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(No Model.) 4 Sheets—Sheet 1.

H. ABBOTT.

TYPE WRITING MACHINE.

No. 437,371. Patented Sept. 30, 1890.

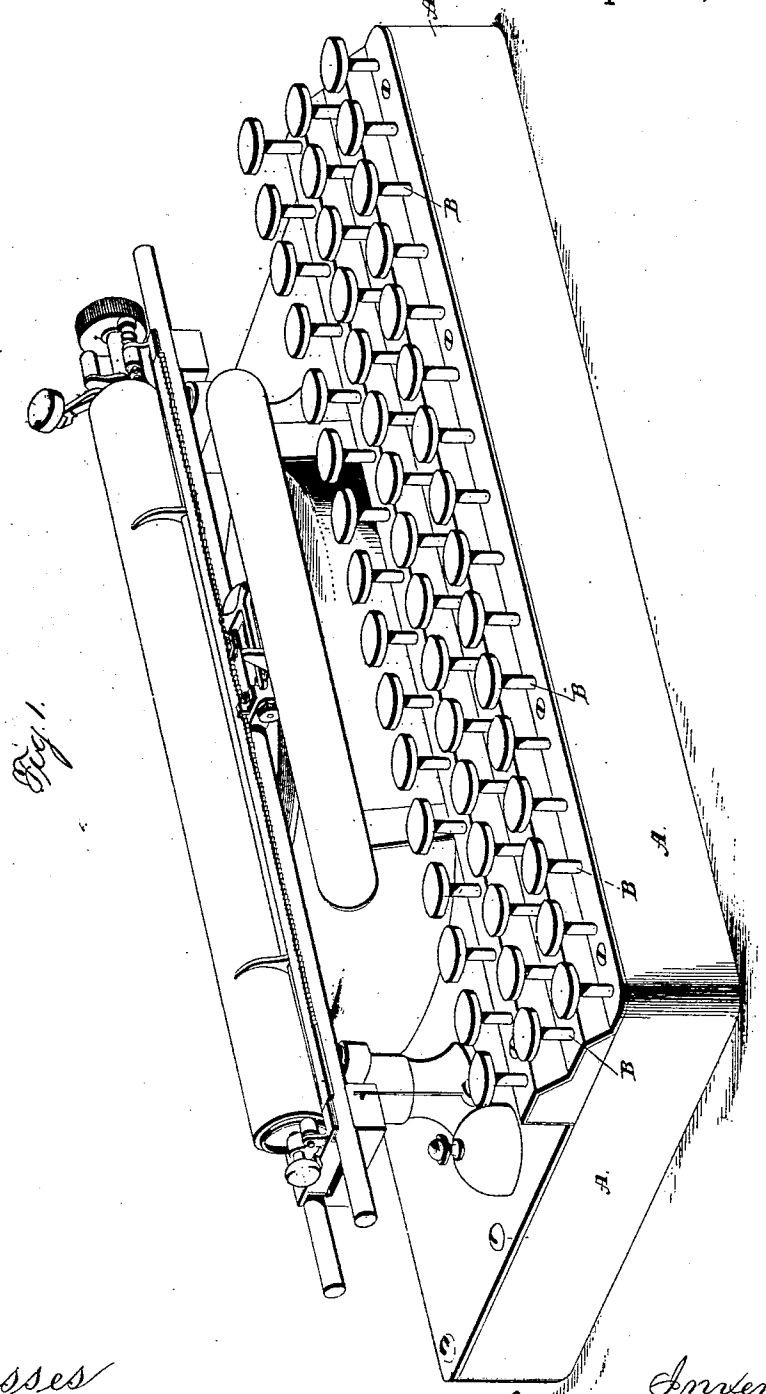


Fig. 1.

Witnesses
Chas. J. Williamson
Henry C. Hazard

Inventor
Henry Abbott, by
Brindle & Russell, his Attys

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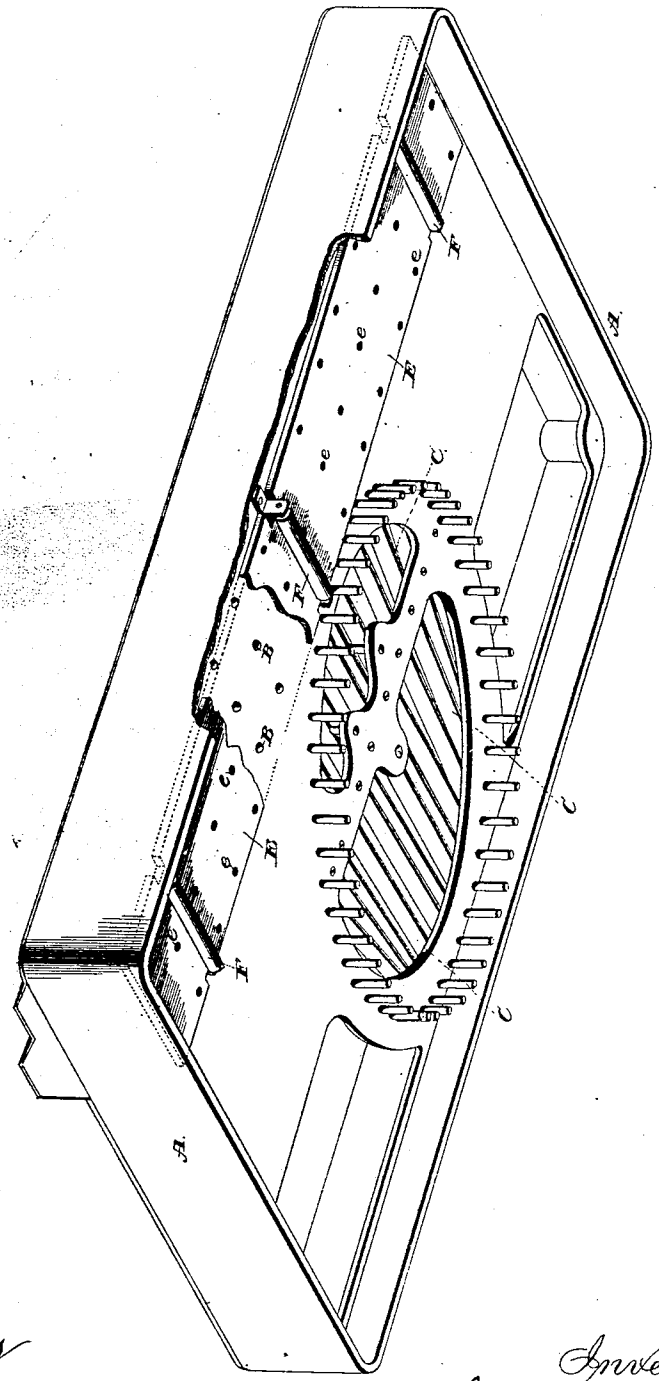
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TYPE WRITING MACHINE.

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Fig. 2.



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H. ABBOTT.

TYPE WRITING MACHINE.

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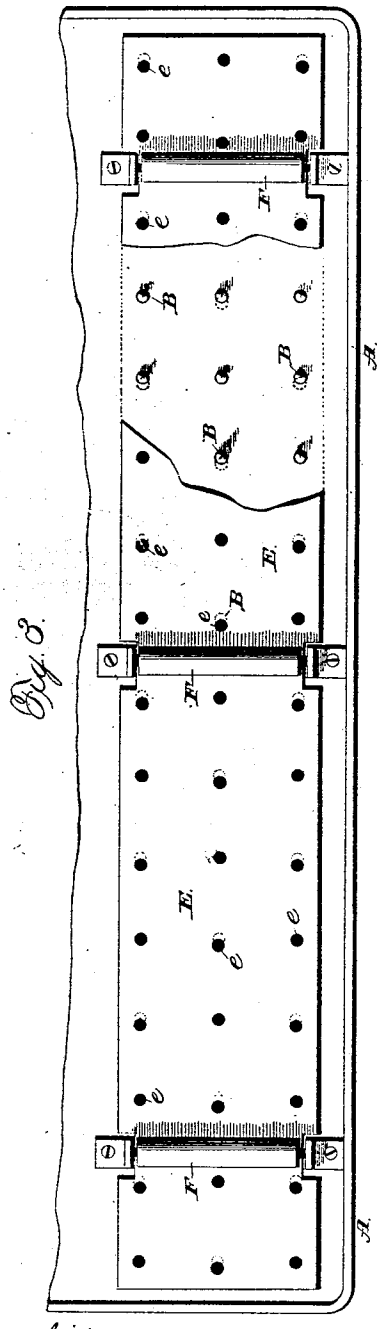


Fig. 3.

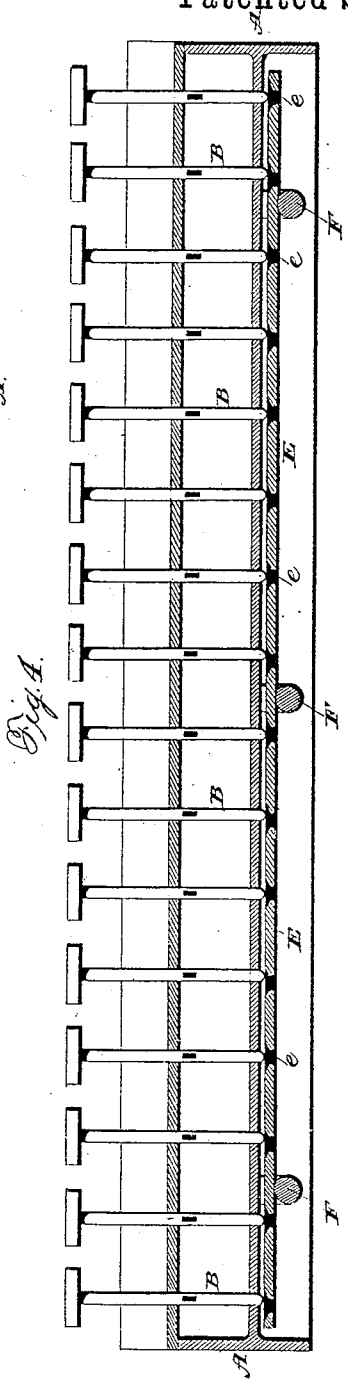


Fig. 4.

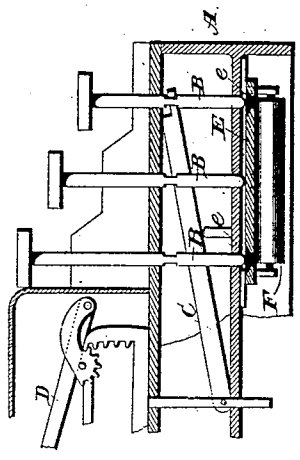


Fig. 5.

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H. ABBOTT.

TYPE WRITING MACHINE.

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Fig. 6.

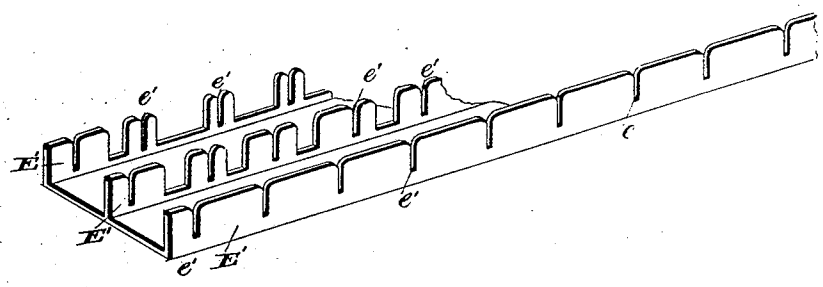


Fig 7.

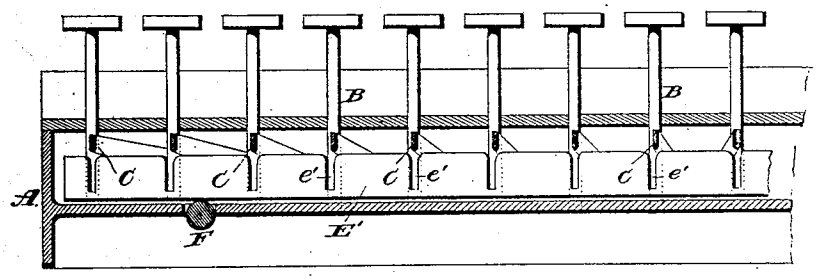
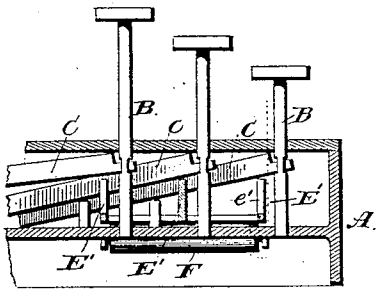


Fig 8.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY ABBOTT, OF NEWARK, NEW JERSEY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 437,371, dated September 30, 1890.

Application filed October 5, 1888. Serial No. 287,330. (No model.)

To all whom it may concern:

Be it known that I, HENRY ABBOTT, of Newark, in the county of Essex, and in the State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my machine from the upper side. Fig. 2 is a like view of the same from the lower side, a portion of the locking-plate being removed. Fig. 3 is a plan view from below of said locking-plate and the adjacent parts. Figs. 4 and 5 are respectively vertical sections of the same upon lines parallel with and at a right angle to the front of the machine. Fig. 6. is a perspective view of a plate arranged for engagement with the key-levers, and Figs. 7 and 8 are respectively sections of the same upon lines parallel with and at a right angle to the front of the machine.

Letters of like name and kind refer to like parts in each of the figures.

In the use of type-writers much trouble is occasioned by the accidental depression of two adjacent keys, which, when pivoted type-bars or levers are employed, usually causes two type to be moved into locking engagement and temporarily blocks the operation of the machine, while frequently the engaging-levers are bent so as to throw the type out of alignment.

To obviate the difficulty named is the design of my invention; and such invention consists in a locking-plate which is adapted to be moved longitudinally by the action of the keys of a type-writer and to prevent movement of the keys adjacent to the key being operated, substantially as and for the purpose hereinafter specified.

While my invention is applicable to any of the usual forms of key-lever machines, its operation and advantages will be sufficiently illustrated by reference to one form, in which—

The frame or bed A is rectangular in plan view and within its front portion is provided with several parallel rows of keys, each of which keys consists of a head that has formed thereon a letter or character and a straight cylindrical body B, which passes vertically through suitable openings in said frame, and at a point below the top plate of the latter is connected with one end of a pivoted lever C, that has its opposite end connected with and adapted to operate a pivoted type-bar D.

The lower ends of the keys B and B pass through the bottom plate of the frame A, and immediately below the same there is located a plate E, which has such dimensions as to cause it to extend beneath the entire series of keys and is supported upon or by two or more rollers F and F, that permit it to be moved longitudinally or in a line parallel with the front of the machine.

The plate E is provided with openings *e* and *e*, which correspond in number to the number of keys B and B, and have each such diameter as to permit the coinciding lower end of a key to pass freely through the same when the latter is depressed. Said openings are arranged with relation to said keys so that when said plate is at one limit of its longitudinal motion but one half of the same (every other opening) coincide with the ends of said keys, while by moving said plate to the opposite limit of its motion the other half of said openings and key ends coincide. The ends of the keys B and B are tapered or the upper ends of the openings *e* and *e* are enlarged or both are so shaped, as desired, that when a key is depressed its end will readily enter its opening, and if the same does not coincide therewith will move the plate E in the direction necessary to secure such result, the extreme divergence of an opening being but one-half its diameter. By this arrangement, when a key is depressed and its end has entered its opening the adjacent keys have no coinciding openings and therefore cannot be depressed, so that it is impossible that by accident contiguous keys should be manipulated to cause two type to be thrown up at one time. Should two adjacent keys be struck at the same time, but one can be depressed and the other will be blocked by contact with the locking-plate, or in case that the latter is at a point midway between its limits of motion both keys will be arrested by engagement with said plate.

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The construction described is preferably employed; but, if desired, the locking may be had in connection with the key-levers C and C, for which purpose a plate E′ may be arranged edgewise beneath each row of levers, either in front or rear of the pivotal bearings and provided with notches e' and e', that are each adapted to coincide with a certain key when said plate is at the limit of its lateral motion in one direction. When this construction is employed, it will be necessary that a notched plate be employed for each row of keys, and that such plates be connected together, so that they will be moved simultaneously in the same direction and to the same distance by the action of each key-lever.

Having thus fully described my invention, what I claim is—

1. In combination with a series of keys, a movable plate which is adapted to lock adjacent keys against simultaneous movement, and is provided at intervals with openings, and a part connected with each key and adapted to pass into one of said openings only when said keys are successively operated, substantially as and for the purpose shown.

2. In combination with a series of keys, a reciprocable plate having a series of openings, alternate ones of which are in alignment with alternate ones of said keys, and the remaining ones out of alignment with the remaining keys, substantially as and for the purpose specified.

3. In combination with a series of keys, a reciprocable plate adapted to lock adjacent keys against simultaneous movement, for such purpose being provided with openings that are separated from each other a distance alternately wider and narrower than the distance between adjacent keys, and a part connected with each key that is adapted to pass into one of said openings only when said keys are successively operated, substantially as and for the purpose set forth.

4. In combination with a series of keys, a reciprocable plate which is adapted to lock adjacent keys against movement during the movement of one key, for such purpose being provided with series of openings, alternate ones of which being in alignment with alternate ones of said keys and the remaining ones out of alignment with the remaining keys, and a part connected with each key, which when its key is operated engages with one of the openings in said plate, thereby maintaining the adjacent openings in a position out of alignment with their respective keys, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of September, 1888.

HENRY ABBOTT.

Witnesses:
JOHN W. COMBS,
ALBERT KAMP.