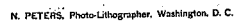


Hackling Machine.

Patented May 1, 1845.



UNITED STATES PATENT OFFICE.

GEO. W. BILLINGS AND JOHN HARRISON, OF GLASGOW, MISSOURI.

IMPROVEMENT IN MACHINES FOR HACKLING AND CLEANING HEMP AND FLAX.

Specification forming part of Letters Patent No. 4,022, dated May 1, 1845; antedated November 1, 1844.

To all whom it may concern:

Be it known that we, GEO. W. BILLINGS and JOHN HARRISON, of Glasgow, Howard county, and State of Missouri, have invented a new and useful Machine for the Purpose of Hackling and Scutching Hemp and Flax; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 is a top view. Fig. 2 is a transverse section, and Fig. 3 is a perspective view. Fig. 4 is a front elevation of shaft and beaters.

The same letters refer to corresponding parts in each figure.

A A A are the sills, B B are the posts, and C C are the cross-pieces, forming the frame of our combined scutching and hackling machine.

D is the shaft of our combined revolving scutcher and hackle.

E E are tight and loose pulleys on the shaft of our combined revolving scutcher and hackle.

F F are arms projecting from the shaft D, to which are attached the combined scutchers and hackles.

G G G are the combined scutchers and hackles, their peculiarity consisting in their beating edges being sections of a grooved cylinder, and the grooves forming from one to the other a right-and-left-hand screw each way from their centers to the ends, (represented by the dotted lines,) the sharp projections between the grooves acting as a hackle for removing the tow from the hemp or flax at the same time that the hemp is beaten, and the shives and dirt are separated from the same, (Fig. 5 is a view of the face of one of our beaters,) the spiral form of the grooves and the projections between them all the while separating the hemp or flax upon the rest and moving it gradually from the center toward each end of the same.

H is the rest, over which the hemp or flax is held while operated upon by the revolving combined scutcher and hackle, its peculiarity consisting in its being elevated upon the standards I I, and in its being detached from the other

parts of the machine, likewise in the tightly-closing up of the space between the standards I I, and leaving a free and open space for the strong current of air created by the rapid revolutions of the scutcher and hackle to pass through between the outer side of each standard and the closed sides of the machine, the two currents of air passing in on each side of the rest and meeting in the center, having a constant tendency to draw the ends of the hemp and flax to the center of the revolving scutcher and hackle. Another peculiarity of the rest H is the outward curve at both ends of it for affording greater facility for the introduction of hemp or flax between the same and the revolving scutcher and hackle.

K is a bonnet or cover to the revolving combined scutcher and hackle.

L L are connecting flat surfaces between the combined scutchers and hackles, for preventing the hemp or flax from being drawn around the shaft and arms of the same.

M M are stationary rings, attached to the side pieces, *c c*, passing inside the drums O O, and around which the drums revolve.

O O are drums at both ends of the combined revolving scutcher and hackle. The design of the rings M M and the drums O O is the prevention of the hemp or flax from being drawn in at the ends of the combined scutcher and hackle and around the journals of the same.

N is a rack, attached to the rear end of the machine, for catching the tow thrown back by the combined revolving scutcher and hackle, and separating it from the shives and dirt.

Having thus fully described the construction and operation of our improved combined scutching and hackling machine for hemp or flax, what we claim as new therein, and desire to secure by Letters Patent, is—

1. The form and arrangement of the rest H and the standards I I, as herein described and set forth.

2. The rack N, in combination with the improved combined scutcher and hackle, for separating the tow from the shives and dirt, as herein described.

3. The drums O O, at each end of the combined revolving scutcher and hackle, in combination with the rings M M, for preventing

the hemp or flax from being drawn in at the ends and around the journals or shaft of the same, as herein described.

4. We are aware that machines for beating, scutching, and cleaning hemp and flax have been made with rows of teeth on a cylinder, and therefore we wish it to be understood that we do not claim this as our invention; but what we do claim, and desire to secure by Letters Patent, is the placing of the teeth, which are

in rows parallel with the shaft in the direction of a helix diverging from the middle of the length of the cylinder toward each end, for the purpose of spreading and acting upon every part of a bunch of hemp, as herein described.

GEO. W. BILLINGS.
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Witnesses:

R. P. HANENKAMP,
F. M. BILLINGSLEY.