

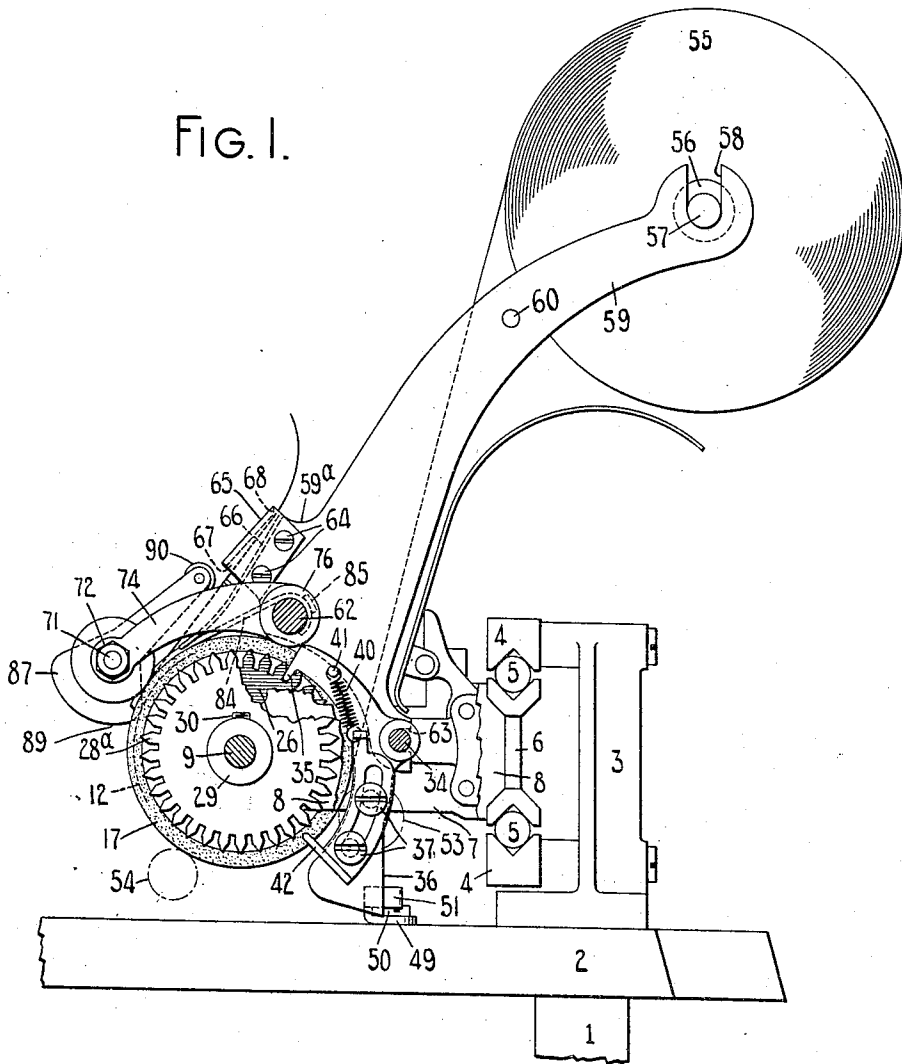
H. H. STEELE.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 18, 1911.

1,052,021.

Patented Feb. 4, 1913.

3 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:

E. M. Wells
Wm. Pool

INVENTOR:

Harbert H. Steele

By Jacob F. Felt

HIS ATTORNEY

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3 SHEETS-SHEET 2.

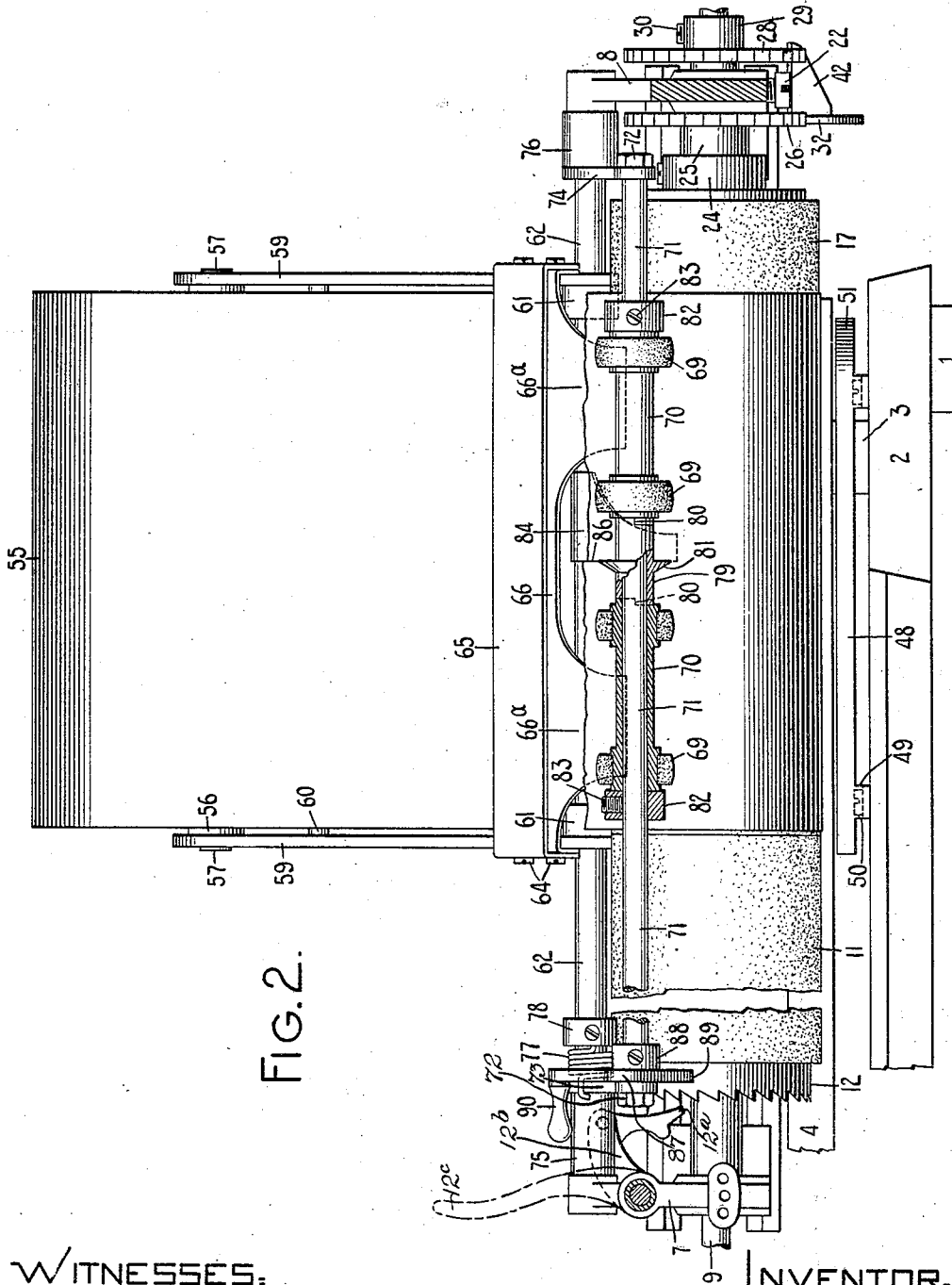


FIG. 2.

WITNESSES:

J. M. Wells
mwpool

INVENTOR.

Herbert H. Steele
By Jacob F. Felt
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Patented Feb. 4, 1913.

3 SHEETS-SHEET 3.

1,052,021.

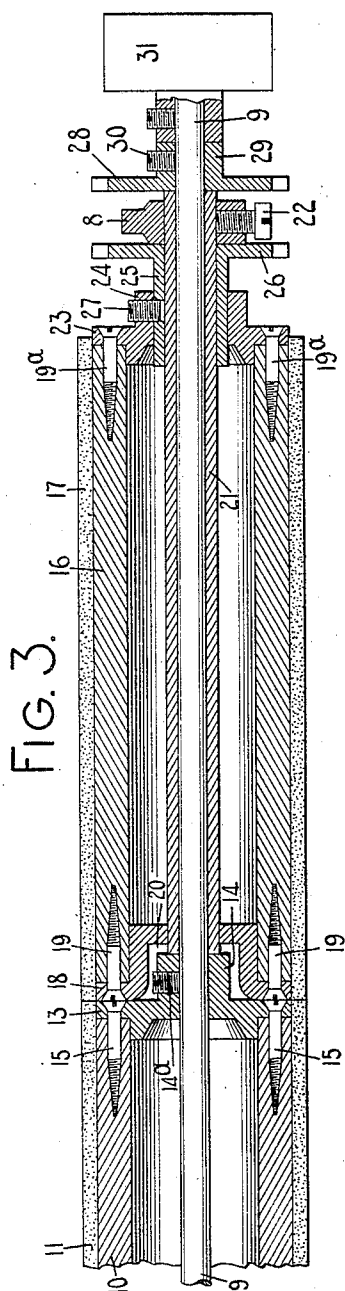


FIG. 3.

WITNESSES:

E. M. Wells.
mwpool

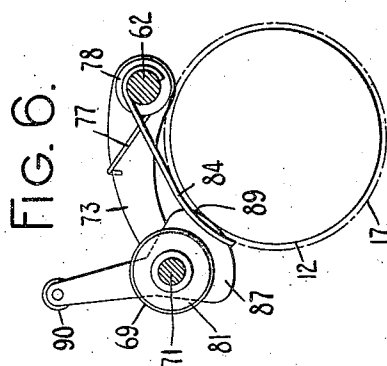


FIG. 6.

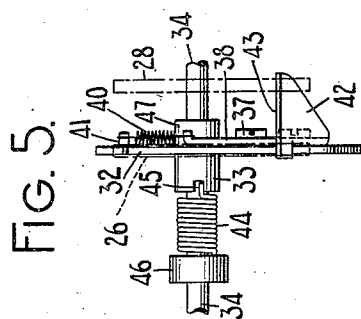


FIG. 5.

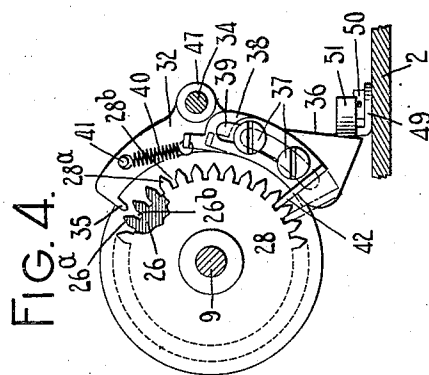


FIG. 4.

INVENTOR:

Harbert H. Steele

By Jacob F. Steel

HIS ATTORNEY

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.

1,052,021.

Specification of Letters Patent.

Patented Feb. 4, 1913.

Application filed May 18, 1911. Serial No. 627,916.

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 devices for feeding and controlling the paper of typewriting machines and its general object is to provide improved devices of the character specified.

Another object of the invention is to provide novel means for coupling and uncoupling the sections or parts of a divided or sectional platen.

Another object is to provide novel means for cutting the paper.

Other objects will hereinafter appear.

To the above 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.

My invention is applicable to typewriting machines generally but is shown herein as applied to a Monarch type-writing machine.

Figure 1 is a fragmentary side elevation of a Monarch typewriting machine embodying my invention, parts being omitted and parts being broken away. Fig. 2 is a fragmentary front elevation of the upper part of said machine, parts being shown in section. Fig. 3 is a fragmentary vertical longitudinal sectional view of the platen. Fig. 4 is an end view of the platen and the devices for connecting the sections thereof, said devices being shown in operative position. Fig. 5 is a front elevation of said devices. Fig. 6 is an end view showing the operated position of the throw-off devices for certain of the paper controlling elements.

As appears from Figs. 1 and 2, the main frame of the machine comprises posts 1 supporting a top plate 2 from which rise standards 3 to which are secured grooved track ways 4 connected through anti-friction balls 5 with a slide or rear bar 6 comprised in a platen frame or carrier which further in-

cludes end bars 7 and 8. The end bars provide bearings for a platen axle 9 on which are mounted end to end the two sections or parts of a divided or sectional platen. The left-hand platen section comprises a core 10 and a sheath 11 and has operatively connected to its left-hand end the usual or other suitable line spacing ratchet wheel 12 with which the ordinary line spacing devices, comprising a pawl 12^a and a connected lever device 12^b provided with a finger piece or line spacing handle 12^c, are adapted to cooperate. As appears from Fig. 3 a platen head 13 provided with a hub 14 is secured to the right-hand end of the core 10 by wood screws 15, said platen head being overlapped by the sheath 11. A set screw 14^a in the hub 14 cooperates with the spindle or axle 9 to secure the platen head 13 thereto. The right-hand platen section comprises a core 16 and a sheath 17. A platen head 18 is secured by wood screws 19 to the left-hand end of the core 16, said platen head abutting the platen head 13 and being overlapped by the sheath 17, the end whereof abuts the sheath 11 so that the two sheaths provide a practically continuous writing surface throughout the entire length of the divided platen. The platen head 18 is recessed as indicated at 20 to receive the hub 14; and said platen head bears on a tube or sleeve 21 which surrounds the axle 9 and at its left-hand end abuts against the hub 14. Said sleeve 21 extends rightward through the end bar 8 and is held in fixed relationship therewith by a set screw 22. Secured to the right-hand end of the core 16 by wood screws 19^a is a platen head 23, said platen head being provided with a hub 24 and bearing on the hub 25 of a toothed wheel 26, the platen 23 and the wheel 26 being secured together by a set screw 27. The hub 25 bears on the sleeve 21, thus providing a bearing for the right-hand end of the platen section, the construction being such that the right-hand platen section is adapted to turn on said sleeve but is prevented from endwise movement by the hub 14 at one end and the end bar 8 at the other end, the outer face of the wheel 26 cooperating for this purpose with said end bar. A

toothed wheel 28, similar in construction to and having the same number of teeth as the toothed wheel 26, is provided with a collar 29 which is secured by a set screw 30 to the platen axle 9 to the right of the sleeve 21. Beyond the wheel 28 the usual platen finger wheel 31 is secured to the end of the axle 9. As appears from Fig. 4 the teeth 26^a of the wheel 26 are beveled at their ends while the spaces or notches 26^b between said teeth are square or rectangular. The same is true of the teeth 28^a and the notches 28^b therebetween of the wheel 28. The teeth 26^a and 28^a correspond in number with the teeth of the line spacing ratchet wheel 12.

It will be understood that there is normally no connection between the two platen sections so that when the left-hand platen section is turned or rotated the right-hand platen section will not be affected. In order to prevent the right-hand platen section from being accidentally turned because of friction with the moving parts or otherwise, I provide means which normally holds the right-hand platen section positively against rotary movements. Said means comprises a locking or pawl member 32 provided with a hub 33 bearing on a rod or rock shaft 34 mounted on the platen frame at the rear of the platen and which is or may be the usual releasing rock shaft for the feed rollers. At its upper end the member 32 is provided with a tooth 35 beveled at its ends to pass readily between the teeth 26^a and engage with the openings 26^b in the wheel 26. The lower arm or portion of the member 32 is broadened, the rear edge 36 of this lower portion being substantially upright. Secured to the lower arm of the member 32 by screws 37 is a slidable member 38 formed with a slot 39 through which the stems of the screws 37 pass. The upper end of the member 38 is connected by a coiled spring 40 with a pin 41 on the member 32, said spring tending constantly to hold the member 38 up in the Fig. 1 position, the upward movement being limited by the engagement of the lower end of the slot 39 with the lower screw 37. The lower end of the member 38 is bent or turned laterally as indicated at 42 to provide a broad tooth-like portion, the upper edge portion 43 whereof is adapted to cooperate with the teeth of both the wheels 26 and 28, the length of this edge portion being greater than the distance between the wheels as will be understood from Figs. 2 and 5.

Normally the connecting device 42 is inoperative and the locking tooth 35 operative as shown in Fig. 1, the parts being maintained in this position by a spring 44 which, as shown in Fig. 5, is coiled around the rock shaft 34 and engages at one end in a notch 45 in the hub 33, the opposite end of said spring being engaged in a collar 46 fixed to

the rock shaft 34. A collar 47 suitably secured to the rock shaft 34 at the outer face of the member 32, cooperates with the spring 44 to prevent undue endwise movement of said member while permitting it to rotate freely on the shaft 34.

Means are provided which operate automatically during endwise movement or travel of the movable element or carriage to render said connecting device operative, the result being that the two platen sections are automatically connected so that they will turn together whenever the right-hand platen section is in the printing field, that is, whenever any portion of said platen section is opposite the printing point. In the present case the means referred to comprise a fixed bar or camming device 48 which is arranged above the top plate at the rear of the platen and extends lengthwise thereof. The bar 48 is provided with ears 49 which are secured by screws 50 to the top plate. The right-hand end portion of the bar 48 is curved rearwardly as indicated at 51 to provide a cam which is adapted to engage with the edge 36 during leftward movements of the platen, the cam bar 48 being so arranged that its camming face 51 will cooperate with the edge 36 just prior to the time when the right-hand platen section reaches the printing point. The cam 51 forces the edge 36 forward, swinging the member 32 on the rod 34 to the position shown in Fig. 4 and the member 32 will remain in its forward position, the edge 36 riding along the front face of the bar 48 as long as the right-hand platen section is within the printing field. The swinging movement of the member 32 withdraws the tooth 35 from the wheel or device 26 and forces the broad tooth-like portion 43 into engagement with both the teeth of the wheel 26 and the teeth of the wheel 28, thereby connecting the two wheels. The part 43 is partly engaged before the tooth 35 is entirely disengaged, thus preventing accidental displacement of the right-hand platen section. Since the wheel 26 is rigidly connected with the right-hand platen section and the wheel 28 is rigidly connected through the shaft 9 with the left-hand platen section, the devices comprising the part 42 and the wheels or connectible devices 26 and 28 thus connect the two platen sections so that if the left-hand platen section be line spaced, the right-hand section will be correspondingly line spaced at the same time. The line spacing operation will be limited by the arrest of the sliding member 38 by the stem of the upper screw 37 cooperating with the upper end of the slot 39; and in the present instance this cooperation and the consequent arrest of the platen will take place after a single line spacing movement. In other words, the parts are so constructed that the right-hand

platen section may be automatically advanced through only a single line space distance. Thereafter the two platen sections will be locked or held from rotation and before additional line spacing of either platen section may be obtained the platen must be moved endwise toward the right until the edge 36 has entirely disengaged from the bar 48, permitting the springs 44 and 40 to restore the member 32 and the slidable device 38 thereon to the normal positions shown in Fig. 1. This provides a check to undue advance or spacing of the right-hand platen section and is useful in some classes of work.

My improvements in divided platens, as hereinbefore described, are particularly useful in connection with those kinds of commercial billing work wherein a series of bills or invoices are being written and a record is being kept of certain data from each bill. For example, the bill sheets may be written on the left-hand platen section while the totals of each bill may be written on a continuous sheet or tally strip which is fed around the right-hand platen section. It will be understood that the usual or suitable paper guiding and feeding devices may be employed in connection with the left-hand platen section, said devices comprising a paper table 52 and feed rollers 53 and 54. In writing tally strips it is common to write the debits in black and the credits in red and heretofore when a single tally strip has been employed the debit and credit totals were both written thereon so that the strip contained mixed records, some of the items being debits and some credits. It frequently happens that the debits and credits are posted by different persons and when all of the items are on a single sheet or tally strip, one clerk, say, the credit clerk, must wait before he can do his work until another has finished. To overcome these other objections, I provide a tally strip wide enough for two columns to be written, one a debit and one a credit column; and I further provide means for automatically dividing this strip longitudinally after it has been written upon, so that when the different sections of the tally strip are severed, the credit items will be on one strip or section and the debit items on another. In carrying out this feature of my invention, in the present instance, I provide a continuous work sheet or tally strip 55 which is wide enough for two columns of figures and is wound upon a spindle or holder 56 having reduced end portions 57 seated in slots 58 in the upper end portions of parallel plates 59. Said plates are connected just forward of the tally strip roll by a cross rod 60 and the plates and cross rod constitute a bracket or supporting frame which is detachably mounted on the platen frame or carriage.

The lower front portions of the plates 59 are provided with hubs or bosses 61 which are bored out to fit over a supporting rod 62 arranged above and lengthwise of the platen and supported at its ends in the end bars. The rod 62 is preferably the usual paper finger supporting rod found in the Monarch machine. The lower rear portions of the plates 59 are provided with slots 63 which engage with the rock shaft 34. The hubs 61 are suitably secured to the rod 62 in a way which permits ready detachment of the roll supporting frame 59, 60. Above and forward of the rod 62 the plates 59 have projections 59^a to which are secured by screws 64 a cutting bar or plate 65 and a guide plate 66, these two plates having downwardly bent end portions which embrace the plates 59 and receive the screws 64. The cutting bar overlies the guide plate 66 and there is a slot or opening 67 between the cutter bar and guide plate through which the tally strip is adapted to pass. The upper edge of the cutting bar is beveled as indicated at 68 (Fig. 1) to provide a cutting edge. The guide plate 66 extends downward and forward toward the platen and terminates in tongue-like portions 66^a which end close to the platen and cooperate therewith to guide the tally sheet upward away from the platen and into the slot 67. As appears from Fig. 2 the roll supporting frame 59, 60 is secured at the rear of the right-hand platen section so that the unwound portion of the tally strip 55 is drawn from the front of the roll down behind the right-hand platen section and up over the front thereof, passing over the guide 66 and through the slot 67. The ordinary paper feed rollers or other suitable devices may be employed to cooperate with the right-hand platen section at its lower and rear sides to feed the tally strip toward the front. At the right-hand platen section and above the printing line I provide paper feeding devices or pressure rolls 69. These rolls are arranged in pairs, the rolls of each pair being supported on flanged portions of a sleeve 70, the two sleeves 70 being spaced apart and adapted to rotate on a rod 71 extending lengthwise of the platen. Said rod has reduced threaded ends and is secured by nuts 72 to arms 73 and 74 which curve over the top of the platen and are provided at their rear ends with hubs numbered respectively 75 and 76, said hubs bearing on the rod 62. A spring 77 is coiled around the rod 62 and is hooked at one end over the arm 73, the other end of said spring being secured to a collar 78 fixed to the rod 62. The spring constantly urges the pivoted frame or bail comprising the rod 71 and arms 73, 74 toward the platen and maintains the pressure rolls 69 in spring-pressed engagement with the right-hand platen section

or the paper thereon. The two sleeves 70 are spaced apart, and arranged between them on the rod 71 is a short sleeve 79, the ends whereof are cut away or stepped as indicated at 80 to interlock with the correspondingly cut inner ends of the sleeves 70, the construction being such that the sleeve 79 is forced to turn with the sleeves 70. The sleeve 79 is provided with a circular blade or cutter 81, one face of which is in a plane transverse of the platen, the other face being beveled, so that at their intersection the two faces provide a sharp cutting edge. The cutting edge of the rotary cutter 81 is arranged to cooperate with the middle of the tally sheet so as to divide it longitudinally into two equal sections or strips. The sleeve 79 and the sleeve 70 are maintained in interlocking engagement and also held from movement lengthwise of the rod 71 by collars 82 which are secured to the rod 71 by set screws 83 at the outer ends of the sleeves 70. The sleeves, it will be understood, turn on the rod 71 as a single member between the collars 82. By making the sleeves in sections the short section carrying the cutter may be separately hardened and tempered; or if injured may be removed and replaced by a new section independently of the end sections or sleeves. To co-act with the cutter 81 there is provided a plate-like member 84 which is secured by set screws 85 to the rod 62 and projects downward and forward therefrom lying close to the platen and terminating below the cutter 81. The left-hand edge 86 of the member 84 is in the same plane as the plane face of the cutter 81 and the two faces are contiguous, the plane face of the cutter 81 extending close to the platen surface and below or past the upper edge of the face 86. The cutter 81 and the edge 86 are so arranged that they cooperate to exert a shearing action on the paper or tally strip so as to divide it smoothly and evenly as it passes between them, over the shearing plate 84 and under the cutter 81.

In order to dispense at will with the use of the cutter 81 devices are provided comprising a cam-lever 87 which is supported on the rod 71 near its left-hand end, being enabled to turn thereon but being prevented from moving endwise of the rod by a collar 88 which confines the lever 87 close to the arm 73. The lower arm of the lever is formed at its end into a cam 89 which is adapted to cooperate with the periphery of the line spacing wheel 12 and the other arm of said lever is provided with a lateral finger piece 90 which normally rests on the upper edge of the arm 73 as shown in Figs. 1 and 2. When the finger piece is pulled forward the cam edge 89 cooperates with the face of the wheel 12 to swing the rod 71 upward against the spring 77 to the position shown in Fig. 6, thereby rendering the cut-

ter 81 and the rolls 69 inoperative. This operation enables the tally strip 55 to be conveniently manipulated initially and also provides for the feeding of a tally sheet or other sheet over the right-hand platen section without said sheet being severed as it is fed.

Although the different features of my invention hereinbefore described may be made use of separately, nevertheless I prefer to employ them together and in a unitary mechanism and said invention was primarily designed with this purpose in mind.

It will be understood that with the tally strip placed as shown on the right-hand platen section, a bill sheet may be introduced into the machine and fed over the left-hand platen section and a number of lines or items may be written on said bill sheet and the left-hand platen section may be turned or rotated to feed or line space between the several lines all without affecting the tally strip 55. When the totals have been written on the bill, however, and it is desired to reproduce them on the tally sheet the platen is moved leftward to bring the tally sheet opposite the printing point and this leftward movement operates, through the connecting devices 32, 38 and 48, to automatically connect the two platen sections so that after the totals have been reproduced on the tally strip the operation of line spacing will line space both the bill sheet and the tally strip. Thereafter the return movement of the platen toward the right will operate automatically to disconnect the two platen sections. The debit totals are printed at one side or edge portion of the tally sheet, thus forming a column, while the credit totals are printed in a column at the other side or edge portion. It will also be understood that during the automatic turning of the right-hand platen section the pressure rolls 69 will cooperate with the platen to hold the tally strip down on the platen and on the top of the shearing member 84 and will also operate to turn the rotary cutter 81, shearing or cutting the tally strip longitudinally to an extent corresponding to the amount of the line space movement. It will be apparent, therefore, that when the tally strip passes through the slot 67 it will be in two sections or strips of substantially equal width, one of the strips containing debit items in black and the other credit items in red. When the strips have advanced a sufficient distance above the cutter bar 65 they are severed or torn off against the beveled edge 68 thereof and forwarded to the book-keeping department.

It will be observed that my present improvements provide for doing certain styles of commercial typewriting and especially work involving the use of tally strips with facility and despatch; that my invention em-

bodies a platen composed of separate sections or divisions, two in number in the present instance; that these platen sections may be regarded as separate platens providing for the differential feeding or advancement of separate work sheets; that said sections may be automatically coupled or connected together while the normal relationship between them is maintained unaltered; that these platen sections or platens have an unvarying relationship endwise, that is, neither can be moved endwise relatively to the other; that the coupling or connecting devices operate automatically at predetermined points in the travel of the carriage, this being in printing direction in the present case; that the coupling device or connector or coupler is mounted independently of the platens and is movable into and out of engagement with the platens without the platens themselves being moved; that the coupler is controlled by an actuating device, in the present instance a cam bar, mounted on the frame of the machine; that the coupler is associated with a lock or locking pawl operating normally to lock one of the platens against rotation, the lock being released automatically when the coupler is rendered operative; that the locking pawl and coupler or coupling device are relatively movable, one being slidably supported on the other and the normal relationship between them being controlled by a spring; and that the line spacing devices, that is, both the finger wheel 31 and also the line spacing ratchet wheel and its associate parts are normally ineffective or inoperative on the right-hand platen section but are rendered operative to turn the same when said platen section is coupled to the left-hand platen section. In other words, the left-hand platen section is comprised in means for rendering the line spacing devices operative on the right-hand platen section. Further, it will be noted that means are provided for cutting the paper in the direction in which it is fed, said means comprising a paper cutter, said cutter being operated automatically by means actuated by the platen, or, from another aspect, by line spacing mechanism or by certain paper feeding devices, in the present instance, pressure rollers; that the cutter is movable in a plane transverse of the platen; that the movement of the cutter herein is rotary, said cutter comprising a circular cutting blade; that paper cutting devices are provided which are operative to cut the paper in two directions; that these directions are, or may be, at right angles to each other; and that the cutting devices for this purpose comprise a cutting bar which cuts the paper transversely and a rotary cutter which cuts the paper lengthwise.

Various changes may be made without de-

parting 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 two separate platens, and means operating automatically independently of relative movement between said platens to couple said platens together.

2. In a typewriting machine, the combination of a platen support, two separate platens thereon, restricted each to an unvarying path of rotation on and relative to said support, and means operating automatically to couple said platens together.

3. In a typewriting machine, the combination of a traveling carriage, two separate platens thereon, and means operating automatically at a predetermined point in the travel of the carriage to couple said platens together.

4. In a typewriting machine, the combination of a traveling carriage, two separate platens thereon, and means operating automatically at a predetermined point in the travel of the carriage in printing direction to couple said platens together, the platens being automatically uncoupled during return movements of the carriage.

5. In a typewriting machine, the combination of a traveling carriage, two separate platens thereon, and means operating automatically at a predetermined point in the travel of the carriage in one direction to couple said platens together and thereafter to maintain said platens coupled during further travel in the same direction.

6. In a typewriting machine, the combination of a traveling carriage, two separate platens thereon, and means operative by the traveling carriage to couple said platens together.

7. In a typewriting machine, the combination of a pair of traveling platens arranged end to end and separate, and means operating automatically when one of said platens is brought opposite the printing point to couple said platens together, said platens being automatically disconnected when said one of the platens is moved endwise relatively to the printing point so that the other platen is brought opposite the printing point.

8. In a typewriting machine, the combination of a movable element, two separate platens connected to move therewith, and means operating automatically to couple said platens together, said means including a device mounted on a fixed support.

9. In a typewriting machine, the combination of two separate platens, an element movable in respect of the frame of the machine and to which said platens are connected, and means operative automatically to couple said platens together, said means in-

cluding an actuating device mounted on the frame of the machine, said device operating to bring said means into operation.

10. In a typewriting machine, the combination of a movable element, two separate platens connected to move therewith, and means operating automatically to couple said platens together, said means including an actuating device having a fixed support and operating to bring said means into operation and to thereafter maintain said means in operation.
11. In a typewriting machine, the combination of two separate platens, an element movable in respect of the frame of the machine and to which said platens are connected, and means operative automatically to couple said platens together, said means including a cam bar on the frame of the machine.
12. In a typewriting machine, the combination of two separate platens, and means operating automatically to couple said platens together, said means including a coupling device mounted independently of said platens but operatively connectible with both platens by a movement which takes place independently of both platens.
13. In a typewriting machine, the combination of two separate platens, and means operating automatically to couple said platens together, said means including a coupler movable independently of said platens.
14. In a typewriting machine, the combination of two separate platens, and means operating automatically to couple said platens together, said means including a coupling device normally disconnected from both platens but movable to be connected operatively with both platens.
15. In a typewriting machine, the combination of two separate platens, a lock for one platen, and means operating automatically to release said lock and to couple said platens together.
16. In a typewriting machine, the combination of two rotary platens, a lock normally preventing the rotation of one of said platens, and means for unlocking said lock and coupling said platens together, said platens being normally separated.
17. In a typewriting machine, the combination of a carriage, a platen thereon, hand actuated line spacing devices which are at times ineffective on said platen, and means operating automatically to render said hand actuated line spacing devices effective when actuated, said automatic means depending for its operation upon the movement of the carriage and said line spacing devices being ineffective to line space said platen when said automatic means is out of use.
18. In a typewriting machine, the combination of a platen, line spacing devices, and

automatic means for rendering said devices operative to turn said platen for line spacing, said means including a second platen, said devices being inoperative to turn the first named platen when said automatic means is out of use.

19. In a typewriting machine, the combination of a platen, line spacing devices therefor, and means for rendering said devices operative to turn said platen for line spacing, said means including a second platen, and means for automatically coupling said platens, said devices being inoperative on the first-named platen when said first recited means is out of use.

20. In a typewriting machine, the combination of a platen, line spacing devices operative to turn the same, a second platen, a lock normally preventing the rotation of said second platen, and means for unlocking said lock and connecting said second platen to be operated by said line spacing devices.

21. In a typewriting machine, the combination of two platens, a coupler normally inoperative, devices one for each platen engageable by said coupler, said devices being normally disconnected from each other, and automatic means for rendering the coupler operative.

22. In a typewriting machine, the combination of a platen, a toothed wheel connected therewith, a second platen, a second toothed wheel connected with said second platen, and a device movable automatically into and out of engagement with said toothed wheels for coupling and uncoupling the same.

23. In a typewriting machine, the combination of a platen, a toothed wheel connected therewith, a second platen, a second toothed wheel connected with said second platen, and a pivoted connecting member movable into and out of engagement with said toothed wheels.

24. In a typewriting machine, the combination of a movable element, a platen movable therewith, a toothed wheel connected therewith, a second platen, a second toothed wheel connected with said second platen, a pivoted connecting member movable into and out of engagement with said toothed wheels, and a fixed cam bar for operating said connecting member.

25. In a typewriting machine, the combination of a platen, a toothed wheel connected therewith, a second platen, a second toothed wheel connected with said second platen, a device movable into and out of engagement with said toothed wheels for coupling and uncoupling the same, and a locking pawl carrying said coupling device and normally engaging one of said toothed wheels.

26. In a typewriting machine, the combination of a platen, a toothed wheel connected

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therewith, a second platen, a second toothed wheel connected with said second platen, a device movable into and out of engagement with said toothed wheels for coupling and uncoupling the same, and a locking pawl carrying said coupling device and normally engaging one of said toothed wheels, said locking pawl being rendered inoperative concurrently with the movement into operative position of said coupling device.

27. In a typewriting machine, the combination of a movable element, a platen movable therewith, a toothed wheel connected therewith, a second platen, a second toothed wheel connected with said second platen, a device movable into and out of engagement with said toothed wheels for coupling and uncoupling the same, a locking pawl carrying said coupling device and normally engaging one of said toothed wheels, said locking pawl being rendered inoperative concurrently with the movement into operative position of said coupling device, and a fixed cam bar for actuating said locking pawl and said coupling device.

28. In a typewriting machine, the combination of a platen, a toothed wheel connected therewith, a second platen, a second toothed wheel connected with said second platen, a device movable into and out of engagement with said toothed wheels for coupling and uncoupling the same, and a locking pawl carrying said coupling device and normally engaging one of said toothed wheels, said locking pawl being rendered inoperative concurrently with the movement into operative position of said coupling device, said coupling device being spring mounted on said locking pawl and having a limited movement relative to said locking pawl.

29. In a typewriting machine, the combination of a rotary platen, paper feeding devices for assisting to feed the paper in a single piece around the platen as it is turned, and means operating automatically during the operation of said paper feeding devices to cut the paper continuously in two pieces after it passes the printing point.

30. In a typewriting machine, the combination of a platen, means cooperative therewith to feed the paper, and means for cutting the paper in the direction of its feed, the cutting means comprising a rotary cutter, and connections for automatically rotating the same whenever the paper is fed.

31. In a typewriting machine, the combination of a platen, a paper cutter supported independently of the platen, and means actuated by the platen for moving said cutter as the paper is fed over the platen.

32. In a typewriting machine, the combination of a platen, paper feeding devices, and means connected to said paper feeding devices and movable thereby for cutting

paper coincidentally with the feeding or advance movement of the paper.

33. In a typewriting machine, the combination of a platen, line spacing mechanism, a device for cutting the paper, and automatic connections between said line spacing mechanism and said device, said connections being operative at each actuation of said line spacing mechanism to operate said device, the repeated operation of said device making a single continuous cut in the paper.

34. In a typewriting machine, the combination of a platen, a pressure roller cooperative with the platen when said platen is turned, and a paper cutter connected to said roller.

35. In a typewriting machine, the combination of a platen, a pressure roller, and a rotary paper cutter operative by said pressure roller.

36. In a typewriting machine, the combination of a platen, a paper cutter, and means for operatively moving said paper cutter in a plane transverse of the platen axis coincidentally with turning movements of the platen.

37. In a typewriting machine, the combination of a rotary platen, means for turning said platen, and a paper cutter operatively movable by said means in a plane transverse of the platen axle.

38. In a typewriting machine, the combination of a rotary platen, pressure rollers cooperative with said platen, and a rotary paper cutter arranged between said pressure rollers and rotating to cut paper whenever the pressure rollers are turned.

39. In a front-strike typewriting machine, the combination of a rotary platen, means cooperating with the front side of the platen for feeding and guiding paper, and paper cutting means arranged above the printing line and cooperative with the paper as it is fed upward past the printing line, the cutting operation of said means being dependent on and coincident with the feeding movement of the paper, the parts being arranged so that the paper is fed past the printing line in a single piece and is cut continuously at a point above the printing line so that it is divided into a plurality of strips only after being written upon.

40. In a typewriting machine, the combination of a rotary platen, pressure rollers cooperative with said platen, and a rotary paper cutter arranged between said pressure rollers, said paper cutter being detachably connected to said pressure rollers.

41. In a front-strike typewriting machine, the combination of a platen, paper feeding devices comprising a plurality of pressure rollers cooperative with the platen above the printing line, and a paper cutter located between certain of said pressure rollers and

operative on the paper after it has been written and has passed the printing point to cut the paper in the direction of its length whenever the pressure rollers are turned and the paper is fed or advanced.

42. In a typewriting machine, the combination of a platen, a paper cutter, a device with which said paper cutter coöperates to shear the paper, said cutter and said device being constantly maintained in shearing relationship, and means for turning the cutter to effect the shearing of the paper whenever an advance movement of the paper takes place.

43. In a typewriting machine, the combination of a rotary platen, a paper cutter, a device with which said cutter coöperates to shear the paper, and connections for causing said cutter to coöperate with said device whenever the platen is turned to advance the paper from one line to another so that at each line spacing advance of the paper there is a simultaneous cutting thereof.

44. In a typewriting machine, the combination of a platen, a plurality of pressure rolls, a rotary paper cutter located between certain of said pressure rolls, and a shearing plate with which said cutter coöperates to shear the paper whenever the pressure rollers are turned and the paper is fed or advanced.

45. In a front-strike typewriting machine, the combination of a platen, paper feeding devices comprising a plurality of pressure rolls coöperative with the platen above the printing line, a rotary paper cutter connected with and located between certain of said pressure rolls, and a shearing plate coöperative with said cutter to shear the paper.

46. In a typewriting machine, the combination of a platen, means for feeding paper thereover, means for cutting the paper transversely, and other means for cutting the paper longitudinally, said other means comprising a movable device and connections to the platen for moving said device to cut the paper longitudinally.

47. In a typewriting machine, the combination of a rotary platen, a rotary paper cutter operative by the platen whenever it is turned to cut the paper in the direction of its length, and a cutter bar for cutting the paper transversely.

48. In a typewriting machine, the combination of a platen frame, a rotary platen thereon, a support on said platen frame carrying a paper supply roll, a rotary paper cutter operative by the platen whenever it is turned to cut the paper longitudinally, and a cutter bar for severing sections of the paper from said supply roll.

49. In a typewriting machine, the combination of a rotary platen, a paper cutter connected to be operated by the platen whenever it is turned to advance the paper from

line to line so that there is a cutting operation performed on the paper simultaneously with each and every line spacing advance of said paper, and means for rendering said paper cutter inoperative when the platen is turned.

50. In a typewriting machine, the combination of a rotary platen, a rotary paper cutter, connections for causing said cutter to rotate operatively during the rotation of the platen, and hand controlled means for at will breaking said connections.

51. In a front-strike typewriting machine, the combination of a platen, a spring-pressed bail, pressure rollers thereon coöperative with the platen, a rotary paper cutter rotatable on said bail and detachably connected with said pressure rollers, and means operative on said bail to render said pressure rollers and paper cutter inoperative.

52. In a front-strike typewriting machine, the combination of a platen, a spring-pressed bail, pressure rollers thereon coöperative with the platen, a rotary paper cutter rotatable on said bail and detachably connected with said pressure rollers, and means operative on said bail to render said pressure rollers and paper cutter inoperative, said means comprising a manually operative cam plate.

53. In a front-strike typewriting machine, the combination of a platen frame, a platen thereon, a spring-pressed bail pivoted on said platen frame, sleeves rotatable on said bail and carrying pressure rollers coöperating with the platen, a circular cutting blade on a sleeve located between said pressure rollers and connected therewith, and a stationary shearing plate coöperating with said cutting blade.

54. In a front-strike typewriting machine, the combination of a platen frame, a platen thereon, a spring-pressed bail pivoted on said platen frame, sleeves rotatable on said bail and carrying pressure rollers coöperating with the platen, a circular cutting blade on a sleeve located between said pressure rollers and connected therewith, a stationary shearing plate coöperating with said cutting blade, paper guiding devices above said cutting blade, and a transverse paper cutting bar.

55. In a front-strike typewriting machine, the combination of a platen, a spring-pressed bail, pressure rollers thereon coöperative with the platen, a rotary paper cutter rotatable on said bail and detachably connected with said pressure rollers, and means operative on said bail to render said pressure rollers and paper cutter inoperative, said means comprising a plate provided with a cam and a finger piece, the cam being operative to lift the bail against its spring away from the platen.

56. In a front-strike typewriting machine, the combination of a platen, a bail thereon, 130

pressure rollers supported by the bail and
coöperative with the platen, a paper cutter
rotatable on said bail and connected with
said pressure rollers, and a manually opera-
5 tive cam plate pivoted on said bail and co-
operative with an extension or end portion
of the platen to release said pressure rollers
and render said paper cutter inoperative.
10 57. In a typewriting machine, the combi-
nation of two platens, a carriage on which
said platens are supported, line spacing de-
vices on said carriage and normally inopera-
tive on one of said platens but operative on
the other platen, and automatic means for
rendering said devices operative to turn for 15
line spacing the platen on which said devices
are normally inoperative.
Signed at Syracuse, in the county of
Onondaga, and State of New York, this
16th day of May, A. D. 1911.
HERBERT H. STEELE.
Witnesses:
WILLARD C. HAY,
BESSIE G. KITTELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."