

(No Model.)

R. S. WEBB.
HEMP BRAKE.

No. 549,411.

Patented Nov. 5, 1895.

Fig. 1.

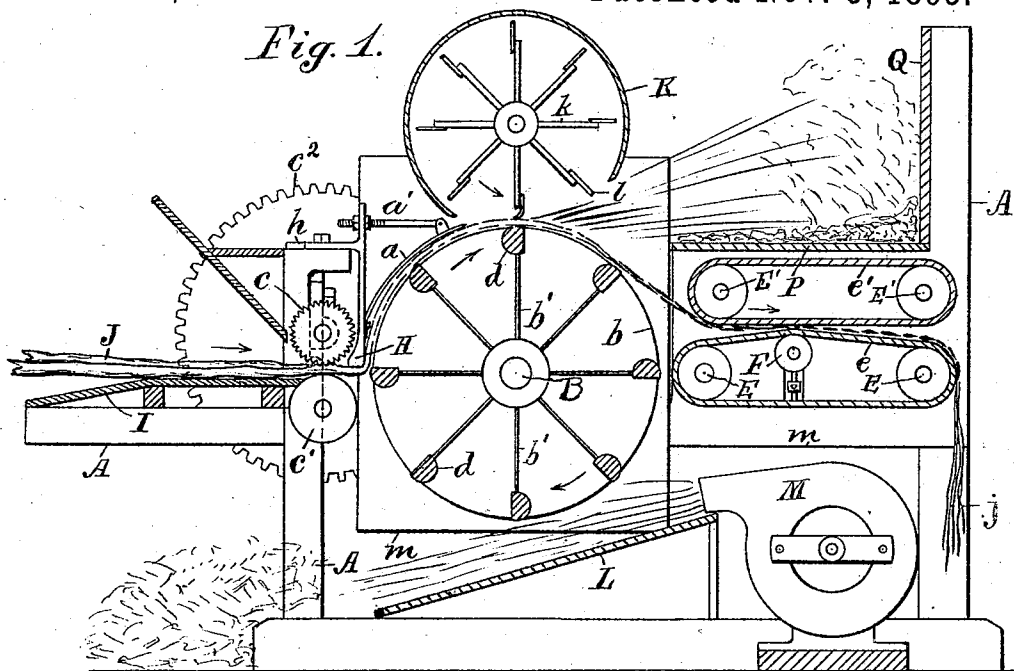


Fig. 2.

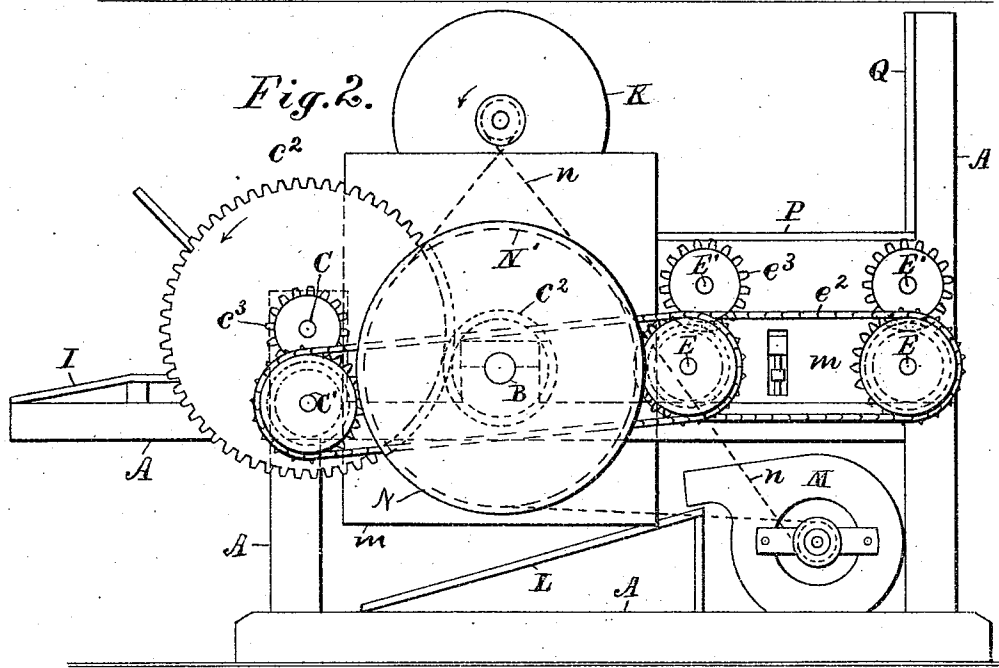


Fig. 3.

Attest:
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per
Thos. S. Crane, Atty.

UNITED STATES PATENT OFFICE.

RICHARD S. WEBB, OF LEXINGTON, KENTUCKY, ASSIGNOR OF ONE-HALF
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HEMP-BRAKE.

SPECIFICATION forming part of Letters Patent No. 549,411, dated November 5, 1895.

Application filed March 20, 1895. Serial No. 542,453. (No model.)

To all whom it may concern:

Be it known that I, RICHARD S. WEBB, a citizen of the United States, residing at Lexington, Fayette county, State of Kentucky, have invented certain new and useful Improvements in Hemp-Brakes; fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to furnish an improved beater for breaking the hemp-stalks and for loosening the pith and bark which are not dislodged in the breaking operation, and also for protecting the upper side of the broken fiber from the deposit of such pith and bark when once removed and for shielding an operator (when engaged in removing the fiber) from the dirt and refuse which are thrown toward the rear end of the machine.

The invention is illustrated in the annexed drawings, in which—

Figure 1 is a vertical section of the apparatus; Fig. 2, a side elevation showing the driving gearing; and Fig. 3 is a diagram upon a larger scale than the other figures, to illustrate the form of the beater-bars.

A is the wooden frame, having bearings for the transverse beater-shaft B, for the feed-roll shafts C and C', for the shafts of the apron-rolls E and E', and for the shaft of the apron pressure-roll F. The shafts C and F are made adjustable.

The beater is furnished with rotary heads b, radial blades b', and beater-bars d, which are rounded upon the rear corner. The upper feed-roll c is corrugated to break the stalks upon the upper side, while the lower feed-roll c' is smooth. These rolls are shown at the left side of the beater with the break-bar H between the two, and adjustable (by means of foot h) to and from the bars d of the beater.

A feed-table I is shown adjacent to the feed-rolls, with the stalks J thereon. A shield a, made of elastic sheet metal, is attached to the break-bar H and extended toward the upper side of the beater to hold the fibers in the desired contact with the beater-bars. A screw or screws a' are pro-

vided to adjust the shield to and from the beaters. A shaft for blower K is mounted over the beater-shaft B, and its blades k are provided at the ends with yielding flaps l, made of leather or rubber cloth, and arranged to brush the upper side of the fiber which lies upon the top of the beater.

The path of the fiber from the upper side of the beater is represented by the lines j. The delivery-aprons e and e' are shown applied to the rolls E E' at the right-hand side of the beater. The lower apron is set close enough to the beater to pick up but not press the fiber and the upper apron is set somewhat farther from the beater, to admit the fiber freely to the space between the aprons and thus avoid buckling the fiber.

The aprons at their ends are separated, so as not to press the fiber at all; but an adjustable presser-roll F is arranged within the lower apron to press it against the upper apron. The fiber is thus grasped between yielding aprons which hold and deliver it without crushing the same.

An inclined board or chute L is arranged beneath the beater to catch the pith and chaff which fall from the under side of the fiber, and a blower M is arranged to deliver its blast along such chute, and thus prevent the accumulation of dirt beneath the beater, which discharges a great volume of such material constantly.

In Fig. 2 a pulley N is shown upon the beater-shaft to propel the entire machine, the shaft being connected with the feed-roll c by gears c², and the shafts C' and E being connected by sprocket-wheels and chains e². The feed-rolls are connected by cog-wheels c³ and the shafts of the rolls E E' by cog-wheels e³. The blowers K and M are provided with pulleys and driven by cords from a pulley N'. The cords n are designated merely by dotted lines to avoid obscuring the other parts of the figure, and the gears c³, c³, and e³ are denoted merely by dotted lines where they are obscured by other parts.

By the gearing shown or other suitable gearing the beater is propelled at a high rate of speed and the blowers at a still higher rate, while the feed-rolls and delivery-aprons are

driven at a suitable rate to feed the stalks into the machine and deliver the cleaned fiber therefrom.

The upper side of the feed-aprons is covered by a platform P, from the rear end of which a guard Q is extended upwardly. The platform prevents the refuse from falling upon the aprons and the cleaned fiber, and the guard intercepts the refuse and thus protects the operator and the cleaned fiber from the same. At the sides of the bearer and delivery aprons the frame is closed by side plates or cheek-pieces *m*, but is otherwise open to permit the ready removal of the refuse, which accumulates with great rapidity in the use of such machines.

I find it avoids serious injury to the fiber to round the rear corners of the beater-bars, and Fig. 3 shows one of the beater-bars *d* enlarged and of the same shape as those in Fig. 1, which consists of a round stick with the front side flattened off at a suitable distance from the center to leave a convex projection *d'*, which presses the stalks against the break-bar H and against the shield *a*. The front corner of the bar, by flattening the round stick at one side of the center, is formed a little inside of the path in which the fibers pass over the beater, and thus avoids scraping the fibers, although it presents a suitable corner to catch any pith or bark projecting from the fibers and effectually removes the same.

The operation of the entire apparatus is as follows: The stalk is fed between the rolls *c* and *c'*, being broken only upon the upper side by the corrugated roll *c*. The beaters then break the stalks upon the under side by driving it against the break-bar H, and they then operate to rub the pith and bark from the fiber by the pressure of the shield *a*, which holds the fiber against the beaters with the required degree of tension. The blades *b'* of the beater operate to discharge a blast of air through the fiber and thus discharge the pith, bark, and dirt upwardly. The blower K drives a blast of air toward the platform P, and thus blows the refuse upon such platform, where it is intercepted by the guard Q. The fiber falls upon the nearer end of the apron *e* and is carried between the aprons, from which it is delivered at the rear end.

The refuse may be removed from the platform P by the operator, or automatically, as by a transverse blast or a traveling carrier. The refuse which falls below the beater is driven from the chute L by the blast of the blower M.

Many varieties of hemp-brakes have been devised, but all are deficient in some respect, as they fail to clean the fiber or else injure the same and produce "tow" in the effort to remove the pith and bark.

I have shown a variety of details which are not claimed herein; but the features which I desire to claim herein are—

1. In a hemp brake, the combination, with feeding mechanism, a break-bar, and a rotary beater arranged to beat the stalks upon the under side of such break-bar, of delivery aprons at one side of the beater, and a platform above the aprons to protect the top of the fiber from the pith and chaff.

2. In a hemp brake, the combination, with feeding mechanism, a break bar, and a rotary beater arranged to beat the stalks upon the under side of such break bar, of delivery aprons at one side of the beater, a platform above the aprons to protect the same from the pith and chaff, and a shield at the farther end of the platform to protect the operator from such pith and chaff.

3. In a hemp brake, the combination, with feeding mechanism, a break bar and a rotary beater having beater bars flat in front and rounded on the rear outer corner as set forth, and arranged to beat the stalks upon the under side of the break bar, of the delivery aprons at the rear side of the beater, the platform above the aprons to protect the same from the pith and chaff, a blower arranged above the rotary beater to blow the refuse upon the platform, and a shield at the farther end of the platform to protect the operator from such refuse, substantially as herein set forth.

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

RICHARD S. WEBB.

Witnesses:

E. D. SAYER,
T. L. WARREN.