

(No Model.)

2 Sheets—Sheet 1.

E. G. HORNE.
COTTON GIN HOPPER.

No. 272,694.

Patented Feb. 20, 1883.

Fig. 1.

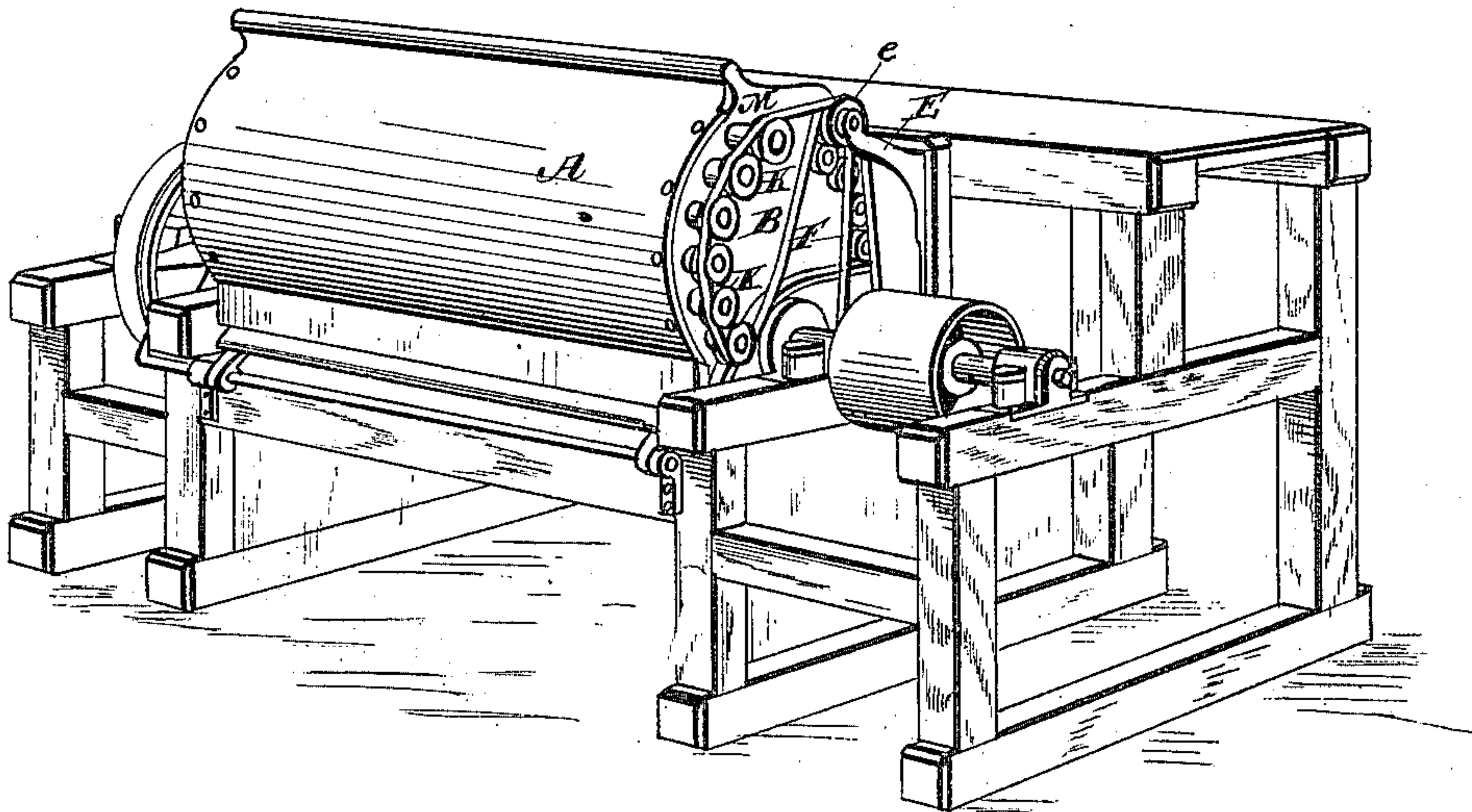
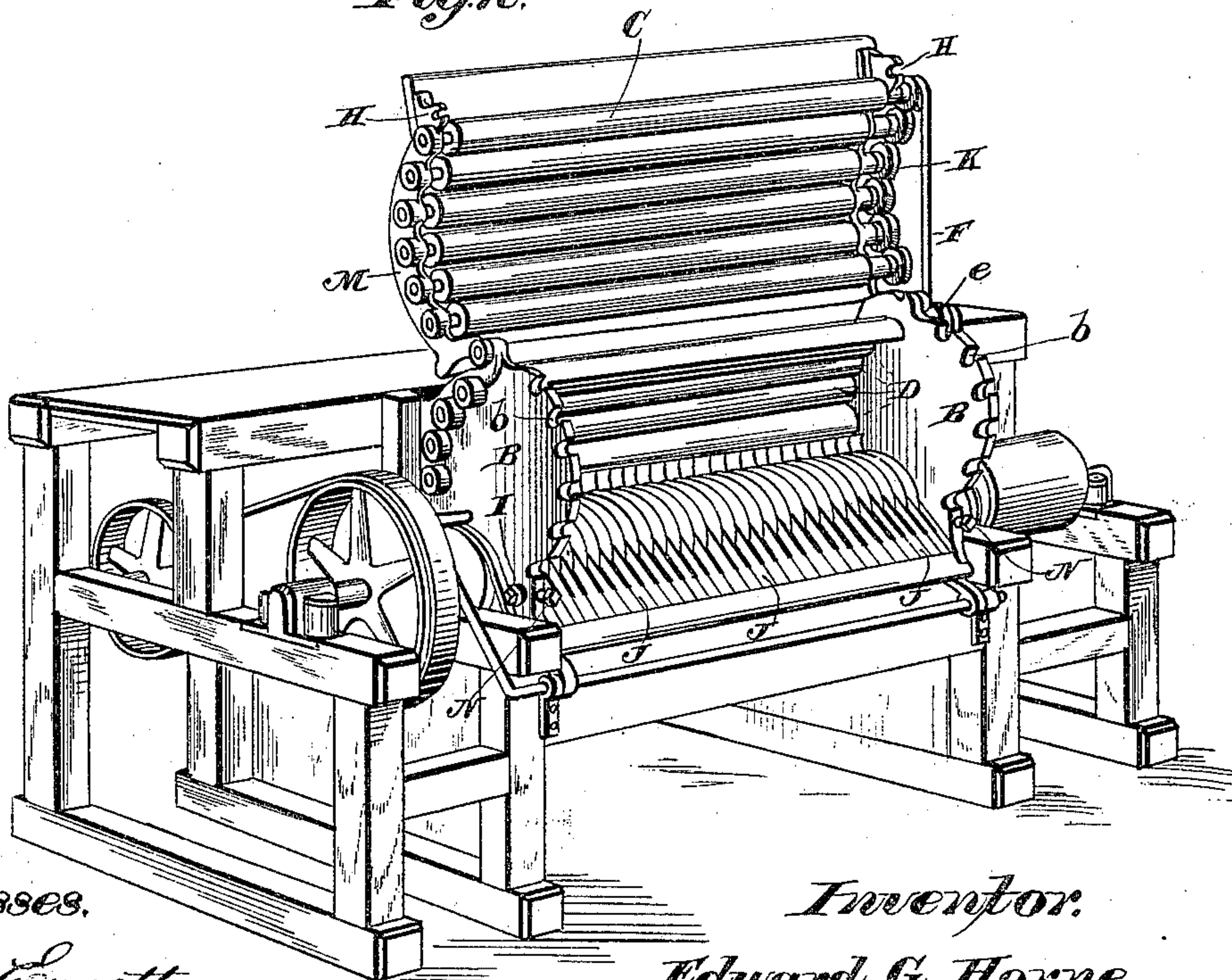


Fig. 2.



Witnesses.

Robert Everett

J. A. Rutherford

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By James L. Norris.

Atty.

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Fig. 3.

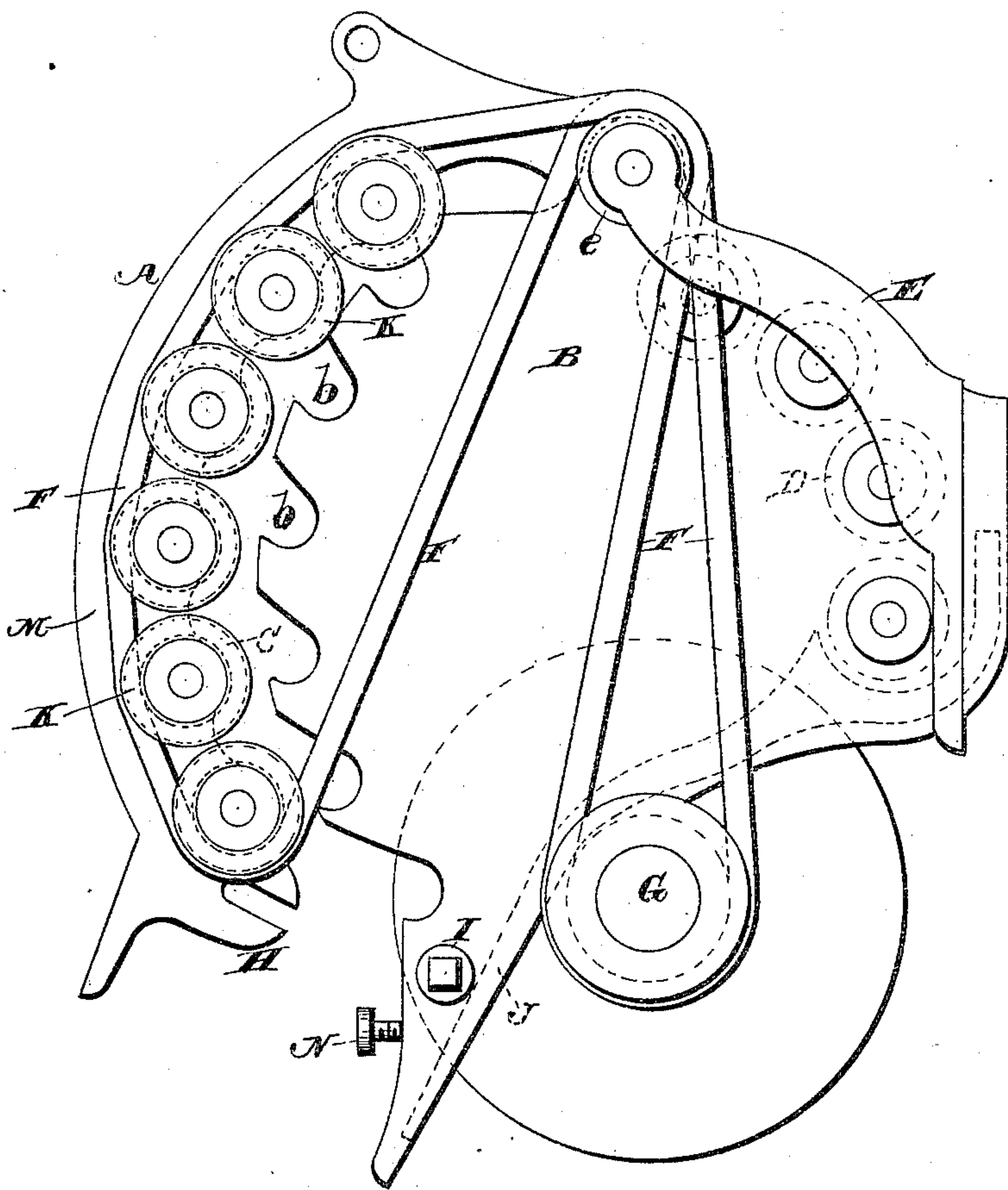
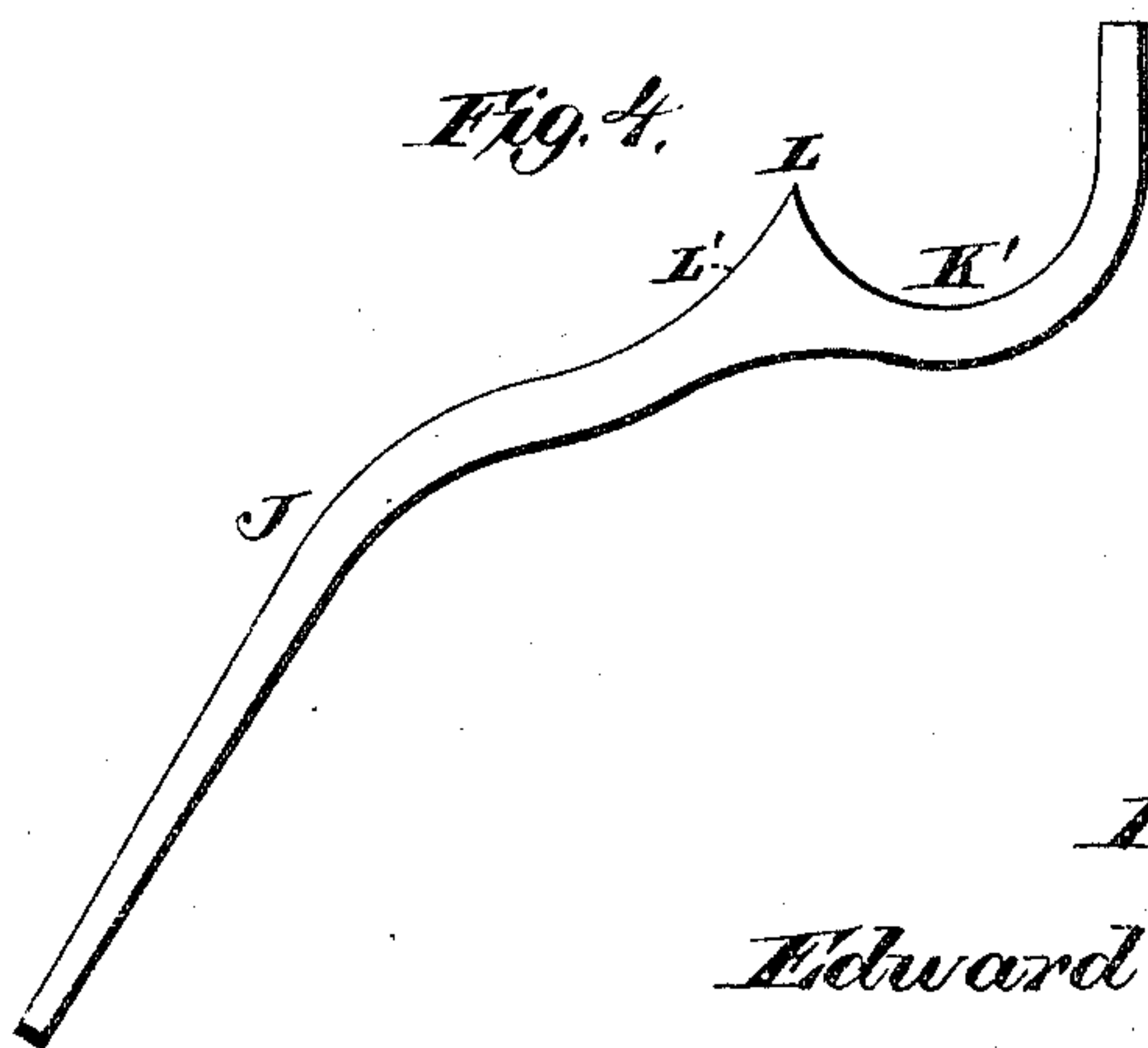


Fig. 4.



Witnesses,

Robert Everett,

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UNITED STATES PATENT OFFICE.

EDWARD G. HORNE, OF CALLOWAY, TEXAS, ASSIGNOR TO THE CARVER
GIN AND MACHINE COMPANY, OF MEMPHIS, TENNESSEE.

COTTON-GIN HOPPER.

SPECIFICATION forming part of Letters Patent No. 272,694, dated February 20, 1883.

Application filed October 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. HORNE, a citizen of the United States, residing at Callo-
way, in the county of Upshur and State of
5 Texas, have invented new and useful Improve-
ments in Cotton-Gin Hoppers, of which the fol-
lowing is a specification.

This invention relates to machines for gin-
ning cotton, and has for its object to provide
10 means whereby the swinging breast carrying
the front rolls of the roll-box can be adjusted
in relation to the rear rolls to vary the pressure
exerted on the roll of cotton, and thus regulate
the density of the latter, and to provide a roll-
15 box having a swinging adjustable breast with
a novel construction of stationary heads for
supporting the rolls. These objects I accom-
plish by the devices and construction of parts
illustrated in the accompanying drawings, in
20 which—

Figure 1 is a perspective view of a cotton-
gin embodying my invention, the hinged breast
being closed; Fig. 2, a similar view with the
breast in its open position; Fig. 3, an end ele-
25 vation of the roll-box; Fig. 4, an elevation of
one of the gin-ribs.

The letter A indicates the swinging curved
breast of the roll box or hopper, which breast
is hinged at its upper end to the stationary
30 metal disks or head pieces B, that constitute
the ends of the roll box or hopper.

The front breast-rollers, C, that are jour-
naled in open bearings formed in the ends of
the swinging breast A, are arranged in the
35 arc of a circle, and the rear or back set of
rollers, D, are likewise arranged in a circular
path, being journaled in suitable boxes or bear-
ings in the stationary ends or heads B of the
roll box or hopper. The breast-rollers are
40 mounted in recessed rims or flanges M, at-
tached to the breast-piece proper, and these
rims or flanges are greater in thickness than
and fit outside of the lower stationary and re-
cessed heads. By this construction sand will
45 be prevented from passing to the journals and
journal-bearings of said rollers, and will be
thrown off by the rotation of the rollers before
it can enter said bearings.

Rigid with the frame of the machine, and
50 located near the outer side of one of its sta-

tionary heads, is a bracket-arm, E, which is
provided at its upper end, near the joint be-
tween the breast and stationary head, with an
eye, in which is mounted the spindle of a pair
of pulleys, e, employed as guides, and support- 55
ing-pulleys for the endless cord or belt F, that
passes over said pulleys and transmits motion
from the gin-saw shaft G to the breast or front
rollers in the swinging breast. The rollers car-
ried by the hinged or pivoted breast are pro- 60
vided with pulleys K, over which passes the
driving belt or cord F, and such pulleys are
located outside of the ends or heads of the roll-
box. The stationary ends or heads B of the 65
roll box or hopper are each formed with a mar-
ginal series of recesses, b, adapted to receive
the rollers upon the breast, and thereby close
the open bearings in the latter, in which the
rollers are mounted. When the hinged breast
is swung down, the rollers which it carries will 70
be received in the recesses of the stationary
heads, and to lock the swinging breast in proper
position I provide the former with slotted lugs
or enlargements H at its lower extremities,
the slots being adapted to receive headed 75
screw-bars or set-screws, I that are fitted in the
stationary head. By drawing the breast and
head together and tightening up this bolt or
set-screw the two parts will be locked together.

The hopper is provided with gin-ribs J. (See 80
Fig. 4 and dotted lines, Fig. 3.) The upper end
of each rib is provided with a bend to form a
semicircular recess, K', which conforms to the
shape of the lower roller at the rear of the roll-
box. Between the gin-saw and the said lower 85
roller the gin-rib is provided with a peak, L,
the front inclined face, L', of which is curved so
as to direct the cotton upon and against the
lower roller and prevent the saw from drag-
ging or pulling the cotton down through the 90
space between the periphery of the saw and
the lower roller. It will of course be under-
stood that a series of such gin-ribs are employed,
one being arranged between each pair of ad-
jacent saws. 95

It will be observed that the entire interior
of the roll box or hopper is composed of rolls,
and hence the roll of cotton fed therein will in
the operation of the gin be subjected on all
sides or portions simultaneously to rolling fric- 100

tion, whereby the roll is prevented from becoming broken or otherwise injured, and a better quality of staple is produced. Further than this, by providing the entire interior of the roll-box with rolls, as described, the friction is greatly reduced, and therefore the power necessary to drive the gin is materially lessened.

In order to accurately determine the adjustment of the breast, I prefer to provide the front edges of the ends or heads of the roll-box with set-screws N', having heads against which the breast rests when in working position. By these adjusting-screws the relative position of the front and rear rollers can be determined, after which the set-screw I serves to lock the breast in place.

Having thus described my invention, what I claim is—

1. In a cotton-gin, the combination, with a roll-box provided with a hinged breast carrying the breast or front rolls, of means for adjusting the breast in position, substantially as described.

2. The combination, with the swinging adjustable breast carrying the front set of rolls, of the stationary heads at the ends of the hopper, formed with recesses adapted to receive the said rolls, substantially as described.

3. The combination, with the stationary heads provided with recesses along their edges, of the swinging adjustable breast carrying the front set of rolls, and the set-screws I and N for adjusting said breast, substantially as described.

4. The breast carrying the front set of rolls, and provided at its extremities with slots, in combination with the bolts upon the ends of the hopper, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD G. HORNE.

Witnesses:

M. B. TREZERANT,
W. W. CURRIE.