

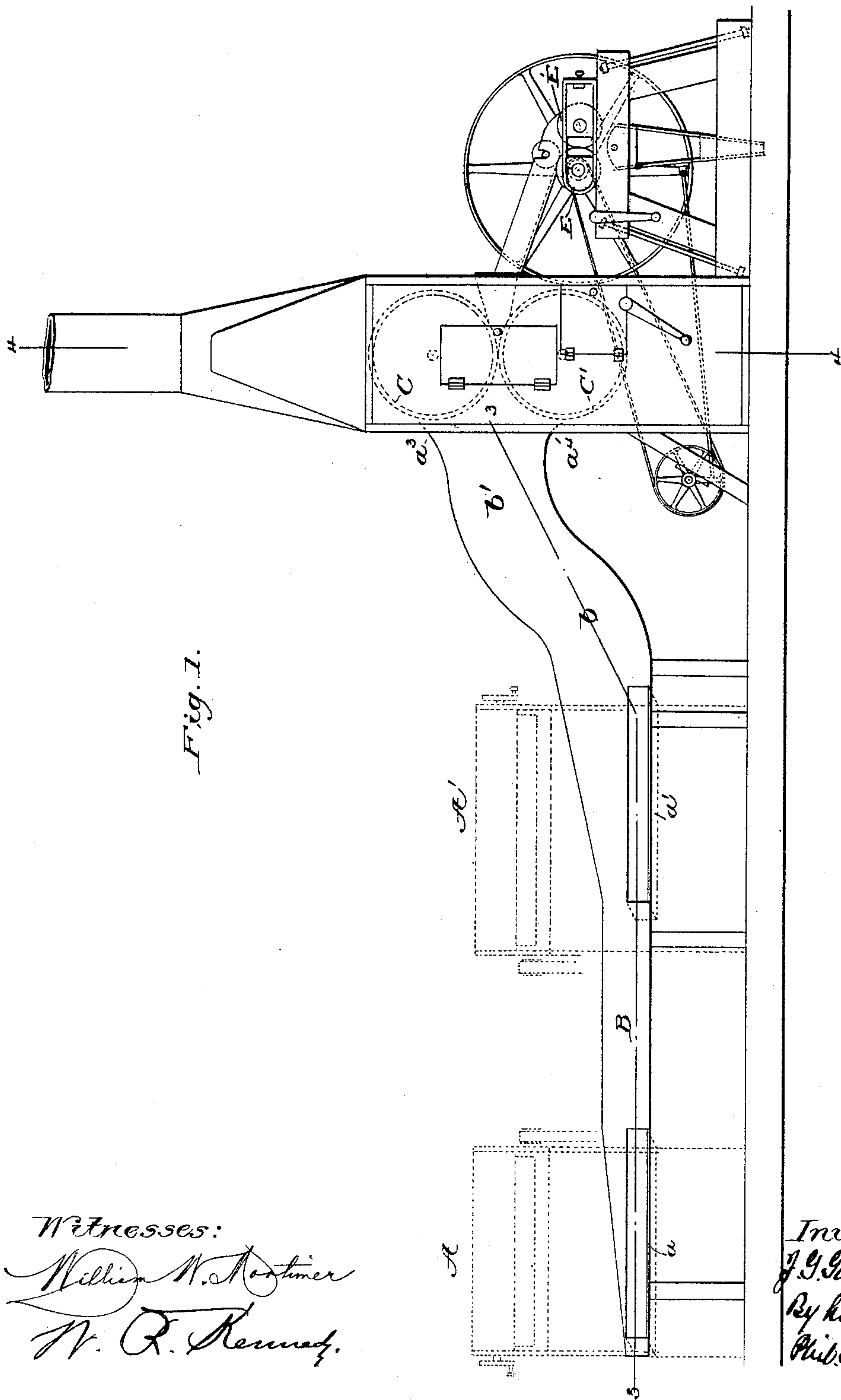
(No Model.)

3 Sheets—Sheet 1.

J. G. GOLDTHWAITE.
CONDENSER FOR COTTON GINS.

No. 462,404.

Patented Nov. 3, 1891.



Witnesses:
William W. Mortimer
W. R. Kennedy.

Inventor:
J. G. Goldthwaite
By his Atty.
Phil. S. Dodge

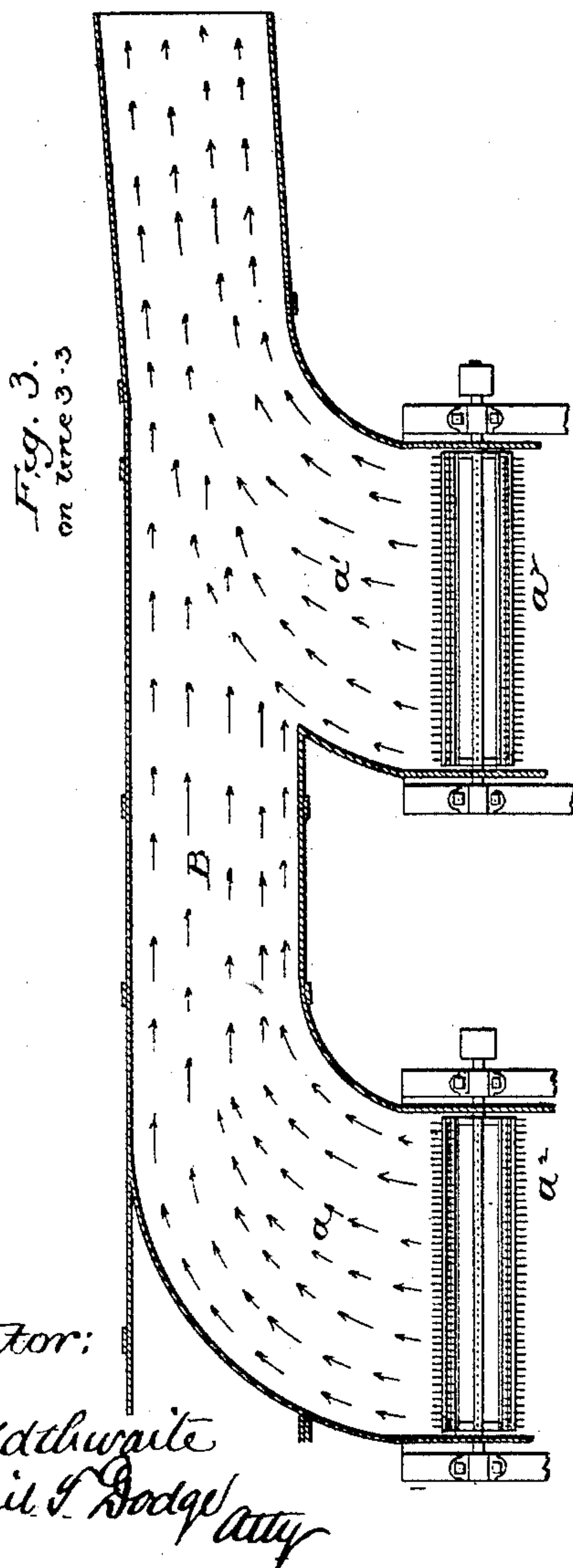
(No Model.)

3 Sheets—Sheet 2.

J. G. GOLDTHWAITE.
CONDENSER FOR COTTON GINS.

No. 462,404.

Patented Nov. 3, 1891.



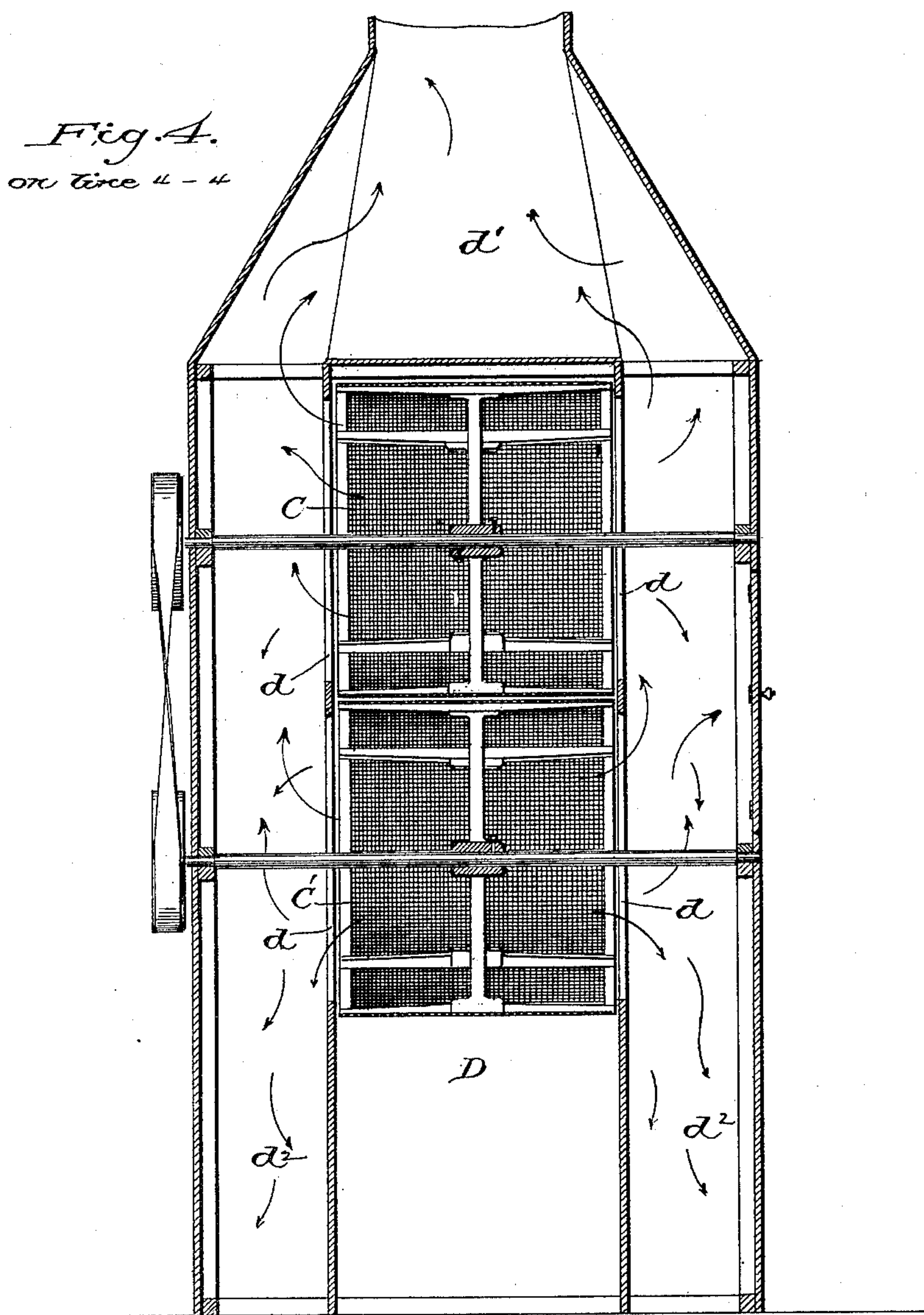
(No Model.)

3 Sheets—Sheet 3.

J. G. GOLDTHWAITE.
CONDENSER FOR COTTON GINS.

No. 462,404.

Patented Nov. 3, 1891.



Witnesses:
William H. Mortimer.
H. A. Kennedy.

Inventor:
J. G. Goldthwaite
By his Atty
Phil. I. Dodge

UNITED STATES PATENT OFFICE.

JOSEPH G. GOLDTHWAITE, OF GALVESTON, TEXAS, ASSIGNOR TO THE REMBERT ROLLER COMPRESS COMPANY, OF TEXAS.

CONDENSER FOR COTTON-GINS.

SPECIFICATION forming part of Letters Patent No. 462,404, dated November 3, 1891.

Application filed March 12, 1891. Serial No. 384,746. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. GOLDTHWAITE, of Galveston, in the county of Galveston and State of Texas, have invented certain Improvements in Condensers for Cotton-Gins, of which the following is a specification.

In Letters Patent of the United States No. 441,022, granted November 18, 1890, to Henry Rembert, is described a method of compressing and baling cotton, consisting in delivering the lint-cotton from the gin or gins directly to a condenser, by which it is formed into a soft bat or sheet and delivered between rolls, by which it is in turn subjected to an extreme compression to suppress its expansive tendency and then delivered to a lapping mechanism, which acts to build up a bale from the compressed sheet. In order that the bale thus built up of a great number of thin laminæ may be of uniform thickness, and that the fiber passing between the rolls may receive a uniform and adequate pressure without danger of being crushed, it is necessary that the fiber shall be fed to and distributed upon the condenser-surfaces with uniformity. In practice I have found that it is extremely difficult to secure this result. The practice has been to deliver the lint from a gin through a trunk or flue to the condenser, as shown in the patent above cited and the companion patent to Rembert, No. 446,888, dated February 24, 1891; but as the parts have been heretofore constructed and arranged the fiber was received unevenly by the condenser, and the bat or sheet passing to the rolls consequently varied in thickness. My present invention is designed to overcome this difficulty and secure the delivery of the cotton to the condenser at a constant rate and evenly from one side to the other. To this end I combine with one or more gins a trunk, into which the fiber is discharged and through which it is carried by the air-blast produced by the gin-brushes to the condenser-cylinders. The mouth or delivery end of this trunk, as it closely approaches the condenser in such form as to deliver the fiber in a horizontal or substantially horizontal direction, is enlarged vertically by rounding its top and bottom walls upward and downward, respectively. The result of the enlargement in this manner is to increase the sectional area and diminish the velocity

of the fiber-laden current, and also to expose a greater area of the condenser-surfaces for the lodgment of the cotton thereon.

In the accompanying drawings, Figure 1 is an elevation of the leading parts of a compressing and baling plant with my improvements incorporated therein. Fig. 2 is a longitudinal vertical section through the trunk, condenser, and adjacent parts. Fig. 3 is a horizontal section on the line 3 3 of Figs. 1 and 2. Fig. 4 is a section on the line 4 4.

Referring to the drawings, A and A' represent two ordinary cotton-gins of any approved form, each containing, as usual and as shown in the drawings, the rotary-brush cylinder, by which the lint is delivered and a strong outward blast produced, arranged to deliver the lint-cotton through short flues *a a'* into the side of a common trunk or conductor B, preferably of rectangular form in cross-section, which extends to and delivers the cotton at its end in a horizontal direction upon the surfaces of the two pervious condensing-cylinders C C', mounted one above the other in an inclosing case or chamber D, having side passages *d*, through which the interior spaces of the cylinders communicate with an uprising dust-flue *d'*, and a descending chamber *d''* to receive the heavier impurities.

E E' are two smooth strongly-supported rollers, to and between which the cotton from the condenser is guided that it may be compressed to a degree suitable for baling.

The rotary brushes *a*² of the gins produce, as usual, a strong outward blast of air, which passes through the trunk and the pervious surface of the condenser-cylinders to their interiors, whence it escapes at the end passages to the dust-flues. This air-current carries with it in suspension the loose ginned fiber or lint, which is deposited on the surfaces of the cylinders and by their revolution in the direction indicated by the arrows formed into and delivered between them as a loose light coherent bat or sheet, which passes it to the compressing-rolls.

In order to secure the uniform delivery of the fiber to the condenser-cylinders, I curve the top wall of the trunk upward immediately in advance of the cylinders, as shown at *a*³, and in like manner curve the bottom wall downward, as shown at *a*⁴. The top and

bottom walls terminate, as shown, substantially on a level with the axes of the respective cylinders, so that their surfaces are equally exposed to the advancing fiber. In
 5 practice I have found that this vertical enlargement of the mouth of the trunk by upward and downward curves is of great advantage in that it secures a uniformity of distribution and a freedom from clogging and
 10 other interruptions not attainable to the same extent by any other means of which I am aware.

I find it desirable to give the trunk opposite the end of each gin an increasing area
 15 longitudinally toward the condenser, or, in other words, from one side of the gin to the other, as shown in Fig. 2. This compensates for the increasing volume of air, maintains a uniform current, and insures the carrying forward of the fiber in a proper manner.

The best results as regards the continuity and regularity of the current and the uniformity of the distribution of the fiber on the cylinders are attained when the trunk is made,
 25 as shown, of gradually-increasing depth from its beginning to a point beyond the last gin, and carried from the last gin upward to the condenser with a reverse curvature, as shown at *b b'*. I also find it desirable to curve the
 30 flues or conductors through which the gins deliver into the main trunk in the direction of the condenser, or, in other words, in the direction in which the fiber is to be conveyed, as plainly shown in Fig. 3. The existence of
 35 sudden constrictions or angular surfaces, which will produce reactionary currents and eddies and a consequent lodgment of the fiber, is to be particularly avoided.

Having thus described my invention, what
 40 I claim is—

1. In combination with a cotton-gin and a condenser having two pervious cylinders, one above the other, an intermediate trunk, through which the gin delivers the lint-cotton to the condenser, said trunk having its delivery end enlarged by an upward and downward curvature of its top and bottom walls, substantially as described, and as distinguished from an angular enlargement.

2. In combination with a cotton-gin and a condenser at a higher level, an intermediate trunk extending horizontally from the gin, then curved upward, and finally expanded vertically in curved lines at its delivery end, substantially as and for the purposes described.

3. In combination with a gin, a trunk for conducting the lint-cotton therefrom, pervious condensing-cylinders at the end of the trunk, and an inclosing case having openings for the delivery of the air from the interior of the cylinders at both ends, whereby the distribution of the fiber on the two ends of the cylinders is equalized.

4. In combination with cotton-gins, a flue arranged to receive into its side the lint-carrying blasts from the gins, said flue having its portions opposite the gins tapered and widened vertically in the direction of its length, whereby the current in the flue is given a substantially constant velocity and adapted to maintain a uniform distribution of the moving fiber.

In testimony whereof I hereunto set my hand, this 6th day of March, 1891, in the presence of two attesting witnesses.

JOSEPH G. GOLDTHWAITE.

Witnesses:

C. S. DRURY,

W. R. KENNEDY.