N. H. ANDERSON.

TYPE WRITING MACHINE.

APPLICATION FILED JUNE 3, 1908.

1,164,622.

Patented Dec. 21, 1915.

2 SHEETS—SHEET 1.

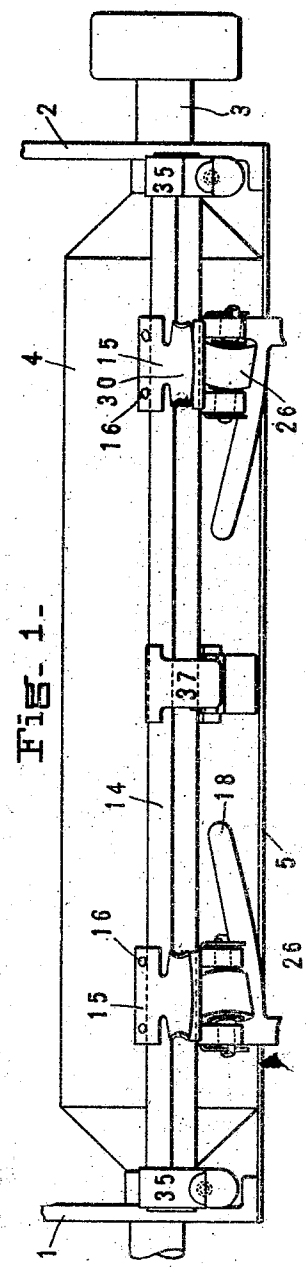


Fig. 1.



Fig. 9.

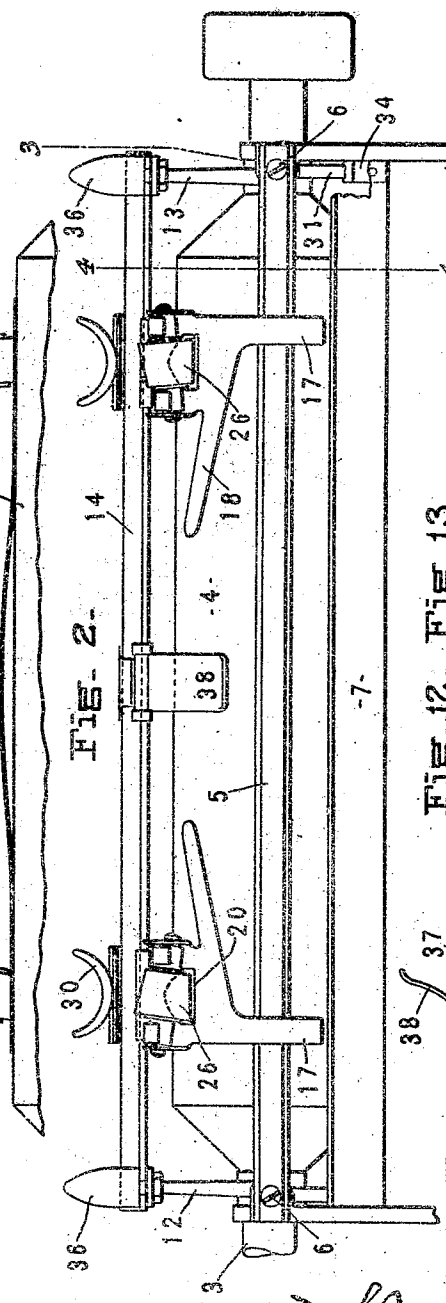


Fig. 2.

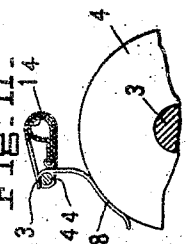


Fig. 11.

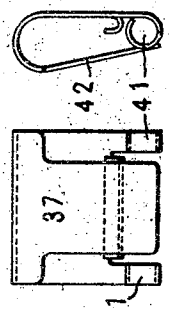


Fig. 13.

Fig. 12.

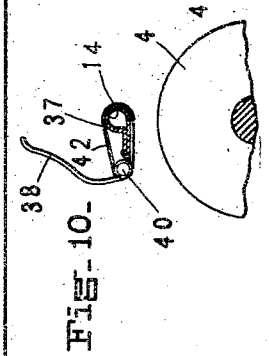


Fig. 10.

WITNESSES:

J. Clyde Kingsley.

Paul. A. Wolff

INVENTOR,

N. H. Anderson

BY

Dyer, Warfield & Dyer

ATTORNEYS.

N. H. ANDERSON.

TYPE WRITING MACHINE.

APPLICATION FILED JUNE 3, 1908.

1,164,622. Patented Dec. 21, 1915.

2 SHEETS—SHEET 2.

Fig. 3.

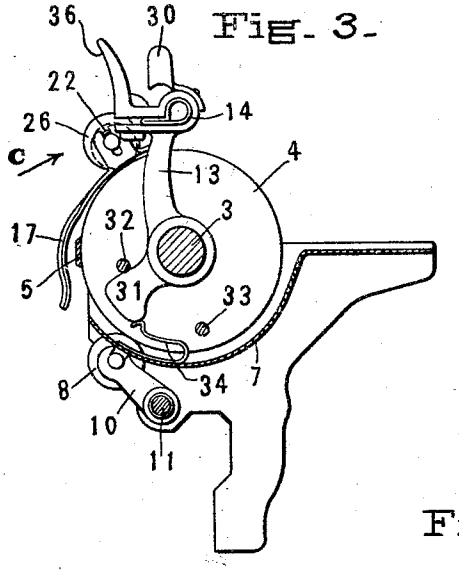


Fig. 4.

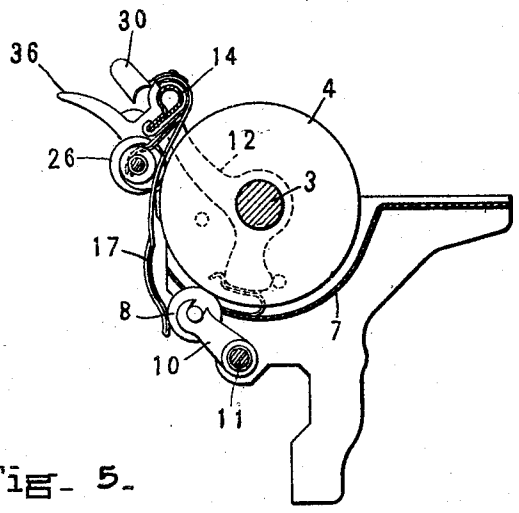


Fig. 5.

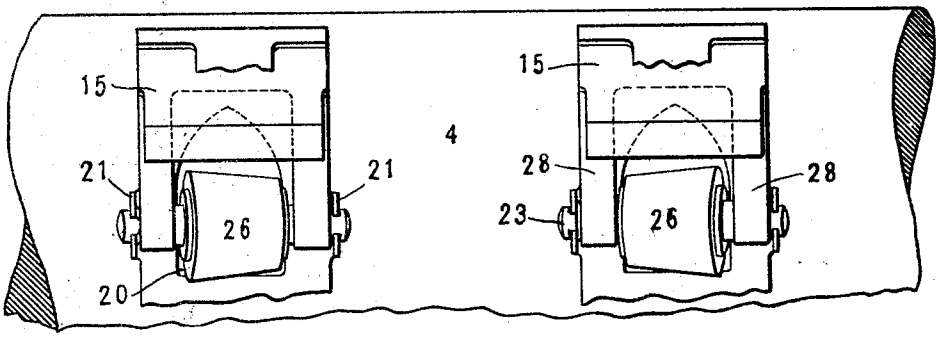


Fig. 6.

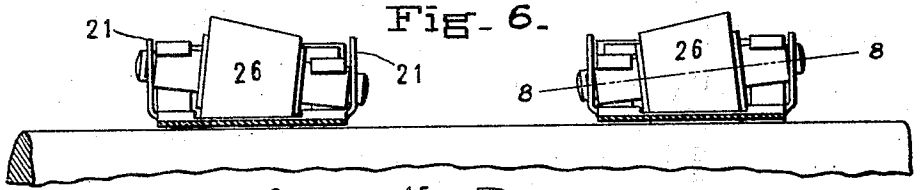


Fig. 7.

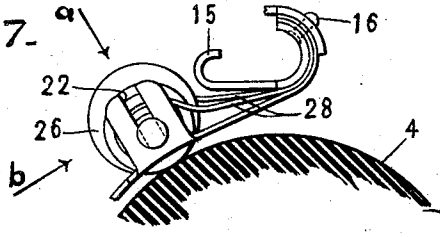
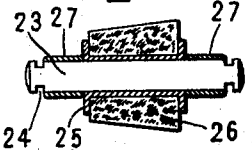


Fig. 8.



WITNESSES:

J. Clyde Ripley.

Paul Arnoff

INVENTOR,

N. H. Anderson

BY

Duell, Warfield & Duell

ATTORNEYS.

UNITED STATES PATENT OFFICE.

NILS H. ANDERSON, OF HARTFORD, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NOISELESS TYPEWRITER COMPANY, OF MIDDLETOWN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

TYPE-WRITING MACHINE.

1,164,622. Specification of Letters Patent. Patented Dec. 21, 1915.

Application filed June 3, 1908. Serial No. 436,325.

To all whom it may concern:

Be it known that I, NILS H. ANDERSON, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to paper feeding mechanism for typewriting machines, and with regard to the more specific features thereof, to paper clips particularly adapted to be used on machines of the front strike type.

One of the objects of the invention is to provide new and improved means for feeding the paper over the platen and for maintaining the sheet in such position that the writing will be constantly in view of the operator.

Another object is to provide paper feeding mechanism of the above character which will remove any irregularities or bulges in the paper and which will correct any tendency of the same to buckle while being fed over the platen.

Another object is to provide a paper clip mechanism for a typewriting machine of such construction as will permit of a ready access to the paper upon which writing has been effected, so as to facilitate the making of erasures in the original as well as in the carbon copies.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, wherein is illustrated one of the various possible embodiments of my invention, Figure 1 is a plan view of my improved mechanism; Fig. 2 is a front elevation thereof; Fig. 3 is an end view taken on line 3—3, Fig. 2; Fig. 4 is a similar view taken on line 4—4, Fig. 2, the parts being shown in different positions; Fig. 5 is a plan view, upon an enlarged scale, of a portion of the platen roll and the frusto-conical paper clip rolls, showing the manner in which they are alined on the platen roll, and looking in the direction of the arrow *a*, Fig. 7; Fig. 6 is a similar view of the paper clip rolls, looking in the direction of the arrow *b* in Fig. 7; Fig. 7 is an end view of the right hand side of the paper clip structure mounted upon the left hand side of Fig. 5; Fig. 8 is a section taken on the line 8—8 of Fig. 6; Fig. 9 is a view of a portion of the platen roll and of two of the frusto-conical clip rolls looking in the direction of the arrow *c* in Fig. 3, and showing the paper buckled in section; Fig. 10 is a view in side elevation of the envelop clip, the same being shown in inoperative position; Fig. 11 is a similar view showing the envelop clip in operative position; Fig. 12 is a plan view, upon an enlarged scale, of the bracket for supporting the envelop clip; and Fig. 13 is a side view thereof.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings, 1 and 2 respectively denote the side members of the platen frame, in which is journaled the shaft 3 of the platen roll 4. The platen is a thin strip of metal 5, having a plain front face for receiving the types, and a curved rear face which conforms to the contour of the platen roll and lies in contact therewith, said platen being extended between the end members 1 and 2 and fastened thereto by screws 6. A paper table 7 is shown fixed in the platen frame and extending beneath the platen roll, the forward end thereof terminating substantially directly below the platen.

8 indicates one of the main paper feed rollers of the set thereof which is supported in the platen frame beneath the platen roll, said roll being carried by an arm 10 mounted upon a rod 11 which extends longitudi-

nally of the platen frame and is supported at its ends in the side members thereof.

12 and 13 respectively indicate arms which are mounted upon suitable bearings adjacent the platen roll shaft and swing concentrically with the central axis thereof. Between the outer ends of arms 12 and 13 is extended a rod or bar 14 which is formed of sheet metal bent into the shape shown in cross section in Figs. 3 and 4 of the drawings. Bar 14, which may be graduated, if desired, extends longitudinally of and parallel to the platen roll.

The carriers for the paper clip rolls and the paper fingers, best shown in Figs. 5 to 7 inclusive, are metal brackets 15 bent to conform to the shape of bar 14 and slide thereon. Two of the brackets 15 are mounted upon the supporting rod 14, one near either end of the platen roll as shown, and, since these brackets and associated parts are similarly constructed, a description of one thereof will suffice. Secured to bracket 15, by rivet 16, and extending forward therefrom, thence downward and terminating below the platen and adjacent the forward end of the paper table, is a paper finger 17. This paper finger is also provided with a laterally extending, upwardly inclined portion 18 which engages and aids in guiding the paper. Paper finger 17 is provided with a slot 20 for accommodating the paper clip rolls, and portions of the metal at either side of the finger are bent upward to form ears 21. Ears 21 are slotted at 22 to receive the axle pin 23 which carries the paper clip roll, said pin being held against turning by means of notches 24 formed therein which engage the walls of the slots 22.

Mounted to rotate upon pin 23 is a double flanged sleeve 25 carrying a paper clip roll 26. This roll is beveled as shown and the rolls of brackets 15 are so disposed thereon that the ends of the rolls having the smaller diameters face each other, the rolls being arranged in alinement as shown. The rolls of each of the brackets extend through the slots 20 of the paper finger and run on the platen roll, as will be understood. Mounted upon pin 23 at either side of sleeve 25 which supports the frusto-conical paper clip roll are collars 27. These collars form bearing points for the ends of a bifurcated leaf spring 28 which is secured to the bracket by means of the rivet 16 and extends forward therefrom. Spring 28 operates to maintain the beveled paper clip roll in engagement with the platen roll.

Each of brackets 15 is provided with a finger piece 30, secured to the brackets by the rivet 16 and curved so as to fit partially about the finger, whereby the brackets may be easily slid in either direction upon the supporting bar 14.

Arms 12 and 13 which support bar 14 are provided with projecting ends 31 which engage with stop pins 32 when bar 14 is swung to the position shown in Fig. 3 of the drawings, stop pins 33, being provided with which said arms engage when the bar is swung to the position shown in Fig. 4. Leaf springs 34 engage with arms 31 and hold them in engagement with one or the other set of stop pins.

Clamped upon either end of bar 14 is a bracket 35 provided with a finger piece 36. Either of these finger pieces may be grasped by the hand of the operator when it is desired to swing the bar 14 and the devices carried thereby from or to either of the positions shown in Figs. 3 and 4 of the drawings.

37 indicates a bracket formed of bent metal so as to fit about bar 14 and slide thereon and which may be placed upon said bar in any position between the brackets which carry the paper clip rolls. This bracket has swiveled thereon a clip finger 38, pivoted at 40 in the bearings 41, formed by two projecting bent-over ends of the bracket, said clip finger being adapted to be swung downward to engage with the platen roll, as shown in Fig. 11, or upward therefrom, as shown in Fig. 10, a spring portion 42 of bracket 37 engaging with either of two flat sides, 43 or 44, adjacent the pivotal point of the clip and operating to hold the same in either of said positions.

Having thus described the construction of this embodiment of my invention, the manner in which the same operates may now be explained. The normal position of the bar 14 which carries the paper clip roll brackets 15 is that shown in Fig. 3 of the drawings, in which position the paper finger 17 receives the advancing end of the paper as the same is fed underneath the platen roll and guides the same upwardly over the platen 5 and between the paper clip rolls 26 and the platen roll. When the platen roll is turned, the frusto-conical faces of the paper clip rolls where they engage the paper on the top of the platen roll operate to draw the edges of the paper outward and tension the paper and thus correct any tendency of the same to buckle. This function is performed by the rolls 26, owing to their tendency to rotate in a curved line toward the center of the sheet, but inasmuch as they are supported against bodily movements in brackets 15, the reaction of these rolls against the paper tends to move it outward under both of the rolls away from the center of the sheet. The paper is therefore always maintained in engagement with the platen roll throughout its lateral extent. When it is desired to obtain access to the paper to make erasures,

bar 14 may be swung to the position shown in Fig. 4 of the drawings, the paper clip rolls running over the paper upon the platen roll and occupying a position adjacent the platen. The paper upon the top of the platen roll is thus exposed and erasures may be readily made in the original as well as in the carbon copies. It will be observed that inasmuch as bar 14 and the paper clip rolls carried thereby are mounted concentrically with the axis of the paper roll, the paper clip rolls will be maintained in engagement with the paper upon the platen roll, whatever position they occupy thereon. When it is desired to write upon envelops, the brackets 15 may be moved toward the center of the platen roll to engage the lateral edges of the envelops and the clip 38 may be swung down to engage the top edge thereof, whereby the envelop is conveniently held in position for writing.

It will accordingly be seen that I have provided mechanism well adapted to attain, among others, all the ends and objects above enumerated. Through the provision of the radially swinging arms which carry the supporting bar for the beveled paper clip rolls, said bar may be swung to the position occupied in Figs. 3 and 4 so that access may be had to the paper, and it is therefore unnecessary at any time to disengage the rolls from the paper. These rolls always being in engagement with the paper, operate to hold it firmly in position when erasures are being made. Another advantage inherent in the invention resides in the fact that the paper is maintained always in engagement with the platen roll through the provision of the beveled paper clip rolls.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

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

1. In a typewriting machine, in combination, a platen roll, and a frusto-conical paper roll suitably supported adjacent said platen roll and running thereon.

2. In a typewriting machine, in combination, a platen roll, and a paper clip roll suitably supported adjacent the platen roll and running thereon, said paper clip roll having its entire periphery inclined with respect to the printing point.

3. In a typewriting machine, in combination, a platen roll, and a pair of paper clip rolls suitably supported adjacent the platen roll and adapted to run thereon, the entire peripheries of said paper rolls tapering in a direction toward the middle point of said platen roll.

4. In a typewriting machine, in combination, a platen roll, and a frusto-conical paper clip roll suitably supported adjacent the platen roll and spring-pressed thereagainst.

5. In a typewriting machine, the combination with the platen roll, of a frusto-conical paper clip roll, running upon the platen roll and spring-pressed thereagainst, and a movable support for said paper clip roll.

6. In a typewriting machine, the combination with the platen roll, of a frusto-conical paper clip roll running upon the platen roll and spring-pressed thereagainst, and a swinging support for said paper clip roll.

7. In a typewriting machine, the combination with the platen roll, of a plurality of frusto-conical paper clip rolls, adapted to run upon the platen roll and coöperate therewith in feeding the paper, a swinging support upon which said paper clip rolls are mounted, and spring means for holding said swinging support in such position that the paper clip rolls will be in engagement with different portions of the platen roll.

8. In a typewriting machine, the combination with the platen roll, of a plurality of paper rolls, a swinging support for said paper rolls, and spring means for holding said swinging support in either of two positions, one with the paper rolls in engagement with the upper portion of the platen roll, and the other with said rolls in engagement with said platen roll at a point near the printing line.

9. In a typewriting machine, the combination with the platen roll, of a plurality of paper roll supports mounted in proximity with the platen roll, and a paper roll carried by each of said supports, said paper roll having one end of larger diameter than the other.

10. In a typewriting machine, the combination with the platen roll, of a plurality of paper roll supports mounted in proximity with the platen roll, a frusto-conical paper roll carried by each of said supports, and spring means upon said supports for urging said paper rolls toward the platen roll.

11. In a typewriting machine, the combination with the platen roll, of a plurality of paper roll supports supported in proximity with the platen roll, a paper roll carried by each of said supports, and springs carried by each of said supports which engage the shafts of the paper rolls and hold the latter in contact with the platen roll, said paper rolls having their outer ends of larger diameter than their inner ends.

12. In a front strike typewriting machine, a support for paper clip rolls, comprising a

bar disposed longitudinally of the platen roll and parallel therewith, and swinging arms carrying said bar, of brackets carried by said bar and slidable thereon, roller means carried by said brackets, and springs for maintaining said roller means in engagement with the platen roll, said roller means having their outer ends of larger diameter than their inner ends.

13. In a front strike typewriting machine, the combination with the platen roll, of means for feeding the paper upwardly over said platen roll comprising a bar disposed in front of the platen roll and extending longitudinally of the same, swinging arms interposed in the support of said bar, a pair of brackets mounted upon said bar and adapted to slide thereon; and a presser roll journaled in each of said brackets and spring-pressed into engagement with the platen roll, the diameter of one end of said presser roll being larger than the other.

14. In a typewriting machine, the combination with the platen roll, of means for feeding the paper upwardly and rearwardly thereover and for maintaining the same in contact therewith throughout its entire lateral extent, comprising a bar extending longitudinally of the platen roll at the forward portion thereof, arms journaled concentrically with the axis of the platen roll, and connected with the ends of said bar, brackets mounted upon said bar and adapted to slide thereon, a paper clip roll mounted in each of said brackets, and spring means upon said brackets for urging said paper clip rolls against the platen roll, the diameter of one end of said roll being larger than the other.

15. In a front strike typewriting machine, the combination with the platen roll, of a pair of paper clip rolls adapted to run upon the platen roll at either side of the printing point of the platen, a bracket in which each of said rolls is journaled, a swinging frame for supporting said brackets, comprising a bar disposed in front of and slightly above the platen roll, and swinging arms connected with the opposite ends of said bar and journaled concentrically with the axis of the platen roll.

16. In a typewriting machine, the combination with the platen roll, of a frame adapted to swing circumferentially about said platen roll, comprising a bar disposed longitudinally of the platen in parallel relation therewith, and arms carrying said bar which are journaled concentrically with the axis of the platen roll, a plurality of paper clip rollers supported upon said bar and spring-pressed into engagement with the platen roll, and means whereby said frame may be swung radially with respect to the platen roll to carry said paper clip rolls to different points about said platen roll.

17. In a front strike typewriting machine the combination with the platen roll, of a bar disposed in front and slightly above the same, arms connected with the ends of said bar and journaled concentrically with the axis of the platen roll, a plurality of brackets mounted upon said bar and adapted to slide thereon, a paper roll carried by each of said brackets, each of which is adapted to engage a lateral edge of the paper as the same is fed upwardly and rearwardly over the platen roll, and spring means carried by said brackets for holding said feed rolls in engagement with the platen roll, said bar and arms being adapted to be swung to such position that the feed rolls will be carried to the upper portion of the platen roll.

18. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a paper cli the bearing surface whereof carries a di agonally set roller for acting on the paper upon the platen and stretching the same toward the ends of the platen.

19. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable independently along the platen and each having a roller mounted thereon and extending across the same diagonally with relation to the axis of the platen, the roller of one clip being at an opposite angle to the roller upon the other clip.

20. In a typewriting machine the combination with the platen roll, of a swinging frame journaled concentrically with the axis of the platen roll and having a bar disposed in front of and slightly above the platen roll, a bracket mounted to slide upon said bar near either end thereof, a paper clip roll mounted upon each of said brackets and spring-pressed into engagement with the platen roll, a clip mounted upon said bar intermediate said brackets and adapted to engage with the platen roll or be swung from engagement therewith, and means for holding said clip in either of said positions.

21. In a front strike typewriting machine, the combination with the platen roll, of a swinging frame comprising side arms journaled concentrically with the axis of the platen roll, a bar supported upon the ends of said arms, said bar extending in parallel relation with the platen roll in front of and slightly above the same, a pair of brackets mounted to slide a ove said bar, a paper finger mounted upon each of said brackets and having a portion extending downwardly and laterally with respect to the platen roll, a paper clip roll carried by each of said paper fingers, and a spring mounted upon each of said brackets and adapted to maintain said paper clip rolls in engagement with the platen roll.

22. In a front strike typewriting machine, the combination with the platen roll, of a swinging frame comprising a bar disposed in front of and slightly above the platen roll, arms journaled concentrically with the axis of the platen roll and connected with the ends of said bar, a pair of brackets mounted upon said bar and adapted to slide thereon, a paper clip roll mounted upon each of said brackets and spring-pressed into engagement with the platen roll, and means whereby said frame may be swung downwardly to permit of access to the paper upon the top of the platen roll.

23. In a front strike typewriting machine, the combination with the platen roll, of a flat platen located in front of the platen roll and lying in contact therewith, a bar extending longitudinally of the platen roll above the platen and in parallel relation therewith, a pair of brackets mounted to slide upon said bar, a paper clip roll carried by each of said brackets, and swinging supports for said bar whereby the same may be swung downwardly to carry the paper clip rolls to a position adjacent the platen, thus permitting of access to the paper upon the upper portion of the platen roll.

24. In a front strike typewriting machine, the combination with the platen roll, of a bar mounted upon swinging supports radially disposed with respect to the axis of the platen, said bar normally disposed in front of and above the platen roll, a pair of brackets carried by said bar, and a paper roll carried by each of said brackets and spring-pressed into engagement with the platen roll, said bar being adapted to be swung downwardly in front of the platen roll so that access may be had to the paper upon the top portion of the platen roll.

25. In a typewriting machine, the combination with the platen roll, of paper clip rolls adapted to run thereon, and supports for said paper clip rolls radially disposed with relation to the axis of the platen roll adapted to move the rolls circumferentially with respect to the platen roll.

26. In a typewriting machine, the combination with the platen roll, of paper clip rolls adapted to run upon the platen roll, a bracket for supporting each of the paper clip rolls from a point coincident with the axis of the platen roll, and a circumferentially movable bar upon which said brackets are movably supported.

27. In a front strike typewriting machine, the combination with the platen roll, of a bar extending longitudinally of the platen roll, arms connected with the ends of said bar, said arms being mounted to swing around the axis of the platen roll, a pair of brackets mounted upon said bar, paper fingers depending from said brackets, and means whereby said bar may be swung downwardly to carry said paper fingers to such position as will enable them to engage with the forward edge of the paper as the same is fed beneath the platen roll.

28. In a typewriting machine, in combination, a paper carrier, and roller means coacting therewith of larger diameter at one end than the other adapted to remove any irregularity in the paper as the same is fed.

29. In a typewriting machine, in combination, a platen roll, a suitably supported paper roller means adjacent said platen roll and running thereon, said paper roller means being of larger diameter at one end than the other.

30. In a typewriting machine, in combination, a platen roll, a suitably supported paper clip, and roller means carried by said clip, said roller means being of larger diameter at one end than the other.

31. In a typewriting machine, in combination, a platen roll, a suitably mounted paper clip normally disposed at either end of said platen, and roller means carried by each of said clips, the outer ends of said roller means being of larger diameter than the inner ends.

32. In a typewriting machine, in combination, a platen roll, a suitably supported paper clip, and roller means carried by said clip, said roller means being of larger diameter at one end than the other and having the axis thereof inclined with respect to the axis of the platen.

33. In a typewriting machine, in combination, a paper carrier for feeding the paper longitudinally, a flat platen, and means adapted to press against the paper and tension the same laterally as the paper is fed.

34. A card holder comprising a holding and guiding roller adapted to be disposed to one side of the printing point adjacent the platen and of greater diameter at one end than at the other.

35. In a typewriting machine, in combination, a platen roll, and roller means coacting with said platen roll having their axes inclined with respect to the axis of the platen roller whereby any irregularity in the paper is removed as the paper is fed around the platen roll.

36. In a typewriting machine, in combination, a platen roll, and roller means normally engaging the platen roll near the ends thereof adapted to engage the paper as it is fed around the platen roll and urge the lateral edges thereof outwardly.

37. In a typewriting machine, the combination of a carriage frame, a platen roll carried thereby, supporting arms on the frame, a bar extending therebetween, and paper clips slidably mounted upon said bar and resiliently engaging said platen roll, said

bar and paper clips being circumferentially movable about the support of the supporting arms to carry the clips into engagement with different points about the platen roll and means adapted to hold said bar in the position to which it was last moved.

38. In a typewriting machine, in combination, a platen roll, and means comprising a frusto-conical roller adapted to automatically coöperate with said roll to tension the paper at the printing point transversely of the direction of feed of the paper.

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

NILS H. ANDERSON.

Witnesses:
WM. H. HONISS,
JOSEPH MERRITT.