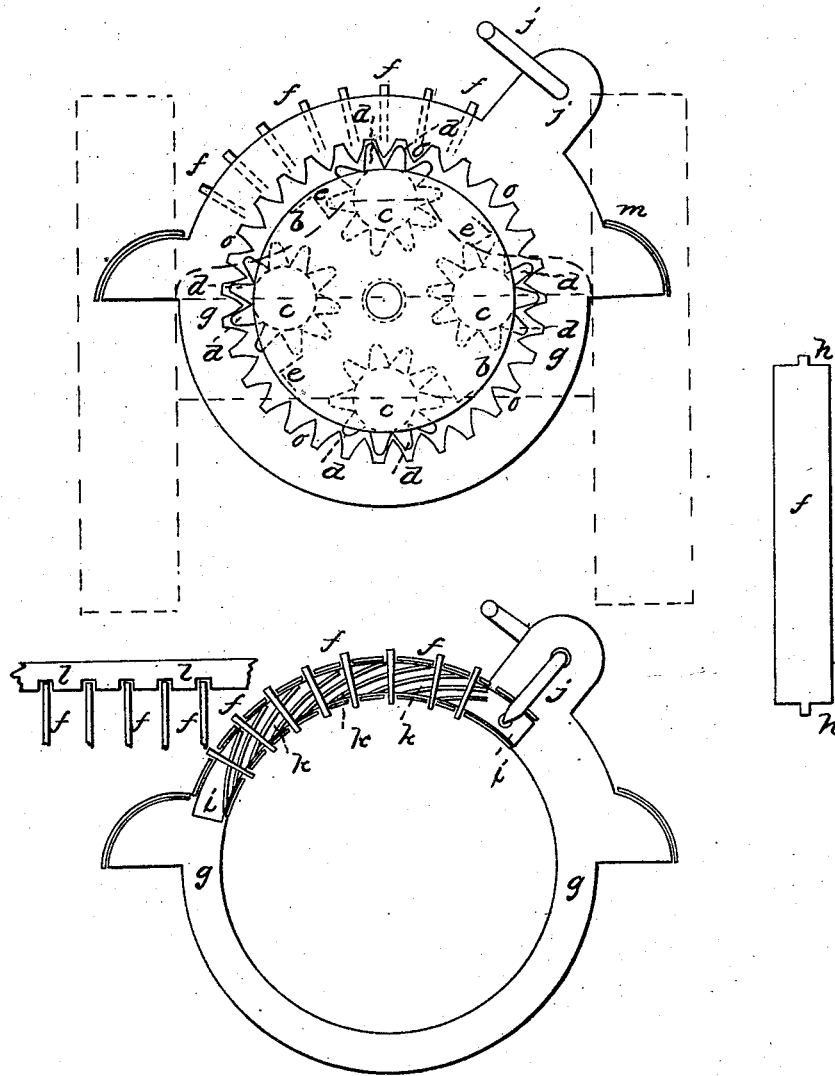


H. LULL.

Hemp and Flax Brake.

No. 235.

Patented June 14, 1837.



UNITED STATES PATENT OFFICE.

HARVEY LULL, OF ITHACA, NEW YORK.

IMPROVEMENT IN MACHINES FOR BREAKING AND DRESSING HEMP AND FLAX.

Specification forming part of Letters Patent No. 235, dated June 14, 1837.

To all whom it may concern:

Be it known that I, HARVEY LULL, of Ithaca, in the county of Tompkins and State of New York, have invented an Improved Machine for the Purpose of Breaking and Dressing Hemp and Flax; and I do hereby declare that the following is a full and exact description thereof.

Upon a main shaft, the gudgeons of which are sustained in any suitable frame, I fix two circular heads, which, for an ordinary-sized machine for hemp, may be three feet in diameter and three feet six inches apart. Between these heads there are to be fluted breaking-rollers, which have their bearings near the peripheries of these heads or circular plates. These rollers may be of cast-iron or of wood covered with metal. They extend from one circular head to the other, and may be ten inches in diameter. They are fluted from end to end by deep angular flutes, each of which may constitute two sides of an equilateral triangle, and of these there are upon each roller, usually ten in number. Two or more such rollers are placed at equal distance apart, with their teeth projecting beyond the edges of the plates in which their gudgeons revolve. Knives for dressing the hemp or flax extend across from head to head, there being one in advance of each roller, nearly in contact with it, and having its blade in the direction of the peripheries of the circular heads, and on a level with them, while they are strengthened by a strip on their backs at the under sides of them. The breaking is to be effected by means of metallic plates or slats with the aid of the above-named fluted rollers, within the flutes of which they are to be received, their conjoint action effecting the object. These slats may be of the same length with the rollers, (four or five inches wide and one-fourth of an inch thick,) and they are to be so fixed that they may be made to pass to a greater or a less depth between the roller-flutes as the breaking proceeds. The rollers, also, must be made to revolve on their own axes, and both of these objects I effect in the following manner:

I prepare two flat circular plates or hoops, usually of cast-iron, which are to be of such size and so attached to the frame of the machine as that they shall surround the fluted

rollers near each of their ends. One of these hoops is round on its inner edge, and the opening therein of such diameter as just to allow the fluted rollers to revolve and to be carried round by the main shaft within without touching it. This plate or ring is about three inches wide. The opposite plate differs from this first in being furnished with teeth on its inner edge, which mesh into the flutes or teeth of the fluted rollers, which play with freedom in them. The effect of this arrangement is, that when the main shaft, carrying the cylinder of fluted rollers and knives, is made to revolve, the individual rollers will likewise revolve on their own axis. The slats which are to pass between the teeth of the fluted rollers are received between the two last-described hollow circular plates or hoops, extending from one of them to the other, and sliding in and out in notches or grooves prepared for that purpose, their planes pointing toward the center of the main shaft and standing in the middle of each of the teeth, by which the rollers are turned. The number of these slats may vary, but eight will usually answer the intended purpose. They occupy the upper portion of the machine, commencing about twenty degrees from its top on the feeding side and extending about one-fourth of the way round. I have said that these slats are made to slide in and out, as may be required, and this sliding I effect by making a projecting tongue on each end of them, which tongues are received into grooves upon movable curved plates adapted to the inner sides of the hoops or rings by which the slats are sustained. The grooves above named form inclined planes so placed that when the curved plates are made to slide back or forth within the circle the slats are simultaneously forced in or out. They are made to slide by means of a cranked lever attached to their ends, and which crosses the machine. Instead of tongues there may be notches on each end of the slats having inclined tongues or fillets fitted into them, and the sliding of the slats, also, may be effected in other ways.

When the machine is used, the main shaft is to be made to revolve by any competent power. The tow or flax is to be held in the hand, or in a grip made for the purpose, and fed in upon the revolving rollers, by which it

will be carried under the slats, that, by means of the cranked lever, are forced down as the breaking proceeds, while it is at the same time dressed by the knives, which separate the slivers from it and clean it in a very perfect manner. When one end of the handful has been thus dressed and cleaned, it is withdrawn, and the other end is fed in and cleaned in a similar manner.

For flax the machine should be of smaller size than that designated; but considerable latitude may be allowed in this particular.

Having thus fully described the construction and operation of my machine for dressing and cleaning hemp and flax, I do hereby declare that I do not intend to claim the fluted rollers, the slats, or the dressing-knives, in their individual capacity as of my invention, these having been before used in machines for the same purpose, but combined together

and operating in a manner essentially different from that herein described.

What I do claim, therefore, is—

The general combination and arrangement of those parts, substantially as above set forth—that is to say, the fluted rollers carried round by a revolving shaft and having an independent revolution of their own on their individual shafts, which revolution is effected by teeth taking into the teeth or flutes on the rollers in the way described, and this in combination with the dressing-knives and the movable slats, which latter are made to pass simultaneously to a greater or lesser depth within the flutes of the rollers, in the manner and for the purpose herein fully set forth.

HARVEY LULL.

Witnesses:

THOS. P. JONES,

W. THOMPSON.