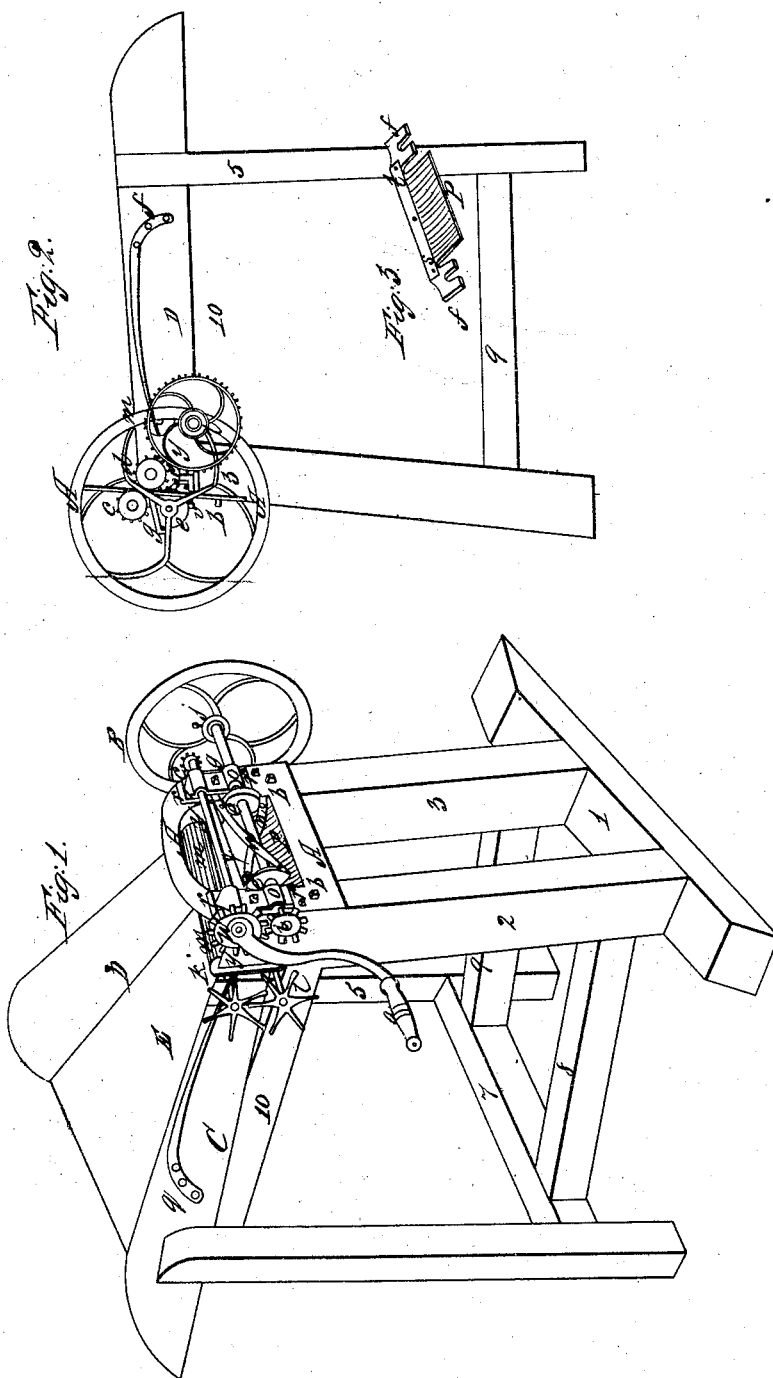


*S. Gilson.*

*Straw Cutter.*

*N<sup>o</sup> 807.*

*Patented Jun. 27, 1838.*



# UNITED STATES PATENT OFFICE.

SAMUEL GILSON, OF ARCADIA, NEW YORK.

## MACHINE FOR CUTTING STRAW AND OTHER FODDER.

Specification of Letters Patent No. 807, dated June 27, 1838.

*To all whom it may concern:*

Be it known that I, SAMUEL GILSON, of Arcadia, in the county of Wayne and State of New York, have invented a new and useful Improvement in Machines for Cutting Straw and other Kinds of Fodder of a Similar Nature; and I do hereby declare that the following is a full and exact description of the said machine as improved by me and is accompanied by a drawing to which this specification or description refers.

Figure 1 is a perspective view. Fig. 2 is a side view of said machine. Fig. 3 is a view of a dissected part.

No. 1 Fig. 1 represents the sill or step; 2 and 3 front posts 2 ft. 2 inches long exclusive of tenons set  $13\frac{1}{2}$  in. distant from out side to out side; 4 and 5 back posts 2 ft. 10 in. long; 6 and 7 cross girts 1 ft. 6 in. long; 8 and 9 bottom girts 2 ft. 3 in. long; 10 Figs. 1 and 2 top girts. C and D Fig. 1 and D Fig. 2 side boards, and E Fig. 1 bottom of the box.

A A Fig. 1 represents a cast iron frame  $13\frac{1}{2}$  inches across parallel with the shafts  $\frac{1}{4}$  of an inch thick. The dark shade around the edge represents a bead.

*r r r r* represents four concave projections standing in relief so far that the shafts when fitted to these concavities may clear the bead of the frame. These concavities are the same distance from center to center as the semidiameter of cog wheel *w* and pinion *i* and serve as a part of the boxes for the shafts *w c* and *i j* to revolve in; *o* and *o* represent two long caps with a concavity near each end fitted to the concavities *r r r r*, thus forming the boxes. Through the center of each cap a bolt passes and is screwed into the cast iron frame A A. *b* and *b* two bolts whose nuts are in the top girts, thus screwing the girts and cast iron frame to the posts 2 and 3. Between the last mentioned bolts and the lower projections *r r* two set screws pass through the frame and set against the feet of the stand which holds the stationary or bed knife, thereby preventing the bed knife from coming into too close contact with the rotary knives. This will be better understood by a view at *v* and *s* Fig. 2. Below these set screws and from the back side of the cast iron frame A A Fig. 1 as seen between *v* and *y* Fig. 2 two stands project. To these stands is bolted the frame holding the bed knife.

*g* Fig. 1 represents the end of a stand to

which a stud holding the intermediate gear wheel *d*, Fig. 2 is bolted.

*a w* Fig. 1 represents the crank, *w* cog wheel of 40 cogs; *w c* wrought iron shaft; *c* pinion 12, 15, 20, or 25 cogs as the operator may require; *i* pinion 20 cogs driven by the wheel *w* of 40 cogs. (I would here state that the number of cogs should be taken from the specification as it is not always convenient in all cases to represent the exact number on the draft.) B balance wheel 20 inches diameter weighing 30 pounds; *i j* wrought iron shaft to which the pinion *i* and the balance wheel are attached, also the cast iron heads *e e* to which the rotary knives *n* and *n* are molted. These knives are set 90 degrees spiraling or twisting and are also bent to conform to the circle described by the ends, the back being pitched down from the circle described by the edge to give room for the bolt heads to clear the bed knife. These knives are ground or turned after being bolted to the heads so that a perfect spiral and cylindric edge is formed. Below these knives at P, the concave wing of the frame holding the bed knife is represented. This wing serves to convey the fodder out side of the machine when cut. This frame of the bed knife is represented by Fig. 3, is made of cast iron and the bed knife is bolted to a flanch by bolts passing through said flanch and screwed into the bed knife. *s t* bed knife; *f* and *f* feet with openings to receive bolts; P concave wing.

*k* and *l* Fig. 1 represent finger gears with 6 bags each to whose shafts wooden rollers are attached.

*m m* Fig. 1 represents the top roller near each end of whose shaft a stiff steel spring presses for the purpose of holding the fodder firmly while in the act of cutting. Into each of these rollers six blades of sheet iron are bedded and left one eighth of an inch from the surface for the purpose of assisting the rollers to hold the fodder. These rollers are  $3\frac{1}{4}$  inch diameter. The ends of these rollers are represented by the light shaded circles *l* and *m* Fig. 2, although they are entirely within the side boards D opposite the finger gear *l* Fig. 1 is the gear wheel, *l* Fig. 2 of 60 cogs. This is driven by the pinion *c* with an intermediate wheel *d*, of any convenient number of cogs revolving on a stud attached to the stand *g* Fig. 1.

*e* Fig. 2 represents one of the cylinder heads on which is seen the end of one of the

rotary knives as coming in contact with the bed knife. The cylinder heads to which the rotary knives are bolted are 4 inches in diameter. Between *k* and *l* Fig. 1 and *m* and *l* Fig. 2 is a cast iron stand 6 inches long with an opening in which the feed rollers revolve and the top one rises or falls according to the quantity of fodder passing between them. *q* Figs. 1 and 2 are steel springs fastened to the side boards pressing upon the top roller shaft. The spaces between the stand *k l* Fig. 1 and the cast iron frame *A A* also between the stand *m l* Fig. 2 and the cast iron frame *A A* are filled with cast iron plates fitted to the spaces called cheeks. These are represented at *y* Figs. 1 and 2. To these cheeks a top and bottom is fitted thus forming a throat for passing the fodder between the knives. The top of the throat is represented by the dark shade at *x* below the shaft *w c* Fig. 1. The pinion *c* or change wheel can be taken off and a larger or smaller one put on in its stead. This is done for the purpose of driving the feed rollers faster or slower so as to cut the fodder longer or shorter. When this is done the intermediate wheel *d* must be adjusted by

moving the stud on which it revolves so as to let it mesh both into the pinion *c* and into the gear wheel *l* of 60 cogs. In using a change wheel or pinion *c* of 12 cogs the machine cuts half an inch, one of 20 cogs  $\frac{3}{4}$ , one of 25 cogs one inch long.

To set the machine in motion or operation place the fodder to be cut in contact with the feed rollers and with the right hand take hold of the handle represented by *a* Fig. 1 and draw it up toward that part of the machine represented by *C*, and continue to turn in the same rotary direction and the fodder will be passed between the rotary and bed knife and cut off.

What I claim as my improvement and desire to secure by Letters Patent is—

The mode of applying the intermediate gear wheel *d* Fig. 2 on a movable stand so as to admit different sized pinions for driving the feed rollers and thereby changing the feed in combination with the feed rollers and the rotary cutters.

SAMUEL GILSON.

Witnesses:

WILLIAM BRYANT,  
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