

1,052,022.

3 SHEETS—SHEET 1.



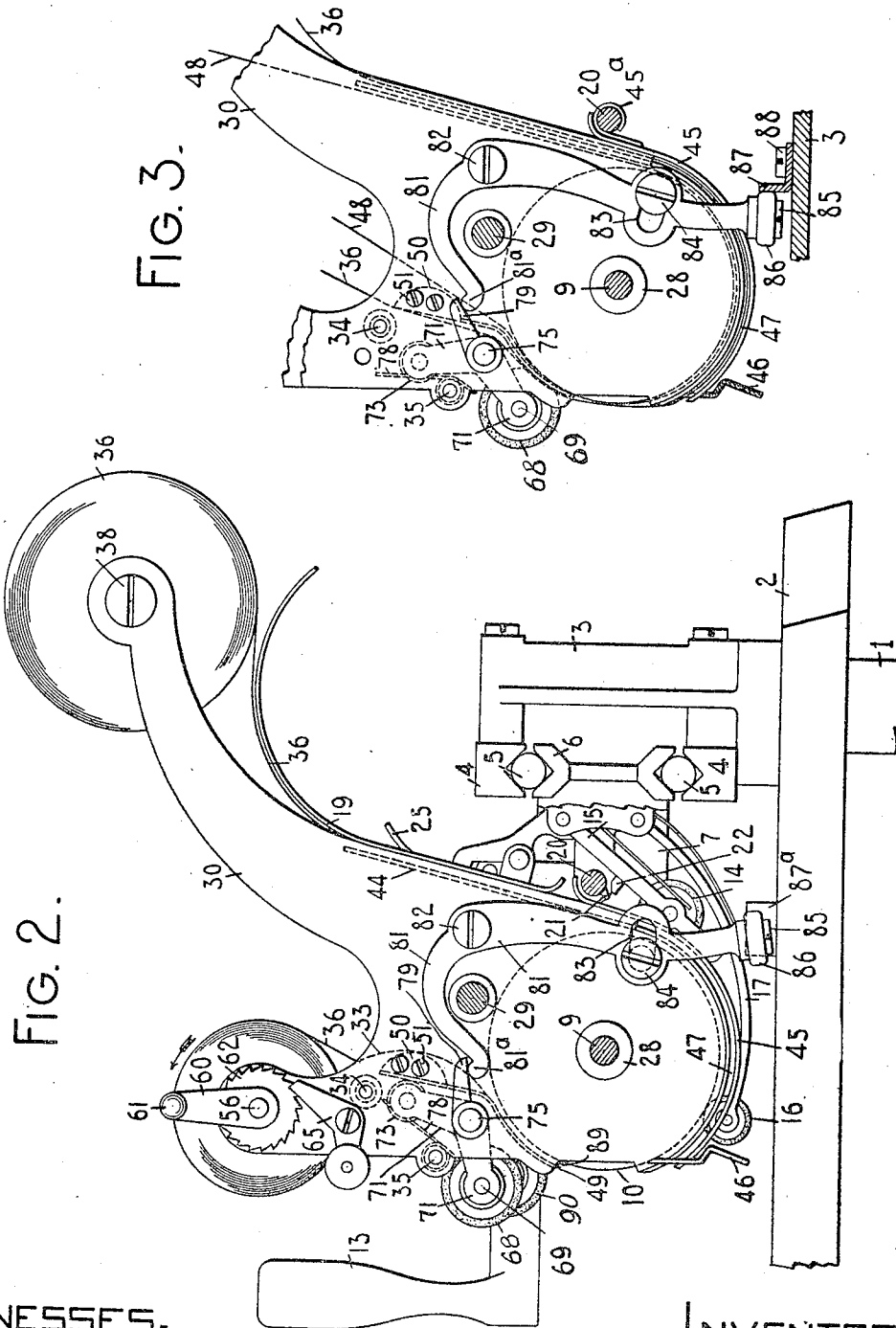
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1,052,022.

Patented Feb. 4, 1913.

3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

FIG. 6.

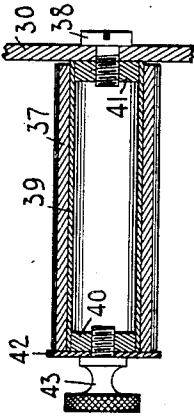


FIG. 7.

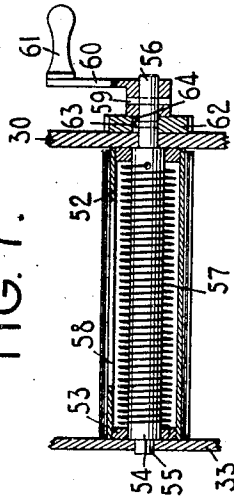


FIG. 8.

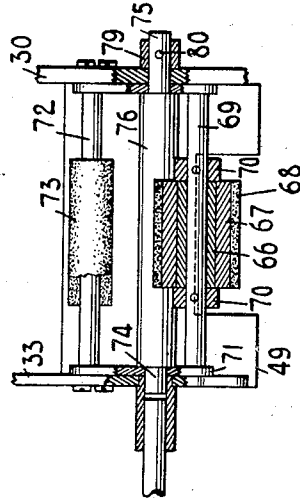


FIG. 4.

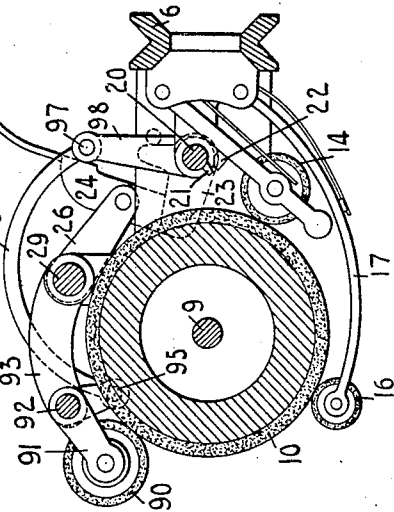
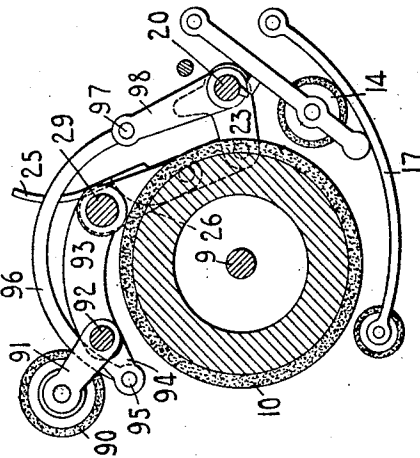


FIG. 5.



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UNITED STATES PATENT OFFICE.

HERBERT H. STEELE, OF MARCELLUS, NEW YORK, ASSIGNOR TO THE MONARCH TYPE-WRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

1,052,022.

Specification of Letters Patent.

Patented Feb. 4, 1913.

Application filed July 24, 1911. Serial No. 640,295.

To all whom it may concern:

Be it known that I, HERBERT H. STEELE, citizen of the United States, and resident of Marcellus, in the county of Onondaga 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 paper feeding mechanism for typewriting machines and more especially to what is commonly termed tally strip mechanism.

The principal object of the invention, generally stated, is to provide improved mechanism of the character specified.

One object of the invention is to provide a compact and comparatively simple tally strip mechanism enabling the tally strip and the main work sheet to be arranged in superposed relationship and which may be readily applied to existing styles of typewriting machines.

Another object is to provide improved means for feeding the tally strip, said means comprising devices which are automatically moved into and out of operative relationship with the tally strip when the tally strip is brought respectively into and out of the printing field of the types during to and fro endwise movements of the platen. When the tally strip feeding devices are in operative position, a line spacing movement communicated to the platen from the regular manually operated line spacing mechanism will not only advance the main work sheet but will also operate to advance or line space the tally strip simultaneously therewith.

To the above and other ends my invention consists in the features of construction, combinations of devices and arrangements of parts hereinafter described and particularly pointed out in the claims.

In the accompanying drawings which illustrate one form of my invention applied to a Monarch typewriting machine, Figure 1 is a fragmentary front elevation of the upper part of a Monarch typewriter embodying my invention. Fig. 2 is a fragmentary side elevation partly in section corresponding with Fig. 1. Fig. 3 is a view corresponding to Fig. 2 but omitting some of the parts shown in said figure and showing

other parts in different relationships. Fig. 4 is a transverse vertical sectional view of the platen and certain of the paper feeding devices cooperative therewith. Fig. 5 is a view corresponding to Fig. 4 but showing the paper feeding devices in released position. Fig. 6 is a longitudinal sectional view of the tally strip delivery spool. Fig. 7 is a longitudinal sectional view of the tally strip receiving spool. Fig. 8 is a front elevation partly in section of paper feeding and clamping devices which cooperate with the tally strip.

In the various views parts are omitted and broken away for the sake of clearness of illustration.

The printing instrumentalities, escapement devices and various other features of construction are omitted from the drawings but are or may be of the ordinary construction common to the Monarch machine.

As appears from Figs. 1 and 2 the main frame of the machine comprises corner posts 1 supporting a top plate 2 from which rise standards 3 to which are secured fixed track ways 4 grooved to receive anti-friction balls 5 which also cooperate with grooves in a slide or rear bar 6 comprised in a platen carrier or carriage which further includes end bars 7 and 8. A platen axle or spindle 9 is journaled on the end bars and carries a rotary cylindrical platen 10. Operatively connected with the left-hand end of the platen is a line spacing ratchet wheel 11 cooperative with which are line spacing devices comprising a pawl 12 manually controlled by a finger piece 13. Associated with the platen are paper feeding devices comprising a main feed roller 14 mounted on pivoted spring-pressed arms 15, and a secondary feed roller 16 mounted on pivoted spring-pressed arms 17. The feed rollers cooperate with the platen to the left of a narrow work-sheet or tally strip hereinafter described, through openings in a curved deflector or apron (not shown) which extends around the lower side of the platen and upward in rear of the same, terminating below the lower end of a paper table 19. The feed rollers 14 and 16 are adapted to be released by devices comprising a rock shaft 20 provided with lugs 21 which, when the rock shaft is turned, cooperate

with projections 22 on the arms 15, throwing said arms downward and releasing the main feed roller 14, the lower ends of the arms 15 in turn acting to swing the arms 17 downward to release the secondary feed roller 16. The means for turning or rocking the shaft 20 for releasing purposes are best shown in Figs. 1, 4 and 5 and comprise a crank arm 23 fixed to the left-hand end of the rock shaft and pivotally connected with a member or arm 24 terminating in a finger piece 25. Said arm 24 is pivotally connected with an arm 26 pivoted at 27 to the end bar 7. The arms 24 and 26 constitute toggle arms which normally are in the relationship shown in Fig. 4 but when the finger piece 25 is pulled forward to the Fig. 5 position the toggle elements are straightened as shown in the latter figure, with the result that the rock shaft 20 is turned to release the feed rollers 14 and 16 and is locked so as to maintain said feed rollers in released or inoperative position.

The parts thus far described are common to the Monarch typewriting machine.

The right-hand platen head is sunk flush with the end of the platen in the present instance and is provided with an elongated hub 28 which abuts against a boss 8^a on the end bar 8 and is suitably secured to the platen axle 9. The end bars 7 and 8 of the platen carrier support a rod or bar 29 which extends lengthwise of the platen above the same and is or may be the usual paper finger rod. This rod 29 assists to support a tally strip frame comprising a side plate 30 having a hub or boss 31 which surrounds the rod 29 and is secured thereto by a pin 32 or otherwise. The lower portion of the plate 30 is provided with a hole which receives the hub 28, so that the plate 30 is contiguous to the right-hand end of the platen. The rear edge of the plate 30 may rest against the paper table 19. The tally strip frame further comprises a side plate 33 which is spaced leftward from the plate 30 and is secured thereto by cross rods 34 and 35. The rear edge of the plate 33 terminates above the platen and slightly forward of its axial center, as indicated by the curved dotted line in Fig. 2. It will be understood that the tally strip supporting frame comprising the side plates 30 and 33 and the connecting rods 34 and 35 constitutes in effect a single member which is secured to the platen carrier near the right-hand end of the platen, so that the tally strip 36 carried by said tally strip frame may be fed around the right-hand end of the platen. Said tally strip is wound around a core piece 37 which is arranged on a carrier or holder secured to the upper rearwardly curved end of the side plate 30 by a screw 38. Said holder as shown in Fig. 6 comprises a tube 39 having plugs 40

and 41 secured in its ends. The screw 38 passes through the side plate 30 and engages in the plug 41, thus securing the holder to the plate 30. The core 37 and the tally strip rolled thereon are adapted to turn freely on the tube 39. A flange or circular plate 42 is clamped against the outer face of the holder by a thumb screw 43 which engages in the plug 40, said flange preventing accidental displacement of the tally roll. The loose end of the tally strip 36 is drawn forward from the under side of the roll as shown in Fig. 2 and as appears from said figure and also from Fig. 3 is led down over the paper table 19 to the left of the plate 30, passing between said paper table 19 and a guide plate 44 suitably secured to the inner face of the plate 30, which latter may be used as a side guide both for the tally strip and main work sheet. Said guide plate 44 is arranged between the platen and the paper table 19 and a paper apron 45, said plate curving around the rear and under sides of the platen and terminating at the front side of the platen just above the paper apron 45, the usual scale plate 46 being cut away as indicated at 46^a (Fig. 1) to accommodate the guide plate and the paper apron. The paper apron 45 is not spring-pressed but is hung or suspended loosely from the rock shaft 20 by hooks or clips 45^a, the forward end of said apron resting normally on the bottom edge of the cut-out 46^a. The apron 45 is preferably a section separate from the body of the usual paper apron which extends lengthwise of the platen and is spring-pressed toward the same. The guide plate 44 co-operates with the paper table and paper apron to provide a slot, passage way or channel 47 partly closed at the right-hand side, through which channel the tally strip passes and by which it is guided around the platen and upward at the forward side thereof, the guide plate 44 being interposed between the tally strip and the platen and holding the tally strip away from the platen until the tally strip approaches the vicinity of the printing point at the front side of the platen. The inner face of the tally strip 36 is preferably carbonized and the guide or curved deflector 44 is provided for the purpose of preventing the carbonized surface from off-setting on the bill sheet which overlies the tally strip but is separated therefrom by the guide 44, said bill sheet which is indicated in Fig. 3 by the number 48, passing between the platen and said guide. Furthermore in many kinds of commercial typewriting the bill sheet is required to be frequently inserted and removed during the writing, and the guide 44 both protects the sheet and prevents it from being injured and from being interfered with by the tally strip during insertion and re-

removal. It will be understood that the passage way or channel 47 is clear and unobstructed so that the tally strip may be advanced freely through it.

5 Above the printing line a guide is provided over which the tally strip is led, the main work sheet passing under the guide. Said guide comprises a plate 49 which curves from a point above the printing line rearward over the platen for a short distance
10 and then inclines upward and rearward, its upper portion being suitably secured to a cross bar 50 the ends of which are fastened by headed screws 51 to the plates 30 and 33. The guide or deflector 49 preferably is
15 under tension in order properly to hold its shape and position; and accordingly the right-hand edge of said deflector just clears the inner face of the plate 30 while the left-hand end portion bears against the lower
20 curved edge of the plate 33. After crossing the printing line the tally strip passes over the deflector 49 upward and rearward to a holder on which it is wound. Said holder is shown in detail in Fig. 7 and comprises a
25 tubular body portion 52 provided with heads 53 which bear on a shaft 54, the ends of which are reduced as indicated at 55 and 56, the end 55 bearing in a hole in the plate 33 and the end 56 bearing in the plate 30. A coiled spring 57 surrounds the shaft 54
30 within the tube 52, one end of said spring being fixed to the shaft and the other end to the left-hand head 53. The tendency of the spring is to turn the receiving holder so as to wind the tally strip, thereon, the inner end of the tally strip being secured in a slot 58 in the tube 52 or any other suitable manner. The reduced end 56 has secured to it by a pin 59 a crank arm 60 provided with a finger piece or handle 61. Confined between the crank arm and the outer face of the plate 30 is a ratchet wheel 62, said ratchet wheel being prevented from
45 turning on the reduced end 56 by a pin 63 which projects radially from the shaft and engages a slot 64 in the ratchet wheel. As shown in Fig. 2 a pivoted gravity pawl 65 normally engages the ratchet wheel and prevents it from turning backward under the action of the spring 57 to weaken the latter. By turning the handle 61 in the direction of the arrow in Fig. 2 the tension of the spring 57 may be increased. The spring
55 57 is regulated so that it has sufficient tension to take up the slack in the tally strip between the receiving roll and the platen and so that as the tally strip is advanced or line spaced it will be correspondingly wound on the receiving roll. In order to accomplish this result it may be necessary from time to time to rewind the spring by means of the handle 61. At suitable intervals the tally strip may be severed against the upper
60 edge of the deflector 49 which may be sharp-

ened for the purpose. Then the written portion of the tally strip which is in roll form on the receiving roll may be unwound and removed from the receiving holder and the loose newly severed end of the tally strip
70 secured in the slot 58 in said holder for a new series of operations.

Means are provided for cooperating with the platen to advance or line space the tally strip when the platen is turned, which means
75 are automatically moved into and out of operative relationship with the platen. Said means in the present instance includes a short feed or pressure roll comprising as shown in Fig. 8 a metal bearing portion 66, a wooden core 67 and a rubber sheath 68. The tally strip pressure roll is arranged to turn freely on a rod 69, being held from movement lengthwise of said rod by collars
80 70 pinned thereto. The rod 69 comprises part of a rocking frame which includes parallel arms 71, the lower ends whereof are connected by and support the rod 69. The upper ends of the arms 71 carry a cross rod
85 72 to which is secured a clamping member 73 of rubber or the like. The rocking frame comprising the arms 71 and the parallel connecting rods 69 and 72 is suitably secured on the reduced end portions 74 and 75 of a rock shaft 76. The end 74 of said rock
90 shaft bears in a hub or socket piece 77 secured to the side plate 33 while the end 75 bears in an opening in the side plate 30. The tally strip pressure roll is adapted to cooperate with the tally strip and the platen
95 through a cut-out or slot 49^a formed in the lower end of the deflector 49. The clamping element 73 cooperates with the upper portion of said deflector plate. A spring 78 coiled around the cross rod 35 cooperates with the arm 72 of the rocking frame, tending constantly to maintain the frame in the position shown in Fig. 2 with the clamp 73
100 operative and the pressure roll 66-68 released or inoperative. By rocking the shaft 76 the frame secured thereto is rocked and as a result the clamping element 73 and the tally strip pressure roll are adapted to be swung into and out of operative position alternately.
115

Automatic means are provided for rocking the shaft 76, said means in the present instance being controlled by to and fro movements of the platen carrier and comprising a crank arm 79 pinned at 80 to the reduced end 75 outside the plate 30 and projecting rearward as shown in Figs. 2 and 3. This crank arm is adapted to cooperate with the forwardly extending arm of a lever 81 fulcrumed at 82 on the plate 30. The
120 lower arm of the lever 81 extends downward outside said plate and is formed with a guide slot 83 which cooperates with a headed screw 84 fixed to the plate 30 to guide the lever 81 during swinging move-
125

ments and prevent distortion thereof. Pivoted on a screw 85 secured in the lower bent end of the lever 81 is a roller 86 which is adapted to cooperate with an upturned forward end of an angular bar 87 secured by screws 88 to the top plate 2 and extending in the direction of the carriage travel. The right-hand end portion 87^a of the bar 87 is curved or inclined rearward providing a cam surface which is in the path of the roller 86 and operates when the roller engages it during leftward movements of the platen to force the roller forward, thereby swinging the lever 81 on its fulcrum, lifting the forward arm thereof and causing the end 81^a of said arm which is rounded and underlies the crank arm 79 to swing said crank arm upward, thereby rocking the shaft against the spring 78 from the Fig. 2 to the Fig. 3 position. This rocking operation throws off the clamping element 73 and throws on the pressure roll 66—68. As has been stated the deflector 49 is yieldingly mounted so that in the Fig. 2 position when the tally strip pressure roll is inoperative said deflector is raised from the platen surface, affording a clear passage 89 for the bill sheet between the platen and the deflector; but when the tally strip pressure roll is swung down into operation as in Fig. 3 it engages the surface of the tally strip and through it forces the deflector close to the platen surface, thus lessening the liability of tearing or shearing the tally strip between the pressure roll and the side edges of the slot 49^a in the deflector. It will be understood that after the pressure roll 66—68 has been brought to the operative or Fig. 3 position, then if the platen be turned for line spacing said pressure roll will cooperate with the platen to line space the tally strip. When, however, the pressure roll is inoperative as in Fig. 2 and the clamp 73 is operative, the tally strip will be clamped or held from being advanced during turning movements of the platen. The cam bar 87, 87^a is so arranged that the roller 86 will not engage it so long as that portion of the bill sheet which is to the left of the tally strip is in the printing field of the types; but just prior to the entrance of the tally strip into the printing field of the types the roller 86 will engage the cam 87^a, operating the train of mechanism connected to said roller, so that when the tally strip enters the printing field the pressure roll will be in operative position and the clamp will be released or thrown off. During return movements, as soon as the tally strip passes rightward out of the printing field, the roller 86 will separate from the cam bar, permitting the spring 78 to restore the parts to the Fig. 1 position.

In addition to the paper feeding devices hereinbefore described for the main work

sheet including the feed rollers 14 and 16, I provide additional devices for cooperating with the main work sheet above the printing line on the front of the platen, said additional devices comprising a pressure roller 90 which is pivotally supported on a bifurcated carrier 91 fixed to a rock shaft 92 arranged above the platen and extending lengthwise thereof. The left-hand end of said rock shaft bears in an arm 93 fixed to and extending forward from the rod 29, while the right-hand end of said rock shaft, as appears clearly in Fig. 8, bears in the socket piece 71. Fixed to the left-hand end of the rock shaft 92 outside the carrying arm 93 is a crank arm 94 which projects downward and is pivotally connected at 95 with a link 96 curving upward and rearward and pivotally connected at 97 with a crank arm 98 fixed to and extending upward from the rock shaft 20. The crank arms 98 and 94 and the connecting link 96 provide a connection between the rock shaft 20 and the rock shaft 92 such that when the finger piece 25 is pulled forward to release the feed rollers at the under side of the platen it will also operate to rock the shaft 92 and swing the pressure roll 90 up from the Fig. 4 to the Fig. 5 position, thereby entirely freeing the main work sheet from its feeding devices both above and below the printing line.

It will be understood that the main work sheet or sheets may be inserted in and removed from the machine at pleasure without interfering with the tally strip which is superposed on the right-hand edge portion of the main work sheet when the latter is in position to receive the type impressions; also it will be plain that the main work sheet may be fed or advanced from line to line without interfering with the tally strip or disturbing the latter, so long as the tally strip is not within the printing field. When the tally strip is brought within the printing field and the types are operated the impressions through the usual ribbon will be made on the tally strip and transmitted from the carboned back of said strip on to the main work sheet so that the type impressions will be written in duplicate on the tally strip and the main work sheet. These impressions as is well understood are usually totals relative to items which are specified on the left of the main work sheet outside of the field of the tally strip. Thus the tally strip affords a check on the bills. By employing my invention it will be clear that the items on the tally strip will be in condensed form for the reason that the feeding of the tally strip is automatically effected when the bill sheet is line spaced after the totals have been printed in duplicate on the tally strip and bill sheet, but at other times when the bill sheet is being writ-

ten on at the left of the tally strip field, line spacing operations of the bill sheet will not affect the tally strip, which latter will remain quiescent. In other words, the tally strip is advanced or line spaced only after it has been itself written on; and line spacing movements of the main sheet at other times do not affect the tally strip.

It will be observed that by my present invention I provide the combination with a platen, of a paper feeding device movable relatively to the platen to feed paper, and means for automatically moving said device into operative position; that the automatic means operates during bodily endwise movements of the platen but independently of rotary movements of the platen; that after said device has been moved into operative position it will cooperate with the platen during rotary movements thereof to feed the paper, the paper in the present instance being a tally strip; that the feeding movement of the device is a movement relative to the rotary movement of the platen; that said device is also moved out of cooperative relationship with the platen during endwise movements of the platen; that the movement of the device into and out of operative position takes place at predetermined points in the carriage travel or platen travel in opposite directions; that said device in the present instance is a feed or pressure roller which is mounted on a swinging frame, said swinging frame also carrying a clamping element which cooperates with a part, in the present instance a paper guide, separate from and independent of the platen; that the feeding device or roller for the tally strip and the clamp therefor are thrown into and out of operative position in alternation; that the said devices are mounted on a swinging frame supported on the tally strip supporting bracket, said swinging frame being pressed in one direction by a spring and being adapted to be swung in opposition to said spring by devices comprising a cam bar on the machine frame and connections between said cam bar and said swinging frame comprising a lever fulcrumed on the tally strip supporting bracket, said lever carrying a roller that may engage with the cam and also cooperating with a crank arm rigid with said swinging frame; and that the platen is combined with line spacing devices and a feeding device (in the present instance a tally strip feed roller) which is mounted independently of the platen and cooperates therewith to feed paper when the platen is turned by the line spacing devices, said device being rendered effective and ineffective to feed the paper by automatic means, said automatic means in the present instance comprising the cam bar on the

frame and the lever carrying the cooperating roller.

Various changes may be made without departing from the spirit and scope of my invention.

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

1. In a typewriting machine, the combination of a platen, a feed roller rotatable with the platen to feed paper, means constantly tending to separate said roller from the platen, and automatically operating means for overcoming said first named means and for moving said roller into operative position.

2. In a typewriting machine, the combination of a platen, a paper feeding device, means constantly tending to maintain said device in operative position, and means operating automatically during bodily endwise movements of the platen to overcome said first named means and move said paper feeding device into cooperative relationship with the platen, the automatic movement of the paper feeding device being independent of rotary movements of the platen.

3. In a typewriting machine, the combination of a platen, a paper feeding device, and means operating automatically during bodily endwise movements of the platen and independently of turning movements thereof to move said paper feeding device into and out of cooperative relationship with the platen.

4. In a typewriting machine, the combination of a platen, a paper feeding device, means operating automatically during endwise movements of the platen, in one direction to move said device into cooperative relationship with the platen and to move said device out of cooperative relationship with the platen during endwise movements of the platen in the opposite direction.

5. In a typewriting machine, the combination of a platen, a roller cooperative directly therewith to feed paper when the platen is turned, and means for releasing said roller and for moving said roller back into operative position, said means acting automatically during endwise movements of the platen and independently of turning movements thereof.

6. In a typewriting machine, the combination of a rotary platen, a device cooperative therewith to feed paper when the platen is turned, and automatic means for moving said device bodily relatively to the platen during bodily endwise movements of the platen in printing direction, the automatic movements of said device taking place independently of rotary movements of the platen.

7. In a typewriting machine, the combination of a platen carrier, a platen thereon,

a swinging frame mounted on the platen carrier, a pressure roller pivoted on said frame, spring means constantly operative on said frame and means automatically operating to swing said frame against said spring means and move said roller bodily into engagement with the platen.

8. In a typewriting machine, the combination of a platen carrier, a platen thereon, a pressure roller, a swinging frame mounted on the platen carrier and on which said pressure roller is pivoted, means constantly tending to swing said frame in one direction, and means overcoming said first recited means and operating to swing said frame to move said roller bodily into engagement with the platen, said last recited means operating automatically during endwise movements of the platen.

9. In a typewriting machine, the combination of a traveling platen carriage, a platen, a paper feeding device, spring means normally maintaining said device out of cooperation with the platen, and means operating automatically during the travel of the carriage to move said paper feeding device into cooperative relationship with the platen, the automatic movement of said paper feeding device taking place independently of rotary movement of the platen.

10. In a typewriting machine, the combination of a traveling platen carriage, a platen, a paper feeding device, means tending constantly to render said device inoperative, and means operating automatically at a predetermined point in the carriage travel to overcome said means and to move said paper feeding device into cooperative relationship with the platen.

11. In a typewriting machine, the combination of a carriage, a platen, a paper feeding device, a paper clamping device, and means including a stationary part for automatically moving both said devices into and out of operative position.

12. In a typewriting machine, the combination of a carriage, a platen, a paper feeding device, a paper clamping device, and means including a stationary part for automatically moving said devices into and out of operative position, said means being so constructed and arranged so as to move said paper feeding device and said paper clamping device in alternation.

13. In a typewriting machine, the combination of a carriage, a platen, a swinging frame, a paper feeding device on said frame, a paper clamp on said frame, and means including a stationary part operating automatically to swing said frame to move said devices alternately into and out of operation.

14. In a typewriting machine, the combination of a traveling carriage, a platen, a swinging frame, a paper feeding device

on said frame, a paper clamp on said frame, and means operating to swing said frame to move said devices alternately into and out of operation, said means operating automatically during the travel of the carriage.

15. In a typewriting machine, the combination of a carriage, a platen, a swinging frame, a paper feeding device on said frame, a paper clamp on said frame, and means operating to swing said frame to move said devices alternately into and out of operation, said means operating automatically at predetermined points in the carriage travel.

16. In a typewriting machine, the combination of a carriage, a platen, a paper feeding device cooperative therewith to feed paper, a paper clamp cooperative with a part independent of the platen to hold paper from being advanced by the platen, and means including a part on the machine frame for automatically moving said device and said clamp into and out of operative position in alternation.

17. In a typewriting machine, the combination of a carriage, a platen, a clamping element cooperative with a part on said carriage independent of said platen, and means for automatically moving said clamping element into cooperative relationship with said part during the travel of the carriage.

18. In a typewriting machine, the combination of a carriage, a platen, a clamping element cooperative with a part on said carriage independent of said platen, and means for automatically moving said clamping element into cooperative relationship with said part, said means operating at a predetermined point in the travel of the carriage.

19. In a typewriting machine, the combination of a carriage, a platen, a swinging frame, a paper feeding device mounted on said frame, a paper clamp on said frame, a spring for swinging said frame in one direction, and a device on the machine frame for swinging said frame in the opposite direction.

20. In a typewriting machine, the combination of a carriage, a platen, a swinging frame, a paper feeding device mounted thereon, a paper clamp on said frame, a spring tending to swing said frame in one direction, and devices for swinging said frame in the opposite direction comprising a fixed cam, and connections between said cam and said frame comprising a lever.

21. In a typewriting machine, the combination of a carriage, a platen, a swinging frame, a paper feeding device on said frame, a paper clamp on said frame, a spring tending to swing said frame in one direction, and devices for swinging said frame in the opposite direction comprising a fixed cam, and connections between said cam and said frame comprising a lever, a crank arm fixed

to said frame and operative by said lever, and a roller on said lever cooperative with said cam.

22. In a typewriting machine, the combination of a carriage, a platen, line spacing devices, a device mounted independently of the platen and cooperative with the platen to feed paper when the platen is turned for line spacing, and means including a part mounted on the frame of the machine operating automatically to render said device effective and ineffective, the automatic operation of said means being independent of rotary movement of the platen.

23. In a typewriting machine, the combination of a carriage, a platen, line spacing devices, a device mounted independently of the platen but cooperative with the platen to feed paper when the platen is turned for line spacing, means tending constantly to maintain said device out of cooperation with the platen, and means operating at a predetermined point in the carriage travel to overcome said first named means and to move said device into cooperative relationship with the surface of the platen.

24. In a typewriting machine, the combination of a carriage, a platen, line spacing devices, a device mounted independently of the platen but cooperative therewith to feed paper when the platen is turned for line spacing, and means operating automatically at a predetermined point in the travel of the carriage in printing direction to move said device into cooperative relationship with the surface of the platen and for releasing said device during the travel of the platen in the opposite direction.

25. In a typewriting machine, the combination of a platen, line spacing devices, a device movable into position to cooperate with the platen to feed paper when the platen is turned for line spacing, and means operating automatically when the paper controlled by said device enters the printing field to move said device into position to cooperate with the platen to feed said paper.

26. In a typewriting machine, the combination of a platen, line spacing devices, a device cooperative with the platen to feed paper when the platen is turned for line spacing, and means operating automatically when the paper controlled by said device enters the printing field to move said device into position to cooperate with the platen to feed said paper, said device being moved away from the platen to released or inoperative position during the travel of the platen in the opposite direction.

27. In a typewriting machine and in a tally strip mechanism, the combination of a platen, a device at one end of the platen to feed a tally strip, and means for moving said device into and out of operative rela-

tionship with the tally strip, said means operating automatically during endwise movements of the platen.

28. In a typewriting machine and in tally strip mechanism, the combination of a carriage, a platen, means for feeding a main work sheet, a device for advancing a tally strip, and means including a part mounted on the frame of the machine for automatically moving said device into and out of cooperative relationship with the tally strip independently of said feeding means.

29. In a typewriting machine and in tally strip mechanism, the combination of a platen, means cooperative with the platen for feeding a main work sheet, a device cooperative with the platen for feeding a tally strip arranged in superposed relationship with the main work sheet, and means operating automatically to move said device independently of said paper feeding device into operative engagement with the platen and also into released or inoperative position.

30. In a typewriting machine and in tally strip mechanism, the combination of a carriage, a unitary platen, paper feeding means cooperative therewith to feed a main work sheet, a tally strip feed roller, a tally strip clamping element, and means including a part mounted on the frame of the machine operating automatically to move said feed roller and said clamp independently of said paper feeding means into and out of operative position.

31. In a typewriting machine, the combination of a platen carrier, a platen, a tally strip supporting frame on said platen carrier, a tally strip holder on said frame from which holder the tally strip is led around one end of the platen, a clamping device for the tally strip, and means operating automatically to move said feeding device and said clamping device into and out of operative position in alternation.

32. In a typewriting machine, the combination of a platen carrier, a platen, a tally strip supporting frame provided with a tally strip delivery holder and tally strip receiving holder, a swinging frame on said supporting frame, said swinging frame carrying a tally strip feed roller and a tally strip clamp, a spring tending constantly to turn said tally strip receiving holder, and means including a cam on the machine frame for operating during traveling movements of the carriage to move said tally strip feed roller and said tally strip clamp into and out of operative position alternately.

33. In a typewriting machine and in tally strip mechanism, the combination of a platen carriage, a platen, a tally strip supporting frame on said carriage, a paper table, a paper apron, and a guide for separating the

tally strip and the main work sheet, said guide being secured to the supporting frame and cooperating with said paper table and said paper apron to provide a passage for the tally strip, part of said passage being closed at one side by the supporting frame.

34. In a typewriting machine and in tally strip mechanism, the combination of a platen, a tally strip guide, and a feed roller for the tally strip cooperative with the platen through an opening in said guide, the tally strip passing between the guide

and the feed roller and said guide being yieldingly mounted to move toward the platen when the feed roller is brought into cooperative engagement with the tally strip.

Signed at Syracuse, in the county of Onondaga and State of New York this 20th day of July, A. D. 1911.

HERBERT H. STEELE.

Witnesses:

WILLARD C. HAY,
BERNICE E. FOX.