W. S. BARTLE.
Feed Cutter.

No. 201,732. Patented March 26, 1878.

Fig. 1.

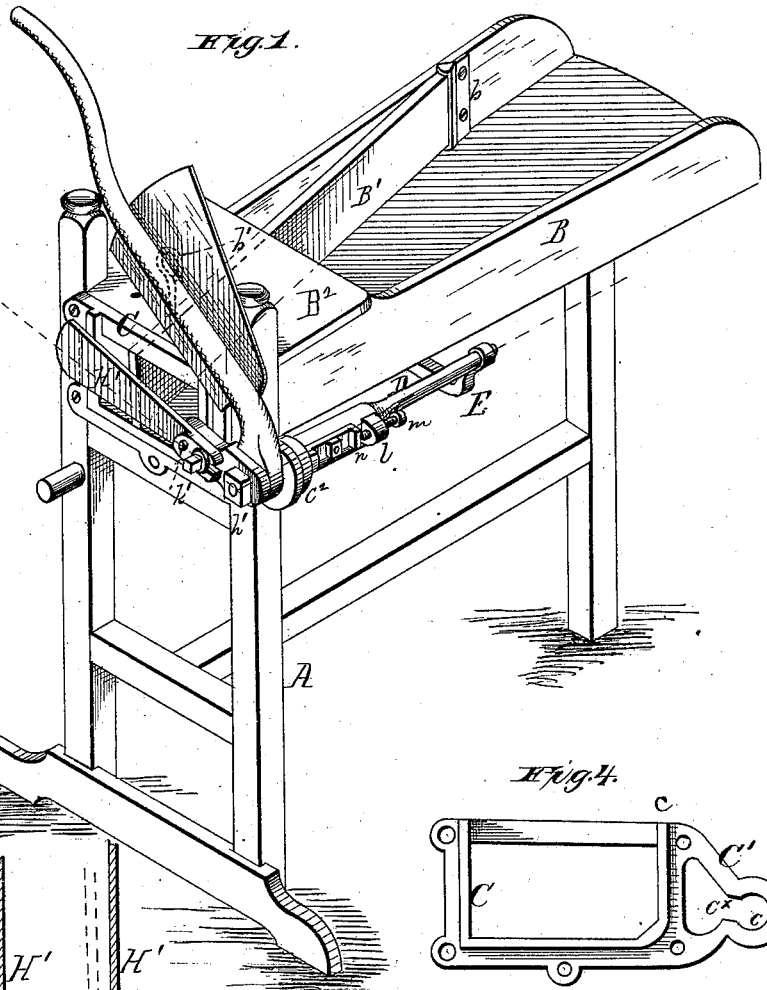
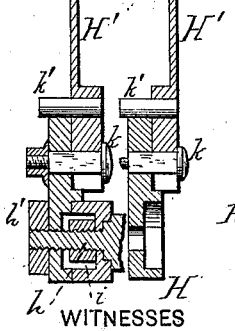


Fig. 4.

Fig. 3.



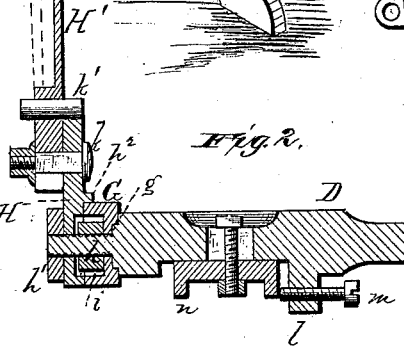
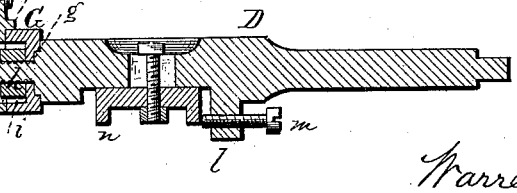


Fig. 2.



WITNESSES

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WARREN S. BARTLE, OF NEWARK, NEW YORK.

IMPROVEMENT IN FEED-CUTTERS.

Specification forming part of Letters Patent No. **201,732**, dated March 26, 1878; application filed January 3, 1878.

To all whom it may concern:

Be it known that I, WARREN S. BARTLE, of Newark, county of Wayne, State of New York, have invented certain new and useful Improvements in Feed-Cutters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a perspective view of my improved straw or feed cutter. Fig. 2 is a horizontal section through the cutter-shaft and gage-plate. Fig. 3 is a view similar to Fig. 2, showing a different adjustment of the gage-plate; and Fig. 4 is a face view of the mouth-piece or fixed cutting-plate.

Similar letters of reference denote the same parts wherever used.

My invention has for its object the improvement of the machine upon which Letters Patent were granted to myself and James Garlock, March 25, 1873.

It consists, first, in making the gage-plate arm separate and removable from the knife-arm and shaft, and adapting it to receive the gage-plate, as hereinafter described.

It further consists in a novel construction of shouldered gage-plate, and of the arm to which it is attached, whereby said plate is adapted to be applied to either side of said arm for effecting its adjustment.

It further consists in combining, with the knife-shaft, the devices for effecting the adjustment of said shaft and of the knife connected therewith, so arranged in connection with an open shaft-bearing as to adapt them to be removed and replaced with the shaft without disturbing the adjustment of the knife.

It further consists in the combination, with the box, of a laterally-adjustable compressor or compressing-board, by means of which hard substances, such as corn-stalks, may be forced under the heel of the cutter, all as hereinafter described.

In the accompanying drawings, A represents a strong upright frame, upon which is mounted the box B, these parts being of any usual or preferred form and construction. C is the mouth-piece or plate, firmly secured to the frame at the end of the box or trough B, and provided on its outer vertical face with a ledge or rib, *c*, extending around the sides and bottom of the open center or mouth through which the straw and stalks are fed outward, and forming the stationary cutting-surface over which the knife works.

The plate C has a projection, C′, upon its heel end, in which is formed a bearing at c^2 for the knife-shaft D, said bearing being open at one side at $c^\times$ to permit the passage of the lugs or projections on the shaft, for holding the latter in position and effecting its adjustment when in place, the opening at $c^\times$ permitting the shaft to be withdrawn and replaced when said lugs or projections are turned or brought into line therewith.

The inner end of the knife-shaft D is stepped or journaled in a bracket, E, adjustably secured either to the bottom of the box B or to any convenient support on the frame, as preferred, the adjustment of said bearing-bracket serving to give the knife the proper relation to the mouth-piece for causing it to work snugly against the latter over its entire face.

The shaft D, outside of the bearing c^2, is reduced in diameter, being provided at the shoulder with a squared portion at *g*, matching a socket in the heel end of the knife-lever G, and preventing the latter from turning on the shaft.

In lieu of the squared portion *g*, a V or conical shaped spur may be employed on the arm, matching a socket of corresponding shape in the end of the shaft, or vice versa—a construction which will insure the same relation always of the arm to the shaft.

Outside of the squared portion *g* the shaft, still further reduced in size, is made round, and provided with a screw-thread, and a nut, *h*, thereon entering a socket, *i*, in the outer face of the knife-lever, as shown, serves to hold said lever firmly in place on the squared portion *g*.

A short arm or plate, H, is secured to the shaft outside of the knife arm or lever G by a nut, h^1, said arm being recessed on its inner face to fit over nut *h*, and being further provided with ribs or a projecting flange, h^2, overhanging the heel of the knife-lever, and serving to prevent relative movement between said arm and lever.

This arm has a square perforation near its swinging end, and is notched at its end, adapting it to receive a through-bolt, *k*, and a pin, *k'*, the latter attached to the gage-plate H' for holding said plate firmly attached to the arm. The gage-plate H' is made in the form of a straight, or nearly straight, vertical blade, slightly expanded in vertical width toward its outer swinging end, and provided with a shoulder or projection at its shank end upon one side, for facilitating its adjustment, as follows: For cutting the shortest length of straw or feed, the blade is attached to the inner face of the arm H, with its projecting shoulder adjacent to said arm, thus bringing the blade in close proximity with the mouth-piece. For the next longer cut, the blade is simply turned over, throwing the shoulder next to the mouth-piece, with the blade still applied on the inner face of the arm.

Two additional similar adjustments of the length of cut may be made by attaching the blade in similar manner to the outer face of arm H, thus giving four absolute adjustments or positions to the same straight gage-plate, sufficient for all ordinary purposes, and obviating the uncertain adjustments effected by the devices in ordinary use.

The shaft D, at a point intermediate between its bearings, has a perforated lug or ear, *l*, formed upon it, to receive an adjusting-bolt or set-screw, *m*, operating upon a longitudinal slide, *n*, (see Fig. 2,) which abuts against the bearing-bracket C', and serves, through the action of the screw *m*, to draw the shaft inward, for causing the knife to work snugly against the face of the mouth-piece C, as required. The lug *l* and slide *n* are placed upon the shaft at a point nearly opposite to the knife or to the gage-plate H', so that when the shaft is turned over out of working position, and said lug and slide are brought into line with the opening $c^{\times}$ in the shaft-bearing, the shaft, without disturbing any of the adjustments of the knife or gage-plate described, and without removing any of its fastenings, can be withdrawn endwise, and, together with its several attachments when not in use, can be hung up in a place of safety.

For facilitating the cutting of the harder substances, such as corn-stalks, I employ a wing-board, B^1, pivoted at its heel end in a socket-piece, *b*, attached to the forward vertical wall of the box, as shown, with its outer swinging end brought into close proximity with the knife or mouth-piece, and held in any desired position of adjustment by a vertical pin, *b'*, (see dotted lines, Fig. 1,) passing through the cover-plate B^2, and bottom board, as shown, and either through or behind the wing-board, as preferred.

By this arrangement the stalks are moved toward the heel end of the knife, where it acts with the greatest leverage, and they are also held firmly compressed at that point under the action of the knife. The pin *b'* can be omitted or withdrawn, and the board can be held in place or moved back and forth by hand for compressing the stalks at each stroke of the knife, if preferred. The form of the compressor may be varied from that shown, so long as it is adapted to force the stalks nearer to the heel of the cutter.

It will be seen that by making the arm H, to which the gage-plate is attached, separate from the knife-lever and its shaft or pivot, the parts can be replaced, when broken, at much less expense than when they are formed together in the ordinary way.

The operation of the several parts will be readily understood without further description.

Having now described my improved machine, I would state that I am aware that adjustable gage-plates are not new; also, that devices similar to those employed by me have been used for adjusting the knives or cutters, and that the latter have been adapted to be removed from the machine when not in use.

I am also aware that compressing devices have been employed, under different arrangement from mine, for compacting the material to be operated upon. I therefore do not claim said parts, broadly, and irrespective of arrangement; but

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

1. The gage-plate arm, made separate from the knife-lever, and adapted to be applied thereto, and to receive the gage-plate, as described.

2. The shouldered gage-plate, jointly with and adapted to be applied to either side of the gage-plate arm.

3. The knife-shaft, carrying the devices for effecting its longitudinal adjustment, jointly with the open bearing in an arm of the face-plate, substantially as described, whereby the shaft is locked in its bearing when the knife is in working position, while at the same time it is adapted to be removed from the machine, together with the knife and its adjusting devices, when the knife is turned out of working position, as described.

4. The laterally-adjustable compressing-board, by means of which the stalks to be cut can be forced up toward the heel of the knife, as described.

WARREN S. BARTLE.

Witnesses:
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H. H. STANSELL.