A. B. EARLE.

Straw Cutter.

No. 11,548. Patented Aug. 22, 1854.

Fig. 3.

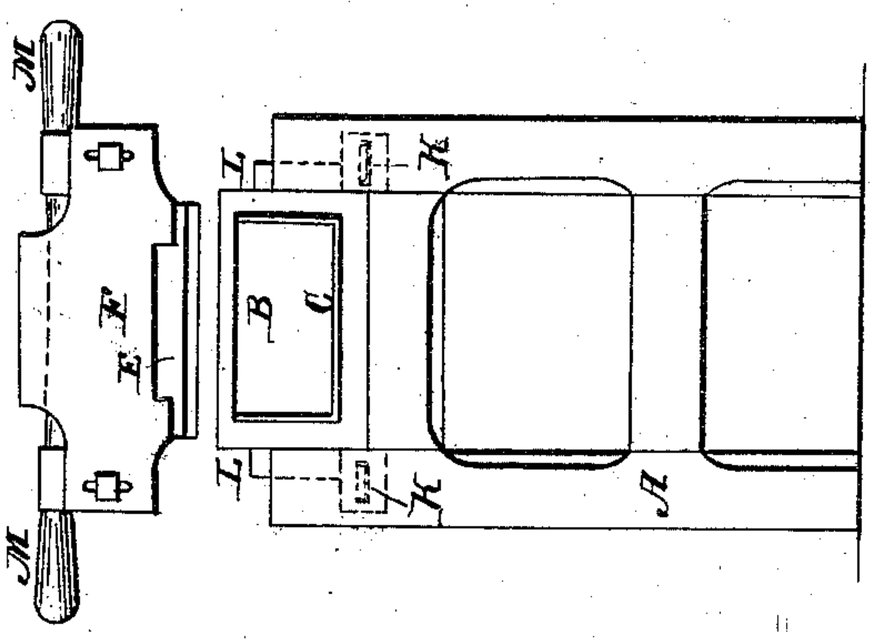


Fig. 2.

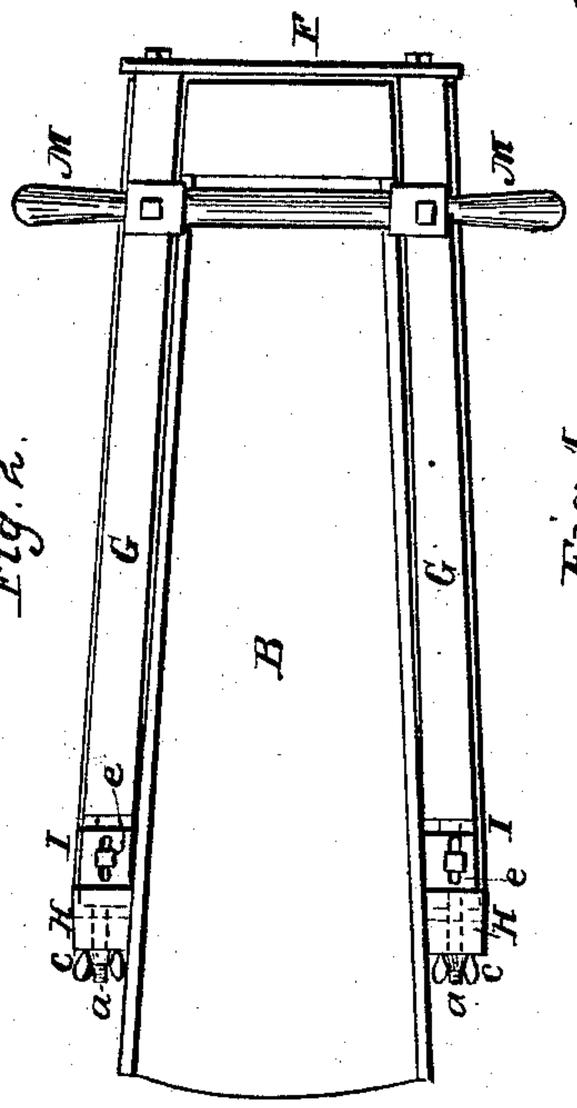
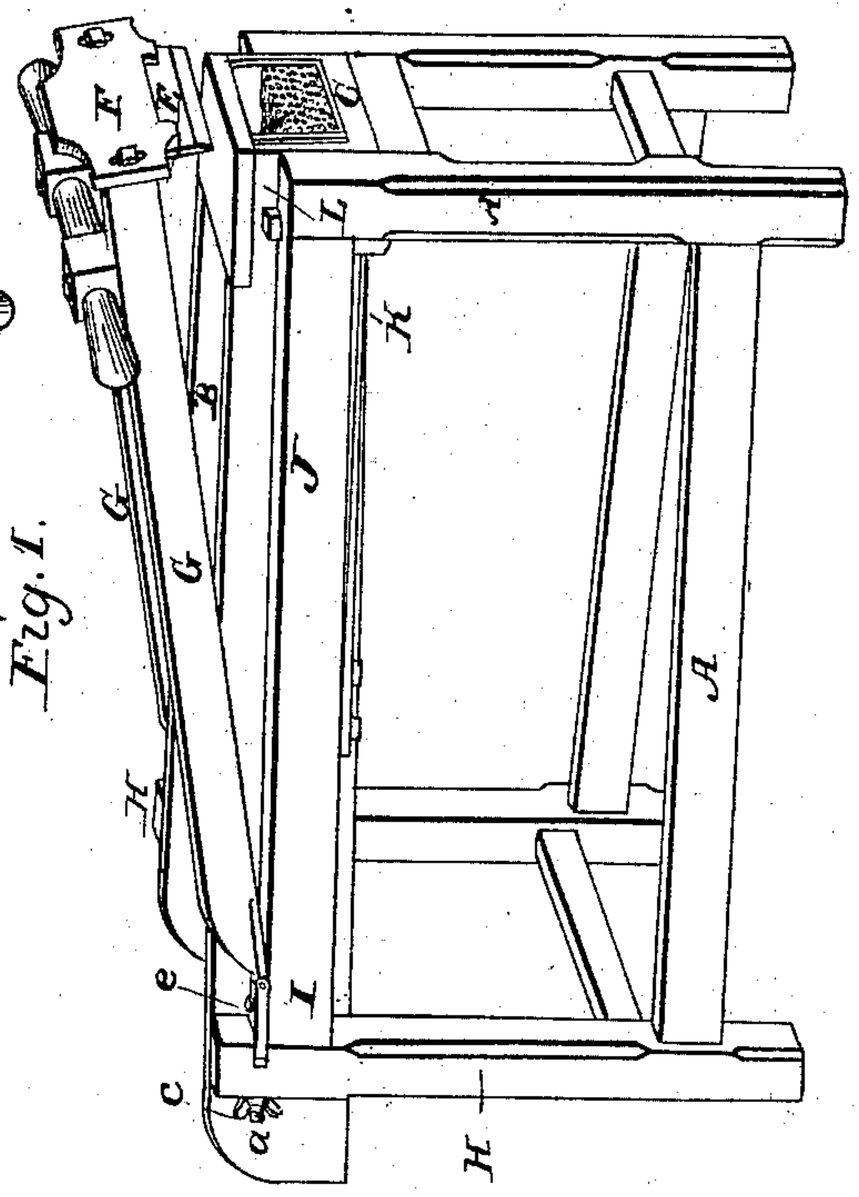


Fig. 1.



UNITED STATES PATENT OFFICE.

ABSALOM B. EARLE, OF FRANKLIN, NEW YORK.

STRAW-CUTTER.

Specification of Letters Patent No. 11,548, dated August 22, 1854.

To all whom it may concern:

Be it known that I, ABSALOM B. EARLE, of Franklin, in the county of Delaware and State of New York, have invented a new and useful Improvement in Straw-Cutters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which makes part of this specification, and in which—

Figure 1, represents a view in perspective of a machine embracing my improvements; Fig. 2 represents a top view, and Fig. 3, a front elevation.

The improvements which I have made in the straw cutter, consist in arranging on each side of the trough or box, a spring buffer, upon which, the arms that carry the chopping knife, strike as they descend with the knife for the purpose of arresting the momentum and causing them to rebound by the force thus accumulated in the spring, thereby lessening to a great degree the labor of the operator.

My improvement further consists in making the hinges adjustable on which the arms turn that carry the chopping knife, so that the latter may with greater ease be kept in the proper position relative to the fixed knife.

My invention further consists in combining with the arms that carry the knife a pair of handles, so that the operator may stand on either side of the machine, and may increase or diminish at will the arc of the vibration of the knife to vary the force of its blow according to the quantity of straw in the box, so that whether it be much or little, the labor of the operator does not vary materially for when the arc of vibration is increased the frequency of the strokes is correspondingly diminished, and vice versa. The force of the blow is varied by simply varying the length of the arc of vibration of the knife.

In the accompanying drawing, (A) represents the frame, (B) the feeding box or trough, (C) the fixed knife, and (E) the movable knife which is secured to a stock or cross head (F), mounted on the front ends of a pair of arms (G). The arms (G) extend back from the cross head, and are attached to hinges (I) secured to the upper ends of the posts (H) of the frame. They operate the chopping knife (E) and form the radii of the arc of its vibration. The rear leaf of each hinge on which the arms turn, has a screw shank (*a*) projecting horizontally from it, through the post (H), and on its end, is fitted a nut *c* whereby the movable knife can be adjusted with the greatest nicety. When the arms which carry the knife have been adjusted, they may be clamped to the top rails, by means of screws (*e*) the shanks of which pass through slots in the rear leaf of each hinge. The arms are situated directly over the rails (J) and adjacent to the sides of the trough by which they are guided laterally.

Beneath each rail, (J) a strong spring (K) is secured. This spring may be made of wood or tempered steel. The front or free end of each spring is connected with a buffer (L) which projects upward through an opening in the rail adjacent to the front post. The spring tends constantly to push the buffer upward. When the arms (G) descend with the knife, they strike upon the buffers about the time the knife has cut through the straw, and the springs yielding, the buffers descend a distance proportioned to the momentum with which the arms strike them. The instant the momentum of the knife and arms has been overcome by the elastic power of the spring, the latter will rebound, and returns all the force with which it was compressed, to aid in raising the knife again. The arms (G) have handles (M) attached to them near their front ends, by either of which the operator may vibrate the knife, and whereby he can control its motion to increase or diminish the force of the blow according to the quantity of straw to be cut. If the box be full, then the arc of motion of the knife must be increased so that the force or momentum developed by the descent of the knife shall be sufficient to cut through the straw, without requiring pressure to be applied by the operator. By thus mounting the knife upon a pair of hinged arms fitted with a handle on each side, the operator can stand on either side of the machine and cut with facility and ease.

I make no claim to a spring in straw cutters connected by a link, chain, or otherwise to the knife, so as to retard its descent and assist in raising it throughout its entire range of motion, as this is well known. Nor do I claim vibrating arms for carrying the knife, with a fixed range of motion, neither do I claim a spring, or vibrating arm by itself, however constructed, my claim and

invention being confined to certain new arrangements of these, in connection with other parts, as hereafter specified, viz:—

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

1. The arrangement of a vibrating knife, and recoil spring, substantially as herein set forth.

2. I also claim the arrangement of a chopping knife on vibrating arms, fitted on each side with a handle in such manner that the force of the blows of the knife may be varied in proportion to the quantity of straw to be cut, and by which the operator may work on either side of the machine at pleasure.

In testimony whereof, I have hereunto subscribed my name.

A. B. EARLE.

Witnesses:
P. H. WATSON,
PETER HANNAY.