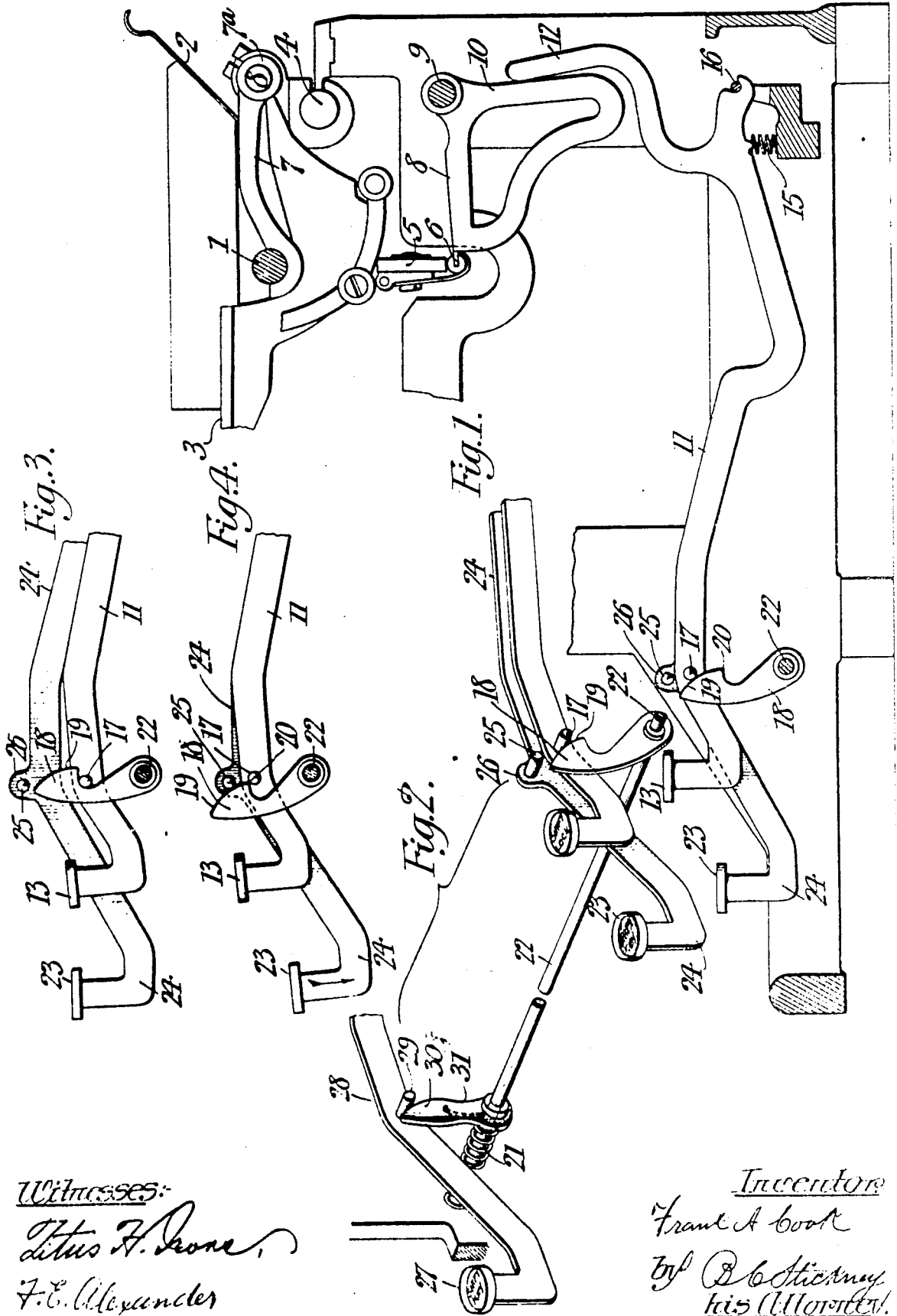


F. A. COOK.
TYPE WRITING MACHINE.
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1,055,520.

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Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK A. COOK, OF HARTFORD, CONNECTICUT, ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

1,055,520.

Specification of Letters Patent.

Patented Mar. 11, 1913.

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To all whom it may concern:

Be it known that I, FRANK A. COOK, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to platen shift mechanism for typewriting machines, and is herein illustrated as applied to an Underwood typewriting machine.

In said machine, the platen is journaled in a shift frame forming part of the paper carriage. A rail is shiftable so as to raise said shift frame with the platen to enable upper case types on type bars to print on the platen. Said shiftable rail is carried on pivoted arms, each of which arms forms one member of a bell crank, the other member of which may be engaged by a key lever, to be rocked thereby, whereupon the shift rail raises the platen so that upper case type will write on it. The keys for thus operating the shift rail are usually placed at the front of the key-board of the machine, there being one at each side of the key-board. Usually one of said keys is arranged to lock the platen permanently in its shifted position, while the other will only hold the platen so shifted temporarily, or as long as the key is held depressed; and if the platen is locked in its shifted position it may be released by the depression of the temporary shift key.

In the present invention the platen is arranged to be temporarily operated by the depression of either of two keys, of which there may be one at each side at the front of the key-board, each arranged to hold the platen shifted while it is depressed, but not locking the platen in its shifted position. A third key may be provided at the upper end of the key-board, which when depressed will raise the platen to its shifted position, and lock it there. This locking may be accomplished by a spring operated hook, which is arranged to catch over a pin on the key lever of the platen shift key. The lock may be released by a shift key lever carrying a pin, which is arranged to strike a cam on said hook and force said hook free of said first pin. Either of the first named temporary shift keys may be ar-

ranged to thus release the platen from its locked position.

Other features and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a sectional side view of an Underwood typewriting machine showing only such parts as are necessary to the understanding of my invention. Fig. 2 is a perspective view showing the relation of the shift keys to each other. Fig. 3 shows a shift key holding the carriage locked in its shifted position. Fig. 4 shows the locked key in the act of being released.

In the Underwood typewriting machine, as usual, type keys, not shown, cause type bars, also not shown, to strike against a platen whose axle 1 is mounted in a shift frame 2, in a carriage 3, said carriage rising on a rail 4, and drawn forward in letter-feeding direction thereon by means of a spring, not shown, at every depression of a type key. Said shift frame 2 has a wheel 5 traveling on a rail 6, and is pivotally mounted on arms 7 pivoted to the carriage frame at 7^a. Said shift frame 2 may be raised in said carriage by raising the shift rail 6, which rail forms part of a bell crank or bracket 8 pivoted at 9 on the frame of the typewriting machine, said bracket carrying a downwardly extending arm 10, which may be brought forward by the depression of a key lever 11, having an arm 12 arranged to bear against said bracket arm 10. Said key lever 11 carries a key 13, by which it may be depressed, and is normally pressed upward at its rear end by means of a spring 15 adjacent the rod 16 on which said key lever is pivoted. When said shift key is depressed, a pin 17 fast on the lever 11 swings forwardly a hook 18 by means of a cam 19 formed on the upper surface of said hook, until said pin passes the point 20 on said hook, at which moment the hook 18 is snapped rearwardly by means of a coil spring 21 on a rock shaft 22 on which said hook is fast. When said hook is so sprung forward, it locks the key 13 against return and so holds the platen in its lifted position.

The key lever 11 may be depressed by means of a temporary second shift key 23 on a lever 24, which lever carries a pin 25 in an upward projection 26 thereon, and said pin 25 is arranged to overlie the key lever 11 so

that when the key 23 is depressed, it will carry down the key lever 11 with it, by means of the pin 25. Said pin 25 is arranged to cam out the hook 18 when it is depressed, and so prevent said hook from latching over the pin 17, or if said hook 18 is already latched over said pin 17, the pin 25 will cam the hook back far enough to release the key lever 11. The key lever 24 extends rearwardly like the key lever 11 to the pivot 16, and is held upward by spring 15 pretisely as the key lever 11.

In Fig. 4 is shown the operation of the key lever 25 in releasing the key lever 11 from the hook 18. A temporary third shift key 27 on a key lever 28 extends rearwardly, and has an arm 12 like the key lever 11 for shifting the platen. This key lever may also release the hook 18, and for that purpose carries a pin 29 fast on it, which pin is arranged to strike the upper cam surface 30 of a rock arm 31 fast on the rock shaft 22, and so rotate said shaft against the spring 21, and swing the hook 18 to its inoperative position. In this way, it will be seen that the action of the keys 23 and 27 has the same effect on the hook 18 and on the platen shift frame.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a case shift frame, of a key, a lock arranged to catch said key in its depressed position and lock said frame in its shifted position, a second key adjacent said first key, an extension from the lever of said second key to cause said first key to be depressed, and a third key arranged to swing said frame independently of either of said first two keys.

2. In a typewriting machine, the combination with a case shift frame, of a key for swinging said frame, a lock for locking said

key to hold said frame in its shifted position, a second key comprising a lever having an extension arranged to overhang said first key and depress it, said extension of said second lever being arranged to release said lock whenever said key is depressed, and a third key arranged to shift said frame directly and release said lock.

3. In a typewriting machine, the combination with a shift frame, of a key for swinging said frame, a pin on said key, a hook arranged to catch said key when depressed by said pin, a second key adjacent said first key, a pin on said second key arranged to catch said first key to depress it, and a cam face on said hook arranged to be struck by said second pin to release said first key.

4. In a typewriting machine, the combination with a shift frame, of a key for swinging said frame, a pin on said key, a hook arranged to catch said key when depressed by said pin, a second key adjacent said first key, a pin on said second key arranged to catch said first key to depress it, a cam face on said hook arranged to be struck by said second pin to release said first key, a rock shaft on which said hook is fast, a cam member on said rock shaft, and a third key comprising a pin arranged to strike said cam member to release said hook.

5. In a typewriting machine, the combination with a shiftable frame, of a key for shifting said frame arranged at one side of the key-board of the machine, a lock for holding said key, a key for releasing said lock adjacent said first key, a key at the opposite side of said key-board, a rock shaft extending across said key-board, and a rock arm on said shaft arranged to be engaged by said third key to release said lock.

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Witnesses:

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