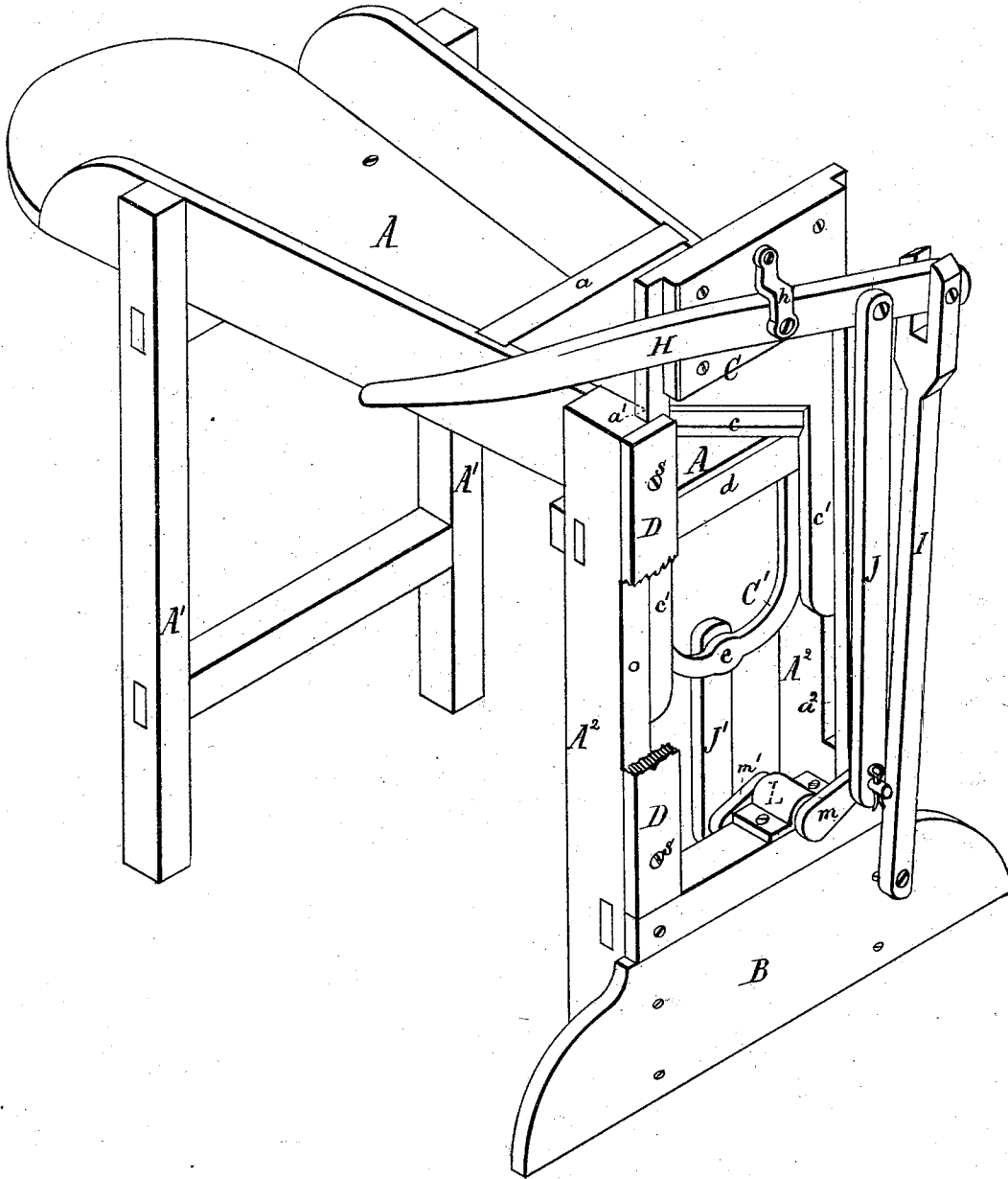


D. A. WALKER.
Straw-Cutter.

No. 223,781.

Patented Jan. 20, 1880.

Fig 1.



Witnesses:

J. P. Th. Lang
J. A. Knight

Inventor:

David A. Walker

Wm. R. Lawrence

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Fig 2.

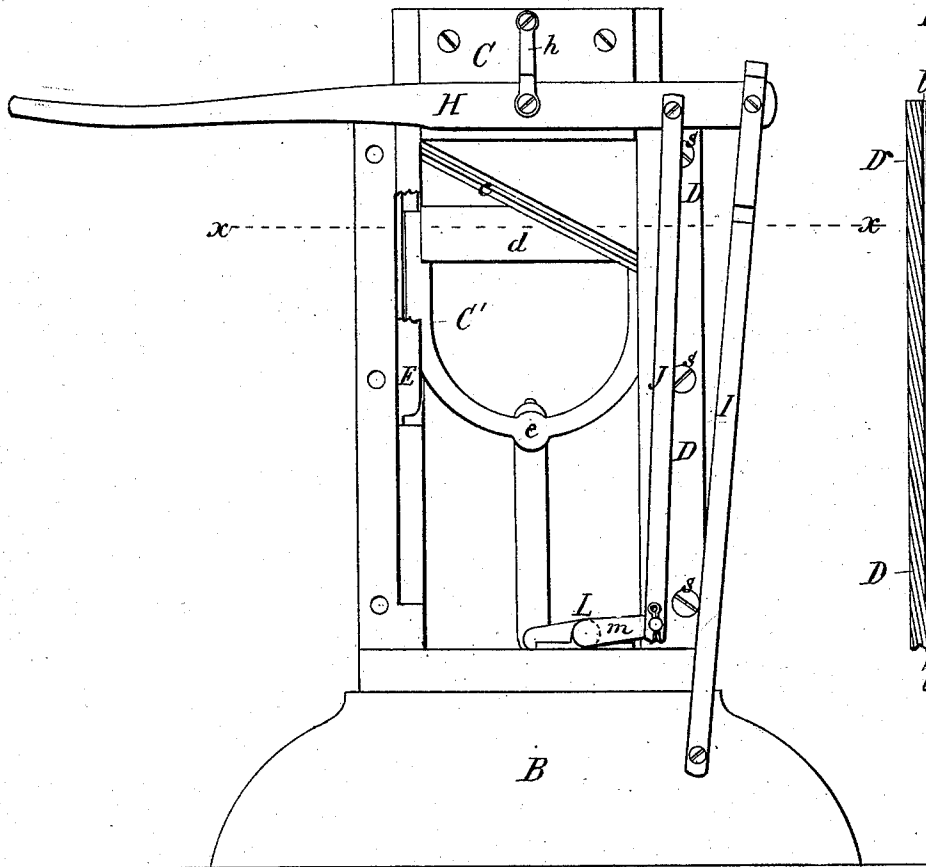


Fig 5.

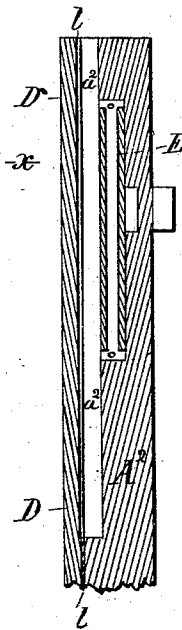
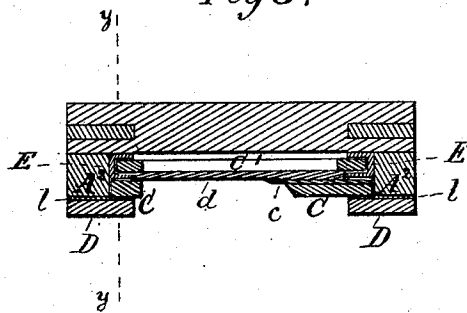


Fig 4.



Fig 3.



Witnesses:

J. P. Th. Long.
J. A. Knight.

Inventor:

David A. Walker
by
Mason, Durick & Lawrence

UNITED STATES PATENT OFFICE.

DAVID A. WALKER, OF SALEM, INDIANA, ASSIGNOR OF TWO-THIRDS OF HIS RIGHT TO GEORGE R. HARRIS, OF SAME PLACE.

STRAW-CUTTER.

SPECIFICATION forming part of Letters Patent No. 223,781, dated January 20, 1880.

Application filed October 15, 1879.

To all whom it may concern:

Be it known that I, DAVID A. WALKER, of Salem, in the county of Washington and State of Indiana, have invented a new and Improved Straw-Cutter for Cutting Hay, Straw, and other Fodder for Cattle, Horses, and other Animals; and I do hereby declare that the following is a full, clear, and exact description thereof, having reference to the annexed drawings and letters of reference marked thereon, in which drawings—

Figure 1 is a perspective of my improved cutting-box; Fig. 2, a front elevation of the same with one of the screw face plates or strips removed; Fig. 3, a section in the line *xx* of Fig. 2; Fig. 4, a perspective view of one of the metal guideways for the lower cutting-blade and its inverted arch-frame; and Fig. 5, a longitudinal section in the line *yy* of Fig. 3, showing one of the metal guideways of the lower cutting-blade in position, and with one of its sides forming a portion of one of the guideways of the carrying-frame of the upper cutting-blade of the cutting-box.

The nature of my invention consists, first, in a cutting-box having two cutting-blades, which are operated simultaneously toward and from each other in parallel vertical planes in separate movable frames in separate guideways by the use of a lever-crank, which is actuated by a hand-lever through a connecting-bar, which has its upper end pivoted to the hand-lever and its lower end to the crank; second, in a cutting-box having two cutting-blades, which are operated at the same speed simultaneously toward and from each other in parallel vertical planes in separate movable frames, which travel in separate guideways, the cutting-edge of the lower blade being set horizontal and effecting a horizontal cut, and the cutting-edge of the upper blade being set obliquely thereto for the purpose of effecting a drawing cut, while at the same time the lower blade, by reason of its horizontal edge, resists the crowding or bunching against one side of the cutting-box of the straw or hay or other fodder being cut, which the oblique set of the upper cutting-blade is liable to produce; third, in a cutting-box, the combination of a

lower vertically-moving cutter-blade, an inverted arch-frame for carrying said blade, and independent ways for said frame to travel in, for giving permanence of position and steadiness of action in the operation of said blade, and at the same time providing for making the lower blade-frame light, strong, and cheap; fourth, in a cutting-box, the combination of the lower cutting-blade and frame and its guideways, the upper cutting-blade and the extension-legs of its carrying-frame, provided with separate guideways, and screw face strips or plates, whereby the pressure of the face strips or plates, being imparted to the said legs of the upper cutter-blade frame, causes said legs to bear against the ends of the lower cutter-blade, and thus the cutting-edges of the two cutting-blades can be made to maintain a close contact with each other as they wear away, while at the same time both cutter-blades have independent guideways.

In the drawings, A indicates the box to receive the fodder to be cut, and it is provided with the usual inclined guide-board *a*, to guide the fodder to the cutting-blades, and at the same time compress it at the point of its delivery to the action of the blades. This box is mounted upon a frame consisting of corner-posts *A'* and *A''* and connecting cross-ties, as shown, the front posts, *A''*, being provided with a steady-board, B, which is of a length greater than the width of the body of the machine, in order to resist its overturn. The front posts, *A''*, are rabbeted from their top downward a greater portion of their length, in order to properly receive the sides of the frame C, to which frame an upper cutting-blade, *c*, is securely attached and set in an oblique position, as shown, and with its rear surface flush with the rear surface of the frame C.

As signified in Fig. 1, the frame C, above the blade or knife *c*, is, in practical construction, made solid or in one piece, but with downward extensions or limbs *c'*, which extend below the cutting-edge of said blade, as shown, and have a movement in the rabbets *a'* to the full extent of a stroke of said frame.

D D are face strips or plates adjusted to the posts *A''* by screws, as shown in the drawings,

and with their inner edges made to overlap the limbs c' of the frame C, as clearly shown in Figs. 1 and 3. In Fig. 1 I have shown one of these face-strips with a portion broken away, and in Fig. 2 entirely removed, in order to expose parts in rear thereof; and one function subserved by said strips is to afford a secure front bearing for the frame C and its limbs c' in the operation of the machine, and so, in connection with the rabbets a' , form a complete and independent groove or guideway, as at a^2 , Figs. 1 and 5, in which the frame C makes its up and down movements.

To the frame C a hand-lever, H, for operating the cutting-box, is attached by a pivotal screw-connection through a hasp, h , as signified in Figs. 1 and 2 of the drawings, and from the outer end of said lever a fulcrum-bar, I, extends down to the steady-board B, said bar, at its upper end, having a pivotal screw-connection with the lever H, and at its lower end a like connection with the steady-board, as shown. Between the pivotal connection of the hand-lever H to the frame C and the pivotal connection of the fulcrum-bar I to the outer end of said lever a connecting-bar, J, is, at its upper end, pivoted to the hand-lever H, while its lower end is pivotally seated to the wrist-pin of the longest arm m of a leverage-crank, L, as shown. This crank L is properly secured to the lower cross tie or beam of the machine; and from the body portion of said crank, but in opposite directions, two crank-arms, m and m' , extend outwardly, the arm m being of greater length than the arm m' , in order to impart a leverage power to the cutting-frame C', and connected by its wrist-pin to the connecting-bar J, as before stated, while the other crank-arm, m' , has its wrist-pin passed through the lower end of a connecting-bar, J', which, at its upper end, is secured by a pivotal connection to the lower central portion, e , of the inverted arch-frame C', to which the lower cutting-blade, d , is attached.

The inverted arch-frame C' is made of thin narrow plate metal, and, being open beneath the cutting-blade d , allows the free escape of the cut fodder at the instant the same is cut. This frame, being manufactured of metal, can be made of suitable strength to sustain the blade d , while at the same time it is light, easily constructed, and cheap; and it is secured in position between the posts A^2 immediately in rear of the frame C, and works in metallic ways E, applied to said posts, as represented in Figs. 2, 3, and 5.

The cutting-blade d , at its ends, is secured to the front surface of the frame C', with its cutting-edge projecting above the upper ends of said frame, while at the same time the cutting-face of the blade projects in front of the front sides of the ways E, in which the frame C' works, and as the extension-limbs c' of the frame C are made to overlap the ends of the blade d , it is apparent that, on pressure being

applied against said frame C the cutting-blades c and d of the two frames may be forced into close contact, and so held as the cutting-faces of the blades wear away by use. To effect this pressure the face strips or plates D are made to overlap the sides of the upper portion and limbs c' of the frame C, and are applied in position to the posts A^2 by screws, as at s , and thus said strips can readily be removed for the insertion of leather or other proper elastic fabric between the outer face of the posts A^2 and the inner face of the strips D, as indicated in Figs. 3 and 5, whereupon, on readjusting and screwing up said strips, pressure will be applied to said frame C, and thus effect the desired juxtaposition and cutting adjustment of the blades c and d .

The blades c and d being operated at the same speed, a uniform pressure is simultaneously applied above and beneath the fodder being cut, and the fodder held steadily at the point of cut, while at the same time the tendency of the oblique set of the blade c to crowd the fodder to one side away from the point of cut is counteracted by the horizontal ascending edge of the blade d .

I claim—

1. In a cutting-box, the cutting-blades c and d , operated simultaneously toward and from each other in parallel vertical planes in separate movable frames and in separate guideways through a lever-crank, L, which is actuated by a hand-lever, H, through a connecting-bar, J, which has its upper end pivoted to said hand-lever and its lower end to the crank, substantially as described.

2. In a cutting-box, two cutting-blades, c and d , which are operated at the same speed simultaneously to effect the cut of the fodder, the cutting-edge of the lower blade, d , being set so as to effect a horizontal cut, and the cutting-edge of the upper blade, c , being set obliquely thereto, and both working in parallel vertical planes in separate movable frames having separate guideways to travel in, substantially as described.

3. In a cutting-box, the combination of a lower vertically-moving cutter-blade, d , an inverted arch-frame, C', and guideways E for said frame to travel in, which is separate from the guideways of the frame C, substantially as and for the purpose described.

4. In a cutting-box, the combination of the lower frame, C', carrying the cutting-blade d and moving in its own independent guideways E, the upper frame, C, carrying cutting-blade c and having extended limbs c' , and moving in grooves or guideways a^2 , which are independent of the guideways E, and the screw face strips or plates D, substantially as and for the purpose set forth.

DAVID A. WALKER.

In presence of—

AZARIAH LANNING,
DAVID M. ALSPAUGH.

1.750 words