

W. Gale,
Straw Cutter.
No. 31,001. Patented Dec. 18. 1860.

Fig. 1

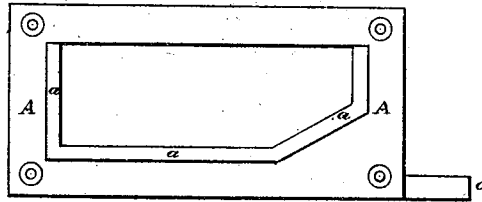


Fig. 2

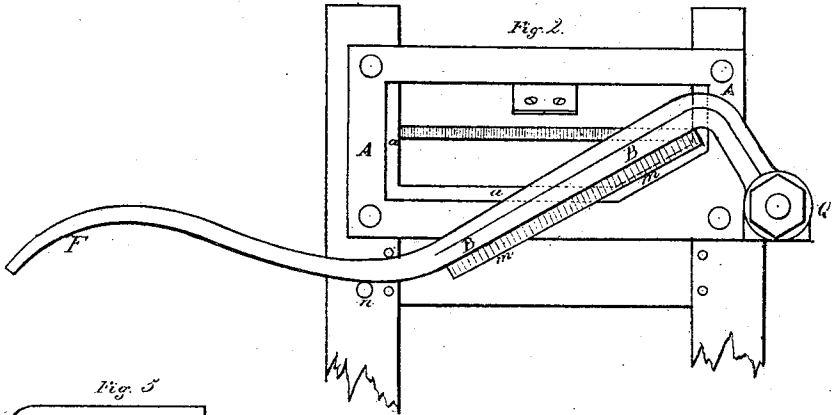


Fig. 5

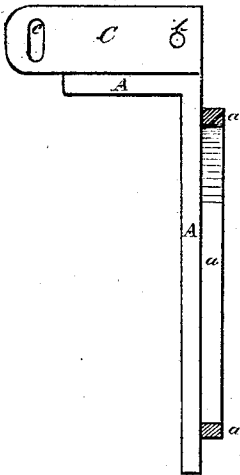


Fig. 3

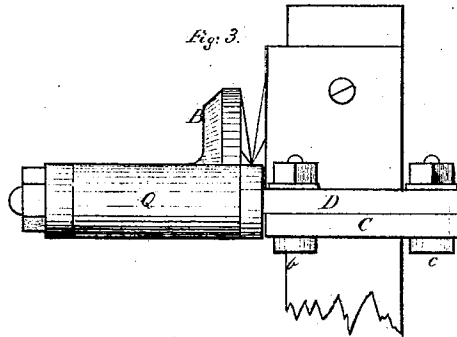


Fig. 4



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UNITED STATES PATENT OFFICE.

WARREN GALE, OF CHICOPEE FALLS, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND
B. B. BELCHER, OF SAME PLACE.

MACHINE FOR CUTTING STRAW, &c.

Specification forming part of Letters Patent No. 31,001, dated December 18, 1860; Reissued May 30,
1865, No. 1,977.

To all whom it may concern:

Be it known that I, WARREN GALE, of Chicopee Falls, in the county of Hampden and State of Massachusetts, have invented
5 a new and Improved Mode of Attaching the Moving Chop or Knife in Hay, Straw, and Stalk Cutters; and I do hereby declare that the following is a full, clear, and exact
10 description of the same, reference being had to the accompanying drawings and to the figures and letters thereof.

In these drawings, Figure 1, is a front elevation. Fig. 2, is a front elevation. Figs. 3, 4, and 5 represent details of differ-
15 ent parts of my improvements.

In all these figures similar parts are indicated by similar letters.

The nature of my invention consists in so combining the stud or center pin upon
20 which the lever of the knife is hung or works with the mouth piece of the cutting box that it shall be adjustable so as to give the knife the necessary side pressure or bearing against the mouth piece of the box
25 for the efficient performance of its functions.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct my cutting box in the usual
30 manner with bottom and side boards supported on legs or framing and the box or sides somewhat tapering toward the cutting end, so as to compress the fodder while being cut. I also employ a top board or platen
35 in the usual manner for giving vertical compression to the fodder by means of a spring or otherwise, and I also employ any of the known means which may conveniently answer the purpose, to force the fodder up to
40 the cutter or knife, or it may be forced up by hand. Upon the narrow end of this cutting box, I securely place the cast iron mouth piece, A, A, Figs. 1, 2, 3 and 5, upon the front of which and in line with the sides
45 and bottom of the cutting box, I form the projecting edges *a, a, a*, Figs. 1, 2 and 5, which edges are filed or ground to the same plane. These form the stationary cutting edges of the machine and are traversed diagonally by the moving chop or knife *m, m*,
50 Fig. 2, which is attached to the lever F B, which lever is so formed as to give what is called a draw cut, as shown in Fig. 2.

Upon the casting or mouth piece A, A,

Figs. 1, 3 and 5, I form the projection or
lug C, to serve as a carrier for the stud or
center pin of the knife lever F B. In this
carrier C, I make two slots, as shown at Fig.
5, for the purpose of allowing the bolts *b*
and *c*, which secure the stud D to the car-
rier, to traverse back and forth, as shown at
Fig. 3, and thereby afford the necessary side
adjustment to the knife. But in order to
give the knife angular adjustment which is
also requisite, so that it can be made to bear
65 from heel to point on the cutting edges *a, a, a*, Figs. 1 and 2.

I form a slot in the stud D, Fig. 3, as
shown at C, Fig. 4, which slot, when the
stud is in position, will be at right angles
70 with the slots in the carrier C. By means of this arrangement, the bolt *b*, Fig. 3, will serve as a center for angular adjustment, while the slot *c*, Fig. 4, will admit of the
vibration of the stud upon the said bolt *b*, as
75 a center, to the required extent. The stud is then secured in position by the pinch of the two bolts *b* and *c*, Fig. 3. I make the knife lever F B of cast iron and attach the
steel cutter *m, m*, to it by short countersunk
80 bolts or rivets, in the usual manner, and the fulcrum Q, I form with a deep socket, as shown in Fig. 3, so as to give stability to the
knife *m, m*, which latter is operated by hand
by the part F of the lever F B, Fig. 2, and
85 is stopped on the completion of the cut by the stud *n*, Fig. 2.

The advantages of this mode of construction are very great in practice, as the adjustment gives the greatest possible ease of
90 the operation and adds to the durability of the apparatus by permitting the cutting edges to be ground, set up or removed, as often as required, until completely worn out.

In machines of this kind for cutting fod-
95 der, as heretofore constructed, there is no convenience for adjustment or sharpening of the cutting edges, and as they invariably have the stud upon which the knife lever works attached to the wood work of the ap-
100 paratus, they are continually getting out of line and order by the warping, shrinking or swelling of the timber, thus causing them to be operated with difficulty when the knife stands out from the face of the mouth piece
105 and leading to rapid self destruction when the knife unduly impinges upon the cutting edges of the mouth piece. But in my im-

proved mode of construction, the center stud of the knife lever being attached to a carrier formed in the same piece with the stationary cutting edges, or mouth piece of the machine and being capable of adjustment in all directions completely obviates all the defects which have attended the use of the lever cutting box, without adding to its cost or increasing its complexity. On the contrary, it constitutes such a machine as any one capable of using it may keep in repair without any expense whatever except that of the short time required for the purpose.

Having thus described the nature and

construction of my said improvements, what I claim as my invention and desire to secure by Letters Patent is—

The combination of the stud D, the carrier C and the mouth piece A A, with the slots for lateral and angular adjustment of the cutter or knife, *m, m*, to the stationary edges *a, a, a*, of the mouth piece A A, substantially as described.

WARREN GALE.

Witnesses:

ALFRED W. TAYLOR,
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