No. 667,072. Patented Jan. 29, 1901.

F. A. DELPH & J. L. CANTEY.

LINT SEPARATING AND CONDENSING APPARATUS.

(Application filed Dec. 1, 1899.)

(No Model.)

Fig. 1.

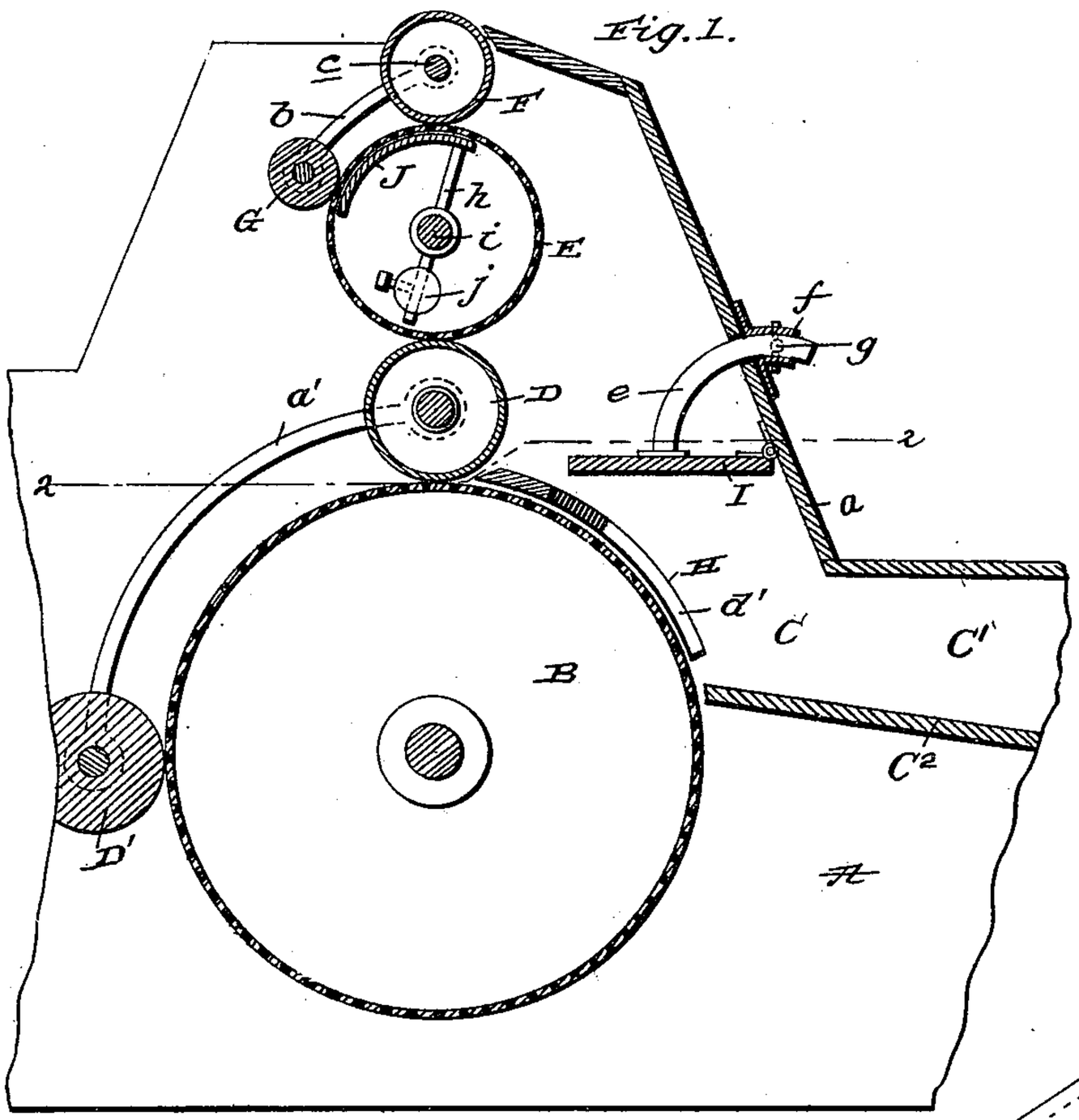


Fig. 2.

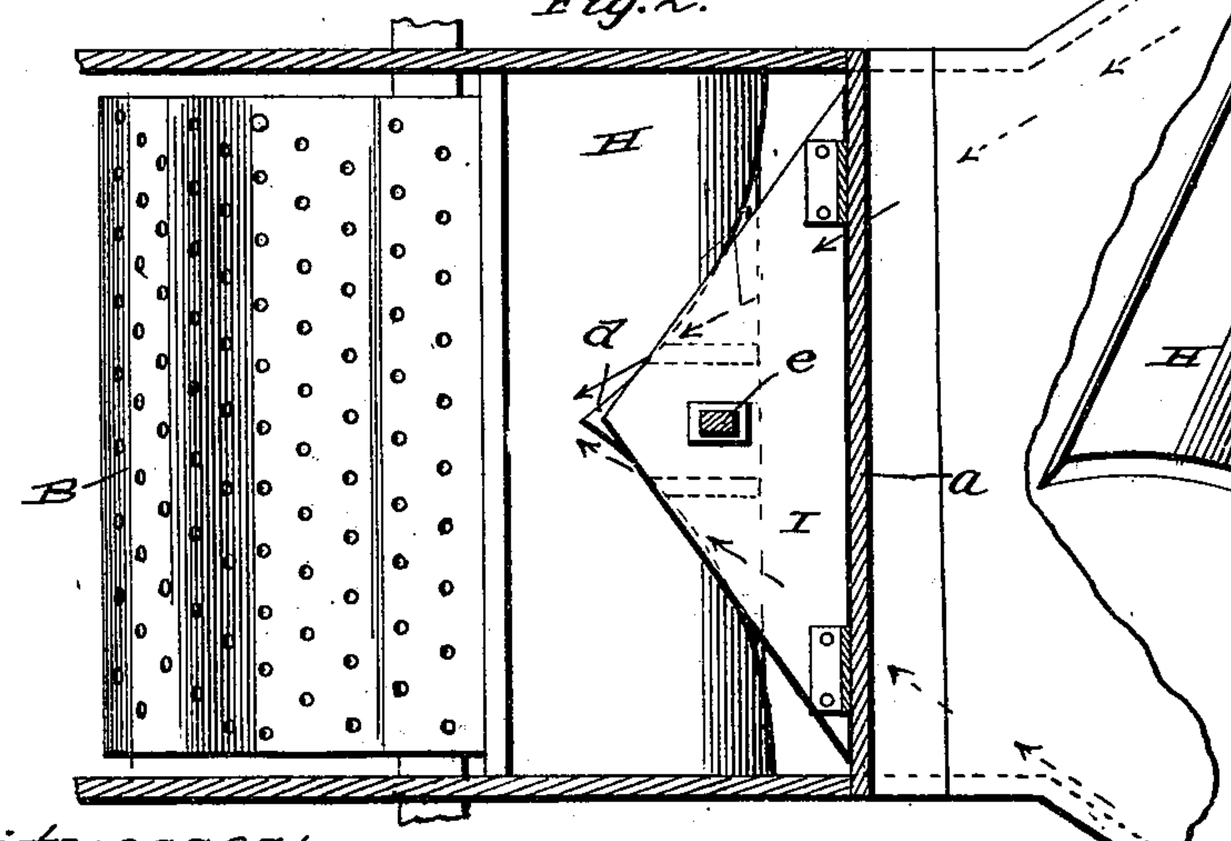
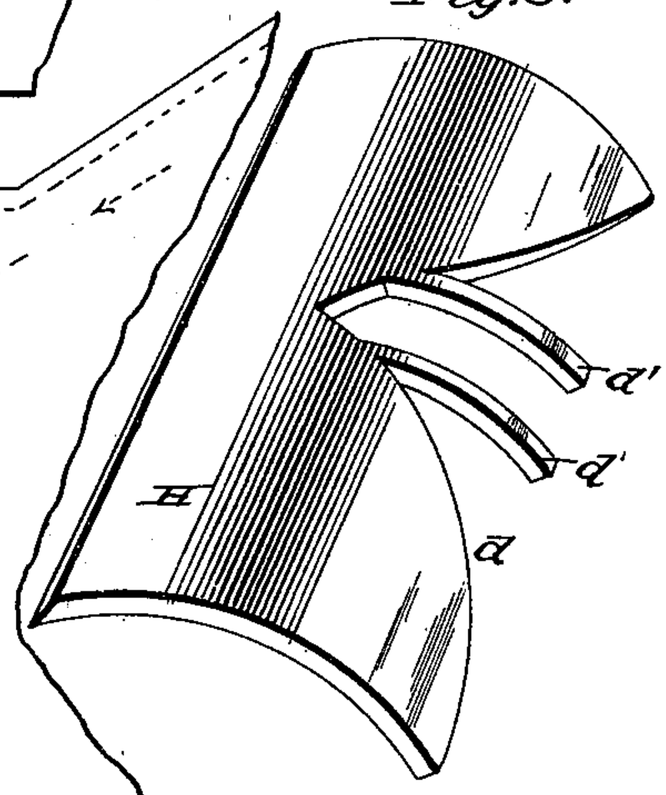


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK A. DELPH AND JAMES L. CANTEY, OF NEW ORLEANS, LOUISIANA.

LINT SEPARATING AND CONDENSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 667,072, dated January 29, 1901.

Application filed December 1, 1899. Serial No. 738,897. (No model.)

To all whom it may concern:

Be it known that we, FRANK A. DELPH and JAMES L. CANTEY, citizens of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Lint Separating and Condensing Apparatus, of which the following is a specification.

Our invention relates to condensing apparatus for use in conjunction with cotton-gins and contemplates the provision of a simple and inexpensive condensing apparatus calculated to separate the clean, fine, and light particles of the lint from the coarse particles of lint and the dirt, mote, and trash as the lint is discharged from the cotton-gin.

With the foregoing end in view the invention will be fully understood from the following description and claims when taken in conjunction with the annexed drawings, in which—

Figure 1 is a vertical section of our improved apparatus. Fig. 2 is a horizontal section taken in the plane indicated by the line 2 2 of Fig. 1 with the lower bat-roll and its pendent arms omitted. Fig. 3 is a detail perspective view of the curvilinear deflector.

Referring by letter to the said drawings, A is a suitable casing which may, if desired, form part of the casing of a gin, and B is an ordinary condenser-cylinder, between which and the wall *a* of casing A is formed a flue C, up which the cotton is blown by the blast from the gin-brush. The cylinder B is designed to receive the coarse particles of the lint and the dirt, mote, and trash, which are formed into a bat by a roll D, arranged above the cylinder after the well-known manner.

D′ is a bat-roll which is carried by pendent arms *a′*, loosely mounted on the shaft of the roll D.

E is a condensing-cylinder which is arranged immediately above the roll D and is designed to receive the fine particles of lint.

F is a roll arranged above the cylinder E, and G is a bat-roll which is carried by pendent arms *b*, loosely mounted on the shaft *c* of roll F and is designed to bear against the cylinder E. The roll F serves to arrest the blast and cause the same to force the fine particles of lint against the periphery of the cylinder E, and it also serves to render compact the lint bat on the cylinder.

In order to cause the excess of blast to pass through the upper condensing-cylinder and carry the fine particles of lint to the same, we provide the curvilinear deflector H, which rests in the flue C and above the cylinder B, as shown. The said deflector H is preferably shaped as shown—that is to say, is provided with an obtuse-angle-shaped notch *d* and parallel curvilinear arms *d′*, arranged about the proportional distance illustrated apart in the said notch *d*.

In conjunction with the deflector H is employed an adjustable deflector I. This deflector I is of a shape and size corresponding to the notch in the deflector H and has for its purpose to deflect the blast when the same acts with too great force against the cylinder E. It is connected in a hinged manner to the wall *a* of casing A and is adjustably fixed in position by a quadrant *e*, connected to it and passed through a sleeve *f* in the casing-wall, and a set-screw *g*, bearing in said sleeve and arranged to press against the quadrant.

J is a curvilinear deflector arranged within the cylinder E and close to the wall thereof. This deflector is carried at the upper ends of the arms *h*, which are loosely mounted on the shaft *i* of the cylinder, adjacent to the ends thereof, and are provided at their lower ends with adjustable peas or weights *j*, designed to counterbalance the deflector and hold it in the position shown within the cylinder, which revolves around it. As will be noticed by reference to Fig. 1, the deflector J is arranged below the space between the rolls F and G, and it has for its purpose to prevent the blast from dislodging the lint from the cylinder E before the lint reaches the bat-roll. It also serves to effectually prevent the cloud of dust present in the apparatus from gaining access to and mixing with the cotton while the cotton is passing from the roll F to the bat-roll G and while it is being wound upon the latter, such dust being discharged through the ends of the cylinder E.

The brush (not shown) of the gin is about five feet in length and the condenser B is about thirty-five inches long, and consequently the gin-casing is contracted or grad-

nally reduced in width from the brush to the flue C′ after the manner shown in Fig. 2. By reason of such construction of the gin-casing the blast from the gin is contracted, its velocity is increased, and it is deflected toward the transverse center of the condenser B, and hence enabled to move the dirt, mote, and trash and the coarse particles of lint mixed therewith on the bottom board C^2 of flue C′ to such transverse central portion of the condenser B, and deposit the same thereon between the arms d' of the deflector H. The dirt, mote, trash, and the coarse particles of lint mixed therewith are confined by the arms d' of the deflector H within a space of from four to six inches wide on the condenser B and are formed into a bat of such width thereon by the roll D. The coarse particles of the lint—that is, the coarse particles free from the dirt, mote, and trash—are carried by the blast from the gin to the spaces between the outer sides of the arms d' and the walls of the notch d in the deflector H and are deposited on the condenser B and formed into bats thereon by the roll D, such bats extending from the transverse central bat of dirt, mote, and trash to the ends of the condenser. The bats of coarse or second-grade lint may be and preferably are rolled up on the bat-roll D′, while the transverse central bat of dirt, mote, and trash may be rolled up on a bat-roll (not shown) located below the roller D′ or may be permitted to drop from the condenser into a receptacle placed to receive it. The fine particles of lint by reason of their comparative lightness are carried up to and formed into a bat against the condenser-cylinder E, which bat is rolled up on the bat-roll G after the usual manner.

It will be appreciated from the foregoing that we obtain from the condenser B a small amount in bulk, but very great in weight, of dirt, mote, trash, and lint mixed therewith, and also obtain a great percentage of good second-class lint, while from the condenser E we obtain a fair percentage of first-class lint or merchantable cotton.

The dirt, mote, trash, and the lint mixed therewith may be used to advantage in the manufacture of paper-stock.

Having thus described our invention, what we claim is—

1. A lint separating and condensing apparatus comprising a casing having a flue adapted to be connected with a gin, a plurality of condenser-cylinders located at different distances from the mouth of the flue, rolls for holding cotton on the condenser-cylinders, and suitable means for deflecting the blast so that the major portion of the same will reach the condenser-cylinder remote from the mouth of the flue, substantially as specified.

2. The lint separating and condensing apparatus described comprising a casing having a flue adapted to be connected with a gin, the lower and upper condenser-cylinders located at one side of the flue, rolls for holding cotton on the said cylinders, a deflector supported within the upper cylinder, the fixed curvilinear deflector arranged adjacent to the lower cylinder and having the notch d, the adjustable deflector connected to the casing-wall and shaped in conformity to the notch of the fixed deflector, and means for adjustably fixing the adjustable deflector, substantially as specified.

3. The lint separating and condensing apparatus described comprising a casing having a flue adapted to be connected with a gin, the lower and upper condenser-cylinders located at one side of the flue, rolls for holding cotton on the said cylinders, a deflector supported within the upper cylinder, the fixed curvilinear deflector arranged adjacent to the lower cylinder and having the notch and the parallel arms arranged therein, the adjustable deflector connected to the casing-wall and shaped in conformity to the notch of the fixed deflector, and means for adjustably fixing the adjustable deflector, substantially as specified.

4. A lint separating and condensing apparatus comprising a casing having a flue adapted to be connected with a gin, a condenser-cylinder arranged in the casing, a roll arranged adjacent to said cylinder, and a curvilinear deflector arranged adjacent to the cylinder and having the notch d, substantially as and for the purpose set forth.

5. A lint separating and condensing apparatus comprising a casing having a flue adapted to be connected with a gin, a condenser-cylinder arranged in the casing, a roll arranged adjacent to said cylinder, and a curvilinear deflector arranged adjacent to the cylinder and having the notch d and also having the arms d' in said notch, substantially as and for the purpose set forth.

6. A lint separating and condensing apparatus comprising a casing having a flue adapted to be connected with a gin, a foraminated condenser-cylinder E arranged in the casing, rolls F G arranged adjacent to and adapted to operate in conjunction with the cylinder, and a deflector arranged in the cylinder coincident with the space between the rolls F, G, substantially as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

FRANK A. DELPH.
JAMES L. CANTEY.

Witnesses:
P. EBERT,
W. P. KILLELEA.