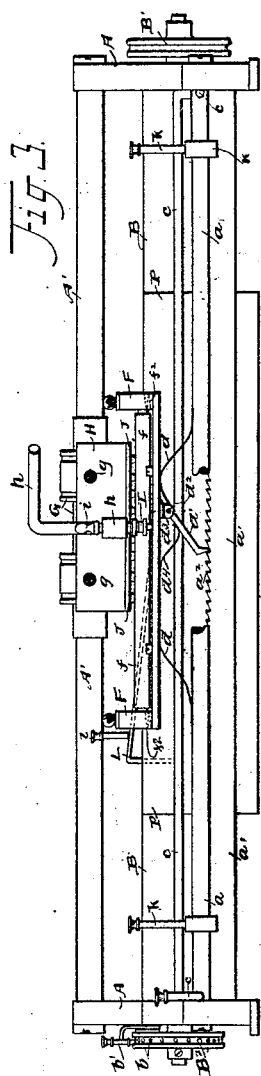
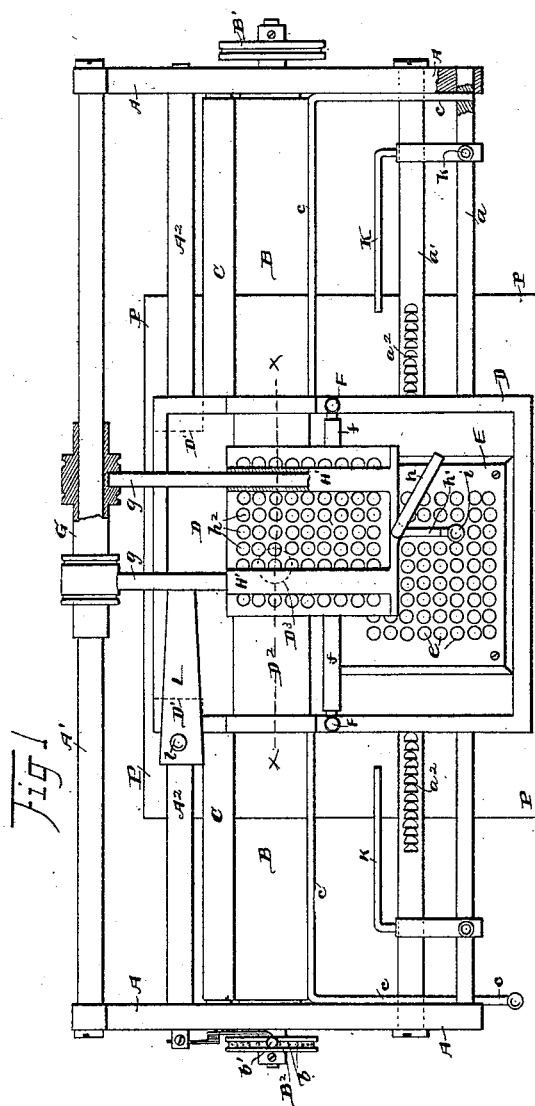


2 Sheets—Sheet 1.

No. 421,536.

Patented Feb. 18, 1890.



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Geo. W. King

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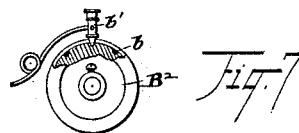
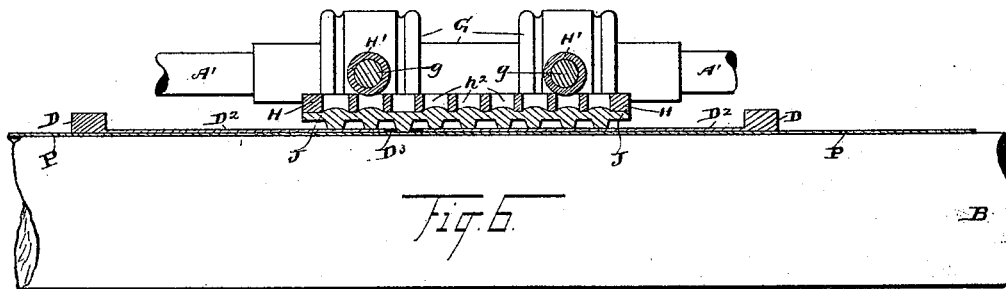
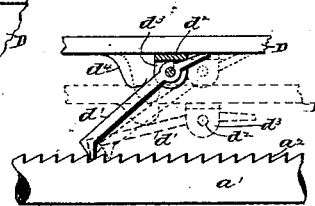
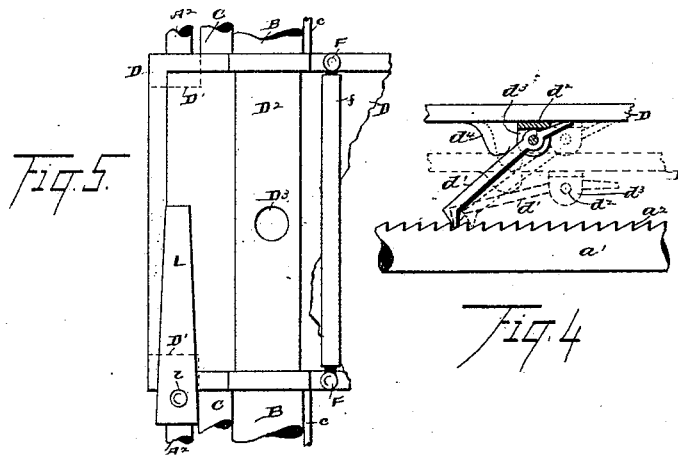
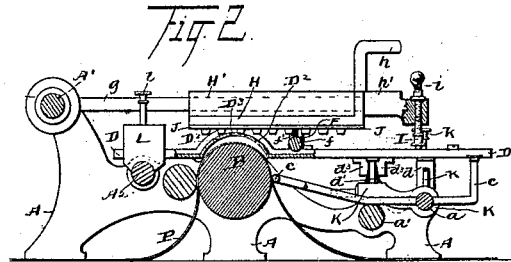
(No Model.)

2 Sheets—Sheet 2.

A. A. WILCOX.
TYPE WRITING MACHINE.

No. 421,536.

Patented Feb. 18, 1890.



WITNESSES.

W. S. Amstutz
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UNITED STATES PATENT OFFICE.

AMOS A. WILCOX, OF CLEVELAND, OHIO.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 421,536, dated February 18, 1890.

Application filed October 15, 1888. Serial No. 288,094. (No model.)

To all whom it may concern:

Be it known that I, AMOS A. WILCOX, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Type-Writers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in type-writers; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims, the object being to provide a type-writer so simple in construction that it can be manufactured at a small initial cost.

In the accompanying drawings, Figure 1 is a plan. Fig. 2 is an end elevation, partly in section. Fig. 3 is a front elevation. Fig. 4 is an enlarged detail of the feeding device. Fig. 5 is a plan of section B² detached. Fig. 6 is an enlarged section on line *xx*, Fig. 1. Fig. 7 is an end elevation of the spacing device.

A A are metal end pieces rigidly connected by means of rods A', A², *a*, and *a'*, the latter having ratchet-teeth *a*² on the upper surface thereof, so that rods *a'* serve as ratchet-bars, the teeth thereof presenting toward the right-hand end.

B is a rubber roller of considerable size, on which the sheet of paper P is supported, the trunnions thereof being journaled in suitable holes in the side pieces A A. On the one trunnion and outside the frame is mounted thumb-wheel B' for rotating the roller by hand, and on the trunnion at the opposite end of roller B is mounted disk B², the latter having a series of holes *b* located at equal intervals on the periphery thereof and engaging successively the spring retaining-pawl *b'*.

C is a small rubber roller, the trunnions thereof being journaled in suitable holes in the side frames A A, the functions of this roller being to press the paper against roller B; a bail *c*, pivoted on roller *a*, holding the paper against the other side of roller B. By raising pawl *b'* and turning roller B the dis-

tance from one hole *b* to another the paper is moved the distance of one printed line from another.

D is a tilting table, the same being mounted on rod A³ and connected with the latter by means of thimbles D'. These thimbles have an easy fit on the rod, so that the table may freely turn or move endwise of the rod. The body of this table, or at least section D² thereof, is of thin sheet metal and curved to fit roller D, section D² having a small orifice at the center thereof, the size of which is adapted to admit one type at a time. Attached to the under side of the table and near the front edge thereof is the flat semi-elliptical spring *d*, the free ends of the spring bearing on rods *a*. This spring is light, and the recoil thereof is only sufficient to upwardly tilt the table a short distance. A dog *d'* engages the ratchet-teeth of rod *a'*. This dog is pivoted at *d*² to lugs *d*³, the latter depending from the under side of the table. In the depressed position of the table dog *d'* is in approximately horizontal position. When the table is elevated, the dog by gravity, aided by a spring *d*⁴, assumes such an inclined position that the free end of the dog is thereby advanced toward the right hand one ratchet-notch. (See Fig. 4.) When, therefore, the table is again depressed, the table is by the action of the dog forced along one notch of the ratchet and to the right hand. Upon the table is secured the index-plate E, the latter having series of holes *e*, arranged in line either way, the different letters of the alphabet, together with numerals, punctuation-marks, &c., being plainly marked on the table, so as to be respectively read through the different holes *e* of the index-plate.

F are tubular housings projecting upwardly from table D for holding in position the inking-roller *f*. The trunnions of this roller enter slots *f'* of the housings, these trunnions resting, respectively, on springs *f*², the tension of which springs holds the inking-roller in its normal or elevated position.

G is a long sleeve mounted on and nicely but easily fitting rod A', so that the sleeve may easily turn or slide endwise on the rod. From the sleeve project forward two parallel

fingers *g*, on which fingers is mounted type-bed H, the latter having sleeves H' attached that embrace and slide on the said fingers.

Type-bed H is provided with handle *h* and with forwardly-projecting arm *h'*, the latter having a vertical screw-threaded hole in which is screwed the shank of pointer I. The pointer has a blunt conical lower end adapted to engage hole *e* of the indexed plate. A thumb-nut *i* screws onto the shank of the pointer above arm *h'* and serves as a jam-nut, by means of which pointer I, having been adjusted vertically by means of the screw-threads thereof, is afterward locked and secured in such adjustment by the said thumb-nut. To the under side of the type-bed H is attached a thin rubber plate J, this plate being integral with and having the different letters and characters projecting downward from the under side thereof, the different letters and characters being arranged directly under the different holes *h*², these latter being in rows to correspond in arrangement and number with holes *e* of the index-plate.

A flat spring L is secured to the table directly over rod A². The free end of this spring is bent downward and notched, so as to engage this rod. The spring is provided with an upwardly-projecting handle *l* for elevating the spring and moving the table backward to the place of beginning. This spring by pressing upon the rod steadies the table and serves as a brake to prevent the table from backlash or moving too easily in feeding, the spring, as aforesaid, being elevated in reversing the table.

In operating the device the operator, by means of handle *h*, raises the type-bed until pointer I is free from the index-plate, and then by sliding the platen endwise of rod A or endwise of finger *g*, or both, the pointer is brought over hole *e*, having the desired letter or character exposed at the bottom thereof, and while the pointer is in such position the relation of parts is such that the corresponding letter or character of the other plate will be directly over orifice D³ of the curved section D² of tilting table D, whereupon by pressing down on handle *h* pointer I is forced down into the opposing orifice *e* of the index-plate E. This presses section D² firmly upon the paper and causes type-bed H to be depressed to the extent that the row of letters or characters brought to bear on and along the summit of section D² are by such engagement forced up into holes directly above all except the letter or character that has been brought directly over orifice D³, and this letter or character leaves its impress on the paper. As, as aforesaid, section D² is extremely thin and at the time rests directly and firmly upon the paper, it follows that the elastic quality of the rubber plate is taxed but lightly by reason of the letters along the summit of section D² being forced back into the holes of the platen a distance equal to the thickness of section D².

The letters and characters that engage section D² serve to steady the type-bed, so that the letter that engages the paper through orifice D³ makes a clean and sharply-defined impression. Section D² also serves as an ink-distributing plate. The ink is applied by hand from time to time to the inking-rollers *f*, and as the type-bed is moved backward and forward over the inking-roller the type carries the ink from the roller and deposits it on section D², and whenever a type makes an impression all the other types in that row are brought in contact with the inked surface of section D², and in this manner ink is kept well distributed to the type. When it is desired to feed the table along to separate the words, the pointer is drawn forward, so as to rest on the front margin of the table, whereby all the types are brought forward of orifice D³. In such position the table is depressed, as aforesaid, for feeding purposes, but without causing any impression to be taken on the paper.

K K are stops mounted on and adjustably secured to rods *a* by means of set-screw *k*. These stops are adjusted to limit the movement of the table according to the size of the sheets of paper and to leave a margin, if desired, on the paper.

In operating this type-writer, by bearing heavily or lightly on handle *h* considerable difference may be made in the character of the impressions on the paper corresponding with so-called "heavy" or "light" hand in writing. This peculiarity may be utilized to advantage, for instance, in emphasizing or rendering conspicuous certain words, phrases, or sentences.

What I claim is—

1. In a type-writer, the combination, with a perforated type-bed and attached thereto a rubber plate bearing type, the latter respectively registering with the different holes of the type-bed, of a tilting table interposed between the type and paper and having a hole for admitting one type at a time to contact with the paper, substantially as set forth.

2. In a type-writer, the combination, with a perforated type-bed, types, and a table interposed between the types and paper, substantially as indicated, of an index-plate and pointer arranged for mutual engagement, the former being mounted on said table and the latter being connected with the type-bed, the parts being arranged substantially as and for the purpose set forth.

3. In a type-writer, the combination, with a tilting table having endwise movement and provided with an opening, a rod, a sleeve loosely mounted on said rod so as to turn and slide thereon and provided with fingers, and a type-bed located above the table and connected with and having a sliding movement on said fingers, of a dog and a ratchet-bar, the former being pivotally connected with

the table and resting on the ratchet-bar, whereby the depression of the table operates the dog in feeding the table laterally.

4. In a type-writer, the combination, with
5 a rod and a sleeve having fingers projecting at right angles therefrom, the said sleeve adapted to turn and have endwise movement on the rod, of a type-bed mounted on the fingers and adapted to move in the direction of
10 the length of the rod, toward and away from the rod, and in the arcs of circles concentric with the rod, a roller located under the type-bed, a tilting table located between the roller and type-bed and having a sliding movement
15 independently of the type-bed, the said table being provided with an index-plate and a printing-opening, and mechanism for feeding the table laterally, substantially as set forth.

5. In a type-writer, the combination, with a perforated type-bed, types connected there- 20 with, and a tilting table interposed between the type and paper, substantially as indicated, of a perforated index-plate mounted on the tilting table, and an arm and pointer connected with the platen, said pointer being 25 adjustable toward and from the index-plate, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 21st day of May, 1888.

AMOS A. WILCOX.

Witnesses:

CHAS. H. DORER,
ALBERT E. LYNCH.