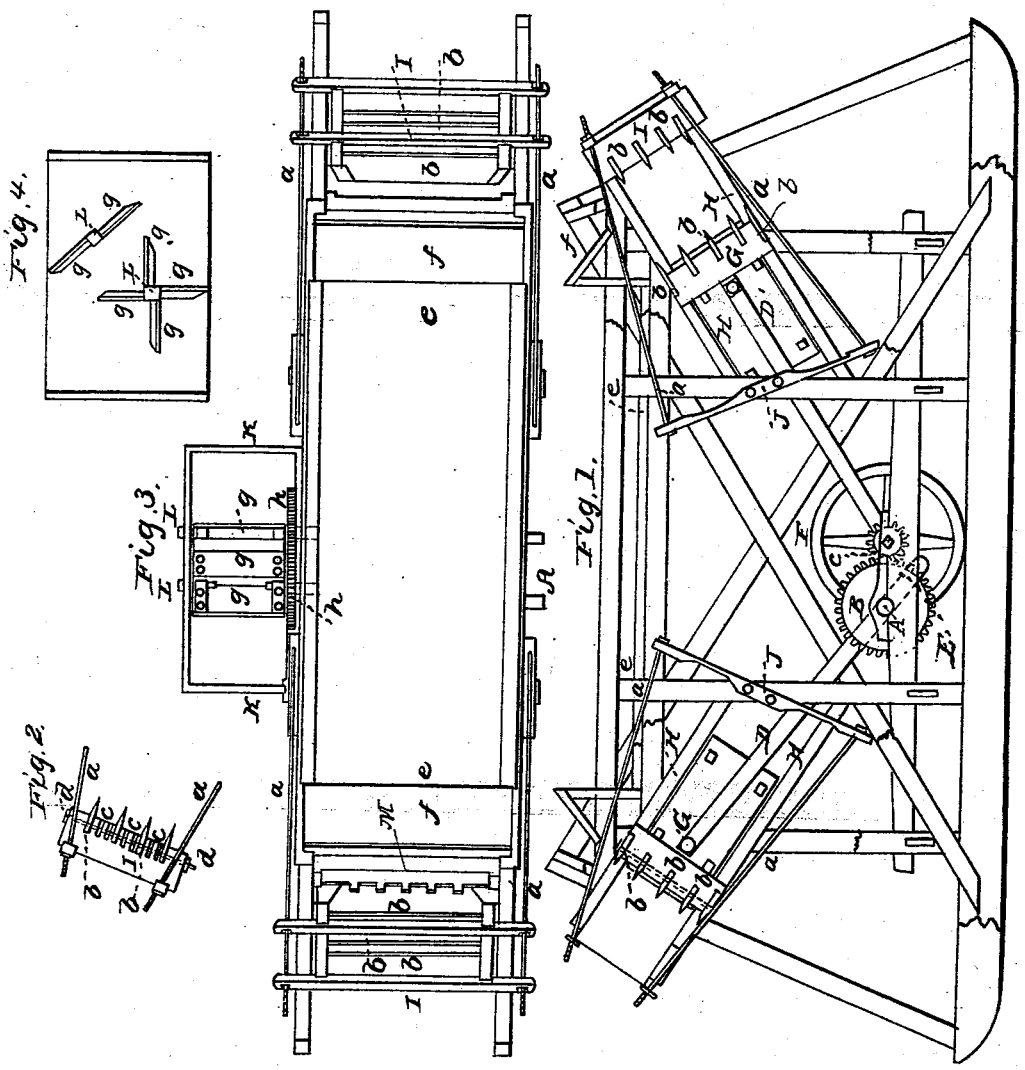
F. M. BARNES.

Hemp Brake.

No. 2,905.

Patented Jan'y 10, 1843.



UNITED STATES PATENT OFFICE.

F. M. BARNES, OF LEXINGTON, MISSOURI.

IMPROVEMENT IN MACHINES FOR BREAKING FLAX AND HEMP.

Specification forming part of Letters Patent No. **2,905**, dated January 10, 1843.

To all whom it may concern:

Be it known that I, F. M. BARNES, of Lexington, in the county of Lafayette and State of Missouri, have invented certain new and useful Improvements in the Manner of Constructing a Machine for Breaking and Cleaning Hemp and Flax; and I do hereby declare that the following is a full and exact description thereof.

The apparatus by which the hemp or flax is to be broken consists of rows of slats, which are similar in their construction and operation to such as have been previously used for that purpose; but I have arranged them and the other parts of the machine so as to operate more conveniently and efficiently than in the brakes heretofore employed.

In the accompanying drawings, Figure 1 is a side elevation of my machine, a part of the braces and other timbers of the frame-work being omitted for the purpose of exhibiting the operating parts the more clearly. The shaded parts represent the timbers on the opposite side of the machine. An ordinary-sized machine may be about ten or twelve feet in length and five or six in height, and the slats about three feet in length. Its size will admit of considerable variation; but it will not be found advantageous, excepting where great power is applied, to make the length of the slats much greater than three feet.

A is the main driving-shaft, to which any adequate power may be applied. This shaft carries a cog-wheel, B, which gears into a pinion, C, on a crank-shaft which moves the beaters. D D′ are connecting-rods, which are moved by the crank shown in dotted lines at E. On the crank-shaft there is a fly-wheel, as shown at F. G G are the beater or sliding slat-frames, the ends of which slide within guide-strips H H on each side of the machine. I I are what may be denominated the "stationary beater-frames." These, however, are not actually stationary, but are so connected with the other parts of the machine as to have an elastic, yielding motion, which is attained in the following manner: On each side of the machine I bolt springs J J, of wood or metal, from the ends of which proceed rods *a a*, which are attached to the beater-frames I I by nuts and screws, which admit of said frames being drawn up with any required degree of force, and while they are still left free to yield to the blows of the moving beaters whenever it becomes requisite. One of the stationary beaters is removed from one end of the machine, and is shown separately in Fig. 2. The end or cheek pieces of the stationary beater-frames which hold the slats *b b*, and also those of the moving frames, are provided with a number of notches, as shown at *c c c* in Fig. 2, to admit of the shifting of the slats, so that they may be placed more or less distant from each other, according to the nature of the work to be performed. The slats are held in place by bolts *d d*, which pass through them and through the cheek-pieces. This arrangement is not represented in the other slat-frames, but is to be made throughout. When this machine is in use, the hands that feed the hemp or flax to be broken stand on the top of it, there being a platform at *e e* for that purpose, extending its whole width. The material, being held in the hands, is laid on one of the inclined boards *f f*, and lowered by hand between the beaters in the ordinary way. The inclined position of the beaters is peculiarly favorable to the handling of the material and to their action upon it, the shives and other foreign matter being more readily separated than when the fibers lie either horizontally or vertically.

Fig. 3 is a top view of the machine, the respective parts of it being designated by the same letters as in the other figures. In this figure an upper slat of one of the sets of movable beaters is shown at M, which is notched on its edge at equal distances, so that only about one-half of the handful of hemp will be struck by it at the first impulse, and the breaking of that which is hard is thus much facilitated. This slat may be added or removed at pleasure, according to the nature of the article to be operated upon. K K is the cleaning apparatus, which has two shafts carrying revolving wings, and is attached to the side of the machine in such manner as that the shaft of one of the revolving wings shall be connected to the crank-shaft of the principal machine. The construction of this apparatus is best shown in Fig. 4, which is a vertical section through its middle from end to end. L L are two shafts which carry the wings *g g*. These shafts are geared together by the toothed wheels *h h*, Fig. 3, which, being equal in size, cause them to revolve with equal velocities. One of these shafts is represented as carrying four and

the other as carrying two wings; and I prefer these numbers, although they may carry but two and one only, but are not in any case to exceed two and four. The flax or hemp which has been broken and partially cleaned by the beaters of the principal machine is to receive a final dressing in the cleaning-machine by allowing it to pass in between the wings, being governed by the hands in so doing, as in the first operation.

Having thus fully described the nature of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The employment, in combination with the beaters, of the slat M, having about one-half of the beating-edge cut away, in the manner and for the purpose herein made known.

F. M. BARNES.

Witnesses:
THOS. P. JONES,
JOHN HITZ.