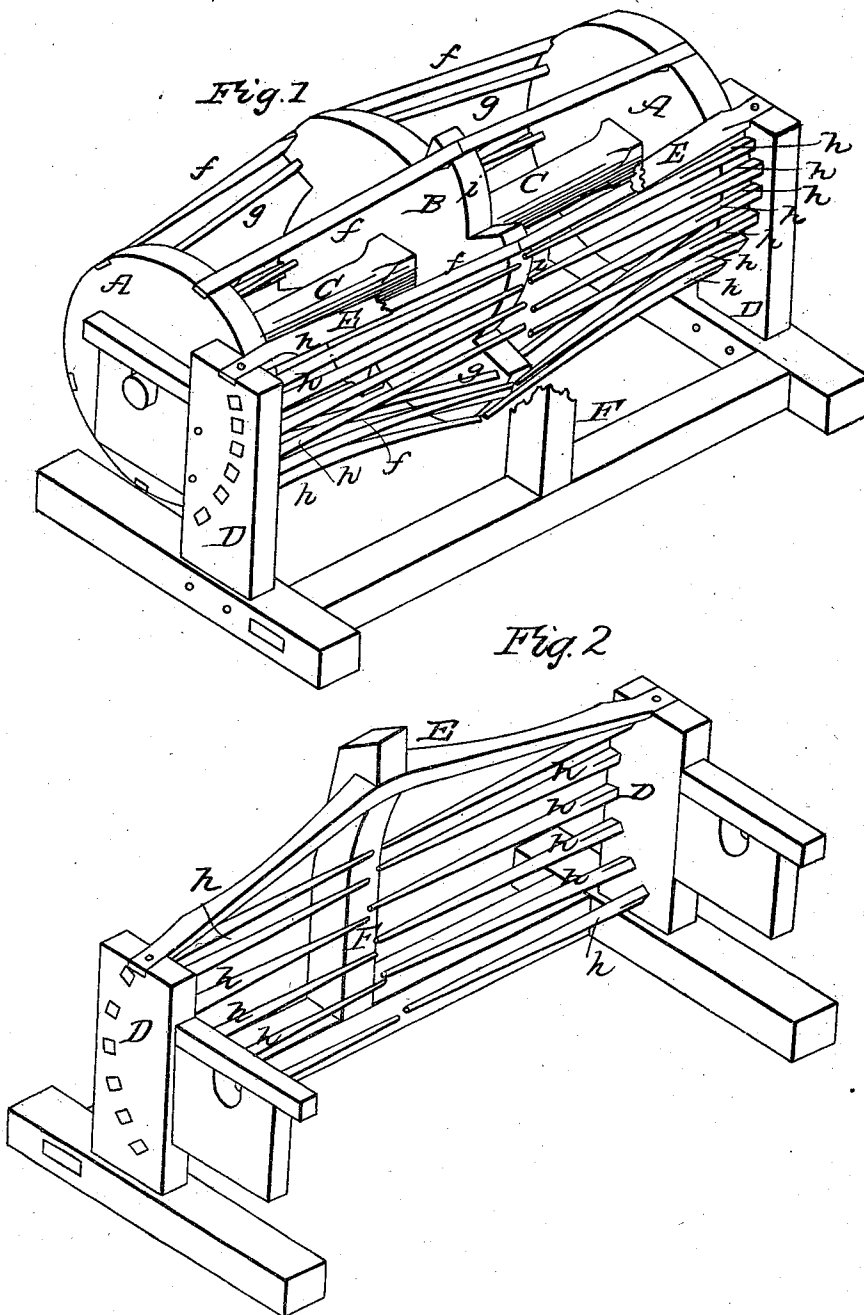


S. H. SAMPLE.
Hemp and Flax Brake.

No. 4,698.

Patented Aug. 18, 1846.



UNITED STATES PATENT OFFICE.

SMILEY H. SAMPLE, OF FAYETTE, MISSOURI.

IMPROVEMENT IN HEMP-BRAKES.

Specification forming part of Letters Patent No. 4,698, dated August 18, 1846.

To all whom it may concern:

Be it known that I, SMILEY H. SAMPLE, of Fayette, in the county of Howard and State of Missouri, have invented a new and Improved Machine for Breaking, Scutching, Beating, and Cleaning Hemp or Flax; and I do hereby declare the following to be a full and exact description of its construction and operation, reference being had to the accompanying drawings, making a part of this specification.

My hemp and flax breaking and cleaning machine consists of a series of rotating beaters secured to a driving-shaft, as hereinafter described, combined with a rest and series of elastic rods or whips, in the manner herein set forth.

In the accompanying drawings, Figure 1 is a perspective elevation of my hemp and flax breaking and cleaning machine, a portion of the rest E and center supporting-post, F, being broken out for the purpose of showing more clearly the other parts of the machine. Fig. 2 is a perspective elevation of my hemp and flax breaking and cleaning machine, the driving-shaft C, to which the rotating beaters *ff* are attached, being removed for the purpose of showing the position and arrangement of the rest E and elastic rods *hh*, which scutch and whip the hemp or flax after it has passed between the rest and rotating beaters *ff*.

I construct my rotating beaters *ff* and attach them to the driving-shaft C in the following manner: I construct two circular heads, A A, say, five and a half feet in diameter, (more or less,) which are secured to the ends of the driving-shaft C and support the ends of the beaters or breakers *ff*. The central supporter or cam, B, secured to the center of the shaft C, which sustains the central portion of the beaters *ff*, I construct as follows: I in the first place lay out a circle (say seven feet in diameter for heads of five and a half feet diameter) and divide the same into six equal parts and mark the divisions on the periphery. From each of these division-points I draw lines toward the center of the circle one foot in length. I then draw a parabolic curve from the outer end of each of the lines on the periphery of the circle to the inner end of the next division-line on its right, (should the left-hand side of the supporter, as seen from the front of the machine, be uppermost,) thus uniting the outer

and inner ends of the whole number of radiating division-lines of the circle. Having thus laid out the form of the supporter or cam B, I by the radiating division-lines and parabolic next proceed to reduce it to the shape defined curves by cutting away the surplus parts of the circle beyond these lines, thereby reducing it to the shape represented by B in Fig. 1 of the accompanying drawings. About six inches from the points of the projecting shoulders on the supporter I cut out mortises in the face of them, in which I countersink the centers of the beaters *ff*. Their ends are likewise countersunk into the heads A A in a position to bring their edges parallel to the shaft C. The beaters *ff* are broad and thin. Their lower side is let into the heads and central supporter, causing them to move edge foremost. Their front or breaking and scutching edge is beveled or rabbeted down to a dull edge. Underneath the beaters *f* there are braces *gg*, running parallel with the same, made fast in the sides of the heads A and central supporter, B. These braces *g* are for the purpose of preventing the hemp or flax from catching to and being wound around the beaters *f*. They also serve as braces and supports to the heads and beaters. The rest E is secured in the top of two side posts, D D, of a frame, (constructed in any convenient manner.) The rest is swelled out at its center to suit the form of the beaters *ff*. It is supported at its center by a central post, F. Underneath the rest E there are inserted and firmly secured in each of the side posts, D, the ends of a curved series of beating and rubbing rods, *hh*, extending to and nearly meeting at the center of the central post, F. These rods form a concave corresponding in its curve with the periphery of the heads A of the beaters *f*, and partially inclosing the same. As the beaters revolve, the curved cam projections *i* on the supporter B gradually force out the ends of the elastic rods *h* until they reach the shoulders at their rear, passing which they react to their straight position again.

The operation of my hemp and flax breaking, scutching, and cleaning machine is as follows: Suitable motion is given to the revolving beaters by passing a band around one of the heads A and connecting it to some motive power, or in any other manner thought advisable. The operator then takes a quantity of

hemp or flax—as much as he can conveniently manage in his hands—and places it between the revolving beaters and the rest. It is first broken between the beaters and rest. Passing farther into the machine, it is rubbed and softened between the beaters *ff* and elastic rods *hh*, while the rods are passing over the face of the cam projections *ii*, and whipped and thoroughly cleaned of all dirt and impurities by the reaction of the rods in passing over the abrupt shoulders of the projections *i*. After operating in this manner from the end to the center of the rest, until the hemp or flax is thoroughly broken and cleaned of shives, the ends are reversed and acted upon in the same manner.

The beaters *ff* may be constructed of wood

or metal. The rods *hh* may be constructed of elastic wood or metal, or of the two combined.

Having thus fully described the construction and operation of my improved hemp and flax breaking, scutching, and cleaning machine, what I claim therein as new, and desire to secure by Letters Patent, is—

The combination of the beaters *ff* and cam projections *ii*, arranged as above described, with the rest *E* and elastic rods *hh*, substantially in the manner and for the purpose set forth.

SMILEY H. SAMPLE.

Witnesses:

Z. C. ROBBINS,
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