

No. 751,855.

PATENTED FEB. 9, 1904.

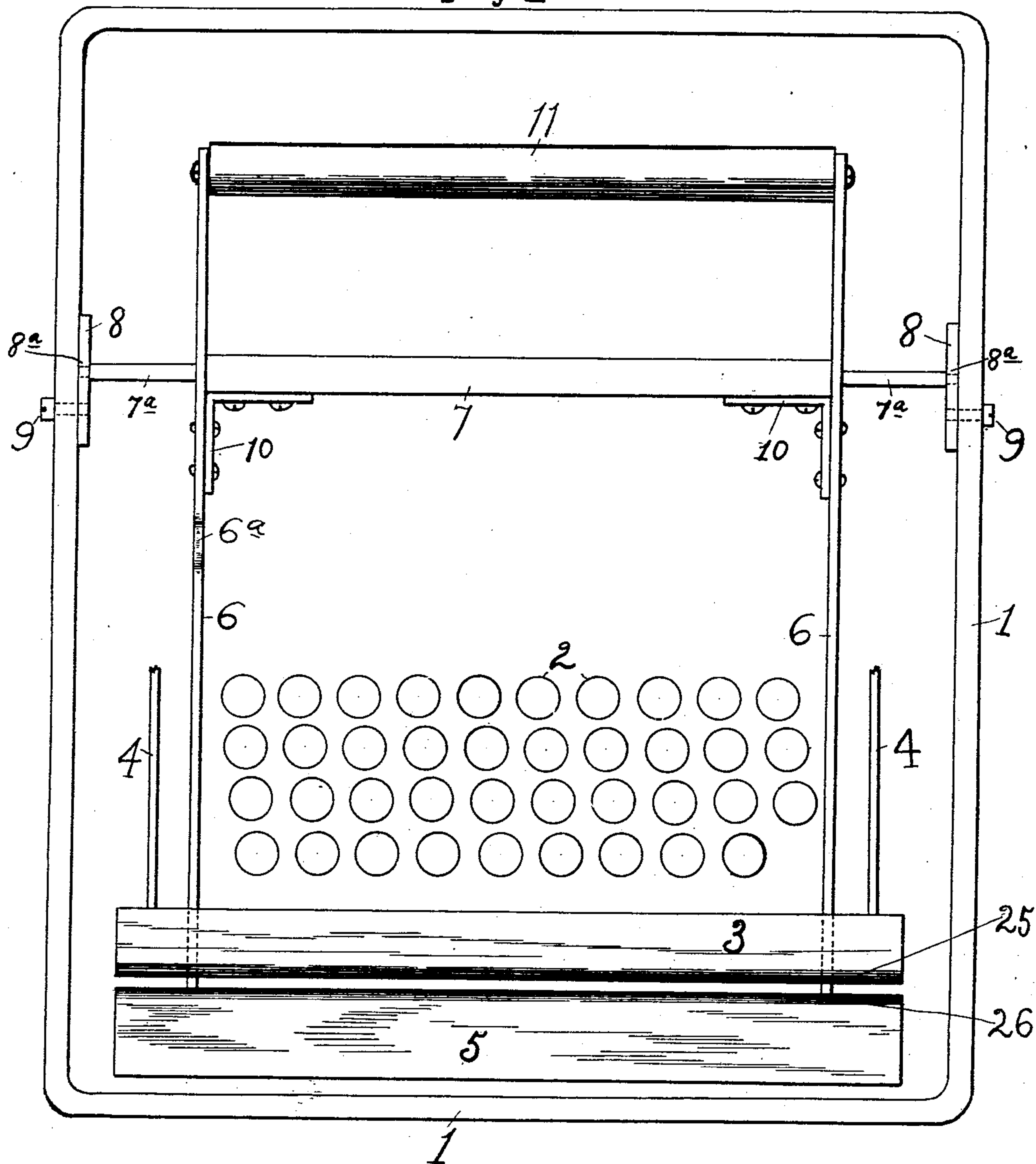
J. H. HOTSON.
TYPE WRITING MACHINE.

APPLICATION FILED AUG. 8, 1903..

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:
Wm. P. Hammond.
A. F. Smith.

John H. Hotson
INVENTOR.
BY *Smith & Co.*
ATTORNEYS.

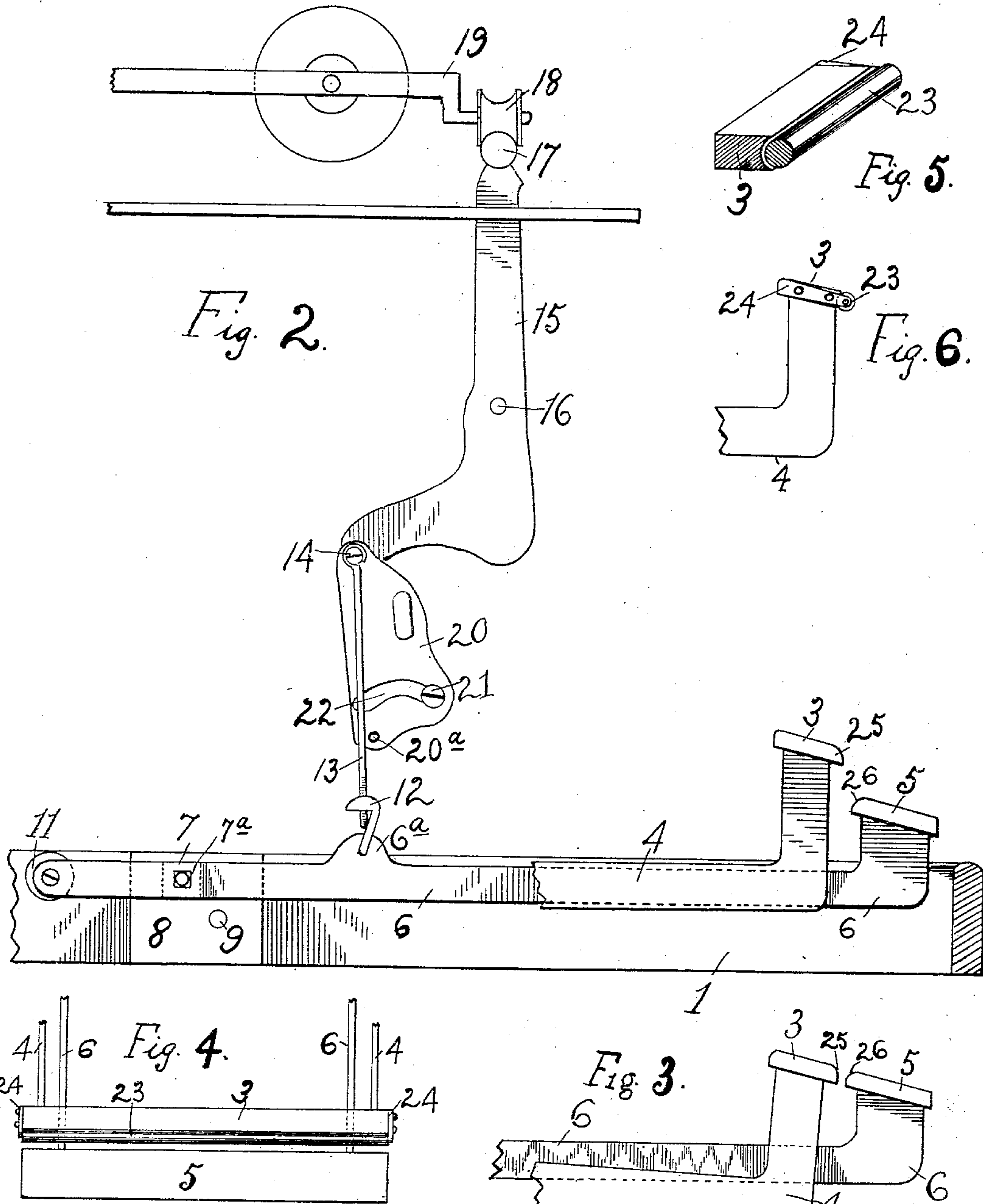
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NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:
Wm. P. Hammond
P. F. Lomick

John H. Hotson INVENTOR.

BY *Luigi B. Pros*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN H. HOTSON, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 751,855, dated February 9, 1904.

Application filed August 8, 1903. Serial No. 168,756. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. HOTSON, a citizen of the United States, and a resident of Richmond Hill, in the borough of Queens, city and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to improvements in that class of type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and type in order to allow a capital letter or other selected character to strike the printing-point and which also have a depressible space key or keys located in front of the keyboard.

My invention relates more particularly to such machines as shift the platen in a substantially horizontal direction in order to allow a capital letter or other selected character to print.

My invention has for its object to increase the ease and speed of operating machines of this class by providing for the shift mechanism being operated by means of a depressible shift-key located conveniently close in front of the space-key of the machine and preferably somewhat lower, so that the said shift-key can be actuated by a continuation of the same downward movement of the thumb (or thumbs) which actuates the space-key.

My invention is fully disclosed in the following description, and by way of example its application to a Remington type-writer is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of so much of the lower part of a type-writing machine as is necessary to illustrate my invention, the position of the type-keys being indicated diagrammatically. Fig. 2 is a side elevation of the principal operating parts to which my invention relates, the front of the frame being shown in section. Fig. 3 is a detail side view of the space-bar and shift-bar, showing their preferred relative position when the space-bar is depressed and prior to the depression of the shift-bar. Figs. 4, 5, and 6 illustrate a modification of my invention.

1 represents the frame of a Remington type-writer; 2, the type-keys, the position of which is indicated diagrammatically; 3, the space-bar, and 4 4 the space-levers on which it is mounted, the said space-levers being broken off, as their mode of attachment and connection to the carriage is well known in the art and my invention does not involve any special construction thereof.

In applying my invention I set the letter-keys 2 farther back on their levers in order to make room within the frame of the machine for the shift key or bar 5, which is interposed between the space-bar 3 and the front of the frame 1. The shift-bar 5 is mounted on the front ends of lever-arms 6 6, fixed by means of brackets 10 10 to a rock-shaft 7, of which projections 7^a 7^a pass through orifices in the lever-arms 6 6 and are pivoted to plates 8 8 at 8^a 8^a, which plates are fastened by bolts or screws 9 to the inner face of the respective side bars of the frame 1. One of the arms 6 is formed with an upwardly-projecting cheek 6^a for the reception of a pivoted link 12, which is threaded to receive the lower end of a rod 13, pivoted by its upper end at 14 to plate 20, which in turn is pivoted at the point 20^a to the L-shaped shift-lever 15 of usual form, which is fulcrumed at 16 and connected at its upper end with the track-bar 17, on which runs the concave-faced roller 18, pivoted to the platen-carriage 19, so as to shift the same back and forth in customary manner by the oscillating movement of the L-shaped lever 15.

20 represents the customary rocking plate, through the medium of which the rod 13 is connected to the lever 15 and by the shifting of which on its pivot 20^a to either extremity of its stroke, permitted by the movement of the screw or pin 21 in segment-slot 22 in said plate 20, the line of pull of the rod 13 is changed to either side of the fulcrum-point 16, so that the platen-carriage is held normally at either extremity of its back-and-forth movement and thrown to the other extremity of such movement by the depression of the shift-key.

To the rear of the pivot-point 8^a 8^a a weight 11 is fixed to the lever-arms 6 6 for the pur-

pose of counterbalancing wholly or to a large extent the shift-bar 5 and the portion of its arms 6 6 lying forward of the pivot-point.

In the operation of type-writing machines it occurs in a large majority of instances that the operation of the shift key or bar for the printing of a capital letter or special character is preceded by the operation of the space-bar. It will be apparent that the location of the shift key or bar directly in front of and slightly below the space-bar greatly facilitates this operation by permitting the depression of the shift-key directly after the space-bar by a single stroke or downward movement of the thumb. This makes my thumb key or bar arrangement and combination of thumb shift-bar and space-key greatly superior to one having a depressible thumb shift-bar in front of the letter-keys and space-keys at the sides or one having a horizontally-moving thumb shift-key, the above-mentioned combination stroke being impossible in either of these cases.

I prefer to trim off the upper front edge of the space-bar and the upper rear edge of the shift-bar, preferably constructing the said edge with a convenient rounding in order to obviate the disagreeable effect that a prominent edge would have upon the thumb while making the transition from the one to the other and to render the transition itself more smooth and easy. As a modification of this convenient rounding of the upper front edge of the space-bar and the upper rear edge of the shift-bar I provide in front of the space-bar a roller 23, mounted by pivots at its ends in cheek-plates 24, fixed to the ends of the space-bar 3, the said space-bar being preferably recessed in its forward edge to receive the rear side of the said roller, as shown. This roller is advantageous in facilitating the passage of the thumb from space-bar to shift-bar and also in hindering the accidental depression of the said space-bar by friction of the thumb against its front edge when it is intended to depress the shift-bar only.

The location of the shift-key 5 below the level of the space-key 3 has an important practical advantage in preventing the accidental striking of one instead of the other.

In order to further facilitate the combined action of the space-bar and thumb shift-key, as well as to facilitate and render more agreeable the separate operation of space-bar and shift-bar, I prefer to construct each in such a way that the upper surfaces of the space-bar and shift-bar slope downward toward the front, preferably at an angle of about fifteen degrees. By this arrangement the passage of the thumb from the space-bar forward to the shift-bar, and thus the operation of both with one unbroken movement of the thumb, is greatly facilitated. Also the sloping of these bars toward the front enables the thumb to strike them with the fleshy part, the nail be-

ing prevented from touching them by the downward incline of their surface toward the front.

I prefer also to so adjust the relative height of the space-bar and shift-bar that when the space-bar is depressed to its full or normal extent the upper surface of the space-bar and the upper surface of the shift-bar lie substantially in the same plane, the one being substantially a continuation of the other. By this means the passage of the thumb from the space-bar forward to the shift-bar being on a substantially continuous plane is very much facilitated.

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

1. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard; and a depressible shift-key connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper surface lower than the upper surface of the space-key, and inclined downward toward the front, so that the thumb, after striking the space-key and effecting the space, passes directly forward to the shift-key and depresses the same, effecting both spacing and shifting with substantially one unbroken movement:

2. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard, and inclined downward toward the front; and a depressible shift-key, connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper surface lower than the upper surface of the space-key, and inclined downward toward the front, so that the thumb, after striking the space-key and effecting the space, passes directly downward and forward to the shift-key and depresses the same, effecting both spacing and shifting with substantially one unbroken movement.

3. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard; and a depressible shift-key, connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key and having its upper surface lower than the upper surface of

the space-key; said shift-key so located with respect to the space-key as to height, that when the space-key is depressed down to its full or normal depression, the top surface of the space-key shall form substantially a continuous plane with the top surface of the shift-key.

4. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard, and inclined downward toward the front; and a depressible shift-key, connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper surface lower than the upper surface of the space-key, and inclined downward toward the front; said shift-key so located with respect to the space-key as to height, that when the space-key is depressed down to its full or normal depression, the top surface of the space-key shall form substantially a continuous plane with the top surface of the shift-key.

5. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard; and a depressible thumb shift-key, connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper side lower than the upper side of the space-key; the said space-key having its upper front edge trimmed off, substantially as described, so as to facilitate the thumb in gliding off the space-key onto the shift-key when a capital letter or other selected character is to be written immediately following a space.

6. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard; and a depressible thumb shift-key connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper side lower than the upper side of the space-key; the shift-key having its upper rear edge trimmed off substantially as described, so as to facilitate the transition of the thumb from the space-key onto the shift-key when a capital letter is to be written immediately following a space.

7. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard, and inclined downward toward the front; and a depressible shift-key connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper surface lower than the upper surface of the space-key, and inclined downward toward the front, so that the thumb, after striking the space-key and effecting the space, passes directly downward and forward to the shift-key and depresses the same, effecting both spacing and shifting with substantially one unbroken movement; the space-key having its upper front edge trimmed off substantially as described, and the shift-key having its upper rear edge trimmed off substantially as described, so as to facilitate the transition of the thumb from the space-key onto the shift-key when a capital letter or other selected character is to be written immediately following a space.

acter to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard; and a depressible thumb shift-key connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper surface lower than the upper surface of the space-key; the space-key having its upper front edge trimmed off substantially as described, and the shift-key having its upper rear edge rounded, so as to facilitate the transition of the thumb from the space-key to the shift-key when a capital letter or other selected character is to be written immediately following a space.

8. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard, and inclined downward toward the front; and a depressible shift-key connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper surface lower than the upper surface of the space-key, and inclined downward toward the front, so that the thumb, after striking the space-key and effecting the space, passes directly downward and forward to the shift-key and depresses the same, effecting both spacing and shifting with substantially one unbroken movement; the space-key having its upper front edge trimmed off substantially as described, and the shift-key having its upper rear edge trimmed off substantially as described, so as to facilitate the transition of the thumb from the space-key onto the shift-key when a capital letter or other selected character is to be written immediately following a space.

9. In type-writing machines which have a single keyboard and a shifting mechanism for changing the relative position of the platen and the type in order to allow a selected character to strike the printing-point; the combination of a depressible space-key lying in front of the keyboard, and inclined downward toward the front, and a depressible shift-key, connected to the shifting mechanism for actuating the same, located conveniently close in front of the space-key, and having its upper surface lower than the upper surface of the space-key, and inclined downward toward the front, said shift-key so located with respect to the space-key as to height, that when the space-key is depressed down to its full or normal depression, the top surface of the space-key shall form substantially a continuous plane with the top surface of the shift-key; the space-key having its upper front edge trimmed off substantially as described, and the shift-key having its upper rear edge trimmed off substantially as described, so as to facilitate the transition of the thumb from the space-key onto the shift-key when a capital letter or other selected character is to be written immediately following a space.

transition of the thumb from the space-key to the shift-key when a capital letter or other selected character is to be written immediately following a space.

5 10. In type-writing machines which have a single keyboard and a platen which is shifted in a substantially horizontal direction for the purpose of enabling a capital letter or other selected character to strike the printing-point;
10 in combination with a depressible space-key located in front of the keyboard; a downwardly-depressible thumb shift-key, connected with the platen for shifting the same, centrally located conveniently close and entirely
15 in front of the space-key, and within convenient range of, and adapted to be operated by downward pressure of, the thumbs in such a way that the thumb after depressing the space-key can pass directly forward to the shift-key
20 and depress the same, while the fingers retain their normal position over the keyboard, such as is customary in touch operating.

11. In type-writing machines having a single keyboard and a platen which is shifted in a
25 substantially horizontal direction for the purpose of enabling a capital letter or other selected character to strike the printing-point; in combination with a depressible space-key lying in front of the keyboard; a depressible
30 shift-key connected with the platen for shifting the same, located conveniently close in front of the space-key and having its upper side lower than the upper side of the space-key, so as to hinder striking one for the other,
35 and so that the thumb or finger of the operator, after striking the space-key and effecting the space, passes directly downward and forward to the shift-key and depresses the same, effecting both spacing and shifting with substantially one unbroken movement.
40

12. In type-writing machines which shift the platen in a substantially horizontal direction in order to print a capital letter or other selected character; the combination of a depressible space-key lying in front of the keyboard, and a downwardly-depressible shift-key connected to the platen, the downward depression of which shift-key effects the shifting of the platen, and lying conveniently close

in front of the space-key, so that the thumb 50 or finger of the operator, after striking the space-key and effecting the space, passes directly forward to the shift-key and depresses the same, with a substantially uninterrupted movement. 55

13. In type-writing machines which shift the platen in order to print a selected character; in combination with a depressible space-key located in front of the keyboard, a downwardly-depressible shift-key located centrally, 60 and conveniently close and entirely in front of the space-key, and constituting the front side of a rigid frame pivotally connected to the frame of the machine and connected to the platen in such a way that the depression 65 of the shift-key causes the shifting of the platen, for the purpose of printing a selected character, and lying within convenient range of, and adapted to be operated by downward pressure of, the thumbs, in such a way that 70 the thumb after depressing the space-key can pass directly forward to the shift-key and depress the same while the fingers retain their normal position over the keyboard customary in touch operating. 75

14. In type-writing machines which shift the platen in order to print a selected character; the combination of a depressible space-key located in front of the keyboard; and a depressible shift-key constituting the front side 80 of a rigid frame pivotally connected to the frame of the machine and connected to the platen in such a way that the depression of the shift-key causes the shifting of the platen for the purpose of writing a selected character, 85 and located in front of the space-key and having its upper side lower than the upper side of the space-key, so as to hinder striking the one for the other, and so that the thumb or finger of the operator, after striking the 90 space-key and effecting the space, passes directly forward to the shift-key and depresses the same, effecting both spacing and shifting with substantially one unbroken movement.

JOHN H. HOTSON.

Witnesses:

WM. P. HAMMOND,
P. FRANK SMITH.