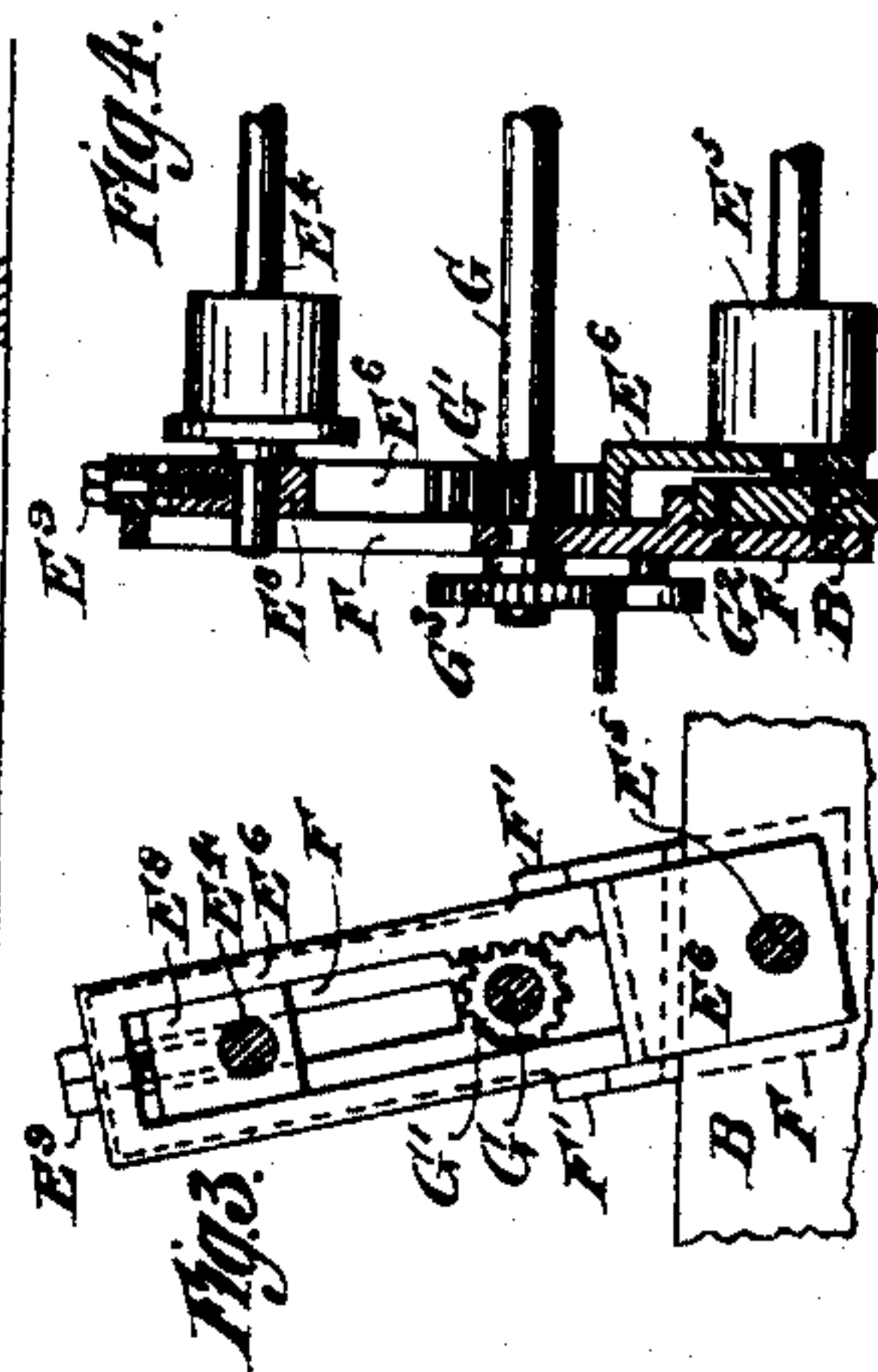
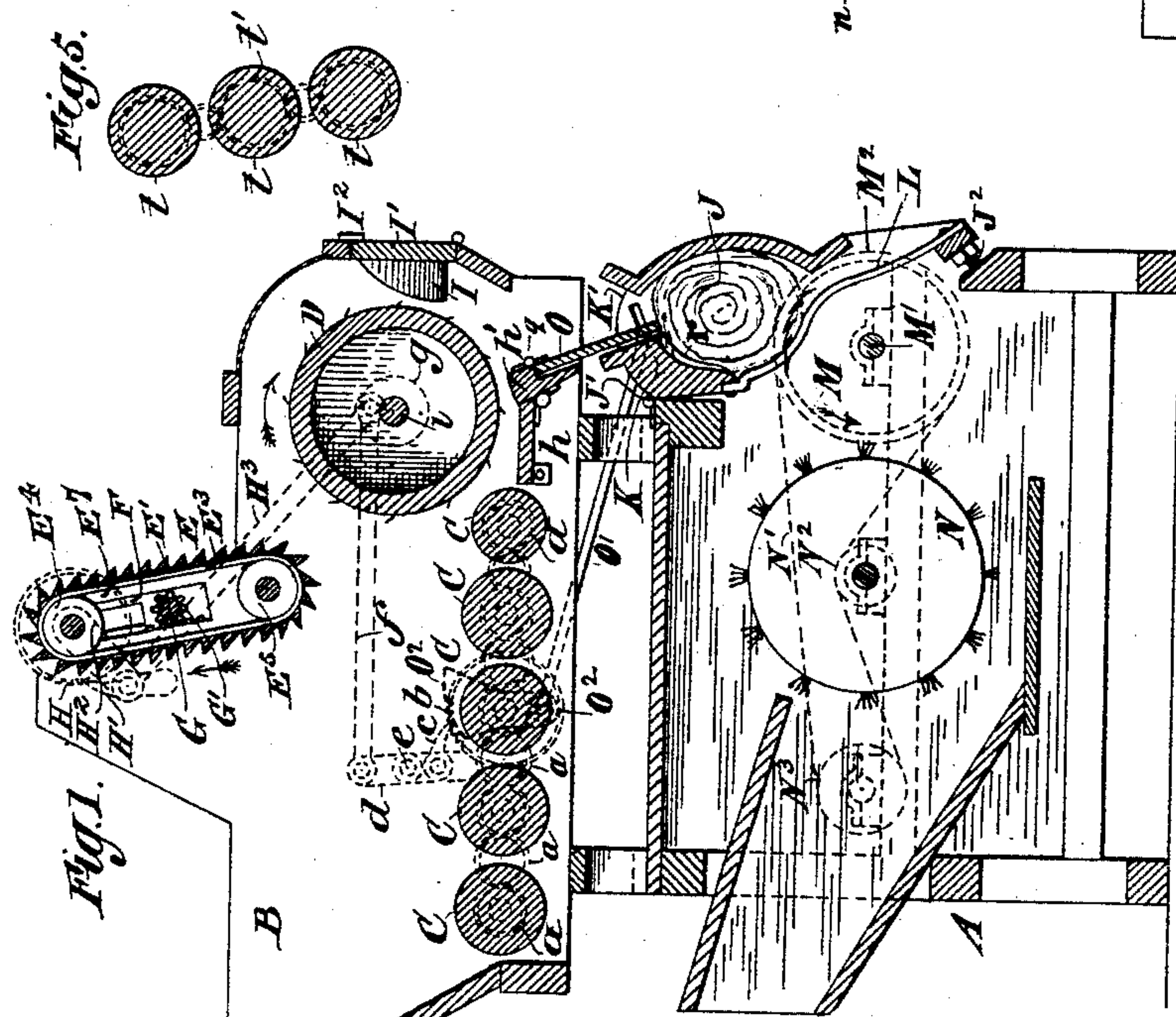
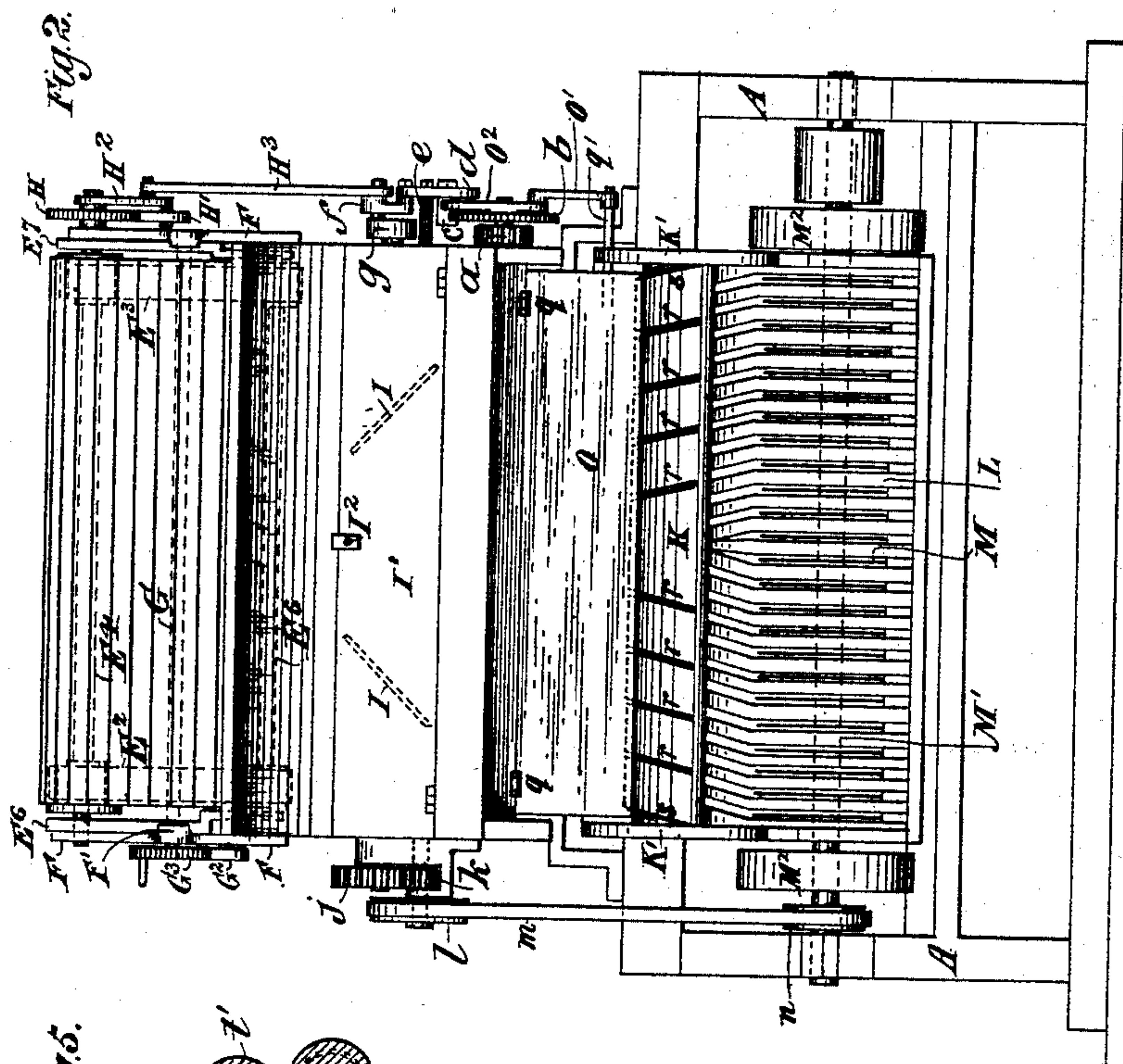


O. WASHBURN.
FEEDER FOR COTTON GINS.

Patented Oct. 13, 1885.



Witnessed
2nd Lt. Library
H. R. Rowen

Inventor
Oscar Washburne
by his attys,
Gifford & Brown

UNITED STATES PATENT OFFICE.

OSCAR WASHBURNE, OF SING SING, NEW YORK, ASSIGNOR TO MARY E. WASHBURNE, OF SAME PLACE.

FEEDER FOR COTTON-GINS.

SPECIFICATION forming part of Letters Patent No. 328,159, dated October 13, 1885.

Application filed May 8, 1885. Serial No. 164,753. (No model.)

To all whom it may concern:

Be it known that I, OSCAR WASHBURNE, of Sing Sing, in the county of Westchester and State of New York, have invented a certain new and useful Improvement in Feeders for Cotton-Gins, of which the following is a specification.

My improvement relates to self-feeding cotton-gins.

I will describe a feeder for cotton-gins embodying my improvement, and then point out the various features in claims.

In the accompanying drawings, Figure 1 is a central vertical section of a self-feeding cotton-gin embodying my improvement. Fig. 2 is a front elevation of the same having the front plate of the breast removed. Fig. 3 is a view from the inside of one of the side frames and supporting-standards for carrying the apron. Fig. 4 is a sectional front view of the same. Fig. 5 is a vertical section illustrating a modification of certain parts.

Similar letters of reference designate corresponding parts in the different figures.

A designates the frame-work of the machine, which may be of any suitable form and material.

B designates a hopper, having rollers C arranged along the bottom for carrying the seed-cotton horizontally forward to a feeding-cylinder D. These rollers C are rotated in the same direction by means of a train of gear-wheels *a a*. A ratchet-wheel *b* is secured to the end of one of the rollers C. A pawl, *c*, is pivoted to a lever, *d*, and engages with the ratchet-wheel *b*. This lever *d* is fulcrumed on a pin, *e*, secured to the hopper, and is actuated through a pitman-rod, *f*, from a crank-disk, *g*, secured to the shaft of the feeding-cylinder D. The feeding-cylinder D may be of ordinary construction, consisting of a hollow drum of wood provided with projecting pins or spikes arranged at suitable distances apart on its entire surface. This cylinder is mounted on a shaft, *i*, journaled in suitable bearings in the sides of the hopper. On one end of the shaft *i* is secured a gear-wheel, *j*, which receives motion from a pinion, *k*, secured to the shaft of a pulley, *l*, over which a belt, *m*, passes from a

pulley, *n*, on the shaft *M'* of the saws *M*. A plate, *h*, is hinged to the stationary part *h'*, and is capable of being dropped at intervals to pass out the rubbish accumulated thereon.

E is an endless apron, which may be of any suitable construction, being here shown as consisting of wooden slats *E'* which are made independent and separated from each other. They are secured to endless belts *E² E³*, of flexible material passing over rollers *E⁴ E⁵*. These rollers are journaled in sliding frames *E⁶ E⁷*, and are shown with their central portions of reduced diameter. The upper roller, *E⁴*, is journaled in boxes *E⁸*, vertically adjustable within slots in the frames *E⁶ E⁷* by means of the screws *E⁹*, and the lower roller, *E⁵*, is journaled directly into the frames *E⁶ E⁷*. By this means any slack in the endless apron may be taken up.

The frames *E⁶ E⁷* are supported by the standards *F*, secured to the hopper, and having flanges *F'* to embrace the sides of the frames *E⁶ E⁷*. The ends of the upper roller, *E⁴*, pass through the slots in the standards to afford additional support.

G is a shaft journaled in the standards *F*, and having pinions *G'* to engage with racks within slots of the frames *E⁶ E⁷*. By this means the aprons may be raised or lowered. A pawl, *G²*, pivoted to one of the standards *F*, and adapted to engage with the ratchet-wheel *G³*, secured to the shaft *G*, serves to hold the apron in any desired position. Motion is imparted to the apron in the direction indicated by the arrow in Fig. 1 by means of the ratchet-wheel *H*, secured to one end of the roller *E⁴*, and pawl, *H'*, adapted to engage therewith and pivoted to an arm, *H²*, swinging loosely on the end of the roller *E⁴*, alongside the ratchet-wheel *H*. This arm is actuated through a pitman, *H³*, by the crank-disk *g*. By connecting the pitman *H³* to the arm *H²* nearer its center of motion, provision for which may easily be made, different speeds may be imparted to the apron.

In lieu of the endless apron, a series of two or more rollers, *t*, having a longitudinal ribbed or a plain smooth surface, may be used, as shown in Fig. 5. These rollers may be jour-

naled in sliding frames capable of vertical adjustment, and be rotated in the same direction by means of gear-wheels *t*, affixed to their journals and intermediate pinions, deriving motion from any suitable source.

I designates guide-plates, of zinc or other suitable material, vertically inclined to conduct that portion of the seed-cotton delivered upon them by the feeding-cylinder into the ends of the breast of the gin. These plates I are preferably secured to the hinged cover-plate *I'*, which is held in place by the button *I*². Thus access to the guide-plates is afforded.

J is the breast or roll-box, having a cone, K, provided with thin parallel and equidistant ribs or flanges *r*, arranged at an angle with the heads *K'* of the breast.

At the junction of the cone and heads *K'* corner pieces, *s*, are provided, corresponding in angle and projection to the ribs. These ribs and corner pieces may be either integral with the cone or otherwise secured to it, and may be of any suitable material—such, for instance, as wood, iron, or glass. The cotton-roll impinges against these ribs and corner pieces.

L designates ribs forming the grate of the breast and having those portions of their upper parts beyond the saws inclined laterally to correspond with the inclination of the ribs *r*.

By means of the ribs *r* and angular portions of the ribs L the cotton-roll is caused to travel from the ends of the breast toward the center of the same, allowing the end saws to have fresh unginmed seed-cotton to act on constantly.

The breast, consisting of the cone K, ribs L, and heads *K'*, is adjustable relatively to the saws by means of the hinges *J'* and the set-screws *J*².

N designates a brush cylinder inclosed in a chamber. (Here shown as formed in the lower portion of the frame-work.)

The brush-cylinder and the saws may be constructed and operated in the usual manner.

The brush-cylinder is driven by a belt, *N'*, passing from a pulley, *M*², on the saw-shaft, over a pulley *N*² on the shaft of the brush-cylinder, and around an idler, *N*³.

I am aware an apron has been used to prevent clogging the feed-roller, in combination with a small picker-roller placed immediately below the apron and in the same vertical line; but by my improvement I locate the apron slightly rearward of the feeding-cylinder and use it in combination with a feed-cylinder of large diameter, by which arrangement impurities or extraneous matter are less liable to be carried into the breast of the gin, for the reason that the seed-cotton is caused to travel an upward path while passing between the apron and the feed-cylinder, and all rubbish—such as sand, pebbles, rocks, nails, matches, and other hard substances

which the projecting pins on the feed-cylinder will have no hold of—will fall back by gravity and drop into the space below the cylinder D and onto the plate *h*. The feeding-cylinder has a free action by reason of the wedging of the cotton about the cylinder being prevented by the apron, which forces the cotton backward, only allowing a certain quantity at a time to come in contact with the cylinder, whereas by the other arrangement little obstruction is afforded to the passing of impurities along with the seed-cotton.

O designates a board, arm, or analogous device, connected at the upper end by hinges *q* to the stationary part *h'*, and adapted normally to rest against the cone K. At one end it is provided with a pin, *q'*, that extends through a slot in one of the heads *K'* to the outside of that head. A rod, *O'*, is connected at one end to the pin *q'*, and at the other end to a lever, *O*², hung loosely on a journal of one of the rollers C, and having at the top an eccentric or cam surface, which may act upon the pawl *c* to raise it. If the cotton below the board O becomes too solidly packed, it will cause the board O to swing away from the cone. Then the lever *O*² will be rocked so as to lift the pawl *c* and stop the feed of cotton until the board O is allowed to fall back to its normal position by reason of the yielding or receding of the cotton below it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a feeder for cotton-gins, the combination, with carrying-rollers, of a feeding-cylinder of large diameter, a space below the feeding-cylinder adjacent to the carrying-rollers, and a vertically-adjustable endless apron movable in a direction contrary to that of the rotation of the cylinder, arranged slightly to the rearward of said cylinder and having its lower portion extending into a plane below that of the top of said cylinder, substantially as described, whereby cotton will be fed directly upward from the carrying-rollers by the cylinder between the latter and the endless apron, and whereby the endless apron will force the cotton backward from the cylinder, and rubbish from the cotton will be caused to fall by gravity into the space below said cylinder.

2. In a feeder for cotton-gins, the combination, with the endless apron E, of rollers *E*⁴ *E*⁵, adjustable journal-boxes *E*⁸, screws *E*⁹, frames *E*⁶ *E*⁷, a rock-shaft, G, pinions *G'*, ratchet-wheel *G*³, pawl *G*², and standards F, substantially as specified.

3. In a feeder for cotton-gins, the combination, with the endless apron E, the rollers *E*⁴ *E*⁵, frames *E*⁶ *E*⁷, standards F, ratchet-wheel H, pawl *H'*, swinging arm *H*², pitman *H*³, and crank-disk *g*, substantially as specified.

OSCAR WASHBURNE.

Witnesses:

F. L. RICHARDSON,
JOS. GAINS.

It is hereby certified that in Letters Patent No. 328,159, granted October 13, 1885, upon the application of Oscar Washburne, of Sing Sing, New York, for an improvement in "Feeders for Cotton-Gins," errors appear in the printed specification requiring correction, as follows: In lines 15, 19, 23, 38, 82, and 93, page 2, the word "cone" should be stricken out and the word *cove* inserted instead; in line 121, same page, the word "rock-shaft" should be stricken out and the word *rack-shaft* inserted instead; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 27th day of October, A. D. 1885.

[SEAL.]

H. L. MULDROW,
Acting Secretary of the Interior.

Countersigned:

M. V. MONTGOMERY,
Commissioner of Patents.