

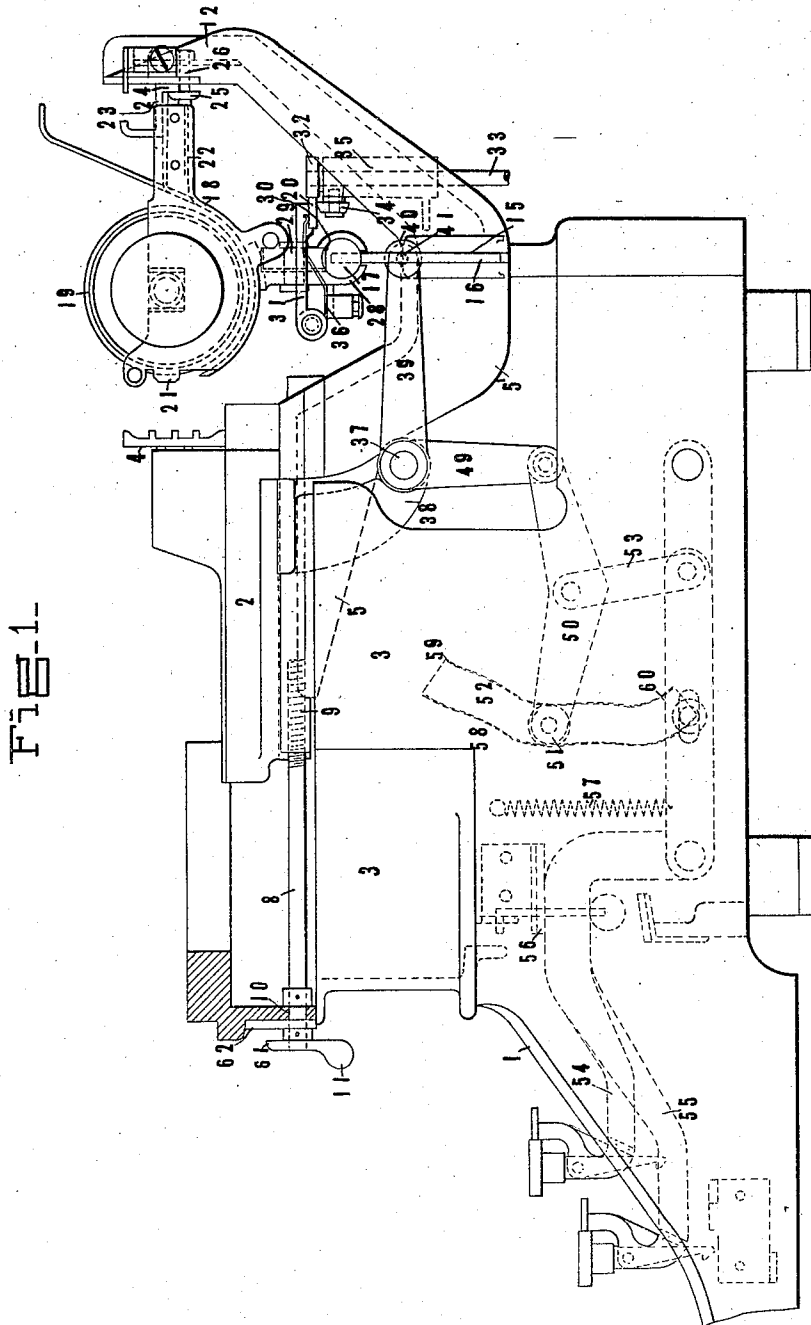
C. W. SPONSEL.
TYPE WRITING MACHINE.

APPLICATION FILED AUG. 13, 1907. RENEWED JUNE 19, 1912.

1,055,566.

Patented Mar. 11, 1913

4 SHEETS—SHEET 1.



WITNESSES
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Samuel L. Alpert.

INVENTOR
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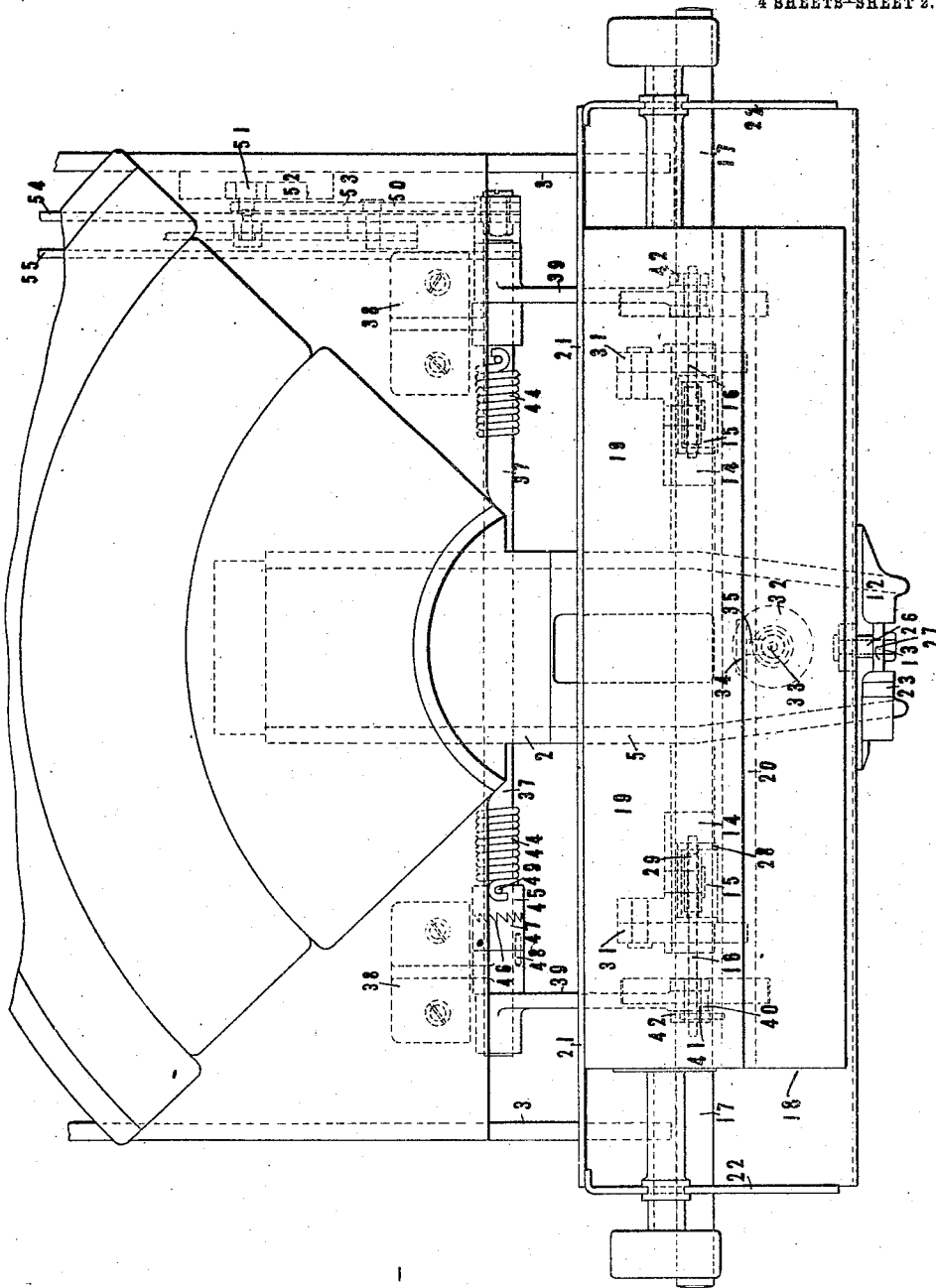
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4 SHEETS-SHEET 2.



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Fig. 2-

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C. W. SPONSEL.
TYPE WRITING MACHINE.

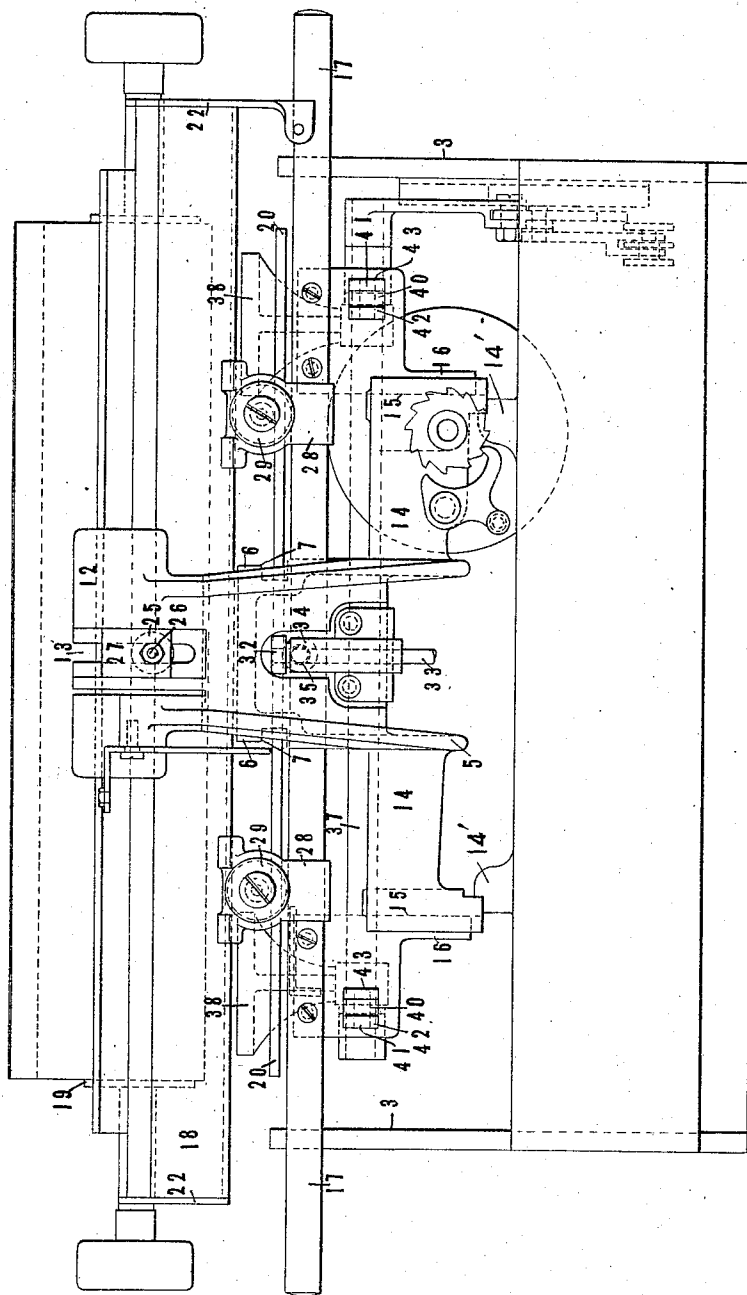
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4 SHEETS—SHEET 3.

FIG-3-



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4 SHEETS—SHEET 4.

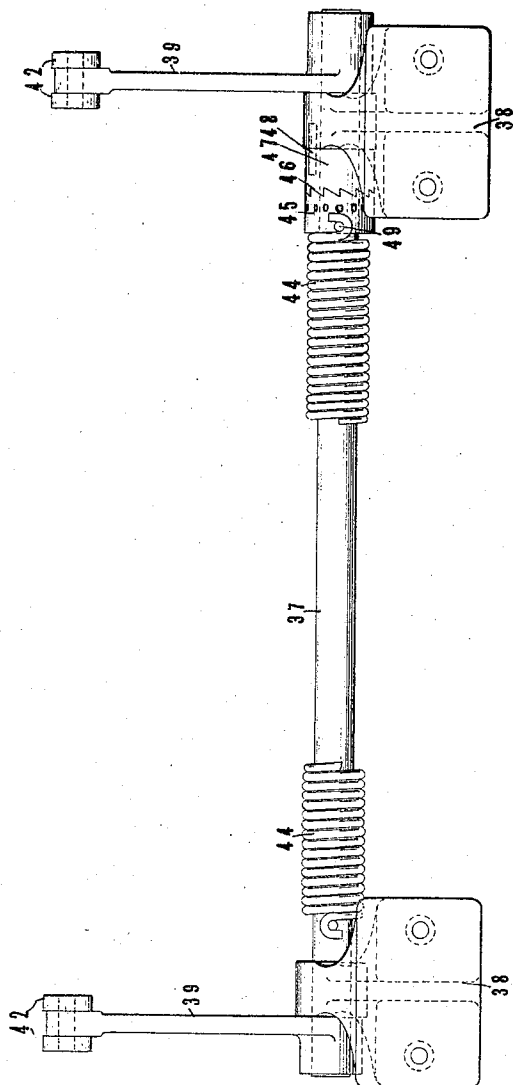


Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES WILLIAM SPONSEL, OF HARTFORD, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NOISELESS TYPEWRITER COMPANY, OF MIDDLETOWN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

TYPE-WRITING MACHINE.

1,055,566.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed August 13, 1907, Serial No. 388,282. Renewed June 19, 1912. Serial No. 704,684.

To all whom it may concern:

Be it known that I, CHARLES WILLIAM SPONSEL, 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 typewriting machines, and has for its main object to provide improved means for supporting the platen against a receding movement during printing while allowing it to be shifted from its normal printing position to other printing positions, or to be moved toward or from the normal printing plane.

Another object of the invention is to provide improved means for holding the platen in a normal central position so as to enable impressions to be made from the middle type of type bars provided with three printing characters.

Another object is to provide simple and efficient means for shifting the platen such that while the same is always held in a normal central or intermediate position, it may be readily shifted to a printing position to either side thereof.

A further object is to provide improved means for counterbalancing a vertically shiftable platen.

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 vertical sectional view taken transversely of a typewriting machine equipped therewith, certain of the parts being shown in side elevation. Fig. 2 is a top plan of the typewriting machine showing the same. Fig. 3 is a rear elevation thereof, and Fig. 4 is a top plan view showing the means employed for counterbalancing the platen.

In the accompanying drawings 1 indicates the frame of a typewriting machine and 2 indicates a plate or bed supported by the side walls 3 of the machine upon which the type bars, one of which is shown at 4, are adapted to rest and across which they are projected to impression by means not herein shown.

Extending transversely of the machine in the central portion thereof is a tie rod 5, the rear portion 5' of which is provided with tongues 6 which slide upon matching tongues 7 formed underneath plate or bed 2. The forward portion of the tie rod comprises a screw threaded member 8 which has a threaded connection with the rear portion at 9 and at its forward end extends through the front wall of the machine at 10. Member 8 has at its forward end an adjusting handle 11 which takes against the front walls of the machine and by means of which the same may be revolved to thereby adjust the rear portion 5' forwardly or rearwardly, the purpose of which will be apparent hereinafter. The rear portion 5' of the center tie drops downwardly from the top plate, then extends toward the rear and then upwardly at an angle, and finally terminates in a vertical extension or horn 12 having a vertically disposed slot 13.

The rear portion 5' of the tie rod is provided with a pair of oppositely disposed lateral extensions 14 at the outer ends of which are formed vertical ways 15. The outer ends of extensions 14 rest upon feet 14' formed upon the frame of the machine. Ways 15 are adapted to receive legs 16 which depend from a rail 17 upon which the platen carriage 18 is adapted to ride for letter spacing. Platen carriage 18 comprises a frame which supports a paper roll 19, a rack 20 and such other devices as may be desired, the platen being located in a forward portion of the frame, said platen comprising a bar or plate 21 extending between the end walls of the platen frame, as clearly shown in Fig. 2 of the drawings. Platen carriage 18 has a rearwardly extending portion 22 which carries a plate 23 having a downwardly extending portion 24 which takes behind a roller 25 journaled upon a stud 26 fixed to an angle block 27, the latter being slidably mounted in slot 13 of a

horn 12. Plate 23 rides upon roller 25 when the carriage is fed for letter spacing and block 27 rides in slot 13 when the platen carriage is shifted for letter spacing. It will be noted that plate 23 bears against horn 12, said horn forming an immovable abutment which operates to prevent yielding of the platen under pressure of the printing instrumentalities when projected to impression.

Platen carriage 18 is provided with depending portions which carry a yoke 28. Yoke 28 takes about rail 17 and said depending portions have rollers or casters 29 journaled thereon which ride upon the flattened upper portion 30 of rail 17. Rack 20 is carried by arms 31 journaled upon the platen frame and meshing with this rack is the feed pinion 32 of escapement shaft 33. Rack 20 rests upon a roller 34 carried by a collar 35 in which the escapement shaft is journaled. A spring 36 engages the rack and holds the same in engagement with the feed pinion irrespective of the vertical position of the platen carriage.

In the present instance each of the type bars is shown as being provided with three types, the platen being by means of rail 17 supported in such position as to normally receive impressions from the middle type of the type bars. The platen is also through rail 17 made shiftable upward and downward from its normal intermediate position to enable it to receive impressions from the upper and lower types of the type bars. In order to attain these ends a rock shaft 37 is journaled at either end in a pair of brackets 38 which depend from plate or bed 2. If desired this rock shaft can be supported in the rear portion 5' of the tie rod and the brackets omitted although I prefer the construction shown herein.

Extending rearwardly from rock shaft 37 at either end thereof and fixed thereto are arms 39. These arms at their rear ends have journaled thereon anti-friction rollers 40, said rollers being carried upon pins 41 extending between lugs 42 formed upon the rear ends of arms 39. Arms 39 extend rearwardly and enter slots 43 provided in legs 16 of rail 17 the top walls of said slots resting upon rollers 40. Arms 39 therefore, constitute supports for rail 17 and the platen carriage mounted thereon.

Positioned about rock shaft 37, in the present instance, is a coil spring 44 one end of which is attached to the shaft, the other end thereof being attached to a collar 45 loosely mounted on said shaft, said collar having ratchet teeth 46 which mesh with corresponding teeth formed upon a collar 47 fixed to one of brackets 38 by means of a pin 48. Spring 44 constitutes a counterbalancing means through rock shaft 37 and arms 39 for rail 17 and the platen frame

mounted thereon. The tension of spring 44 may be changed by rotating collar 45 with respect to fixed collar 47 by means of adjusting holes 49 provided therein in such manner that the vertically moving rail and platen carriage can be maintained in a suspended position and the platen held opposite the central type of the type bars. The engagement of the ratchet teeth of collars 45 and 47 respectively serve to hold the counterbalancing spring in its adjusted position.

Depending from rock shaft 37 is an arm 49 which is adapted to be swung in opposite directions to oscillate rock shaft 37, said operations through arms 39 and legs 16 moving rail 17 upwardly or downwardly to carry the platen to a position opposite the upper or lower types of the type bars.

Any desired means may be employed for swinging arm 49 to effect the above operations. In the present instance I have shown schematically a platen shifting mechanism disclosed in an application of Daniel B. Weston, Serial No. 388,327 filed of even date herewith. This mechanism comprises a lever 50 pivotally attached to arm 49, the opposite end of said lever carrying a roll 51 which rides in a cam track 52 which is formed upon arcs of different radii so that when lever 50 is caused to swing upwardly or downwardly it will be given an end-wise movement in a direction depending upon the direction in which it is swung, and thereby swing arm 49 in a corresponding direction. Lever 50 is adapted to be swung upwardly or downwardly by means of a link 53 having a pivotal connection with a pair of shift levers 54 and 55. One of these shift levers through its connection with link 53 operates to depress the same, and the other of said shift levers when depressed operates to raise the same. Shift levers 54 and 55 are normally held in a raised position against a cushioned stop 56 by means of coil springs, one of which is shown at 57, said shift levers when in their raised positions holding lever 50 in a position shown and in engagement with a dwell 58 formed intermediate the ends of cam track 52. With the parts in the position shown the shiftable rail is held in its normal central position and the platen is located in position to receive impressions from the middle type of the type bars. Dwells 59 and 60 are also formed at either end of cam track 52 said dwells through their engagement with roll 51 operating to determine the shifted position of the platen.

Having thus described this embodiment of my invention, the operation thereof is substantially as follows: The platen frame which rests against the upwardly extending horn 12 of the rear portion 5' of the tie rod may be moved forwardly or rearwardly by means of member 8 as when handle 11 is rotated to carry the platen toward or from

the normal printing plane, and the position of the platen with respect to this plane may be indicated to the operator by means of a pointer 61 attached to the handle which co-
 5 operates with scale 62 located upon the front wall of the machine. During this movement the rear portion of the tie rod slides upon the supporting tongues 7 formed underneath bed 2. Inasmuch as the platen
 10 frame, carriage rack and vertically supporting rail are carried by the rear portion of the tie rod, all these parts will be caused to move forwardly or rearwardly during the above described adjusting operation,
 15 such movement being permitted by the rollers 40 which enter the slots 43 of legs 16 and which carry a vertically shiftable rail. This adjustment is, however, slight, it being merely necessary to move the platen to such
 20 position as will enable the same to receive the proper amount of pressure exerted by the type bars, as when a greater or less number of sheets are to be written upon. When it is desired to shift the platen to a printing
 25 position to either side of its normal intermediate position, such operation may be caused by depressing either of the shift levers 54 or 55 which through the above described mechanism causes arm 49 to swing
 30 in either direction and effect thereby corresponding movements of the platen through the vertically shiftable rail 17. Counterbalancing spring 44 at all times operates to balance the carriage and rail so that the
 35 same may be readily shifted upwardly or downwardly from their normal intermediate positions with the expenditure of very little power.

It will accordingly be seen that I have
 40 provided a construction well adapted to attain, among others, all the above ends and objects of my invention above enumerated. The vertically shiftable rail which carries the platen may be perfectly balanced and
 45 caused to maintain the platen always in an intermediate position in such manner that little power is necessary to shift the same to a printing position at either side thereof. The platen may also be readily
 50 adjusted with respect to the common plane occupied by the face of the type when they are projected to impression without racking or straining the remaining parts of the mechanism. The platen, moreover, is sup-
 55 ported against movement against pressure exerted by the type bars when thrust to impression.

As many changes could be made in the above construction and many apparently
 60 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
 65 be interpreted as illustrative and not in a

limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of
 70 the invention which, as a matter of language, might be said to fall therebetween.

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

1. In a typewriting machine, the combination with the platen, of means extending
 75 transversely of the machine and forming a rigid backing for the platen, a rail upon which the platen rides for letter spacing, and means for shifting said rail upwardly or downwardly from an intermediate position to carry the platen to different printing
 80 positions.

2. In a typewriting machine, the combination with the platen, of means extending
 85 transversely of the machine to a position behind the platen and adapted to form a rigid backing therefor, a shiftable rail fixed against endwise movement upon which said
 90 platen rides for letter spacing, and means for lifting or depressing said rail to carry the platen to different printing positions.

3. In a typewriting machine, in combination with the platen, means extending
 95 transversely of the machine and rearwardly of the platen to form a rigid backing therefor, a rail mounted to move vertically with respect to said backing means and forming a support for the platen, means for lifting
 100 or depressing said rail to carry the platen to different printing positions, and means for moving said backing means in opposite directions to move the platen with respect to the printing plane.

4. In a typewriting machine, the combination with the platen carriage, of a platen
 105 carried thereby, a rigid abutment arranged behind the platen carriage, a rail upon which the platen carriage rides for letter spacing, and means for lifting or depressing
 110 said rail to carry the platen to different printing positions.

5. In a typewriting machine, in combination, a platen, a member anchored in the
 115 framing of the machine and extending transversely thereof adapted to form a rigid abutment for the platen, a rail fixed against endwise movement upon which the platen
 120 rides for letter spacing, means for lifting or depressing said rail to carry the platen to different printing positions, and means for moving said member in opposite directions whereby the platen will be carried to or
 125 from the normal printing plane.

6. In a typewriting machine, in combination, a platen, a member, one end of which
 130 furnishes a backing for the platen and having the opposite end thereof anchored in the frame of the machine, a shiftable rail

upon which the platen rides for letter spacing, and means for moving said rail to carry the platen to a different printing position.

7. In a typewriting machine, in combination with the platen, a member, one end of which furnishes a rigid backing for the platen and having the opposite end thereof anchored in the framing of the machine, said member operating to maintain the platen against movement during printing, a rail upon which the platen rides for letter spacing, said rail normally retaining the platen in an intermediate printing position, means for raising or lowering said rail to carry the platen to a printing position at either side of a normal central position, and means for changing the operative length of said first mentioned member, whereby the platen may be moved to or from the normal printing plane.

8. In a typewriting machine, the combination with the platen, of a rod anchored in the front wall of the framing of the machine and extending rearwardly to a point behind the printing point of the platen to furnish a rigid backing for the platen, a vertically shiftable rail mounted in ways provided in said rod, said rail forming a support upon which the platen rides during its letter spacing movements, and means for lifting or depressing said rail to carry the platen to different printing positions.

9. In a typewriting machine, in combination, a platen, extensible means extending rearwardly from the front portion of the frame of the machine to a point behind the platen to form a rigid support therefor, a rail movable vertically with respect to said extensible means, upon which the platen is adapted to ride during its letter spacing movements, and means for raising or depressing said rail.

10. In a typewriting machine, in combination, a platen, means for adjusting the platen with respect to the printing plane, a rail upon which the platen is adapted to ride during its letter spacing movements, and means for raising or lowering said rail to carry the platen to a printing position at either side of its normal printing position.

11. In a typewriting machine, in combination, a platen, means for adjusting the platen with respect to the common plane occupied by the faces of the types when carried to impression, a rail interposed in the support of the platen upon which the same is adapted to ride for letter spacing, and means for shifting said rail whereby the platen will be carried to a different printing position.

12. In a typewriting machine, in combination, a platen, a rigid abutment for the platen, means for moving said abutment to cause the platen to advance toward the printing plane or to move rearwardly therefrom, a rail upon which the platen is adapted to

ride for letter spacing, and means for raising or depressing said rail to carry the platen to different printing positions.

13. In a typewriting machine, in combination, a platen, a member forming a rigid abutment therefor and extending forwardly therefrom, a screw threaded member anchored in the front wall of the machine and cooperating with said first mentioned member to move said platen toward or from the printing plane, a rail upon which the platen is adapted to ride for letter spacing, and means for lifting or depressing said rail to carry the platen to a printing position at either side of its normal printing position.

14. In a typewriting machine, in combination, a carriage adapted to support the platen, an abutment adapted to prevent yielding of the platen supporting means when the platen is engaged by the printing instrumentalities, means for moving said abutment whereby the platen may be moved with respect to the printing plane, a rail upon which the platen is adapted to ride for letter spacing, and means for lifting or depressing said rail.

15. In a typewriting machine, in combination, a platen, a support for the platen, a tie rod for the platen support, one end of which furnishes a rigid abutment for the platen support behind the printing point of the platen, the opposite end thereof being anchored in the front wall of the frame of the machine, a rail carried by said tie rod and adapted to be shifted vertically with respect thereto, said platen support being adapted to ride upon said rail during the letter spacing movements of the platen, and means for raising or lowering said rail whereby the platen support will be raised or lowered and the platen moved to a printing position at either side of its normal printing position.

16. In a typewriting machine, in combination, a platen, an abutment adapted to prevent yielding of the platen when the same is engaged by the printing instrumentalities, means connected with the rigid portion of the frame of the machine for holding said abutment in a stationary position, a vertically shiftable rail upon which the platen rides during its letter spacing movements, and means for raising or lowering said rail.

17. In a typewriting machine, in combination, a platen support, a rigid abutment for the platen support means interposed between said platen support and said abutment adapted to slide upon said abutment when the platen is shifted to another printing position, said platen support being adapted to slide in said last mentioned means when letter spacing movement is afforded, a rail upon which the platen support is carried and upon which the same is

adapted to slide for letter spacing, and means for raising or lowering said rail.

18. The combination in a typewriting machine, of means for effectively resisting the pressure of the type bars against the platen, comprising a member anchored in the front wall of the machine and extending rearwardly from frame to form an abutment, a platen support, means interposed between said platen support and said abutment adapted to permit the same to be shifted upwardly or downwardly from a normal central position or to be fed for letter spacing, a rail upon which the platen support is adapted to rise, and means for raising or depressing said rail.

19. In a typewriting machine, in combination with the platen, a member extending rearwardly from the front wall of the machine to form an abutment for the platen, means for changing the length of said member whereby the platen may be moved with respect to the normal printing plane, a rail mounted for vertical movement in said member upon which the platen is adapted to ride for letter spacing, and means for raising or depressing said rail to carry the platen to a different printing position.

20. In a typewriting machine, the combination with the platen, of a platen support, a tie rod anchored in the front wall of the machine and extending rearwardly therefrom and thence upwardly to form an abutment for the platen support, a rail upon which the platen support is adapted to ride for letter spacing, and means for lifting or depressing said rail.

21. In a typewriting machine, in combination, a platen, a vertically shiftable frame adapted to carry the platen, an abutment for the platen frame adapted to prevent yielding of the platen under pressure of the printing instrumentalities, a rail fixed against endwise movement upon which the platen frame is adapted to ride when a letter spacing movement is afforded, and means for lifting or depressing said rail whereby the platen will be carried to a printing position arranged at either side of a normal printing position.

22. In a typewriting machine, in combination, a platen, a frame adapted to support the platen in the normal intermediate printing position, an abutment for the platen frame adapted to hold the same immovable during pressure of the printing instrumentalities against the platen, a rail interposed in the support of the platen frame, upon which the same is adapted to ride for letter spacing, and means for raising or depressing said rail to cause corresponding movements of the platen.

23. In a typewriting machine, in combination, a platen, a frame for supporting the platen, an abutment for the frame against

which the same presses when the printing instrumentalities are pressed against the platen, said abutment being provided with an extension projecting forwardly beneath the platen, means for connecting the forward end of said abutment with the front wall of the frame of the machine, a rail upon which the platen frame rides during the letter spacing movements thereof, said rail being adapted to be shifted vertically in ways provided in the lateral extensions of said abutment, and means for shifting said rail upward or downward to carry the platen to a position at either side of a normal intermediate printing position.

24. In a typewriting machine, in combination, a platen frame, a platen carried thereby and shiftable with said platen frame to other printing positions, an abutment forming a backing for the platen frame, said abutment being provided with a forward extension projecting beneath the platen and extending forwardly thereof, a member anchored in the framing of the machine and threaded into the end of said forward extension, a rail carried by legs which are slidably mounted in lateral extensions of said abutment, said rail being interposed in the support of said platen frame, and means for raising or depressing said rail to shift the platen.

25. In a typewriting machine, the combination with a platen, of a tie rod extending centrally of the machine to a position behind the printing point of the platen and adapted to form a rigid backing therefor, a rail upon which the platen rides for letter spacing, a pair of legs depending from said rail and guided in said tie rod, and means operating through said legs to raise or depress said rail.

26. In a typewriting machine, the combination with a platen, of a tie rod anchored in the front wall of the machine and extending rearwardly therefrom and adapted to form a rigid backing therefor, a frame upon which the platen is mounted, a rail having a pair of depending legs guided in lateral extensions of said tie rod, said platen frame being adapted to slide upon said rail when letter spacing movement is afforded, and means for raising or depressing said rail to carry the platen to other printing positions.

27. In a typewriting machine, the combination with a platen, of a frame in which the same is carried, a tie rod anchored in the front portion of the machine and extending rearwardly therefrom to form a rigid abutment for the platen, said tie rod being provided with a pair of oppositely disposed lateral extensions, a rail having a pair of depending legs mounted to slide in ways provided in the lateral extension of the tie rod, said rail being interposed in the support of the platen frame which is adapted to ride

thereon during its letter spacing movements, and means for raising or depressing said rail whereby the platen will be moved to the printing position at either side of its normal printing position.

28. In a typewriting machine, in combination, a platen, a member, one end of which furnishes a backing for the platen and having the opposite end thereon anchored in the frame of the machine, a shiftable rail upon which the platen rides for letter spacing, and means for moving said rail to carry the platen to a different printing position.

29. In a typewriting machine, the combination with the platen, of a rod anchored in the front wall of the frame of the machine, and extending rearwardly to a point behind the printing point of the platen and furnishing a rigid backing for the platen during printing; a vertically shifting rail mounted in ways provided in said rod, said rail forming a support upon which the platen rides during its letter spacing movement, and means for moving said rail to carry the platen to a different printing position.

30. In a typewriting machine, the combination with a platen, means behind the impression point on said platen forming a rigid backing therefor, a rail upon which said platen rides for letter spacing, and means for shifting said rail.

31. In a typewriting machine, in combination, a platen frame, a shiftable rail adapted to carry the same and upon which said platen frame rides during its letter spacing movements, means for shifting said rail in the opposite direction from normal intermediate position, and means for supporting said rail in said intermediate position, comprising a rock shaft journaled in a fixed portion of the machine, arms fixed to said rock shaft and engaging underneath said rail, and a spring coiled about said rock shaft, one end of which is fixed thereto, the opposite end thereof being secured to the support of said rock shaft.

32. In a typewriting machine, the combination with a shiftable carriage, of a rail upon which the same rests, legs depending from said rails, said legs being adapted to slide in fixed ways, a rock shaft, a plurality of arms extending from said rock shaft, the free end of said arms being in engagement with said legs, means for oscillating said rock shaft, and a spring coiled about said rock shaft and operating through the same to counterbalance said platen frame and said rail.

33. In a typewriting machine, the combination with a platen carriage having a platen roller, a fixed backing in contact with said carriage diametrically opposite the impression receiving part of said platen roller,

a rail along which said carriage rides, and means for shifting said rail.

34. In a typewriting machine, the combination with the traveling platen carriage, of a vertically movable rail upon which said platen carriage slides during its letter spacing movement, a plurality of legs depending from said rail, a plurality of fixed ways each of which is adapted to receive and guide one of said legs, a rock shaft, a plurality of arms fixed upon said rock shaft, the opposite end of said arms entering slots provided in said legs, a shift arm fixed to said rock shaft, and means for swinging said latter arm whereby said rock shaft will be oscillated and said rail moved to shift the platen carriage.

35. In a typewriting machine, the combination with the traveling platen carriage, of a vertically shiftable rail adapted normally to hold the platen frame and the platen in a normal intermediate position, a pair of legs depending from said rail and guided in fixed ways, a rock shaft, a pair of arms fixed to said rock shaft, said legs having slots adapted to receive the opposite ends of said arms, a spring coiled about said rock shaft and operative through the same to counterbalance said rail and the platen carriage mounted thereon, and means for oscillating said rock shaft thereby causing the arms fixed thereon to be swung upwardly or downwardly and said rail moved in corresponding directions to shift the platen from its normal intermediate position to a printing position at either side thereof.

36. In a typewriting machine, in combination, a platen frame for supporting the platen, an abutment against which the platen frame rests when the printing instrumentalities are thrust against the platen, said abutment being provided with an extension projecting forwardly beneath the platen, means for connecting the forward end of said extension with the frame of the machine, a rail upon which the platen frame rides during the letter spacing movements thereof, said abutment being provided with oppositely disposed lateral extensions, each of which is provided with a vertically disposed way, a pair of legs depending from said rail, each of which is guided in one of said ways, a rock shaft, a pair of arms fixed upon said rock shaft, the outer end of said arms entering slots provided in said legs, means for oscillating said rock shaft, and spring means operative through said rock shaft to counterbalance said rail and said platen frame.

37. In a typewriting machine, the combination with the platen of a frame in which the same is carried, a tie rod anchored in the front portion of the machine and extending rearwardly therefrom to form a rigid abutment for the platen, said tie rod being

provided with a pair of oppositely disposed extensions, a rail having a pair of depending legs mounted to slide in ways provided in the lateral extensions of said tie rod, said rail being interposed in the support of the platen frame which is adapted to ride thereon in its letter spacing movement, a rock shaft, and means for connecting said rock shaft and the depending legs of said rail, whereby when said rock shaft is oscillated said rail will be caused to move to shift the platen frame.

38. In a typewriting machine, the combination with the platen, of a frame in which the same is carried, a tie rod anchored in the front portion of the machine and extending rearwardly therefrom to form a rigid abutment for the platen, said tie rod being provided with a pair of oppositely disposed extensions, a vertically shiftable rail having a pair of depending legs mounted to slide in ways provided in the lateral extensions of the tie rod, said rail being interposed in the support of the platen frame which is adapted to ride thereon during its letter spacing movement, a rock shaft, a plurality of arms extending from said rock shaft, said arms entering slots provided in the legs of the rail, a shift arm fixed upon said rock shaft, means for swinging said shift arm to oscillate the rock shaft, whereby said rail through said first-mentioned arms may be raised or lowered from a normal intermediate position to shift the platen to different printing positions, and spring means operative through said rock shaft to counterbalance said platen frame and said rail.

39. In a typewriting machine, the combination with the platen, of a frame in which the same is carried, a tie rod anchored in the front portion of the machine and extending rearwardly to form a rigid abutment for the platen, the rear portion of said tie rod being adapted to slide in ways formed in a bed of the machine, means for moving the rear portion of said tie rod to carry the platen toward or from the normal printing plane, said rear portion having a pair of oppositely disposed lateral extensions, vertical ways formed in said extensions, a vertically shiftable rail upon which the platen frame rides during letter spacing, said rail being adapted to hold the platen in a normal

intermediate printing position, a pair of legs depending from said rail, said legs being guided in ways formed in the lateral extensions of the tie rod, a plurality of brackets depending from the bed of the machine, a rock shaft journaled in said brackets, a plurality of arms extending from said rock shaft and entering slots provided in said legs, an arm fixed upon said rock shaft, a spring encircling said rock shaft and operative through the same to counterbalance the weight of said platen frame and said rail, and means operative through said shift arm to oscillate said rock shaft, whereby the said rail may be moved upwardly or downwardly from its normal central position to shift the platen to other printing positions.

40. In a typewriting machine, in combination, a shiftable part, a rock shaft, intermediate means between said rock shaft and said shiftable part for transmitting motion from one to the other, a balancing spring associated with said rock shaft, and spring means for returning said parts to normal position after being shifted.

41. In a typewriting machine, in combination, a part shiftable in opposite directions from a normal intermediate position, a rock shaft, mechanism intermediate said shiftable part and said rock shaft for transmitting motion from one to the other, a balancing spring associated with said rock shaft, and spring means for returning said shiftable part to normal position.

42. In a typewriting machine, in combination, a part shiftable in opposite directions from a normal intermediate position, a rock shaft, mechanism intermediate said shiftable part and said rock shaft for transmitting motion from one to the other, a balancing spring associated with said rock shaft, actuating means for rotating said rock shaft in opposite directions, and spring means connected to said actuating mechanism for returning said parts to normal position.

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

CHARLES WILLIAM SPONSEL.

Witnesses:

ARTHUR B. JENKINS,
D. C. KREIMERDAHL.