

A. Ford.

Disintegrating Fibrous Plants.

N^o 24,292.

Patented Jun. 7, 1859.

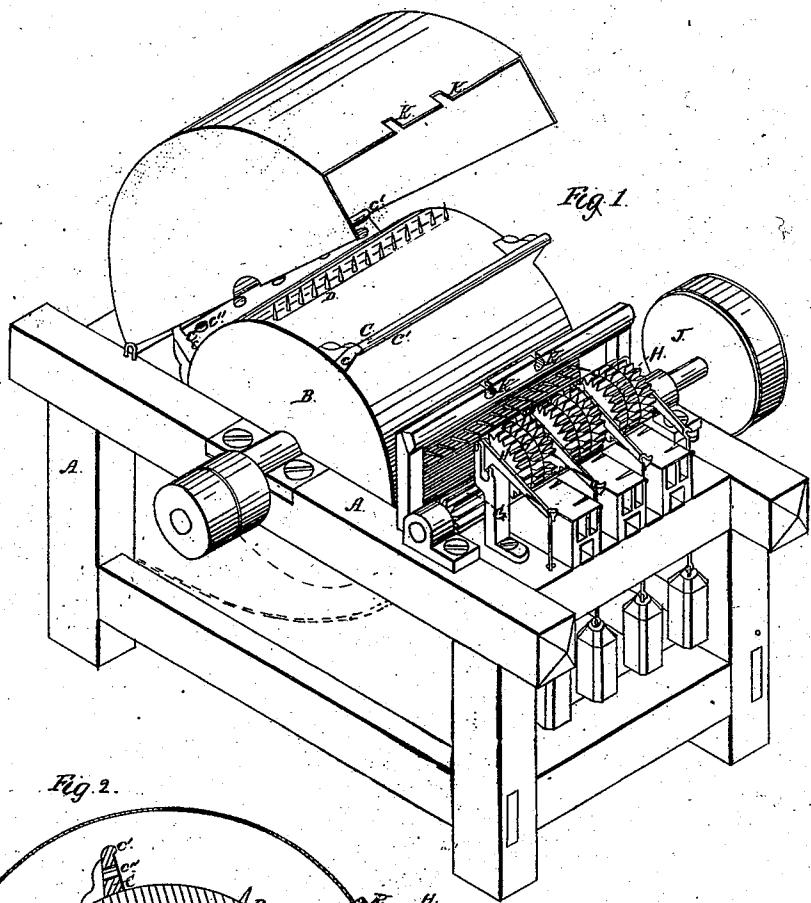


Fig. 1.

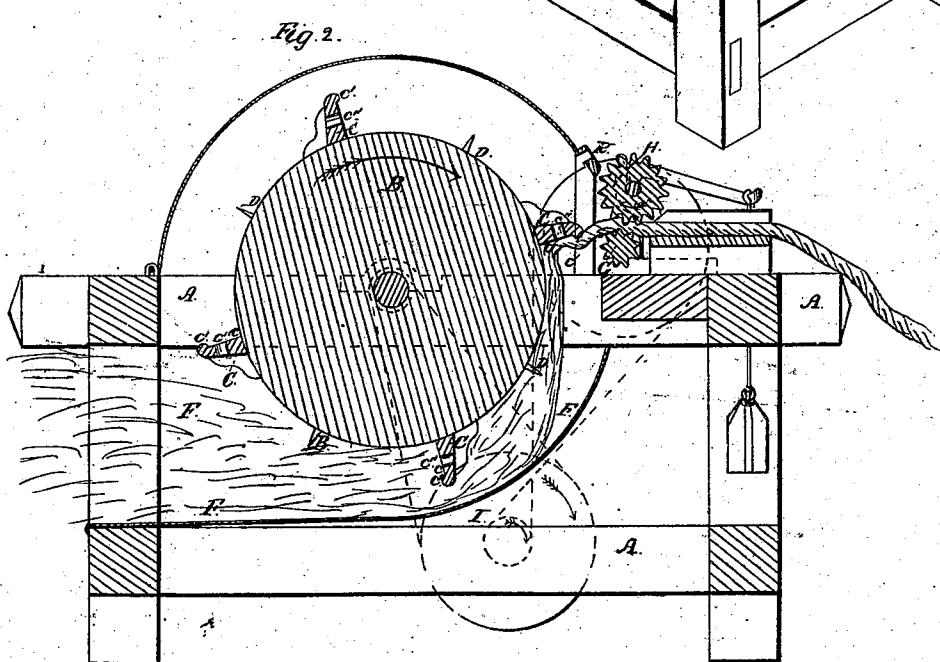


Fig. 2.

Witnesses:
Francis Millwald
Geo H. Knight.

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UNITED STATES PATENT OFFICE.

ARCHIBALD FORD, OF NEWPORT, KENTUCKY.

IMPROVEMENT IN MACHINERY FOR OPENING OLD ROPE.

Specification forming part of Letters Patent No. 24,292, dated June 7, 1859.

To all whom it may concern:

Be it known that I, ARCHIBALD FORD, of Newport, Campbell county, Kentucky, have invented new and useful Improvements in Rope-Opening Machines; and I do declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

The said improvement consists in an arrangement for the preliminary opening of the rear ends of the rope.

Figure 1 is a perspective view of a machine embodying my improvements. Fig. 2 is a longitudinal section at *x x*, Fig. 1.

The frame A has journaled within it horizontally a drum, B. The periphery of this drum at distances somewhat exceeding the length of the staple is armed with longitudinal ribs or bars C slightly hollowing or depressed *c* on their advancing side, so as to present in the direction of rotation a blunt salient edge, *c'*. Each bar is sufficiently perforated at *c''* to prevent the creation of such a current of air as otherwise from the very swift rotation of the drum six hundred to one thousand per minute would tend to drive the stuff toward the end of the casing. The periphery of the drum is also midway between the ribs C, armed with longitudinal rows of spikes or teeth D, considerably shorter than the ribs.

F is a casing concentric with the drum, and open at the rear side to permit the escape of the tow.

G H I J is a suit of feeding mechanism, the construction and arrangement of which are clearly represented in the drawings.

K is an elevated bar, having cavities *k k* in its upper edge for the purpose of holding the butts of the rope to the action of the beater, as will be hereinafter explained.

k' k' are corresponding apertures in the casing forming parts which admit of the ready insertion and withdrawal of the ends of the rope.

Operation: The beater being set in motion, the butts of the ropes are first inserted for an instant in the cavities of the bar K and there held so as to open out the strands and fibers at one end before the other end is fed into the

machine. The ropes being then reversed are passed into the machine between the feed-rollers G H. The violent striking of the rope by the blunt or rounded edges of the beaters acts to unwind the component strands and fibers while the flat depressed portion *c*, in conjunction with the air-suction through the apertures *c''*, acts to create a "flab" that further spreads and separates the fibers. The small teeth D assist in ejecting the smaller fibers. The butt or last end having passed through the feed-rollers separates of itself in consequence of the previous opening of it, as already stated.

In the use of this class of machines a serious difficulty occurs from the final end of each piece of rope passing through unopened. The ports or apertures *k k'* admit of the easy insertion and withdrawal of the butts, and the rear end of the rope being first opened and its forward end inserted between the feed-rollers, the whole will pass through the machine without further manipulation, the feed-rollers operating to govern the entrance of rope and hold it to the action of the beater until the whole has passed within the machine, so that before the feed-rollers cease to hold the ends of the fibers no part of the rope remains unopened.

I am aware that machines exist for opening rope consisting of rotary beaters armed with spikes and bars; and do not therefore desire to be understood as claiming other than the specific arrangement and combination here shewn, whereby such machines are made to operate with more full effect.

I claim as new and of my invention and desire to secure by Letters Patent—

The elevated bar K, provided with cavities *k k*, arranged in the described relation to the feed mechanism and drum, and operating in combination with the latter to preparatively open the butts of the rope, as set forth.

In testimony of which invention I hereunto set my hand.

ARCHIBALD FORD.

Witnesses:

GEO. H. KNIGHT,
J. F. SMITH.