J. C. MARSHALL.

Gage for Paper-Cutting Machines.

No. 217.629. Patented July 15, 1879.

Fig. 1.

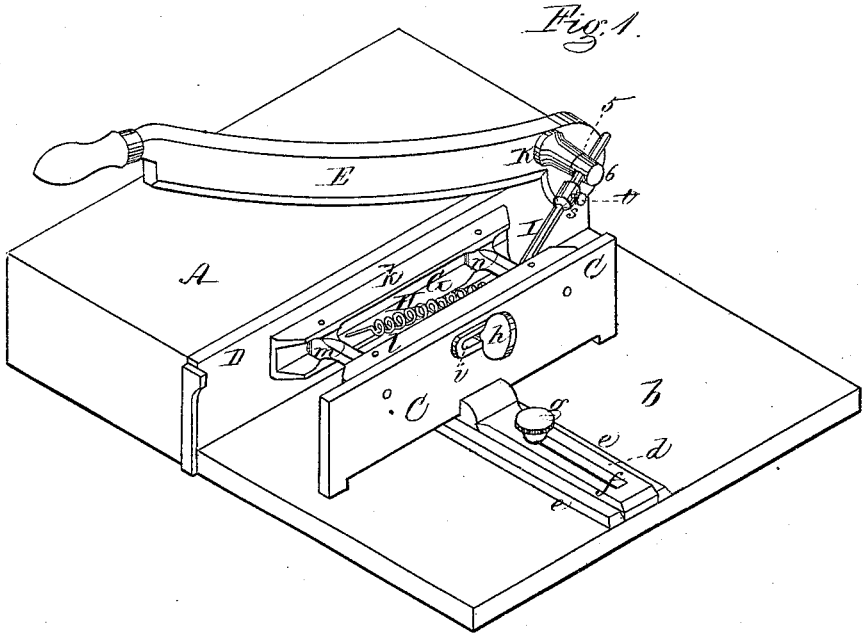


Fig. 2.

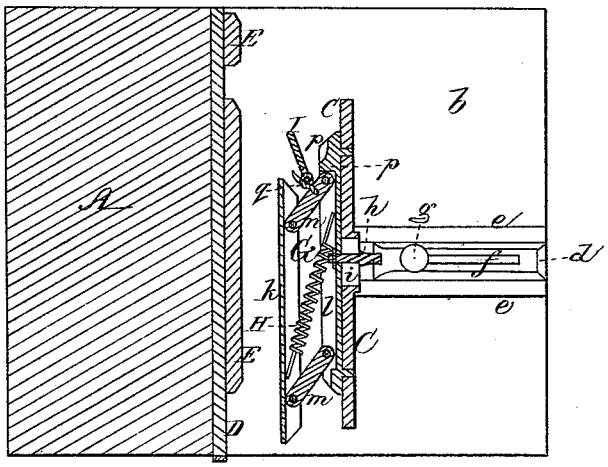
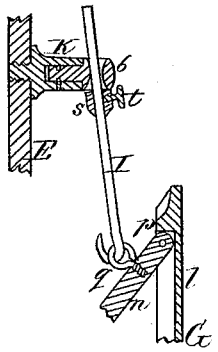


Fig. 3.



Witnesses;
W. J. Cambridge
Chas. E. Griffin

Inventor,
James C. Marshall
per P. C. Teschemacher
Atty

UNITED STATES PATENT OFFICE.

JAMES C. MARSHALL, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN GAGES FOR PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. **217,629**, dated July 15, 1879; application filed March 20, 1879.

To all whom it may concern:

Be it known that I, JAMES C. MARSHALL, of Boston, in the county of Suffolk, and State of Massachusetts, have invented an Improvement in Gages for Paper-Cutting Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a paper-cutting machine having my improved gage applied thereto. Fig. 2 is a horizontal section through the same; Fig. 3, a sectional detail.

In paper-cutting machines it is essential to employ a gage which can be brought up close to the line on which the cut is made in order to allow of the cutting of narrow strips of paper; but it is manifest that such gage cannot be immovably fixed at a less distance from the line of the cut than the thickness of the movable or upper blade, for the reason that the latter, on its descent, would otherwise come into contact with and injure or break the gage.

To overcome this objection a gage has been constructed with a parallel motion, which, after being used, could be withdrawn by a hand-lever out of the way of the cutter previous to its descent; but this device did not always accomplish the desired end, for the reason that if the attendant neglected to move the lever, the gage, if sufficiently near the line of the cut, would be broken or injured, as before, on the descent of the cutter.

Gages have also been constructed which have been so hung as to be swung down out of the way in the arc of a circle, against the resistance of a spring or springs, this movement having been effected by the upper blade or a projection thereon coming into contact, on its descent, with the movable gage.

These automatic spring-gages are however liable to many serious objections, among which may be enumerated the following: When moved by the upper cutter itself the contact takes place between the rear portion of the blade near the pivot and one end of the gage, which is thereby liable to be carried down farther than the other end, and, as the pressure is not centrally applied, the strain on the springs is unequal, and, after considerable use, the gage will not always return to its proper horizontal position. Again, these spring-gages, when released by the ascent of the upper cutter, are suddenly thrown up by their springs against a stop, and chatter or vibrate before coming to a state of rest; and, furthermore, a gage, when hung to move downward in the arc of a circle, does not accomplish its work in a perfectly satisfactory manner, as it is not entirely out of the way when depressed, and obstructs, in a measure, the fall of the strips cut off, and also intercepts the light and view, preventing the operator from properly inspecting the work being done by the machine.

My invention has for its object to entirely remove all of these difficulties; and consists in the combination, with a paper-cutting machine, of a movable gage having a parallel motion in a horizontal plane, and so connected by suitable mechanism with the movable cutter that, as the latter descends, the gage will be automatically withdrawn in a horizontal plane out of its path and entirely out of the way of the work, a clear and unobstructed view of which is thus afforded during the operation, while no obstacle is presented to the free dropping of the strips of material after being cut.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the table of a paper-cutting machine, which is provided, as usual, with an extension, *b*, arranged below the level of the top of the table A. Upon this extension *b* is secured the front gage, C, which is provided with a piece, *d*, sliding between guides *e*, the piece *d* having a slot, *f*, through which passes the binding-screw *g*, by means of which it is held in place, the gage being adjustable toward or from the stationary cutter D to the extent of the slot *f* in the ordinary manner, to accommodate the width of paper which it is desired to cut.

E is the movable cutter, consisting of a curved lever having a handle, and pivoted at its opposite end at 5, so as to operate in connection with the stationary cutter D.

To the inner side of the gage C is secured, by

a suitable clamping device, *h*, passing through a slot, *i*, a supplementary removable gage, G, which is employed when a strip of paper or other material is to be cut of a less width than the thickness of the movable cutter E. This gage G, which is set at the desired distance from the cutter D by adjusting the position of the gage C, consists of two parallel bars, *k l*, connected together by links *m n*, pivoted at their ends to the bars, which construction admits of the front bar, *k*, having a parallel motion in a horizontal plane toward and from the cutter D.

The front bar, *k*, is held in the position seen in Fig. 1, with the links *m n* at right angles thereto, so as to resist any pressure caused by the contact therewith of the edge of the material to be cut, by means of a spring, H, the outer side of the link *n*, when in this position, bearing against a piece, *p*, which serves as a stop to prevent the spring from carrying the links beyond a line at right angles with the length of the gage.

To the link *n*, near the bar *l*, is secured an eye, *q*, into which is hooked the inner end of a connecting-rod, I, which passes freely through an oblong aperture in the outer swiveling end, 6, of a stud, K, projecting out from the movable cutter E near its pivot 5, the end 6 being made to turn independently of the main portion of the stud to allow it to accommodate itself to the movements of the cutter-lever E.

The connecting-rod I is provided with a sliding stop, *s*, which is held in place when adjusted in the desired position by a set-screw, *t*, and thus, as the cutter E is brought down to cut the paper or other material on the table A, the stud K slides over the rod I until it comes in contact with the stop *s*, when it will actuate the rod I, and cause it to move the front bar, *k*, of the gage G against the resistance of the spring H into the position seen in Fig. 2, the gage being thus automatically withdrawn in a horizontal plane out of the path of the cutter, if it was previously therein, and also entirely out of the way of the strips cut off, which the beveled edge of the cutter tends to press forward, a clear and unobstructed view of the work being thus afforded during the operation of cutting, while the automatic withdrawal of the gage in a horizontal plane effectually prevents any interference with the free dropping of the strips after being detached. When the cutter is raised by the hand the stud K slides back over the rod I, and allows the spring H to return the bar *k* of the gage to its proper working position, when the paper is moved up into contact therewith and clamped, and the operation continues as before.

I do not confine myself to the exact mechanism shown for connecting the movable cutter with the gage G, as it is evident that any equivalent connecting mechanism which will cause the gage to be automatically withdrawn in a horizontal plane by the descent of the cutter may be employed without departing from the spirit of my invention.

It is evident that the gage G may be used with advantage for cutting strips of various widths greater than the thickness of the movable cutter E, and consequently the frequent removal and replacing of the supplementary gage, as has heretofore been necessary, is avoided.

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

The combination, with the jointed gage G and its spring H, of the connecting-rod I, with its adjustable stop *s*, and the stud K on the movable cutter E, with its swiveling end 6 perforated for the passage of the rod I, all constructed to operate substantially in the manner and for the purpose set forth.

Witness my hand this 13th day of March, A. D. 1879.

JAMES C. MARSHALL.

In presence of—
P. E. TESCHEMACHER,
W. J. CAMBRIDGE.