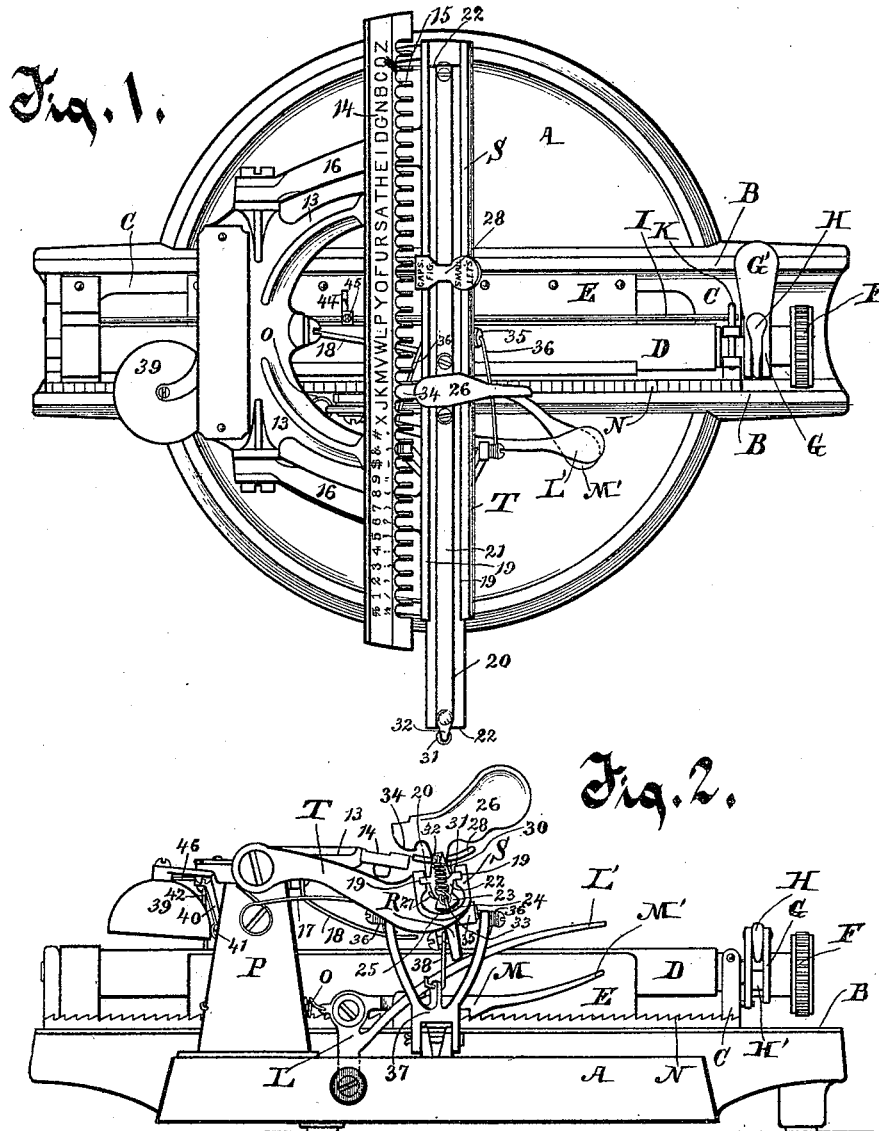


L. J. ODELL.
TYPE WRITING MACHINE.

No. 457,840.

Patented Aug. 18, 1891.



Witnesses.

C. H. Keeney,

Notary.

Inventor.

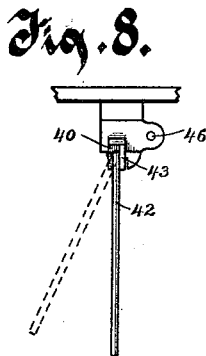
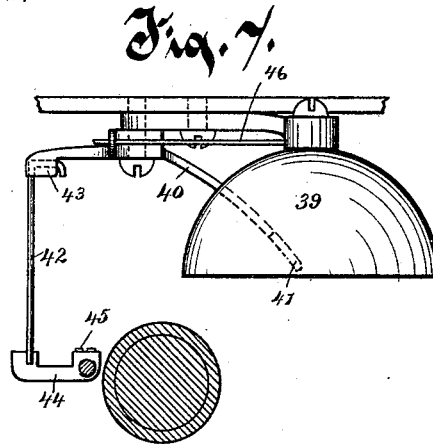
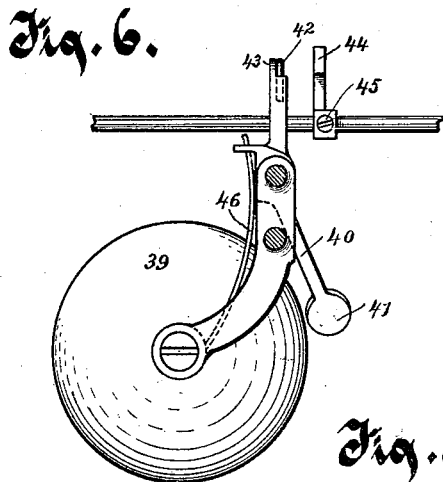
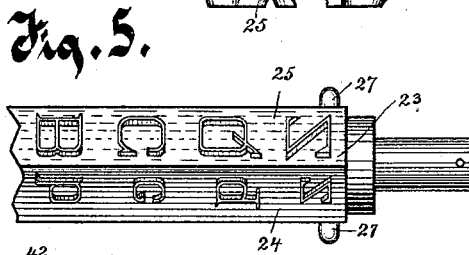
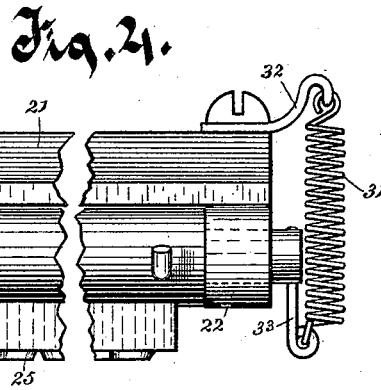
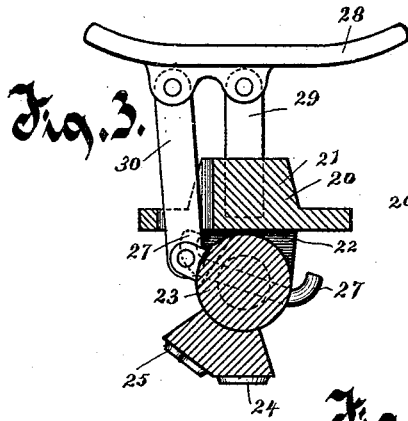
Levi J. Odell

Ernest Benedict
Attorneys.

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Witnesses.

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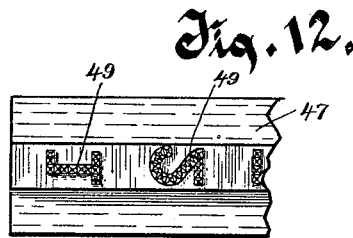
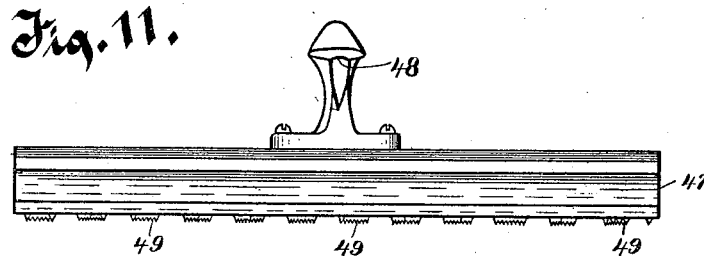
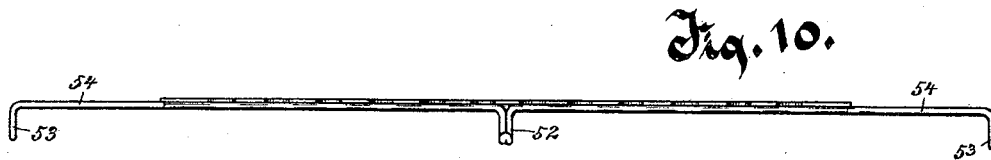
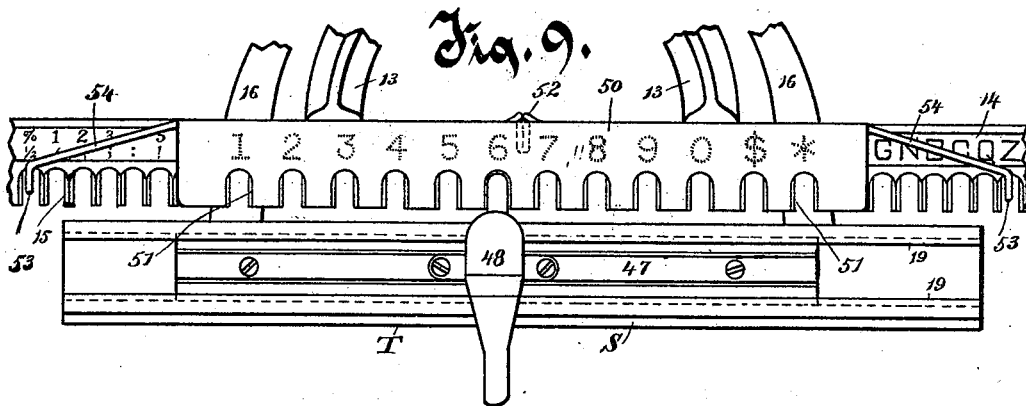
(No Model.)

3 Sheets—Sheet 3.

L. J. ODELL.
TYPE WRITING MACHINE.

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Patented Aug. 18, 1891.



Witnesses.

A. H. Kenney.

Kath. Birn

Inventor.

Levi J. Odell

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UNITED STATES PATENT OFFICE.

LEVI J. ODELL, OF LAKE GENEVA, WISCONSIN, ASSIGNOR TO THE ODELL
TYPE WRITER COMPANY, OF CHICAGO, ILLINOIS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,840, dated August 18, 1891.

Application filed March 24, 1890. Serial No. 345,052. (No model.)

To all whom it may concern:

Be it known that I, LEVI J. ODELL, of Lake Geneva, in the county of Walworth and State of Wisconsin, have invented new and useful
5 Improvements in Type-Writing Machines; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures
10 of reference marked thereon, which form a part of this specification.

My invention relates to improvements in the type-writing machine for certain parts of which Letters Patent of the United States
15 No. 399,205 were granted to me March 5, 1889.

In the drawings, Figure 1 is a top or plan view of the type-writer. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse
20 section of the type-bar and its supporting frame or carriage, with an elevation of the finger-lever and connecting-rod by which the type-bar is tilted, as seen from that side which is at the top in Fig. 1. Fig. 4 is a side eleva-
25 tion of the top type-bar and its supporting frame or carriage, the central portion being broken away for convenience of illustration. Fig. 5 is a view from the under side of a portion of the type-bar. Fig. 6 is a top view of
30 the alarm-bell and the striking mechanism relating thereto. Fig. 7 is a side elevation of the alarm-bell and of the mechanism for striking it, with the cylindrical platen in cross-section. Fig. 8 is a detail of the tilting
35 mechanism for striking the alarm-bell shown at right angles to Fig. 7. Fig. 9 is a top view of a removable character-plate and comb placed on the letter-plate and comb of the machine, in connection with the type-bar.
40 Fig. 10 is an edge view of the removable character-plate and comb. Fig. 11 is a side elevation of the type-bar provided with perforating-type. Fig. 12 is a view of the under side of a portion of the perforating-type bar.
45 A is a base-plate of such size and form as to properly support the entire mechanism mounted thereon.

B B are ways constructed on the base-plate, in which ways a carriage C travels endwise,
50 on which carriage a revoluble cylindrical platen D is journaled. This platen is a round

metal rod having a rubber covering forming a yielding surface adapted to receive thereon the stroke of the type. The paper on which the printing is to be done is curved partially
55 about and carried on this platen, close to which it is held and guided by the sheet-metal guide E, affixed at one edge of the carriage C and curved partially about the platen D. The journal of the platen is provided
60 with a milled head F, by which the platen may be rotated, and a loose collar G, provided with a thumb-piece G', rides on the journal of the platen, which collar is provided
65 with a gravity-pawl H, pivoted on the collar G, which pawl is adapted to engage a rack H' on the journal of the platen, and by means of this loose collar and pawl, in connection with the rack on the journal, the platen may
70 be rotated limitedly through a prescribed arc by each downward movement of the thumb-piece G'.

An elastic rod I is fixed at one end in the carriage C, and at the other end engages removably in a hook K, fixed in the carriage
75 C. This rod I is located alongside and parallel with the platen D, and is adapted to receive the paper thereunder and guide it in its movement about the platen D. An upwardly-extending lever L is pivoted at its
80 lower end to the base-plate A, and is provided with a forwardly-extending thumb-piece L'. A pawl M is pivoted in the top of the lever L, and is adapted to engage with a rack N on the carriage C. The pawl M is provided with
85 a forwardly-extending thumb-piece M'. A retrieving-spring O is attached at one end to the lever L, and at the other end to the post P, fixed on the base-plate A. A stud R projecting downwardly rigidly from the ver-
90 tically-moving type-bar-supporting channeled bar S, (hereinafter to be more fully described,) is adapted, as the channeled bar S is forced downwardly, to strike against the thumb-piece L' and force the pawl M forward
95 sufficiently to engage the next tooth of the rack N, and thereupon as the channeled bar is raised the retrieving-spring O through pawl M forces the carriage C rearwardly a prescribed distance.

Two arms 13 13, rigid on or integral with post P, project forwardly therefrom, and a let-
100

ter-plate 14, located at right angles to the platen D, is secured rigidly to the ends of the arms 13 13. The letter-plate 14 has im-
 5 pressed therein or affixed thereon the letters of the alphabet occupying a portion of the length of the plate, the numerals, marks of
 10 punctuation, and other characters occupying in two lines the remaining longitudinal portion of the plate. A comb 15, one recess of
 15 which is in front of each one of the letters on the letter-plate, and in front of each two numerals or characters on the letter-plate, is adapted to receive and guide the stylus on the type-bar, thereby guiding and moving the
 20 type-bar into the exact position necessary to properly print a letter above the platen D.

A type-bar frame T, consisting of the channeled bar S and two rigid rearwardly-extending arms 16 16, is pivoted at the rear ends of
 20 the arms 16 16 to the arms 13 13, opposite the post P. The bar S is located in front of and parallel to the letter-plate 14, and has a limited oscillating movement vertically a little in front of and below the comb 15. A
 25 spring 17, affixed at one end to the post P, bears at its free end against the under side of a projection on an arm 16, and is adapted to hold the channeled bar S upward yieldingly. A slight yielding stop 18 is secured
 30 rigidly at one end to the arm 13 13, and projects forwardly, terminating over the platen D at such a point as to receive against its free end the downward thrust of the channeled
 35 bar S about at the moment of its reaching its extreme movement downwardly. The channeled bar S is open at the top throughout its entire length, and is open centrally at the bottom above the platen D and for a little
 40 distance on each side of the platen. The channeled bar S is provided with longitudinal ways 19 19 in its side walls, in which the type-bar or type-bar frame is supported and travels.

The type-bar in my improved device is
 45 supported in a frame or carriage 20, consisting of the elongated plate or bar 21, having downwardly-projecting lugs or ears 22 22, in which the type-bar 23 is journaled. This type-bar 23 is provided with two longitudinal
 50 faces 24 and 25, which in transverse section are located at a slight angle to each other, the transverse line of the two faces of the bar being preferably the chords of a circle about the axis of the type-bar, the circle hav-
 55 ing a radius of the same length as the distance of the edges of the faces from the axis of the type-bar. On these faces are constructed two different sets of letters and characters. Thus, on the face 24 are placed
 60 the capital letters, the numerals, and, if desired, such characters as $\frac{1}{2}$, \$, or %, and on the face 25 are the small letters, marks of punctuation, and fractions or other characters. The arrangement and number of the charac-
 65 ters may be varied to suit the user; but the small letters on face 25 are placed opposite the same capital letters on face 24, and the

letters, figures, and characters on the letter-plate 14 are arranged in the same order as
 the letters, figures, and characters are ar- 70
 ranged on the type-bar, the arrangement and location of the letters, figures, and characters on the letter-plate being such with reference to the comb 15 and the letters, figures, and
 75 characters on the type-bar that when the stylus 26, affixed to the type-bar, is adjusted to enter a recess of the comb opposite a letter, figure, or character, the same letter, figure, or character on the type-bar will be over the platen D centrally. The letters, figures, 80
 and characters on the faces of the type-bar are in raised type so as to be adapted to print on paper above the platen D. This type-bar 23 is provided with rigid pins 27 27, one on
 85 each side, adapted to strike against the under surface of the bar 21 and prevent the tilting of the type-bar, except only in one direction to such limited extent as is necessary to bring the face 24 into position directly down-
 90 wardly from the axis of the type-bar, in which position the type-bar is adapted for printing the letters on face 24 and in the other direction so as to bring the face 25 into position directly downwardly from the axis
 95 of the bar, in which position the type-bar is adapted for printing the letters, figures, or characters on the face 25.

To enable the operator to tilt the type-bar while the machine is in use, a finger-plate 28
 100 is pivoted centrally on a post 29 fixed in the bar 21, which plate 28 is connected by a rod 30 to the type-bar, the rod being pivoted to an ear on plate 28 and ear on the type-bar. The type-bar is locked yieldingly in position with the face 24 or the face 25 directly down-
 105 wardly by the retrieving-spring 31, secured at one end to a bracket 32, fixed on the bar 21, and at the other end to an arm 33, fixed in the end of the journal of the type-bar and projecting therefrom radially through the prolonged line
 110 of junction of the faces 24 and 25. By this construction when the outer end of the arm 33 is thrust to the right or left of the axis of the type-bar the retrieving-spring locks it yieldingly in that position, the spring being
 115 sufficiently elastic to readily yield to finger-pressure on the plate 28. It will be understood that by this construction the operator can tilt the type-bar readily, so as to print the letters, figures, or characters on either the
 120 face 24 or 25 in such sequence as desired while shifting the type-bar to right or left by the thumb and finger of the right hand grasping the stylus 26, the little finger being used to tilt the plate 28. The stylus 26 is provided
 125 with a downwardly-projecting guide 34, adapted to enter the recesses of the comb 15.

An inking-roller 35, constructed of some absorbing material, is journaled on elastic arms
 36 36, by which it is held yieldingly against
 130 the type in the open space in the bottom of the channeled bar S. The elastic arms 36 36 are secured to the free upper ends of the bifurcate lever 37, which is pivoted at its lower

end on the base-plate A. A connecting-rod 38 is secured at one end to the lever 37 and at the other end to the stud R, the connecting-rod being arranged at an angle to the lever 37, so that as the channeled bar S is forced downwardly the lever 37 will be forced outwardly toward the left, and as the channeled bar S rises the lever 37 will be drawn inwardly toward the right, whereby the inking-roller 35 is caused to reciprocate in front of and against the letters on the type-bar above the platen D with each downward and upward motion of the channeled bar S.

For giving an alarm to the operator, a small bell 39 is suspended by an arm from the rear of the arms 13 13, which bell is arranged to be struck by a centrally-pivoted swinging lever-clapper 40, having at one end a knob 41 for that purpose. This lever 40 is pivoted to the arms 13 and is provided with a tripping-rod 42 depending therefrom. The rod 42 is so pivoted in the outer arm of the lever 40 that it swings freely in one direction, while in the other direction it engages a downwardly-extending lug 43, integral with the lever 40, whereby the rod is held vertically against swinging in the other direction. A tripping-arm 44, sliding on the rod I, is secured adjustably thereto by means of a set-screw 45, turning through the tripping-arm against the rod. This tripping-arm 44 is constructed and arranged to engage the tripping-rod 42 as the carriage C moves toward the rear of the machine, and thereby to swing the lever 40, carrying the knob 41, away from the bell until the tripping-rod 42 slips off the tripping-arm 44, when the knob is thrown sharply against the bell by the resilience of the spring 46, which is affixed at one end to the bell-supporting arm and at the other end is connected movably to the lever 40. When the carriage C is returned to the front, the tripping-arm 44 merely swings the tripping-rod 42 in the manner shown by dotted lines in Fig. 8 without moving the lever 40. The tripping-arm 44 can be adjusted and secured on the rod I at any place desired, so that the alarm may be given at any particular point of the movement of the carriage.

In the use of checks, bills of exchange, promissory notes, and other similar papers expressing valuable consideration, it is found desirable to perforate or so mark the instrument with the numeral-characters as to protect the same against any improper change of the amount stated therein. For this purpose I have provided an additional type-bar 47, having a stylus 48, which type-bar is adapted to be inserted and travel in the channeled bar S. This type-bar is provided with type representing the nine digits, a cipher, a dollar-mark, and a star, and may be provided with other characters, if desired. The type 49 49 on this bar 27 are constructed with a series of downwardly-projecting teeth or points in the form of the figures and characters represented, which points are adapted to

perforate the paper while at the same time they may be inked with indelible ink supplied by the inking-roller 35. By this form of type having the serrated toothed or pointed construction the paper may be perforated and the apertures so inked as to be entirely ineradicable while the apertures cannot be filled in as has been done where the figures were cut from the paper. As the type used for this perforating process are preferably much larger than the type ordinarily used on the type-bar, I provide a removable character-plate 50, on which the same figures and characters are arranged in the same order as they are on the type-bar 47, and this character-plate 50 is provided with a comb 51, having recesses that are twice as far apart as the recesses in the comb 15, so that when the plate 50 is placed upon the plate 14, the recesses in the comb 51 register with every other recess in the comb 15. The letters and characters on the plate 50 are located opposite the recess in the comb 51, and the type 49 on the type-bar 47 are arranged at corresponding distances apart. To secure the removable plate 50 in position on the plate 14 this plate 50 is provided with a central hook 52, and with hooks 53 53 at the ends of laterally-extending arms 54 54, which hooks are adapted to engage the plate 14 at its front and rear, respectively, and hold the plate 50 in position removably thereon. Other means of securing the removable plate 50 to the plate 14 could be used.

Instead of the removable plate 50 the plate 14 could be used, having thereon the numerals and characters properly arranged for use with a type-bar 47, having perforating-type 49, or perforating-type like the type 49 could be constructed on the type-bar ordinarily used with the type-writing machine, the perforating-type being provided instead of some of the type thereon, or being added thereto by extension of the type-bar longitudinally.

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

1. In a type-writing-machine, the combination, with a vertically-oscillating frame hinged at one side to a fixed support, but having no lateral motion thereon, of an independent type-bar frame supported and sliding horizontally in ways in the vertically-oscillating frame parallel with and at a distance from the axis of oscillation, and a type-bar having two sets of type in longitudinal parallel lines, which bar is pivoted in the type-bar frame, being thereby tiltable transversely of its long axis independently of the type-bar frame, substantially as described.

2. In a type-writing machine having an elongated type-bar frame or carriage constructed to travel endwise on ways therefor in the machine, a type-bar having thereon two sets of fixed type arranged in parallel lines at an angle to each other, which type-bar is journaled in the type-bar frame so as to be tiltable limitedly laterally therein, a spring secured to

the type-bar frame and to an arm on the type-bar, and so arranged as to swing past the axis of the bar when the bar tilts, the spring being adapted to act as a yielding lock to the type-bar, and means for tilting the type-bar, substantially as described.

3. In a type-writing machine having a movable type-bar frame, a type-bar having two parallel lines of fixed type arranged at an angle to each other, which type-bar is journaled in the type-bar frame so as to be tiltable laterally therein, a tilting finger-plate pivoted on the type-bar frame and connected movably to the type-bar, and means for locking the type-bar in position yieldingly, substantially as described.

4. In a type-writing machine having a fixed letter-plate and a comb therewith, a removable letter-plate having numerals, characters, or letters thereon, a comb rigid or integral therewith, the recesses of which comb are arranged to register with a portion only of the recesses of the fixed comb, and means, substantially as described, for securing the removable comb temporarily to the fixed comb.

5. In a type-writing machine having a fixed letter-plate and comb and a parallel oscillat-

ing type-bar-supporting frame, a removable letter-plate having a comb arranged to register with alternate parts of the fixed comb and to prevent the use of the type-bar with other parts of the fixed comb, in combination with a type-bar supported and movable endwise in the vertically-oscillating frame, which type-bar has serrated or pointed type, substantially as described.

6. In a type-writing machine, the combination of a bell 39, secured to a stationary part of the machine, a swinging lever-clapper 40, a spring 46 bearing against and actuating the clapper, a rod 42 so hinged on the free arm of the lever-clapper as to swing freely in one direction and to be rigid to the clapper against swinging thereon in the other direction, and an arm 44 adjustable on the guide-rod 1 on the paper-carrying carriage, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LEVI J. ODELL.

Witnesses:

J. MCKAY,

OMA ODELL.