(No Model.) 3 Sheets—Sheet 1.

J. L. EDLAND.

TYPE WRITING MACHINE.

No. 456,025. Patented July 14, 1891.

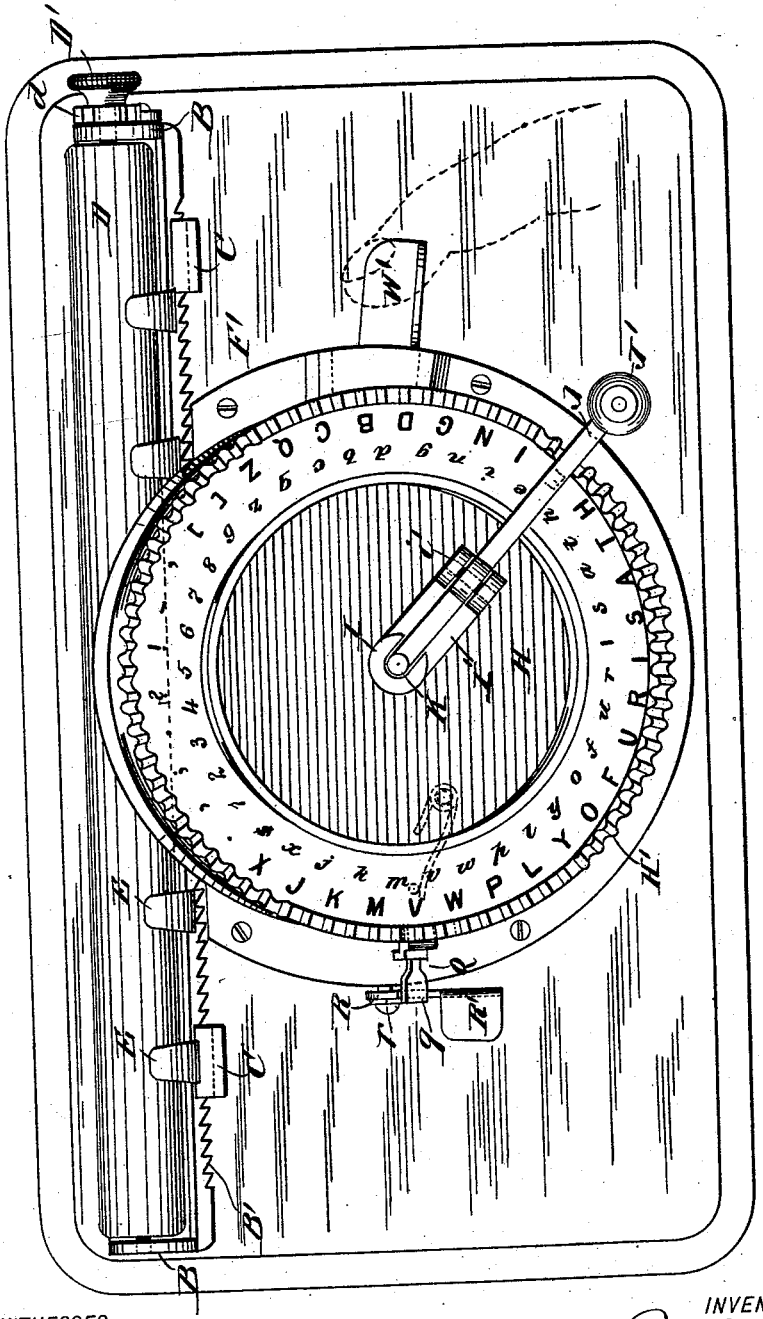

Fig. 1.

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3 Sheets—Sheet 2.

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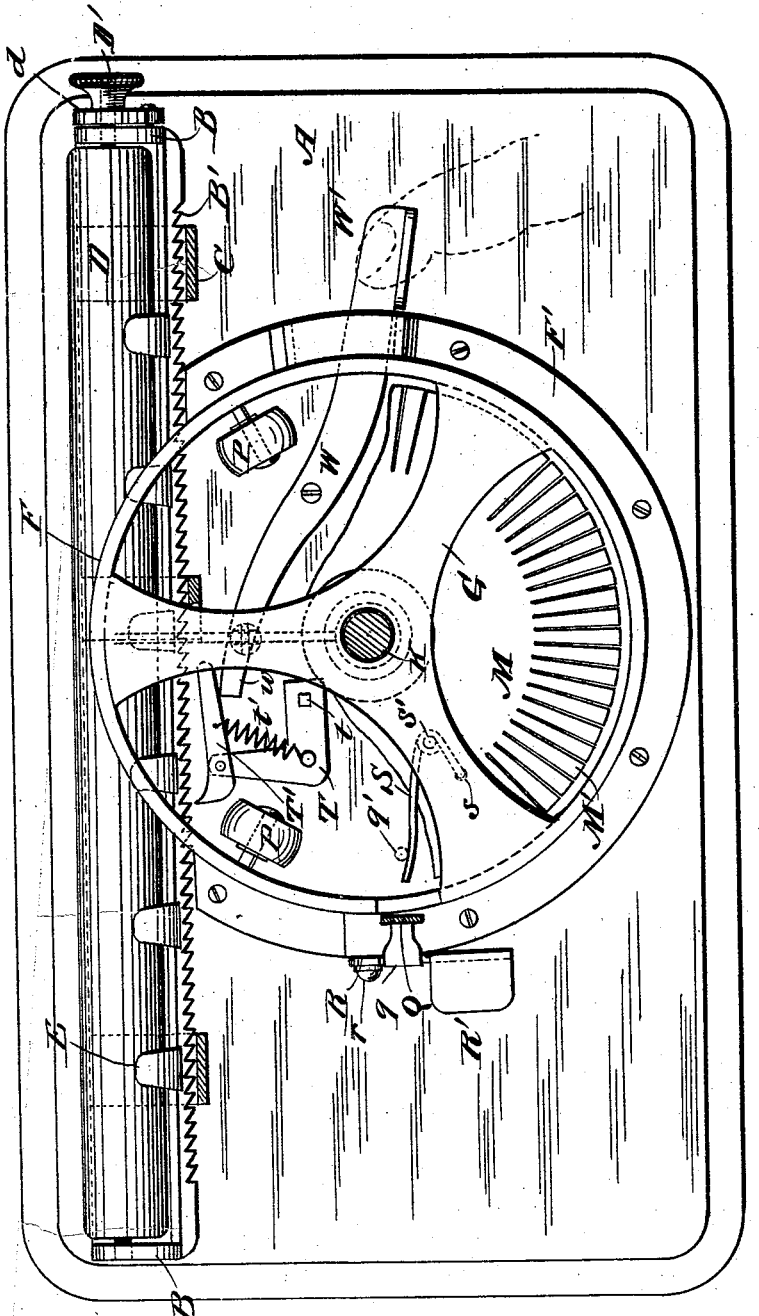

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(No Model.) 3 Sheets—Sheet 3.

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TYPE WRITING MACHINE.

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Fig. 3

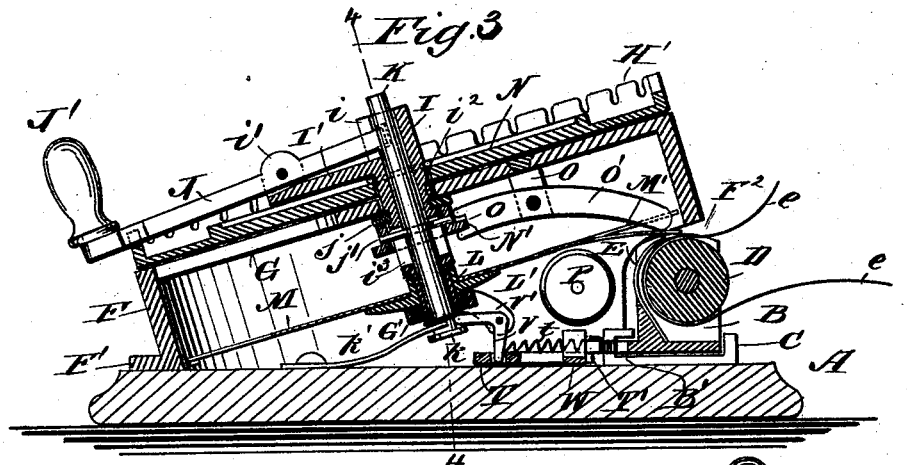


Fig. 4

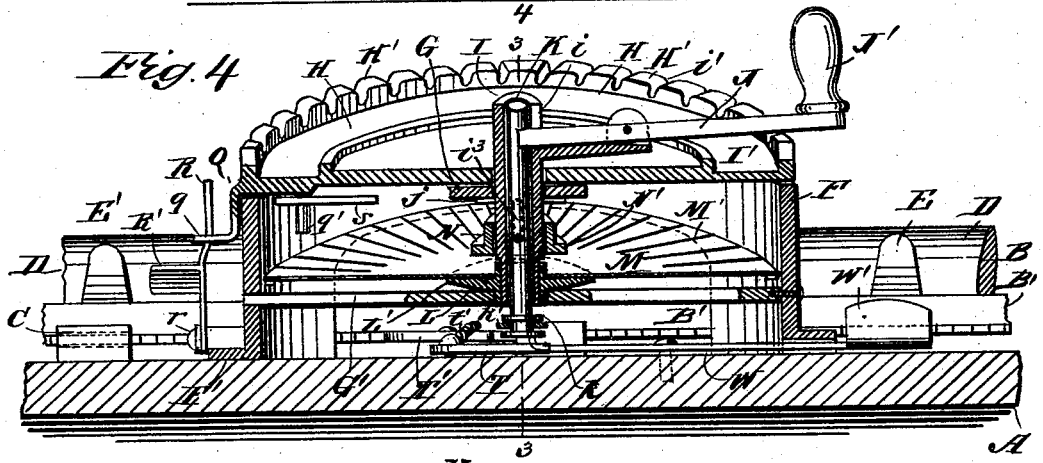
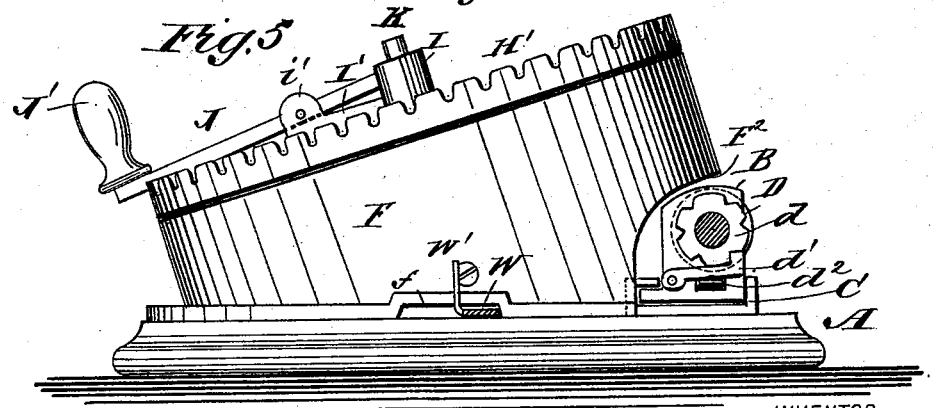


Fig. 5



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UNITED STATES PATENT OFFICE.

JOE L. EDLAND, OF BROOKLYN, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 456,025, dated July 14, 1891.

Application filed December 4, 1890. Serial No. 373,565. (No model.)

To all whom it may concern:

Be it known that I, JOE L. EDLAND, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Type-Writing Machine, of which the following is a full, clear, and exact description.

My invention relates to improvements in type-writing machines; and the object of my invention is to produce a type-writer of few parts which is specially adapted for private use, and which may be easily and correctly operated by one who is not familiar with type-writing.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the type-writer. Fig. 2 is a plan view with the dial removed. Fig. 3 is a vertical cross-section on the line 3 3 of Fig. 4. Fig. 4 is a broken vertical longitudinal section on the line 4 4 of Fig. 3; and Fig. 5 is a side elevation, partly in section, of the type-writer.

The machine is provided with a suitable base A, which is adapted to rest upon a table or other object, and a carriage B is mounted longitudinally on the back side of the base so as to slide thereon, the carriage having a flat lower portion which moves in keepers C on the base, and having on its inner side a rack B′, which is engaged and moved by a spring-pawl in a manner hereinafter described, the notches on the rack corresponding to a letter-space, so that by moving the rack and carriage one notch at a time the proper spaces will be made on the paper. A rubber roll D is mounted longitudinally in the carriage, the roll serving as a feed-roll and as a printing-platen, and one end of the roll has a thumb-piece D′ fixed thereto, by means of which the roll may be revolved, and the roll is also provided at one end with a ratchet-wheel *d*, which is engaged by a pawl *d′*, pivoted on the carriage beneath it and held in engagement with the wheel by a spring d^2, so that the roll will be thus prevented from turning back in the wrong direction. The front upper portion of the roll D is clasped by flat springs E, which are secured to the carriage and press lightly against the roll, said springs being adapted to hold the paper *e* upon the roll and at the same time to allow it to be fed between the springs and the roll.

A drum F is fixed centrally to the base A, the drum having a flange F′ at the bottom to enable it to be easily secured to the base and having its rear portion cut away, as shown at F^2, so that said rear portion of the drum may overlap the carriage and roll and bring the type in line with the roll, as described below. The drum F is inclined forward, as best shown in Figs 3 and 5, so that all the characters on the dial which surmounts the drum can be easily and distinctly seen.

The drum is provided at the top with a three-armed spider G, which serves to strengthen the drum and also affords means for securing some of the working parts of the machine, and a cross-arm G′ extends centrally through the drum near the lower part thereof, the cross-arm and spider both being centrally perforated to receive a vertically-movable shaft, as described below. The drum F is surmounted by a dial H, which has a notched flange H′ around its outer edge, and which has the various characters to be printed inscribed around its outer portion near the flange, its characters being preferably arranged with the upper-case characters next the flange and the lower-case just within the upper-case and with the letters of the upper and lower-case alternating. The notched flange H′ serves as a guide for the printing-lever and causes it to descend above the appropriate character. A tube I is mounted vertically in the central portion of the spider G and dial H, the said tube having a vertical slot *i* near the top and having a laterally-extending arm I′ beneath the slot and above the dial, said arm terminating in vertical lugs *i′*, between which is pivoted the printing-lever J, said lever having at its outer end a handle J′, by which it may be operated, and having its inner end connected with the vertical shaft K, which extends downwardly through the tube I. The tube I is held in place by a key *j*, which fits in recesses i^2 on

opposite sides of the tube just beneath the spider G, and in the central portion of the tube on opposite sides are slots i^3 to receive the pin j', which extends through the shaft K and to permit the pin to move vertically with the shaft. The shaft K is normally pressed downward, so as to raise the handle of the printing-lever by a spring k', one end of which is fixed to the base A and the opposite end of which is made to enter between the two parallel flanges k on the bottom of the shaft K.

Fixed to the lower end of the tube I is a hub L, which will necessarily revolve with the shaft. The hub L is provided with a wide flange L', extending laterally and circumferentially from it and fixed to the flange is an annular plate M, the outer portion of which is slit radially to form the flexible type-fingers M', which carry type upon their under sides near the outer ends, the type representing characters similar to the characters on the dial H, and the type being arranged for upper and lower case printing by producing the upper and lower case type on alternate fingers.

A sleeve N is mounted to move vertically on the tube I, and the sleeve is held to the shaft K by the pin j', which extends through the shaft and sleeve and through the slots i^3 in the tube I. The sleeve will thus move vertically with the shaft and will revolve with the shaft and tube.

Pivoted between the depending lugs O, on the under side of the spider G, is a curved lever O', the outer end of which extends to a point above the outer edge of the plate M and the inner end of which is slotted horizontally, as shown at o, so as to clasp loosely the annular flange N' on the sleeve N. It will thus be seen that when the sleeve is raised the inner end of the lever O' will be raised and the outer end will be forced downward, thus depressing one of the type-fingers M' and causing a character to be printed on the paper e immediately below said finger.

On the inner sides of the drum F are pivoted ink-rollers P, which are thus brought within the path of the type on the fingers M', so that the type will be kept well inked.

The dial-plate H is provided on one side with a depending ear Q, the lower end q of which is bent outward, so as to engage the upper arm of the elbow-lever R, which is pivoted to a boss r on the flange F' of the drum, and the lower arm of which terminates in a thumb-piece R'. The plate H has a depending pin q', and is pressed upon by a spring S, which is secured at one end to the under side of one of the spider-arms, as shown at s in Fig. 2, and has a central coil, as shown at S', to give it the necessary strength, and its free end presses against the pin q' of the dial-plate, the pressure of the spring normally holding the dial in position for lower-case printing.

When the dial is to be shifted and the mechanism is to print with upper-case type, the operator depresses the thumb-piece R', and this will cause the lever R to strike the ear Q and move the dial H against the spring S, so as to shift the mechanism just enough to bring it into position to print upper-case characters. The type-fingers bear upper and lower case type to correspond with the characters on the dial, the upper and lower case type being arranged on alternate fingers, and by moving the dial, as described the dial characters will be made to align with either the upper or lower case type, and in order that there may be no mistake the dial movement is limited to the distance from one type-finger to another. An elbow-lever T is pivoted on the base A within the drum F, the said lever being pivoted at its elbow so that one arm will extend to a point adjacent to the rack B' of the carriage, and pivoted on the end of the lever next the rack is a pawl T', which is normally held in engagement with the rack B' by a spring t', extending from the elbow of the lever T to the rear portion of the pawl. The inner arm of the lever T has a vertical recess t in it near one end to receive the lower end of the elbow-lever V, said lever being pivoted between the lugs V', which depend from the cross-arm G', and the upper arm of the lever V enters between the flanges k of the shaft K. It will thus be seen that every time the printing-lever is depressed and the shaft K raised to print a character, as described above, the elbow-lever V will be tilted, thus tilting the elbow-lever T and drawing back the pawl T', and when the printing-lever is raised and the above movements reversed the pawl T' will move the rack B' and carriage B the distance of one notch, and as the notches correspond with the letter-spaces the spaces will be properly made on the paper.

A lever W is centrally pivoted on the base A within the drum F, the inner end w of the lever pressing against the rear end of the pawl T' and the outer end of the lever being made to extend through a slot f in the bottom of the drum F and terminating in a thumb-piece W'. It will thus be seen that by tilting the lever W the pawl T' may be thrown from engagement with the carriage-rack B', and while the lever and pawl are held in this position the carriage may be moved freely back and forth and brought into a desired position.

To operate the machine, a piece of paper e is made to enter between the roll D and springs E from the rear under side, and the operator then grasps the handle J' of the printing-lever and brings the lever opposite the letter to be printed. This brings the type representing the letter above the paper e and printing-roll D, as the plate M bearing the type-fingers is arranged in relation to the lever J, so that when the lever is above a certain letter the type representing the said letter will be above the printing-roll. The op-

erator then depresses the lever, and this movement raises the shaft K and sleeve N, thus tilting the curved lever O and causing its outer end to strike the type-finger and print the letter. The operator then swings the lever to the next letter to be printed and the operation is repeated, the levers V and T and pawl T′ advancing the carriage the distance of one letter-space in the manner already described. When the operator has printed a line, the thumb-piece W′ is pressed, thus releasing the pawl T′ from the carriage-rack, and the carriage is then moved back into position for printing another line, the roll D being first turned up the distance of one line-space by means of the thumb-piece D′.

From the foregoing description it will be seen that the type-writer is composed of comparatively few pieces, and that consequently it cannot easily get out of repair, and it will also be observed that any one who can read can run the machine, as all that is necessary to print upon the paper is to insert the paper in its proper place, bring the lever J above the characters to be printed, and then to press the lever.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A type-writer comprising a drum or frame, a printing-roll arranged adjacent to the drum, a character-dial mounted on the drum, a tube mounted vertically in the drum and extending through the dial, a spring-pressed shaft extending vertically through the tube, a printing-lever mounted above the dial and extending through a slot in the tube to connect with the vertical shaft, a revoluble plate fixed to the tube, said plate having radially-extending type-fingers adapted to be brought above the printing-roll, and a curved lever pivoted above the plate, said lever having its outer end above the type-fingers and its inner end loosely connected with the vertical shaft, substantially as described.

2. A type-writer comprising a drum or frame, a printing-roll arranged adjacent thereto, a dial mounted on the drum, a tube mounted vertically in the dial and drum, a spring-pressed revoluble shaft mounted in the tube, a plate mounted on the tube, said plate having radially-extending type-fingers, a printing-lever pivoted above the dial and connected with the shaft, a flanged sleeve mounted on the tube and connected with the shaft, and a movable lever pivoted in the drum, said lever having one end clasped to the flanged sleeve and the opposite end arranged above the type-fingers, substantially as described.

3. A type-writer comprising a drum or frame having a character-dial thereon, a printing-roll arranged adjacent to the drum, a revoluble plate mounted in the drum and having radially-extending fingers, a tube mounted in the drum and carrying the plate, said tube having at its upper end a laterally-extending arm, a spring-pressed revoluble shaft mounted vertically in the tube and extending through the plate, a lever pivoted in the arm and connected with the shaft, a flanged sleeve connected with the shaft and mounted to slide on the tube, and a curved lever pivoted in the drum, said lever having one end connected with the flanged sleeve and the opposite end arranged above the type-fingers, substantially as described.

4. In a type-writer, the combination, with a sliding carriage having a rack thereon, and a vertically-movable shaft having parallel flanges at its lower end, of an elbow-lever pivoted horizontally and provided with a spring-pressed pawl to engage the carriage-rack, and an elbow-lever pivoted vertically, the latter lever having one arm connected with the horizontal elbow-lever and the other arm extending between the flanges of the shaft, substantially as described.

5. A type-writer comprising an inclined drum or frame having a dial mounted on its top, a printing-roller arranged adjacent to the drum, a revoluble shaft extending through the dial and provided with a printing-lever, a plate carried by the shaft and provided with type-fingers which extend above the printing-roller, and a lever mechanism for operating the type-fingers, substantially as described.

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Witnesses:
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C. SEDGWICK.