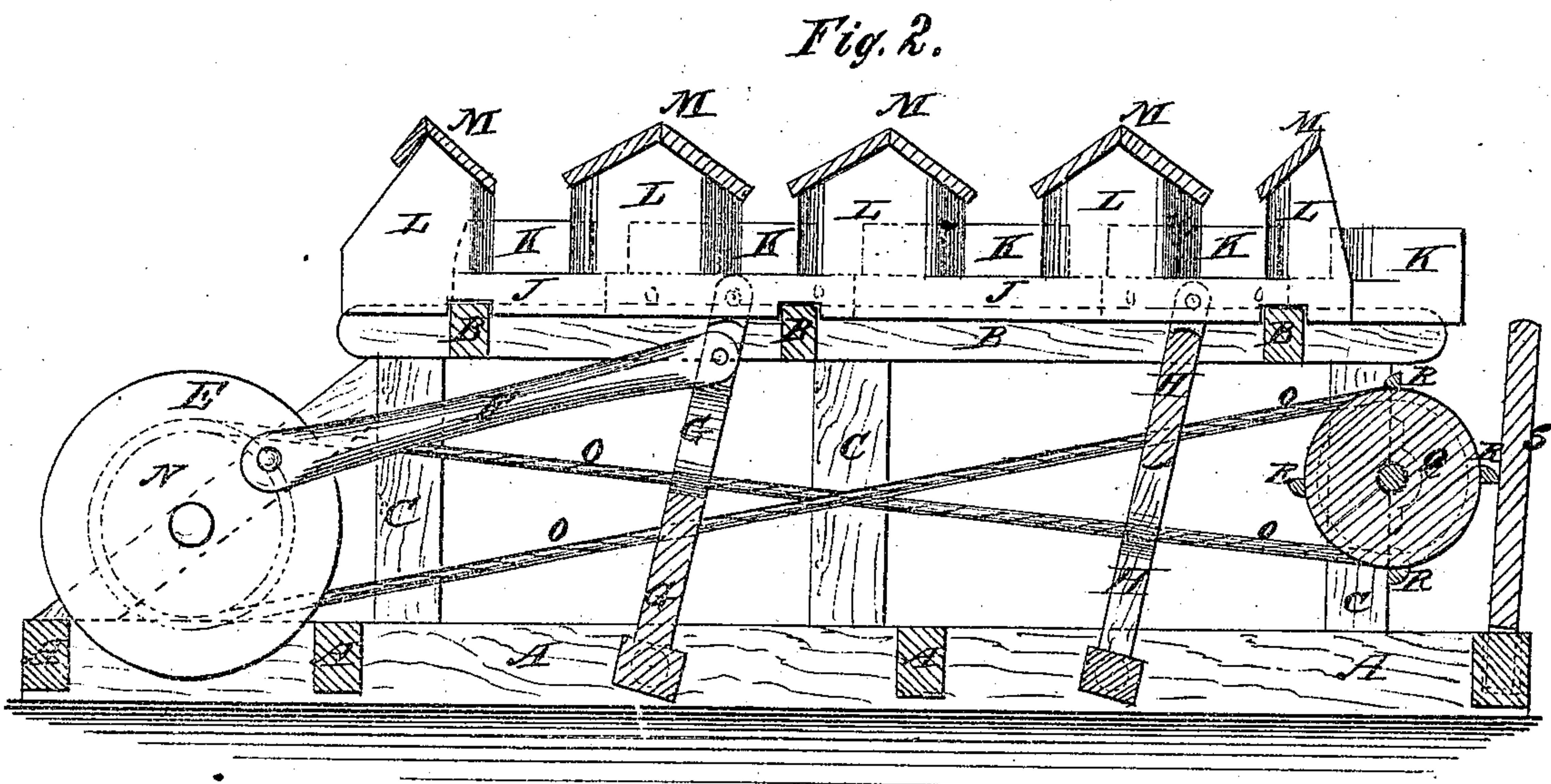
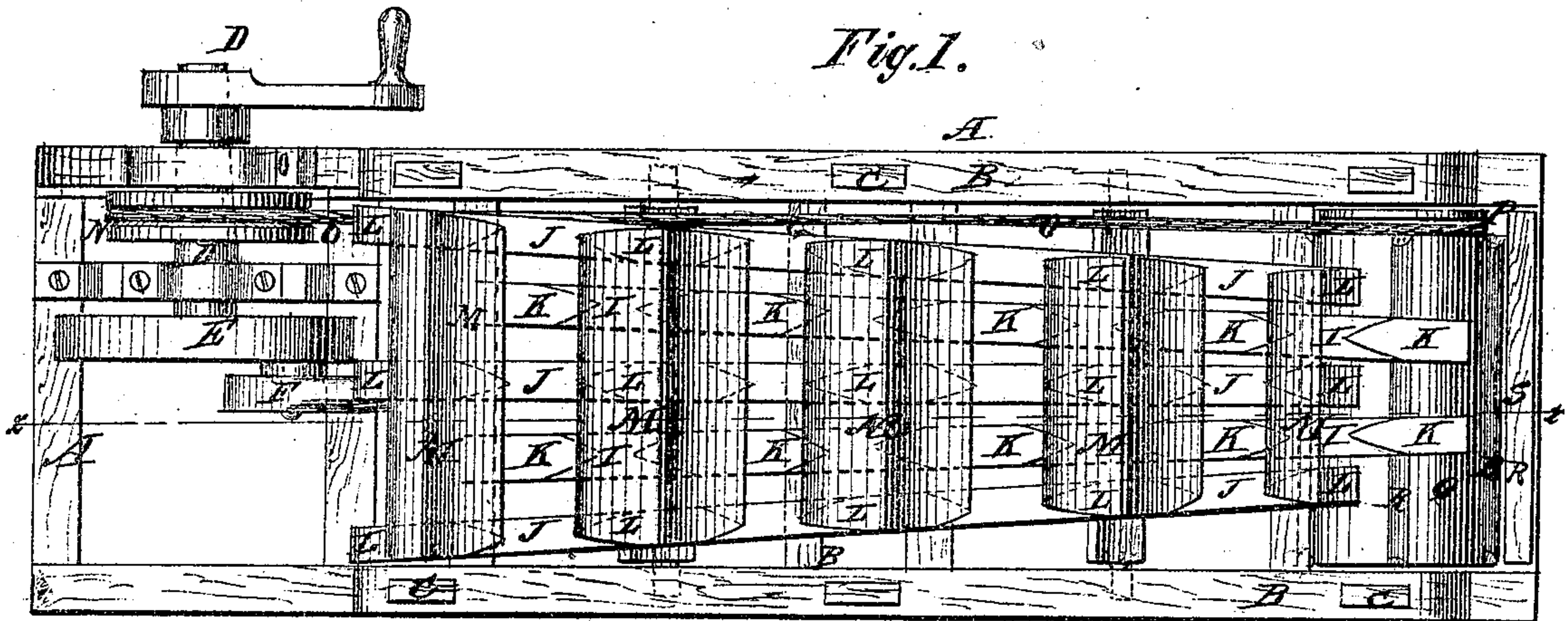


P. S. FITCH.

Improvement in Hemp-Brakes.

No. 128,030.

Patented June 18, 1872.



Witnesses:

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# UNITED STATES PATENT OFFICE.

PHILONZO S. FITCH, OF HANLY, KENTUCKY.

## IMPROVEMENT IN HEMP-BRAKES.

Specification forming part of Letters Patent No. 128,030, dated June 18, 1872.

Specification describing a new and Improved Hemp-Breaking Machine, invented by PHILONZO S. FITCH, of Hanly, in the county of Jessamine and State of Kentucky.

Figure 1 is a top view of my improved machine. Fig. 2 is a detail vertical longitudinal section of the same taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for dressing hemp and preparing it for baling, which shall be simple in construction, convenient in use, and effective in operation, quickly and effectually breaking the hemp and beating out the shives; and it consists in the construction and combination of the various parts of the machine, as hereinafter more fully described.

A is the base-frame of the machine, and B is the top frame, which frames A B are connected by posts or studs C, of such a length as to make the machine of a convenient height. D is the driving-shaft, to which power may be applied in the ordinary manner, and which revolves in bearings attached to the frame-work A B C of the machine. To the shaft D is attached a crank-wheel, E, which should be made large and heavy to adapt it to serve as a fly-wheel. To the crank-pin of the wheel E is pivoted the end of a connecting-rod, F, the other end of which is pivoted to the upper part of the vibrating upright G. H is a vibrating upright placed parallel with the upright G. The lower ends of the uprights G H are attached to rock-shafts, the ends of which work in bearings in the base-frame A of the machine. The upper ends of the uprights G H are branched, and are pivoted to the bars I so as to carry the said bars I back and forth above the cross-bars of the frame B. The bars I are arranged with their forward ends inclined toward each other, so as to be nearer together than the rear ends, as seen in Fig. 1. J are bars alternating with the bars I, and which are stationary, being securely attached to the cross-bars of the frame B. The central bar J is placed midway between the bars I, and the other or outer bars J are placed upon the outer sides of the bars I, and more inclined than the said bars I, so that all the spaces between the bars I J may be wedge-shaped and of equal

size, as shown in Fig. 1. To the upper sides of the bars I are attached knives, swords, or blocks K, which are made wedge-shaped at each end, except the end swords, which need be wedge-shaped only upon their inner ends. To the stationary bars J are attached knives, swords, or blocks L, which are made wedge-shaped at each end. The upper edges of the blocks or swords L are made angling, as shown in Fig. 2, and are covered with a roof or cover, M. This construction allows space for the hemp to spread when struck by the moving knives, and at the same time prevents the shives from flying about, and prevents the hemp from passing over the upper edges of the stationary knives L and becoming tangled. The knives or blocks L K are so arranged as to be further apart toward the rear end of the machine, and so that the rear set of moving knives may but slightly overlap the edges of the two sets of stationary knives L, between which they move. Each set of moving knives K, from the rear end toward the forward end of the machine, overlaps the edges of the sets of stationary knives more and more. The edges of the knives K L are made vertical or nearly vertical, so as to operate evenly upon the upper and lower parts of the handfull of hemp. To the shaft D is attached a grooved pulley, M, around which passes a belt, O, which also passes around a pulley, P, formed upon or attached to the end of the shaft or drum Q, the journals of which revolve in bearings attached to the frame-work of the machine. To the face of the shaft, cylinder, or drum Q are attached longitudinal knives R, to swingle the hemp and thus beat out the shives. S is the swingling-board, which is placed in front of and parallel with the drum Q, and the lower end of which is hinged or pivoted to the cross-bar of the frame A, so that it may be moved forward, to hold the hemp at any desired closeness to the drum Q, by the operator with his knee, leaving his hands free to manage the hemp.

In using the machine, the hemp is placed in the space between the first two sets of stationary knives, L, and moved back and forth longitudinally, so that all its parts may be acted upon by the two rear sets of moving knives K, which strike its opposite sides alternately, forcing it alternately against the ad-



jacent edges of each two sets of stationary knives, L. When sufficiently acted upon by these knives, the hemp is transferred to the next space, and so on to the forward end of the machine, when it is transferred to the swingling-board S to be acted upon by the knives R of the drum Q, where it is finished ready for baling.

For using the machine advantageously, a man should be stationed at each space between the stationary knives L, one at the swingling-board S, and an extra one to be selecting a handfull of hemp, ready to take his place at the first space at the rear end of the machine. Each man may pass his handfull of hemp to the next man, or—and this arrangement I prefer—each man may pass along the machine from one space to the next one with his own handfull of hemp.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the sword-carriers I I

with the uprights G H arranged on rock-shafts, as and for the purpose described.

2. The movable bars I I of a hemp-breaker, inclined increasingly toward each other at the forward ends, and combined with stationary bars J J J, of which the outer bars are more inclined than said bars I, as described, for the purpose of forming intermediate spaces of wedge-shape and uniform size.

3. The combination, in a hemp-breaker, of wedge-shaped movable knives K with stationary knives L, wedge-shaped at each end, and provided with angular covers M, as and for the purposes described.

4. The combination, with sets of stationary knives, of sets of movable knives I I, each succeeding set of which overlaps the stationary knives more and more, as and for the purpose set forth.

PHILONZO S. FITCH.

Witnesses:

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