

(No Model.)

2 Sheets—Sheet 1.

G. H. LASAR.  
TYPE WRITING MACHINE.

No. 415,525.

Patented Nov. 19, 1889.

Fig. 1.

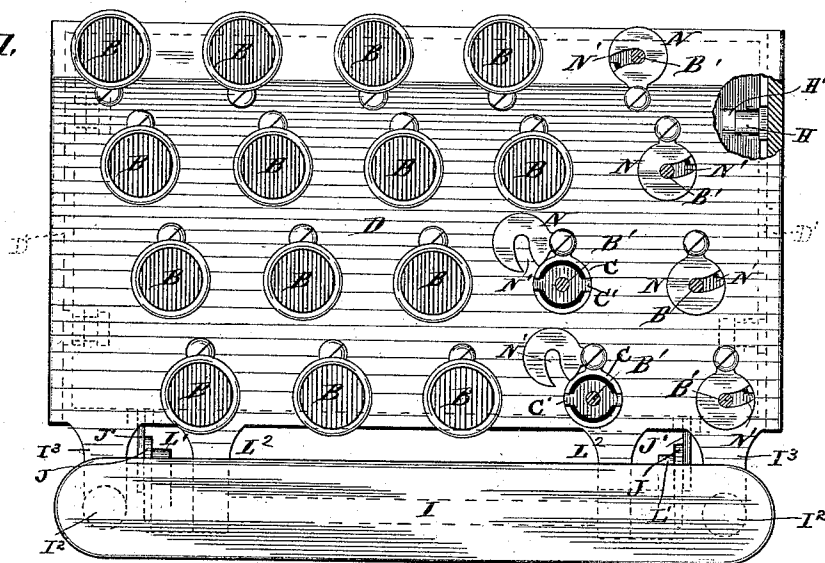
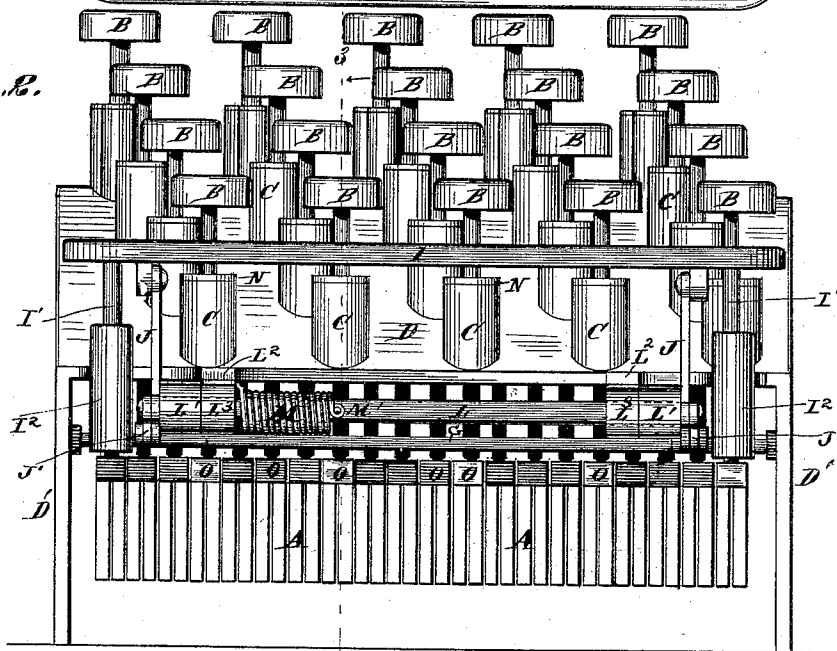


Fig. 2.



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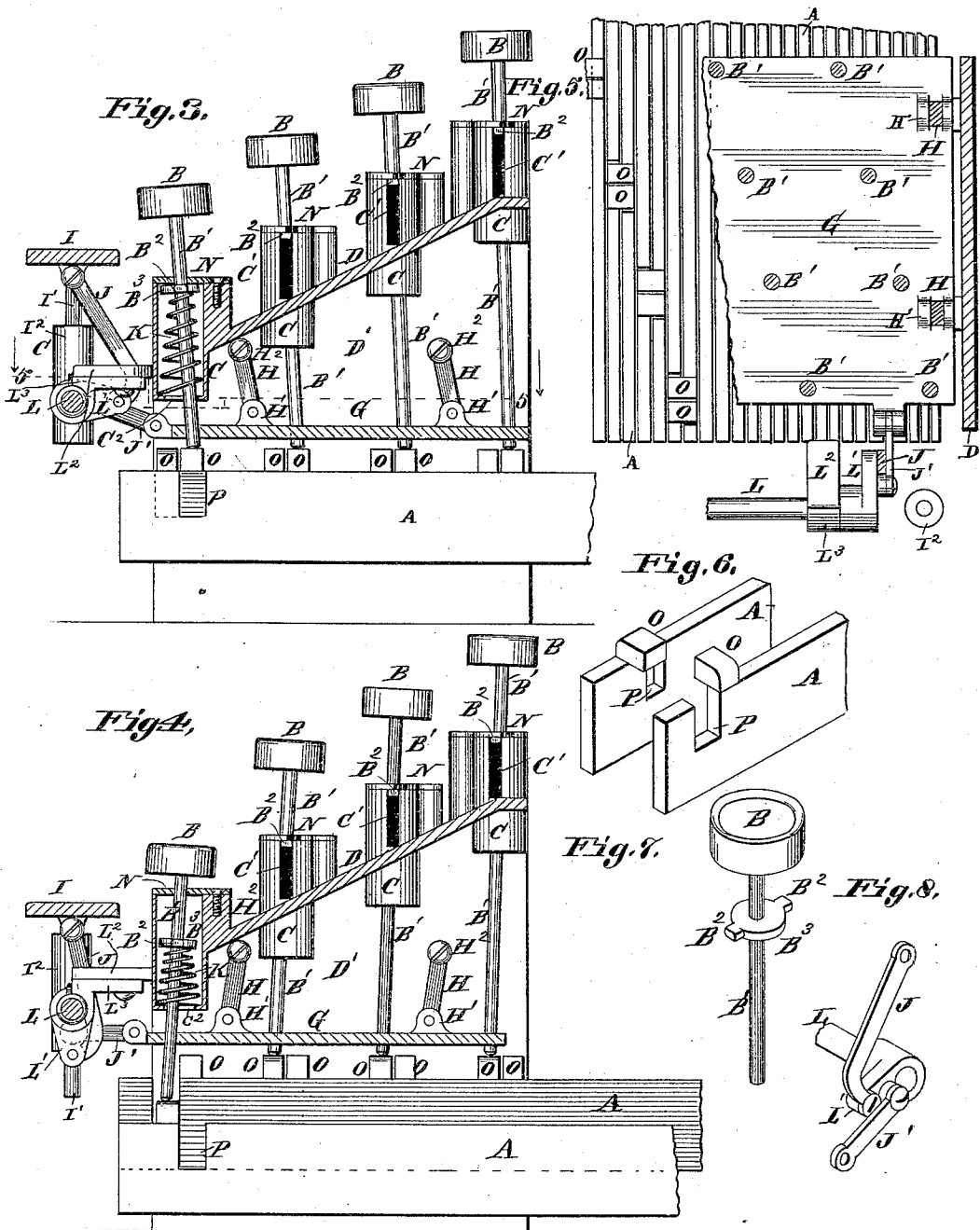
By *his* Attorneys

*Knight Bros*

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# UNITED STATES PATENT OFFICE.

GODFREY H. LASAR, OF ST. LOUIS, MISSOURI.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 415,525, dated November 19, 1889.

Application filed October 11, 1886. Renewed June 22, 1889. Serial No. 315,143. (No model.)

*To all whom it may concern:*

Be it known that I, GODFREY H. LASAR, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Type-Writing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a top view, part in section, illustrating my improvement. Fig. 2 is a front elevation of the same. Figs. 3 and 4 are vertical sections thereof on line 3 4, Fig. 2, looking in the direction of the arrows, the two figures showing the parts in different positions. Fig. 5 is a section on line 5 5, Fig. 3, looking in the direction of the arrows. Fig. 6 is a perspective view of the outer ends of two of the key-levers of the machine separated. Fig. 7 is a perspective view of one of the keys. Fig. 8 is a perspective view of the link arrangement for shifting the keys, looking from the rear side.

This invention relates to that class of type-writers where the keys are shifted so as to operate the key-levers of either the upper or lower case letters; and this invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, A represents the key-levers, and B the keys, of a type-writer, the latter having stems B', which pass through and are held in sleeves or tubes C, supported in a fixed key-board or plate D on the upper end of side pieces D'. The sleeves or tubes have slots C', to receive lugs or ears B<sup>2</sup> on collars B<sup>3</sup>, secured to or formed upon the stems of the keys. The lugs fitting in the slots guide the keys and keep them from turning; but they do not fill the slots entirely, so as to permit the keys to be moved or shifted in vertical planes out of a vertical position in either direction, (see Figs. 3 and 4,) so that they may be made to operate either the upper or lower case letter key-levers, as desired. The openings C<sup>2</sup> in the bottoms of the tubes or sleeves are also elongated in the direction of the movement of the stems, so as to permit of the movement of the latter.

There are springs K, located between the collars or disks B<sup>3</sup> and the bottoms of the sleeves, for the purpose of holding the keys

in their elevated position except when depressed to operate the key-levers. The tops of the sleeves consist of hinged buttons N, (see Fig. 1,) having slots N', to receive the stems. By turning the buttons back the keys may be removed.

G represents a movable plate having a perforation to receive the lower end of each of the stems B'. This plate is supported by links H, hinged thereto at H' and to the sides D' of the plate D at H<sup>2</sup>. The plate is thus allowed to be swung freely in or out to bring the lower ends of the stems of the keys over either the upper or lower case key-levers, and the plate is thus moved in one direction by depressing a key I or finger-piece having stems I', working in sleeves I<sup>2</sup>, supported on lugs I<sup>3</sup>, projecting from the top plate D. The key I is connected by links or arms J to cranks L' on a rock-shaft L, journaled in bearings L<sup>2</sup>, secured to lugs L<sup>2</sup> on plate D. The cranks of the shaft are connected by other links or arms J' to the plate G. It will thus be seen that as the key or finger-piece I is depressed and the rock-shaft turned the plate will be moved and the keys shifted in one direction at bottom, and this direction is from that shown in Fig. 3 to that shown in Fig. 4. The plate and keys are moved in the other direction at bottom, when the pressure is removed from the key or finger-piece I, by a spring M, surrounding the shaft and secured by one end to the shaft at M' and by the other end to a bearing L<sup>3</sup> on the plate D. This spring holds the keys in their normal position, (see Fig. 3,) where they operate one set of key-levers, (say the lower-case,) and by depressing the key or finger-piece I the keys are brought into position to operate the upper-case key-levers, as stated.

The keys are preferably arranged in diagonal rows or series, so that their lower ends are brought in line with their respective pair of key-levers, and in order that each key need not be moved from its vertical plane over its key-levers (and yet operate both) I secure blocks or pieces O to each pair of key-levers, and upon these blocks the lower ends of the keys impinge when the keys are operated. Each block is long enough to extend from the key-lever to which it is secured over the other key-lever of that pair, (see Figs. 2 and 5,) and

- in order that only the key-lever of the block secured to it shall be operated when a key is depressed (and not also the other key-lever of that pair) the other key-lever of that pair is notched out at P beneath the block that is secured to the other key-lever of the pair, and thus only one key-lever is operated at a time, and yet provision made for two key-levers to be operated by a single key.
- 10 I claim as my invention—
1. In a type-writer, in combination with the key-levers, the keys swinging in vertical planes, substantially as set forth.
  2. In a type-writer, in combination with the key-levers, the keys swinging in vertical planes, a fixed plate, perforated plate through which the stems of the keys pass, and mechanism, substantially as described, for moving the perforated plate.
  3. In a type-writer, in combination with the key-levers, the keys swinging in vertical planes, perforated plate through which the stems of the keys pass, hinged links supporting the plate, and mechanism, substantially as set forth, for moving the latter.
  4. In a type-writer, in combination with the key-levers, the keys swinging in vertical planes, movable perforated plate, and mechanism for moving the plate to shift the key-levers, consisting of a rock-shaft provided with a crank, key, links connecting the key to the crank on the rock-shaft, links connecting the crank to the plate, and springs for moving the parts in one direction, substantially as set forth.

5. In a type-writer, in combination with the key-levers, the fixed plate, sleeves or tubes secured to the plate, keys moving in vertical planes, having stems passing through the sleeves, springs located in the sleeves and acting to support the keys, and mechanism, substantially as described, for shifting the keys, substantially as and for the purpose set forth.

6. In a type-writer, in combination with the key-levers, the fixed plate, slotted sleeves secured to the plate, keys having stems passing through the sleeves, collar secured to the stems and provided with lugs fitting in the slots of the sleeves, and mechanism, substantially as described, for shifting the keys in vertical plane, substantially as specified.

7. In a type-writer, in combination with the key-levers, the keys provided with stems having collars, fixed plate, sleeves secured to the plate and through which the stems of the keys pass, and slotted buttons hinged to the fixed plate, substantially as and for the purpose set forth.

8. In a type-writer, in combination with the keys provided with stems, the notched key-levers provided with blocks or pieces, against which the stems of the keys strike, and means, substantially as described, for shifting the keys in a vertical plane, for the purpose set forth.

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Witnesses:

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