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H. H. STEELE.
TYPE WRITING MACHINE.
APPLICATION FILED MAR. 12, 1910.

Patented Sept. 13, 1910

3 SHEETS-SHEET 1.

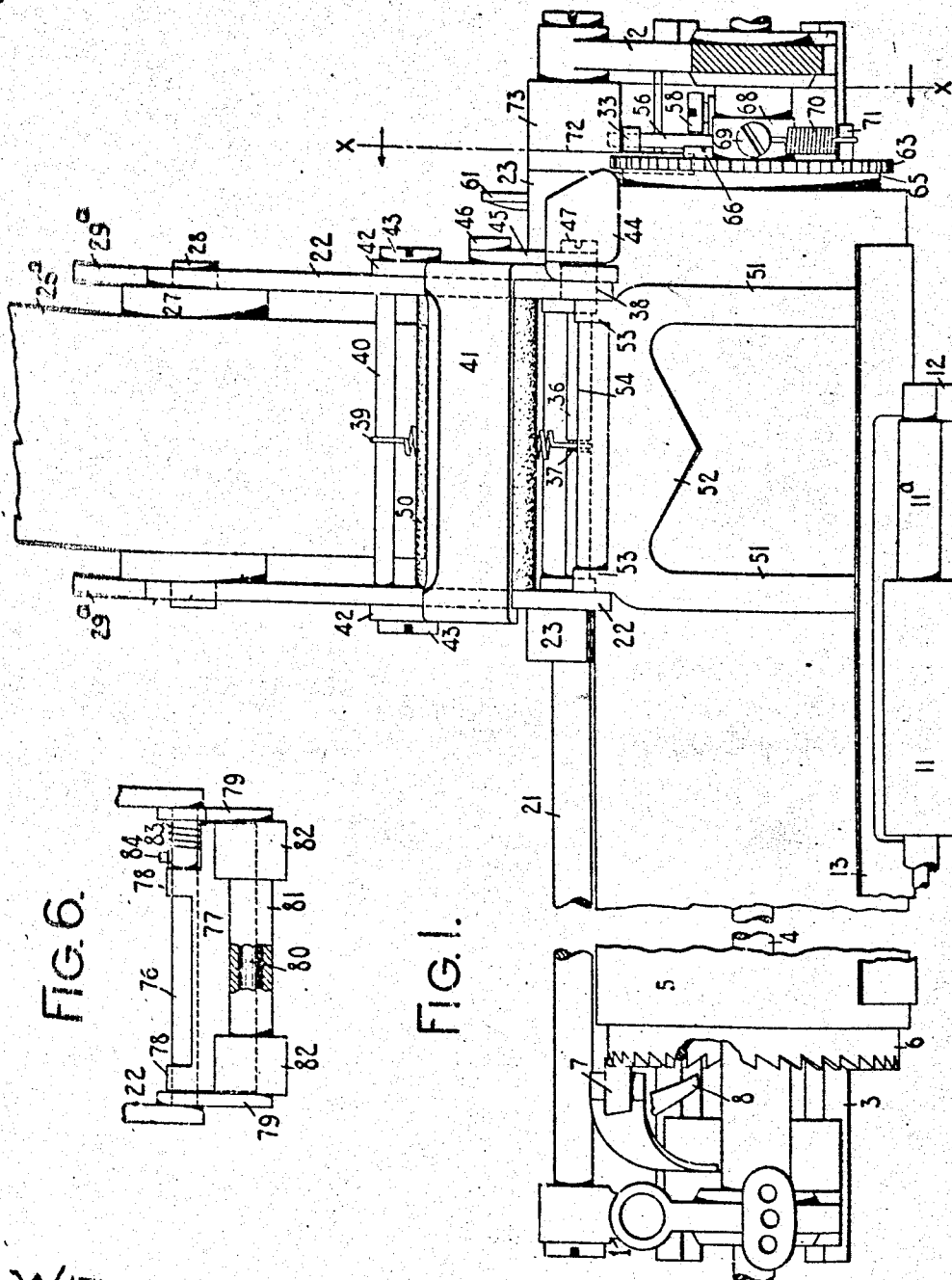


FIG. 6.

FIG. 1.

WITNESSES:

E. H. Mills.
M. W. Pool

INVENTOR.

Herbert H. Steele
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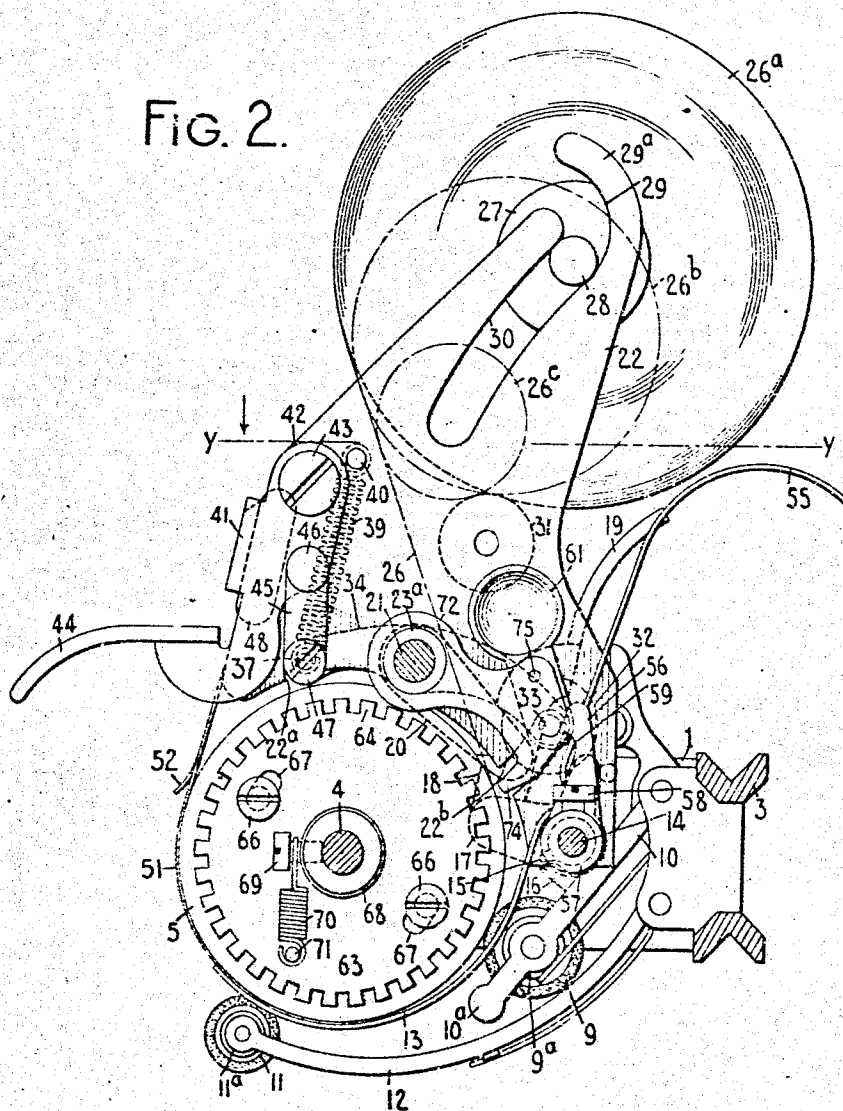
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3 SHEETS—SHEET 2.

FIG. 2.



WITNESSES:

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969,915.

Patented Sept. 13, 1910.

3 SHEETS—SHEET 3.

FIG. 3.

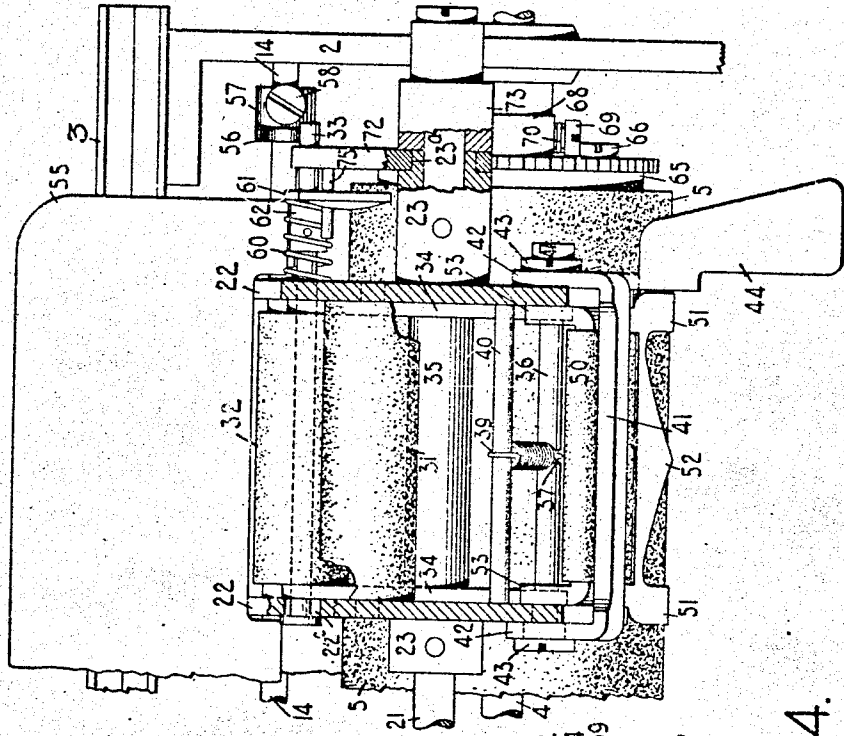
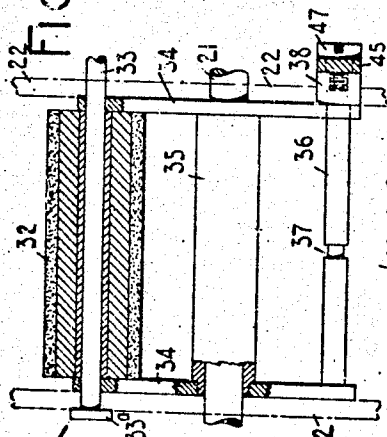


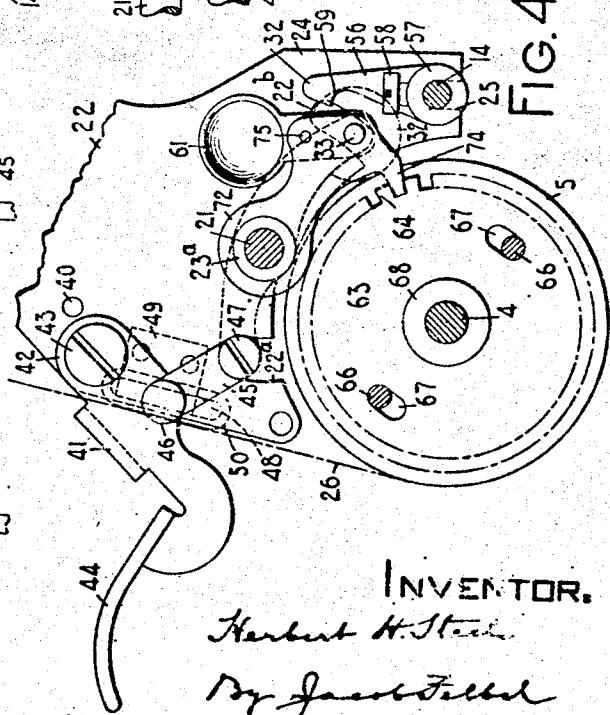
FIG. 5.



WITNESSES:

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FIG. 4.



INVENTOR.

Herbert H. Steele

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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.

969,915.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed March 12, 1910. Serial No. 548,994.

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 especially to paper feeding mechanism for typewriting machines and its general object is to provide improved devices of the class stated.

More specifically my invention is concerned with tally strip mechanism of that kind wherein the tally strip is adapted to be fed intermittently around the platen by tally feeding devices which cooperate with the platen for the purpose. In this kind of tally strip mechanism it is highly desirable to condense the totals on the tally strip and to that end the tally strip should be fed only at intervals following the writing of the totals on the several bills and the reproduction of such totals on the tally strip, said tally strip remaining unaffected during the other line space advances of the bills.

It is the chief purpose of my invention to insure that the tally strips are to be fed intermittently in the way stated by providing safeguards against carelessness or inattention on the part of the operator.

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

In carrying out my invention in the present instance, the tally strip and its controlling devices are mounted on a frame which is detachably supported on the platen carrier, said controlling devices comprising a tally feed roll which is adapted to cooperate with the platen but which is normally inoperative. As the bill is written and advanced from line to line the tally strip is not affected by the paper feeding devices for the bill. Preferably the tally strip is positively held from advance movement by a clamp. When said bill is completed and after the total thereon has been written, should the operator, having forgotten to write the total on the tally strip and to line space the latter, attempt to operate the usual

releasing devices to release the completed bill sheet, he will be prevented from doing so by novel locking devices provided for the purpose. Before the bill sheet can be released it is necessary to throw the tally feed roll into operation and concurrently throw off the clamp. Suppose this last named operation has been performed and the total written on the tally strip, and suppose further that the completed bill has been released and withdrawn, if the operator should next enter a new bill sheet, adjust the same, throw on the paper feeding devices, write a line on the bill sheet, and then attempt to line space the same, without having previously thrown off the tally feed roll and thrown the clamp into operation, the platen would be locked against rotation by novel locking devices provided for the purpose. Prior to releasing the platen so that it may be turned for line spacing, it is necessary to throw off the tally feed roll. Means are further provided for enabling the usual releasing devices to be operated when so desired for ordinary adjustments of bill or work sheets without interference from my improvements.

It will be observed that I safeguard the proper operation of the tally feeding mechanism by providing a set of checks, or locks, one of these checks insuring that the normally inoperative tally feed roll shall be rendered operative at the proper time, said check comprising locking mechanism which prevents a release of the regular bill sheet; and the other of these checks being adapted to insure the throwing off of the tally feed roll after it has been used, this other check comprising locking mechanism which cooperates with the platen to prevent it from being turned for line spacing prior to the release of said feed roll.

My invention will be described in detail in connection with the accompanying drawings which illustrate one form of said invention applied to a Monarch front-strike typewriting machine.

In said drawings, Figure 1 is a fragmentary front elevation of the platen and platen carrier of a Monarch typewriting machine embodying my invention. Fig. 2 is a vertical sectional view taken on planes represented by the dotted line $x-x$ in Fig. 1 and looking in the direction of the arrows

at said line. Fig. 3 is a fragmentary horizontal sectional view taken on a plane represented by the dotted line *y-y* in Fig. 2 and looking in the direction of the arrows at said line. Fig. 4 is a fragmentary view corresponding to Fig. 2 but omitting some of the parts shown in Fig. 2 and showing other parts in different relationships. Fig. 5 is a plan view partly in section showing the tally strip feed roll, its supporting frame and associate parts. Fig. 6 is a fragmentary front view of a modification.

As appears from Figs. 1, 2 and 3 the platen frame or carrier of the typewriting machine, which frame is shown detached, comprises end bars 1 and 2 and a connecting rear or slide bar 3 which is oppositely grooved to co-act with ball bearings on the frame of the machine (not shown). The end bars provide bearings for an axle 4 which carries a rotary platen 5 the left end whereof is operatively connected with a line pacing ratchet wheel 6 which is co-active with a spring mounted roller detent 7 and with line spacing devices comprising a hand operated pawl 8 which is or may be of the usual Monarch construction. The paper feeding mechanism comprises a main feed roller 9 mounted on a pair of spring-pressed pivoted arms 10, and a secondary feed roller 11 mounted on a pair of spring-pressed pivoted arms 12. A paper apron or deflector 13 is formed with openings through which the feed rollers may co-act with the platen. Said paper apron is loosely mounted on a rock shaft 14 which is supported on the end bars 1 and 2 and which carries lugs 15 co-active with pins 16 on the arms 10 to release the feed rollers when the rock shaft 14 is turned by hand, the releasing of the feed roller 11 being effected by extensions 10^a of the arms 10, which extensions co-act with the arms 12 to swing the same downward. The rock shaft 14 is adapted to be rocked by manual devices comprising a crank arm 17 fast on the rock shaft, a member or toggle element 18 pivotally connected with said crank arm and terminating in a finger piece or key 19 and an arm 20 having a fixed pivot on the end bar 1 and pivotally connected with the arm 18. When the key 19 is pulled forward the rock shaft is turned to release the paper feed rollers, and by reason of the straightening of the toggle comprising the parts 18 and 20 said feed rollers are held locked in released position until the key 19 is pushed back.

The supporting frame for the tally feed mechanism is mounted on the usual paper finger rod 21 of the machine, said supporting frame comprising upright end or side plates 22 each provided with a hub 23 which surrounds and is pinned to the rod 21. To promote the stability of the supporting frame, each side plate is provided with a

rearward extension 24 slotted at 25 to fit over the rock shaft 14. The plates 22 are set spaced apart near the right-hand end of the platen carrier so that the tally strip may coöperate with the platen near its right-hand end, the right-hand end portions of the feed rollers 9 and 11 being reduced in diameter as indicated at 9^a and 11^a so as not to engage the tally strip when it passes around the platen. The tally strip or tape is designated as 26 and is wound in a roll on a wooden core piece 27 which is loosely mounted on a rod or shaft 28, the ends whereof project beyond the ends of the core and are received in slots formed at the upper end of the plates 22. Each of said slots comprises a short rearwardly curved mouth 29 connecting at its lower ends with a forwardly and downwardly curved body portion 30. The rear wall 29^a of the mouth is shaped so that if the machine is tipped backward the wall 29^a will cradle the rod 28 and prevent the tally supply roll from falling out. A supporting roll 31, mounted rotatably between the plates 22 below the slot portions 30, supports the tally supply roll and coöperates with said slot portions to guide and control the same. The slot portions 30 are formed to guide the devices or ends of the rod 28 in such a way that the unwound portion of the tally strip 26 between the supply roll and the platen shall always be in the same plane no matter what the diameter of the supply roll may be. This will be understood from Fig. 2 where in the supply roll as initially provided is designated as 26^a, 26^b showing in dotted lines the position of the supply roll after it has been greatly reduced in diameter and 26^c showing the position when substantially exhausted. The purpose of this construction is to enable the tally strip 26 always to engage tangentially with the platen at the same point, this point being that at which the tally feed roll is brought into coöperation with the platen at the rear upper side thereof. The result is that during movements of the tally feed roll into and out of operation there will be no tendency to disturb the relation of that portion of the tally strip which is engaged with the platen as there would be if the point varied at which the tally strip first contacts with the platen when led from the supply roll.

The tally strip devices comprise a rubber-covered feed roll 32, said feed roll being mounted on a rod 33 which is slidably supported on a rocking frame comprising parallel arms 34 connected by a hub or sleeve 35 which loosely surrounds and bears on the paper finger rod 21 between the end plates 22. The arms 34 extend forward from the hub 35 and are connected by a cross rod 36 which has a groove 37 midway of its length and an enlarged right-hand end 38 outside

the right-hand arm 34, the enlargement 38 projecting outward through a slot 22^a in the right-hand end plate 22. A coiled spring 39 has its lower end hooked in the groove 37, the upper end of said spring hooking over a cross rod 40 connecting the end plates 22. The spring 39 tends constantly to lift the forward end of the rocking frame and to maintain the tally feed roll 32 carried at the rear of said frame in operative engagement with the platen.

The rocking frame and the tally feed roll are adapted to be manually controlled by devices which preferably include the active member of a two-part clamp which is adapted to hold the tally strip from being advanced when the tally feed roll is inoperative. Said devices include a U-shaped frame comprising a cross bar or clamping bar 41 extending across the supporting frame at the front thereof and provided with rearwardly bent ears 42 which loosely embrace the supporting frame and are pivoted on shouldered screws 43 secured on the outer faces of the side plates 22 of said frame. The right-hand ear 42 is formed with an extension which is shaped and bent to provide a forwardly extending finger piece or key 44 for actuating the pivoted U-shaped frame, which frame is connected by a link 45 with the rocking frame carrying the feed roll 32, the upper end of said link being pivoted on a shouldered rivet 46 on the right-hand ear 42 and the lower end of said link being pivoted on a shouldered screw 47 which is secured to the enlargement 38. The movable clamping bar 41 is adapted to cooperate with a stationary clamping bar 48 arranged between the plates 22 and having ears 49 riveted to the inner faces of said plates. The bar 48 is preferably covered with a rubber sheath 50. The operative position of the two-part clamp is illustrated in Figs. 1 and 2 wherein the bars 41 and 48 are shown frictionally engaged. The upper edge of the bar 41 may be beveled, as shown, to facilitate cutting the tally strip into lengths.

The loose portion of the tally strip is led off from the front of the tally roll and down between the arms 34 passing between the platen and the tally feed roll 32; thence downward around the platen between the same and the apron 13 and the reduced portions 9^a and 11^a of the feed rollers 9 and 11; and thence upward at the front of the platen between the two parts of the clamp. From the lower front side of the platen to the passageway between the clamped parts, the tally strip may be guided by a frame which, as shown in Fig. 1, comprises two guide fingers 51 connected at the top by a cross piece or deflector 52, the upper edge of said frame being provided with ears 53 which are coiled around a cross rod 54 connecting

the lower portions of the plates 22. The tally strip passes upward between the inner edges of the guide fingers 51, thus being properly positioned lengthwise of the platen and thence under the lower forwardly curved edge of the deflector 52 behind the same but forward of the rod 54 to the clamp. Said clamp is maintained in operative position by the link 45 and the right-hand ear 42 which act as toggle elements and hold the three pivotal points 43, 46 and 47 substantially in alinement. When the toggle is straight the forward end of the rocking frame is depressed and the tally feed roll is held away from the platen in inoperative position. It will be noted that the spring 39 is so arranged that its pull is substantially exerted to maintain the toggle straight when the parts are set as in Fig. 2. When the finger piece 44 is pulled up, the toggle is broken and the spring 39 tends to move the parts to the position shown in Fig. 4. From this figure it will be noted that the tally feed roll 32 is contactive with the platen while the two parts of the clamp are separated, so that the tally strip may pass upward freely between them. Normally, however, or during the writing of a bill sheet or invoice, the tally feed roll will be inoperative and the two-part clamp operative as shown in Figs. 1 and 2.

The bill sheet is entered in the machine over the paper table 55 at the left of the tally strip supporting frame, the side portions whereof may extend through slits in said table. From the latter the bill sheet passes downward and around the platen between the same and the feed rollers 9 and 11 and the other usual paper controlling devices, said bill sheet being fed forward by these paper feeding and controlling devices when the line spacing mechanism is actuated. It will be clear that during the writing of the bill and its step-by-step advances from line to line, the tally strip will not be affected when the platen is turned since the tally feed roll is inoperative; but that on the contrary said tally strip will be positively held from accidental advancement by the co-action of the clamping bars 41 and 48. It will also be apparent that the two-part clamp may be dispensed with although I consider it preferable to employ the same.

After a bill has been completed, should the operator attempt to release said bill without having previously entered the total on the tally strip and actuated the key 44 to throw on the tally feed roll and throw off the clamp, such release of the bill will be prevented by devices which comprise a locking finger 56, said finger having a hub 57 which is secured by a screw 58 to the rock shaft 14 inside the end bar 2 (Fig. 3). The locking finger is undercut as indicated at 59 and its upper end at the forward side is

adapted to cooperate with an end portion of the rod 33 which carries the tally feed roll 31, said rod being extended rightward through a slot 22^a in the right-hand plate 22 past the finger 56. From Fig. 2 it will be seen that when the tally feed roll is inoperative the rod 33 will be in the path of the finger 51 and as said finger is fixed to the rock shaft 14 it will co-act with the rod to prevent the rock shaft from being turned to throw off or release the feed rollers 9 and 11, thus apprising the operator that the key 44 should be actuated to throw on the feed roll and to throw off the clamp. When the clamp is thrown off the rod 33 will swing downward out of the path of the co-acting part of the finger 56 so that, as will clearly be apparent from Fig. 4, the rock shaft 14 may be operated to release the feed rollers 9 and 11 and permit the removal of the completed bill sheet. The undercut 59 permits the finger 56 to complete its forward swing without contacting with the rod 33.

Obviously, it may be desirable at times in the course of writing, to release the feed rollers 9 and 11 in order to adjust the work sheet; and in order to provide that the work sheet may be released for such purpose I provide devices for temporarily rendering ineffective the interlocking members 51 and 33. Referring to said devices it will be recalled that the rod 33 is slidably mounted in the rocking frame. The left-hand end of said rod is formed with a head 33^a. The rod 33 may extend leftward through the slot 22^a in the left-hand end plate 22 to permit the head 33^a to engage with the outer face of said end plate or said slot 22^a may be of such size that the head will pass entirely through it and engage with the outer face of the left-hand arm 34. The rod 33 is pressed constantly rightward by a spring 60 which is coiled around the extended portion of the rod 33 outside the right-hand end plate 22 and may be confined between said end plate and an upright finger piece or key 61 having a hub 62 which is pinned to the rod 33. The finger piece 61 extends upward so that it is readily accessible and it will be understood that when said finger piece is pressed inward toward the left-hand, the spring 60 will be compressed and the rod 33 slipped leftward until its end is out of the path of the finger 56. Accordingly, while maintaining the finger piece 61 in abnormal position, the key 19 may be pulled forward to release the paper feed mechanism. During said releasing operation the finger 56 will swing forward into the path of the rod 33 so that when the released parts are held locked in released position, the finger piece 61 may be released, permitting the end of the rod 33 to be forced against the left-hand face of the finger 56, the construction being such that when the release key 19 is thereafter swung rearward,

the rod 33 will be pressed rightward past the inner face of the finger 56 and will snap off the finger 56 and again extend into the path of said finger.

The check whereby the operator is notified to throw off the tally feed roll 32 and throw on the clamp so that the next bill sheet may be fed forward independently of the tally strip, comprises a wheel 63 provided with peripheral cog-like teeth 64, which wheel is loosely secured against the outer face of the right-hand platen head 65 by headed screws 66. These screws pass through slots 67 in said wheel 63 so that said wheel and plate may have a limited relative rotary movement. The hub 68 of the platen head 65 passes outward through the wheel 63 which loosely bears on said hub and the screw 69 which secures said hub 68 to the axle 4 is connected by a coiled spring 70 with a lateral pin 71 on the wheel 63. As will be understood from Fig. 2 the construction is such that the spring 70 tends constantly to turn the wheel 63 forward or in the direction of line spacing movement and maintain the slots 67 engaged at one end with the shanks of their associate screws 66. With the parts normally related as shown in Fig. 2 it will be obvious that if the wheel 63 were held from turning it would, nevertheless, be possible by reason of the pin and slot connections 66, 67 to turn the platen a short distance before it would be arrested by the contact of the screws 66 with the opposite end of the slots 67, the extent of this movement depending on the length of the slots 67. In the present instance said movement is equal to a unit of line space distance.

Adapted to cooperate with the teeth 64 is a locking member, detent, or pawl which comprises an arm 72 loosely pivoted as appears from Fig. 3 on the reduced portion 23^a of the right-hand hub 23. A spacing washer 73 arranged on the rod 21 prevents accidental displacement of the arm 72 from its bearing 23^a. The arm 72 extends rearward and downward and terminates in a downwardly and forwardly extending locking tooth 74 which is adapted to fit into the spaces between the teeth 64 in the wheel 63 so as to lock said wheel against movement. Above the tooth 74 the arm 72 is formed with a hole through which the rod 33 passes. Said rod, it will be seen, connects the arm 72 with the rocking frame so that said arm will participate in the rocking movements of said frame. When the frame is in the Fig. 2 position the pawl tooth 74 is inoperative but when the frame is rocked to throw off the clamp and throw on the feed roller 32, then the locking pawl is brought into operation as shown in Fig. 4 and will hold the wheel 63 from turning. Accordingly, it will be seen that though the platen

may be turned a single line space to advance the tally strip after the feed roller 32 is rendered operative, yet at the end of said turning movement of the platen it will be
 5 locked against further advance so that the operator, should he forget to throw off the feed roller 32 at the proper time, will be apprised of his neglect by the locking of the platen against line spacing. When the key
 10 44 is pressed down, the rocking frame will be locked and the locking tooth withdrawn from operation, permitting the spring 70 to turn the wheel 63 backward and restore it to normal relationship with the platen. In
 15 order to prevent the rod 33 from rotating and thereby causing the key 61 to drop down from its substantially upright position, I may provide an inwardly extending pin 75 on the arm 72, said pin passing through a
 20 hole in the key 61 and being of sufficient length to prevent disconnection when the key 61 is pressed inward to withdraw the rod 33 from cooperation with the finger 56. It may also be said that the rod 33 is long
 25 enough to prevent it from being withdrawn from the hole in the arm 72 when the key 61 is pressed in.

A few additional remarks regarding the operation of my improvements may be made.
 30 The typewriting machine may be assumed to be provided with a billing attachment such as a chain billing attachment and the platen and the usual record sheet may be rotated backward through the limit afforded
 35 by the billing attachment in order that a new bill sheet may be inserted; so that ordinarily the only operation requiring a manipulation of the release key 19 will be when the bill is finished and is to be removed at
 40 the front of the machine without disturbing the record sheet or rotating the platen. After the platen and record sheet have been turned rearward to the predetermined position the next bill sheet or invoice is inserted
 45 and the platen turned to the printing position. The chain billing attachment may now be thrown off and the body of the bill printed. During the filling in of the bill the tally roll mechanism is positioned as
 50 shown in Figs. 1 and 2, the tally strip being clamped against advance by the two-part clamp and the tally feed roller being raised out of contact with the platen. Next the operator is supposed to press the key 44
 55 upward to release the tally strip from the clamp and throw the tally feed roll into operation. Thereafter the operator line spaces the platen for the total and this movement also line spaces the tally strip so that the
 60 total or sum of the bill or invoice may be printed first on the bill and then repeated on the tally strip. Next the operator pulls the release key 19 forward, releasing the written bill which is drawn out from the
 65 front. The release key 19 is then restored to

normal position and the key 44 is pushed down to release the feed roller 32 and re-clamp the tally strip. The platen is next advanced two spaces for the separating gap between successive bills on the record sheet,
 70 the billing attachment being then thrown into engagement to limit the backward rotation of the platen as already explained. After the bill is completed, should the operator forget to throw in the tally feed but should
 75 print the total or footing of the bill, the tally mechanism will remain as shown in Fig. 2; and when the operator tries to remove the written bill in the usual way by operating the release key 19, movement of
 80 said release key will be checked by the co-acting devices 56 and 33. This will indicate that the tally record has been omitted and must be printed before the completed bill can be removed in the regular manner. On
 85 the other hand, suppose that the operator has printed the bill footing, duplicated it on the tally strip and removed the completed bill, but that by mistake the tally mechanism is left in the Fig. 4 position. The operator
 90 next tries to line space the platen for the separating gap between the two entries on the record sheet but this line spacing movement is checked by the cooperating screws and slots 66 and 67 and the interlock between
 95 the tooth 74 and the teeth 64, thus making it plain that the tally devices must first be restored to the Fig. 2 position before the platen can be turned.

Various changes may be made without
 100 departing from the scope of my present invention. An example of such changes is shown in Fig. 6 which shows a modification in the controlling mechanism for the tally
 105 strip wherein the member comprising the fingers 51 is dispensed with, being replaced by a pair of pressure rolls and a deflector. The deflector is loosely supported on a rod
 110 76 which replaces the rod 54 of the prior construction, being slightly less in diameter than said rod 54. Said deflector comprises a guiding portion proper 77 which is provided with ears 78 coiled around the rod 76
 115 which serves as a pivot rod for the deflector, the lower edge of the guide 77 resting loosely against the platen. Pivoted to the rod 76 outside the ends of the guide 77 are depending
 120 arms 79 whose lower ends are connected by a cross rod 80 carrying a rotary sleeve 81 provided at its ends with pressure rolls 82. A light spring 83 is coiled around the stationary rod 76 near one of its ends. One
 125 end of said spring is hooked over a pin 84 on the rod 76 and the other end is secured to the adjacent arm 79. The spring acting through said arm communicates a light pressure to the rolls 82. I have found in practice that the employment of these rolls gives
 130 desirable results in advancing the tally strip, conducing to a smooth and even advance of

said strip and assisting to maintain the same close to the platen surface where said tally strip curves around said surface.

Of course, various other forms of guiding and controlling devices for the tally strip, as well as the bill sheet, may be employed and changes in other parts of the structure herein shown may be made and parts of the mechanism may be employed without other parts, all within 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, releasable paper feeding devices, tally strip mechanism, and means connected therewith for preventing said paper feeding devices from being released.

2. In a typewriting machine, the combination of a platen, paper feeding devices, a release key connected therewith, tally strip mechanism, and means connected with said tally strip mechanism for locking and unlocking said release key.

3. In a typewriting machine, the combination of a platen, releasable paper feeding devices normally operative, releasable tally feeding devices normally inoperative, and means connected with said tally feeding devices and normally preventing said paper feeding devices from being released.

4. In a typewriting machine, the combination of a platen, a feed roller normally co-operative therewith, a separate tally feed roller co-operative with the platen but normally inoperative, a release key for said normally co-operative feed roller, and means connected with said tally feed roller for normally locking said release key.

5. In a typewriting machine, the combination of a platen, a feed roll normally engaged therewith, a separate tally feed roll which is co-operative with said platen but is normally disengaged therefrom, a normally operative lock preventing the release of said normally engaged feed roll, and means for throwing said tally feed roll into engagement with the platen and for unlocking said lock.

6. In a typewriting machine, the combination of a platen, releasable paper feeding devices co-operative therewith, tally feed devices, means including a key for moving said devices into and out of cooperation with said platen, and a lock for said releasable paper feeding devices, said lock being controlled by said key.

7. In a typewriting machine, the combination of a platen, releasable paper feeding devices co-operative therewith, a tally feed roller, a movable frame carrying the same, a key connected to said frame for moving it, a lock for said releasable paper feeding devices, and connections between said lock and said key.

8. In a typewriting machine, the combination of a platen, releasable paper feeding devices co-operative therewith, a tally feed roller, a key-controlled rocking frame on which said feed roller is mounted, and a two-part lock for said releasable paper feeding devices, one part of said lock being movable with said frame.

9. In a typewriting machine, the combination of a platen, paper feeding devices, releasing means therefor including a rock shaft, means normally locking said rock shaft against rotation, tally strip feeding devices, and key actuated means for controlling the relationship between said tally strip feeding devices and said platen, said last named means being connected to said locking means.

10. In a typewriting machine, the combination of a platen, paper feeding devices, releasing means therefor including a rock shaft, a part separate from said rock shaft and normally preventing the turning thereof to release the paper feeding devices, tally strip feeding devices, and key actuated means for controlling the relationship between the tally strip feeding devices and said platen, said last named means being operative to move said part to inoperative position.

11. In a typewriting machine, the combination of a platen, paper feeding devices, releasing means therefor including a rock shaft, a part separate from said rock shaft and normally preventing the turning thereof to release the paper feeding devices, a tally feed roll normally inoperative, and key actuated means for moving said feed roll to operative position and for concurrently moving said part to inoperative position.

12. In a typewriting machine, the combination of a platen, paper feeding devices, releasing means therefor including a rock shaft, a finger on said rock shaft, a key controlled rocking frame, a tally feed roll on said rocking frame, and a part on said rocking frame co-operative with said finger, said part being normally operative and said feed roll being normally inoperative.

13. In a typewriting machine, the combination of a platen, releasable paper feeding devices normally operative, locking means normally preventing the release of said devices, tally strip mechanism comprising a normally inoperative feed roll and a normally operative clamp, and means connected with said mechanism for concurrently throwing on said feed roll, throwing off said clamp and rendering said locking means ineffective.

14. In a typewriting machine, the combination of a platen, releasable paper feeding devices, normally effective locking means therefor, a key controlled movable frame, a

tally feed roll thereon, a clamp part also carried by said frame, a relatively stationary clamp part, and connections between said frame and said locking means for rendering the same ineffective when said frame is moved to break the clamp and thrown on the feed roll.

15. In a typewriting machine, the combination of a platen, releasable paper feeding devices, a lock for said devices, tally strip mechanism, connections between said tally strip mechanism and said lock, and means independent of said tally strip mechanism for rendering said lock ineffective.

16. In a typewriting machine, the combination of a platen, releasable paper feeding devices, a lock normally preventing the release of said devices, tally strip feeding mechanism, means for moving the same into and out of operation and for unlocking and locking said lock, and separate means for unlocking said lock.

17. In a typewriting machine, the combination of a platen, paper feeding devices, releasing means therefor including a rock shaft, a locking finger on said rock shaft, a key controlled frame carrying a tally feed roll movable into and out of engagement with said platen, a locking rod carried by said frame and cooperative with said locking finger, and a key for moving said rod to ineffective position independently of said frame.

18. In a typewriting machine, the combination of a rotary platen, paper feeding means, and arresting means connected with said paper feeding means for preventing the rotation of said platen, said arresting means, after having been set in operative position, permitting the platen to be rotated a predetermined extent prior to the operation of said arresting means.

19. In a typewriting machine, the combination of a rotary platen, paper feeding means, and arresting means connected with said paper feeding means for limiting the extent of rotation of said platen, said arresting means comprising two elements, one of said elements having a lost motion connection with said platen.

20. In a typewriting machine, the combination of a rotary platen, paper feeding devices normally ineffective but adapted to cooperate therewith, and means for throwing said paper feeding means into operation and for preventing rotation of said platen, after said paper feeding means has cooperated with said platen to advance the paper a limited extent.

21. In a typewriting machine, the combination of a rotary platen, paper feeding means controlled by a key, a platen lock, and a connection between said lock and said paper feeding means, said lock being set to operate after the actuation and subsequent release of said key.

22. In a typewriting machine, the combination of a platen, a feed roll engageable therewith but normally inoperative, a normally inoperative platen lock, and key-actuated means for throwing said feed roll and said platen lock into operation.

23. In a typewriting machine, the combination of a platen, paper feeding means, a platen lock, a connection between said lock and said paper feeding means, and lost motion devices between said lock, and said platen.

24. In a typewriting machine, the combination of a platen, paper feeding means engageable therewith but normally inoperative, a normally inoperative platen lock, key actuated means for throwing said paper feeding mechanism into operation and for setting said platen lock for operation, and a lost motion connection between said platen and said lock when said lock is so set.

25. In a typewriting machine, the combination of a platen, normally ineffective paper feeding means, a normally ineffective platen lock comprising two parts, one of which has a lost motion connection with the platen, and key-actuated means for rendering said paper feeding means operative and for connecting the two parts of said platen lock.

26. In a typewriting machine, the combination of a platen carrier, a platen, paper feeding means, key controlled means for throwing said paper feeding means into and out of operation, a locking part connected to turn with said platen and a cooperative locking part on said platen carrier, said locking part being movable into and out of cooperation by said key controlled means.

27. In a typewriting machine, the combination of a platen, paper feeding means, key controlled means for throwing the same into and out of operation, a locking part connected with said platen, and a cooperative detent connected with said key controlled means.

28. In a typewriting machine, the combination of a platen, paper feeding means, key controlled means for throwing the same into and out of operation, a toothed wheel connected with said platen, and a cooperative pawl connected with said key controlled means and movable into operative position concurrently with the throwing in of said paper feeding means.

29. In a typewriting machine, the combination of a platen, paper feeding means, key controlled means for throwing the same into and out of operation, a toothed wheel having a lost motion connection with said platen, and a cooperative locking pawl controlled by said key controlled means.

30. In a typewriting machine, the combination of a rotary platen, a feed roller, a key for throwing the same into and out of

operation, a locking wheel having a pin and slot connection with said platen, a locking pawl cooperative with said wheel, and connections between said key and said pawl.

31. In a typewriting machine, the combination of a platen, a platen lock, releasable paper feeding devices, a lock for preventing the release of said devices, and connections between the platen lock and the lock for the paper feeding devices.

32. In a typewriting machine, the combination of a platen, a platen lock, releasable paper feeding devices, a lock for preventing the release of said devices, and connections between the platen lock and the lock for the paper feeding devices, said connections including a key operative to render the two locks alternately operative.

33. In a typewriting machine, the combination of a platen, a platen lock, releasable paper feeding devices, a lock for preventing the release of said devices, tally strip mechanism, and connections between said tally strip mechanism and the two locks.

34. In a typewriting machine, the combination of a platen, a platen lock, releasable paper feeding devices, a lock for preventing the release of said devices, separate paper feeding devices, and connections between said separate paper feeding devices and the two locks.

35. In a typewriting machine, the combination of a platen, a platen lock, releasable paper feeding devices, a lock for preventing the release of said devices, a tally feed roll, key controlled means for throwing the same into and out of operation, and connections between said key controlled means and the two locks.

36. In a typewriting machine, the combination of a platen, a platen lock, releasable paper feeding devices, a lock for preventing the release of said devices, a tally feed roll, key controlled means for throwing the same into and out of operation, and connections between said key controlled means and the two locks for rendering said two locks alternately operative.

37. In a typewriting machine, the combination of a platen, a platen lock, releasable paper feeding devices, a lock for preventing the release of said devices, a tally feed roll, key controlled means for throwing the same into and out of operation, and connections between said key controlled means and the two locks for rendering said two locks alternately operative, said platen lock and said feed roll being in operation at the same time while the lock for the paper feeding devices is inoperative.

38. In a typewriting machine, the combination of a platen, a support for a paper supply roll, and guiding means for said supply roll cooperating with said support to maintain always in the same plane the un-

wound portion of the paper between the platen and the supply roll, whatever variation may take place in the diameter of said supply roll.

39. In a typewriting machine, the combination of a platen, a support for a paper supply roll, and guiding slots cooperative with devices at the ends of said supply roll, said slots cooperating with said support to maintain always in the same plane the unwound portion of the paper between the platen and the supply roll whatever variation may take place in the diameter of said supply roll.

40. In a typewriting machine, the combination of a rotary platen, a releasable feed roller cooperating with said platen, a support on which a supply roll of paper is adapted to rest, and curved guide slots cooperative with devices at the ends of said supply roll to guide the same so that as the paper is unwound and the diameter of said supply roll decreases, the plane remains unvarying in which lies the unwound portion of the paper between the supply roll and the platen at the point on said platen where the feed roller engages the same.

41. In a typewriting machine, the combination of a platen, a pivoted rocking frame, a feed roll on said rocking frame at one side of its pivot, a spring at the opposite side of said pivot tending constantly to throw said feed roll against the platen, and means for controlling said rocking frame comprising a manually movable frame and a connecting link between said manually movable frame and said rocking frame.

42. In a typewriting machine, the combination of a platen, a rocking frame, a feed roll on said rocking frame, a spring tending constantly to throw said feed roll against the platen, means for controlling said rocking frame comprising a manually actuated pivoted frame and a connecting link between said pivoted frame and said rocking frame, and a clamp brought into operation by said manually actuated frame.

43. In a typewriting machine, the combination of a platen, a pivoted rocking frame, a feed roll on said rocking frame at one side of its pivot, a spring at the opposite side of said pivot tending constantly to throw said feed roll against the platen, means for controlling said rocking frame comprising a manually actuated frame and a connecting link between said manually actuated frame and said rocking frame, a clamp part on said manually actuated frame, and a cooperative stationary clamp part.

44. In a front-strike typewriting machine, the combination of a platen, a pivoted rocking frame provided with a feed roll cooperative with the upper rear side of the platen, a spring connected with said rocking frame and tending constantly to throw

said feed roll against the platen, key actuated toggle devices for controlling said rocking frame, and pressure rolls at the upper front side of said platen.

5 45. In a front-strike typewriting machine, the combination of a platen, a pivoted rocking frame provided with a feed roll co-
10 operative with the upper rear side of the platen, a spring connected with said rocking frame and tending constantly to throw
15 said feed roll against the platen, key-actuated toggle devices for controlling said rocking frame, pressure rolls at the upper front
side of said platen, and a deflector behind
said pressure rolls, the pressure rolls and
deflector cooperating to guide the paper up-
ward.

46. In a front-strike typewriting machine, the combination of a platen, a pivoted rock-
20 ing frame provided with a feed roll co-
operative with the upper rear side of the
platen, a spring connected with said rock-
ing frame and tending constantly to throw
25 said feed roll against the platen, key actuated toggle devices for controlling said rock-
ing frame, a pivoted spring-pressed frame
carrying pressure rolls cooperative with the
upper front side of said platen, a deflector
30 behind said pressure rolls, the pressure rolls
and deflector cooperating to guide the paper
upward, and a two-part clamp above said
deflector, said clamp being controllable by
said toggle devices.

47. In a typewriting machine, the combi-
nation of a platen, a pivoted rocking frame, 35
a feed roll on said rocking frame at one
side of its pivot, a spring at the opposite
side of said pivot tending constantly to
throw said feed roll against the platen,
means for controlling said rocking frame 40
comprising a manually actuated frame and
a connecting link between said manually
actuated frame and said rocking frame, a
main feed roller, releasing devices therefor
comprising a key-controlled rock shaft, a 45
finger on said rock shaft, and a projection
on said rocking frame normally in the path
of said finger.

48. In a typewriting machine, the combi-
nation of a rotary platen, paper feeding 50
means cooperating with the platen to ad-
vance paper when said platen is turned, said
means being normally out of engagement
with the platen, a platen locking device nor-
mally out of engagement with the platen, 55
and means for throwing both said paper
feeding means and said locking device into
cooperative relation with the platen.

Signed at Syracuse, in the county of
Onondaga and State of New York this 10th 60
day of March A. D. 1910.

HERBERT H. STEELE.

Witnesses:

BESSIE G. KITTELL,
HILDA M. PERKINS.