

C. D. WALLACE.
TYPE WRITING MACHINE.

Patented Dec. 24, 1889.

Fig. 7

Casper S. Wallace
By Jacob Felbel
Atty:

UNITED STATES PATENT OFFICE.

CASPER D. WALLACE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
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TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 418,094, dated December 24, 1889.

Application filed May 6, 1889. Serial No. 309,691. (No model.)

To all whom it may concern:

Be it known that I, CASPER D. WALLACE, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention in type-writing machines relates more particularly to the platen driving and checking devices, or what is frequently designated as the "platen line-space-feeding mechanism," and has for its main object to provide a construction whereby the driving pawl or finger may be employed to engage with the arm carrying the platen-check or holdfast for the purpose of disengaging the platen-check from the platen ratchet-wheel and locking it out of engagement with the latter, in order that the platen may be freely rotated by hand in either direction; and to this end it consists in the features of construction and combinations of parts, hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a top view of a portion of a type-writing machine embodying my improvements. Fig. 2 is an enlarged side elevation of the right-hand end of the paper-carriage. Fig. 3 is an enlarged vertical section taken at the line *x x* of Fig. 1. Fig. 4 is a vertical section taken at the line *y y* of Fig. 1, on an increased scale. Fig. 5 is a plan view of the platen-check-carrier spring. Fig. 6 is a perspective view of the platen-check carrier or lever. Fig. 7 is a side elevation of a modification of my invention.

In the several views the same part will be found designated by the same figure of reference.

1 represents the usual type ring or top plate of a type-writing machine; 2, the carriage guide-rail; 3, yokes connecting the carriage and the guide-rail, and 4 the letter-space racks. The carriage is composed, preferably, of a front rod 5, a rear rod 6, a left-hand-end bar 7, and a right-hand-end bar 8. In the end bars 7 and 8 is journaled a rubber-covered platen 9, provided at its left-hand end with a knurled finger-wheel 10 and at its

right-hand end with a ratchet-wheel 11. Journaled or pivotally mounted upon the rear carriage-rod is an arm or lever 12, which is provided with a ratchet-tooth 13, that serves to check or hold fast the platen when in engagement with the ratchet-wheel 11, in order to avoid any accidental turning of the platen during the process of writing or printing. The arm or lever 12 extends forward beyond the platen-check 13, and is curved or rounded outwardly near its end, as seen at 14. The said arm or lever also extends below the end carriage-bar 8 and forwardly, forming a heel 15, against the end of which presses the free end of a flat or bar spring 16, whose opposite end is attached by the screw 17 to the under side of the carriage end bar 8. The spring 16 operates to hold the platen-check 13 in engagement with the ratchet-wheel 11.

Upon the front carriage-rod 5 is fulcrumed the line-space lever, consisting, preferably, of a vertically-arranged arm 18 and a horizontally-arranged arm 19, which terminates in a curved finger-piece. To the end of the arm 18 is pivoted at 20 a push-pawl or driving-finger 21, whose free end is provided with a notch or depression 22, of a contour to receive and engage with the convex surface 14 of the platen-check arm. The free end of the finger 21 is also adapted to engage with the ratchet-wheel 11, to drive or rotate the same step by step.

Preferably formed integral with the end bar 8 is a thumb-piece 23, to facilitate the vibration of the line-space lever, and also an inwardly-projecting hollow or tubular boss 24, which serves as an abutment or stop to the return movement of the line-space lever, and also as a housing or bearing for the line-space regulating devices, which, as herein shown, consist of a horizontal spindle or arbor 25, a radial pin 26, a spiral spring 27, and a finger piece or head 28, by which the pin 26 may be turned in a slot or cut-away 29 in the boss or hub 24, to occupy either a vertical or horizontal position and accordingly limit the forward vibration of the line-space lever. When the pin 26 is turned to a horizontal position, the line-space lever and the driving-pawl may be moved to an extent to rotate the

platen the distance of two teeth; but when the pin 26 is turned to point in a vertical direction the line-space lever is limited to vibrate in a shorter arc, and the driving-pawl can rotate the platen the distance of only one tooth or notch on the ratchet-wheel. The spiral spring 27 causes friction between the hub and the spindle, and hence serves to hold the pin 26 in place in any position it may be turned to occupy.

30 represents the usual friction-roll, between which and the platen the paper to be printed on may be fed. In the normal position of the parts the spring 16 (pressing upon the heel of the lever or arm 12) holds the platen-check 13 firmly between two teeth of the ratchet-wheel 11, the arm 18 rests against the hub or abutment 24, and the driving-pawl 21 is supported at its free end upon a tooth of the ratchet-wheel, all as shown in full lines at Figs. 2 and 3 of the drawings.

If it be desired now to rotate the platen in the direction of the arrow and by a step-by-step movement, the line-space lever is vibrated and the pawl 21 caused to move toward the vertical axis of the platen, and at the same time, by its engagement with the ratchet-wheel, partially turn the same against the tension of the spring 16, the platen-check rising out of one notch and snapping into the next as each tooth of the ratchet-wheel is driven around by the push-pawl.

When it may be desired to free the platen of its driving and checking devices, in order that it may be turned forward rapidly or be turned backward for the making of connections, the driving-pawl 21 may be lifted from the ratchet-wheel 11 and swung up to raise the overhanging arm 12 and disengage the platen-check from the ratchet-wheel. When the driving-pawl has been so far lifted as to clear the platen-check of the ratchet-wheel, the concave surface 22 of the pawl will have reached and received the convex surface 14 of the arm 12, as seen by the dotted lines at Fig. 2, and the parts will be locked or held together out of connection with the platen, leaving the latter free to be turned in either direction at will. To unlock the driving-pawl and the platen-check arm, when it is desired to resume writing, it will be understood, of course, that it is only necessary to push down on the driving-pawl until it passes the platen-check arm, when both devices will return to their normal positions, the pawl by gravity, and the arm by gravity with assistance of the spring 16. When the pawl and the arm have been brought to the dotted-line position at Fig. 2, the arm, working from a fixed support or center, cannot disengage itself from the pawl and descend, because the arm upon which the pawl is pivoted stands against the abutment 24, and is prevented thereby from vibrating outward in the direction of the thumb-piece 23. In the dotted-line positions of the parts the spring 16 is

pressed flat against the under side of the end bar by the heel, and the free end of the arm 12 is restrained from further upward and rearward vibration.

In hastily or carelessly swinging up the pawl to lock or prop the arm 12, if the spring should not come to a stop against the under side of the end bar, (on account of wear or slight inaccuracy in the fitting of the parts,) it would be possible to rotate the pawl so far as to pass by the arm and permit the latter to spring back to its normal position. To prevent this, the free end of the pawl is beveled or slanted from one edge to the other to provide a nose 50, which serves to prolong the pawl. This nose swings in an arc so much further out from the pivot than the remainder of the pawl that the pawl is arrested positively before the nose can be carried past the arm 12.

In the modification shown at Fig. 7 the notch or concave surface 22 is formed in the arm 12, and the tooth or convex surface 14 is formed in the pawl 21, and in lieu of the flat spring and heel, which I prefer, a coiled spring 51 is employed, one end thereof being attached to the platen-check arm and the other to the end bar.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination of a platen, a ratchet-wheel, a line-space lever carrying a pivoted pawl, and a pivoted arm carrying a platen-check, the said arm and the said pawl being formed with interlocking surfaces, whereby the pawl is adapted to be raised to lift the arm and hold the platen-check out of engagement with the ratchet-wheel, substantially as described.

2. In a type-writing machine, the combination of a platen, a ratchet-wheel, a line-space lever carrying a pivoted pawl having a concave surface at its free end, and a pivoted arm carrying a platen-check, the said arm overhanging the said pawl and provided with a convex surface to engage with the concave surface of the pawl, substantially as and for the purpose set forth.

3. In a type-writing machine, the combination of a platen, a ratchet-wheel, a line-space lever carrying a pivoted pawl, a pivoted arm carrying a platen-check and provided with a heel extending beneath the end bar of the carriage-frame, and a flat spring attached to the under side of said end bar and acting upon said heel below the pivot of said arm to hold the platen-check normally in engagement with the ratchet-wheel, substantially as described.

4. In a type-writing machine, the combination of a platen, a ratchet-wheel, a bar, as 8, a line-space lever carrying a pawl provided with a nose, as 50, a pivoted arm overhanging said nose and carrying a platen-check, a heel extending from said arm below the pivot thereof and beneath the bar 8, a spring at-

tached at one point to said bar and bearing at another point upon said heel, substantially as described.

5 In a type-writing machine, the combination of a platen, a ratchet-wheel, a bar, as 8, an abutment, as 24, a line-space lever consisting of the arms 18 and 19, a pawl pivoted to said lever, a pivoted arm 12, carrying a platen-check, a heel extending from said arm, and a
10 spring attached to said bar and acting on said heel, the said pawl and the said arm

being provided with locking-surfaces to retain the platen-check out of engagement with the ratchet-wheel, substantially as described.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 2d day of May, A. D. 1889. 15

CASPER D. WALLACE. [L. S.]

Witnesses:

STEPHEN OSBORNE,
W. B. BOSTWICK.

It is hereby certified that in Letters Patent No. 418,094, granted December 24, 1889, upon the application of Caspar D. Wallace, of Bridgeport, Connecticut, for an improvement in "Type-writing Machines," an error appears in the printed specification requiring correction, as follows: In lines 36-7, page 2, the word "connections" should read *corrections*; and that the Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned and sealed this 14th day of January, A. D. 1890. .

[SEAL.]

CYRUS BUSSEY,

Assistant Secretary of the Interior.

Countersigned:

C. E. MITCHELL,

Commissioner of Patents.