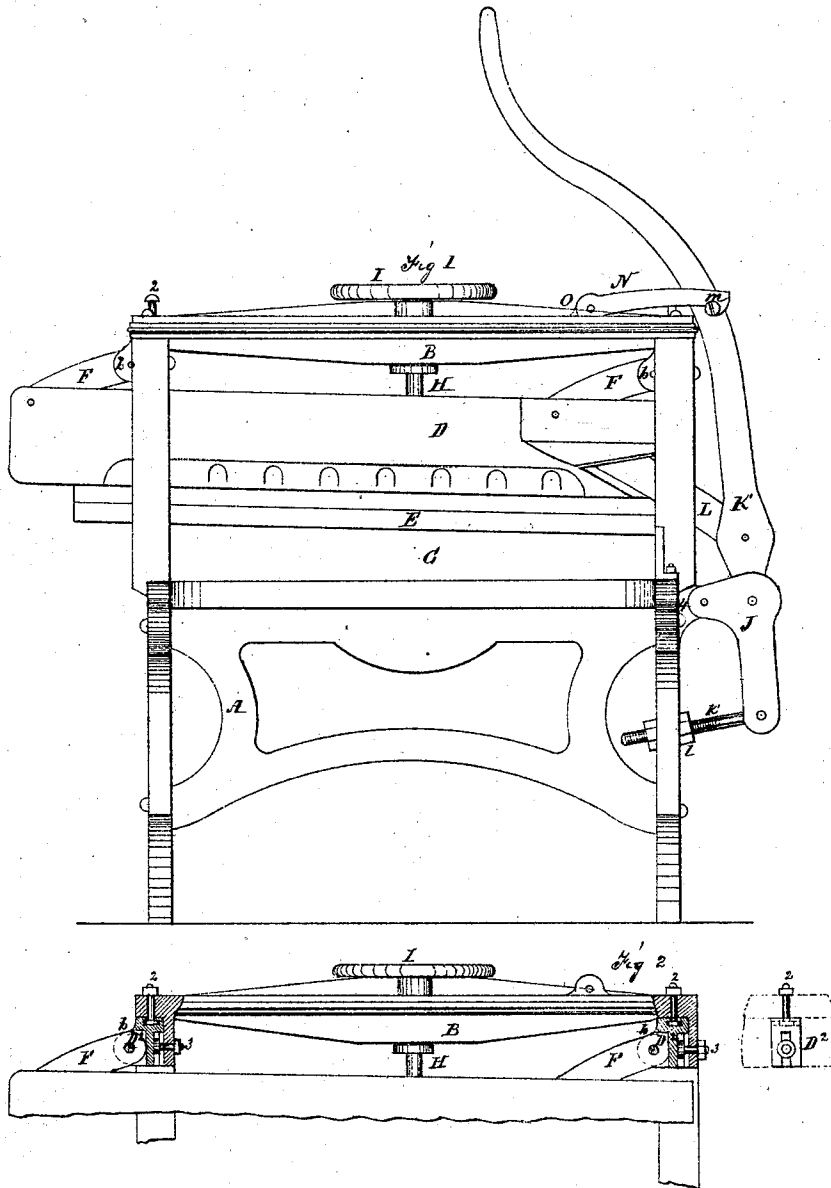


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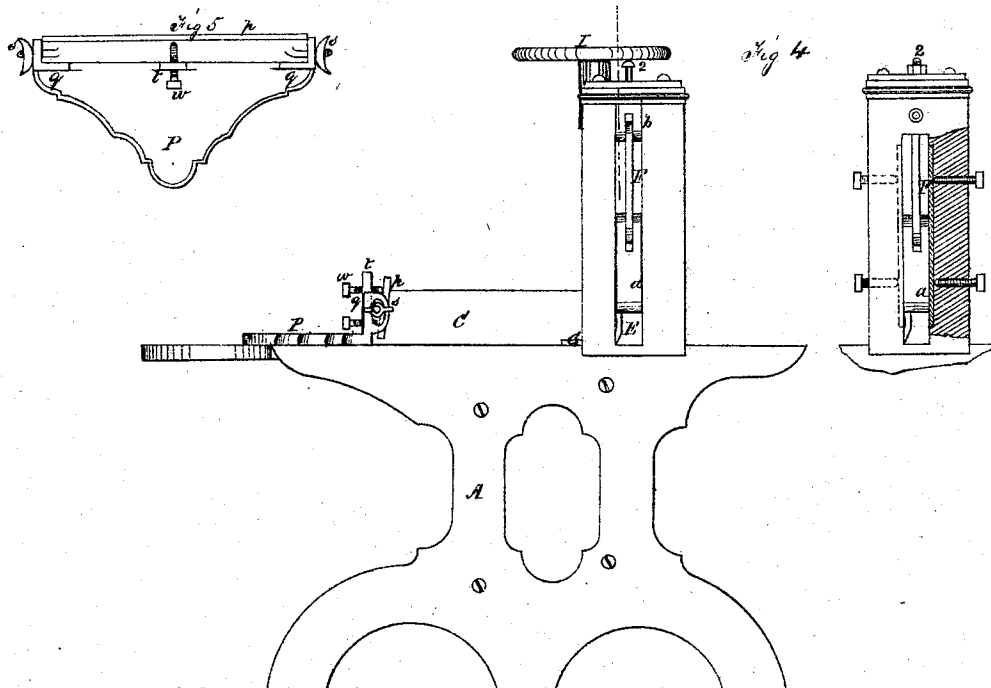
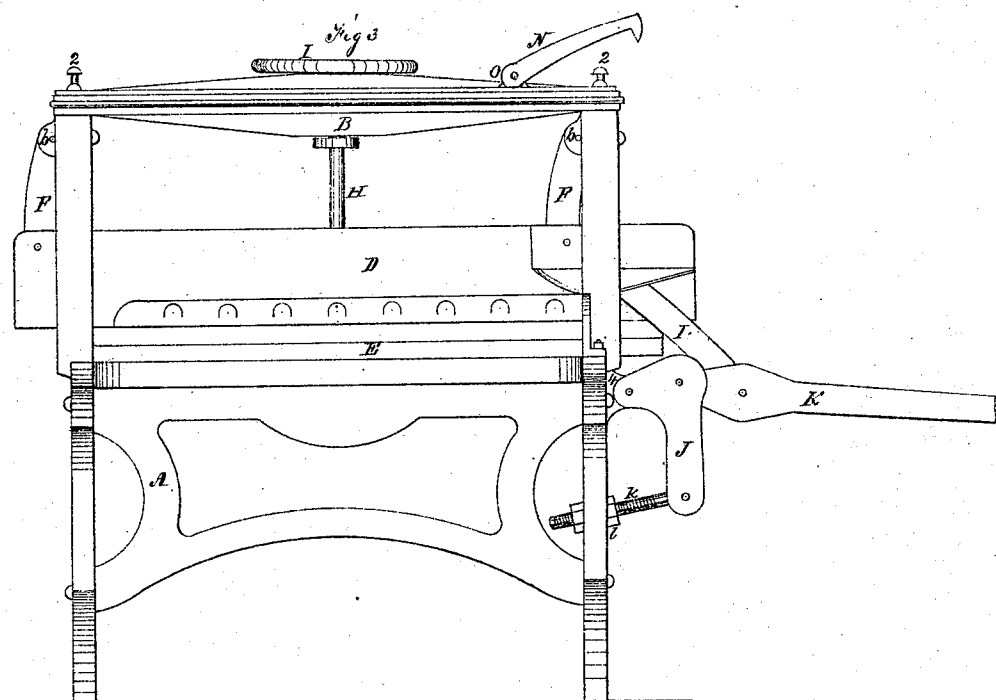
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UNITED STATES PATENT OFFICE.

JOHN LEVINNESS, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOSEPH S. SANBORN,
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IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. 117,650, dated August 1, 1871.

To all whom it may concern:

Be it known that I, JOHN LEVINNESS, of Brooklyn, in the county of Kings and State of New York, have invented, made, and applied to use certain Improvements in the Construction of Paper-Cutting Machines, of which the following is a full, clear, and correct description, reference being had to the accompanying drawing making part of this specification and to the letters of reference marked thereon, in which—

Figure 1 is a view of my improved paper-cutting machine, the knife being shown up. Fig. 2 is a sectional view of the upper portion of the machine, showing the construction of the boxes employed to regulate the position of the knife-bar. Fig. 3 is a view of the machine, the knife being shown down. Fig. 4 is an end view of the machine, showing the back gauge used. Fig. 5 is a plan view of the back gauge.

In the drawing, like parts of the invention are designated by the same letters of reference.

The nature of the present invention consists in certain improvements in the construction of paper-cutting machines, as more fully hereinafter set forth; the object of the invention being the production of a paper-cutting machine presenting many advantageous features.

To enable those skilled in the arts to make and use my invention, I will describe its construction and operation.

A shows the frame of my improved paper-cutting machine, formed of any suitable material, and provided with a cross-head, B. The frame also serves to support the table C of the machine. The frame is slotted, as at *a*, to allow the knife-bar D to be held and move freely in the same. D shows the knife-bar, to which is secured the knife E for cutting the paper or material that may be supplied to the machine. The knife-bar D is attached to the frame of the machine by means of the links F, the lower ends of which are attached to the knife-bar D near its ends, while the upper ends of the same are pinned in the lugs *b* secured in the sliding boxes D². The sliding boxes D² are formed as shown in Fig. 2, and are provided with a T-slot across the top and down the back, so that they can be removed at any time, and have cast upon them the circular lugs *b*, in which are pinned the ends of the links F attached to the knife-bar D. These boxes are adjusted downward or upward by means of

the top screws 2, and are retained in position in the frame by the set-screws 3, which pass through the frame and bear upon the sides of the boxes D². The frame A is also slotted upon its sides to receive the ends of the clamp G, for clamping the paper upon the table C, which clamp may be elevated or depressed by means of a screw-rod, H, operated by the hand-wheel I secured upon its upper end, the upper end of the screw-rod H passing through the cross-head B, and the rod passing about centrally through the clamp G. Upon one side of the frame A is secured a yoke, J, in which is held the lower end of a lever, K, the said lower end being free to turn upon a pin passed through it, and being slotted to receive one end of a toggle, L, the opposite end of which toggle is attached to the knife-bar D, near one end of the same. The yoke J is, to a certain extent, movable, being pinned to circular bosses 4 secured upon the frame, and its lower end has attached to it a short rod, K, passed through the frame A, and being provided with the adjusting-nuts *l*, which nuts are placed on each side of the frame A. Thus the point upon which the lever K moves is adjusted to the relative position of the knife-bar D, adjusted by the T-boxes D². The lever K has inserted in it a pin, *m*, over which, when the lever K is thrown up in position, as shown in Fig. 1, the hooked end of the short lever N is passed, the opposite end of this lever N being attached to a boss, O, upon the cross-head B. The table C is slotted about centrally, back of the clamp G, to receive a back gauge, P, provided on its underside with a guide made to snugly fill the slot in the table, and serving to support the gauge P. The face or front portion *p* of the gauge P is formed of a separate piece or plate of metal, and is hinged to the lugs *q* upon the ends of the gauge P, and can be easily adjusted either down or up, backward or forward, by means of thumb-screws S passed through the lugs *q* and having a bearing upon the front portion of the gauge. The gauge P has secured upon it, about midway between the lugs *q*, a lug, *t*, through which are passed the set-screws *w*, the forward ends of which bear upon the rear of the front portion *p* of the gauge P. The front or forward portion of the gauge P, by means of the set-screws *w*, which may be advanced or withdrawn, as desired, can be thus readily adjusted to the cut of the knife.

Such being the construction, the operation is as follows: The back gauge P is adjusted to give the desired width of paper to be cut by the knife E. The paper is then placed upon the table C of the machine, and clamped beneath the clamp G, and the lever K is moved by the operator from the vertical position it occupies when the knife is elevated into a horizontal or nearly a horizontal position. The depression of the lever K, attached to the knife-bar D by means of the toggle L, causes a downward and lateral movement to be imparted to the knife-bar D, carrying the knife E through the paper. The lever K is then elevated from the horizontal or nearly horizontal position to a vertical or nearly vertical position, causing the knife E to be elevated and relieved from the mass of paper. The cut paper may then be removed, the remaining paper to be cut be advanced upon the table, (the clamp having been elevated by turning the hand-wheel I, and thus operating the screw-rod H and through it the clamp,) the paper again clamped, and the operation already described may be repeated.

Two features in the construction of the present machine will be found of particular advantage: First, that, employing the boxes D², constructed as shown, the links F adjusted by means of these boxes are always retained in the same position relative to the knife-bar D, so that, as the

knife E wears, by depressing these boxes D², and thus depressing the knife-bar D, the same depth of cut is given to the knife as when new and unworn. Knives at present used in paper-cutting machines, after being used sufficiently long to wear them down, are dispensed with and new knives substituted. The knife in the present machine will last much longer and be easily adjusted. Second, that by the use of a back gauge, P, constructed as described, any variation in the cutting of the knife that may arise from the wear of the knife-bar is compensated for, and the gauge P is easily adjusted to present the same width of paper to the knife. Finally, I would state that, if deemed advisable, "gib" slides, constructed as shown in Fig. 4, may be used, and may be inserted in the frame A.

Having now set forth my invention, I claim—

1. The combination, with the knife-bar D, of the links F, boxes D², toggle L, lever K, and movable yoke J, constructed and operating substantially as and for the purposes specified.

2. The back gauge P, when combined with the hinged front plate P, set-screws S, and screw W, as and for the purposes set forth.

JOHN LEVINNESS.

Witnesses:

A. SIDNEY DOANE,
M. B. WHITTLESEY.