(No Model.)

W. CLARK.

TYPE WRITING MACHINE.

No. 500,798. Patented July 4, 1893.

Fig. 1.

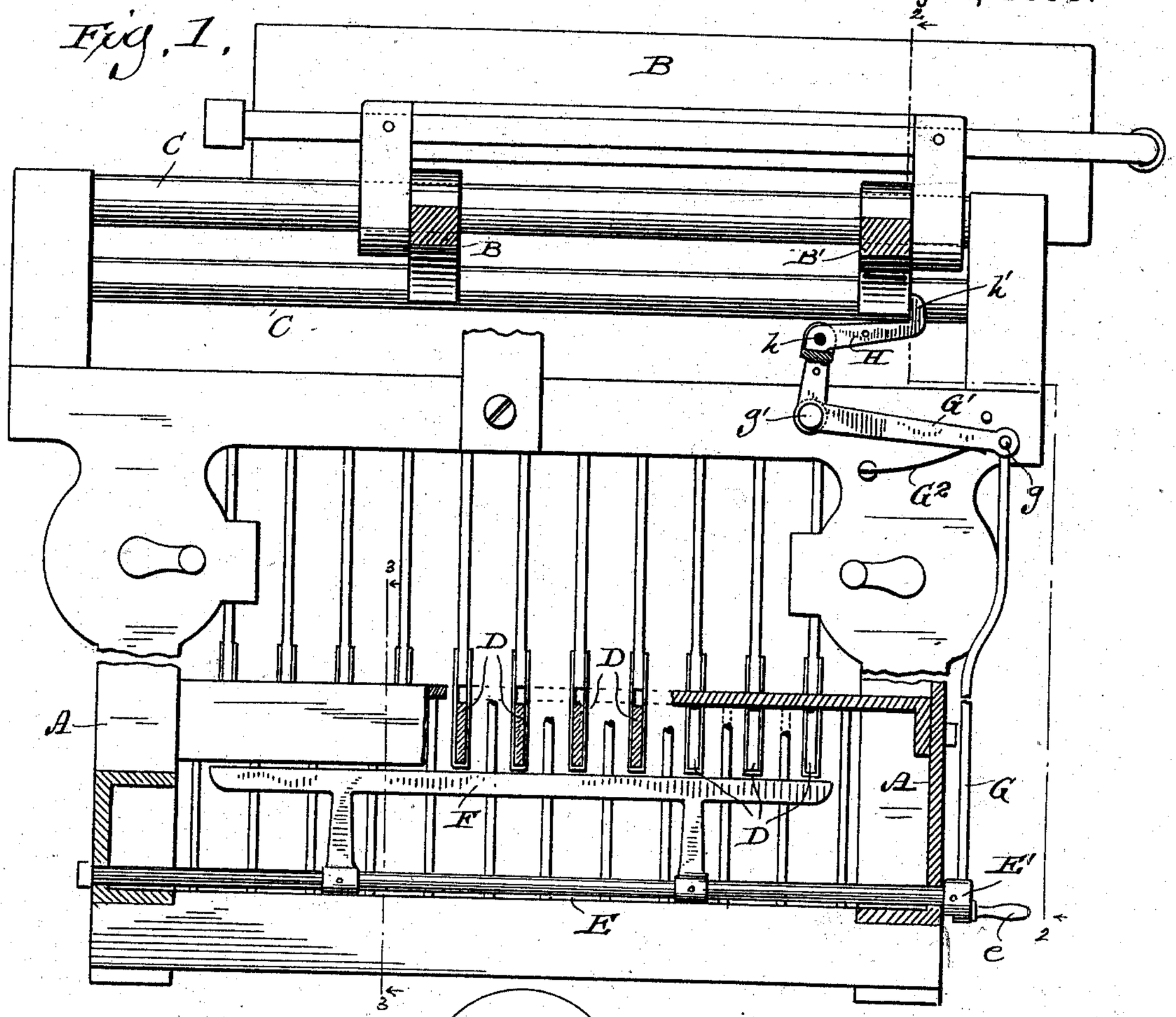

Fig. 2.

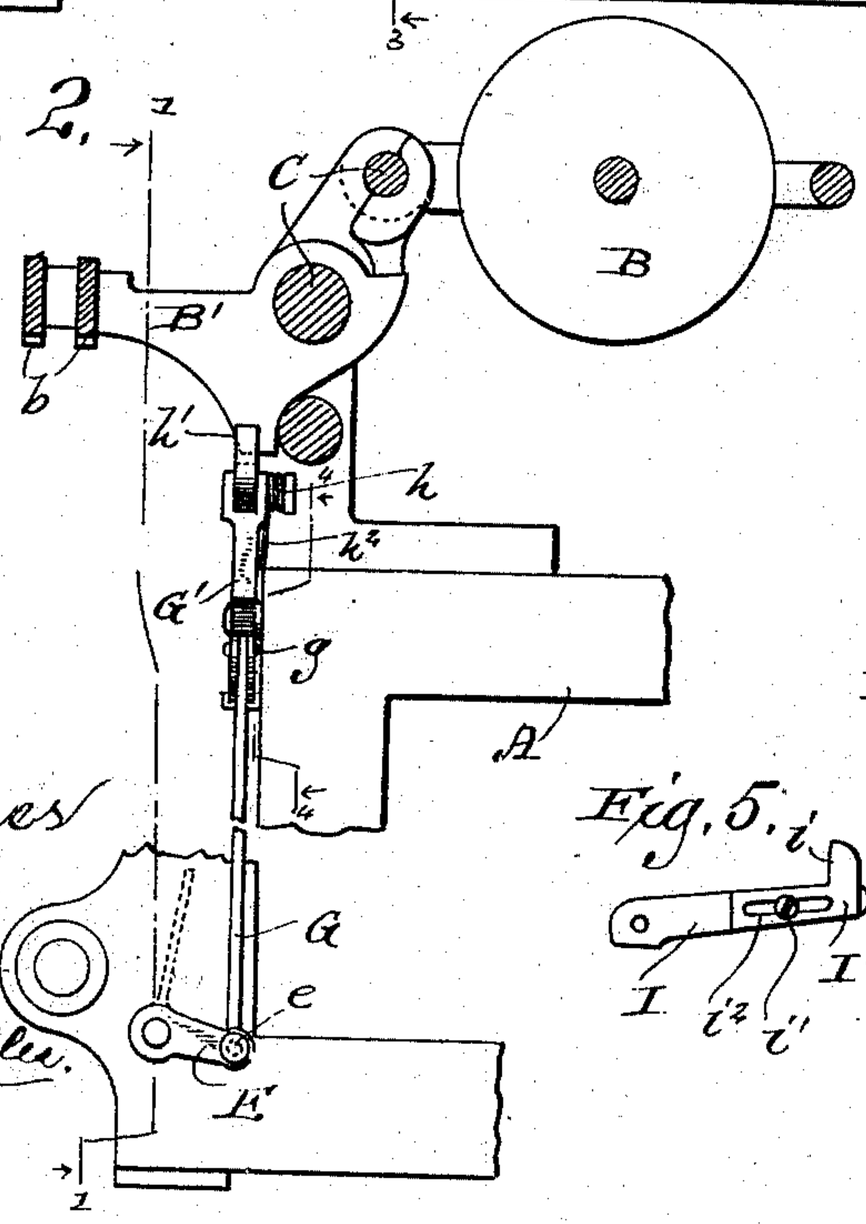

Fig. 3.

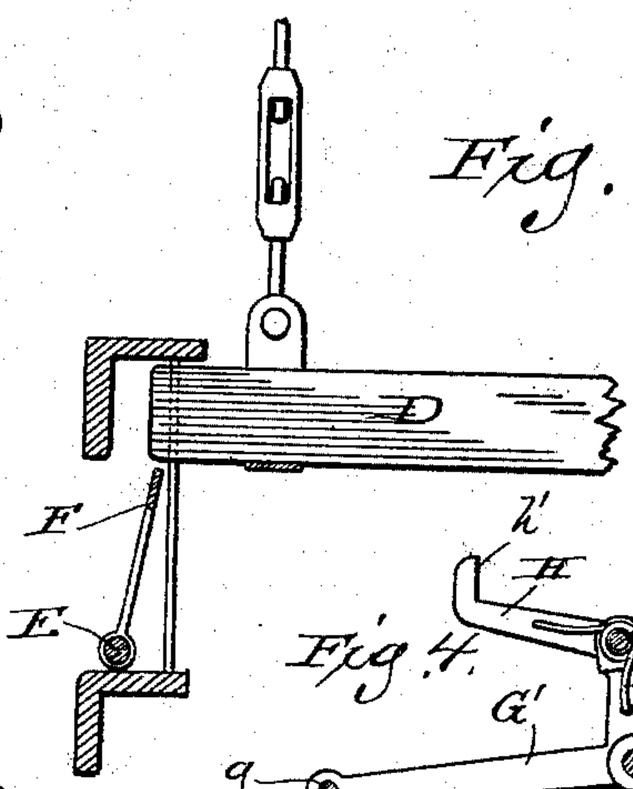

Fig. 5.

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM CLARK, OF NORTH GREENFIELD, WISCONSIN.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 500,798, dated July 4, 1893.

Application filed September 5, 1892. Serial No. 445,048. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CLARK, a subject of the Queen of Great Britain, and a resident of North Greenfield, in the county of Milwaukee, and in the State of Wisconsin, 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.

My invention relates to new and useful improvements in type writing machines, and the object of my said invention is to provide suitable means for automatically locking all of the keys of the machine from movement when the carriage approaches the limit of its movement adjacent to the end of each line of writing, so as to prevent the operator from writing one letter on top of another as often happens in the use of type writing machines as ordinarily constructed.

In the accompanying drawings illustrating my invention, Figure 1 is a rear elevation of a type writing machine to which my improvements have been applied, showing portions of the machine in sections on line 1—1 of Fig. 2. Fig. 2 is a view of the same partly in end elevation and partly in section on line 2—2 of Fig. 1. Fig. 3 is a vertical sectional view taken on line 3—3 of Fig. 1 and showing the parts in their locked position. Fig. 4 is a detail section of one of the parts. Fig. 5 is a detail view illustrating a slightly different form of one of the parts.

In said drawings: A represents the frame of the machine, B the carriage, C C the longitudinal guide rods upon which the carriage moves and D D the key levers, all of which are of the ordinary construction.

Across the rear of the machine, below the free ends of the key levers D D, I arrange a rock shaft E, which carries a bar F, arranged to be moved into or out of the path of the free ends of the key levers by rotary motion of said shaft. A crank arm E′ located upon one end of the rock shaft E is provided with a suitable handle *e* by which it may be operated at times by hand. A vertically extending rod G is engaged with the free end of the crank E′ and at its upper end, is operatively engaged at *g*, with one arm of a bell crank lever G′, pivotally supported at *g′* upon the frame of the machine. The other arm of this bell crank lever extends upwardly and a detent H, is pivotally secured at *h* to its free end. This detent H is provided at its free end with an upturned shoulder or lug *h′* arranged to lie in the path of the same portion of carriage B. In the particular form of construction shown in the drawings this shoulder or lug *h′* is arranged in the path of one of the sliding blocks B′ B′ with which the carriage is engaged, and which carry the toothed bars *b b* which engage with the dog for producing the step by step movement of the carriage. A spring h^2 is arranged about the pivotal connection *h′* between the detent H and the arm of the bell crank lever G′, and is engaged at one end with said detent H, and at the other, with said arm of the bell crank, so as to normally hold said detent up in position to engage with the block B′ as in the manner shown. A spring G^2 is located upon the frame and serves to normally press the arm of the bell crank up. The detent H is so arranged that the shoulder *h′* will engage with the block B′ as the carriage approaches the limit of its movement, and it follows from the described construction, that when said block B′ comes into engagement with the detent, the tension of the carriage spring will operate to draw the carriage still farther toward the extreme limit of its movement, thus pulling down the detent H, and rocking bell crank G′ about its pivotal support *g*. This movement of the parts obviously causes the long arm of the bell crank G′ to swing downwardly and thereby depress the rod G, which rod in turn communicates motion to the crank E′ and shaft E and rocks said shaft so as to throw the bar F carried thereby, inwardly beneath the free ends of the key levers D D to prevent their downward movement. In this condition all of the key levers are locked and it is impossible to write any letter or character while the parts remain in the same relative positions, and this locking of the keys when the carriage reaches the limit of its travel, effectually prevents one letter being printed on another. If now, the operator desires to print a letter to complete a word, or to insert a hyphen when one or more syllables of the word must be carried down to the next line, he may, by lifting up on the handle *e* of the crank E′, rock said

crank and the rock shaft E, so as to throw the bar F out from beneath the ends of the key levers D D, to permit any desired key to be operated and the desired letter or character written at the end of the line. The detent may be arranged to engage with the carriage and lock the keys at any desired distance from the end of the line for one, two, or even more letters or characters.

In the particular form of construction illustrated in Fig. 5 the detent comprises a pivoted arm I, secured to the bell crank in the manner described, and a block I′ having an upwardly extending shoulder *i* adapted to engage with the carriage. The block I′ is adjustably secured upon the arm as by means of a screw *i′* arranged to pass through a slot i^2 in the block and into the arm I. By this construction, the block I′ may be adjusted so as to engage with the carriage at the desired distance from the extreme limit of its movement, and the operator may adjust the detent so as to lock the keys at such a point as to leave room at the end of the line for one, two, three or more letters or characters.

When the operator desires to write more than one letter or character at the end of a line he raises a handle *e* of the crank E′ as before described, and operates a key to print the first letter or character, when the tension of the carriage spring will force the carriage forward for the distance of one tooth. This movement of the carriage will cause the block B′ or other part of the carriage with which the detent engages to crowd said detent downward and free it from its engagement therewith, when the remaining letters or characters may be printed in the ordinary manner.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with the carriage and the key mechanism of a type writing machine, of a pivoted bar adapted to simultaneously engage with all of the key levers to lock the same from movement a bell crank pivotally supported upon the machine frame and provided with an arm extending into the path of the carriage and adapted for engagement therewith as the carriage approaches the limit of its movement an operative connection between the other arm of said bell crank and said pivoted bar for moving the latter into position to lock the key mechanism when the bell crank is engaged by the carriage, and means for independently actuating said bar to free the key mechanism, substantially as set forth.

2. The combination with the carriage and the key mechanism of a type writing machine, of a pivotal bar adapted to simultaneously engage with all of the key levers to lock the same from movement, a bell crank pivotally supported upon the machine frame and provided with an arm carrying a detent arranged in the path of the carriage and adapted for engagement therewith as the carriage approaches the limit of its movement an operative connection between the other arm of said bell crank and said pivoted bar for moving the latter into position to lock the key mechanism when the bell crank is engaged by the carriage, and means for independently actuating said bar to free the key mechanism, substantially as set forth.

3. The combination with the carriage and the key mechanism of a type writing machine of a pivoted bar adapted to simultaneously engage with all of the key levers to lock the same from movement, a bell crank pivotally supported upon the machine frame and provided with an arm carrying an adjustable detent arranged in the path of the carriage and adapted for engagement therewith as the carriage approaches the limit of its movement, an operative connection between the other arm of said bell crank and said pivoted bar for moving the latter into position to lock the key mechanism when the bell crank is engaged by the carriage, and means for independently actuating said bar to free the key mechanism, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WILLIAM CLARK.

Witnesses:
H. G. UNDERWOOD,
JOHN E. WILES.