

(No Model.)

D. A. SAILOR.
CONDENSER FOR COTTON GINS.

No. 474,799.

Patented May 10, 1892.

Fig. 1.

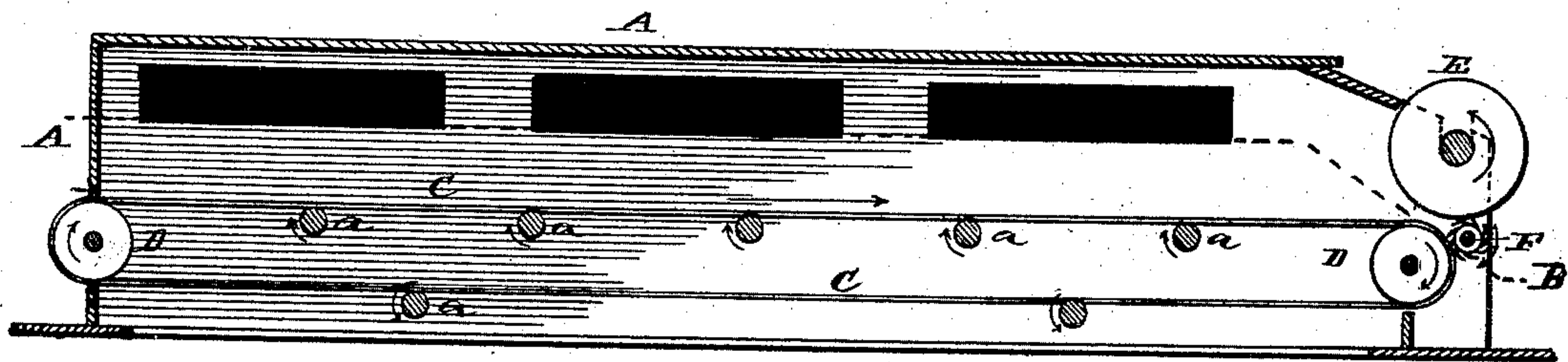


Fig. 2.

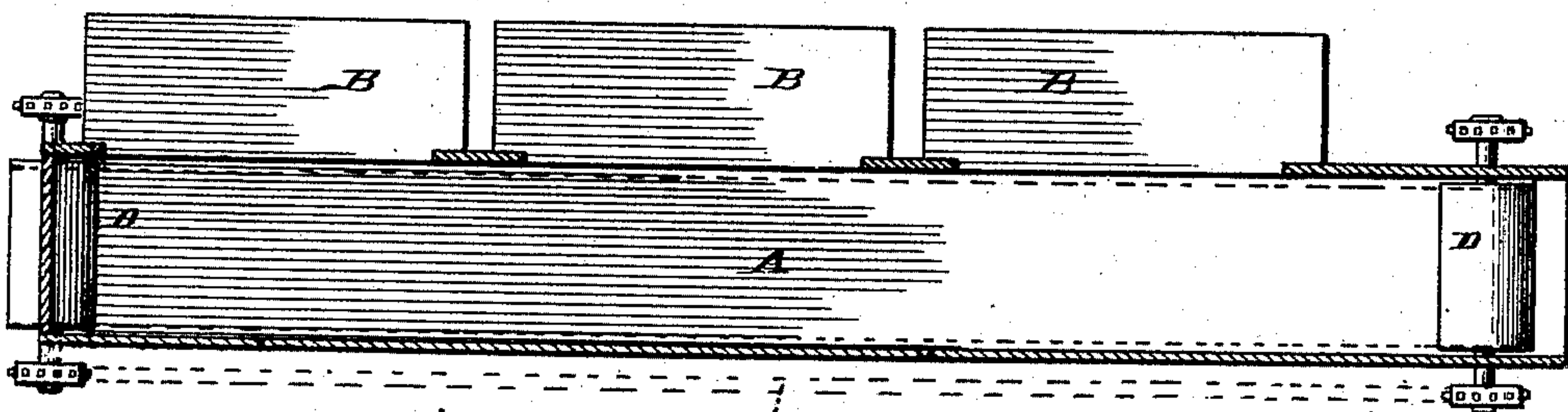


Fig. 3.

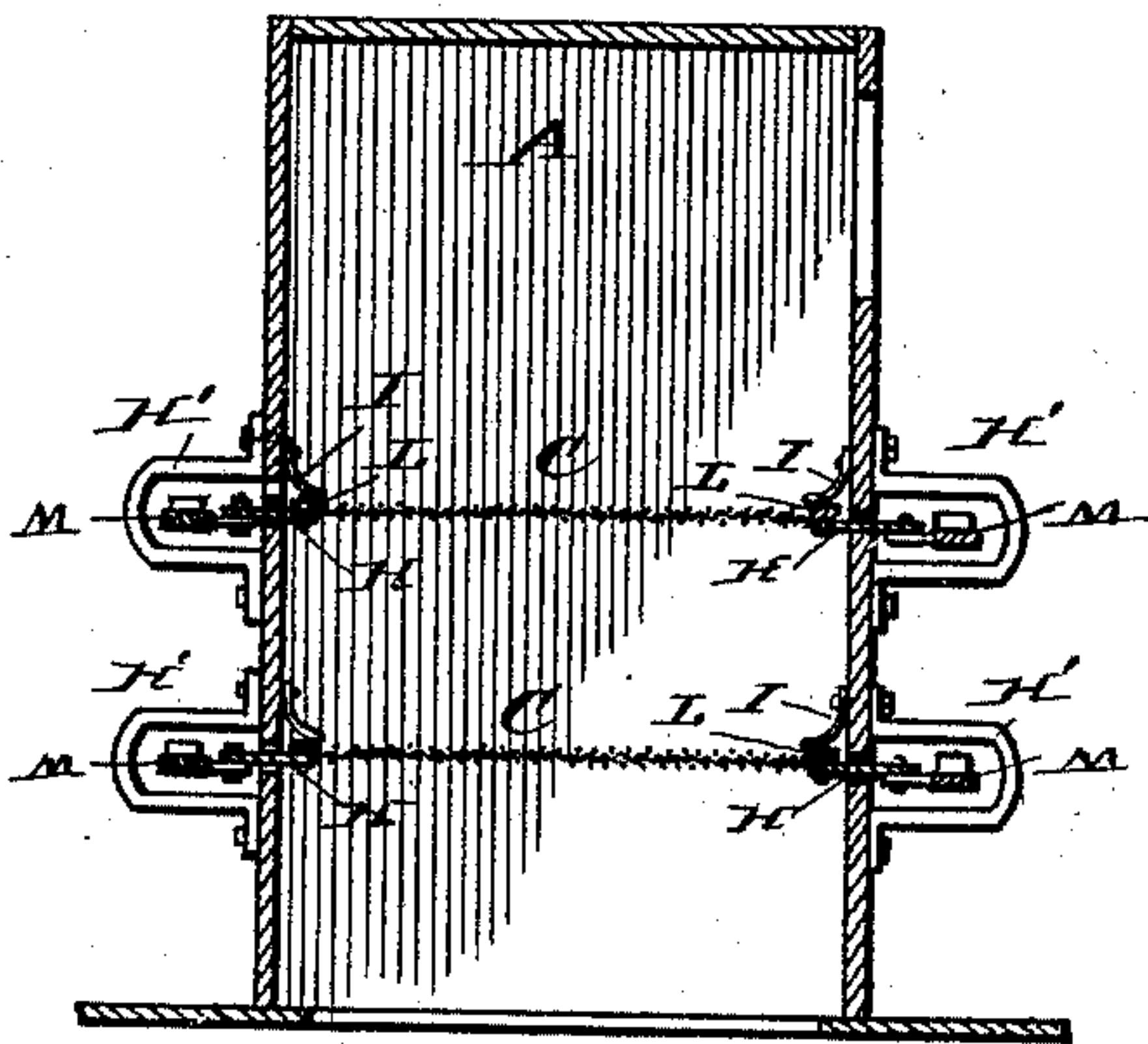
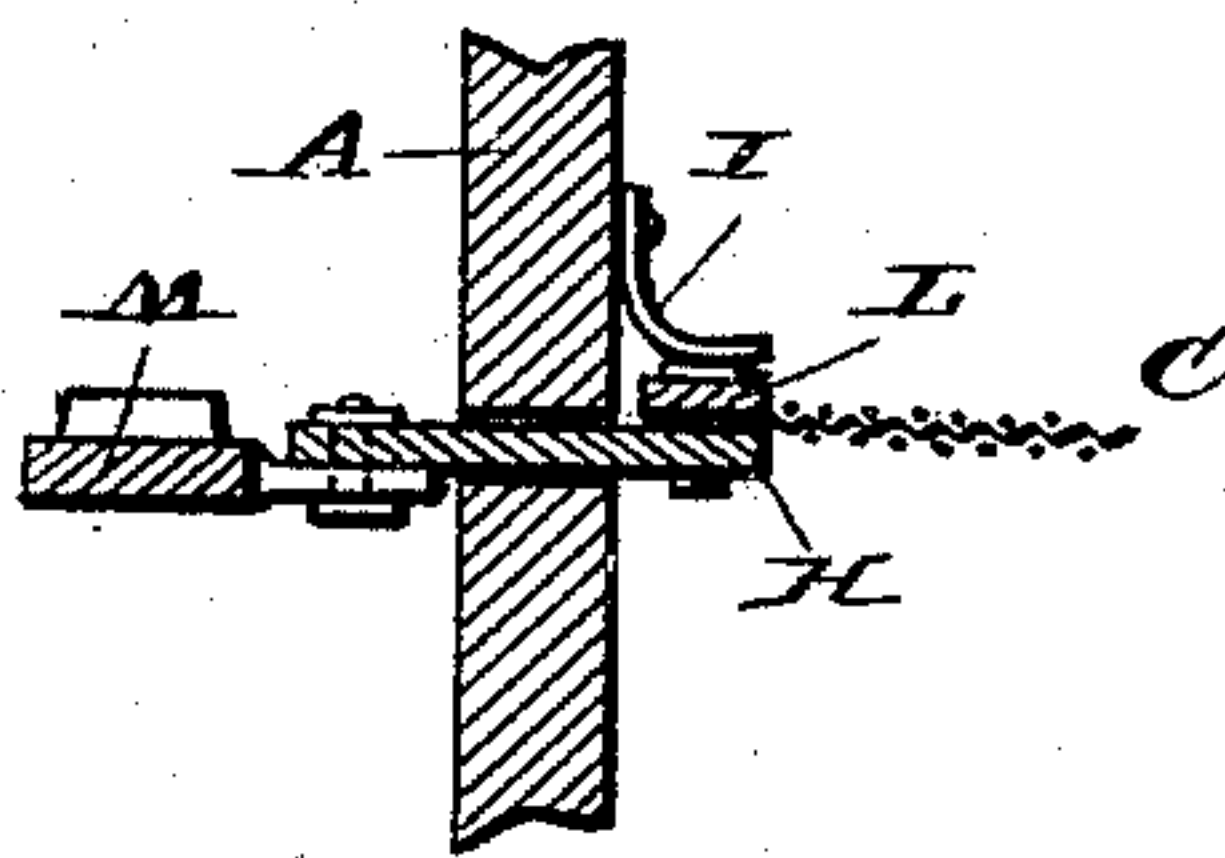


Fig. 4.



Witnesses

W. R. Davis.

John M. Walsh.

Inventor

D. A. Sailor

By his Attorneys

Alexander Davis

UNITED STATES PATENT OFFICE.

DAVID A. SAILOR, OF LITTLE ROCK, ARKANSAS, ASSIGNOR TO THE DUDLEY
E. JONES COMPANY, OF SAME PLACE.

CONDENSER FOR COTTON-GINS.

SPECIFICATION forming part of Letters Patent No. 474,799, dated May 10, 1892.

Application filed April 30, 1891. Serial No. 391,080. (No model.)

To all whom it may concern:

Be it known that I, DAVID A. SAILOR, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented certain new and useful Improvements in Condensers for Cotton-Gins, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In the accompanying drawings, Figure 1 designates a vertical longitudinal sectional view of my improved conveyer and condenser; Fig. 2, a horizontal longitudinal sectional view thereof on the line A B of Fig. 1; 15 Fig. 3, a vertical sectional view, and Fig. 4 a detail sectional view which is fully hereinafter described.

The invention has special relation to that class of cotton-handling apparatus wherein the lint-cotton from a series of two or more gins or linters is automatically collected or formed into a single mass and then conveyed and delivered to a single condenser, whereby the cotton from all the gins is formed into a 25 single large bat, as is more fully hereinafter set forth, the advantages of thus handling the cotton being well known to those skilled in the art. Heretofore in one kind of apparatus of this class the cotton is conducted by independent 30 flues from each gin-stand to a common air-flue, through which it is conveyed by a current of air (created by the gin-brushes or otherwise) to the common condenser. In another apparatus of this class the cotton is conveyed from each gin through independent air-flues directly to the common condenser.

The machines just described are objectionable in many respects, and it is the object of the present invention to obviate such defects 40 and also improve and simplify the general construction of this class of apparatus, as will more fully hereinafter appear.

In the accompanying drawings, A designates a casing, which I denominate a "condensing-chamber," and which preferably sets 45 over an opening in the floor of the gin-house. The gin-stands or gins B are placed on the floor of the gin-house on one or both sides of the long condensing-chamber, as the exigencies of the case may require, the gins being 50 only shown on one side of the chamber in the

present instance. The gins are placed with their rear sides close up to one side of the chamber, so that the ginned cotton may be discharged by the gin-brushes through suitable openings in the adjacent side of the chamber directly into the same, thereby doing away with all intermediate flues heretofore employed to convey the cotton to the common flue. 60

Supported within the condensing-chamber below the openings leading from the gins is a horizontal longitudinally-traveling belt or conveyer C, which is constructed of wire-netting or other reticulated material, and which 65 travels on rollers or shafts D, journaled in openings in the ends of the condensing-chamber, the intermediate portions of the conveyer being supported and prevented from sagging by a suitable number of transverse 70 rollers *a*, journaled in the sides of the chamber and arranged under the conveyer. This wire-screen conveyer, together with its supporting-rollers, travels in the direction indicated by the arrows, any suitable mechanism being 75 employed to drive them.

The longitudinal edges of the endless conveyer, as shown most clearly in Fig. 4, have clamped to them by narrow strips L endless strips or belts H, of leather or other flexible 80 material, which extend out through longitudinal slots in the sides of the chamber and are connected by rivets or otherwise to endless link belts *m*, running on sprocket-wheels secured on the ends of the shafts D D. Thus connecting the longitudinal edges of the screen-conveyer to traveling sprocket-chains provides means for carrying the screen without 85 subjecting it to undue longitudinal strain, and placing the chains outside of the chamber is advantageous in that they are thereby prevented from interfering with the free passage of the air and dust through the condensing-chamber. Strips I of flexible material are 95 secured to the interior of the condensing-chamber above the upper slots therein and hang down over the narrow traveling strips L, extending the full length of the chamber, and thereby serving to prevent the cotton from working out through the slots formed 100 for the passage of the belts H.

While I prefer the above means for carry-

ing the traveling screen, I do not desire myself to be limited in that respect, as other means may be employed, as will be evident to one skilled in the art. A belt of perforated sheet metal or a wire screen perfectly woven might be made to travel without the aid of the link belts and strips.

The portions of the sides of the casing between the longitudinal slots therein may each be supported by suitable arched brackets H' (shown in Fig. 3) or in any other suitable manner. At the discharge end of the chamber are the condensing-rollers, which consist of a superimposed light roller E, driven by suitable means and journaled in the frame of the condenser, and a discharging-roller F, journaled below the same and in close proximity to the end roller D, over which the wire belt passes, the said roller F being provided with the usual leather flaps, whereby the cotton is removed from the wire screen as it passes over the roller D and carried under the roller E, by which it is condensed into a suitable bat and discharged from the chamber.

In operation the lint-cotton is blown by the gin-brushes directly into the condensing-chamber and deposited upon the traveling gauze belt, the dust and impurities passing down through the meshes of the conveyer and out through the floor opening or flue, while the cleaned cotton from all the gins is conveyed to the condensing-rolls at the discharge end of the chamber and formed into a thick narrow bat, and then discharged into a press or other receptacle or upon the floor.

The improved form of apparatus herein described has a number of important advantages over the old forms of apparatus. In the first place, in this apparatus the condensing-chamber extends the entire length of the row of gins and all that the gin-brushes have to do is to blow the lint from the gin-stands directly into the condensing-chamber, thereby avoiding the use of costly and cumbersome intermediate flues to take the cotton from the separate gin-stands. The draft created by the gin-brushes passes immediately and freely out through the opening at the bottom and deposits the cotton upon the traveling screen quite forcibly, thereby cleaning and preliminarily condensing it upon the same. The traveling screen also serves to convey the cotton to the condensing-rolls at the discharge end of the condenser, thereby relieving the gin-brushes of the duty of serving as blow-fans to convey the cotton to the condensing-rolls and also avoiding the use of blow or suction fans for this latter purpose. In the condensers heretofore used in this class of appa-

ratus the wind from the gin-brushes is allowed to escape through a revolving screen, which, being cylindrical, necessarily confines the screen to a small area. This failure to provide an ample and free escape for the draft causes a certain amount of back-pressure of air against the gin-brushes, which pressure, as is evident, will be increased in proportion to the increase in the number of gins employed, this back-pressure having a tendency to retard the discharge of the lint from the gins and cause it to collect under the gin-stands. In the present apparatus this back-pressure is entirely avoided by providing a large screen area and a free passage for the escape of the dust and wind. In this apparatus, also, it will be observed, the large and ample screen area permits the use of as many gins as may be desired under any circumstances, whereas in the apparatus heretofore employed the number of gins that may be used is limited by reason of the failure to provide a free escape for the draft.

An essential advantage of the present arrangement of gins is its compactness, whereby a large amount of space in the gin-house is economized, and this is especially so where a double row of gins are arranged to discharge into both sides of the condensing-chamber. The narrow building required for this arrangement permits abundant light to be had all around the rows of gins, as the press will be placed off at one end of the plant.

Another advantage is that, owing to the narrow and thick form of bat made by this condenser, it is not sufficiently compressed by the rollers thereof to give it the appearance of "repacked" cotton when it is baled, as is the case with the common condenser, which discharges the bat in the form of a broad thin sheet.

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

The combination of a chamber and means for discharging lint-cotton therein, an endless-screen conveyer in the said chamber and shafts or rollers for supporting this conveyer, sprocket-wheels on these shafts, and a sprocket-chain connecting the respective sprocket-wheels, said sprocket-chains being connected to the edges of the said screen conveyer, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID A. SAILOR.

Witnesses:

W. C. RABY,
P. V. OLSON.