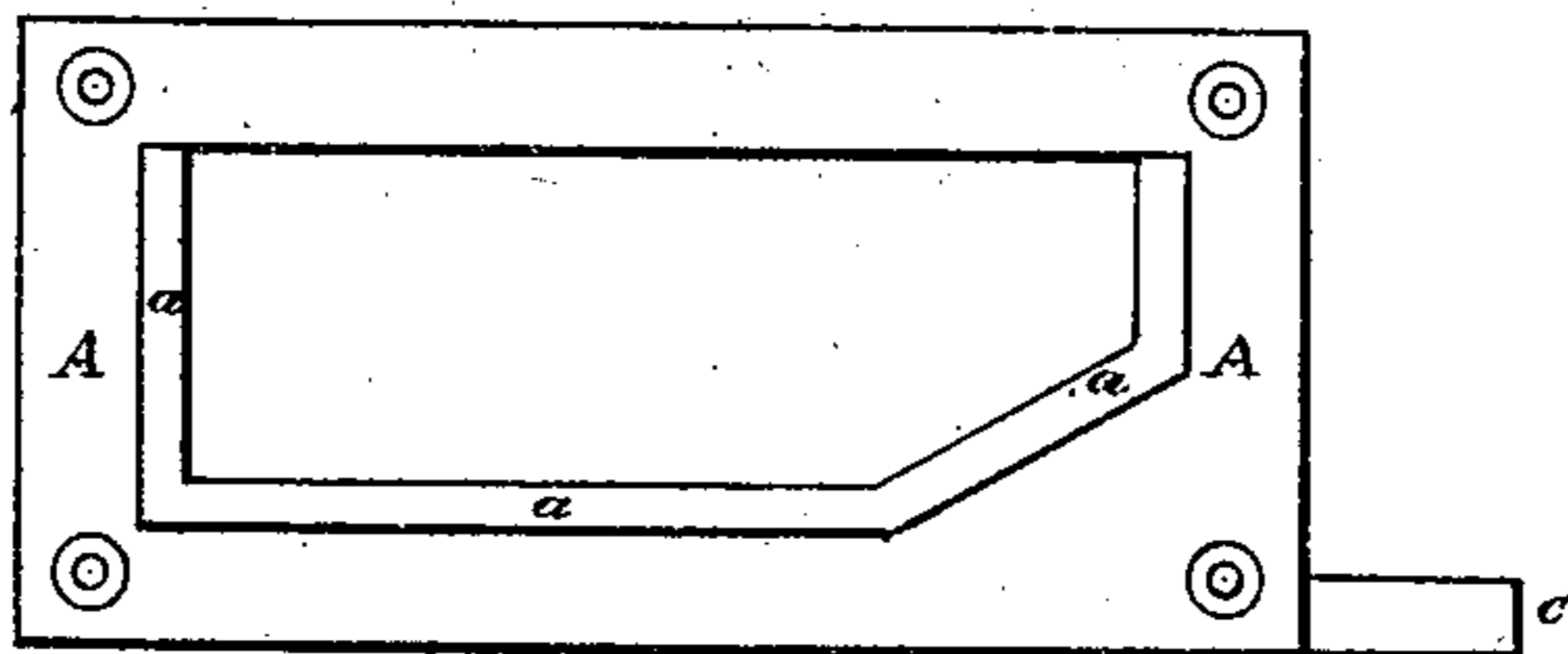
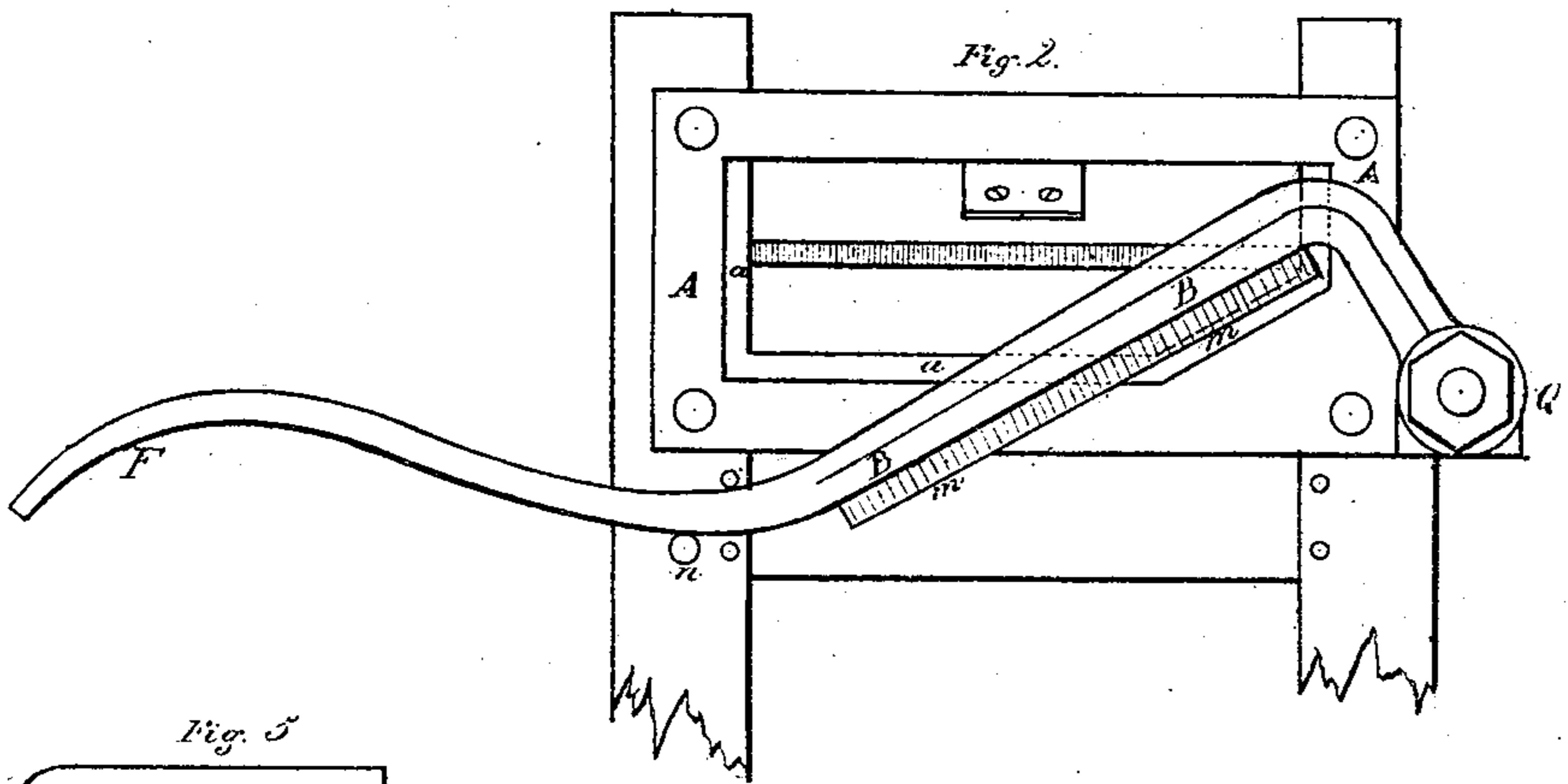


*W. Gale,*  
*Straw Cutter.*  
*No. 31,001.                      Patented Dec. 18. 1860.*

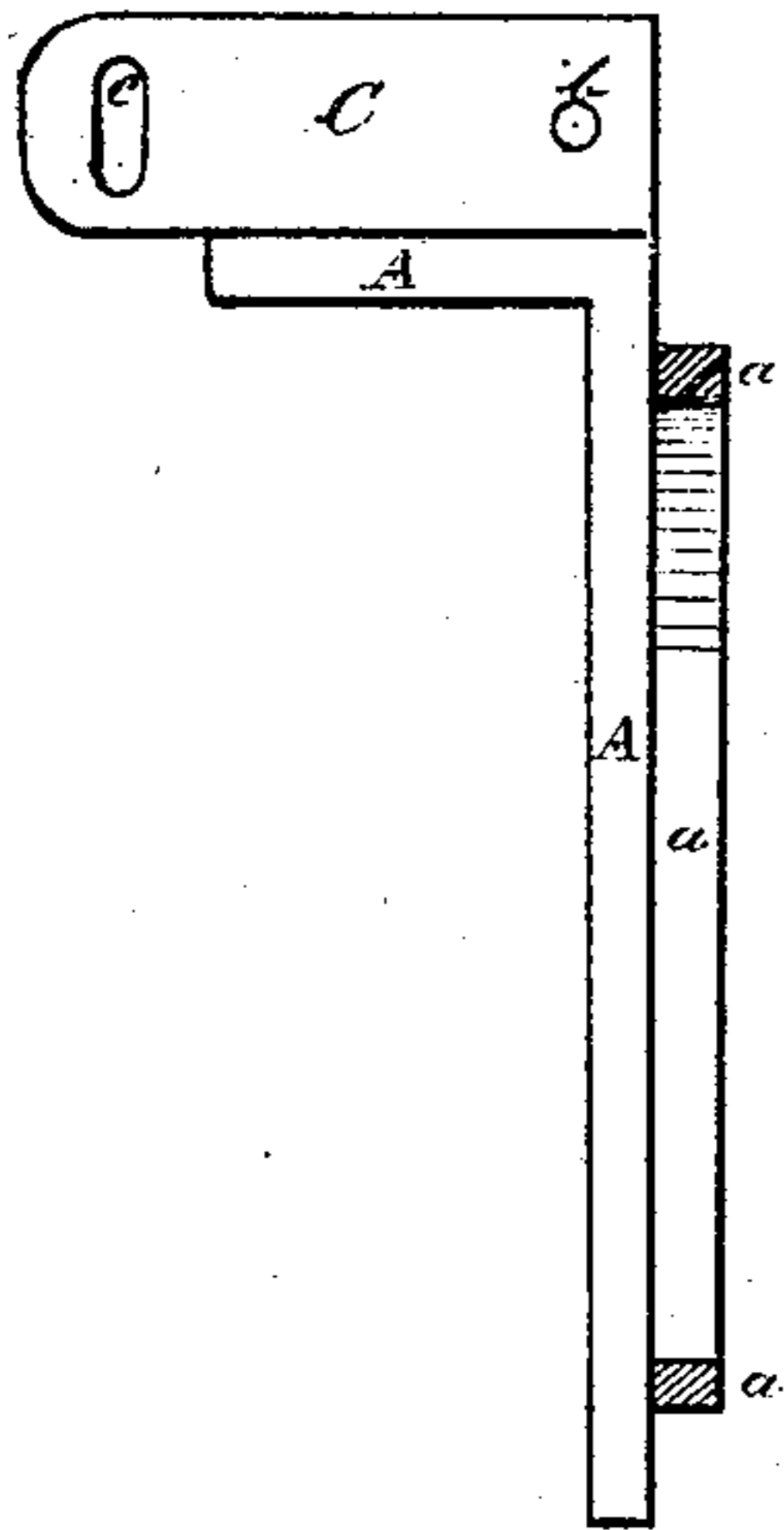
*Fig. 1*



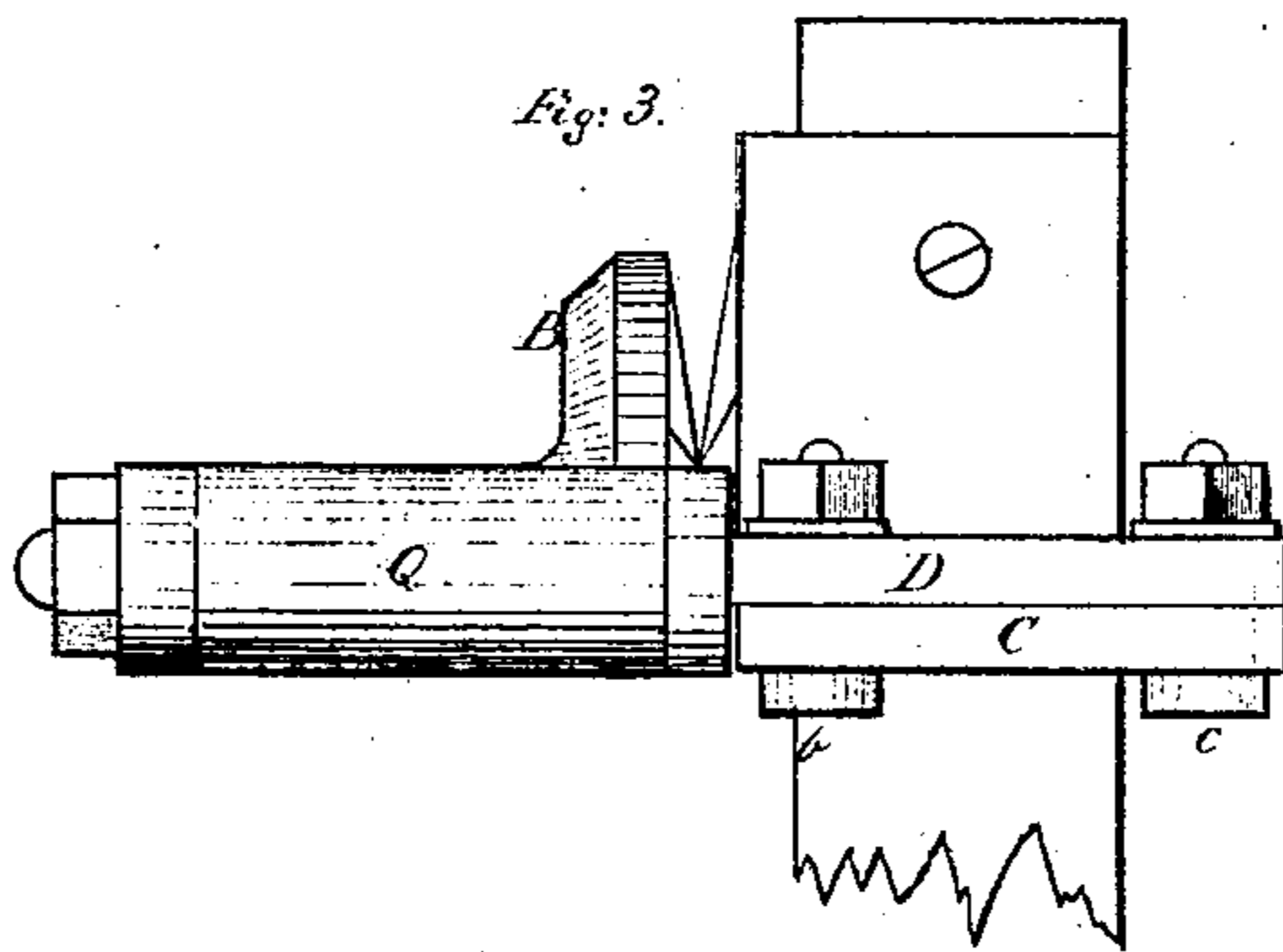
*Fig. 2.*



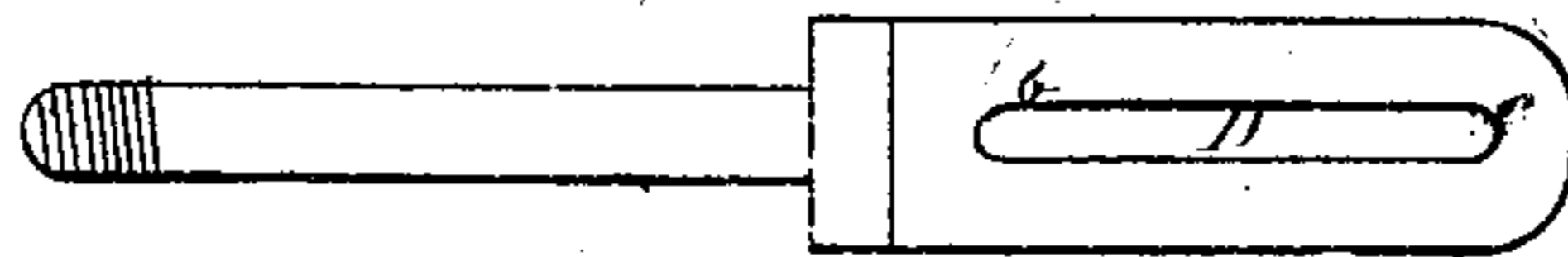
*Fig. 3*



*Fig. 3.*



*Fig. 4.*



*Inventor Wm. Gale*  
*Witness Geo. W. Roberts*  
*Alfred W. Taylor*

# 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  
description of the same, reference being had  
10 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 indi-  
cated 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 sup-  
ported on legs or framing and the box or  
sides somewhat tapering toward the cutting  
end, so as to compress the fodder while be-  
ing cut. I also employ a top board or platen  
35 in the usual manner for giving vertical com-  
pression to the fodder by means of a spring  
or otherwise, and I also employ any of the  
known means which may conveniently an-  
swer 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 cut-  
ting 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 di-  
50 agonally by the moving chop or knife *m, m*,  
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 55  
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- 60  
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*, 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 construc-  
tion are very great in practice, as the ad-  
justment 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,  
GEO. W. ROBERTS.