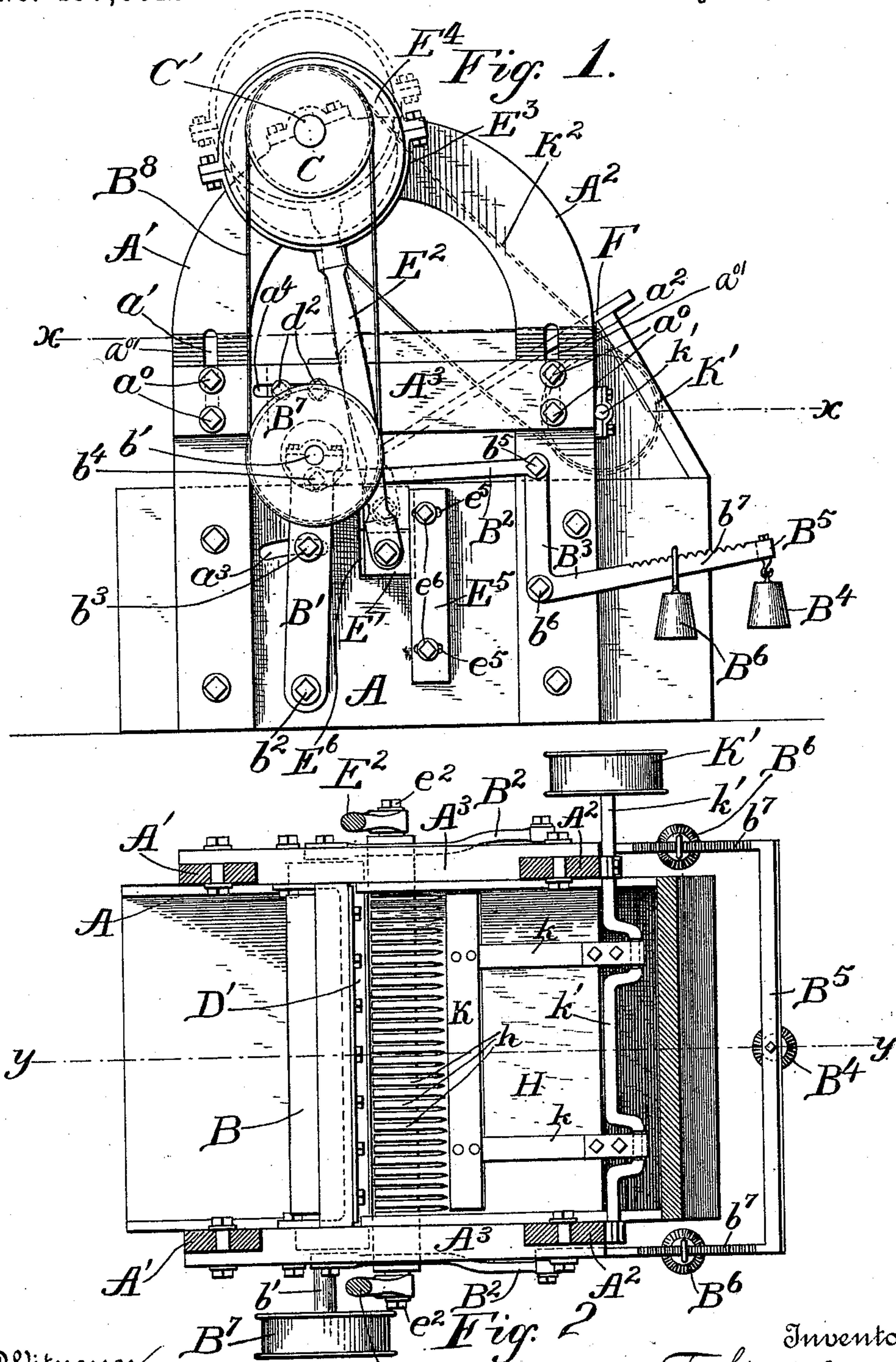


3 Sheets—Sheet 1.

No. 497,652.

Patented May 16, 1893.



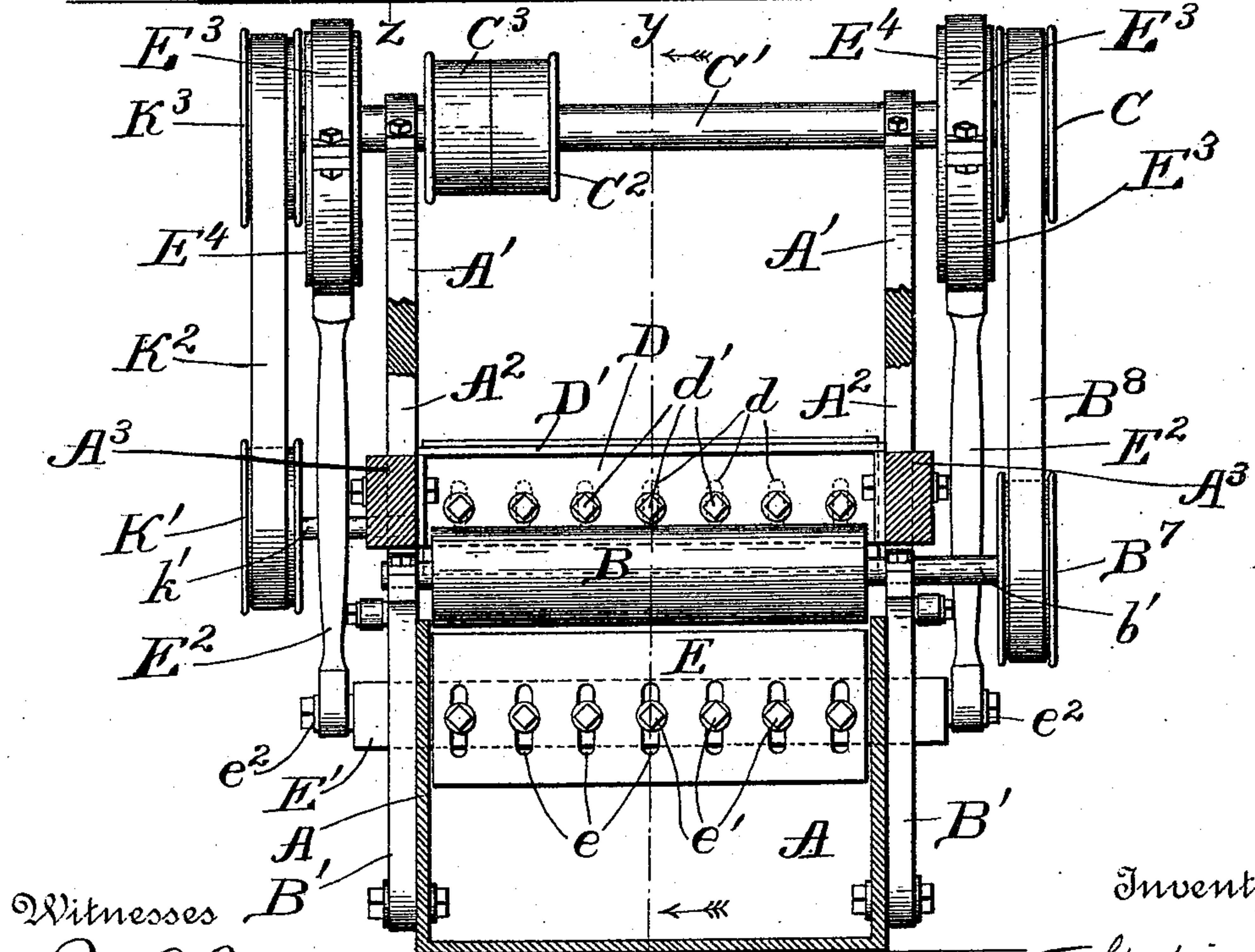
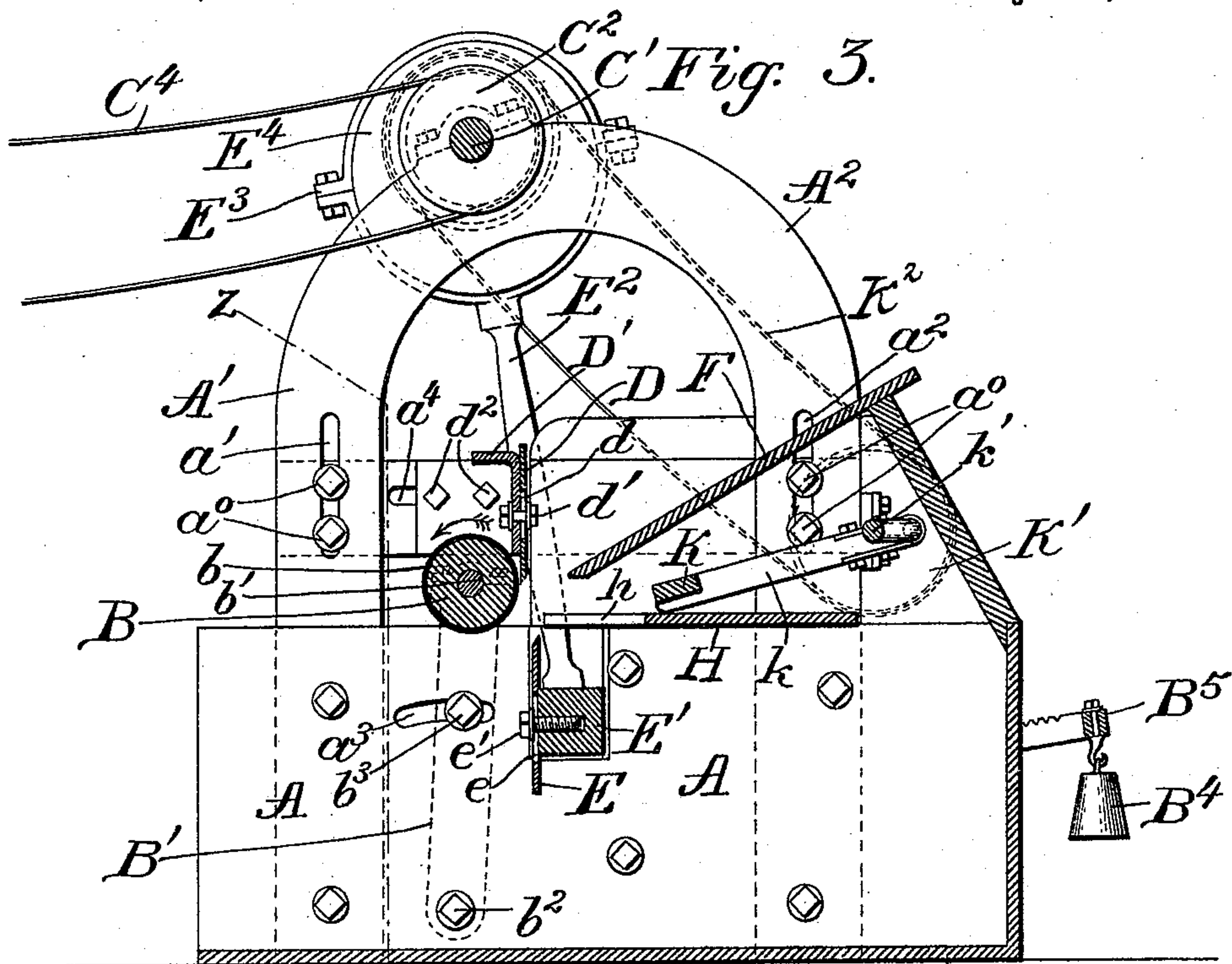
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ROLLER COTTON GIN.

No. 497,652.

Patented May 16, 1893.



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Fig. 4.

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(No Model.)

3 Sheets—Sheet 3.

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FIG. 5.

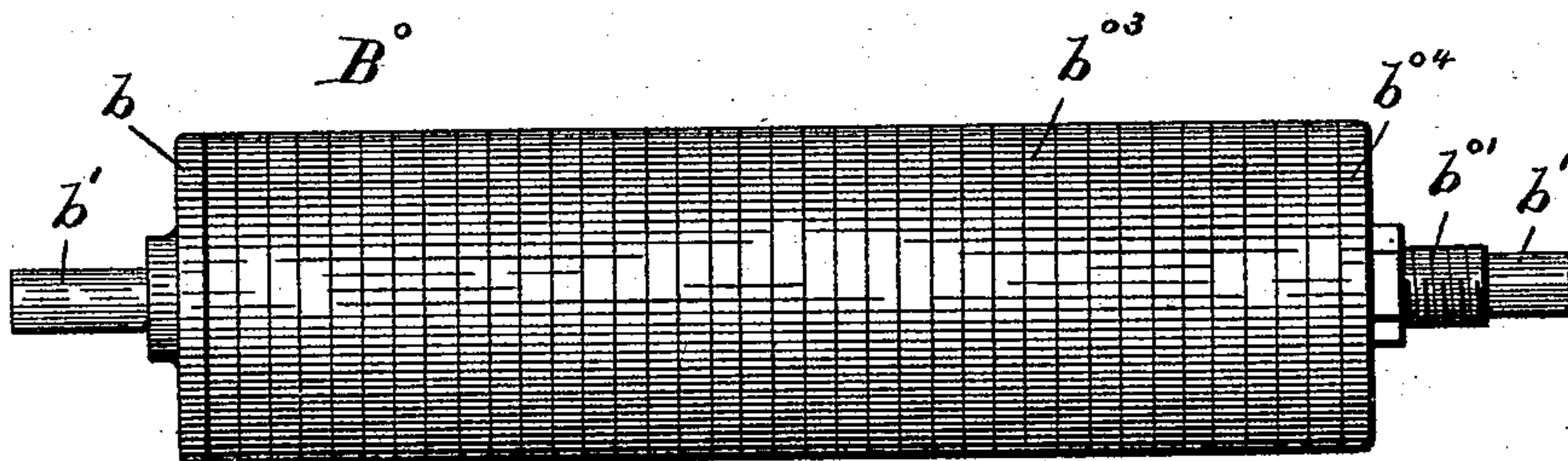
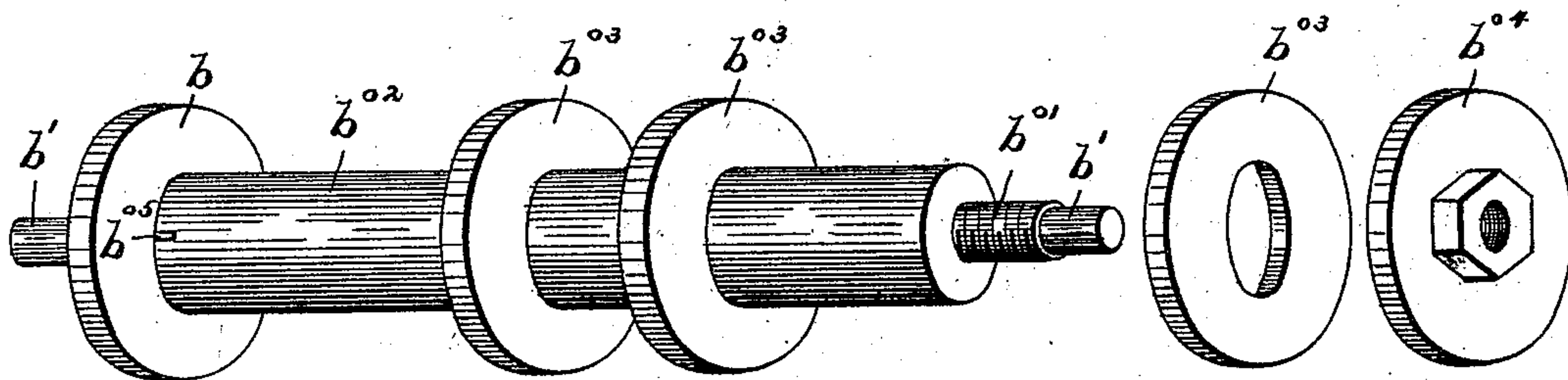


FIG. 6.



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UNITED STATES PATENT OFFICE

OTIS F. GOODWIN, OF SPARKS, GEORGIA.

ROLLER COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 497,652, dated May 16, 1893.

Application filed January 24, 1893. Serial No. 459,539. (No model.)

To all whom it may concern:

Be it known that I, OTIS F. GOODWIN, a citizen of the United States, residing at Sparks, in the county of Berrien and State of Georgia, have invented certain new and useful Improvements in Roller Cotton-Gins; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to cotton-gins of the class known as "roller" or "drum" gins, or sometimes called "long cotton" gins. Gins of this class are specially adapted for ginning long fiber cotton, such as sea-island cotton, the advantage being that the long fibers are not torn or broken as with the saw gins, which are largely in use, for ginning cotton of short fiber.

My invention consists of certain novel features hereinafter described and claimed.

Reference is had to the accompanying drawings in which the same parts are indicated by the same letters.

Figure 1 represents a side elevation of the improved gin. Fig. 2 represents a section of the same made by the broken line xx in Fig. 1, and looking down. In this figure the inclined platform or chute for delivering the cotton to the gin is omitted for the sake of clearness in the drawings. Fig. 3 represents a vertical section of the device along the line yy of Fig. 2, and Fig. 4. Fig. 4 represents a section along the line zz of Fig. 3, looking to the right. Fig. 5 represents a side elevation of an improved form of roller for use in such gins; and Fig. 6 represents a perspective view of the various parts used in the manufacture of said roller.

A represents a suitable box or tank preferably made of metal, and forming a foundation for the framework of the machine.

A' and A² represent beams, preferably of metal supporting the shaft C', and the cross pieces A³ which will be hereinafter described.

B represents a rotary drum covered with walrus hide or leather b and mounted on the shaft b' , which shaft is journaled on the arms B' pivoted at b^2 to the box A. These arms are steadied by the bolts b^3 which pass through the curved slots a^3 , struck with a radius drawn

from b^2 as center. These bolts b^3 are free to move laterally in the slots a^3 , but steady the arms B' against vibrations in the line of the axis of the said bolts.

In the form of roller shown in Figs. 5 and 6, the roller B^o consists of a central shaft b' provided with a screw thread b'' at one end thereof, a drum b^{o2} fixed on said shaft with head b fixed on said drum and head b^{o4} adapted to screw on over said screw b'' , and a plurality of leather washers b^{o3} compressed between said fixed head b and said movable head b^{o4} . A roller built up in this way does not wear out rapidly and may be repaired with little trouble and expense. It will be seen that when a part of the roller covering is damaged, that the remainder of it is not rendered useless, as is the case where sheets of leather are used as a covering. Again, the leather washers may be cut out of refuse bits of leather. The upper portion of each of these arms B' is connected pivotally at b^4 to the connecting rod B² which is pivotally connected at b^5 to the bell crank lever B³ which is pivoted at b^6 and carries on its outer arm a weight B⁶ which may be moved along the rack b^7 , and so alter the tension on said bell-crank lever, connecting rod and pivoted arm B' carrying the roller B. The bell-crank levers B³, one on each side of the box A, are connected together by a cross bar B⁵ to which is suspended a fixed weight B⁴. This weight B⁴ gives a permanent tension on the drum B, which is augmented or decreased by moving the sliding weights B⁶.

B⁷ represents a pulley on the end of the shaft b' which is driven by the belt B⁸ passing over the pulley C on the shaft C'. This shaft is driven by the belt C⁴ shown in Fig. 3, which passes over the fast and loose pulleys C² and C³ on the said shaft C'.

D represents the fixed blade which is adjustably secured to the angle beam D' by means of the bolts d' which pass through the longitudinal slots d in the blade D. The ends of the angle beams D' are secured to the cross pieces A³, as shown in Fig. 4, and a second adjustment of the blade D may be had by unscrewing the bolts a^0 passing through the slots a' and a^2 in the beams A' and A²; and then by moving the said cross pieces up or down

the desired distance indicated on the scales a^0 , and clamping the bolts a^0 again. The blade D may be moved backward or forward at right angles to the plane of the blade by means of the clamp-bolts d^2 , which pass through the slot a^4 in the cross-piece A^3 . By means of these bolts the distance of the fixed blade D from the drum B may be adjusted at will. These various adjustments of the fixed blade are of special importance, as it wears rapidly, and owing to the constant vibrations of the machine the parts are likely to yield somewhat.

E represents the clipper-blade or stripper, which is carried by the block E' moving in suitable guides, and pivotally connected to the eccentric rod E^2 , which is operated by the eccentric E^4 by means of the eccentric strap E^3 . This eccentric is mounted on the shaft C' and is driven by the belt C^4 . The eccentric E^4 is preferably a shifting eccentric, so that the throw of the blade E may be adjusted by moving the eccentric relative to the shaft C' , but since shifting eccentrics are well known in the arts, it has not been deemed necessary to illustrate this form of eccentric in the drawings. The block E' passes between the fixed guide E^6 , shown in Fig. 1, and the adjustable guide E^5 clamped at the desired position by the bolts e^6 in the slots e^5 . The connecting rod E^2 is pivotally connected at e^2 to the ends of the block E' . The clipper blade E is provided with slots e through which pass the clamp bolts e' by which it is adjustably connected to the reciprocating block E' . The position of the knife E is adjusted relative to the fixed blade D by means of the said bolts e' , while its vertical motion is adjusted, if necessary, by shifting the eccentric E^4 .

F represents a sloping platform or chute on which the seed cotton is placed, and down which it slides.

H represents a floor or platform provided with teeth h at its forward end with spaces between the said teeth sufficiently large for the cotton seed to drop through.

K represents a pusher or feeder connected by the rods k to the crank shaft k' which is driven from the shaft C' by means of the pulleys K^3 , the belt K^2 , and the pulley K' .

The operation of the device is as follows:—The seed cotton is placed on the chute F and slides down next the fixed blade D, and the drum B. The long fiber is caught on the surface of the drum B and is drawn beneath the fixed blade D which catches the seed. The clipper blade E alternately rising and falling past the fixed blade, helps to take the seed out of the fiber, and the seed fall on the teeth h , and drop between them into the bottom of the box A, whence they may be readily removed. The cotton is removed from the drum B by means of any of the well known devices now in use for that purpose. It will be seen that the drum B will be pressed backward should any foreign matter likely to injure the blades or the drum, be thrown in with the

cotton, and be drawn between the drum and the fixed blade. The weights B^4 will give the desired tension on the drum, varied more or less by the movable weights B^6 , and this tension will be sufficient for the ordinary requirements of the machine. Should any foreign matter get between the drum and the fixed blade, if the drum did not yield, the fixed blade would be bent forward, and the two blades would strike together to their mutual damage. Again, by having a yielding tension on the drum, the possibility of setting up the drum too tight, and so burning the leather covering thereon, is avoided.

By having the various other parts adjustable, as shown, the various adjustments that may become necessary may be speedily and conveniently made.

It will be seen that the belts all run straight, and that the moving parts are operated in a simple and inexpensive way.

The guide E^5 is made adjustable so that there may be no lateral vibration of the clipper blade as it rises and falls.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a gin of the character described, the combination with a frame, of the drum B yieldingly mounted thereon, the revolving shaft C' journaled in said frame, the pulley C, belt B^8 , and pulley B^7 , for revolving said drum, the angle beam D' adjustably mounted in said frame, the fixed blade D adjustably mounted on said angle beam, the eccentrics E^4 , eccentric rods E^2 , and reciprocating block E' moving in guides in said frame, and the clipper blade adjustably mounted on said block, substantially as and for the purposes described.

2. In a gin of the character described, the combination with a frame, of the drum B and pivoted arms B' supporting the shaft of said drum, the connecting rod B^2 , bell crank lever B^3 , and weights B^4 and B^6 adapted to draw the drum toward the fixed blade; of the revolving shaft C' journaled in said frame, the pulley C, belt B^8 and pulley B^7 for revolving said drum; the angle beam D' adjustably mounted in said frame, the fixed blade D adjustably mounted in said angle beam, the eccentric E, eccentric rods E^2 , and reciprocating block E' moving in guides in said frame, and the clipper blade adjustably mounted on said block, substantially as and for the purposes described.

3. In a gin of the character described, the combination with a frame, of the drum B and pivoted arms B' supporting the shaft of said drum, the connecting rod B^2 , bell crank lever B^3 , and weights B^4 and B^6 adapted to draw the drum toward the fixed blade; of the revolving shaft C' journaled in said frame, the pulley C, belt B^8 and pulley B^7 for revolving said drum; the angle beam D' adjustably mounted in said frame, the fixed blade D adjustably mounted in said angle beam,

the eccentric E, eccentric rods E², and recip-
rocating block E' moving in guides in said
frame, and the clipper blade adjustably
mounted on said block, and the pulley K³,
5 belt K², pulley K', crank k', rods k, and recip-
rocating beam K, substantially as and for the
purposes described.

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

OTIS F. GOODWIN.

Witnesses:

J. Z. ELLIOTT.

M. W. ALMAND.