T. B. DOOLEY.

Paper-Cutting Machine.

No. 127,226. Patented May 28, 1872.

Fig. 1

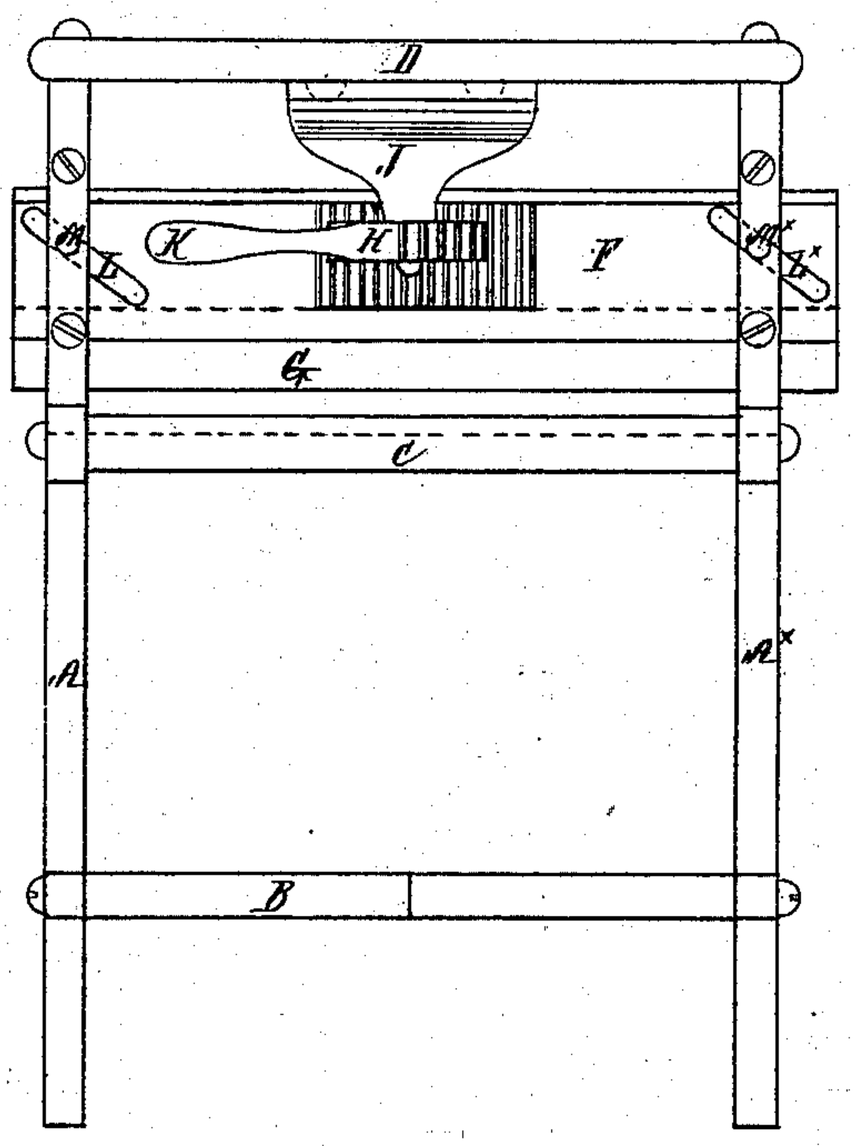


Fig. 2

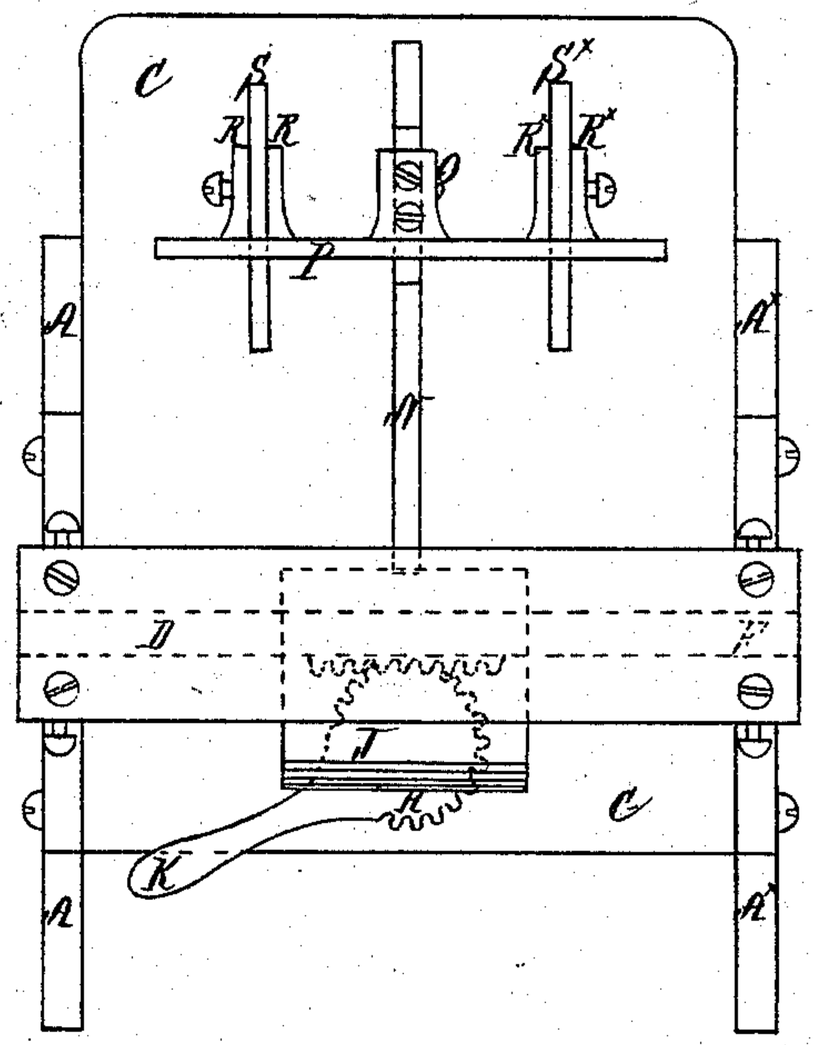
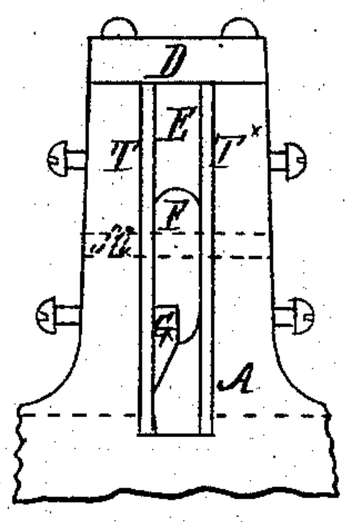


Fig. 3



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THOMAS BROWN DOOLEY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. 127,226, dated May 28, 1872.

I, THOMAS BROWN DOOLEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a Lever Paper-Cutter, of which the following is a specification:

Nature and Object of the Invention.

The nature of my invention is that of a machine with a frame, and with a raised platform, on which bundles of paper may be laid, the frame bearing a cutting-blade, which lifts and lowers in a peculiar manner; and the object of the same is to cut smoothly the edges of paper sheets.

Description of the Drawing.

Figure 1 is a view of the front side of the machine. Fig. 2 is a view of the same from above. Fig. 3 is a view—looking at the left-hand side of the machine, as shown in Fig. 1—of the upper portion of the frame, with some attachments hereinafter more particularly explained.

Description of the Invention.

All the machine is made of metal, except the handle, hereinafter described. In the drawing, A A$^{\times}$, Fig. 1, A A A$^{\times}$ A$^{\times}$, Fig. 2, (see also A, Fig. 3,) are two upright slabs, called the standards. These are cut away, to diminish the weight, in any convenient manner, and have their bases broad, as shown in Fig. 2, while the tops of the same are shaped as seen in Fig. 3. B, Fig. 1, is a horizontal slab, called the lower brace, which passes from one standard to the other horizontally near the lower ends of them, and is secured to them at each end by the screws seen in Fig. 1. C, Fig. 1, C C, Fig. 2, is a horizontal platform, passing from one standard to the other, and secured to the same by four screws seen in Fig. 2. (Two of these are seen in Fig. 1.) D, Figs. 1, 2, and 3, is the upper brace, being a slab, of shape as seen in the figures, which passes from and over the top of one standard to that of the other. This upper brace is fastened to the standards by four screws, seen in Fig. 2. Exactly below the center of the upper brace D is cut across a trough or channnel—called the blade-channel—in the upper surface of the platform C to the depth defined by the dotted line in Fig. 1. The depth of this blade-channel is seen—not in dotted lines—in Fig. 3. In Fig. 3 the dotted lines show the line of the upper surface of the platform C. In Fig. 3 is seen a perpendicular slot, E, in the upper part of the standard A, the center of which slot is coincident, perpendicularly, with the center of the upper brace B. The other standard, A$^{\times}$, Fig. 1, has a similar slot. They are called the blade slots. Passing horizontally (see Fig. 1) through these two slots, and projecting each side beyond the outer surfaces of the two standards, is a slab of metal, F, called the blade-slab, which carries firmly screwed to it the blade G, Figs. 1 and 3, which is a blade of steel, sharpened at the lower edge, (see Fig. 3.) The blade-slab F also carries on its front surface, (see Fig. 1) at its center, horizontally, a rack of cogs, called the blade-slab rack. Into this rack gears the cog-wheel, H, Figs. 1 and 2, which is a portion—say three-fourths—of a cog-wheel, which is held with its axis perpendicular by the cog-wheel holder J, Figs. 1 and 2, a piece of metal of shape as seen in the drawing, which passes upward perpendicularly till it reaches a plane a little above the lower surface of the upper brace B, where it turns at right angles, and passes—fitting into a channel cut in that part of the upper brace B—horizontally nearly to the other or back edge of the said upper brace B, (see dotted lines in Fig. 2,) to which brace it is firmly fastened by screws. The cog-wheel H has attached to it a horizontally-proceeding handle, K, called the cog-wheel handle, Figs. 1 and 2, which is made of wood, and, in practice, at one end fits into a socket attached to the cog-wheel H. The blade-slab F has passing through it diagonally near each end, respectively, (see Fig. 1,) two slots, L L$^{\times}$, called the blade-slab slots. Through these slots pass horizontally, at right angles to the blade-slab, two pins, M M$^{\times}$, called the blade-slab pins, whose hither ends are seen in Fig. 1, and whose courses are marked in dotted lines at M in Fig. 3, which pins are held firmly at each of their respective ends by that portion of the standards A and A$^{\times}$ which is shown, so far as regards the standard A, in Fig. 3, into apertures passing through which the said pins are driven. N, Fig. 2, is a slot, called the gauge-slot, passing perpendicularly down through the platform C C. Its width and length are there seen. Supported by the platform C C, Fig. 2, and sliding—when the machine is to be arranged

for operation—backward or forward, guided by the gauge-slot, is the common device adapted in paper-cutting machines used by bookbinders, to gauge the length or width at which the bundle of papers is to be cut off. This device, called the gauge, is not represented in vertical elevation in the drawing, as the main features of it are not novel. It may be described as consisting of a slab of metal, P, Fig. 2, of any convenient height, disposed perpendicularly, and resting on its lower edge, which lies—reaching nearly across—upon the platform C C, parallel with the blade-slab F. The slab P has a horizontal projection, Q, (see Fig. 2,) at its center horizontally, and in the rear, cast upon it—the device being made of metal—which may be called the gauge-holder, and which bears two screws, seen in Fig. 2, called the gauge-fastening screws. These two screws pass down into a bar of metal, not otherwise held in connection with the gauge-holder, which bar lies in the guide-slot N, Fig. 2, exactly beneath the gauge-holder. This bar is called the lower gauge-holder, and bears at its lower edge two flanges, one on each side, which, when the gauge-fastening screws are tightly screwed, impinge upon the lower surface of the platform C C, and thus hold the gauge-holder Q and the gauge firmly in place. This lower gauge-holder is not shown in the drawing, because it is a common device with machinists, in connection with the gauge-holder above, for purposes like that for which it is used in my machine. The special peculiarity of this gauge is now to be described. In Fig. 2 are seen R R and R$^{\times}$ R$^{\times}$, which are four pieces of metal, cast on the back side of the slab P, and of nearly the same height, and which project horizontally back from this slab P at right angles to it. There is a clear narrow passage-way between each pair, respectively, of these, which passages are continued through the slab P. They are called the slide-bar channels. Through these channels, respectively, slide back and forth, resting on their lower edges on the platform C C, two bars, called the slide-bars S S$^{\times}$, Fig. 2. These are held in place, respectively, by the two set-screws seen in Fig. 2. Sometimes I have more than two slide-bars. In Fig. 3 are seen, one respectively on each side of the blade-slot E, two gibs or pieces of soft metal, T T$^{\times}$, standing perpendicularly on their lower ends, and between these gibs the blade-slab F slides. Each of these gibs is adjustable by means, respectively, of two screws (see Fig. 3) passing horizontally through that part of the standard A shown in Fig. 3. The other standard, A$^{\times}$, bears a similar pair of gibs, similarly adjustable. Sometimes I dispense with the blade-bar, and, making my steel blade of sufficient breadth, cut therein the diagonal slots shown, and fasten thereto the rack seen in Fig. 1.

The operation of the machine is as follows: The cog-wheel handle K (see Fig. 2) is drawn to the right as far as it will go, when the cog-wheel H, playing in the rack on the blade-slab F, seen in Fig. 1, moves it to the left. This blade-slab hanging with the upper sides of the blade-slab slots L L$^{\times}$, Fig. 1, impinging upon the upper sides of the blade-slab pins M M$^{\times}$, moves upward diagonally as it moves to the left. Its converse motion, when the handle is drawn to the left, and the blade-slab moves downward, being the same, the blade attached below thus gives a drawing stroke. The gauge, seen in Fig. 2, is then slidden back far enough to admit the placing of the bundle or bundles of paper to be cut so as to lie between the slab of metal P and a point just beyond a line drawn vertically downward from the edge of the blade G. Then, by means of the two screws upon the gauge-holder Q being tightened, the gauge and its attachments are firmly fixed. It is desired, say, to trim two bundles of paper at a time. The slide-bars S and S$^{\times}$ are drawn a short distance toward the blade-bar, and are then fastened firmly by means of their respective set-screws. The bundles of paper to be cut are then placed with each a corner in the inner angles formed by the slide-bars and the slab P, with the edges to be cut smooth passing forward a little beyond the blade-edge. The handle K is then pulled to the left to the position shown in Figs. 1 and 2, when the blade G, descending with a drawing cut, shears off the ragged edges of the bundles of paper, leaving the bundles smooth and square. Sometimes it is desirable to cut the edges of the bundles in a slanting direction, when the gibs T and T$^{\times}$ are, by means of their set-screws, seen in Fig. 3, caused to assume a slanting position, when the blade-bar and its blade G go with them, and are also made to slant, and the cut effected upon the bundles of paper is slanting.

Claim.

I claim—

The combination of the cog-wheel H and its handle, K, with the rack fixed to the knife-bar F having the inclined slots L L$^{\times}$, which move over the guide-pins M M$^{\times}$, constructed and arranged substantially as set forth.

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