(No Model.) 2 Sheets—Sheet 1.

E. TERRY.

TYPE WRITING MACHINE.

No. 570,886. Patented Nov. 3, 1896.

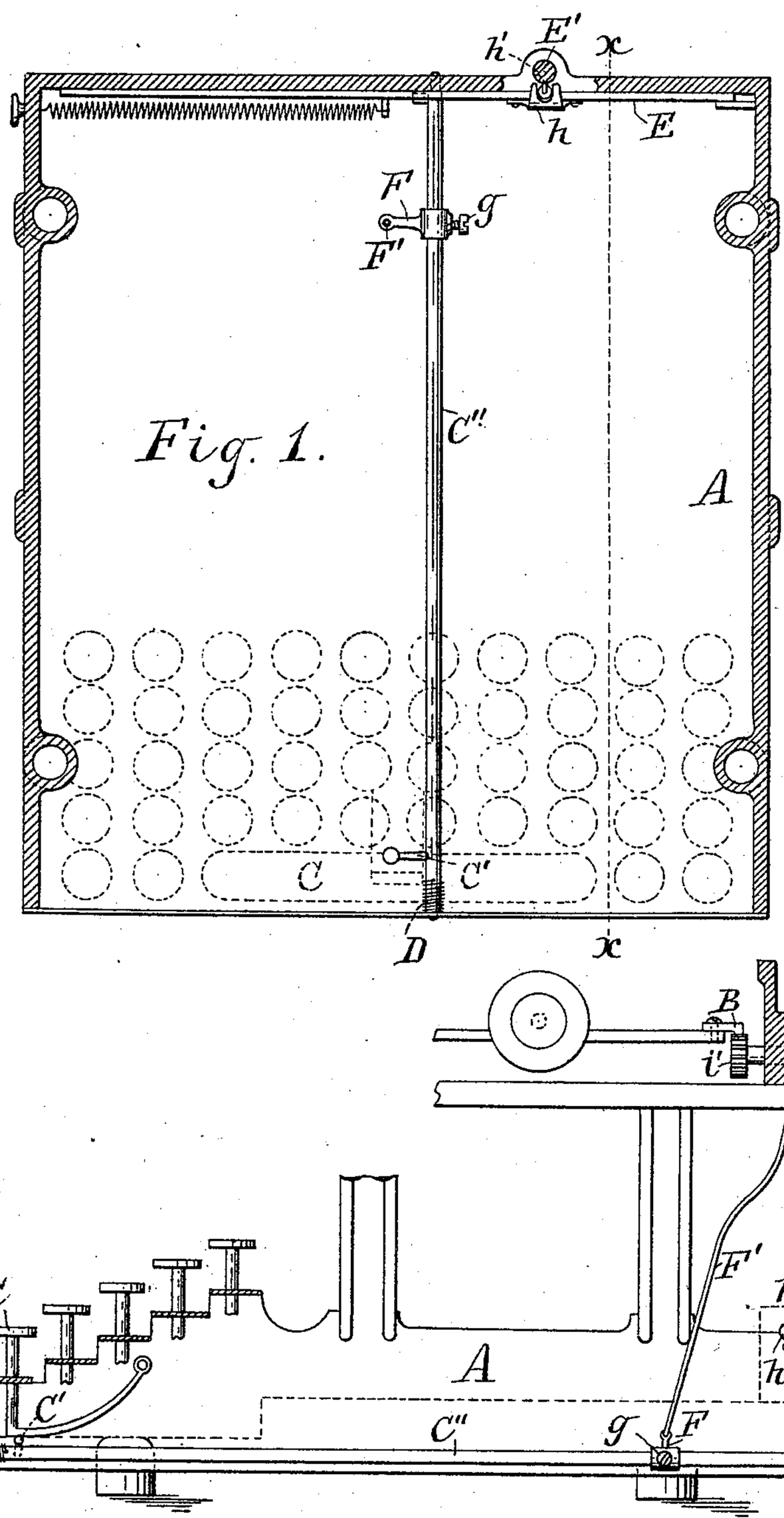

Fig. 1.

Fig. 2

Witnesses:
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R. S. Terry.

Inventor.
Eugene Terry
By C. H. Duell
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(No Model.) 2 Sheets—Sheet 2.

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TYPE WRITING MACHINE.

No. 570,886. Patented Nov. 3, 1896.

Fig. 3.

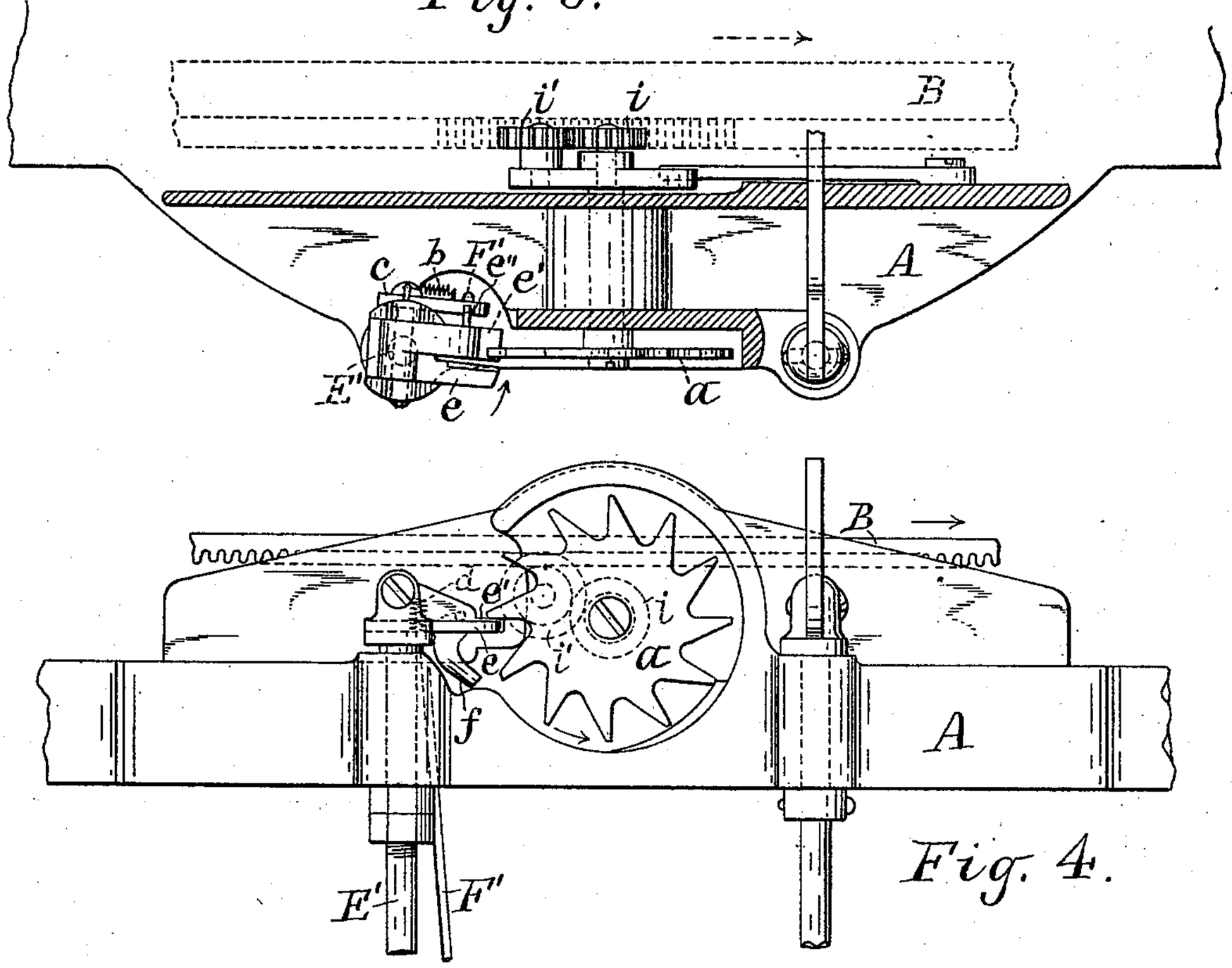

Fig. 4.

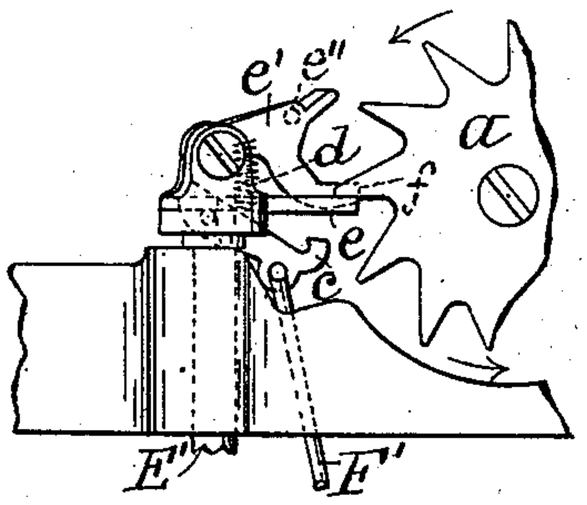

Fig. 5.

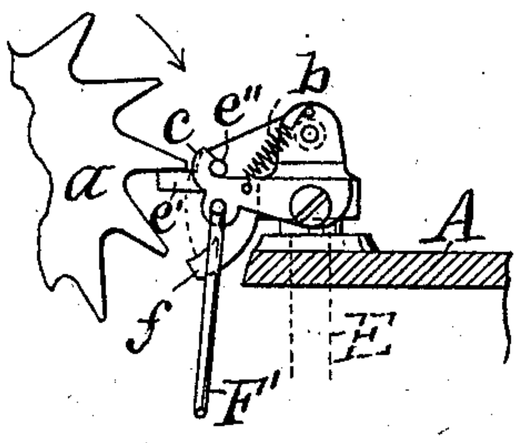

Fig. 6.

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UNITED STATES PATENT OFFICE.

EUGENE TERRY, OF ITHACA, NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES H. DUELL, OF SYRACUSE, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 570,886, dated November 3, 1896.

Application filed May 25, 1895. Serial No. 550,631. (No model.)

To all whom it may concern:

Be it known that I, EUGENE TERRY, of Ithaca, in the county of Tompkins, in the State of New York, have invented new and useful Improvements in Type-Writing Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to certain improvements in type-writing machines, and the object is to provide a construction whereby the space between words may be made when the terminal letter of a word is made, thereby saving time and labor. It will be obvious that if the spaces between words are made without taking up time a much greater speed may be attained in the operation of a type-writer, or, in other words, a greater number of words may be written or printed in a given length of time.

My invention is applicable to that class of type-writing machines in which the successive depression and release of a series of key-levers vibrate and throw a series of types against an inked substance or ribbon and the paper to be written upon, and after each depression and release of any key, and while the type and key-lever are resuming their original position, move the paper a type-space distance and thus print or write one letter at a time.

My invention is shown as applied to a machine which has a paper-carriage adapted to move on guide-rails transversely to the vibratory rods of the key-levers, as a No. 2 "Smith Premier" or other machine having an escape-wheel, but may be applied to other similar machines. The carriage is moved by a spring-wheel and strap and reversed by hand, as usual, after each line has been written, or the carriage may be moved by any suitable and well-known means, as these features do not appertain to my invention.

To this end my invention consists in the combination, in a type-writing machine having a rack-bar mounted on the paper-carriage, of an escapement comprising an escape-wheel geared to the rack, movable means carrying a fixed detent and a shifting detent working in the wheel, a space-key, and suitable connections between the space-key and the shifting detent to allow the escape-wheel to move a greater distance when the space-key is operated; and my invention consists in certain other combinations of parts hereinafter described, and specifically set forth in the claims.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is a sectional plan view of a No. 2 "Smith Premier" type-writing machine embodying my invention, taken on line *y y* of Fig. 2. Fig. 2 is an incomplete vertical longitudinal sectional view of the same, taken on line *x x* of Fig. 1. Fig. 3 is a top plan view of a portion of the writing-machine with my improvement thereon shown in full size. Fig. 4 is the rear side elevation of the same. Fig. 5 shows parts embodying my improvement in their operative position, and Fig. 6 is a front side view of the same parts when in their normal position.

Referring specifically to the drawings, A is the frame of the machine, and B is a portion of the rack-bar, fixed to the paper-carriage. (Not shown in the drawings.)

The unfeathered arrows in the different views indicate the direction of movement of the carriage and rack after the printing of each letter and the release of each key.

In Fig. 1 I have indicated the keys for printing the letters by dotted lines, but their levers and oscillating rods, running from front to back of the machine, are omitted for the sake of clearness.

C is the spacing-key. C′ is the lever, and C″ is the oscillating rod of the lever, pivoted, actuated, and connected in a manner well known and common in this style of machine and not necessary to be herein specified.

Springs D restore the keys to their normal position after being depressed.

E is the universal sliding space-bar, adapted to engage and be operated by any and all of the keys, and E′ is the oscillating connecting spindle or shaft between the sliding space-bar and the detents *e* and *e′*, which are mounted on the upper end of the said spindle or shaft. As usual with machines of this design, the sliding space-bar E is provided with a small plate *h*, which is secured rigidly thereto and is provided with a notch which

engages with a short arm h', projecting outward from the oscillating rod E'. When any printing-key is depressed, the sliding bar is caused to move longitudinally, and by the parts h and h' the rod E' is oscillated or rotated in one direction and upon the release of the key the rod is moved or rotated in the opposite direction. This operation allows the escape-wheel a to move a distance equal to the space between two teeth. The carriage-rack B is so geared to the shaft of the escape-wheel by means of one or more gear-wheels that the carriage will be moved by means of its spring a distance equal to the space occupied by a single letter.

The above-described operation is well known and common in this class of machines and for this reason need not be more fully explained.

Now, in order to move the rack-bar B a distance of two notches, or double the usual distance, when desired, or after the last letter of a word is printed, I strike the space-key C simultaneously with the key which prints said letter. Upon the simultaneous release of both keys two spaces are made, one for the space between two words and the second space for the first letter of the second word to occupy and which it does occupy when its corresponding key is depressed. This double space is obtained by the following-described means:

F is a short arm mounted adjustably on the oscillating rod C'' of the space-key by means of a screw g. F' is a connecting-rod extending upward from the arm F to a small lever c, which may be termed the "releasing-lever." The said lever c is pivoted at one end to one side of the upper end of the rod E' by the side of the detents e and e' before mentioned. The releasing-lever c is pivoted on a horizontal pivot or screw below the axis of the shifting detent e', and is provided at its free end with a hook to engage with a horizontal pin e'', projecting from the side of the detent e', to hold the latter in its depressed position while the printing-keys are being actuated without the space-key. A coil-spring b is connected to the releasing-lever c to raise it after it is depressed and to help support it in its raised position, as shown in Fig. 6. When the space-key is operated alone or with one of the printing-keys, the lever c is depressed to the position shown in Fig. 5. This movement simultaneously with the oscillation of the shaft E' allows the shifting or pivoted detent e' to rise to the position shown in the same figure, and moves the detents so that the tooth of the escape-wheel rests on the rigid detent e. When the space-key and printing-key are released, the rod F' ascends owing to the tension of the spring of the space-key and the spring b. At the same time the shaft E' is oscillated so that the rigid detent e is removed from the tooth of the wheel, allowing it to revolve by means of the carriage-spring in the direction of the arrow a distance of two spaces. The detent e' has an extra projection f or a supplementary detent below the main detent, so that the first tooth of the wheel a that escapes will strike this extra projection and carry it downward, in order that the second tooth will engage the main detent, which when it descends to a horizontal position holds the escape-wheel from rotating further. A small coil-spring d below the shifting detent e' and between the latter and a suitable bearing serves to raise the detent e' when the parts are actuated by the space-key.

i is the gear-wheel on the end of the shaft of the escape-wheel a, and i' is a gear-wheel in mesh with both the gear-wheel i and the carriage-rack B. This wheel i' may be omitted in other machines in some cases, if desired.

I do not wish to be limited to the precise form of construction herein shown or described, as it will be obvious that the details may be changed in various ways without departing from my invention.

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

1. In a type-writing machine having a rack-bar mounted on a paper-carriage, an escapement comprising an escape-wheel, geared to the rack, movable means carrying a fixed detent and a shifting detent to engage the wheel, said shifting detent having two projections to engage the escape-wheel, a space-key, and suitable connections between the space-key and the shifting detent to allow the escape-wheel to move a greater distance when the space-key is operated, as set forth.

2. In a type-writing machine, the combination of the rack-bar, an escape-wheel geared to the rack-bar, a shaft carrying detents engaging the escape-wheel, one of said detents having a pair of projections to engage the teeth of the escape-wheel, a space-key connected to and adapted to operate the shaft, a lever engaging one of the said detents and a connection between the space-key and the said lever, as and for the purpose set forth.

3. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a shaft carrying a fixed detent and a shifting detent, means for operating said shaft when a key is depressed, a releasing-lever engaging the shifting detent, an arm on the oscillating rod of the space-key, and a rod connecting the free end of said arm with the releasing-lever, as set forth.

4. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a shaft carrying a fixed detent and a shifting detent, means for operating said shaft when a key is depressed, a releasing-lever engaging the shifting detent, an adjustable arm mounted on the oscillating rod of the space-key, a rod connecting said arm with the re-

leasing-lever, and a spring connected to the releasing-lever to retract the same, substantially as set forth.

5. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a vertical shaft adapted to oscillate, a sliding universal space-bar connected to the vertical shaft to operate it, a fixed detent and a shifting detent on the upper end of the said shaft and engaging the wheel, a spring to raise the shifting detent, a pin on said detent, a releasing-lever provided with a hook to engage the pin, a spring to raise the releasing-lever, and a rod connecting the releasing-lever with the space-key, as and for the purpose described.

6. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a vertical shaft adapted to oscillate, a sliding universal space-bar connected to the vertical shaft to operate it, a fixed detent and a shifting detent on the upper end of the said shaft and engaging the wheel, a projection on the shifting detent forming a supplementary detent, a spring to raise the shifting detent, a pin on said detent, a releasing-lever provided with a hook to engage the pin, a spring to raise the releasing-lever, and a rod connecting the releasing-lever with the space-key, as and for the purpose described.

7. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a vertical shaft adapted to oscillate, an arm extending from the said shaft, a universal space-bar carrying means to engage said arm, a fixed detent and a shifting detent on the upper end of the said shaft and engaging the wheel, a spring to raise the shifting detent, a pin on said detent, a releasing-lever provided with a hook to engage the pin, a spring to raise the releasing-lever, and a rod connecting the releasing-lever with the space-key, as and for the purpose described.

In testimony whereof I have hereunto signed my name.

EUGENE TERRY. [L. S.]

Witnesses:

A. E. BALL,

O. D. SWEET.