

(No Model.)

J. WALKER & O. E. PERRIGO.

STRAW CUTTER.

No. 264,378.

Patented Sept. 12, 1882.

Fig. 1.

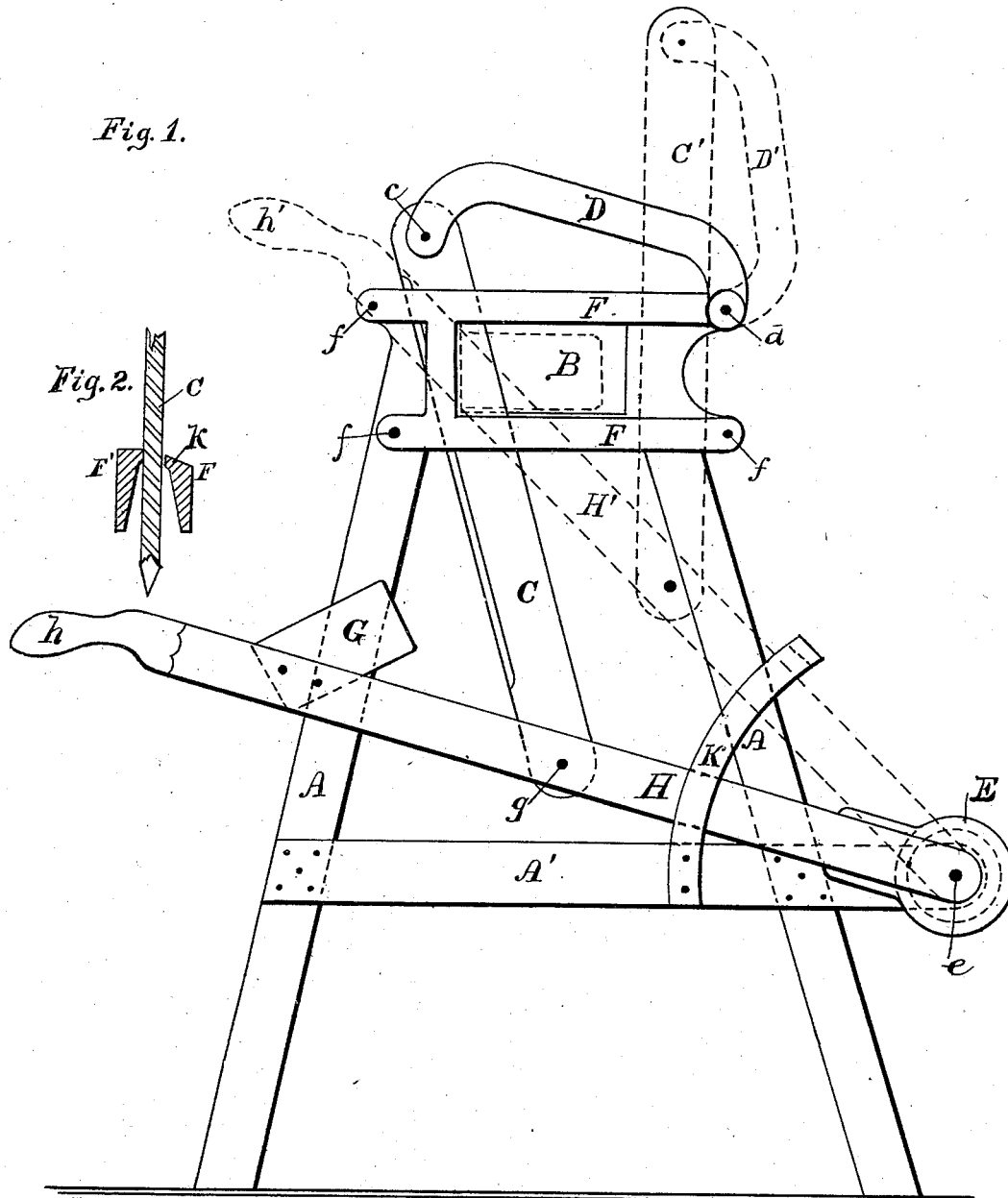
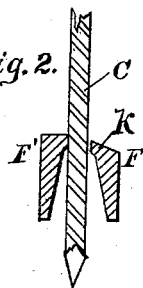


Fig. 2.



WITNESSES:

Saml. Williams
Wm. Hallen

INVENTORS:

Joseph Walker
Oscar E. Perrigo

UNITED STATES PATENT OFFICE.

JOSEPH WALKER, OF MANCHESTER, AND OSCAR E. PERRIGO, OF RICHMOND, VIRGINIA; SAID PERRIGO ASSIGNOR TO SAID WALKER.

STRAW-CUTTER.

SPECIFICATION forming part of Letters Patent No. 264,378, dated September 12, 1882.

Application filed August 29, 1881. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH WALKER, of Manchester, in the county of Chesterfield, and OSCAR E. PERRIGO, of Richmond, in the county of Henrico, and State of Virginia, have invented a new and useful Straw-Cutter; and we do hereby declare that the following is such a full, clear, and exact description of the same that the said straw-cutter can be constructed and operated by any one skilled in the art to which it belongs, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

Our invention relates to that class of machines constructed and used for cutting hay, straw, cornstalks, and other materials of that class for fodder, and is in the nature of an improvement upon the machine described and claimed and patented by us in Letters Patent No. 245,332, dated August 9, 1881.

Our objects are to produce a machine which will make an even, clean cut through the straw or other material, cutting all pieces of an equal length, allowing no straws to pass the knife without being cut or to impede its backward motion, and to do this with the least hand movement and expenditure of power and fatigue to the operator. We accomplish these important results by the mechanism illustrated in the drawings and hereinafter described.

In the drawings, Figure 1 is a front elevation of our machine, the full lines showing the knife and its appendages in the position after the cut is made, while the dotted lines represent those parts when elevated to their highest point, preparatory to making a cut. Fig. 2 is a cross-section of the lower and front parts of the knife-guides.

Similar letters refer to like parts in both views.

A A is a wooden frame in which the cutting-box B is secured. On the front of the box B are secured the knife-guides F by the bolts or screws *fffd*. These guides are of cast-iron and fixed far enough apart to admit of the knife C running up and down freely between them, as shown in section in Fig. 2, in which C is the knife, F is the front guide, and F' is the back guide. The knife C has all the bevel of the

cutting-edge on the front side, the back side being straight, and runs up and down in contact with the back guide, F', while the front guide, F, is set just far enough away to admit of a free motion of the knife. It will be noticed by reference to Fig. 2 that the inside faces of these guides are beveled to a thin edge at the bottom and front, thus making the opening much wider at the bottom and front than the top. By this means any pieces of straw or other matter which might otherwise clog and retard the motion of the knife in this case drop through and out of the way. The top and front end of the front guide, F, is beveled, as shown at *k*, which allows the fodder to bend over slightly, and when cut to drop off, instead of following the knife between the guides and clogging, as it otherwise would do, the knife being a natural wedge. In other respects the guides are not new, but are the same as those described and claimed in Letters Patent No. 245,332, granted to us and referred to above. The knife C is suspended at *c* by the lever D, which is pivoted in the knife-guides F at *d*. The lower end of the knife C is pivoted at *g* to the hand-lever H, having at *h* a handle for operating. The lever H is pivoted to the bar A' of the frame at *e*. E is a circular cast-iron plate, fixed to the lever H by a suitable projection, while its counterpart is similarly fixed to the bar A', the two, with the bolt *e*, forming a good wearing-joint to the lever H, which is still further held in position by the segment K, fixed to the bar A' and embracing the lever H, thus preventing lateral motion. Upon the lever H is fixed a gage, G, composed of a piece of sheet-iron, in such a position that when the lever H is raised to its highest point the gage G will be directly in front of the cutting-box B.

The operation of our machine is as follows, viz: The material to be cut is placed in the box B, and the knife C being raised by the lever H to the position shown in dotted lines at C', the gage G is brought in front of the box B. The straw is now pushed out in front of the knife C and against the gage G. The lever H is forced down, drawing the knife C with a combined downward and forward movement through the mass of straw, making an

even, clean cut. It will be noticed that the knife C, when in an elevated position, stands perfectly vertical, while at its lowest position it is considerably inclined forward. This is accomplished by making the top lever, D, much shorter than the bottom lever, H, is from *g* to *e*, whereby the lever D is made to describe an arc of nearly ninety degrees, while the lever H describes an arc of only about thirty degrees. By thus making the lever D describe an arc of nearly ninety degrees it will be seen that at the commencement of the stroke the knife C moves forward very rapidly, while its downward movement is comparatively little. This tends to force the straw together into a compact mass, making it more easy to cut and rendering the regularity of the cut much more certain. As the movement progresses and the lever D swings forward it will be seen that the speed of the forward motion of the knife C is retarded, while its downward speed is increased, thus increasing its cutting capacity in direct ratio with the increasing resistance offered by the straw to the knife. By this means the cut can be made quicker and easier and with far less hand motion than it could be were either the forward or downward movement maintained at a constant speed throughout the stroke. Another advantage gained by a long leverage from *g* to *e* of the lever H is that the motion of the handle *h* is brought within the easy reach and natural motion of the arm of the operator, by which there is no motion of the body required, as in many other machines, where the handle is required to be moved nearly twice the distance to obtain a proper

stroke. By the sharp forward inclination of the knife at the completion of the stroke it becomes possible to make the box B a perfect rectangle, while in other machines, as in our previously-invented machine, Letters Patent No. 245,332, it was necessary to incline the side of the box or introduce a block or some such arrangement which presented an obstruction to the free forward movement of the straw. In our present machine the box is perfectly square, with no obstruction of any kind therein, thus obtaining a perfectly free and easy movement of the straw, thereby increasing the speed of operating as well as lessening the fatigue of the operator.

Having thus described the construction, application, and operation of our invention, we claim—

In the straw-cutter described, and in combination, knife-guides F F', the former having an inclined top, approaching to within a short distance below the level top of the latter, and both guides having their inner faces beveled downwardly to a thin edge at their bottoms, forming between them a space much wider at the bottom than at the top, substantially as described, shown, and for the purpose set forth.

In witness of the above we have signed this specification this 27th day of August, A. D. 1881.

JOSEPH WALKER.
OSCAR E. PERRIGO.

Witnesses:

SAM. C. WILLIAMS,
WM. HALL CREW.