(No Model.) 2 Sheets—Sheet 1.

G. B. WEBB.

TYPE WRITING MACHINE.

No. 489,514. Patented Jan. 10, 1893.

Fig. 1,

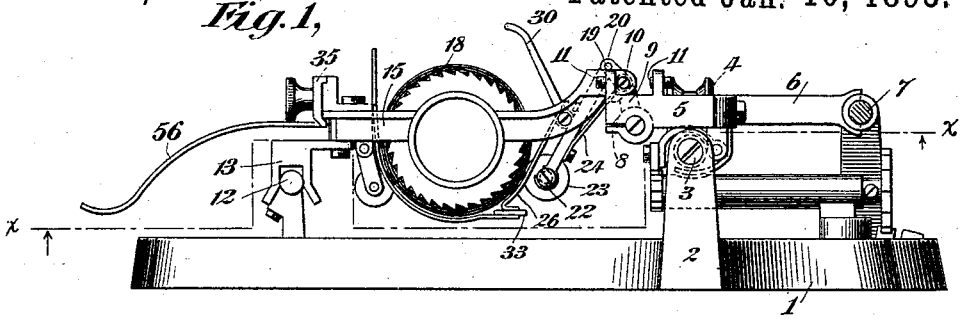
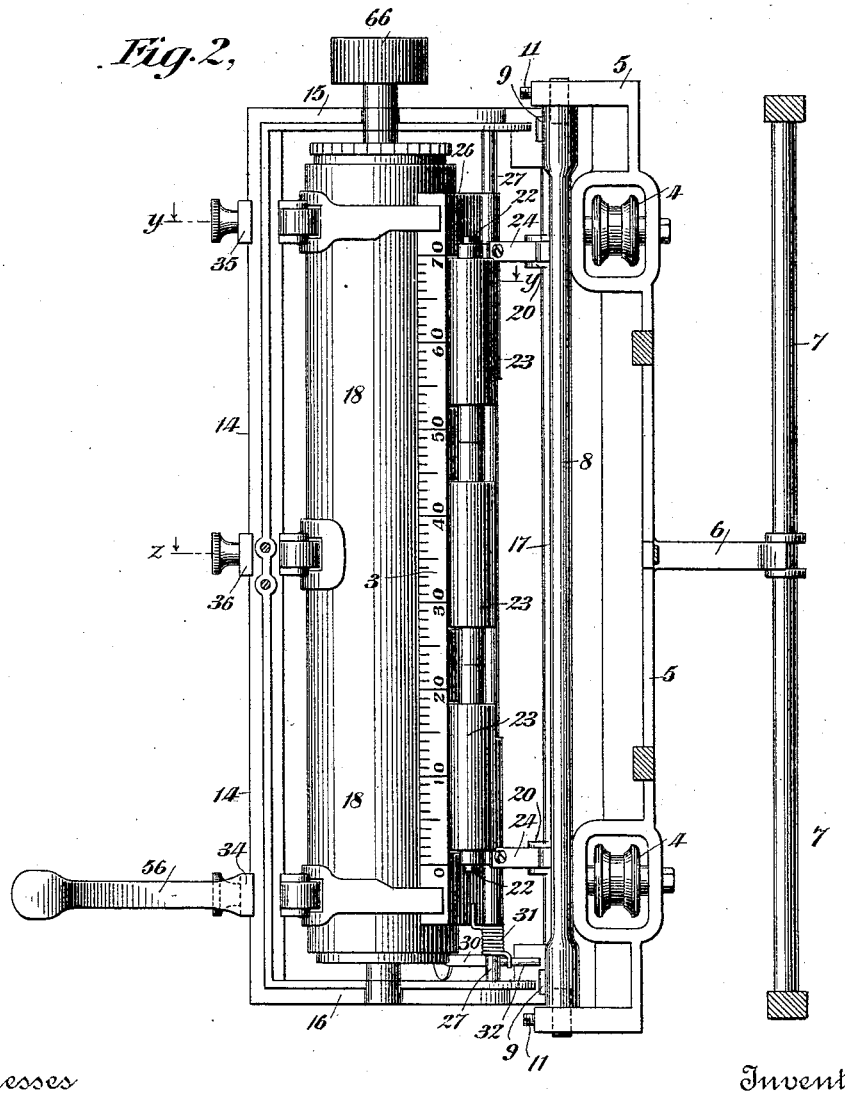


Fig. 2,



Witnesses
C. E. Ashley
H. W. Lloyd

Inventor
George B. Webb
By his Attorney
H. D. Donnelly

(No Model.) 2 Sheets—Sheet 2.

G. B. WEBB.

TYPE WRITING MACHINE.

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Fig. 3,

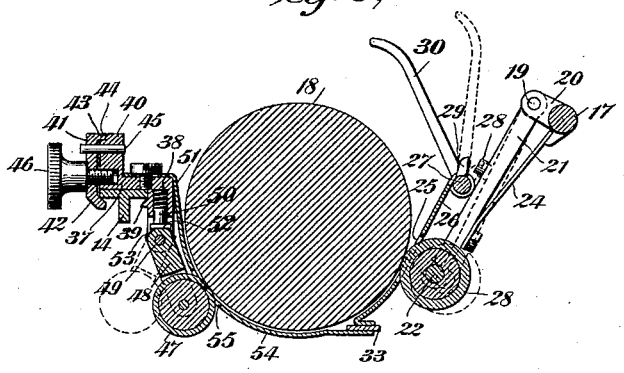
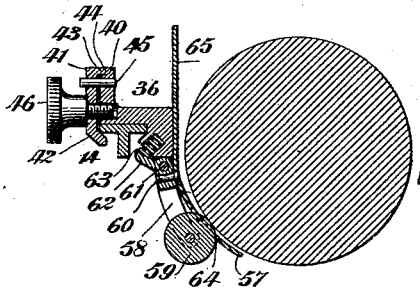


Fig. 7.

Fig. 4,



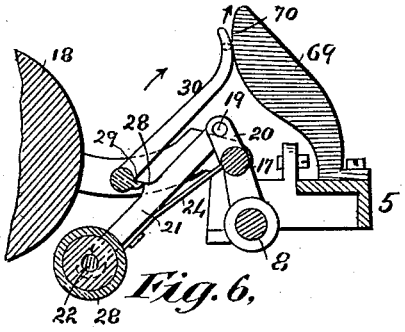
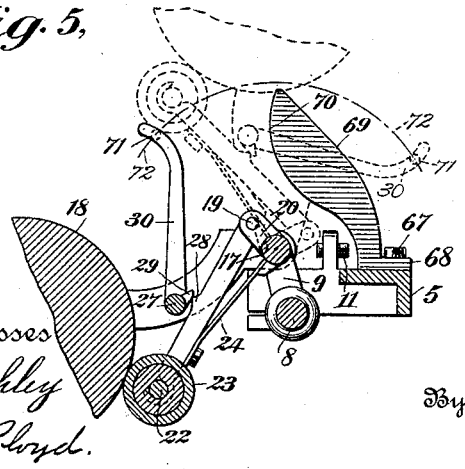
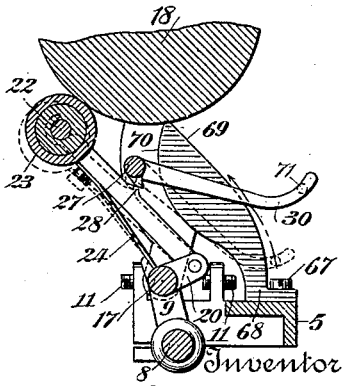


Fig. 6,

Fig. 5,





Witnesses
C. E. Ashley
H. W. Lloyd.

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UNITED STATES PATENT OFFICE.

GEORGE B. WEBB, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE WYCKOFF, SEAMANS & BENEDICT, OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 489,514, dated January 10, 1893.

Application filed April 6, 1892. Serial No. 428,034. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. WEBB, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to means for holding, guiding and feeding paper, envelopes, postal cards, &c. in type writing machines, and consists in the features of construction and combinations of devices hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of so much of a type writing machine as is necessary to illustrate my improvements. Fig. 2 is an inverted or bottom plan of the paper-carriage and platen-carrier and its appurtenances, the said view being taken at the line *x*, *x* of Fig. 1. Fig. 3 is a vertical section taken at the line *y*, *y* of Fig. 2. Fig. 4 is a similar section taken at the line *z*, of Fig. 2, said view as well as Fig. 3, being taken with the paper-carriage and platen-carrier in their proper positions. Fig. 5 is a sectional view similar to Fig. 3, but showing an extension of my improvements, in which means are added to lock the feed-roller away from the platen and to automatically unlock the same when the platen-carrier is turned either up or down. Fig. 6 is a similar section with the platen-carrier in an upturned position. Fig. 7 is a detail view illustrating the positions of the parts when the lever 30 is vibrated rearwardly and the platen-carrier is being swung up and the pin on the lever caused to ride on the cam face 70.

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

I have shown my improvements carried out in what is known as a "shifting platen machine," and in a machine constructed on the general plan shown and described in the Letters Patent granted to me March 29, 1892, No. 471,710, but they may be embodied equally well in machines of different design or general plan of construction, and in which the platen is not adapted to be shifted transversely for co-operation with type-bars carrying a plurality of types.

Having carried out in practice the present improvements in a machine constructed as represented in the drawings, I have found it convenient to illustrate said improvements as applied to such a machine.

1 is top-plate or type-ring, which at each end is provided with a standard 2 adapted to support a guide-rail 3, upon which grooved rollers 4 mounted in the carriage 5 are adapted to travel. The carriage is provided with a rearwardly-extending arm 6, which is coupled to a secondary guide-rod 7 mounted in standards on the top-plate.

8 is a rock-shaft mounted to turn in bearings in the ends of the paper-carriage, and said shaft is provided near each end with a rocker-arm 9, which is connected at its upper end to the platen-carrier. The latter is provided at each end with a pin 10 adapted to play between two adjustable stops 11 in upwardly-extending lugs on the carriage frame, and limit the vibrations of the platen during the back and forth movements of the shift-rail 12, which is partially embraced by a yoke-piece 13 attached to the platen carrier.

The platen-carrier consists of a front bar 14, T-shaped in cross section, side bars 15 and 16, and a back rod or bar 17. Mounted to rotate in said side bars is a cylindrical platen 18.

Pivoted at 19 in forwardly-projecting lugs 20, cast or formed on the back bar 17 of the platen-carrier, are two arms or levers 21, made hook-shaped at their lower ends to receive a shaft or axle 22, upon which is mounted to rotate, each independently, a series of three rubber-covered pressure or feed rollers 23. The arm or lever 21 is provided with a spring 24, which tends to press the series of rollers against the platen. Each roller section 23 preferably passes through a slot or opening 25 in a curved plate or deflector 26 fastened upon a cross-bar 27, which is mounted to rock at its ends in the side-bars of the platen-carrier. On said cross-bar at points opposite studs 28 on the levers 21, are arranged lugs or fingers 29 adapted when the said cross-bar is rocked rearwardly by means of a finger-

piece or lever 30, to move said arms 21 rearwardly and carry the divided or sectional pressure roller out of contact with the platen or the paper thereon. When the key or lever 30 is released, the divided pressure-roller returns to its normal position under the influence of the springs 24, and the cross-bar is restored to its first position by a spiral spring 31 secured thereon at one end and bearing at its other end against the back of the deflector 26. The return of the cross-bar by the spring 31 is limited by an arm 32 secured to said cross-bar and contacting with the under side of the rear forked end on the side bar 16.

At the lower end of the deflector is secured a scale bar 33, which is preferably marked or graduated from left to right.

On the front bar 14 of the platen-carrier are mounted three brackets 34, 35, 36, the latter being arranged between the brackets 34 and 35. These brackets are constructed alike and are adapted to be adjusted lengthwise upon the said bar for sheets of paper of different widths. Each bracket is formed with a horizontal member 37, adapted to rest on top of the bar 14, with a vertical depending member or lug 38 having a shoulder 39 which fits on the underside of the front bar (the latter being T-shaped in cross section), and with a forwardly-extending vertical member 40, in connection with which is used a plate or device 41 having a shoulder 42 at its lower end corresponding to the shoulder 39, adapted also to clasp the underside of the front portion of the bar 14. At the upper end of the plate 41 is formed a lip 43 which is seated on a ledge 44 on the member 40. The latter is provided with a guide pin 45 which extends through a hole in the plate 41. Below this hole is a larger hole, through which passes the shank of a clamping screw 46, whose end engages a threaded hole formed in the horizontal member 37. By means of the screw 46 the bracket and the plate 41 are drawn toward each other and caused to clamp securely the front bar 14, the shoulders 39 and 42 preventing the bracket from rising from said bar. By turning the screw 46 toward the left, the parts may be loosened and the brackets slipped along the bar to any desired place.

The end brackets 34 and 35 are each provided with a small rubber-covered roller 47 which is mounted to turn freely in a fork 48 pivoted at 49 in the bifurcated lower portion of the vertical depending member or lug 38. In this lug or member is arranged a headed pin or plunger 50 provided with a coiled spring 51 having a tendency to press said pin forward or downward. The upper end of the fork 48 is formed with two flat faces 52 and 53, against either of which the head of the spring-pressed pin or plunger bears. When the headed pin bears against the flat face 52, the roll is held against the platen or the paper thereon, and when the said pin bears against the flat face 53, the roll is held away from or out of contact with the platen or the paper thereon. Normally these small rolls 47 are turned up away from the platen and are not in use. They are of great utility however when manifold or carbon work is being done, or when it is desired to print upon cards or envelopes, or when for any reason it is desirable to hold the paper or material with more than usual firmness. They are also useful when it may be desired to print to the bottom edge of the paper and after the paper has left the control of the pressure-roller.

Upon each of the end brackets 34 and 35 is mounted a metal paper-guide 54 which is curved to conform to the curvature of the platen, and which at its free end preferably overlaps and presses upon the scale bar 33. This paper-guide is widened between its ends and is formed with a slot 55 through which the smaller roller 47 protrudes when set in working position as indicated by the full lines at Fig. 3. The plate 41 of the left end bracket 34 has formed with it preferably a handle 56 by which the platen may be lifted for inspection or correction of the work. The middle bracket 36 has a shorter curved plate-like slotted paper-guide 57 which is attached to the fork or hanger 58, that carries a small roller 59, by screws or rivets 60. The said fork or hanger is pivoted at 61 in the depending portion of the bracket 36 and is provided with an extension 62, which is pressed upon by a spiral spring 63 in a housing in said member, the said spring by its action on the lever-like fork or bracket tending to keep the roller 59 always against the platen or the paper thereon, the said roller working through a slot 64 in the paper-guide 57. The latter is extended up above the front bar 14 of the platen-carrier to form a finger-piece 65, so that the roller and the lower end of the guide 57 may be moved away from the platen or the paper thereon when the finger-piece is pushed rearwardly, which is done upon the insertion of a new sheet. This avoids the necessity of raising the platen-carrier and guiding the leading end of the sheet by hand as heretofore. The paper to be written upon is placed upon the platen by passing it down in front of the deflector 26 until its foremost edge arrives at the line of contact between the platen and the sectional pressure-roller. The platen is then rotated by means of its hand wheel 66, and the paper is fed around the under side of the platen the desired distance, the side edges of the paper being guided by the side guides 54 and the central portions of the paper guide being guided by the central guide 57, all three of said guides operating to cause the paper to conform to the curvature of the platen. The pressure or feed roller is divided into two or more parts, each of which is capable of turning independently on the shaft, in order to permit the platen to control the feed of the paper.

It is found in practice that when the small rubber-covered feed-roller does not lie exactly

parallel with the axis of the platen, said roller is liable to skew the paper on the platen, and when manifold work is being done this effect is more observable, as the superimposed sheets slip on each other more readily than against the rubber face of the roll; hence the sheet next to the feed-roll will be delivered square to the axis of that roller, while the remaining sheets will tend to deliver square to the axis of the platen. This skewing of the paper also follows when the ends of the small feed-roll differ in size or diameter, the larger end accelerating and the smaller retarding on respective sides of the paper. I have found in practice that if the feed-roll is divided, its power over the paper to make the same run square to its own axis is also divided, and that if said roll be divided into three parts, each rolling independently of the other, its power to control the paper is materially less (about one-third) than when said roll is undivided.

The sheet of paper may be readily withdrawn from the platen at any time by turning the platen in either direction. In case an error has been made, which it is desired to correct in the machine, the paper may be returned by passing it down in front of the deflector as before. In this case, however, the portion of the sheet at which the correction is to be made, may be readily brought to the printing or impression point by employing the key or lever 30 of the rocking bar or rod 27. When this key or lever is pushed rearwardly at its upper projecting end, the lugs or fingers of the cross-bar bear against the studs 28 on the levers 21, and all sections of the divided pressure-roller are vibrated away from the paper, and the latter is free to be shifted or adjusted on the platen with the utmost ease or facility. At this time it is to be understood that the small rollers 47 at the ends have been previously moved out of contact with the platen or thrown forwardly, as represented by the dotted lines at Fig. 3, at which view is also shown, in dotted lines, the operation of relieving the platen or the paper thereon from the pressure of the divided feed-roll. The deflector and the end and middle paper-guides are made of polished metal offering little or no resistance to the adjustment of the paper when the divided roll has been moved away from the platen to the dotted position shown. Of course the paper may be adjusted at any time upon the platen in the above manner whether or not a correction is to be made, but the devices just referred to will be found useful where it is desired to reinsert a sheet and bring some particular portion thereof exactly at the printing point.

The construction and arrangement of the devices for separating the feed-roller and platen for the insertion of sheets, shown at Figs. 1, 2 and 3, are such that the operator must employ one hand upon the lever 30 during the time that the feed-roller is held back out of contact with the platen and hence can use only one hand to effect the introduction of sheets. As the sheets may be better introduced or inserted with two hands I have provided means for locking the feed-roller when moved back from or out of contact with the platen. While this feature is desirable for the reason stated, it is nevertheless objectionable unless some means be provided to automatically unlock said feed-roller before the platen is turned down to working position.

At Figs. 5 and 6 I have shown means for locking the feed-roller away from the platen, and also means for automatically unlocking it during the turning up and the turning down of the platen. Referring to said figures, the studs or projections 28 are made beveled or cam-shaped, in order that the lugs or fingers 29 on the rock-shaft 27 may, when the lever is moved rearwardly, interlock with said studs or projections and thus cause the feed-roller to remain away from the platen against the force of the springs 24.

At the left hand side of the paper-carriage is affixed, by a screw 67, a plate or standard 68, which is formed or provided on its rear edge with a cam-face 69. The front edge of this plate or standard is curved as at 70 to match the curvature of the side bars of the platen-carrier, and affords a stop to the turning up and back movements of the platen-carrier. It also forms a cam-face. The lever 30 is provided near its outer end with a pin 71 which projects toward the left, and which is adapted to co-operate with the cam-faces 69 and 70 to move said lever and hence unlock the pressure-roller.

Referring to Fig. 5, the platen-carrier, the pressure-roller, the lever, &c. are shown as down in full lines and as in their normal positions, while in dotted lines the platen is shown as swung up for inspection of the work with the feed-roller, lever, &c. still in their normal positions. In turning the platen up from the full to the dotted line position, the pin 71 on the lever moves in the arc described by the dotted line 72 and passes over the top of the plate or bracket and is consequently unaffected thereby. If, however, before raising the platen to the dotted line position, the lever 30 be vibrated rearwardly and the roller 23 be thus locked away from the platen, the pin 71 will be brought nearer the axis of rotation of the platen-carrier, and when the platen-carrier is swung up to the dotted line position said pin will ride upward upon the curved or cam-face 70 (as in Fig. 7) and force the lever back to its normal position and thus permit the feed-roller to again contact with the platen or the paper thereon. By the dotted line 72, (in Fig. 5) it will be seen that during the return of the platen to its normal position the pin 71 will again pass over the top of the plate 68 and the feed-roller will be left in its unlocked normal condition.

Referring to Fig. 6, the platen-carrier, the feed-roller, the lever, &c. are shown in nor-

mal position in full lines when swung up for inspection of the work, while in dotted lines they are shown in their abnormal positions, or in other words, with the feed-roller locked away from the platen. From this view it will be observed that when the parts are in the dotted line position, the pin 71 will ride along the cam edge 69 during the turning down of the platen and gradually effect an unlocking of the feed-roller. It will also be understood from other portions of the description in connection with Fig. 6 of the drawings that if while the platen-carrier is up, the lever 30 be depressed to the dotted line position shown at said figure to separate the feed-roller and the platen, the pin 71 will cooperate with the cam 69, in turning down the platen-carrier, and said cam will thus operate to unlock the feed-roller and permit it to again contact with the platen or the paper thereon.

From both Figs. 5 and 6 it will therefore be observed that if the feed-roller be locked away from the platen while the latter is down in working position, it will be automatically unlocked during the turning up and back of said platen, and that if the feed-roller be locked away from the platen while the latter is in its upturned or unusual position, it will be automatically unlocked during the turning down of said platen to working position. It will thus be seen that it is impossible to lock the roller away from the platen and have it remain in this condition if the platen be either turned up from working position or turned down from non-working position. Of course the feed-roller may be locked away from the platen while the latter is down in working position, for the insertion of a sheet, and if the writing be at once proceeded with, the result may and probably will be that, owing to the absence of the pressure derived from the feed-roller, the paper will slip or feed irregularly and hence exhibit exceedingly poor work. But inasmuch as it is nearly always the practice of the operator after inserting a sheet to turn up the platen to adjust the sheet thereon with reference to the scale or some other straight edge, the liability of the operator to commence writing while the feed-roller is locked away from the platen is reduced to the minimum by providing for the unlocking of the feed-roller during the turning up or down of the platen. If, after having inserted a sheet the platen is turned up with the feed-roller locked back, it is immediately unlocked, and if it should happen that the paper has been properly inserted, the writing may be begun immediately upon the turning down of the platen, since the feed-roller will have been automatically returned to its working position. If on the other hand, after a sheet has been inserted and the platen is turned up to the dotted line position, it should be discovered that the paper had not been properly placed upon the platen, the feed-roller may be locked back as shown at Fig. 6 by the dotted lines to enable the ready adjustment of the paper, and having performed this work, the operator may at once turn down the platen without regard to the feed-roller, as during this turning down movement of the platen, the unlocking of the feed-roller will be automatically effected by reason of the engagement of the pin 71 with the cam-face 69.

Of course some of my improvements may be used without others, and so far as some of the improvements relating to the feed or pressure roller are concerned, I do not wish to be limited to one that is made up of sections.

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 series of independently rotatable feeding rollers on a common shaft or axis, and a pair of depending arms supporting said shaft or axis at their lower ends and pivoted or hinged at their upper ends to the platen-carrier.

2. In a type writing machine, the combination of a platen, a pair of spring-pressed pivoted or hinged depending arms, a pressure-roller supported by said arms, and a transverse rock-shaft provided with devices which act on said arms when the shaft is turned and vibrate them and move the pressure-roller away from the platen or the paper thereon.

3. In a type writing machine, the combination of a platen, a pair of depending pivoted arms, carrying at their lower ends a feed or pressure-roller, a rock-shaft provided with projections adapted to engage both said arms, and a key or finger-piece for turning said rock shaft.

4. In a type writing machine, the combination of a platen, a pair of depending pivoted arms carrying a feed or pressure roller made up of independently rotatable sections having a common shaft or axis, and an independently-mounted fixed deflector provided with slots or openings opposite said roller sections.

5. In a type writing machine, the combination of a platen, a pair of depending pivoted arms carrying at their lower ends a pressure or feed-roller composed of independently rotatable sections, mounted on a common shaft or axis, an independent rock-shaft provided with means for vibrating said arms and moving the roller sections away from the platen, and an independent deflector mounted upon said rock-shaft and provided with slots or openings opposite said roller sections.

6. In a type writing machine, the combination of a platen, a feed-roller, means for locking said feed-roller out of contact with said platen, and means for automatically unlocking said feed-roller.

7. In a type writing machine, the combination of a platen, a feed-roller, locking devices for holding the same out of contact with the said platen, and means for unlocking said de-

vices during the turning up of the platen to an abnormal or non-working position.

8. In a type writing machine, the combination of a platen, a feed-roller, locking devices for holding the same out of contact with said platen, and means for unlocking said devices during the turning down movement of said platen to its normal or working position.

9. In a type writing machine, the combination of a swinging platen-carrier, a platen, a feed-roller, locking devices for holding the same out of contact with the platen, means for unlocking said devices during the turning up movement of the platen, and means for also unlocking said devices during the turning down movement of said platen.

10. In a type writing machine, the combination of a swinging platen-carrier, a platen, a feed-roller, pivoted arms or supports for said roller, a transverse rock-shaft provided with devices to engage with and lock said arms or supports, a key or lever for turning said rock-shaft, a pin or projection on said key or lever, and a relatively-fixed cam surface to co-operate with said pin or projection to effect the unlocking of the parts upon a swinging movement of the platen-carrier.

11. In a type writing machine, the combination of a swinging platen-carrier, a pair of depending spring-pressed arms, a feed-roller supported by said arms, a transverse rock-shaft provided with projections to engage with and lock said arms, a key or finger-piece for turning said rock-shaft and provided with a pin or projection, a carriage and a plate or standard provided with two cam edges or surfaces.

12. In a type writing machine, the combination of a platen-carrier, a platen, a detachable bracket or clamp, adjustable longitudinally of the platen-carrier, and a small roller mounted in a frame or support which is hinged to said bracket or clamp.

13. In a type writing machine, the combination of a platen-carrier, a platen, a bracket or clamp, and a roller mounted in a spring-pressed frame or support hinged to and depending from said bracket or clamp and adapted to be set in either of two positions, so that the roller may run in contact with the platen or the substance thereon to be written, or may be kept out of contact therewith, as desired.

14. In a type writing machine, the combination of a platen-carrier, a platen, a detachable and adjustable bracket or clamp provided with a paper-guide, and a small pressure-roller; the pressure-roller being mounted in a spring-pressed hinged frame, and the paper-guide being independently attached and formed with a slot opposite said roller.

15. In a type writing machine, the combination of a platen-carrier, a platen, a bracket or clamp adjustable lengthwise of the front bar of the platen-carrier, a spring-pressed pin or plunger in said bracket or clamp, and a small pressure roller mounted in a frame or support pivoted to said bracket or clamp and formed with two faces, so that the spring-pressed pin or plunger may act either to hold the pressure roller against the platen or the paper thereon or away therefrom as may be desired.

16. In a type writing machine, the combination of a platen-carrier, a platen, and a guide for the central portion of the sheet to be written upon, consisting of a bracket or clamp, a spring-pressed fork pivoted thereto and provided with a small pressure-roller and with a short curved, slotted plate attached to the said pivoted fork, the construction being such that the roller and the lower end of the plate may be moved away from the platen when inserting a sheet and without lifting the platen-carrier.

17. In a type writing machine, the combination of a platen-carrier, a platen, a clamp or bracket, a fork or support pivoted thereto and carrying a small pressure roller, and a slotted paper-guide attached to said fork or support and extended to provide a finger-piece.

18. The combination with a clamp or bracket, consisting essentially of the members 37, 38 and 41, and the clamping screw 46, of a fork or support pivoted to said clamp or bracket and provided with a pressure-roller.

19. The combination with the clamp or bracket, consisting of the members 37, 38 and 41, the shoulders 39 and 42, the guide pin 45, and the clamping screw 46, of a fork or support pivoted to said clamp or bracket and provided with a pressure-roller.

20. In a type writing machine, the combination of a platen-carrier, a platen, a pair of spring-pressed arms pivoted to the platen-carrier, a pressure-roller mounted at the ends of said arms, and a rock-shaft arranged between said arms and the platen and adapted when turned in one direction to move said arms and the pressure-roller away from said platen.

Signed at New York city, in the county of New York and State of New York, this 5th day of April, A. D. 1892.

GEORGE B. WEBB.

Witnesses:
JACOB FELBEL,
IDA MACDONALD.