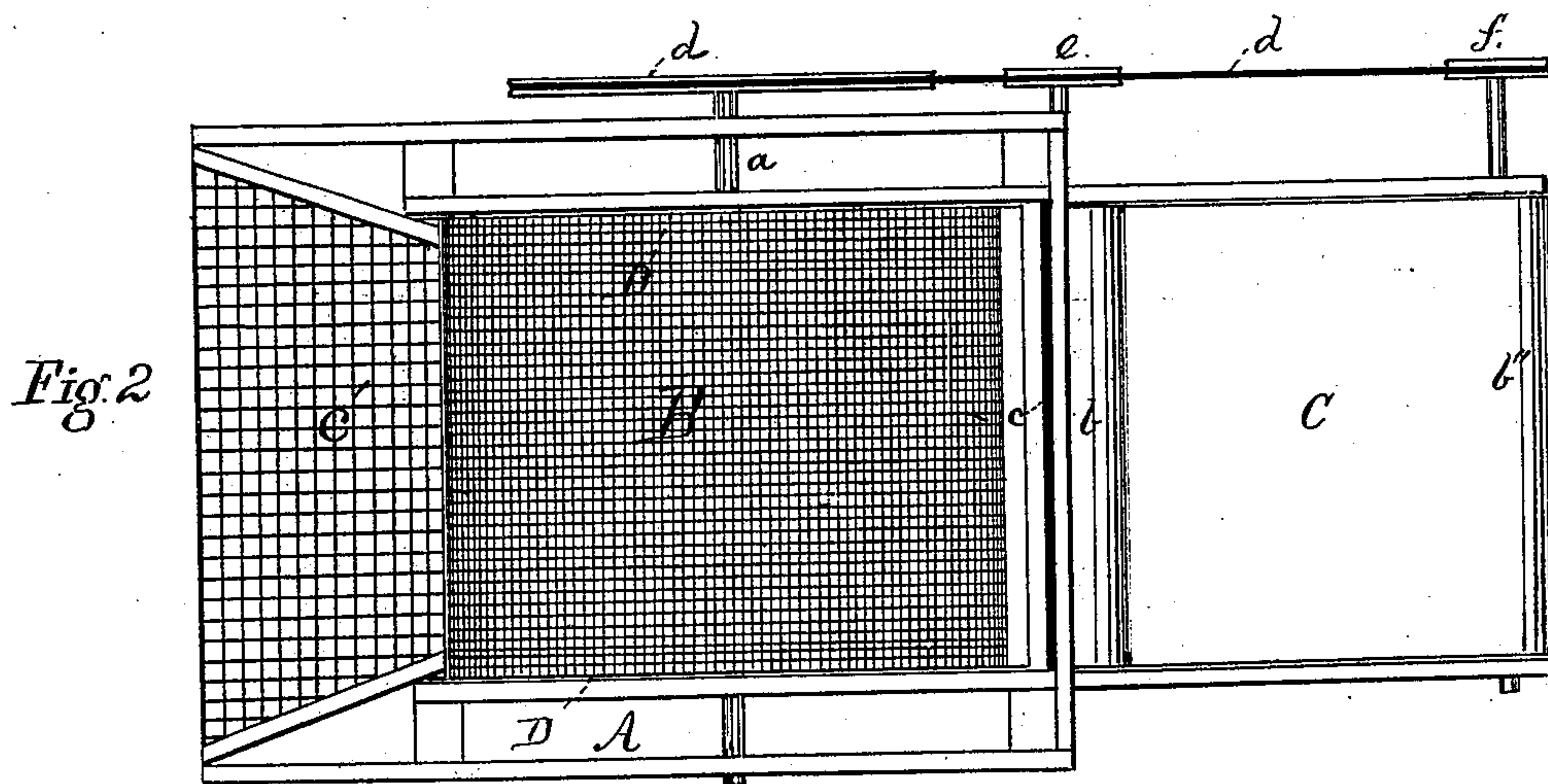
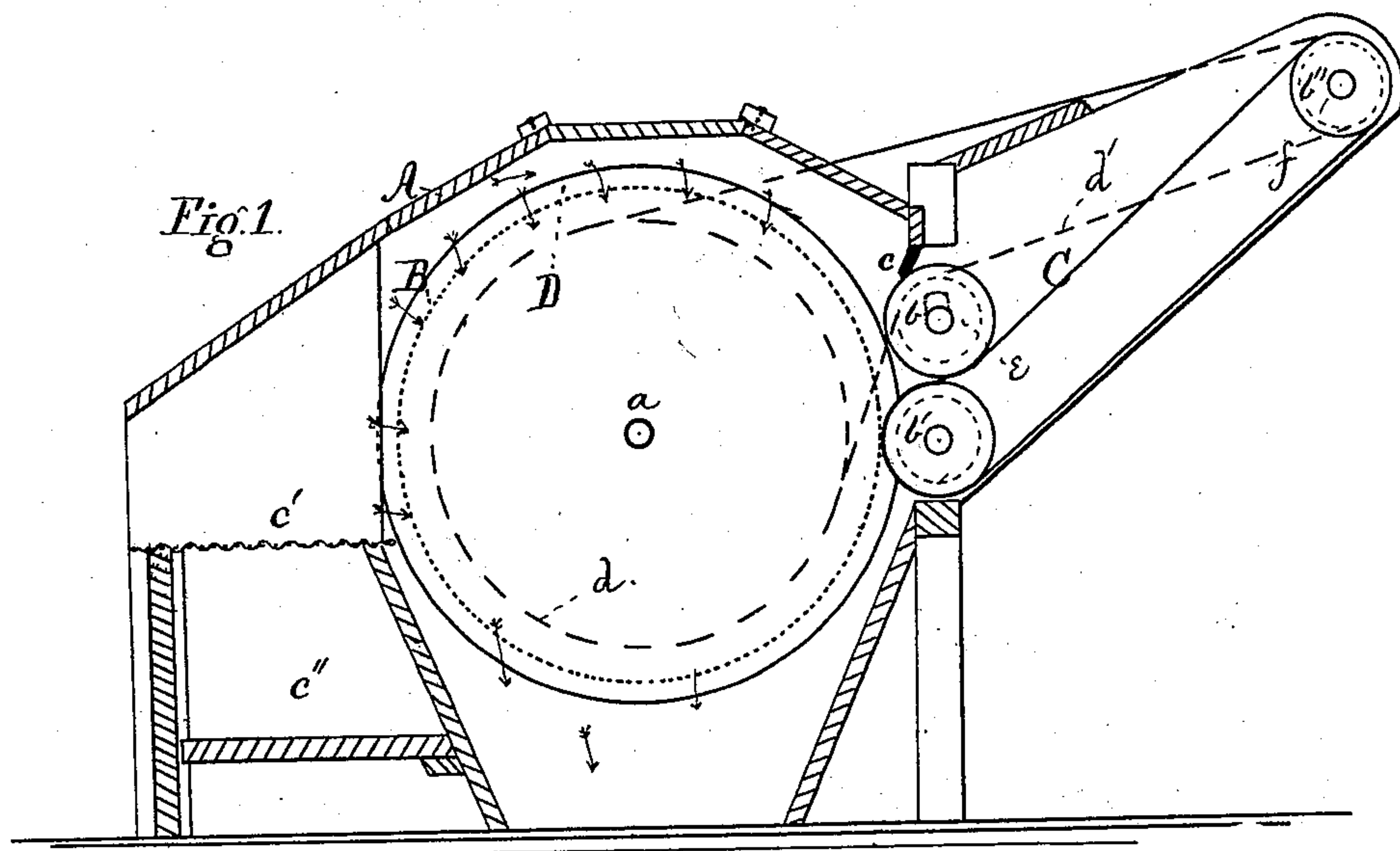


J. T. DONOVAN.
Cotton-Cleaner and Condenser.

No. 197,617.

Patented Nov. 27, 1877.



WITNESSES,

W. A. Bertram.
D. L. H. Barclay.

INVENTOR,

John T. Donovan.

BY

R. W. Williams

ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN T. DONOVAN, OF WACO, TEXAS.

IMPROVEMENT IN COTTON CLEANER AND CONDENSER.

Specification forming part of Letters Patent No. **197,617**, dated November 27, 1877; application filed November 7, 1877.

To all whom it may concern:

Be it known that I, JOHN T. DONOVAN, of Waco, McLennan county, State of Texas, have invented certain new and useful Improvements in Cotton Cleaner and Condenser; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical longitudinal sectional view of my device; Fig. 2, a plan view of the same, the top being removed in order to more fully illustrate the internal construction of the machine.

The object of my invention is to eliminate as completely as may be the sand, particles of leaves, and trash generally with which cotton as it comes from the gin is invariably contaminated, and also to deliver the lint in the form of a compact bat to the baling-press.

In machines for cleaning cotton, as heretofore constructed, the lint has generally been passed over a screen through which a current of air was forcibly drawn, the sand and fine trash being thereby carried through the screen. The operation of these devices has, however, been defective, owing to the fact that the meshes of the screen, if large enough to allow the larger, and therefore most objectionable, pieces of sticks, leaves, &c., to pass through, will also allow the fine lint to be drawn by the blast into the meshes and clog them, or even completely through them, causing a loss of lint. In order to obviate these defects, I pass the lint first over a screen having large meshes, but not provided with an air-blast, in which case the trash and sand alone will pass through the screen, and then carry the lint over a screen of fine mesh, through which the dust is carried by means of a current of air induced by any suitable means. Finally, I compress the lint into an endless bat by passing it between rollers, and lead it thence to the baling-press.

In the accompanying drawings, A represents the main casing of the machine, in which is journaled the shaft *a* of the cylindrical screen B. At one side of the screen are journaled the rollers *b b'*, the latter carrying, in connection with a third roller, *b''*, an endless belt or apron, C. Above the roller *b* is attached

a strip of rubber, *c*, in order to make that side of the machine as nearly air-tight as possible.

The bearings of the roller *b* are slotted, as shown, in order to admit of a slight vertical movement on the part of the roller caused by occasional inequalities in the thickness of the web of cotton.

The cylindrical screen is flanged, as shown at D, in order to prevent the passage of the air-current between it and the casing, as well as to prevent loss of lint from the same cause.

At the opposite side of the screen is the inlet to the machine. A screen, *c'*, of coarse mesh, is there secured, over which the lint is passed. The opening is made tapering, as shown, in order to accommodate gins of various sizes.

The shaft of the cylindrical screen carries a pulley, *d*, over which a driving-belt, *d'*, passes to the pulleys *e* and *f*, which are mounted, respectively, upon the shafts of the rollers *b b''*. These latter pulleys are of the same size, but that upon the shaft of the screen is larger in the ratio of the radius of the screen to that of the roller *b*. The surface-speed of the screen is consequently the same as that of the rollers.

A portion of the cover or top of the casing is made removable, in order to afford convenient access to the interior of the machine when required.

The operation of the device is as follows: A gin being made to communicate with the inlet-opening, the lint is led over the screen *c'*, the coarser and heavier particles of sand, grit, and trash falling therethrough into the box *c''*. Motion is communicated by any suitable means to the cylindrical screen and rollers, and a strong current of air is induced, by means of a fan-blower, downward through the screen and out through the bottom of the machine.

I have not thought it necessary to illustrate any air-forcing device, as any convenient and well-known means may be used.

The lint passes over the revolving screen, and thence, between the rollers *b b'*, to the belt C, being finally delivered, as already stated, in the form of a dense endless bat over the roller *b''* to the baling-press. During the passage of the lint over the screen B the fine

and light particles of dust are drawn there-through, while, owing to the fineness of the mesh the lint shows no tendency to clog the meshes or pass through them.

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

1. In a cotton-cleaner, a pair of screens of, respectively, coarse and fine mesh, the latter alone communicating with an air-forcing device, substantially as described.

2. In a cotton-cleaner, a revolving screen having flanged extremities, as and for the purpose described.

3. In combination with the rotary screen B,

the stationary screen *c'*, of relatively coarser mesh, as and for the purpose described.

4. In combination with the screen B and rollers *b b'*, the rubber strip *c*, substantially as described.

5. In combination with the casing A, the screens B and *c'*, rollers *b b'*, and endless belt C, all substantially as described, and for the purpose set forth.

Witness my hand this 29th day of October, 1877.

JOHN T. DONOVAN.

Witnesses:

JOHN T. WALTON,
L. J. GOREE.