B. C. STICKNEY.

TYPE WRITING MACHINE.

APPLICATION FILED JULY 31, 1915.

1,158,408.

Patented Oct. 26, 1915.

2 SHEETS—SHEET 1.

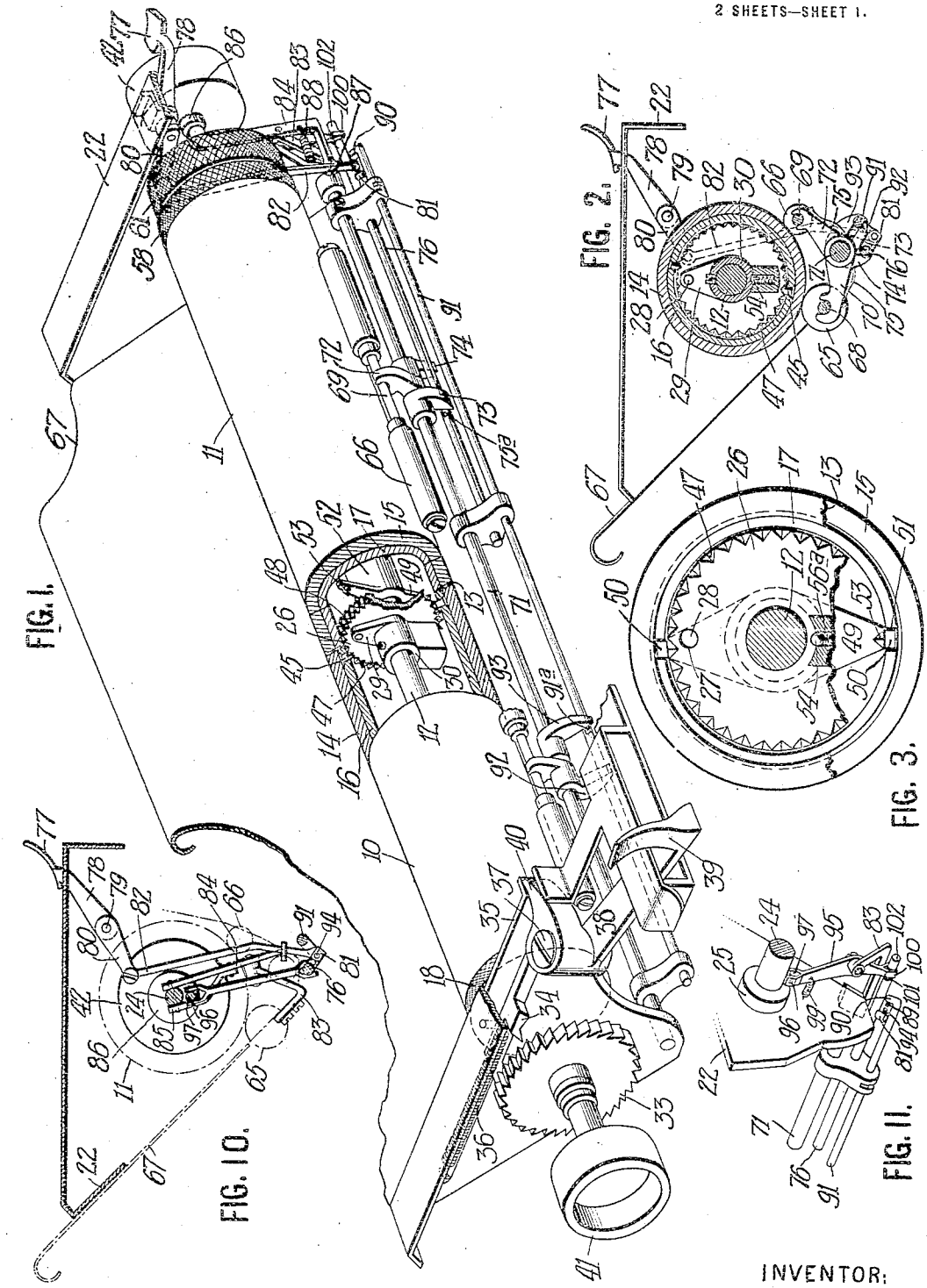


FIG. 1.

FIG. 2.

FIG. 3.

FIG. 10.

FIG. 11.

WITNESSES:

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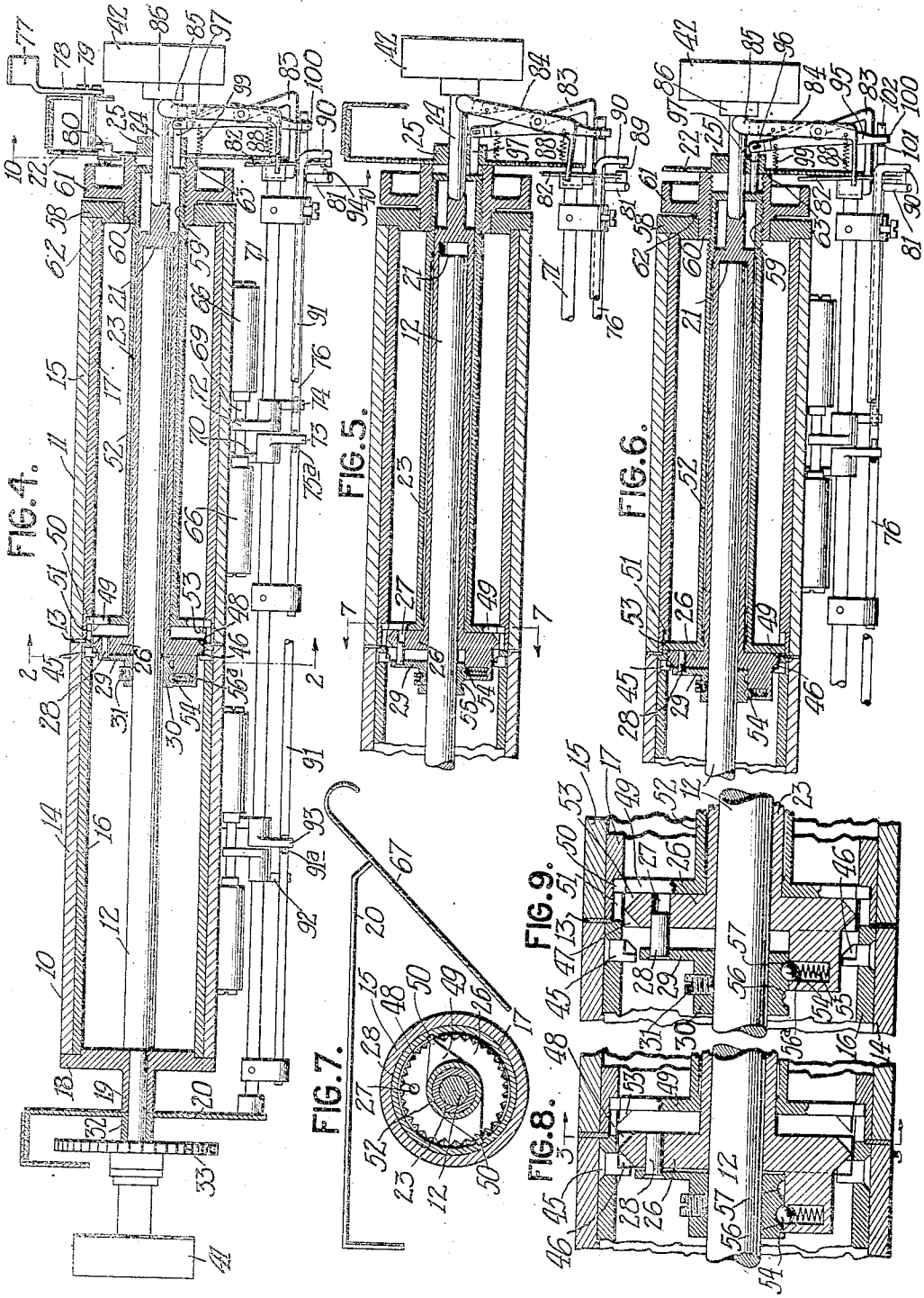


FIG. 4.

FIG. 5.

FIG. 6.

FIG. 7.

FIG. 8.

FIG. 9.

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BURNHAM C. STICKNEY, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

1,158,408. Specification of Letters Patent. Patented Oct. 26, 1915.

Application filed July 31, 1915. Serial No. 42,868.

To all whom it may concern:

Be it known that I, BURNHAM C. STICKNEY, a citizen of the United States, residing in Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

The present invention relates to typewriter platens which are split or divided into a plurality of lengths or sections movable individually and independently of each other. When the platens are disconnected for independent use, one division of the platen may, for instance, be used for the writing of individual bills or forms, and another division of the platen for the writing of ledger accounts, or classified totals, or general forms taken from the individual statements. In such a case, the division of the platen having the ledger or general sheet thereon is silent while the sheet for the individual statement is placed upon, written on, and removed from another division of the platen; and except when such general sheet is itself placed or removed, the division of the platen bearing it only receives line-space movement in the intervals between the writing of individual statements.

In connection with a split or divided platen, there must be mechanism for effecting independent line-space movement of the sections, and for effecting a prolonged independent movement of the sections in inserting and removing sheets. Heretofore, to effect these various operations, the machines have had more or less duplication of line-spacing mechanisms.

A feature of this invention is a novel clutching mechanism, operable from one of the usual hand wheels, for setting the connections for a separate drive of either division of the platen. By this feature of the invention is obviated the necessity of a separate clutch-throwing lever, or its equivalent, and many other connected parts, heretofore commonly used for the purpose.

A preferred form of mechanism embodying the various features of this invention comprises a platen shaft having the ordinary line-space and hand wheels at the left-hand end thereof, but which is not permanently connected to either division of the platen. The hand wheel at the right-hand end of the platen frame is carried by a short shaft terminating in a sleeve which fits over and is splined to the platen shaft. This sleeve carries a clutch member which may be shifted by pulling or pushing on the right hand wheel; and which, according to the direction in which it is shifted, engages either a clutch on the left-hand platen division, or a clutch on the right-hand platen division, to connect one or the other of these divisions to the platen shaft. The latter clutch member is carried by a spider splined to the right-hand platen division and shiftable to engage the clutch on the sleeve at the time the latter is locked to the left-hand platen division, thus causing both divisions to be locked to the platen shaft for rotation together in ordinary writing.

It is another feature of the present invention to provide operating connections for the several platen sections or divisions, such that, any one section alone, or all together, may receive line-space movement from one and the same line-space mechanism; or may receive prolonged forward or reverse movement individually, or together, as a unit, from the hand wheels ordinarily found on the platen shaft.

In the preferred manner of carrying out the invention, the feed roll or rolls of each platen section are independent of the feed roll of the other platen section, and are independently releasable. Thus a partly written sheet may be held by its feed rolls on one platen section while the latter remains motionless, and while an entry is being made upon a sheet carried by the other platen section. To this end, I provide for each platen section a roll-releasing device independent of the roll-releasing device of the other platen section, and I arrange for a single release key to connect with either of said roll-releasing devices. This connection is preferably effected by the same device that connects and disconnects the platen sections from the line-spacing mechanism. Thus a single shift of said connecting device will connect one or the other platen section to the line-spacing mechanism, and at the same time place the connected live platen section rolls under the control of the release key, so that said rolls may be released, while the rolls of the dead platen section remain in normal effective positions.

Not only may the platen sections be connected for simultaneous operation by the single line-spacing mechanism, but also the device which effects such connection of the platen sections may be connected to means for placing both releasing mechanisms under the control of the single roll-releasing key, so that, at such times, the key may release all of the rolls, and hence the platen may be used for its entire length in the ordinary manner. Portions of the improvements may, however, be used without others, as, for instance, the connection of the platen sections for simultaneous use is not necessary in all cases, nor is the connection of both sets of release rolls to the single release key.

Other features and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a view in perspective of a divided platen with the operating connections of the present invention applied thereto, the parts being in position for line-space movement of the left-hand platen. Fig. 2 is a view in cross section through the platen on the line 2—2 of Fig. 4, looking from the left. Fig. 3 is a detail view in cross section on the line 3—3 of Fig. 8, looking from the left. Fig. 4 is a view in central longitudinal cross section of the parts shown in Fig. 1, looking from the front; the parts being positioned for movement of the left-hand platen alone. Fig. 5 is a fragmentary view in central longitudinal cross section showing the parts positioned for movement of the right-hand platen alone. Fig. 6 is a view similar to that of Fig. 5, except that the parts are positioned for movement of the two platens as a unit. Fig. 7 is a view in cross section through the platen, on the line 7—7 of Fig. 5, looking from the right. Fig. 8 is an enlarged fragmentary view in longitudinal cross section showing the clutch and associated parts in Fig. 4 position. Fig. 9 is a view similar to that of Fig. 8, except that the parts are in Fig. 5 position. Fig. 10 is a sectional view on the line 10—10 of Fig. 4, looking from the left. Fig. 11 is a fractional view in perspective of some of the parts mounted on the right end plate of the platen frame.

Referring to the drawings; the platen is shown in two sections; to wit, a left-hand section 10 on which the individual bills or statements are usually written, and a right-hand section 11 on which the ledger account, or totals of the individual accounts, are usually written. These sections are of the same diameter and are concentric with the platen shaft 12; they abut each other, except that a metal washer or plate 13 is interposed between them to prevent wear and undue friction of one on the other. The platen sections have the usual vulcanized outer shells 14 and 15, fast on inner supporting shells 16 and 17 of wood or any suitable material. Fast to, and forming part of, the left-hand platen 10 is the end plate 18 having a hub 19, by means of which this platen section is journaled at its left-hand end on the platen shaft 12. The shaft 12 is journaled at the left-hand side of the machine in the end plate 20 of the frame or carriage in which the platen is mounted for its usual letter-feed movement. The shaft 12 is discontinued at a point such as 21, intermediate the frame end pieces 20 and 22; but is supported from the right-hand carriage plate 22 by means of a sleeve 23, within which, for a considerable distance, the platen shaft 12 fits. The sleeve 23 at its right-hand end is continued in the form of a stub shaft 24, which is journaled in a hub 25 formed on the frame plate 22.

Integral with the sleeve 23, at the left-hand end thereof, is a disk or clutch member 26, having therethrough a pin hole 27 in which fits a pin 28, carried by an arm 29, in the nature of a crank arm, on a hub or boss 30, which latter is secured by a set screw 31 to the platen axle 12. In all positions of the parts, the crank pin 28 remains in engagement with the disk 26; so that, whenever the platen shaft 12 is turned, the disk 26 and sleeve 23 must turn as a unit with it. By means, presently to be described, the disk 26 may be locked to either one of the platen sections 10 and 11, or to both of them; in order that line-space movement of the platen shaft 12 may be transmitted to the platens.

The means shown for effecting line-space movement of the platen shaft 12 is that common to the Underwood typewriting machine. On a hub 32 fast to the shaft 12 is a ratchet wheel 33, the pitch between the teeth of which determines the line-spacing when the wheel is turned. The wheel is actuated by means of a pawl 34 carried by a slide 35 mounted on the platen frame. A coil spring 36, secured to the slide and to the frame normally holds the slide forward, and, after each operation, returns it to normal position, with the pawl out of engagement with the ratchet wheel. A finger lever, in the form of a bell-crank pivoted to the carriage frame at 37, has one arm 38 having a finger-piece 39, and another arm 40 which engages and forces back the slide, to turn the line-space wheel, when the finger-piece is pressed to the right. A spring detent (not shown) engages the line-space wheel to hold the parts in position for printing. The platen shaft and connected parts may also be turned by means of the left-hand wheel 41, fast to the shaft 12 or by means of the right-hand wheel 42, fast to the stub shaft 24; the latter shaft, as above pointed out, being connected through the sleeve 23 for rotation as a unit with the shaft 12.

Diametrically opposed, and projecting from the internal periphery of the platen 10, are two teeth 45, shaped at 46 to engage between adjacent teeth 47 on one side of the periphery of the disk 26. These teeth on the disk 26 are, in number and pitch, the same as the teeth on the line-space wheel 33. When, therefore, the parts are in Fig. 8 position, with the disk teeth 47 in engagement with the teeth 45 on the platen 10, the platen 10 must turn as a unit with the line-space wheel on operation of the latter. This is the condition of the machine when only the platen 10 is to receive line-space movement; that is to say, when an individual statement or bill is being written, the total of which is later to be transferred to the ledger sheet on the platen 11.

Since the platen 10 is to be idle while the totals or other writings are entered upon the ledger or other sheet on the platen 11, it becomes necessary for this purpose, to disengage the disk 26 from the teeth 45 on the platen 10. To this end, the sleeve 23, on which the disk 26 is mounted, is slidable longitudinally on the platen shaft 12 from Fig. 4 to Fig. 5 position. The hand wheel 42 conveniently serves as a means for effecting this shift of the disk. The pin 28 on the crank arm 29 is long enough to hold the disk 26 against angular displacement on the platen axle whatever the longitudinal position of the disk. In this shifting operation, not only is the right-hand platen 10 disengaged from the platen axle 12, but the left-hand platen 11 is connected to the platen axle for movement therewith. The connection of the axle to the platen 11 is effected through a second set of teeth 48, on the periphery of the disk 26, but on the right-hand edge thereof; the teeth 48, like the teeth 47, corresponding in number and angular position to the teeth on the line-space wheel 33. Interlocked for rotation as a unit with the platen 11 is a spider 49, the arms of which at their ends have teeth 50 engaged in recesses 51 in the inner shell of the platen 11. The spider 49 is mounted on a sleeve 52 which embraces and bears upon the sleeve 23 but which at times is free to turn independently of the latter. Whenever the spider is turned, however, the left-hand platen 11 must turn with it, because of the interlocking connections 50 and 51. When the disk 26 has been shifted to Fig. 9 position, it will be noted that it is locked to the spider 49 by reason of the engagement of the laterally projecting teeth 53 on the arms of the spider with the teeth 48 on the disk. At this time, therefore, a line-space movement of the line-space wheel 33 must result in a corresponding movement of the left-hand platen 11, while the right-hand platen 10 is idle.

The clutch member or disk 26 is held against accidental displacement in its several positions by means of a ball clutch or detent consisting of a ball 54, seated on a compressed coil spring 55, which is held in a pocket 56[a] in a lateral extension of the disk 26 opposite the boss or hub 30 of the crank arm 29. In alinement on the hub 30 are two ball notches or pockets 56 and 57; the pocket 56 registering with, and holding the ball 54, when the parts are in Fig. 8 position; and the pocket 57 doing likewise when the parts are in Fig. 9 position. The pocket 56 is slightly bellied to the left to tend to draw and maintain the teeth of the disk 26 in close engagement with the teeth 45 on the platen 10, so that play between the platen axle and the platen 10 may be eliminated; and the pocket 57 is similarly bellied to the right to hold the disk in such engagement with the spider 49 that play between the platen axle and the platen 11 may be eliminated. The platens are thus so held that proper alinement of the letters and spacing of the lines are assured.

Platens 10 and 11 may be locked together, and to the platen axle, so that they may be turned as a unit when the machine is to be used for ordinary writing purposes. To this end, the recesses 51, by means of which the spider 49 engages the platen 11 are elongated to permit the spider to be shifted longitudinally from Fig. 8 position to Fig. 6 position. The spider is actually splined to the platen 11. In Fig. 8 position, the clutch member or disk 26, which at all times turns with the axle 12, is fast to the platen 10. The shift of the spider from Fig. 8 to Fig. 6 position causes the teeth 53 on the spider arms to engage the teeth 48 on the disk 26 in the same manner as when the disk is shifted to the spider. In this way, the platen 11, through the spider 49, is locked to the disk 26, to which the platen 10 is already locked; and the two platens as a unit must turn with the platen axle. This shift may also be made when the parts are in Fig. 9 position, in which event, the shift of the spider causes the disk 26 to be moved with it to Fig. 6 position. For shifting the spider 49, the sleeve 52 on which it is mounted is extended through the right-hand end plate 58 of the platen 11, where it is threaded at 59. Having a flange, or bearing 60, within an opening in the plate 58, and threaded into the sleeve 52 is a knurled nut 61 which has a shoulder at 62 to abut the plate 58, and which is extended at 63 to abut the carriage plate 22. This nut therefore has no movement longitudinally of the platen axle, and rotation thereof must consequently cause the sleeve 52 and spider 49 to be shifted along the platen axle in one direction or the other, according to the direction of rotation of the nut 61. To lock the platen 11 to the platen axle, the nut 61

is turned in one direction; and to disconnect the two platens, it is turned in the reverse direction.

For guiding the paper to and around the platens, there are back paper rolls 65, front paper rolls 66, and a paper shelf 67. As each of the platen sections or platens is to be capable of use independently of the other, each is preferably provided with a pair of front rolls and a pair of back rolls. As is customary in Underwood typewriting machines, the back rolls are preferably all mounted on one shaft 68, and the front rolls all on one shaft 69. In order, however, that when one platen alone is used, the movement thereof may not be transmitted through the rolls and roll shafts to the other platen, the rolls are all loosely mounted on their shafts. The shaft 68 is carried on arms 70 pivoted to the shaft 71; and the shaft 69 is carried on arms 72 likewise pivoted to the shaft 71. Arms 70 form bell-cranks with arms 73, and arms 72 form bell-cranks with arms 74. Springs 75 hold the rolls against the platen and hold the arms 73 and 74 against flats 75[a] on a rock shaft 76. To permit free withdrawal of the paper from either platen division, the rolls 65 and 66 may be thrown off of the platen by means of a finger-piece 77 on an arm 78, pivoted to the platen frame at 79, and forming a bell-crank with an arm 80. Attached at one end to the arm 80, and at the other end to an arm 81 on the rock shaft 76, is a link 82. Depression of the finger-piece 77 draws up the link to rock the shaft 76, thereby causing the flats 75[a] thereon to be so turned as to force apart the arms 73 and 74, thus removing the rolls 65 and 66 from the right-hand platen; all of which roll-supporting and releasing mechanism is common in Underwood typewriting machines.

It is desirable when using the right-hand or left-hand section of the platen to bring the co-acting sets of feed rolls of the respective sections of the platen under the control of the finger-piece 77, so that it may actuate that set of feed rolls coacting with the active section of the platen, that is, the section which may at the time be coupled to the line-spacing mechanism. Mechanism is also provided to bring both sets of feed rolls under the control of the finger-piece 77, so that both sets of feed rolls may be actuated thereby when both sections of the platen are coupled to the line-spacing mechanism.

Upon the typewriter carriage is a bracket 83, on which is mounted a lever 84, the upper end of which is forked at 85 to embrace the stub shaft 24. A spring 88 causes said fork to bear against a hub 86 on the hand-wheel 42. The lower end of the lever 84 has a slot 87, through which the link 82 passes. When the hand-wheel 42 is moved leftwardly to engage the left section of the platen with the line-space mechanism, as shown in Fig. 4, it causes the lower end of the lever 84 to be swung rightwardly, carrying with it the link 82, the lower end of which has a perforated boss formed thereon to engage a pin 89 formed on an arm 90 of the roll-releasing rock shaft 91, which rock shaft has flat surfaces 91[a] formed thereon, which form cams to actuate or control the bell cranks 92 and 93, on which are mounted the front and rear feed rolls that coact with the left-hand platen or section. It will be seen that if now the finger-piece 77 is actuated, the feed rolls of the left section of the platen will be released, while the feed rolls of the right-section of the platen will remain in their normal positions. This is because the rightward adjustment of the lower end of the link 82 has disconnected said link from the arm 81 (fast on the shaft 76) which actuates the right-hand set of feed rolls. But when the hand-wheel 42 is re-set from the Fig. 4 to the Fig. 5 position, to connect up the right-hand section of the platen with the line-spacing mechanism, the lower end of the lever 84 will be moved leftward, carrying with it the link 82, so that the latter will become disengaged from the pin 89 on arm 90, and be moved into engagement with a pin 94 on the arm 81. Thereafter, any motion of the finger-piece 77 will be transmitted to the rock shaft 76, which controls the right-hand set of feed rolls. When the parts are in the Fig. 5 position, the left-hand set of feed rolls will therefore remain in their normal positions when the finger-piece 77 is actuated.

In order to connect both sets of feed rolls to the finger-piece 77 when desired, there is mounted on the bracket 83 a lever 95, the upper end of which has a pin-and-slot connection 96 with a sliding pin or follower 97 which passes through the boss 25 provided on the right-hand plate 22 of the platen-frame. The inner end of said pin 97 is pressed against the right end of the sleeve 52 by means of a spring 99, which is connected to the right-hand carriage plate and causes the lever 95 to follow the lateral shifting motion of the sleeve 52. The lower end of the lever 95 is forked at 100 to fit in an annular groove 101 formed in an extension 102 on the shaft 76, which is slidably mounted in its bearings. When the parts are in position so that the left-hand section of the platen is connected to the line-space mechanism, as in Fig. 4, and it is desired to connect the right-hand section of the platen to the line-space mechanism, so that both sections of the platen may receive line-space rotation simultaneously, the knurled nut 61 is rotated to move the sleeve 52 leftwardly (Fig. 6), so that the teeth 53 on the spider 49 will engage the disk 26. This left-

ward movement of the sleeve 52 permits the follower 97 to be moved leftwardly an equal distance by the spring 99, and the lower end of the lever 95 is moved rightwardly, to move the shaft 76 and arm 81, so that the pin 94 on the arm 81 will be brought into engagement with the link 82, as shown in Fig. 6. It will be seen that in this position both pins 89 and 94 are in engagement with the link 82, and will transmit any motion imparted to the finger-piece 77 to their respective feed rolls. When the knurled nut 61 is rotated to move the sleeve 52 rightward from the Fig. 6 position back to the Fig. 4 position, to silence the right section of the platen, the slide 97 will be moved rightwardly therewith, and through lever 95 cause the pin 94 to become disconnected from the link 82, thus leaving the link 82 in connection with the pin 89, so that the left-hand set of feed rolls will be actuated, while the right-hand set of feed rolls remain in their normal position upon the actuation of the finger-piece 77.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. The combination with a divided platen, of a line-space mechanism, and means for separately connecting either one of the divisions of the platen to said line-space mechanism for movement thereof relative to the other of said divisions.

2. The combination with a divided platen, of a line-space mechanism, means for connecting either one of the divisions of the platen to said line-space mechanism for movement thereof relative to the other of said divisions, and means for connecting both of said platen divisions to said line-space mechanism for movement of both together.

3. The combination with a divided platen, of a line-space mechanism, means for connecting either one of the divisions of the platen to said line-space mechanism for movement thereof relative to the other of said divisions, and means for attaching the platen division, so connected, to the other of the platen divisions for movement of both together.

4. The combination with a divided platen, of a line-space mechanism, means for connecting either one of the divisions of the platen to said line-space mechanism for movement thereof relative to the other of said divisions, and means for connecting both of said platen divisions to said line-space mechanism for movement of both as a unit.

5. The combination with a divided platen, of means for moving the platen in line-space and reverse directions, and means for separately connecting either one of the divisions of the platen to said platen-actuating means for movement thereof in either direction relative to the other of said divisions.

6. The combination with a divided platen, of means for moving the platen in line-space and reverse directions, means for separately connecting either one of the divisions of the platen to said platen-actuating means for movement thereof in either direction relative to the other of said divisions, and means for connecting both of said platen divisions to said actuating means for movement of both together in either direction.

7. The combination with a divided platen, of a platen axle, means for rotating said axle, and means for separately connecting either one of the platen divisions to said axle for rotation of the connected platen division relative to the other platen division.

8. The combination with a divided platen, of a platen axle, means for rotating said axle, means for separately connecting either one of the platen divisions to said axle for rotation of the connected platen division relative to the other platen division, and means for connecting both of said platen divisions to said axle for rotation of both together.

9. In a typewriting machine, a divided rotary platen, a line-space mechanism, and means for separately connecting either one of the divisions of the platen to said line-space mechanism for rotation thereof relative to the other of said divisions.

10. The combination with a divided platen, of a line-space mechanism, and a shiftable clutch member for separately connecting either one of the divisions of the platen to said line-space mechanism for movement thereof relative to the other of said divisions.

11. The combination with a divided platen, of a line-space mechanism, a shiftable clutch member for separately connecting either one of the divisions of the platen to said line-space mechanism for movement thereof relative to the other of said divisions, and means for relatively shifting said clutch member and one of the divisions of the platen to connect both of said platen divisions to the line-space mechanism for movement of the same together.

12. The combination with a divided platen, of a line-space mechanism, and a clutch for connecting either one alone, or both, of the divisions of the platen to the line-space mechanism.

13. The combination with a divided rotary platen, of a platen axle, a clutch member permanently connected to said axle to rotate therewith, means whereby said clutch member may be shifted on said axle into and out of engagement with one of the divisions of the platen, and means for connect-

ing said clutch member at will to the other of said platen divisions.

14. The combination with a divided rotary platen, of a platen axle, a clutch member permanently connected to said axle to rotate therewith, means whereby said clutch member may be shifted on said axle into and out of engagement with one of the divisions of the platen, a second clutch member permanently connected to the other division of the platen to rotate therewith, and means for interlocking said clutch members to drive said second platen division from said axle.

15. The combination with a divided rotary platen, of a platen axle, a clutch member permanently connected to said axle to rotate therewith, means whereby said clutch member may be shifted on said axle into and out of engagement with one of the divisions of the platen, a second clutch member permanently connected to the other division of the platen to rotate therewith, and means for interlocking said clutch members to drive said second platen division from said axle, when the first-mentioned clutch member is out of engagement with the first-mentioned platen division.

16. The combination with a divided rotary platen, of a platen axle, a clutch member permanently connected to said axle to rotate therewith, means whereby said clutch member may be shifted on said axle into and out of engagement with one of the divisions of the platen, a second clutch member permanently connected to the other division of the platen to rotate therewith, and means for interlocking said clutch members when the first-mentioned clutch member is in engagement with the first-mentioned platen division, so that at will both of the divisions of the platen may be driven as a unit from the axle.

17. The combination with a divided rotary platen, of a line-space mechanism, two normally disconnected clutch members, one clutch member having permanent driving connection with the line-space mechanism and being shiftable into and out of driving connection with one of the divisions of the platen, and the other clutch member being normally disconnected from the line-space mechanism and having permanent driving connection with the other division of the platen, and means for interlocking said clutch members while the first-mentioned clutch member is disconnected from the first-mentioned platen division.

18. The combination with a divided rotary platen, of a line-space mechanism, two normally disconnected clutch members, one clutch member having permanent driving connection with the line-space mechanism and being shiftable into and out of driving connection with one of the divisions of the platen, and the other clutch member being normally disconnected from the line-space mechanism and having permanent driving connection with the other division of the platen, and means for interlocking said clutch members while the first-mentioned clutch member is connected to the first-mentioned platen division.

19. The combination with a divided rotary platen, of an axle for the platen, means for rotating the axle, a sleeve splined to said axle, a clutch member fast to said sleeve, and means for shifting said sleeve lengthwise of the axle to connect said clutch member separately to either one of the divisions of the platen.

20. The combination with a divided rotary platen, of an axle for the platen, a sleeve splined to the axle, a finger-piece carried by the sleeve by means of which the sleeve and axle may be rotated, and a clutch member fast to the sleeve, said sleeve being adapted to be shifted longitudinally of the axle, by means of said finger-piece, to connect the clutch member separately to either one of the divisions of the platen.

21. The combination with a divided rotary platen, of an axle for the platen, means for rotating the axle, a sleeve splined to said axle, a toothed disk fast to said sleeve, a tooth fixed on the inner periphery of one of the divisions of the platen, a tooth secured for rotation with the other division of the platen, and means for shifting said sleeve with the toothed disk thereon to cause the teeth of the disk according to the direction of shift, to engage one or the other of said teeth secured to the platen divisions.

22. The combination with a divided rotary platen, of an axle for the platen, means for rotating the axle, a sleeve splined to said axle, a clutch member fast to said sleeve, a clutch member fixed to the first of the divisions of the platen, a clutch member splined to the second division of the platen, means for shifting the sleeve to cause the clutch member thereon to engage either one of the clutch members secured to the platen divisions, for independent rotation of either of the platen divisions, and means for shifting the clutch member which is splined to the second of the divisions of the platen into engagement with the clutch member on the sleeve while the latter clutch member engages the clutch member on the first of the platen divisions, so that the platen divisions may be rotated together by the axle.

23. The combination with a divided rotary platen, of an axle for the platen, means for rotating the axle, a sleeve splined to said axle, a clutch member fast to said sleeve, a clutch member fixed to the first of the divisions of the platen, a clutch member splined to the second division of the platen, a second sleeve to which said last clutch member

is fast, means for shifting the first sleeve to cause the clutch member thereon to engage either one of the clutch members secured to the platen divisions, for independent rotation of either of the platen divisions, and means for shifting the second sleeve with the clutch member which is splined to the second of the divisions of the platen to bring said last-named clutch member into engagement with the clutch member on the first sleeve while the latter clutch member engages the clutch member on the first of the platen divisions, so that the platen divisions may be rotated together by the axle.

24. The combination with a divided rotary platen, of an axle for the platen, means for rotating the axle, a sleeve splined to said axle, a clutch member fast to said sleeve, a clutch member fixed to the first of the divisions of the platen, a clutch member splined to the second division of the platen, a second sleeve to which said last clutch member is fast, means for shifting the first sleeve to cause the clutch member thereon to engage either one of the clutch members secured to the platen divisions, for independent rotation of either of the platen divisions, and means for shifting the second sleeve with the clutch member which is splined to the second of the divisions of the platen to bring said last-named clutch member into engagement with the clutch member on the first sleeve while the latter clutch member engages the clutch member on the first of the platen divisions, so that the platen divisions may be rotated together by the axle, said means for shifting the second sleeve consisting of a nut held against longitudinal movement and threaded into said second sleeve, so that by turning the nut, the sleeve in which it is threaded is fed longitudinally of the axle.

25. The combination with a divided rotary platen, of an axle for the platen, means for rotating the axle, a sleeve splined to said axle, a clutch member fast to said sleeve, a clutch member fixed to the first of the divisions of the platen, a clutch member splined to the second division of the platen, a finger-piece carried by the sleeve for rotating the sleeve with the axle and for shifting the sleeve to cause the clutch member thereon to engage either one of the clutch members secured to the platen divisions, for independent rotation of either of the platen divisions, and means for shifting the clutch member which is splined to the second of the divisions of the platen into engagement with the clutch member on the sleeve while the latter clutch member engages the clutch member on the first of the platen divisions, so that the platen divisions may be rotated together by the axle.

26. The combination with a divided rotary platen, of an axle for the platen, means for rotating the axle, a sleeve splined to said axle, a toothed disk fast to said sleeve within the platen, a tooth projecting inwardly from the first platen division for engagement with the teeth of said disk, a second sleeve having fast thereto an arm splined to the second platen division, a tooth carried by said arm for engagement with the teeth of said disk, means for shifting said first sleeve to cause the toothed disk to engage the tooth of the first platen division or the tooth on said arm, for rotation of either of said platen divisions relatively to the other, and means for shifting the second sleeve to cause the tooth on said arm to engage the teeth of said disk while the latter engages the tooth on the first platen division, so that the divisions of the platen may be rotated together from the axle.

27. The combination with a divided rotary platen, of an axle for the platen, a line-space ratchet wheel on the axle, a sleeve splined to said axle, a disk fast to said sleeve, having teeth in number and angular position the same as the teeth on the line-space wheel, a tooth fixed on the inner periphery of one of the divisions of the platen, a tooth secured for rotation with the other division of the platen, and means for shifting said sleeve with the toothed disk thereon to cause the teeth of the disk, according to the direction of shift, to engage one or the other of said teeth secured to the platen divisions.

28. The combination with a divided rotary platen, of a platen axle, a clutch member splined to the axle within the platen, means for shifting the clutch member into driving connection with either of the divisions of the platen, a boss on the axle, having two alined notches therein, and a spring-pressed ball, carried by the shiftable clutch member and adapted to be seated in one or the other of said notches, according to the position of the clutch member, to hold the clutch member in place.

29. The combination with right and left-hand platen-sections, of separate feed rolls for each section, and means for bringing into use either one section and its feed rolls or the other section and its feed rolls, the rolls constructed so that the feed rolls of the unused section do not turn.

30. The combination with a plurality of revoluble platen-sections, of a single line-spacing mechanism, means for coupling either platen-section to the line-spacing mechanism to turn such platen-section while the other platen-section remains motionless, and a feed roll for each platen-section rotatable independently of the feed roll for the other platen-section.

31. The combination with a plurality of revoluble platen-sections, of a single line-spacing mechanism, means for coupling either platen-section to the line-spacing

mechanism to turn such platen-section while the other platen-section remains motionless, a feed roll for each platen-section rotatable independently of the feed roll for the other platen-section, a feed-roll-release key, and means to connect said key to the feed roll of either platen-section.

32. The combination with a plurality of revoluble platen-sections, of a single line-spacing mechanism, means for coupling either platen-section to the line-spacing mechanism to turn such platen-section while the other platen-section remains motionless, a feed roll for each platen-section rotatable independently of the feed roll for the other platen-sections, a feed-roll-release key, and means to connect said key to the feed roll of either platen-section, said connecting means being automatically operated by connecting up either platen-section to the line-spacing mechanism.

33. The combination with a plurality of revoluble platen-sections, of a single line-spacing mechanism, means for coupling either platen-section to the line-spacing mechanism to turn such platen-section while the other platen-section remains motionless, a feed roll for each platen-section rotatable independently of the feed roll for the other platen-section, a feed-roll-release key, means to connect said key to the feed roll of either platen-section, said connecting means being automatically operated by connecting up either platen-section to the line-spacing mechanism, and means for bringing both rolls or sets of rolls concomitantly under the control of said release key.

34. The combination with a plurality of revoluble platen-sections, of a single line-spacing mechanism, means for coupling either platen-section to the line-spacing mechanism to turn such platen-section while the other platen-section remains motionless, a feed roll for each platen-section rotatable independently of the feed roll for the other platen-section, a feed-roll-release key, means to connect said key to the feed roll of either platen-section, and means for bringing both rolls or sets of rolls concomitantly under the control of said release key.

35. The combination of a line-spacing device, a plurality of platen-sections, a shifter for connecting either one platen-section or the other to said line-spacing device, a finger-key, a feed roll for each platen-section, releasing means for each feed roll, and means controlled by said shifter for connecting said finger-key to either of said releasing means.

36. The combination of a line-spacing device, a plurality of platen-sections, a shifter for connecting either one platen-section or the other to said line-spacing device, a finger-key, a feed roll for each platen-section, releasing means for each feed roll, means controlled by said shifter for connecting said finger-key to either of said releasing means, means for connecting said platen-sections simultaneously to said line-spacing device, and means for placing said releasing means simultaneously under the control of said key.

37. The combination of a line-spacing device, a plurality of platen-sections, feed rolls therefor, a hand-wheel movable to connect or disconnect said platen-sections with the line-spacing device, a lever operable by said hand-wheel, a key, and a link shiftable by said lever to connect to said key the roll of the platen-section which is connected to the line-spacing device by the movement of said hand-wheel.

38. The combination of a line-spacing device, a plurality of platen-sections, a shifter for connecting either one platen-section or the other to said line-spacing device, a finger-key, a feed roll for each platen-section, releasing means for each feed roll, means controlled by said shifter for connecting said finger-key to either of said releasing means, a nut for connecting said platen-sections to move together, and a lever controllable by said nut for connecting both of said roll-releasing means to said finger-key.

39. The combination of a line-spacing device, a plurality of platen-sections, feed rolls therefor, a hand-wheel movable to connect or disconnect said platen-sections with the line-spacing device, a lever operable by said hand-wheel, a key, a link shiftable by said lever to connect to said key the roll of the platen-section which is connected to the line-spacing device by the movement of said hand-wheel, a nut for connecting said platen-sections to move together, a follower working with said nut, and means to enable said follower to connect one feed roll with said link while said link remains connected to the other feed roll, so that said key may release both feed rolls.

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Witnesses:

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