(No Model.)

2 Sheets—Sheet 1.

M. BRADLEY.

LABEL CUTTER.

No. 272,202. Patented Feb. 13, 1883.

Fig I,

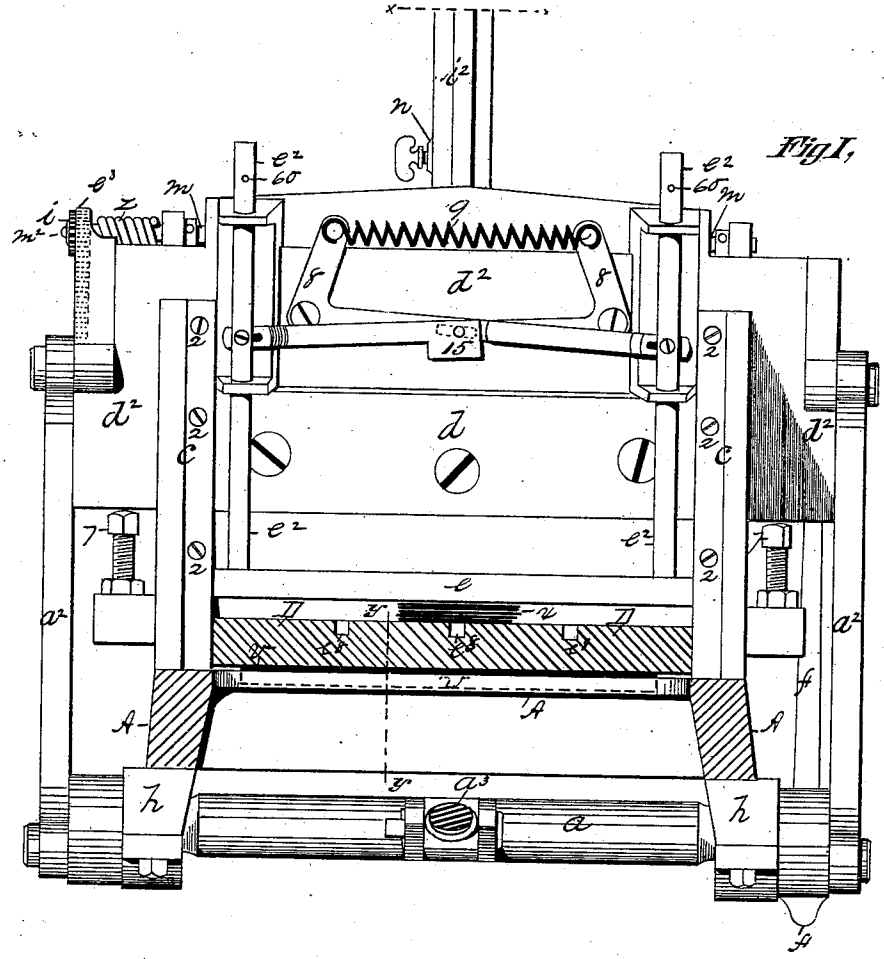
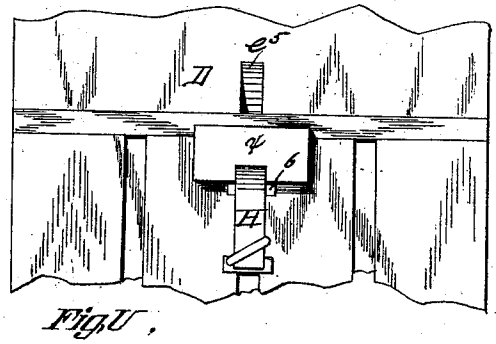


Fig U,



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By Henry A. Chaplin
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(No Model.) 2 Sheets—Sheet 2.

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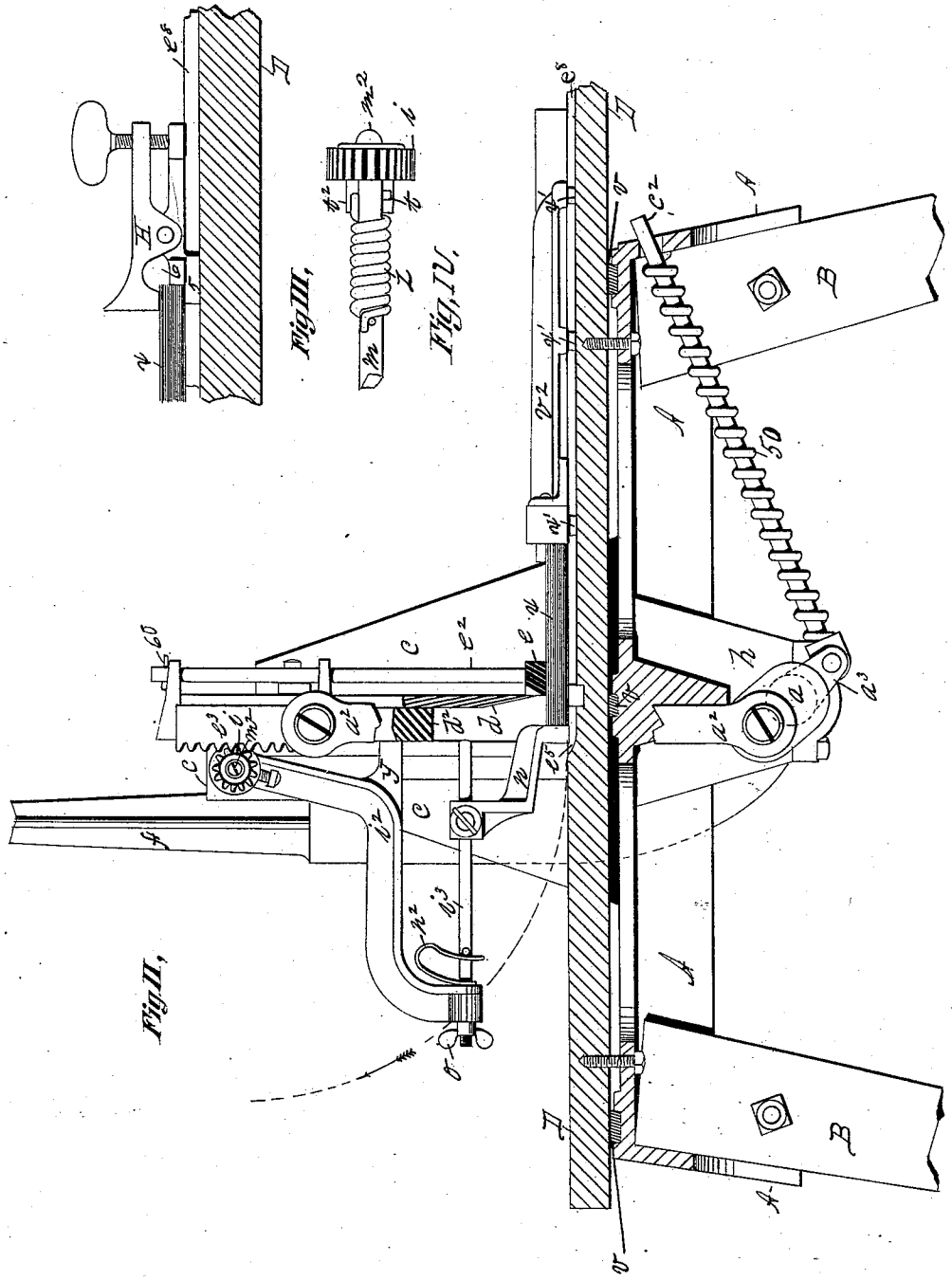


Fig. III.

Fig. IV.

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UNITED STATES PATENT OFFICE.

MILTON BRADLEY, OF SPRINGFIELD, MASSACHUSETTS.

LABEL-CUTTER.

SPECIFICATION forming part of Letters Patent No. 272,202, dated February 13, 1883.

Application filed May 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, MILTON BRADLEY, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Label-Cutters, of which the following is a specification.

This invention relates to improvements in label-cutters, and has relation more particularly to the construction in this class of paper-cutters of an improved binder to press upon the paper near the knife, of an automatic gage, and of devices for holding and moving the paper, the object being to provide improved devices for attaching a paper-binder to a machine of this class, which is adapted to move parallel with the knife and bed and to adjust itself, so as to bear with proper force upon the paper near the knife and quite across its surface; to provide a gage which is automatically moved to and from a proper position behind the knife, and a label-clamp to retain a series of paper-sheets of small dimension in a level position upon the bed of the machine.

In the drawings forming part of this specification, Figure I is an end elevation, partly in section, of a label-cutter embodying my invention. Fig. II is a side elevation, partly in section, of said machine. Fig. III is a side elevation of the label-clamp and a section of the bed of the machine. Fig. IV is a section of the gage-shaft and its directly-connected rotating connections. Fig. V is a plan view of the central portion of the bed and the label-clamp thereon.

The operating parts of this machine are supported upon the frame A, of cast-iron, to which are bolted or otherwise suitably secured the legs B. The said frame has cast upon each side thereof the vertical knife-frame supports *c*, each having a corresponding vertical slot, within which the knife-frame d^2 is fitted and adapted to slide.

The bed D is made preferably of hard wood, and is provided with a series of longitudinal grooves, e^8, in which the back gage and the label-clamp are guided in their movements toward the knife. Said bed is secured on frame A by suitable screws and rests upon transverse blocks *v*.

The knife-frame d^2 has its opposite faces properly finished, and has parallel vertical bearings therefor.

A series of adjusting or gib screws, 2 2 2, is placed in said supports *c c*, each side of the slots therein. The knife-frame is fixed in a proper vertical position between the edges of said slots, and a suitable gib-strip is placed on each side of said frame, and the screws 2 being turned against the rear face of said strips, the latter are held firmly against the knife-frame on opposite sides thereof, and said frame is thereby held in a proper vertical position in said supports *c*.

The ends of the knife-frame d^2 extend outwardly beyond the sides of the supports *c c*, and have attached thereto by suitable pivot-bolts the ends of the connecting-rods a^2.

Two shaft-supports, *h h*, are provided on the under side of the frame A, in which are formed suitable boxes, in which to hang the transverse rock-shaft *a*. In each end of said shaft, which extends outwardly beyond the sides of said frame, is placed a pivot-bolt in a position to rotate eccentrically to the axis of said shaft *a*, and whereby the two connecting-rods a^2 a^2 are connected with said shaft.

A lever-handle, *f*, is secured on one end of shaft *a*, by which the latter is rocked, and whereby the knife-frame is given a reciprocating vertical motion.

An arm, a^3, is provided on shaft *a*, to which is pivoted one end of a spring supporting-rod, c^2, and the opposite end of the latter passes through the end of frame A under the bed D.

A spring, 50, is placed on rod c^2, between a shoulder on said rod, near arm a^3, and frame A. When shaft *a* is rocked to operate the knife-frame, spring 50 is compressed until arm a^3 swings up a little above the axial line of shaft *a*, when the force of said spring acts to assist the rotating movement of said shaft, and this last-named action of spring 50 occurs at the time when the resistance to the descent of the knife through the pile of paper is the greatest, and thus aids rather than otherwise in carrying the knife down, and when the handle-lever *f* is swung back to lift the knife-frame, bringing the parts to the positions shown in Fig. 2, said spring 50 operates to hold the knife-frame and said handle in those positions.

A self-adjusting paper-binder, *e*, is hung on

the front face of the knife-frame d^2 to two vertical posts, e^2, which are supported and guided so that they, with said binder, may have a free vertical movement in suitable perforated projections on said frame, as shown. The said posts e^2 are connected to the slotted arms of two evener-levers, 8 8, which are pivoted on the face of said knife-frame, and are provided each with an upright arm, to or between the upper ends of which is connected a spring. 9. Said evener-levers are pivoted together at the point 15 of their intersection by a pin fixed in one of them, which passes through an oblong slot in the other one, and screws or pins fixed in posts e^2 pass through longitudinal slots in the said evener-arms, as shown in Fig. 1.

Stop-pins 60 are fixed in posts e^2 to arrest the latter at a proper point in their downward movement, or to let the under side of the binder e, when at rest, stand about on a line with the edge of the knife d.

The action of spring 9 and the evener-levers upon the binder e is to cause the latter, as the knife-frame and knife move down, (the latter against a pile of paper to cut it,) to press steadily and firmly upon said paper close by the edge of the knife, and to prevent any of the sheets composing said pile of paper from being drawn by the action of the knife, whereby imperfect work would be done.

It will be seen that said binder e and its above-described connections move down with the knife-frame until said binder strikes the pile of paper x, placed under the knife d to be cut, when the motion of the binder is arrested, except so far as it may be forced by the action of spring 9, and the frame d^2 and knife d continue to move down until the latter shall have passed quite through said paper, the lower edge of that part of frame d^2 beyond supports c c then striking the ends of the stop-screws 7 7 and stopping the motion of said frame. The binder e continues to hold the paper firmly in place until the knife d shall be lifted quite away from it.

The evener-levers 8, as constructed and applied to the knife-frame and connected to the posts e^2, compel the binder e to move down, with its under side always parallel to the face of the bed D and with the edge of the knife, whether the thing to be cut be placed centrally between the ends of said binder or not.

The rear edge of the binder e is beveled off, as shown in Fig. 2, to afford facilities for looking down between said binder and the adjoining face of the knife, so that the paper can be accurately adjusted to a proper cutting-line, if need be, otherwise than by depending solely upon a gage.

A gage, n, adapted to rest in the rear of the knife d and form a stop against which the end of a pile of labels or of paper may be placed to determine their width when cut, is supported adjustably on a gage-rod, i^3, so that it may be moved toward and from said knife. The downhanging end of said gage n is slightly below the surface of bed D, and has an oscillating movement in a groove, e^5, back of knife d. Thus the lower sheet of a pile of paper, as well as those above it, strikes said gage when adjusted beneath the knife. Said gage-rod i^3 is adjustably secured in the end of the gage-arm i^2 by a thumb-nut, o, and a spring, n^2, the latter operating between a pin in said rod and said arm. Said gage-arm is secured on a transverse rock-shaft, m. (see Fig. I,) which is hung on the rear side of the supports c c and back of the knife-frame, and a short horizontal arm, y, on said gage-arm strikes the rear side of the knife-frame when arm i^2 is in the position shown in Fig. 1, and there causes it to be held.

A short rack, e^3, is fixed on one end of frame d^2, and a pinion, i, hung on the end of shaft m, engages with the teeth of said rack. Said pinion i is adapted to have a limited free motion on shaft m, as follows: Pinion i is provided with a hollow hub, t^2, Fig. 4, having one of its sides cut away for about half of its length.

A pin, t, is fixed in shaft m in such position that one lip of the hub t^2 will strike it when pinion i is turned in such a direction as will operate shaft m, so as to swing arm i^2 in the direction indicated by the arrow in Fig. 2, and a coiled spring, z, is placed on shaft m, one end of which engages with a pin in said shaft, and its opposite end engages with the lip of hub t^2 opposite the one which, as above described, strikes pin t.

The above-described construction of the pinion i and its connection with shaft m by the said pins and spring z are for the purpose of allowing a certain movement to frame d^2 without turning shaft m, and whereby, when the knife-frame is approaching its highest point and the end of arm y on arm i^2 is resting against said frame, pinion i may rotate slightly against the tension of spring z and cause the gage n to be held firmly in position by the force of said spring; and, furthermore, said construction provides for allowing the frame d^2 and knife d to descend and the latter to begin to cut the paper before pinion i has rotated against pin t and commenced to turn shaft m and to lift up arm i^2 and swing gage n away from the knife and the end of the pile x of paper, thus holding the latter in position until the binder e and the knife have control thereof. Said gage is adjustable on rod i^3 for general dimensions; but when it is desired to adjust the gage so that cutting may be done very accurately said gage is adjusted finally by the aid of the screw o and the spring n^2.

The clamp H is especially constructed for use with this machine, and consists of an upper and lower plate, hinged together, as shown, one end of the upper one being provided with a thumb-screw, whereby the opposite ends of said plates are caused to approach each other and clamp a series of sheets of paper and hold

them while being cut. On the lower one of said plates is a transverse stop-block, 6, whose under side is on a level with the surface of bed D and below block 6, and reaching out under the end of the upper plate is a guide block, 5, whose upper surface is level with that of said bed, and which hangs downward within one of the grooves e^8 in said table. Thus a clamp is provided for holding labels and similar small work which does not elevate one end of the pile, as is usual, above the face of the bed, thus keeping the paper in the best position to insure the best work. In using said clamp the paper x is secured in it, and, placing the block 5 in one of said grooves in bed D, the paper is pushed along under knife d and against the gage n.

A back gage, v^2, is provided for pushing forward paper, having likewise guide-blocks x' thereunder to follow in said grooves e^8 in bed D, and thus compel its edge next to the paper x (see Fig. II) to stand parallel with the knife, and consequently serve to forward the paper-pile to a true position under the latter, so that it may be properly cut.

What I claim as my invention is—

1. In combination, the shaft a, having arm a^3 thereon, adapted to have its end oscillate above and below a line through the axis of said shaft, the rod c^2, pivoted to said arm, the spring 50, the knife-frame d^2, eccentrically connected to said shaft, and means, substantially as described, for rocking the latter, substantially as set forth.

2. The gage n and the rock-shaft m, connected one to the other, the rack e^3 on frame d^2, pinion i, and appliances, substantially as described, whereby said pinion is free to rotate to a limited extent on said shaft without rotating the latter, combined and operating substantially as set forth.

3. In combination, the gage n, having an oscillating movement over the bed of the machine, and the bed D, provided with the groove e^5 to permit the end of said gage to descend below the surface of said bed, substantially as set forth.

4. Shaft m and means, substantially as described, for rocking the same by the movement of frame d^2, arm i^2, rod i^3, adjustable in said arm, and gage n, combined and operating substantially as set forth.

5. In combination, the posts e^2, supported on the knife-frame d^2, the binder e, the evener-levers 8 8, and the spring 9, substantially as set forth.

6. In combination, the knife-frame d^2, having the rack e^3 thereon, the shaft m, pinion i, provided with a cut-away hub, i^2, and spring z, substantially as set forth.

7. The combination, with the bed D, provided with one or more longitudinal grooves, e^8, of the portable clamp H, consisting of an upper and an under plate hinged to each other, and provided with a thumb-screw, and said under plate having thereon a transverse stop-block, 6, and a guide-block, 5, located under said block 6 and adapted to fit loosely in said grooves e^8, substantially as set forth.

MILTON BRADLEY.

Witnesses:
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H. J. MARGERUM.