(No Model.)

W. E. DAVIS.

STRAW CUTTER.

No. 408,221. Patented Aug. 6, 1889.

Fig. 1.

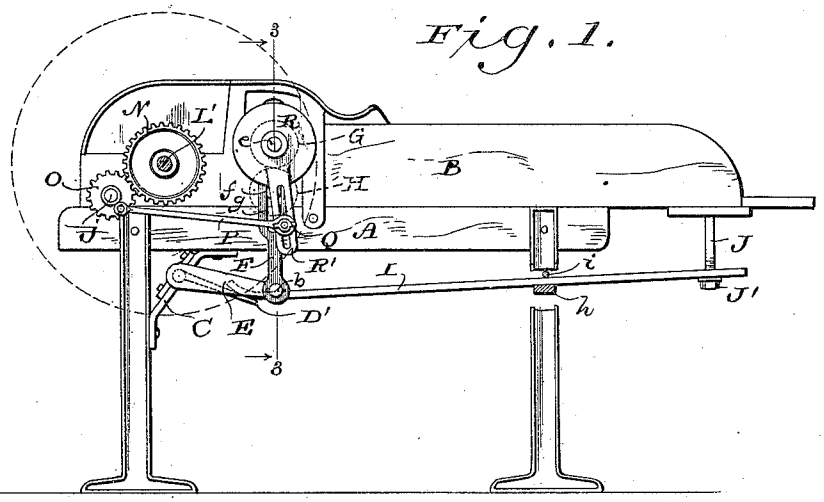


Fig. 2.

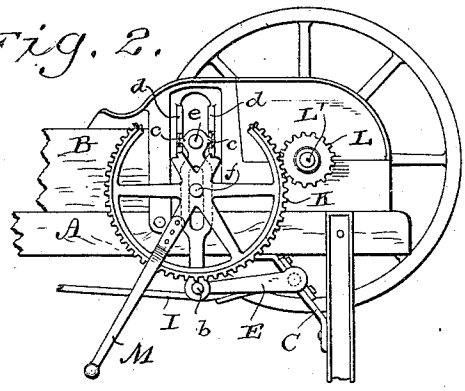


Fig. 3.

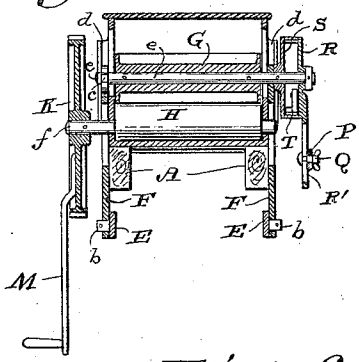


Fig. 5.

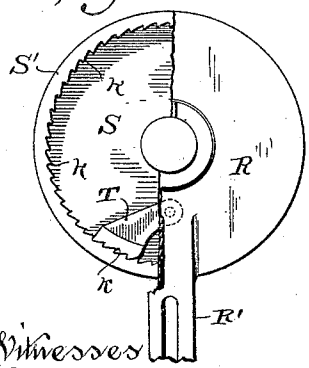


Fig. 4.

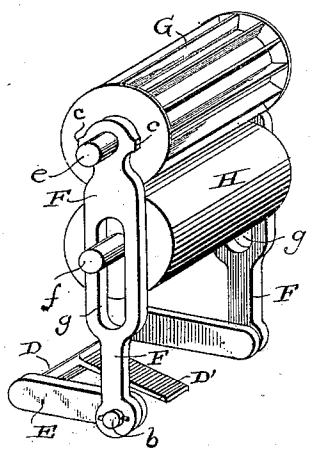
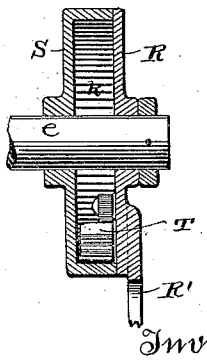


Fig. 6.



Witnesses
Geo W Young.
William Klug.

Inventor
William E. Davis
By Stout & Underwood
Attorneys

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM E. DAVIS, OF RACINE, WISCONSIN, ASSIGNOR TO THE S. FREEMAN & SONS MANUFACTURING COMPANY, OF SAME PLACE.

STRAW-CUTTER.

SPECIFICATION forming part of Letters Patent No. 408,221, dated August 6, 1889.

Application filed August 6, 1888. Serial No. 282,031. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. DAVIS, of Racine, in the county of Racine, and in the State of Wisconsin, have invented certain new and useful Improvements in Straw-Cutters; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to straw-cutters; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents an elevation of one side of a straw-cutter constructed according to my invention; Fig. 2, a similar view of the opposite side of the machine. Fig. 3 is a section on line 3 3 of Fig. 1. Fig. 4 is a detail view of the feed-rollers and shackle and slotted vertical arms that form parts of a straw-cutter constructed according to my invention, and Figs. 5 and 6 are detail views of a ratchet mechanism that also forms part of the machine.

Referring by letter to the drawings, A represents the frame, and B the box, of my straw-cutter. To braces C, that form part of the frame A, I journal a shackle consisting of a transverse bar D and longitudinal arms E, the latter having studs *b*, that serve as bearings for the lower ends of slotted vertical arms F. These slotted vertical arms are preferably provided at their upper ends with lugs *c*, that work on ways *d* on the sides of the box B.

Journaled in the upper ends of the slotted vertical arms F are the journals *e* of the upper feed-roller G; but the journals *f* of the lower feed-roller H pass through the slots *g* in said vertical arms and have their bearings on the machine-frame.

Projecting rearward from the transverse bar D, that forms part of the shackle above described, is a tongue D′, and supported on this tongue is the forward end of a spring-board I, the latter being fulcrumed on a cross-brace *h* of the machine-frame and held down in contact therewith by means of a rod *i*. Depending from the bottom of the box B, to pass through the rear end of the spring-board I, is a stem J, and screw-threaded to this stem is a set-nut J′, that serves to regulate the tension of said spring-board. The spring-board I, through the medium of the shackle connected to the slotted vertical arms F, serves to hold the upper feed-roller G down to its work, and it will be readily seen that the pressure of said spring-board is automatically proportioned to the resistance of the stock that passes under said roller; or, in other words, the pressure of the spring-board is at all times equal to the resistance of the stock. The slots *g* in the vertical arms F permit the latter to move up and down on the journals *f* of the lower feed-roller H, accordingly as the upper feed-roller G is acted upon by the stock and the pressure of the spring-board, the shackle connecting said arms with the machine-frame acting as a toggle to prevent any restriction of the operation just described.

A driving gear-wheel K is fast on one of the journals *f* of the lower feed-roller H, and meshes with a pinion L on the knife-cylinder shaft L′, and while I have shown a crank M connected to said gear-wheel, it is obvious that a belt-pulley may be substituted therefor, especially on large machines.

Fast to the knife-cylinder shaft L′ on the side of the machine opposite the gear-wheel K is a pinion N in mesh with an idler-pinion O, that has its bearing on a stud *j*, projecting from the box B near the forward end of the latter. Wristed to the idler-pinion O is one end of a pitman P, the other end of this pitman being connected by means of a set-bolt Q to a slotted arm R′, that depends from a disk R loose on the adjacent journal of the upper feed-roller. Fast on said journal of the upper feed-roller adjacent to the disk R is another disk S, the latter being provided with an outwardly-projecting flange S′, that has ratchet-teeth *k* upon its inner periphery to engage a gravity-pawl T, the latter being pivoted to said disk R. When the pitman P is on its backstroke, the disk R is partially revolved to carry the pawl T back for a new grip with relation to the ratchet-teeth *k*, and when said pitman makes its forward stroke said pawl causes the disk S and the upper feed-roller G to make a partial revolution, and thereby carry the stock forward to come in the path of the knife-cylinder. By having the pitman P adjustably connected to the arm R′, that depends from the disk R, the

throw of said pitman can be readily regulated to move the upper feed-roller G more or less, according to the length of cut the operator may desire to make.

The stroke of the pitman P is so timed that there is no forward movement of the stock while a cut is being made; but just as soon as this operation is completed the pawl T actuates the ratchet-disk S and the motion is communicated to the upper feed-roller G to bring a predetermined length of said stock into position for another cut.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a straw-cutter, the combination of a shackle journaled in the machine-frame, vertical arms pivotally connected to the shackle and slotted to have loose play on the journals of the lower feed-roller, the upper feed-roller journaled to the arms, a spring-board fulcrumed on a cross-brace of the machine, a rod arranged to hold the spring-board in contact with said cross-brace, a stem depending from the feed-box to pass through the rear end of the spring-board, and a set-nut arranged on the stem to impinge against said spring-board, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Racine, in the county of Racine and State of Wisconsin, in the presence of two witnesses.

WM. E. DAVIS.

Witnesses:
ANNIE SIMONSON,
S. S. STOUT.