No. 790,272. PATENTED MAY 23, 1905.

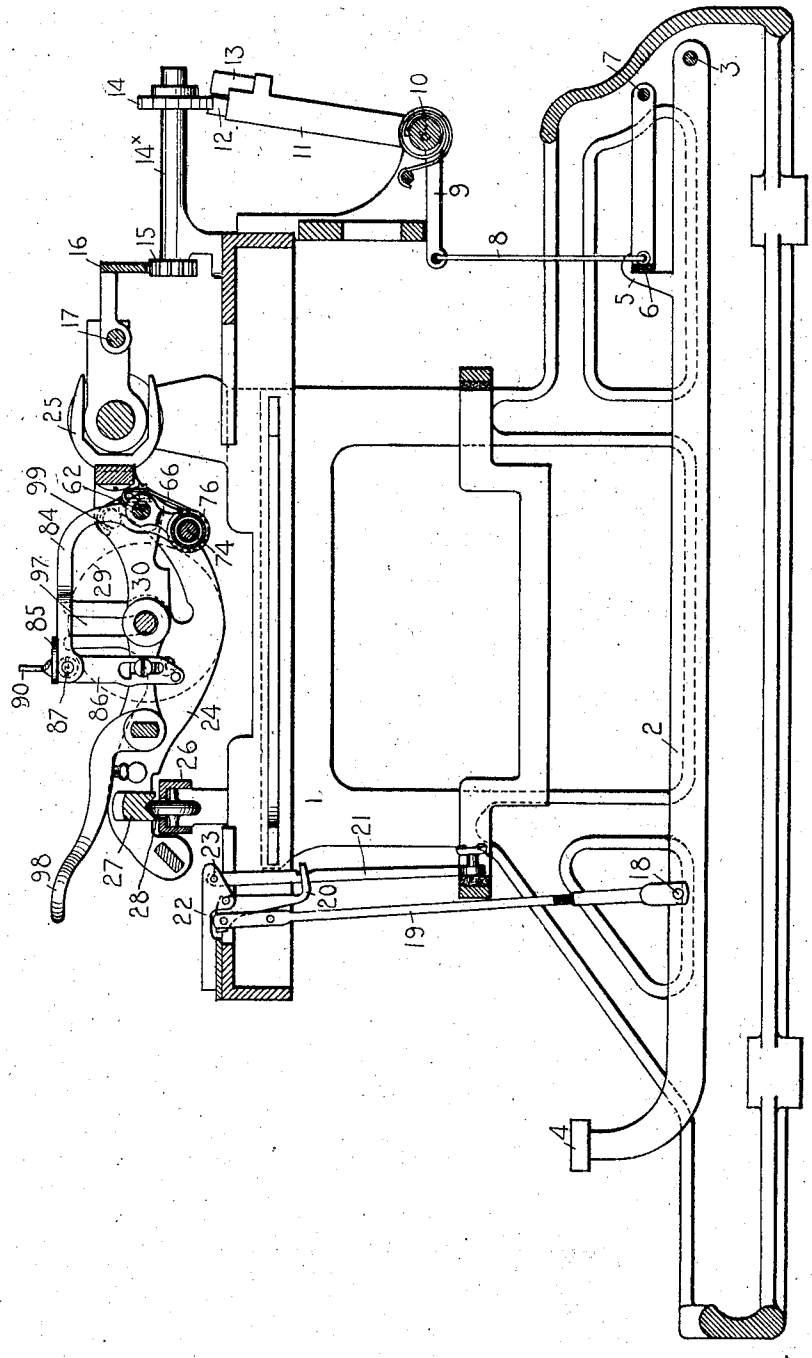
W. J. BARRON.

TYPE WRITING MACHINE.

APPLICATION FILED NOV. 7, 1901.

3 SHEETS—SHEET 1.

FIG. 1.



WITNESSES.

E. M. Wells.

Charles E. Smith.

INVENTOR

Walter J. Barron

by Jacob Felbel

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PHOTO-LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

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3 SHEETS—SHEET 2.

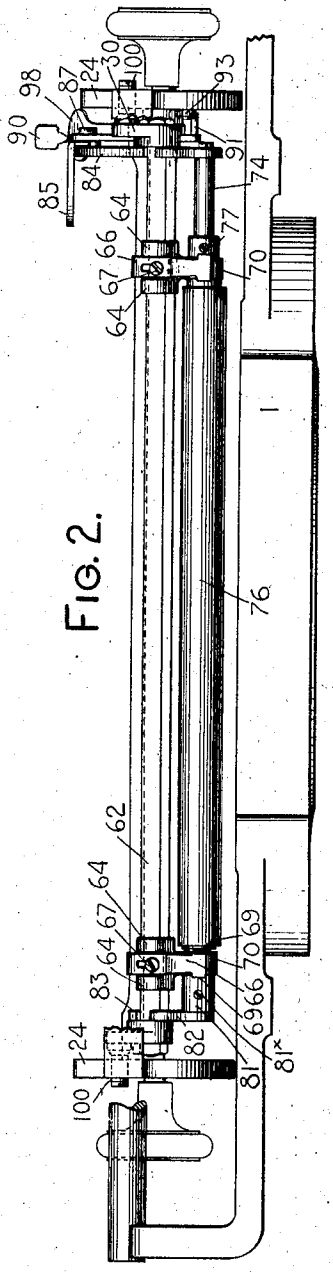


FIG. 2.

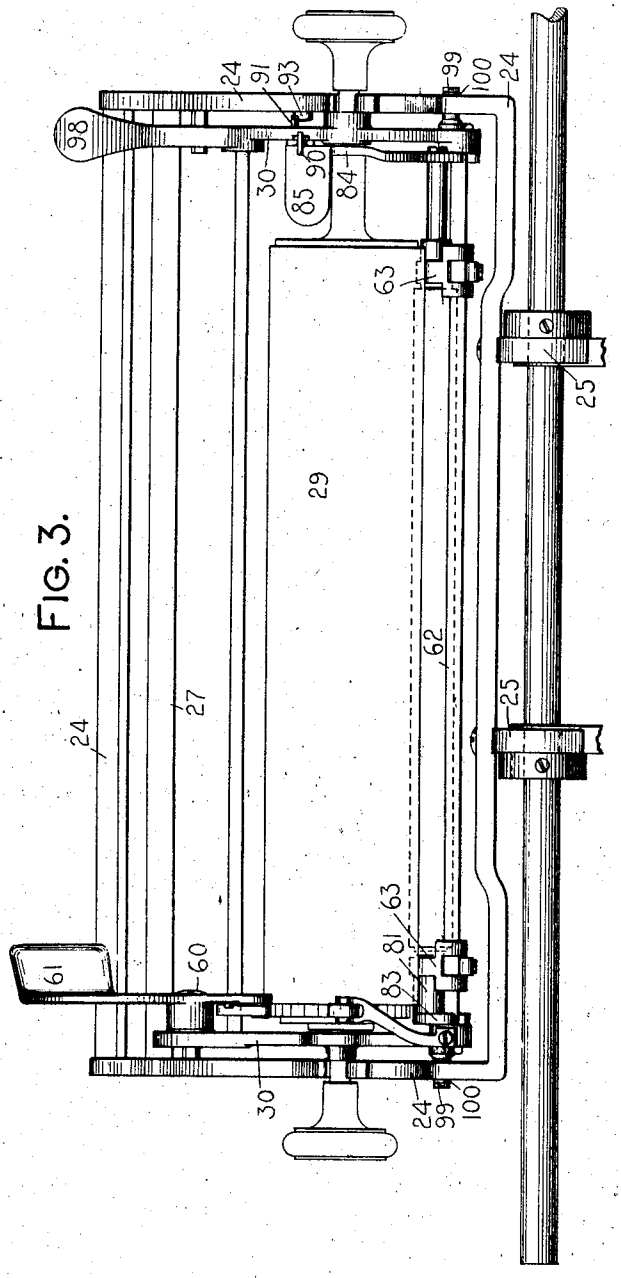


FIG. 3.

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3 SHEETS—SHEET 3.

FIG. 7.

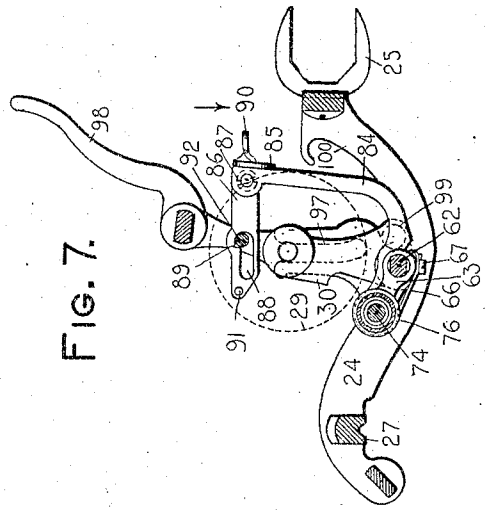


FIG. 8.

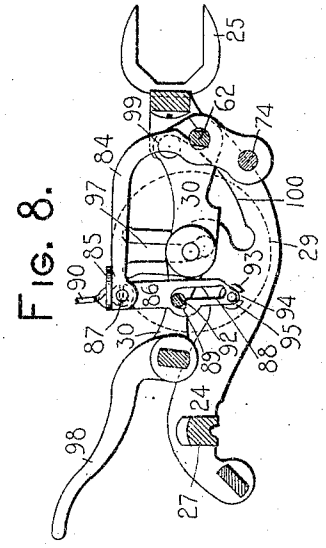


FIG. 4.

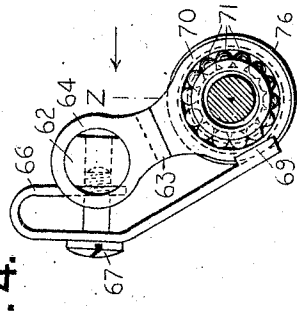


FIG. 5.

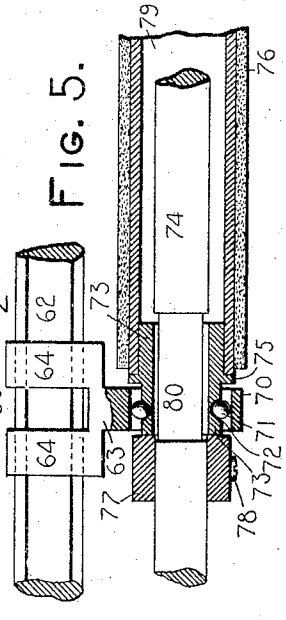
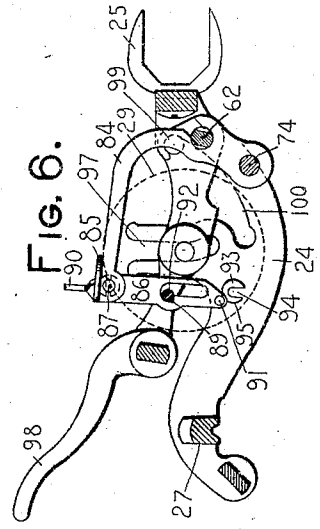


FIG. 6.



WITNESSES,

E. M. Wells.

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INVENTOR

Walter J. Barron

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No. 790,272. Patented May 23, 1905.

UNITED STATES PATENT OFFICE.

WALTER J. BARRON, OF BROOKLYN, NEW YORK, ASSIGNOR TO DENSMORE TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 790,272, dated May 23, 1905.

Application filed November 7, 1901. Serial No. 81,401.

To all whom it may concern:

Be it known that I, WALTER J. BARRON, a citizen of the United States, and a resident of the borough of Brooklyn, city of New York, in the county of Kings 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 type-writing machines, and more particularly to the paper-feeding mechanism; and the object of said invention is to provide simple and efficient mechanism of the character specified.

To these and other ends, which will hereinafter appear, my invention consists in the novel features of construction and combinations of parts, hereinafter more fully set forth and particularly pointed out in the appended claims.

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a vertical sectional view of a sufficient number of parts of a Densmore type-writing machine to illustrate my improvements in its application to that machine, the section being taken from front to rear of the machine. Fig. 2 is a detail rear view of a portion of the machine. Fig. 3 is a detail plan view of the carriage and guide-rail. Fig. 4 is an enlarged detail end view, partly in section, of the paper-feed roll and its hanger. Fig. 5 is a fragmentary longitudinal sectional view of the same taken on the line Z Z of Fig. 4 and looking in the direction of the arrow in said figure. Fig. 6 is a detail sectional view taken through one end of the platen carriage and frame. Fig. 7 is a like view of the same, showing the parts in the position they assume when the platen-frame is swung back. Fig. 8 is a view similar to Fig. 6, except that the parts are shown in a locked position..

Reference being had to Fig. 1 of the drawings, 1 indicates the framing of the machine, in which suitable key-levers 2 may be pivoted, as shown at 3. These key-levers are provided with the usual finger-keys 4 and are adapted by their hooks 5 to coöperate with a universal bar 6, which is in the form of a yoke, the free ends of which are pivoted to the framing of the machine at 7. The universal bar is connected to a link 8, which in turn is connected to an arm 9, that projects from a rock-shaft 10 of a dog-rocker 11. The dog-rocker is provided with feed-dogs 12 and 13, which coöperate with the feed-wheel 14, that is mounted upon a shaft which rotates in a bearing $14^{\times}$, secured to the top plate of the machine, and to the opposite end of the shaft is secured a feed-pinion 15. The feed-pinion 15 meshes with a feed-rack 16, which is pivoted to the carriage at 17. Each of the key-levers 2 is pivoted at 18 to a link or connecting-rod 19, which in turn is pivoted to a lever 20, that is operatively connected to a type-bar 21, which is pivoted to a hanger 22 at 23. It will be understood that these parts may be of the usual or preferred construction and that they constitute no part of my invention.

The platen-carriage 24 has forks 25 secured thereto by means of which the carriage as a whole may be swung back from the shift-rod 26, it being understood that the rail 27, carried by the platen-carriage, may rest upon suitable bearing-rollers 28, carried by the shift rod or rail 26. The platen 29 and its platen-frame 30 may be given a partial rotation by hand and move independently of the platen-carriage in the usual manner in order to expose the printing, as shown at Fig. 7.

The platen is provided with spindles 34 and 47, which are seated in bearings in the platen-frame and terminate in hand-wheels 37 and 53, respectively, by means of which the platen may be rotated. The left-hand end of the platen may likewise be provided with a line-spacing ratchet-wheel 57 for cooperation with the usual line-spacing pawl 58, pivoted to a hand-lever 59, that is pivoted at 60 to the platen-frame and has a finger-piece 61, and there may be provided the usual detent-roller 50^{a} to coact with the ratchet-wheel 57.

The platen-frame 30 is provided with a rod 62, which extends throughout the length of

the platen and between the end plates or bars of the platen-frame and is rigidly secured thereto. This rod constitutes a support for hangers 63, which are pivoted upon said rod, and each hanger is provided with eyes 64, which surround the rod and are spaced apart at 65 for the reception of a leaf-spring 66, which is secured to the rod 62 between said eyes by a set-screw 67, which passes through perforations in the two portions of the bent leaf-spring and takes into screw-threaded openings in the rod in order to adjust the tension of the spring. The lower end of this spring is preferably formed with laterally-projecting ears 69, (see Figs. 2 and 4,) which bear upon the hangers 63 and prevent a relative lateral displacement of the parts. The lower end of each of these hangers 63 is provided with a ball or roller bearing sleeve or eye 70, which surrounds antifriction balls or rollers 71, that move around a raceway or groove 72 in a bearing-sleeve 73, that loosely surrounds a shaft 74. The bearing-sleeve 73 is provided with a flange 75, which is adapted to abut against one end of a paper-feed roller 76, that coöperates with the platen 29 to feed the paper. A collar 77 is secured to the shaft 74 by a screw 78 or otherwise and bears against the outer end of the sleeve 73 to prevent endwise movement thereof and consequent endwise displacement of the feed-roller 76. The roller-bearing sleeve 73 extends into the hollow core 79 of the feed-roller and may be caused to rotate therewith by frictional contact.

From an examination of Fig. 5 of the drawings it will be observed that the shaft 74 is cut away, as indicated at 80. This is to prevent the roller-bearing sleeve 73 from reaching contact with the shaft 74 and to permit the feed-roller to move freely upon its bearing-rollers 71. From an inspection of Fig. 2 of the drawings it will be understood that two of these hangers 63 are employed, one near each end of the shaft 74. The left-hand end of the shaft 74 (see Fig. 2) is socketed and supported in a sleeve 81, a set-screw $81^{\times}$ being employed to hold the shaft in said socket. This sleeve 81 is riveted to a depending link or hanger 82, which surrounds or partly surrounds the rod 62, as indicated at 83, so that the rod will constitute a pivot upon which the link is adapted to turn. The opposite end of this shaft 74 projects beyond the collar 77 and has connected thereto at its end a lever 84, which is likewise pivoted upon the bar 62. (See Figs. 2, 6, and 8.) This lever extends upwardly and forwardly beyond its pivot or fulcrum 62 and is provided with a finger-piece 85, by means of which it may be conveniently operated. The portion of the lever 84 between the rod 62 and the shaft 74 constitutes a link, such as 82, and the arrangement is such that when the finger-piece 85 is depressed the feed-roller 76 will be swung rearwardly about the bar 62 as a center and will be forced against the tension of its springs 66 away from the platen, so that the paper may be easily inserted or placed in position on the platen. The lever 84 has a catch 86 pivoted thereto at 87, and the catch is provided with a slotted portion 88, which communicates with a laterally-extending notch 89. The catch is likewise provided at its upper end with a finger-piece 90 and at its lower end with a laterally-projecting pin 91. The length of the slot 88 corresponds substantially to the extent of movement required to move the feed-roller into and out of contact with the platen. Projecting into the slot 88 is an engaging stud 92, which is secured to the platen-frame, and the platen-carriage is likewise provided with an engaging stud 93, which has in its lower face a recess 94. The outer face of this stud 93 constitutes a cam-face 95, upon which the pin 91 on the catch is adapted to ride when the platen-frame is swung down toward normal position. (See Fig. 6.)

The pin 91 is adapted under certain conditions to be seated within the recess 94 in the engaging stud on the platen-carriage, and thus maintain the feed-roller out of contact with the platen, and likewise maintain the platen-frame and platen-carriage locked to swing together, as represented in Fig. 8 of the drawings. Should an operator desire to position or straighten the paper on the platen while the platen is in an upturned position, as shown in Fig. 7, it is merely necessary to depress the finger-piece 85, when the lateral notch 89 in the catch 86 will automatically coöperate with the locking or engaging stud 92 to lock the feed-roller away from the platen, it being understood that this same movement forces the roller out of contact with the platen. The operator is then at liberty to employ both hands to straighten the paper on the platen. When the paper has been properly positioned, the operator may then press the finger-piece 90 in the direction of the arrow in Fig. 7 of the drawings, when the catch will be moved to disengage the notched portion 89 thereof from the locking-stud 92 and the feed-roller will again be forced into contact with the platen by its springs 66; but if the operator should neglect to release the catch in the manner described the catch will be automatically released when the platen is turned down in the following manner: When the platen-frame is swung down to normal position, the pin 91 on the catch 86 will be brought into contact with the cam-face 94 on the stud 93 of the platen-carriage, thereby slightly moving the lower end of the catch to one side, which movement is effective to release the notched portion 89 and the catch from its engaging stud 92, and the feed-roller is thus automatically released from its locking mechanism

and is forced by its springs into contact with the platen or the paper thereon. When the platen frame and carriage are both in the position represented in Fig. 1 of the drawings, a downward pressure upon the finger-key 85 will cause the locking-stud 91 to be brought into engagement with the recessed portion 94 of the locking-stud 93 on the platen-carriage, so that the platen-frame and platen-carriage will be locked to swing upwardly and rearwardly together, as indicated in Fig. 8 of the drawings, in order that ready access may be had to the ribbon mechanism, type-bars, &c., and so that there is no liability of the platen-frame being disconnected or dropping away from the platen-carriage. In order to release the catch, so that the platen-frame may swing independently of the carriage-frame, it is merely necessary to depress the finger-piece 85 and at the same time move the finger-piece 90 of the catch rearwardly, when the pin 91 on the catch will be released from the apertured portion of the locking-stud 93.

While the swinging motion of the platen and its platen-frame in the platen-carriage shown and described is of the usual Densmore construction, a brief description thereof will nevertheless be given.

The platen 29 is provided with spindles 34 and 47, as hereinbefore described, and these spindles rest in bearings 97, that are vertically disposed and are elongated to permit not only of a rotary motion being imparted to the platen, but to permit it to move from the lowermost position (indicated in Fig. 1 of the drawings) to the raised position, (indicated in Fig. 7,) and a finger-piece 98 is connected to the platen-frame to facilitate the swinging movement thereof. At each end of the platen-frame is mounted an antifriction-roller 99, that is adapted to bear upon a track 100, formed on the platen-carriage, so that a backward swing on the finger-piece 98 will cause the antifriction-rollers on the platen-frame to ride down the inclines or trackways 100 and at the same time will cause the platen to be slightly elevated to the position indicated in Fig. 7 of the drawings, the platen at the same time making a quarter-revolution in order to expose the writing.

Various changes may be made without departing from the spirit of my improvements and some of the features may be used without others.

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

1. In a type-writing machine, the combination of a platen, hangers, roller bearings or journals in said hangers, a paper-feed roller, roller bearings or journals carried by said feed-roller, bearing-rollers interposed between said journals of the hangers and feed-roller, and detachable collars to secure the feed-roller against endwise displacement and to afford a ready mounting of the feed-roller on or dismounting of the feed-roller from its hangers.

2. In a type-writing machine, the combination of a platen, a coöperating feed-roller, roller bearings or journals carried by said feed-roller, pivotally-mounted spring-pressed hangers, roller-bearings in said hangers, bearing-rollers interposed between the said bearings or journals of the feed-roller and hangers, a shaft that extends through the roller-bearings in the feed-roller and hangers, collars on said shaft to maintain the feed-roller against longitudinal displacement on the shaft, and thereby maintain the said roller-bearings properly related one to another, and means for affording a movement of said collars on the shaft.

3. In a type-writing machine, the combination of a platen, a coöperating feed-roller, pivoted hangers therefor, springs for normally maintaining the feed-roller in contact with the platen, hand-operated means for forcing said feed-roller out of contact with the platen and for locking the feed-roller in such position, and an independent finger-piece for releasing said locking means at will and irrespective of the position of the platen.

4. In a type-writing machine, the combination of a platen, a feed-roller coöperating therewith, a shaft for said feed-roller and which extends freely therethrough, roller-bearing sleeves which loosely surround said shaft and which are connected to rotate with the roller, hangers having roller-bearings therein and bearing-rollers interposed between the sleeves and the bearings in the hangers.

5. In a type-writing machine, the combination of a platen, a feed-roller coöperating therewith, a shaft for said feed-roller and which extends freely therethrough, roller-bearing sleeves which loosely surround said shaft and which are connected to rotate with the roller, hangers having roller-bearings therein, bearing-rollers interposed between the sleeves and the bearings in the hangers and removable collars which bear against said sleeves and maintain them against displacement.

6. In a type-writing machine, the combination of a platen, a feed-roller coöperating therewith, a shaft for said feed-roller and which extends freely therethrough, roller-bearing sleeves which loosely surround said shaft and which are connected to rotate with the roller, pivoted hangers having roller-bearings therein, bearing-rollers interposed between the sleeves and the bearings in the hangers, removable collars which bear against said sleeves and maintain them against displacement, springs for normally maintaining said feed-roller in contact with the platen and hand-operated means for forcing the feed-roller out of contact with the platen.

7. In a type-writing machine, the combi-

nation of a platen, a feed-roller coöperating therewith, a shaft for said feed-roller and which extends freely therethrough, roller-bearing sleeves which loosely surround said shaft and which are connected to rotate with the roller, hangers having roller-bearings therein, bearing-rollers interposed between the sleeves and the bearings in the hangers, a hand-operated lever connected to said shaft and adapted to move the feed-roller out of contact with the platen and a catch for locking said lever to retain the feed-roller out of contact with the platen.

8. In a type-writing machine, the combination of a platen, a platen-carriage, a platen-frame independent of but carried by and adapted to swing in said carriage, a feed-roller coöperating with the platen, means for moving said feed-roller out of contact with the platen, means for locking said feed-roller in such position and means for automatically releasing the roller when the platen-frame is swung to the operative position in its platen-carriage.

9. In a type-writing machine, the combination of a platen, a platen-frame, a platen-carriage, a feed-roller coöperating with the platen, means for moving said feed-roller out of contact with the platen, means for locking said feed-roller in such position, and means for simultaneously locking the platen-frame to the platen-carriage so that the two will swing together.

10. In a type-writing machine, the combination of a platen, a platen-frame, a platen-carriage in which said platen and platen-frame are adapted to swing, a feed-roller coöperating with the platen, hand-operated means for moving said feed-roller out of contact with the platen, means for locking said feed-roller in such position, hand-operated means for releasing the locking means at will and means for automatically releasing the roller when the platen-frame is swung to the operative position in its platen-carriage.

11. In a type-writing machine, the combination of a platen, a platen-frame, a platen-carriage in which said platen and platen-frame are adapted to swing, a feed-roller adapted to coöperate with the platen, hand-operated means for moving said feed-roller out of contact with the platen, means for locking said feed-roller when moved by the hand-operated moving means and for simultaneously locking the platen-frame to the platen-carriage so that the two will swing together, hand-operated mechanism for releasing the locking means at will and means for automatically releasing the roller from its locked position when the platen-frame is swung to the operative position in its platen-carriage.

12. In a type-writing machine, the combination of a platen, a platen-frame, a platen-carriage in which said platen and platen-frame are adapted to swing, a swinging feed roller adapted to coöperate with the platen, hand-operated means for swinging said feed-roller out of contact with the platen, a catch member carried by the platen-carriage, a coöperating catch member on the platen-frame for automatically locking said feed-roller when moved by the hand-operated moving means and for simultaneously locking the platen-frame to the platen-carriage so that the two will swing together, a hand-operated release-key carried by one of said catch members for releasing the locking means at will and a cam for automatically releasing or disconnecting the catch members so as to release the roller from its locked position when the platen-frame is swung to the operative position in its platen-carriage.

13. In a type-writing machine, the combination of a platen, a platen-frame, a platen-carriage, a feed-roller adapted to coöperate with the platen, a hand-operated lever connected to the feed-roller and adapted to move it out of contact with the platen, a catch pivoted to said lever, an engaging stud on the platen-frame which is adapted to be engaged by the said catch and an engaging stud on the platen-carriage which is likewise adapted to be engaged by said catch.

14. In a type-writing machine, the combination of a platen, a platen-frame, a platen-carriage, a feed-roller adapted to coöperate with the platen, a hand-operated lever connected to the feed-roller and adapted to move it out of contact with the platen, a catch pivoted to said lever, an engaging stud on the platen-frame which is adapted to be automatically engaged by the said catch when the lever is moved to force the roller out of contact with the platen and an engaging stud on the platen-carriage which is likewise adapted to be engaged by said catch and to lock the platen-frame and carriage together and a finger-piece carried by the catch and by means of which it may be disengaged to release the parts and permit the roller to reach contact with the platen.

15. In a type-writing machine, the combination of a platen, a platen-frame, a platen-carriage, a feed-roller adapted to coöperate with the platen, a hand-operated lever connected to the feed-roller and adapted to move it out of contact with the platen, a catch pivoted to said lever, an engaging stud on the platen-frame which is adapted to be automatically engaged by the said catch when the lever is moved to force the roller out of contact with the platen, an engaging stud on the platen-carriage which is likewise adapted to be engaged by said catch and a cam-face on the engaging stud of the carriage and on which the catch rides when the platen-frame is swung down in its carriage to automatically release the catch and permit the roller to bear against the platen.

16. In a type-writing machine, the combination of a platen, a platen-carrier, a feed-roller hung on links, a lever for moving said roller away from the platen, a catch on said lever, and a device on the platen-frame for engaging said catch and locking the feed-roller away from the platen.

17. In a type-writing machine, the combination of a platen, a platen-carrier, a feed-roller mounted on links, a lever for moving said feed-roller away from the platen, a catch pivoted to said lever, and a pin on the platen-carrier for engaging said catch.

18. In a type-writing machine, the combination of a platen, a platen-carrier, a feed-roller mounted on links, a lever formed integral with one of said links, a catch pivoted to said lever and having a slot and a shoulder, and a pin on the platen-carrier for co-operating with said catch.

19. In a type-writing machine, the combination of platen, a platen-carrier, a feed-roller, a lever for moving said feed-roller away from the platen, a catch on said lever, a device on the platen-carrier for engaging said catch, and means for automatically disengaging said catch when the platen-carrier is turned down.

20. In a type-writing machine, the combination of a platen, a platen-carrier, a feed-roller mounted on links, a lever formed integral with one of said links, a catch pivoted to said lever having a slot, a shoulder and a pin, a pin on the platen-carrier to coöperate with the catch, and a cam for automatically disengaging said catch when the platen-carrier is turned down.

21. In a type-writing machine, the combination of a platen which is adapted to swing into and out of operative position, a coöperating paper-feed roller, means for moving said feed-roller into and out of contact with the platen, means for locking said feed-roller out of contact with the platen, and means that are unaffected by a swinging movement of the platen out of operative position but are automatically brought into operation to release said locking means by a movement of the platen to the operative position.

Signed in the borough of Manhattan, city of New York, in the county of New York and State of New York, this 4th day of November, A. D. 1901.

WALTER J. BARRON.

Witnesses:
K. V. DONOVAN,
E. M. WELLS.