

(No Model.)

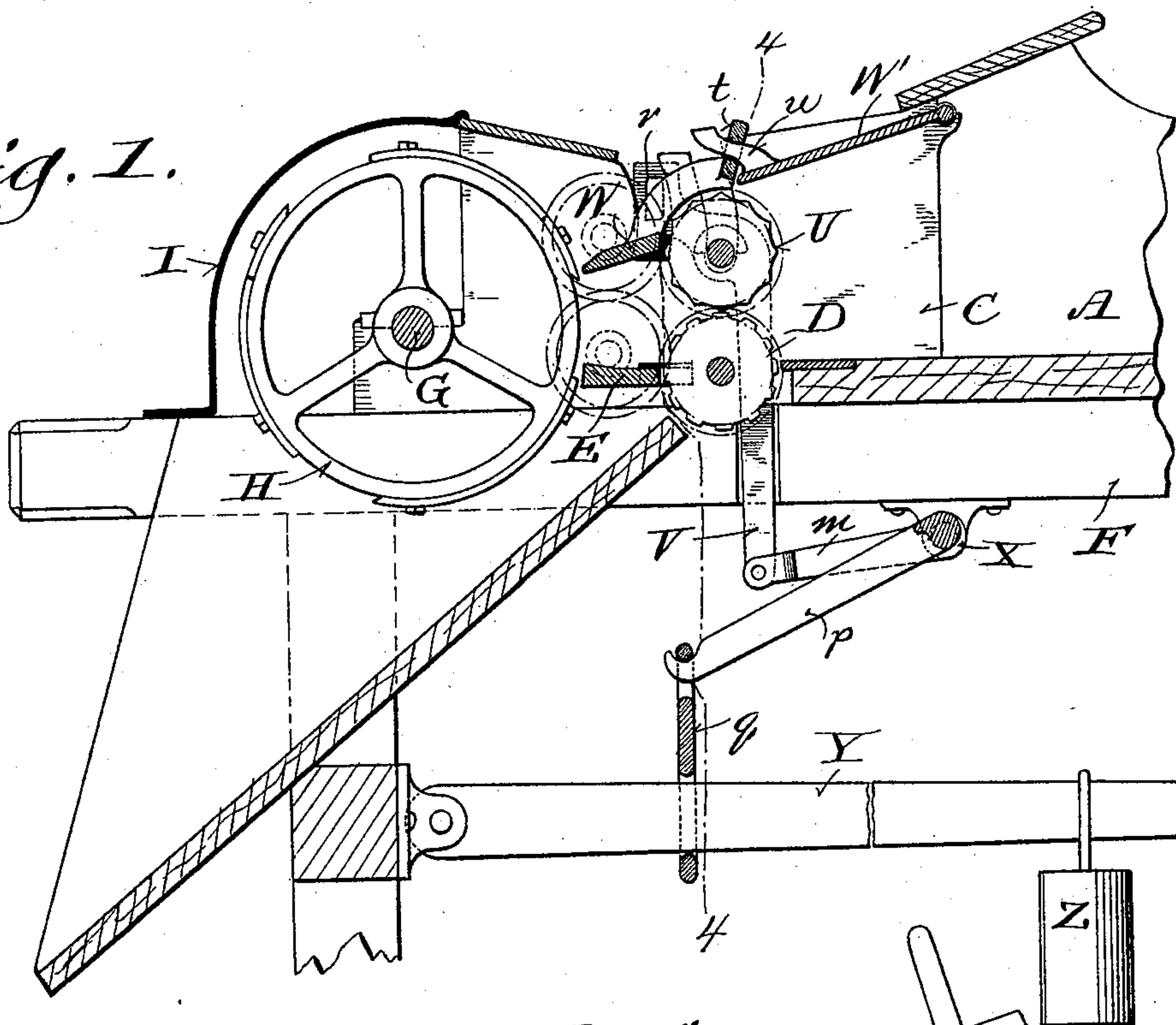
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J. A. FRENZEL.  
STRAW CUTTER.

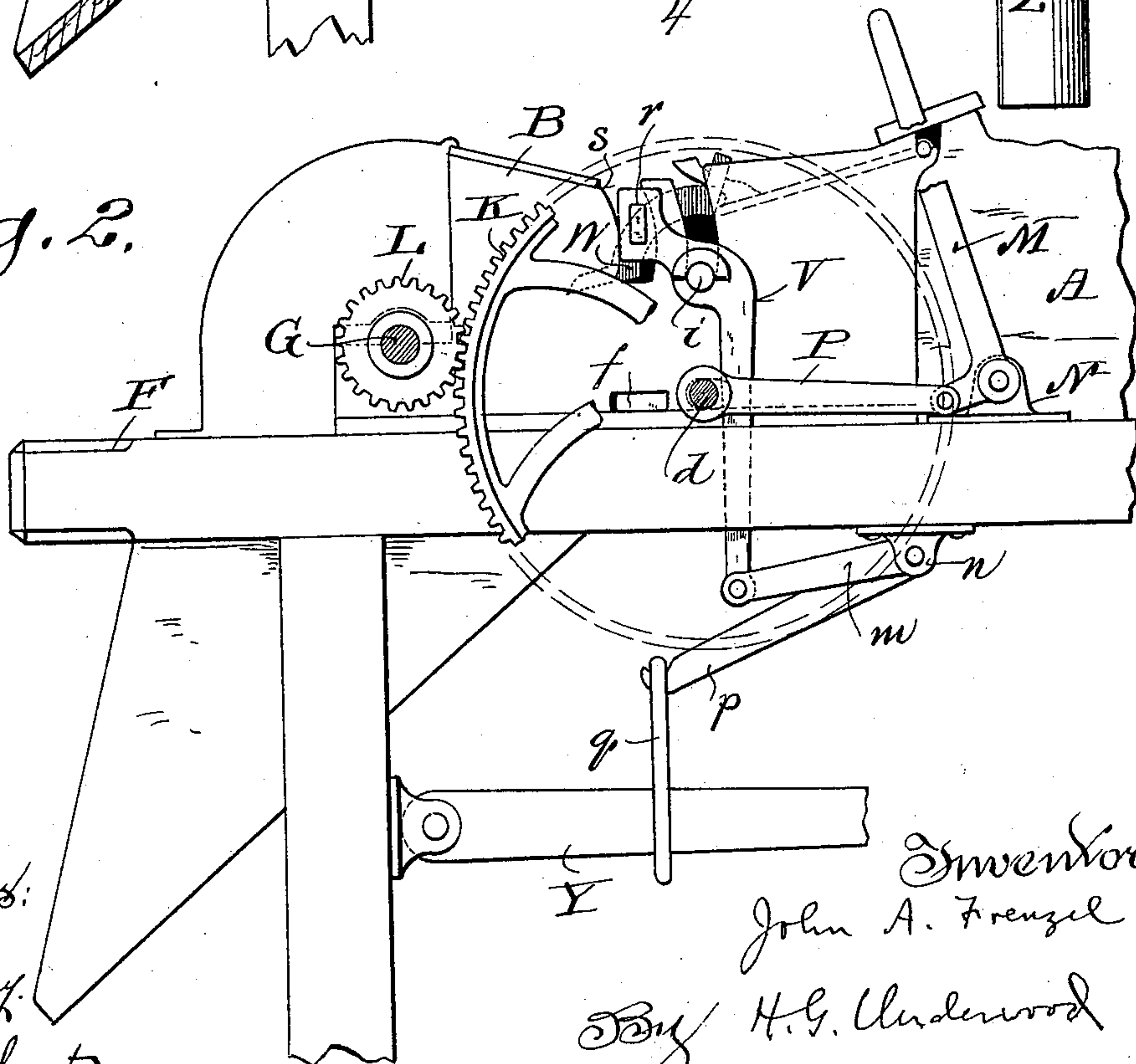
No. 594,074.

Patented Nov. 23, 1897.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
Geo W Young  
N.E. Oliphant

Inventor:  
John A. Frenzel  
By H.G. Underwood  
Attorney

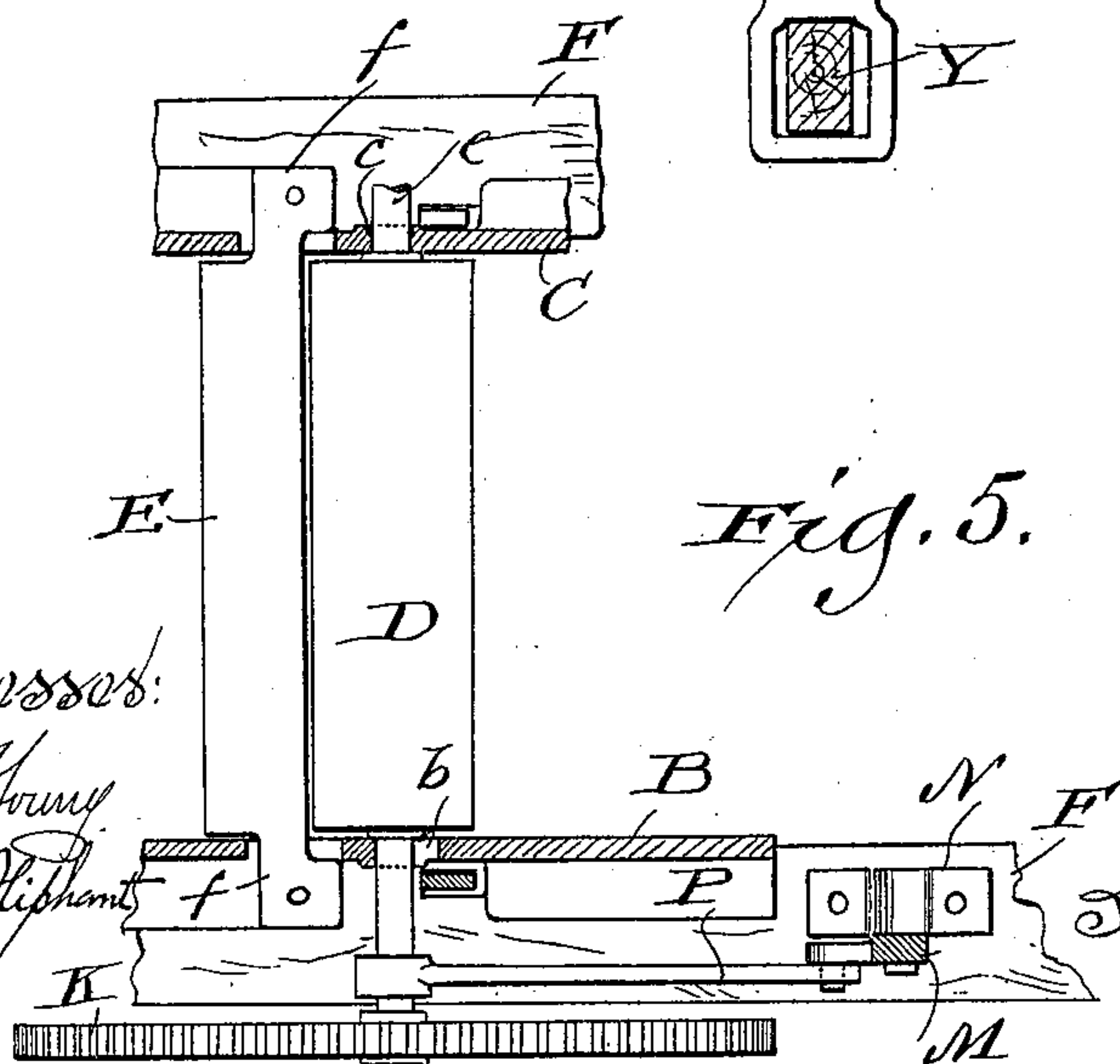
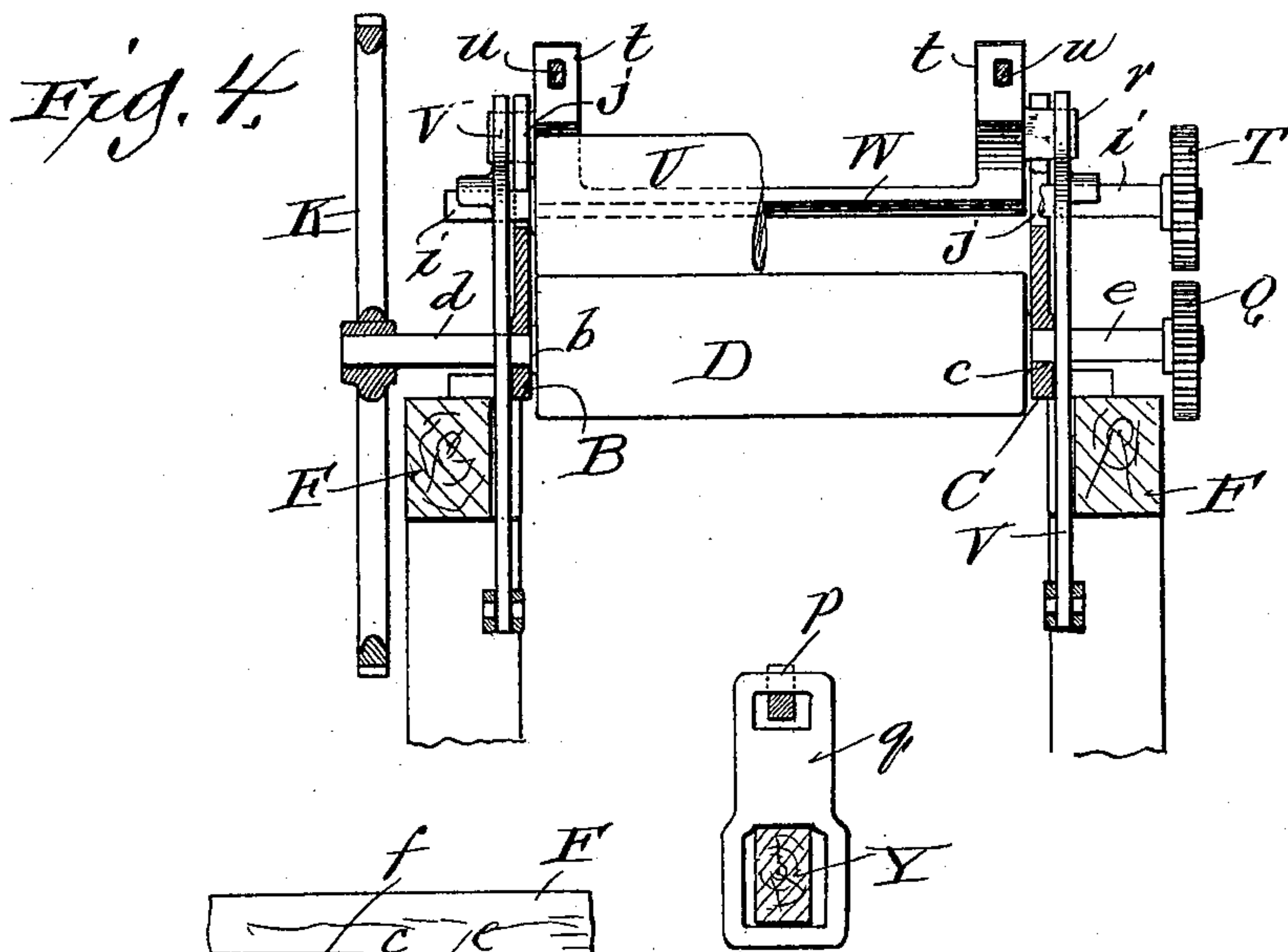
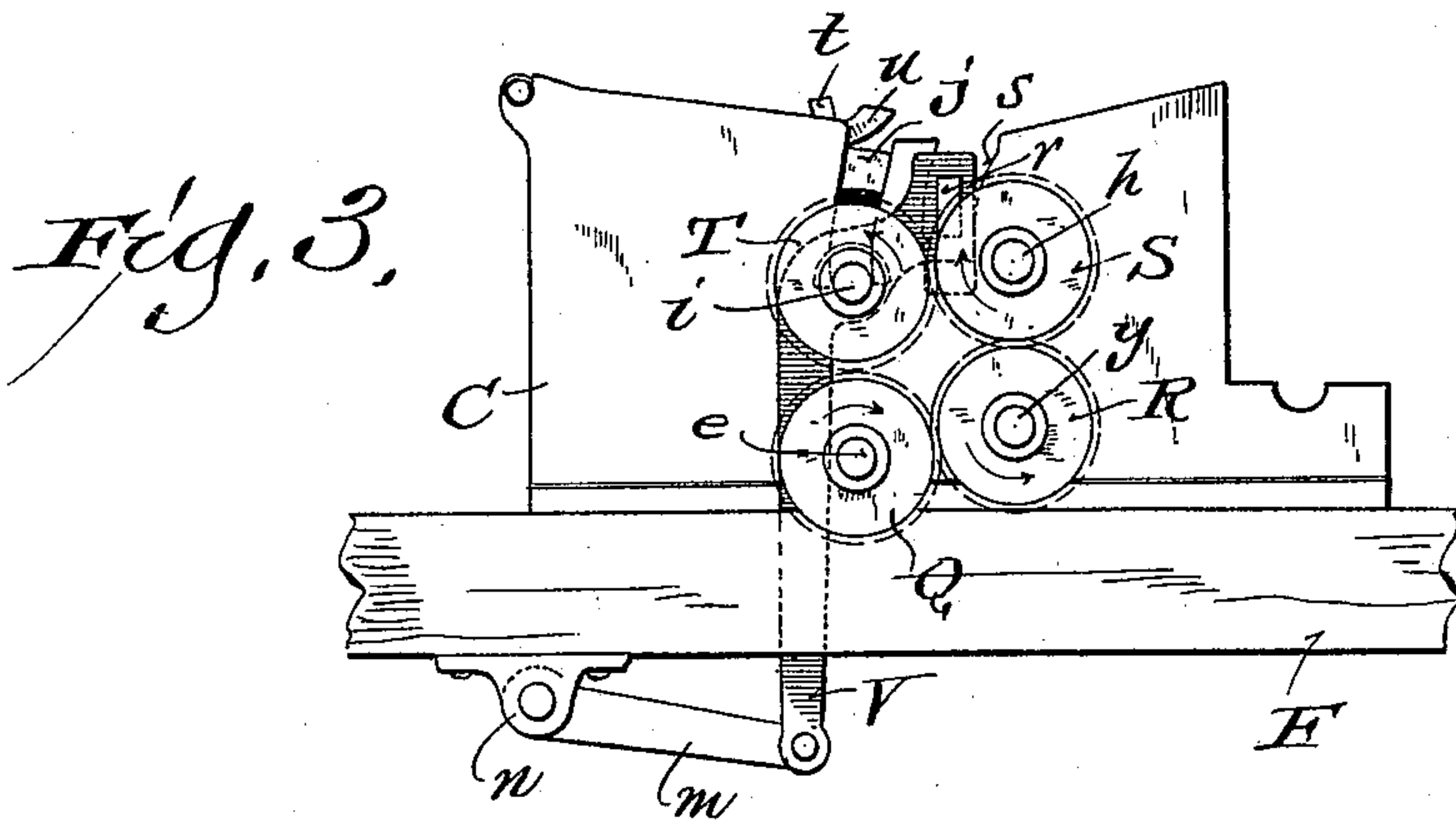
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# UNITED STATES PATENT OFFICE.

JOHN A. FRENZEL, OF WAUSAU, WISCONSIN.

## STRAW-CUTTER.

SPECIFICATION forming part of Letters Patent No. 594,074, dated November 23, 1897.

Application filed August 14, 1896. Serial No. 602,715. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. FRENZEL, a citizen of the United States, and a resident of Wausau, in the county of Marathon and 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 has for its object to provide a simple, strong, and economical straw-cutter; and it consists in certain peculiarities of construction and combination of parts hereinafter set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a vertical longitudinal section of a portion of a straw-cutter embodying my improvements; Figs. 2 and 3, side elevations illustrating the gearing and certain other features of the machine; Fig. 4, a vertical transverse section indicated by line 4 4 in the first figure, the upper feed-roller being broken; and Fig. 5, a horizontal section illustrating the lower feed-roller and its shifting mechanism.

Referring by letter to the drawings, A represents the box of my improved straw-cutter, mounted on a suitable frame that also supports castings in the form of plates B C, constituting front extensions of the box sides. Openings *b c* in plates B C are engaged by the journals *d e* of a lower feed-roller D, the opening *b* in plate B being elongated for the purpose hereinafter specified.

The shear-plate E has ears *f* extending through openings in the plates B C, and these shear-plate ears are bolted or otherwise rigidly secured to horizontal lateral bottom flanges of said plates, at rest on longitudinal upper timbers F of the frame.

The plates B C are also provided with bearings for the arbor G of a knife-cylinder H, and a knife-shield I rests on the machine-frame against a cover-plate J, connecting the former plates.

A spur-wheel K, fast on journal *d* of the feed-roller D, is brought in and out of mesh with a pinion L, fast on the arbor G of knife-cylinder H, by means of a bell-crank lever M, fulcrumed on a stud extending laterally from a bracket N on a longitudinal upper timber of the machine-frame, an arm of the lever being connected by a link P with said feed-

roller journal, and the plate-opening *b* or bearing for this journal is elongated to provide for the necessary play. Any suitable power may be employed to rotate arbor G of the knife-cylinder, and from the foregoing it will be understood that while the rotation of said cylinder is continuous that of the lower feed-roller is intermittent at the will of the operator of the machine.

Fast on the journal *e* of feed-roller D is a pinion Q, in mesh with an idler-pinion R, loose on a stud *g*, extending laterally from the plate C above specified. Another idler-pinion S is loose on a lateral stud *h* of plate C in mesh with the former idler-pinion and another pinion T, the latter being fast to a journal *i* of the upper feed-roller U of the machine. Hence it will be seen that power transmitted to the lower feed-roller D is conveyed to the upper feed-roller and that these rollers are also caused to rotate in opposite directions, as is usual in the art.

The journals *i i* of feed-roller U engage vertically-disposed curvilinear slots *j* in the plates B C, constituting front extensions of the feed-box, and said journals have their bearings in angular vertically-disposed hangers V for a pressure-plate W, that comes forward of the upper feed-roller approximately parallel to the shear-plate E, and link-arms *m* of a rocker-bar X, journaled in brackets *n*, depending from the timbers F of the machine-frame, connect with the lower ends of the hangers. Suspended from a hook-arm *p* of the rocker-bar X is a support *q* for a lever Y, pivoted to a transverse timber of the machine-frame, and a weight Z is adjustable longitudinally of the lever to vary the pressure of plate W, above specified.

By having the journals *i i* of feed-roller U engaged with the vertically-disposed curvilinear slots *j* in the plates B C said roller is free to play up and down without getting out of gear, inasmuch as the pinion T travels on idler-pinion S, in mesh therewith, when the automatic adjustment of the aforesaid roller takes place.

The pressure-plate W is connected to its hangers by means of lateral ears *r*, that engage corresponding apertures in said hangers, and these ears have their play in vertically-disposed recesses *s* in the plates B C, consti-

tuting front extensions of the box sides. Ap-  
ertured lugs *t*, rising from said pressure-plate  
at the rear thereof, are engaged by arms *u* of  
a cover-plate *W'*, in hinge connection with  
5 the plates B C, and said cover-plate is free  
to rise and fall with said pressure-plate.

Having thus described my invention, what  
I claim as new, and desire to secure by Let-  
ters Patent, is—

10 In a straw-cutter, the combination of the  
upper feed-roller having its journals engaged  
with guide-slots, hangers constituting bear-  
ings for said journals, a pressure-plate hav-  
ing ears that engage guide-recesses and con-  
15 nect with the hangers, a hinged cover-plate

having arms engaging apertured lugs rising  
from the pressure-plate, a rocker-bar having  
link-arms connected to the hangers, a hook-  
arm extended from the rocker-bar, a support  
suspended from the hook-arm, a lever engag- 20  
ing the support, and a weight adjustable lon-  
gitudinally of the lever.

In testimony that I claim the foregoing I  
have hereunto set my hand, at Wausau, in  
the county of Marathon and State of Wiscon- 25  
sin, in the presence of two witnesses.

JOHN A. FRENZEL.

Witnesses:

JOHN W. MILLER,  
E. L. BOEHM.