

UNITED STATES PATENT OFFICE.

CHRISTOPHER HERRSCHAFT AND JAMES LAWRENCE, OF BROOKLYN, N. Y.

IMPROVEMENT IN HEMP AND FLAX MACHINES.

Specification forming part of Letters Patent No. 165,825, dated July 20, 1875; application filed May 29, 1874.

To all whom it may concern:

Be it known that we, CHRISTOPHER HERRSCHAFT and JAMES LAWRENCE, both of Brooklyn, in the county of Kings and State of New York, have jointly invented certain Improvements in Machines for Spreading Hemp, Flax, and other fibrous materials, of which the following is a specification:

The invention consists in a certain straight construction of the toes on the ends of the bars carrying the straightening-pins, with holding and delivering rolls constructed as hereinafter described, in combination with upper stationary straight slides or guides, on which said straight portions of the toes bear, and rollers or bearing-surfaces of said bars arranged to run under upper stationary guides, whereby the bars carrying the straightening-pins are kept stiff, and the pins prevented from inclining or working back by reason of the pull of the fiber on them.

In the accompanying drawing, Figure 1 represents a side view of a hemp or other fiber spreading machine constructed in accordance with my invention; Fig. 2, a longitudinal vertical section thereof, and Fig. 3 a similar view, upon a larger scale, of the endless chain with accompanying devices.

A is the main frame of the machine, or rather one of the side frames thereof; and B B' the front and rear pitched drums or rollers, around and by which the chains D on parallel or opposite sides of the machine pass and are driven. These chains D on the two sides of the machine are connected by the usual cross-bars E, carrying or having attached to them the combing or straightening-pins *b*, the whole forming an endless belt or chain of straightening-pins. F F are holding-rolls, of which there may be one, two, or more pairs, and which may either be plain or fluted; but, if the latter, then the top roll in each pair need not be geared with the lower one. These rolls are arranged at the forward end of the machine, and the hemp or other fiber is fed through or between them to the endless belt or chain of straightening-pins. These rolls are geared to run at a slower velocity than said traveling endless belt of straightening-pins, so that they hold back or on the fiber as the pins *b* catch or act upon it, thus causing the pins to more

effectually comb, straighten, or spread the fibers. To still more effectually accomplish the same, the delivery-rolls G G at the back end of the machine are geared to run still faster than the endless belt of combing-pins, thus securing draft on both ends of the fibers.

The endless belt of combing-pins is directed in its travel in the usual manner by means of toes H on the ends of the bars E, and provided with studs or pins *e e*, which, in the upper line of travel of the belt, run above and below longitudinal strips or guides C, arranged one on either side of the machine for the purpose of causing the pins to have an upward projection in the top line or course of their travel, as necessary to effect the combing, straightening, or spreading of the fibers. Such devices, however, do not give a stiff or firm hold of the bars E against the pins *b* being tipped, or pulled, or turned back, in their upper line of travel, especially when the holding-rolls F F run slower than the endless belt of combing-pins, which causes the fibers to pull back on the combing-pins *b*. To stiffen or steady the bars E against such turning action or slip the toes H are made with straight or flat edges *g*, which, as the toes are turned to direct them in their upper travel, rest or run on longitudinal guides I—that is, one on either side of the machine—and the bars E or rollers *h* on the latter run at the same time under upper longitudinal guides J. In this way, or by these means, the combing-pins are held upright and stiff and steady to their work during the upper path of their travel.

By the machine constructed as described the hemp or fibers are delivered in perfect slivers.

I claim—

The toes H on the bars E, which carry the combing-pins, made with straight edges *g*, in combination with the rollers *h* and upper and lower guides I J, holding-rolls F F, and delivering-rolls G G, all constructed and operating substantially as and for the purpose herein set forth.

CHRISTOPHER HERRSCHAFT.
JAMES LAWRENCE.

Witnesses:

HENRY T. BROWN,
MICHAEL RYAN.