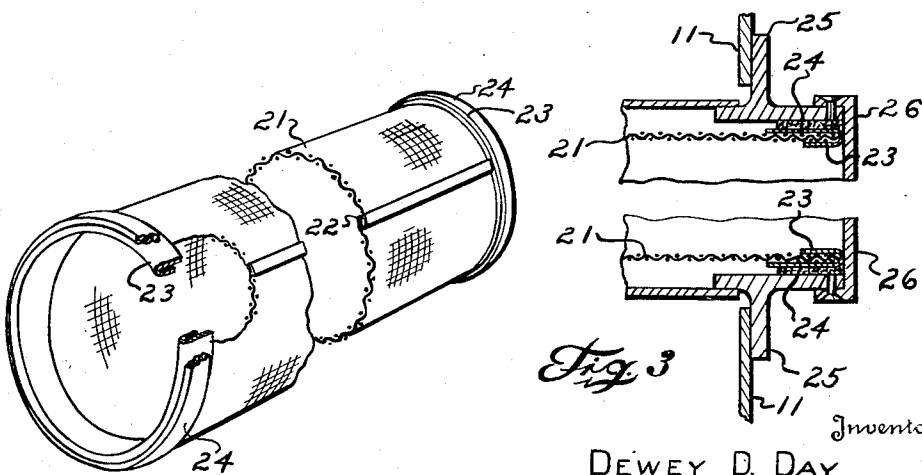
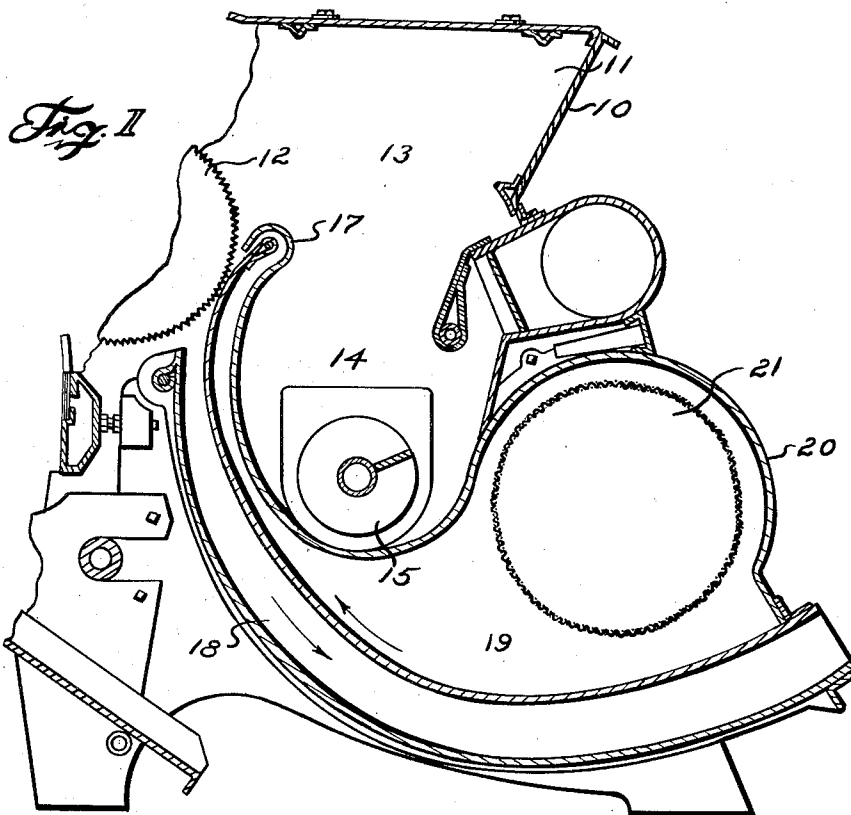
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D. D. DAY

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AIR BLAST COTTON GIN

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Inventor

DEWEY D. DAY

By

Ahley & Ahley
Attorneys

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AIR BLAST COTTON GIN

Dewey D. Day, Dallas, Tex., assignor to The
Murray Company of Texas, Inc., Dallas, Tex., a
corporation of Delaware

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This invention relates to new and useful improvements in air blast cotton gins.

One object of the invention is to provide an improved air blast cotton gin wherein the air flue is equipped with a foraminous cylinder for screening lint and trash and preventing the same from passing to the nozzle or blast head and clogging the latter.

Another object of the invention is to provide a cylindrical screen in the air flue of less diameter than said flue so as to establish a free air space between said cylinder and the wall of the flue and less restriction to the air passing into the air duct; also whereby lint and trash is less likely to mat on the screening surface.

A further object of the invention is to provide an air flue screen cylinder with its ends mounted in the end walls of a gin and having surrounding spacers, whereby said screen is spaced from the cylindrical wall of the flue, together with a removable closure for one end of the flue and screen.

A construction designed to carry out the invention will be hereinafter described together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawing, wherein an example of the invention is shown and wherein:

Fig. 1 is a transverse sectional view of the rear portion of a cotton gin having its air flue equipped with a screening cylinder constructed in accordance with the invention,

Fig. 2 is a fragmentary perspective view of the screen cylinder, and

Fig. 3 is a sectional detail of the screen and collar closure.

In the drawing the numeral 10 designates the rear portion of an air blast cotton gin and 11, one of the end walls thereof. The gin includes the usual saws 12, mote chamber 13, mote trough 14 and conveyor 15. As is customary in this type of gins the air blast duct 16 is curved upwardly in front of the trough 14 and has a nozzle blast head 17 at its upper or outer end. The lint duct 18 is curved under the air duct and discharges at the rear of the gin. The air duct merges into a throat 19 which flares toward and opens into the lower front and bottom of the air flue 20. The elements which have been described are of standard construction.

Within the air flue 20, which extends longitudinally across the rear of the gin, from one end wall to the other end wall, is a foraminous cylinder or cylindrical screen 21. The screen is somewhat less in diameter than the flue so as to pro-

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vide an arcuate space therebetween and is preferably disposed concentrically within said flue and extends longitudinally thereof.

The screen 21 is preferably formed of wire mesh fabric, such as hardware cloth, rolled into a cylindrical form with its longitudinal edges folded and crimped, similarly to a stove pipe seam, as is indicated at 22 in Fig. 2. Metal rings 23, U-shaped in cross-section, are secured on the ends of the screen. Each ring is surrounded by a flat spacer ring 24 of leather or other pliable material, as is best shown in Figs. 2 and 3. It is customary to provide annular collars 25 in the end walls 11 which telescope the ends of the air flue 20. The spacer rings fit snugly in these collars.

The practice in gin houses is to connect several gins, commonly referred to as gin stands, in aligned batteries of four or five stands, with their end walls spaced apart and the collars 25 connected by short flues (not shown) so that a continuous air flue extends through said battery. The collar 25 of the last gin stand is suitably closed, as by a cap 26 as is shown in Fig. 3. This cap abuts the spacer ring 24 and is removably fastened on the end collar 25 in any suitable manner. When it is desired to clean the interiors of the screens, the cap is removed and the trash is blown out through the open end of the last screen by the air stream.

I am aware that screens have been used in gin plants to filter cotton lint and trash from the air blast stream, but so far as I know, it is new and novel to provide a complete cylindrical screen within the air flue and means for cleaning said screen as set forth herein. By making the screen of less diameter than the flue and providing a space surrounding said screen, it will be seen that a free passage of air is provided. If the screen was placed just across the outlet of the flue 20 into the throat 19, some restriction, because of the meshes, would be offered. Further, if the screen was placed across the throat only, there would be a tendency for lint and trash to mat on such a restricted screen area. By using a cylinder and a space therearound, the air may escape in all radial directions and thus, there is little or no air restriction and lint and trash will not mat and interfere with the free passage of air to any serious extent.

The foregoing description of the invention is explanatory thereof and various changes in the size, shape and materials, as well as in the details of the illustrated construction may be made, within the scope of the appended claims, without departing from the spirit of the invention.

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What I claim and desire to secure by Letters Patent is:

1. The combination with a cotton gin having collars in its end walls and a cylindrical air flue connected with said collars and extending therebetween, of a cylindrical screen extending through said flue and having its ends disposed in said collars, and spacers surrounding the ends of the screen within said collars, whereby said screen is secured in the flue and spaced therefrom.

2. The combination set forth in claim 1, and a closure for one of the collars.

3. The combination with a cotton gin stand provided with a generally cylindrical air current supply flue along its lower inner side having a semi-cylindrical wall and a duct leading forwardly and upwardly from the inner side of said flue, of a stationary cylindrical screen disposed longitudinally in and of said flue within the stand and of less diameter than the flue and having its upper longitudinal cylindrical outer surface spaced from the semi-cylindrical wall of the flue and in proximity thereto to provide a semi-circular space therebetween, the duct having its lower end open and leading from the inner lower portion of the flue.

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4. The combination with a gin stand provided with a generally cylindrical air current supply flue along its lower inner side having a semi-cylindrical wall and an air duct leading forwardly and upwardly from the inner side of said flue, of a cylindrical stationary screen disposed longitudinally in the flue of less diameter than the flue, there being a narrow longitudinal space arcuate in cross-section between the walls of the flue and the screen, the screen having a broad longitudinal section exposed in the entrance to the air duct and an air inlet at one end of said screen.

DEWEY D. DAY.

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