

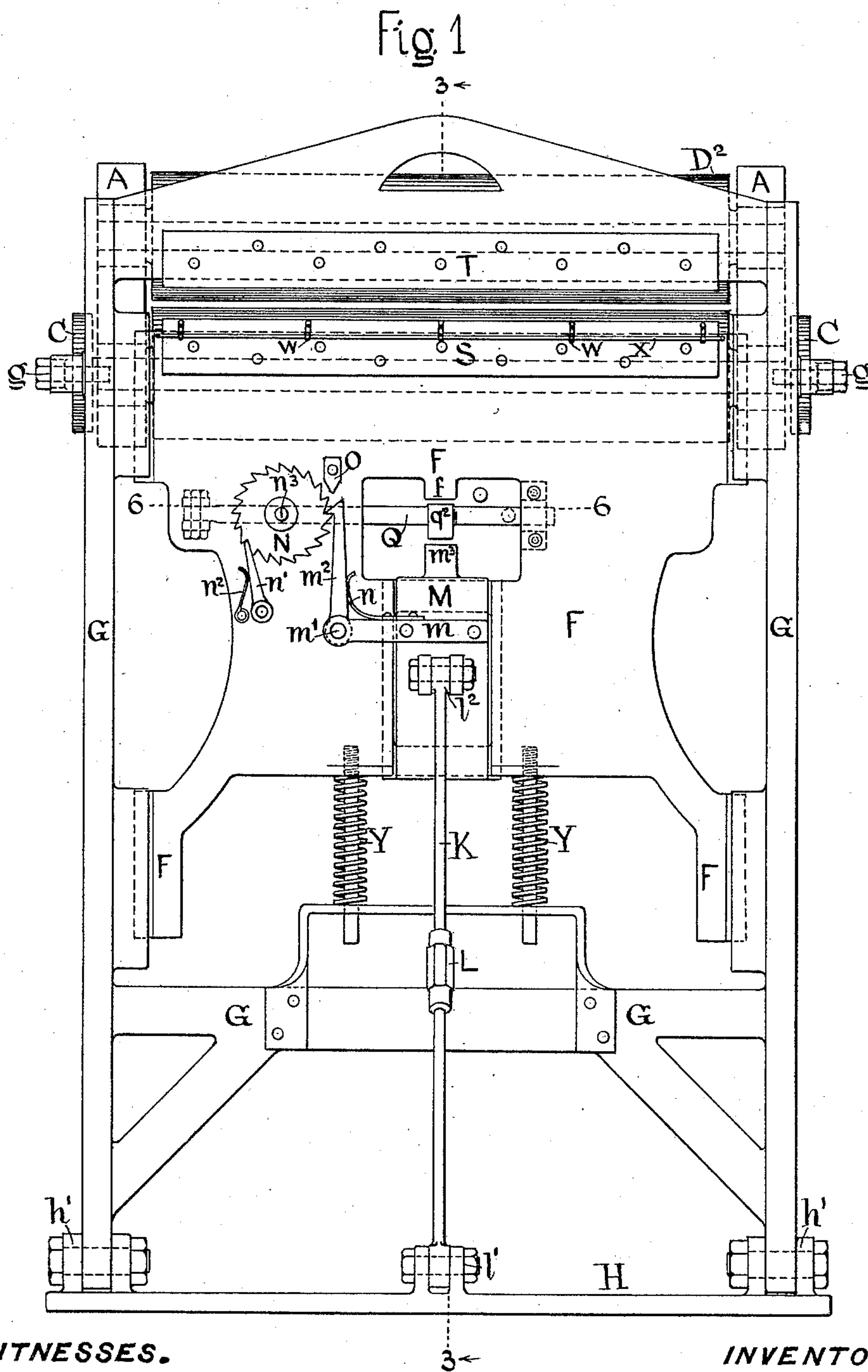
(No Model.)

3 Sheets—Sheet 1.

G. W. EVANS.
PAPER CUTTING MACHINE.

No. 475,761.

Patented May 31, 1892.



WITNESSES.

Samuel H. Roberts
Charles Kay

INVENTOR.

George W. Evans
per R. Walter Prugbaur
Attorney

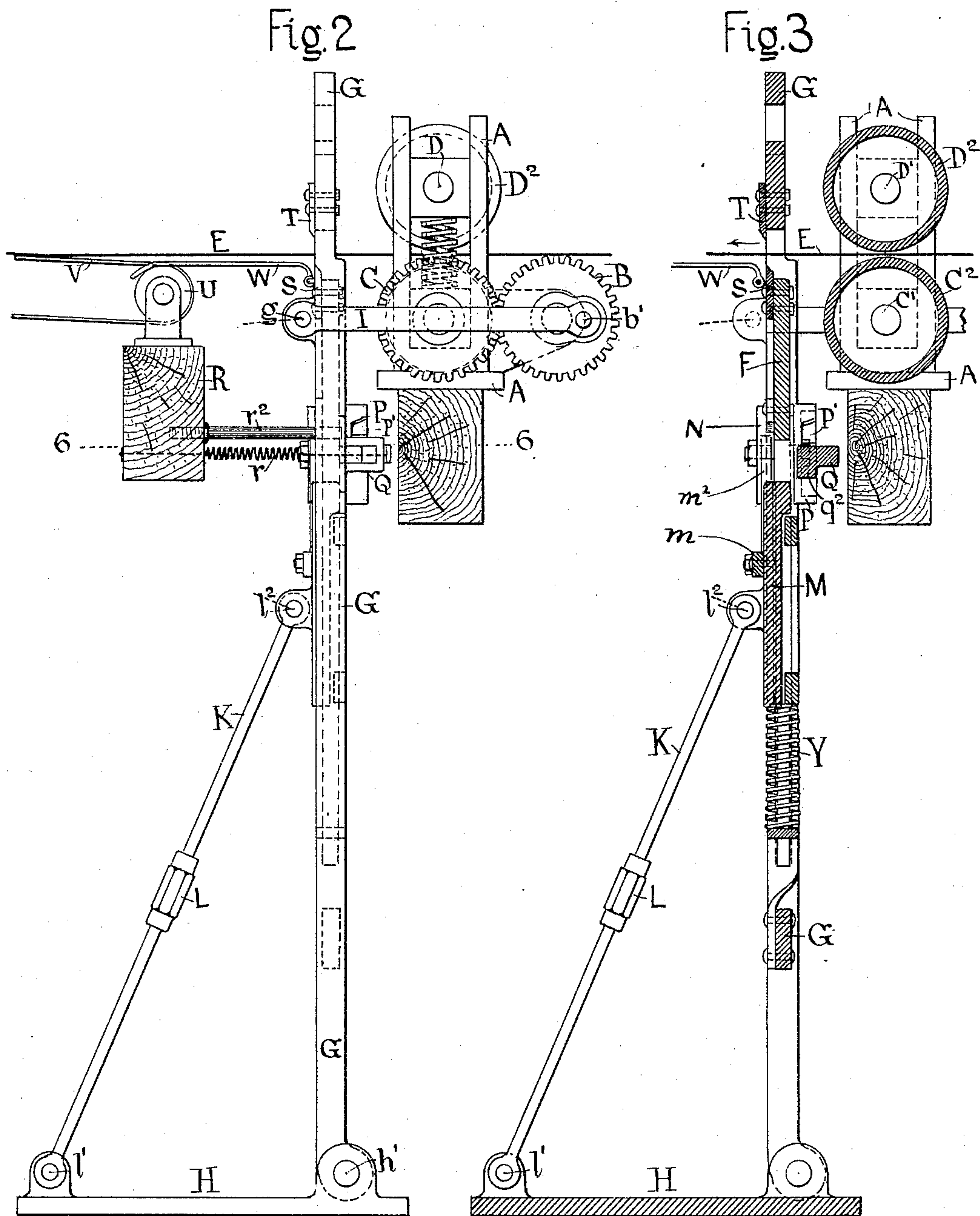
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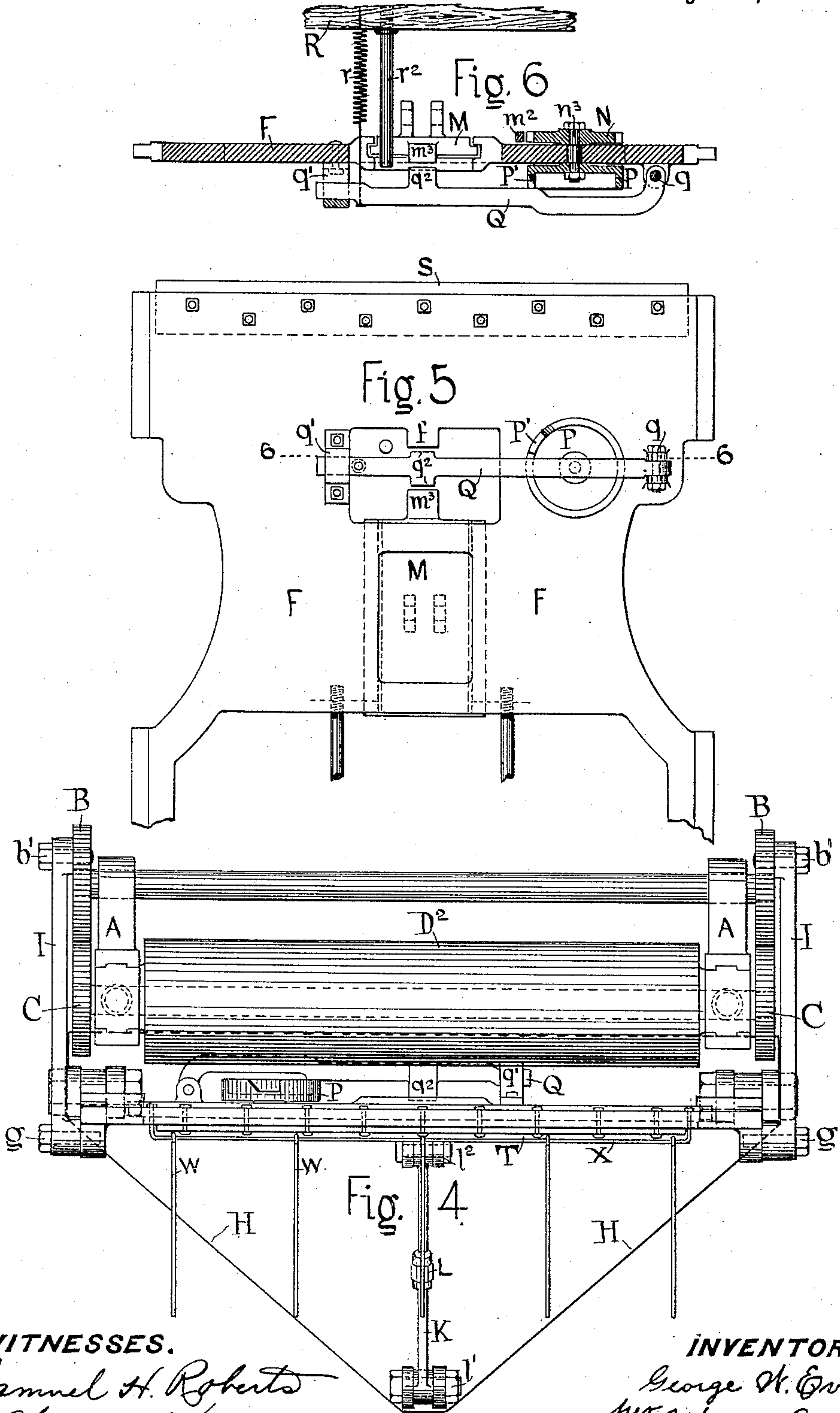
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Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. EVANS, OF BROOKLYN, NEW YORK.

PAPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 475,761, dated May 31, 1892.

Application filed January 6, 1891. Serial No. 376,897. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. EVANS, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Paper-Cutting Machines, of which the following is a specification.

My invention relates to improvements in machines which are applicable to the manufacture of various kinds of paper and products thereof—such as roofing-paper, lining-paper, wall-paper, &c.—and such a measuring and cutting machine usually forms a part of the plant required for the manufacture of such paper fabrics, arranged so as to move in unison with the other parts of the necessary machinery.

The object of my improvement is to provide for measuring and cutting such paper fabrics into the desired length by mechanism having positive and unfailing action, combined with strength and durability, the methods heretofore in use failing in these requirements. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is a side elevation. Fig. 3 is a central section along the line 3 3, Fig. 1. Fig. 4 is a plan view. Fig. 5 is a rear view of part of Figs. 1, 2, and 3; and Fig. 6 is a horizontal section along the line 6 6.

Similar letters refer to similar parts throughout the several views.

A is a frame, fixedly attached to any stationary support or table, (not shown,) upon which part of the other plant for the manufacture of the paper fabric may be mounted. Motion is given to one of the gear-wheels B B from any suitable adjacent mechanism in motion, such connection to a power-shaft not being shown. The driving-wheels B B gear with wheels C C, mounted upon shaft C', which carries the roller C². The shaft D' carries the upper roller D², usual mechanism being provided (not shown) for adjusting the pressure of top roller D² upon the paper E, which is being passed in the direction of the arrow between the two rollers, the roller D² being driven by roller C² by contact and pressure only through the intervening paper E. The inner frame F has endwise-sliding motion up and down within the outer rocking frame G, which latter is hinged to the stationary base-plate H at h' h'. A rocking mo-

tion is given to the frame G by the connecting-rods I I, each hinged at one end upon a wrist-pin b' upon the wheels B B or C C and at the other end upon pin g upon the frame G. The rod K, which is adjustable in length by the sleeve-nut L, is pivoted at its lower end at l' to the base-plate H, and at its upper end l² to the block M, arranged to slide endwise within parallel ways upon frame F, which chamber the vertical edges of block M. Consequently when the frame G is turned upon its pivots h' h' away from the rollers C² D², whereby the upper end of rod K is brought farther from the base H, the block M is raised, and it is lowered by the reverse motion. This oscillating motion of block M is made to turn the ratchet-wheel N, as follows: The bar m, Fig. 1, which is riveted to block M, forms a pivot at m' for the propelling-pawl m², which is pressed toward wheel N by spring n. The check O serves to prevent the pawl from skipping a tooth. n' is the ratchet which, with its spring n², prevents the wheel N from turning backward. The spindle n³, upon which the ratchet-wheel N is fixedly mounted, extends through the frame F and fixedly carries upon its other end the flanged disk P, Figs. 2, 3, 5, and 6, which has a side notch P' in its periphery, Figs. 5 and 6, into which the bar Q drops when registering therewith, as follows: One end of the bar Q is hinged at q to frame F and the other end is guided by slotted piece q', which is attached to frame F, so as to allow horizontal motion, but to check vertical motion. The bar Q is continuously impelled toward beam R by spring r, but is prevented from yielding to the spring by the projecting flange of disk P until the notch P' in the latter registers with the bar Q. Thereupon the bar Q moves toward frame F and its lug q² intervenes between lug m³ upon block M and lug f upon frame F. Consequently when block M is caused to rise through rod K, as described, the frame F is made to rise with it, and thereby the knife S, which is firmly attached to frame F, is caused to move toward the corresponding knife T, which is fixedly attached to frame G, and to sever the intervening paper E. By means of the said sleeve-nut L upon rod K the length of the latter, and thereby the stroke of the under knife S, is made adjustable. Upon the next motion of frames G and F toward beam R the detent r², which is fixedly attached to beam R, pushes the bar Q out of

the notch p' and retains it so until the ratchet-wheel N has been revolved sufficiently to un-register the notch p' from bar Q. Upon the roller U is the belt V, which carries the paper
 5 E toward other operating plant arranged to give the paper the required finish and to roll it into marketable packages.

W W are bars which support and guide the paper between the rolls $C^2 D^2$ and the belt
 10 V. These bars are hinged at one end upon a transverse rod X, Fig. 4, which passes through loops in the ends of bars W, rod X being attached at the ends to the frame F. To facilitate the raising of frame F, springs Y are in-
 15 terposed between it and the frame G, approximately supporting the weight of the frame F and its attachments. There may be several notches P' in disk P, either equidistant, so as to cut the paper fabric of equal length, or
 20 otherwise, so as to cut the fabric of various lengths.

What I claim as my invention in a paper measuring and cutting machine, and desire to secure by Letters Patent, is—

25 1. A pair of rotating rollers to feed the fabric between them, in combination with one of the cutting-knives and an outer frame to which it is attached, said frame being hinged at the bottom to a fixed base, rods pivoted to
 30 said frame at its upper end, a rotating wheel to which said rods are pivoted at their opposite ends, the second knife, an inner frame to which it is attached, said frame sliding end-
 35 wise within grooves in the outer frame, a radius-rod pivoted at its lower end to the fixed base, a block sliding endwise within said inner frame and having the radius-rod pivoted
 40 thereto at its opposite end, and means for connecting the sliding block to the inner frame at intervals to give a cutting motion to
 said second knife.

2. The knife T, the outer frame G, to which it is attached, the fixed base H, to which said frame is hinged at the bottom, connecting-
 45 rods I, pivoted to said frame at its upper end, and a rotating wheel B, to which said rods are pivoted at their opposite ends, in combination with the knife S, the inner frame F,
 50 to which it is attached, the radius-rod K, the base H, to which it is attached at its lower end, the block M, to which said rod K is attached at its upper end, block M being
 adapted to slide endwise within frame F, and bar Q, arranged to intervene at intervals be-
 55 tween block M and frame F, whereby cutting motion is imparted to knife S at the desired intervals, substantially as described.

3. A pair of paper-fabric-feeding rollers, in combination with an outer frame G, the knife
 60 T, carried by frame G, a connecting-rod I, pivoted at one end to frame G, a rotating wheel B, to which the other end of the connecting-rod I is pivoted, another knife S, an inner
 frame F, to which the knife S is attached,
 65 said frame G having grooves wherein the frame F may slide endwise, together with a block M, grooved on its sides, with corre-

sponding tongues upon frame F, as described, a radius-rod K, pivoted at its upper end to
 block M and at its lower end to a fixed base 70
 H, and a bar Q, arranged to intervene at intervals between block M and frame F, where-
 by the frame F is carried upward with the block M by radius-rod K and the knife S is
 brought into active contact with the paper 75
 fabric, substantially as described.

4. In combination with a pair of paper-fabric-feeding rollers, an outer frame G, a knife
 T, attached thereto, said frame G receiving vi-
 brating motion of its upper part in unison 80
 with said rollers, as described, an inner frame F, arranged to slide endwise within the outer
 frame G, a block M, tongued and grooved to frame F, a radius-rod K, arranged to recipro-
 cate block M, as described, a bar Q, adapted 85
 to be interposed between the frame F and the block M, whereby they are made to move up-
 wardly in unison, together with the mechanism for so interposing bar Q periodically, to
 wit: the pawl m^2 , with its pivot m' fixedly at- 90
 tached to block M, the ratchet-wheel N, actuated by pawl m^2 , disk P, with notch P' formed
 upon the same, together with spring r and de-
 tent r^2 , which cause bar Q to register and to
 unregister with the notch P' in disk P, where- 95
 by the knives are brought into cutting contact as often as a notch P' is made to register
 with bar Q, substantially as described.

5. In combination with the vibrating frame
 G, and knife T, attached thereto, and the 100
 frame F, with the knife S attached thereto, the block M, arranged to be reciprocated with-
 in frame F, bar Q, adapted to be periodically interposed between block M and frame F, as
 and for the purpose named, radius-rod K, 105
 which is arranged to reciprocate said block M, and sleeve-nut L upon rod K, whereby
 the length of rod K is made adjustable and the relative positions of said knives is thereby
 made adjustable, substantially as described. 110

6. In combination with a pair of rotating
 paper-feeding rollers, the vibrating frame G,
 and knife T, carried by frame G, the reciprocating frame F, and the knife S, carried by
 frame F, the block M, radius-rod K, ratchet- 115
 wheel N, with its appurtenances, notched disk P, bar Q, spring r , and detent r^2 , through
 which the knives are brought into cutting action at the desired time, the whole operat-
 ing conjointly, substantially as described. 120

7. The combination of the vibrating frame
 G, knife T, carried by frame G, the reciprocating frame F, knife S, carried by the frame
 F, together with the block M, radius-rod K, interposing bar Q, with its attachments, ratchet- 125
 wheel N, with its appurtenances, the notched disk P, and means for throwing bar Q in and
 out of gear with notch P' in disk P, the whole operating conjointly, substantially as
 described.

GEO. W. EVANS. [L. S.]

Witnesses:

R. G. PHELPS,
 CHARLES DUNN.