D. K. BURKHOLDER.

Straw and Feed Cutter.

No. 208,460. Patented Oct. 1, 1878.

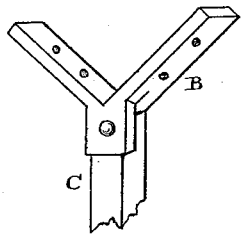

Fig. 4

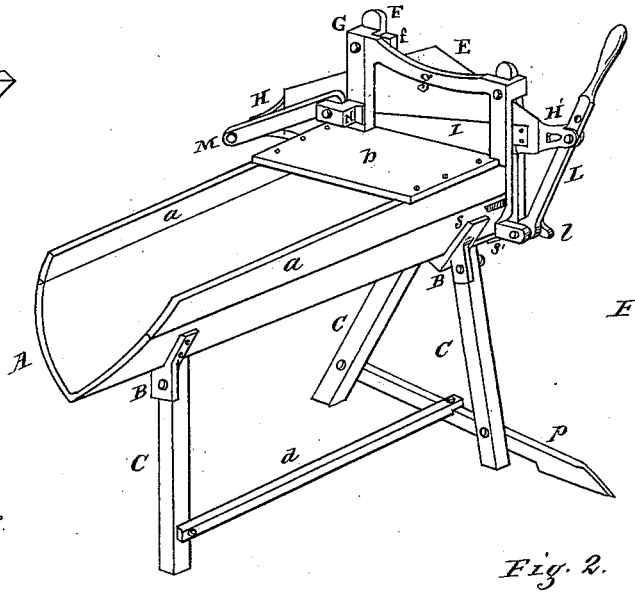

Fig. 1

Fig. 2.

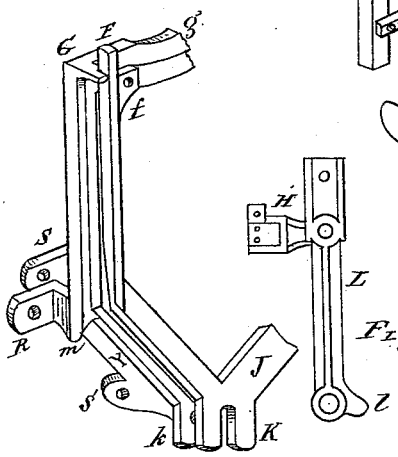

Fig. 3.

Fig. 5.

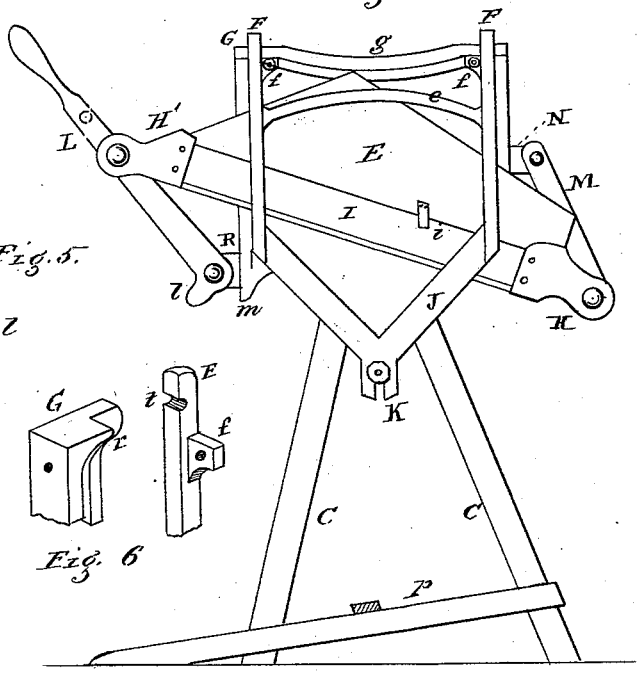

Fig. 6

WITNESSES:

A. G. Goodwin

Jacob Stauffer

INVENTOR

David K. Burkholder

ATTORNEY

UNITED STATES PATENT OFFICE.

DAVID K. BURKHOLDER, OF LANCASTER, PENNSYLVANIA.

IMPROVEMENT IN STRAW AND FEED CUTTERS.

Specification forming part of Letters Patent No. **208,460**, dated October 1, 1878; application filed August 12, 1878.

To all whom it may concern:

Be it known that I, DAVID K. BURKHOLDER, of the city of Lancaster, in the county of Lancaster, State of Pennsylvania, have invented certain Improvements in Straw and Feed Cutters, of which the following is a specification:

This invention relates to a class of feed-cutters having a V-shaped box, and a two-fold motion imparted to the knife to produce a drawing and downward cut.

The novelty consists in the peculiar construction and combination of metallic frames to act as guides and spring upon the knife, and in the manner of adaptation for storage and transportation, herein more fully set forth.

The accompanying drawings, with the letters of reference marked thereon and a brief explanation, will enable those skilled in the art to make and use the same, and in which—

Figure 1 is a perspective view, seen from the rear. Fig. 2 is a front elevation, to show the knife and shield between the two frames. Fig. 3 illustrates the combination of the two frames; Fig. 4, the Y-shaped bracket which connects the feet with the box; Figs. 5 and 6, detached portions, separately shown.

The V-shaped box A has narrow vertical sides *a* on the upper edges, joined at the top in front by a cross-board or table, *b*, projecting between the sides of a frame, G, the vertical portions of which are united at top by a concaved cross-bar, *g*, and converging below (marked Y) to fit the box, being flattened out, and provided with ears *s s'*, by which it is attached to the box. Besides, the vertical portions are provided with projecting perforated lugs N and R, to which the several levers, L M, respectively, are connected by tubular pivots and bolts through them, as well as the knife-holders H H', more fully explained. This inner frame, G, above, on the outer face of each side, has a projecting flange, *y*, being boxed out, so as to produce a rounded fulcrum edge, *r*, which fits into a groove, *t*, made across the inner face of the outer frame, F, by which fulcrum edge and groove the two frames come in contact, forming a vibrating or hanging frame attachment. There is a perforated lug, *f*, for a screw-bolt which passes through it and the inner frame G. The vertical sides of the outer frame, F, are joined above by an arched cross-piece, *e*. The lower portions, J, are beveled, and the sides converge to a central apex, where it is elongated downward, and provided with an open slot, K. A headed bolt enters through said slot and a perforated lug, *k*, on the apical portion Y of the inner frame.

Fig. 5 shows the opening raised for the tubular pivots of the hinged connections. The knife I, with its covering-shield E attached, is secured at one end to the holder H, connected with the short lever, M, the other end of the knife to the holder H', in connection with the longer lever, L, extended for a wooden handle, as shown. The stroke of the knife is arrested by the projection *l* on the lower end of the lever coming in contact with a check for the purpose, at *m*, on the inner frame of G.

The manner of arranging the levers and their connection with the ends of the knife give a facility and direction to the knife that secures the most easy and desirable cut with the least expense or waste of power.

Again, the peculiar action of the outer rigid frame, F, having all the yielding and tension upon the knife of a complication of springs when adjusted by the screws above, where it simply hangs as if hinged, allowing it to vibrate, so that when the knife is drawn up the lower angle of the frames come in close contact, and, as the knife is pressed down, the slot and play upon the bolt press it outward, so that it hugs the knife all the time in its up-and-down motion by its vibrating action, and is far superior and more durable than any spring-action to produce the result. The headed bolt also prevents the frame from yielding, so as to allow the straw to bend down. The V-shaped brackets B are adapted to receive and be connected by screws to the sides of the box A, which brackets are provided with projecting lugs, boxed out for the reception of the legs *c*, which are simply connected below by the foot cross-piece *p* and central reach *d*, secured at all connecting points with screw-bolts and nuts, so that the cutter is readily taken apart for being stored or for transportation, and readily combined for use, making a cheap and strong combination.

I am aware that V-shaped boxes are not new, and that various arrangements in com-

pound levers are in use; but I am not aware of any constructed and arranged as herein specified; and

The parts that I deem novel, and desire to secure by Letters Patent, in straw or feed cutters, are—

1. The metallic frame G, when provided with a side shield, Y, and fulcrum-flange *r* on the upper vertical portion, and having a perforated lug, N, on the inner side, above on one side, and a similar lug, R, below on the other side, the sides Y made convergent to a central union under the V-shaped box, where it forms a perforated lug, *k*, the sides Y being also provided with perforated ears *s s'*, by which they are secured to the box, all constructed and arranged as and for the purpose specified.

2. In combination with the aforesaid frame G, the frame or counterpart F, having a fulcrum notch or groove, *t*, on its inner face above in the vertical sides, side lugs *f*, perforated for bolts, said sides, marked J, made bevel and widened out V-shaped, having a prolonged slotted lug, K, at the apex, attached and operating on the outside of the knife I and shield E, substantially as and for the purpose herein set forth.

3. In combination with the frames G and F and the pivot-lugs N R, the several levers, M L, and knife-holders H H', the whole operating in the manner and for the purpose herein mentioned.

DAVID K. BURKHOLDER.

Witnesses:
A. G. GOOD,
JNO. M. AMWEG.