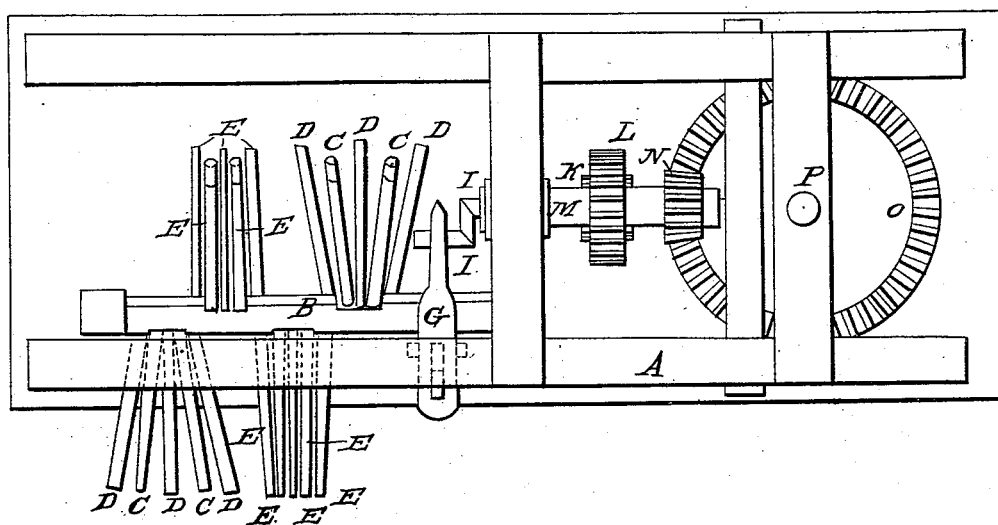


J. P. FRY.  
Hemp Brake.

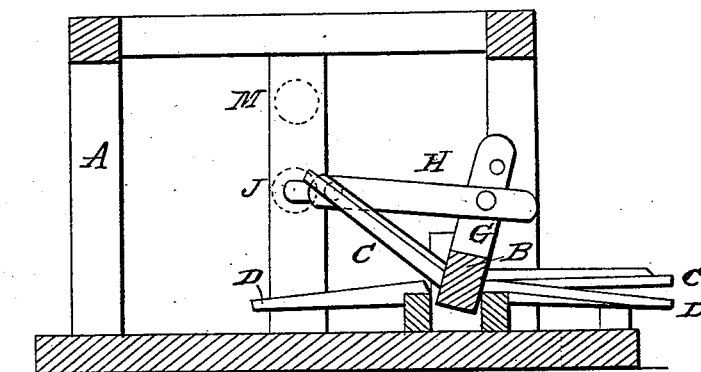
No. 2,889.

Patented Dec. 21, 1842.

*Fig. 1*



*Fig. 2*



# UNITED STATES PATENT OFFICE.

JNO. P. FRY, OF PULASKI, TENNESSEE.

## IMPROVEMENT IN MACHINES FOR BREAKING FLAX AND HEMP.

Specification forming part of Letters Patent No. 2,889, dated December 21, 1842.

*To all whom it may concern:*

Be it known that I, JOHN P. FRY, of Pulaski, in the county of Giles and State of Tennessee, have invented a new and useful Improvement in Machines for Breaking Hemp and Flax, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a top view of the machine. Fig. 2 is a cross-section showing the form of the swords.

A is the frame, of suitable size, strength, and material.

B is the rock-shaft, into which the moving swords are inserted; C, the swords inserted into the rock-shaft for performing the first part of the operation of breaking the hemp or flax. These swords are tapered from the ends inserted into the rock-shaft to their outer extremities, and are mortised and tenoned into the rock-shaft in a flaring position, the small or outer ends being the farthest apart.

D represents horizontal fixed swords, between which the before-described vibrating swords work. These swords are also tapered, being sloped off on their upper edges from a width of six inches to a width of about three inches, the sloping commencing at the center of the blade lengthwise, being horizontal and straight on the lower edges. This form of knife is adopted for the purpose of preventing the vibrating swords from bending the flax or hemp to such a degree as to break the lint in the operation, which should always be prevented if possible, and this the aforesaid sloping of the stationary swords on their upper edges between the middle and outer ends will accomplish, as I have proved by experience. It will, however, be evident on an inspection of the machine that such will be the result, for if the stationary swords had not segments of them removed and these were to remain, it will be seen that as the vibrating knives are brought down between them the resistance would take place at a greater elevation, and consequently that the flax or hemp would receive too sudden and extensive a bend; but by the aforesaid form of the lower swords the vibrating swords will strike the hemp or flax a sudden blow at their outer extremities without bending the same to a great angle, and it

will thus be seen that in a machine having a given motion from cogged gearing or otherwise this is an important point gained. Besides this, the sloping of the fixed blades causes them to act on the hemp or flax in the manner of shears as the material is gradually brought nearer to the rock-shaft in breaking it to a greater degree of fineness. The outer and inner extremities of these swords or blades are fixed permanently in or upon parts of the frame.

E is a set of swords arranged at a convenient distance from the others to allow the operator to stand between them, so that he can remove the hemp or flax from one to the other by merely turning his body. These swords are not sloped on their upper edges, and are arranged in a contrary position to those above described, for the purpose of breaking the hemp or flax more finely—that is to say, their outer ends approach each other, instead of recede or flare therefrom.

F represents the vibrating swords corresponding with the swords just described. These are inserted into the rock-shaft in a position contrary to those first described marked C—that is to say, their outer ends approach each other, and work between the swords E. The shaft must be made flat where the swords are inserted, so as to insert the swords at right angles to said flattened parts of the shaft. By increasing the length of the shaft any convenient number or series of swords may be used. A similar arrangement of similarly-constructed swords are on the opposite side of the shaft, so that there will be the alternate action on the hemp or flax on both sides by increasing the number of attendants to manage the bundles of hemp or flax and change them from one set of swords to the other in breaking the hemp or flax to the degree required.

The rock-shaft is vibrated in the following manner: From the shaft B there extends an arm, G, to which is attached a pitman, H, leading to the wrist I of a crank-shaft, J, on which there is a pinion, K, into which works a cog-wheel, L, on another shaft, M, on which there is also a small bevel-pinion, N, working into a large horizontal cog-wheel, O, or driver, on a vertical shaft, P, turned by a sweep in-

serted into said shaft, to which the animal-power is attached. The machine, however, may be operated by any suitable power.

What I claim as my invention, and which I desire to secure by Letters Patent, is—

Sloping the swords or blades on their upper edges from the middle thereof to their outer

or smaller extremities, in the manner and for the purpose set forth.

JOHN P. FRY.

Witnesses:

WM. P. ELLIOT,  
E. MAHER.