

H. CLARK.

Cotton Gin.

No. 5,740.

Patented Aug. 29, 1848.

Fig. 1. sectional view

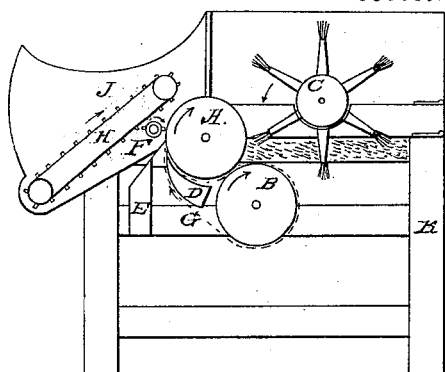


Fig. 2

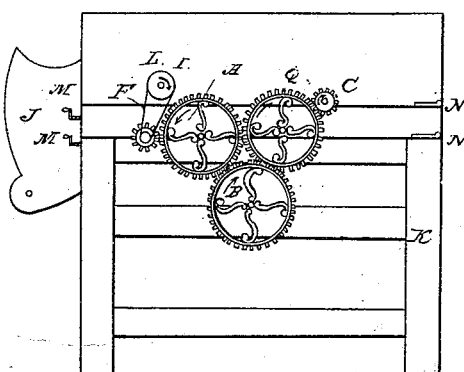


Fig. 3

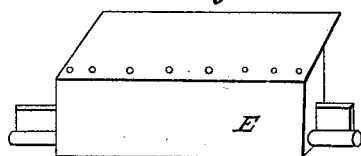


Fig. 4.

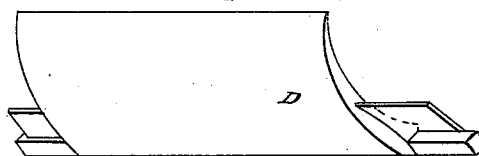
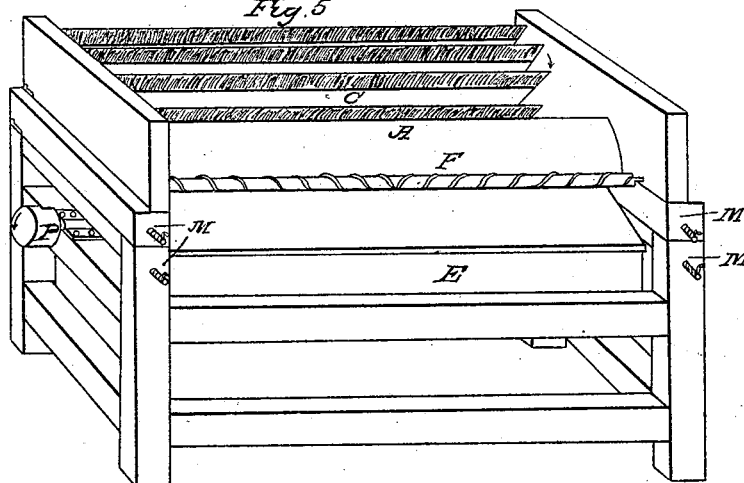


Fig. 5



Witnesses
Alexander
Benjamin

Inventor
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UNITED STATES PATENT OFFICE.

HENRY CLARK, OF EUFAULA, ALABAMA.

IMPROVEMENT IN COTTON-GINS.

Specification forming part of Letters Patent No. 5,740, dated August 29, 1848.

To all whom it may concern:

Be it known that I, HENRY CLARK, of Eu-
faula, in Barbour county and State of Alabama,
have invented a new and useful machine for the
purpose of separating the cotton fiber from the
seed without injury to the former. I denomi-
nate my machine the "Eureka Cotton-Gin;"
and I do hereby declare that the following is
a full, clear, and exact description of the con-
struction and operation of the same, reference
being had to the annexed drawings, making
a part of this specification, in which—

Figure 1 is an end sectional view showing
all the interior operating parts of the machine
in their proper places. The dart-point shows
the direction in which each part moves. Fig.
2 is an end view showing the gearing feed-
whirl and cotton-box; Fig. 3, the shield; Fig.
4, the guard; Fig. 5, a perspective view show-
ing the brush, main roller, shield, relieving-
screw, regulating screws, and driving-whirl.
The top and cotton box are not represented, in
order more clearly to show the internal-oper-
ating parts of the machine.

Letter A represents the main roller; B,
stretching-roller; C, brush; D, guard; E, shield;
F, relieving-screw; G, endless band; H, feed-
apron; I I, apron-rollers; J, cotton-box; K,
frame; M M, regulating-screws; N N, hinges;
P, driving-whirl; Q, connecting-gear, the same
letters representing the same parts in each
view.

To enable others skilled in the art to make
and use my invention, I proceed to describe
its construction and operation.

I make a frame of suitable size—say about
two feet high, two and a half feet wide, and
four feet long. On or near the top of this
frame, and about ten inches back from the
front, is secured boxes for the journals of the
main roller, (marked A in the annexed draw-
ings,) which is six inches, more or less, in di-
ameter and extends from end to end inside of
the frame. Underneath and a little back of the
main roller, and coming within one-fourth of
an inch of the same, is the stretching-roller
B, of the same dimensions as the main roller,
both lying horizontal and parallel with each
other. The circular revolving brush C, which
is of the same length of the main roller, lying
parallel and coming in contact with it on the
back side, also comes in contact with the end-

less band G brushing the cotton from both at
the same time.

D is a horn-shaped piece of metal, called the
"guard," which is the same length as the
main roller and parallel with it. Over the
guard and stretching-roller, entirely covering
both, passes the endless band G. The guard is
then, by means of regulating-screws, made to
bring the endless band in contact with the
main roller in front and near its perpendicular
center.

The shield E is made of sheet metal, the
same length of the main roller and lying par-
allel with it, and by means of regulating screws
or levers is brought in contact with it above
and as near the point of the guard as possible
and allow the endless band to pass freely. The
relieving-screw F is about two inches in diam-
eter, (including the worm, which is about one-
half an inch deep,) the same length of the
main roller, and coming within one-sixteenth
of an inch of it at the point where the shield
touches the same. The driving-whirl P is on
the stretching-roller shaft. From the same
shaft, by gear wheels or belts, the other parts
of the machine are driven.

The cotton is taken from the box by the
feed-apron (which has teeth or points on it)
and conveyed to the main roller, which (be-
ing in motion) by its pressure on the endless
band seizes the cotton fiber, drawing the seed
up to the shield, which, with the guard, arrests
the seed till the relieving-screw removes it
downward, where it falls through the wire
grate in the bottom of the box. The cotton pass-
ing back between the endless band and the
main roller, is removed from them by the cir-
cular revolving brush. The brush should be
about twelve inches in diameter and have four
revolutions to one of the main roller. The
stretching-roller and relieving-screw should
have the same speed as the main roller, and
in this order the brush and main roller revolve
the same way, (forward,) while the stretching-
roller and endless band, with the relieving-
screw and feed-apron, revolve backward in a
contrary direction. The upper bar of the
frame is hung on the back of the frame with
a hinge, for the purpose of getting at the ma-
chinery more easily. A top secured on the
back side by hinges and on the front by catches,
covers all the interior parts of the gin.

The endless band is made of some flexible material, such as cloth, soft leather, gum-elastic combined with cloth, or fine wire combined with cloth or gutta-percha. The main roller is made of wood or metal, separate or combined, and though it may be used successfully without covering for some kinds of cotton, yet generally it must be covered, either with a rough cloth made of wool, hair, bristles, or fine wire, separate or combined, or raw-hide with a roughed surface, or with the hair on. For some kinds of cotton a fine short-toothed card is required, different varieties of cotton requiring different kinds of covering.

The following modification in my machine is contemplated. Instead of the revolving brush for taking the cotton from the roller and band, two stripping-rollers may be substituted.

I do not claim any particular shape for the guard except this, that it has a point, which being brought in contact with the main roller, the lines of the outer circle of each forms an angle so obtuse that a seed can neither lodge nor enter. I do not claim either of the following parts of my machine taken by itself:

the circular brush, the simple rollers, the feed-apron, the endless band, nor the relieving-screw.

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

1. The guard of such a shape as that when it passes the endless band against the main roller, the two latter being in motion, and the cotton fiber thereby being drawn in between them, the point of entrance is so small and the angle formed by the outer lines of the main roller and guard so obtuse that a seed can neither lodge nor enter, and is consequently arrested till the screw removes it.

2. The shield, as herein described and arranged, in connection with the endless band and roller, as described and arranged, for the purpose set forth, together with the combination and arrangement of the machine generally, substantially as herein described, for the purpose of separating the cotton fiber from the seed without injury to the former.

HENRY CLARK.

Witnesses:

BENJN. GARDNER,
I. C. GARDNER.