

(No Model.)

2 Sheets—Sheet 1.

L. BAILEY.
TYPE WRITING MACHINE.

No. 569,737.

Patented Oct. 20, 1896.

Fig. 1.

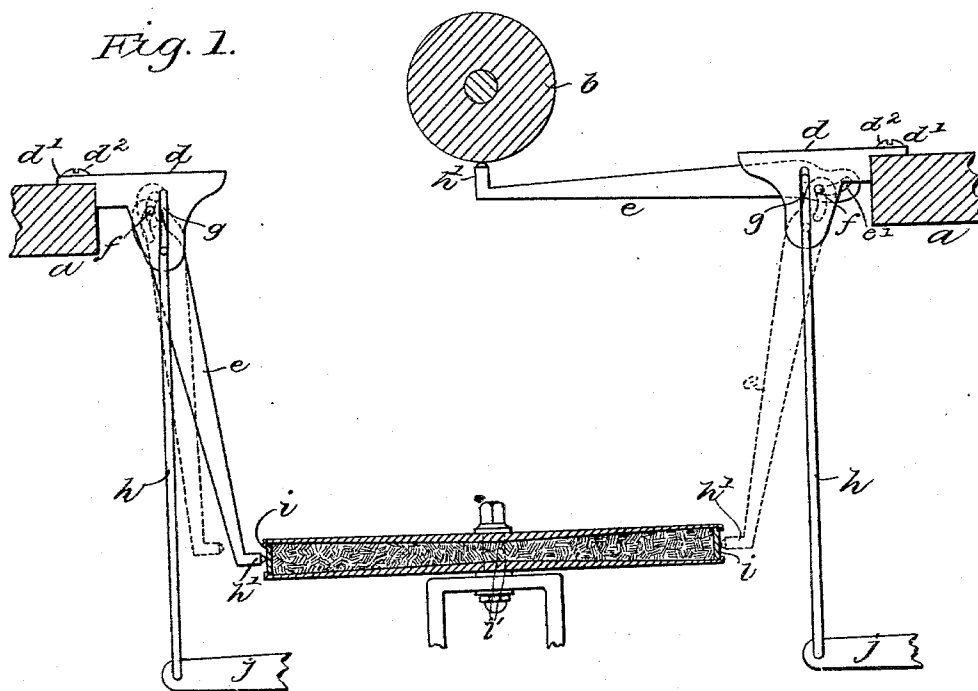


Fig. 2.



Fig. 3.

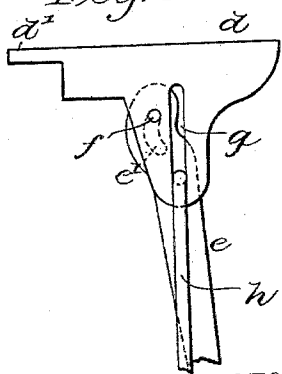


Fig. 4.

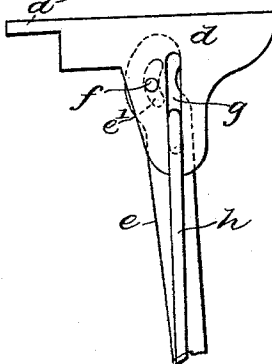
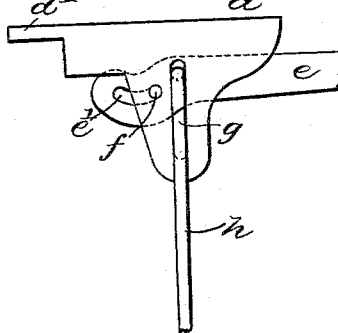


Fig. 5.



WITNESSES

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2 Sheets—Sheet 2.

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Fig. 8.

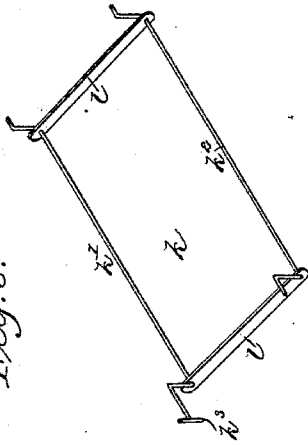


Fig. 9.

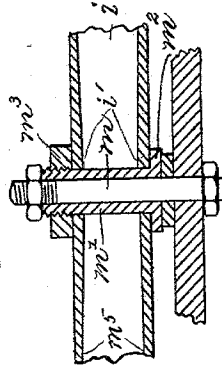


Fig. 7.

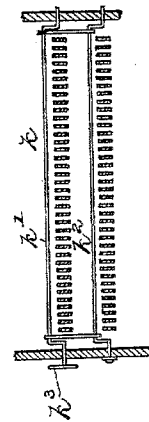
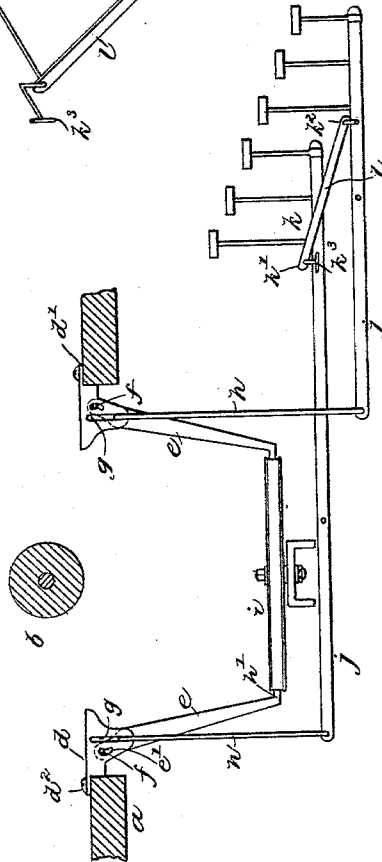


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE

LEONARD BAILEY, OF WETHERSFIELD, CONNECTICUT.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 569,737, dated October 20, 1896.

Application filed May 15, 1891. Serial No. 392,848. (No model.)

To all whom it may concern:

Be it known that I, LEONARD BAILEY, of Wethersfield, in the county of Hartford and State of Connecticut, have invented certain
5 new and useful Improvements in Type-Writing Machines, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The principal object of my invention is to
10 provide a type-writing machine that may be used without a printing-ribbon and one in which the alinement of the several characters is preserved.

My invention consists in the details of the
15 several parts making up the type-bar, its bearings, the operating mechanism, and the inking-pad, and in the combination of such parts, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a detail view, in vertical section, of those parts of a type-writing machine that are directly connected with the features of my improvement.
20 Fig. 2 is a detail top view of one of the brackets with a type-lever mounted therein. Fig. 3 is a detail side view, on enlarged scale, showing the type-bar in its depressed position. Fig. 4 is a detail side view, on enlarged scale, showing an intermediate position of the type-
30 bar. Fig. 5 is a detail view of those parts, showing the type-bar in position when the imprint is being made by the type. Fig. 6 is a detail view in section of part of a type-writing machine, showing a number of type bars and levers and the type-lever clamp. Fig. 7
35 is a detail view in cross-section of the type-levers, showing the type-lever clamp. Fig. 8 is a detail perspective view of the type-lever clamp. Fig. 9 is a detail view in section of
40 the pad-pivot.

In the accompanying drawings the letter *a* denotes the frame of a type-writing machine immediately adjacent to the part on which the type-bars are mounted.

b denotes the platen upon which the paper is supported while the printing is being done, and *c* denotes a type-bar that is pivotally supported in the bracket *d*. The latter is preferably composed of a piece of metal bent to
50 form a loop *d'* at one end that is adapted to embrace the shank of a screw or stud *d''*, that

passes through the loop and serves as a means of securing the bracket to the frame. Between the side parts of this bracket a type-bar *e* is supported, a fulcrum-pin *f* passing
55 directly through the side parts of the bracket and through a cam-slot *e'* in the upper end of the type-bar. The bracket is also provided with the guide-slots *g* in front of the fulcrum-pin and extending in a substantially upright
60 position. A connecting-rod *h*, having its lower end connected to the type-levers, passes upward and at its upper end is connected to the type-bar that rotates freely thereon, and the upper end of this connecting-rod is also
65 connected with the bracket and with the type-bar in such manner that they have a vertical but no lateral movement therein, this movement being controlled by the guide-slot *g*. The lower end of the type-bar is provided
70 with a type *h'*, that, in the lowermost position of the bar, rests against the surface of an inking-pad *i*, that is preferably of a disk shape and presents its periphery to the several type
75 that are arranged about the pad in a circular form usually. The object of this peculiar mounting of the type-bar is to provide a means by which the faces of the type may be held in contact with the inking-pad, so as to take up the necessary quantity of ink for making an
80 impression, and also means for withdrawing the type, lifting it, and then striking it against the paper that is supported on the platen in the usual manner.

The lower end of the connecting-rod *h* is
85 pivotally attached to the end of a type-lever *j*, that is pivoted to the frame and is provided on its outer end with a finger-pad bearing a character that corresponds with that on the type. When the finger-pad is depressed, the
90 inner end of the lever *j* is lifted, thrusting the rod *h* upward. This lifts the type-bar, and, owing to the curved shape of the cam-slot within which the fulcrum-pin *f* is held, the lower end of the type-bar is withdrawn from
95 the face of the inking-pad into substantially the position indicated in dotted outlines on the left of Fig. 1 of the drawings and into the position indicated in Fig. 4 of the drawings, the type-bar swinging on the upper end of
100 the connecting-rod *h*. A continued upward movement of the connecting-rod *h* brings the

lower end of the cam-slot g into contact with the fixed fulcrum-pin f , that holds the upper end of the type-bar and causes it to turn on the upper end of the connecting-rod h and be drawn into the substantially horizontal position shown in full lines in Figs. 1 and 5 of the drawings. The upper end of the connecting-rod slides in the guide-slot, that is of only sufficient width to just embrace this end of the rod and permit a free sliding movement, but no lateral displacement. By this means the type borne on the end of a given type-bar always strikes at the same distance from the pivot on which the bar is supported and in this manner preserves a precise alinement of the characters. As soon as the pressure on the pad is relieved the type-bar drops back into the position indicated in full lines in Fig. 1, and as the return movement is made under the impulse of a spring or by gravity the face of the type borne on the type-bar is driven against the periphery of the inking-pad with a force sufficient to supply the end of the type with sufficient ink to make the next imprint.

In order to prevent the faces of the type from becoming clogged with ink by lying for any considerable time in direct contact with the inking-pad and also to enable the pad to be manipulated without interfering with the faces of the type, provision is made for simultaneously moving the type out of contact with the pad and throwing them into the position as indicated in dotted outline on the left in Fig. 1 of the drawings. To this end the type-lever clamp k is provided, and this consists, preferably, of an eccentric-rod k' , that is pivoted to the side parts of the frame, a crank-like bend being made between the main part of the rod and the pivot ends, as shown in Fig. 7 of the drawings.

In Fig. 6 of the drawings two banks of keys are shown in side view, the upper bank being the ones that are connected to the type-bars on the rear of the circle and the lower bank consisting of those levers having a pivot nearer the keys. The type-lever clamp is so arranged that one of the rods overlies each bank of keys, and these rods are connected by a link l , so that when one is turned both are moved. By turning the bar k' , as by means of the handle k^3 , arranged in any convenient position, the type-levers in the upper bank are as a whole pushed downward, and at the same time, by means of the connecting-link, the clamp-rod k^2 is thrust down upon the upper surface of the type-levers, which are all depressed a sufficient distance to throw all of the type out of contact with the pad.

In Fig. 9 is illustrated a specific form of construction of the pivot that supports the inking-pad. This is so made as to enable the pad to be rotated upon the pivot, and also so formed as to enable the upper and lower disks i' with sloping sides m^5 (see Figs. 1 and 9) and supporting the pad to be forced toward each other in such manner as to force

the ink outward from the center toward the periphery.

The pivot consists of a central bolt m and a sleeve m' . The bolt passes through the hollow sleeve and has a head on one end underlying the support on the frame and a nut on the other end that overlies the upper end of the sleeve. The hollow sleeve has a flange m^2 on the lower end underlying the lower disk and a thread on the upper end, on which a nut m^3 is fitted, and by turning this nut the two disks i' are forced toward each other. This clamping device that supports the disk is independent of the central bolt m , on which the disks and sleeve can be turned when desired.

I claim as my invention—

1. In a type-writing machine, in combination with a type-bar rotarily mounted on a connecting-rod and having a curve-shaped slot, a bracket having a guide-slot, a fulcrum-pin extending through the bracket and through the slot in the type-bar, the connecting-rod extending from the type-lever to the type-bar and in engagement with the slot in the bracket, and the type-lever, all substantially as described.

2. In a type-bar mechanism, in combination, a bracket-loop having guide-slots in each side thereof, a type-bar having a cam-groove, a fulcrum-pin passing through the bracket and through the cam-groove, a bar-actuating rod connected to the type-bar and to a type-lever and in engagement with the guide-slots in the bracket, and the type-lever, all substantially as described.

3. In a type-writing machine, in combination with the type-bars arranged about a common center, an inking-pad arranged within the group of types borne on the type-bars, the type-bars each bearing a type resting normally in contact with the inking-surface of the pad at the lower limit of the play of the type, brackets supporting the type-bars, cam-slots located in type-bars, fulcrum-pins secured to the brackets and extending through the slots, guide-slots located in the brackets, connecting-rods between the type-bars and type-levers, the upper end of the connecting-rods being in engagement with the guide-slots in the brackets, and the type-levers, all substantially as described.

4. In a type-writing machine, in combination with a series of type-bars each bearing type grouped about a common center, an inking-pad located with its outer surface normally in contact with the printing-surface of the type, and composed of a central ink-reservoir, a periphery of porous material, the disks with sloping surfaces with the central pad-pressing device, and a central support or pivot on which the inking device is rotated, all substantially as described.

5. An inking device consisting of a main standard or support, a central pivot secured to and extending upward from this support, a sleeve borne and free to rotate on this pivot,

a disk or disks secured to said sleeve, an absorbent material extending to or beyond the periphery and located between said disks, an ink supply also located between said disks, a
5 nut or like screw-threaded device for compressing the disks secured to one end of the sleeve the opposite end of which is provided

with a flange, and a nut secured to the upper part of the central support or pivot, all substantially as described.

LEONARD BAILEY.

Witnesses:

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