No. 694,602. Patented Mar. 4, 1902.

W. J. BARRON.

TYPE WRITING MACHINE.

(Application filed Nov. 27, 1899.)

(No Model.) 5 Sheets—Sheet 1.

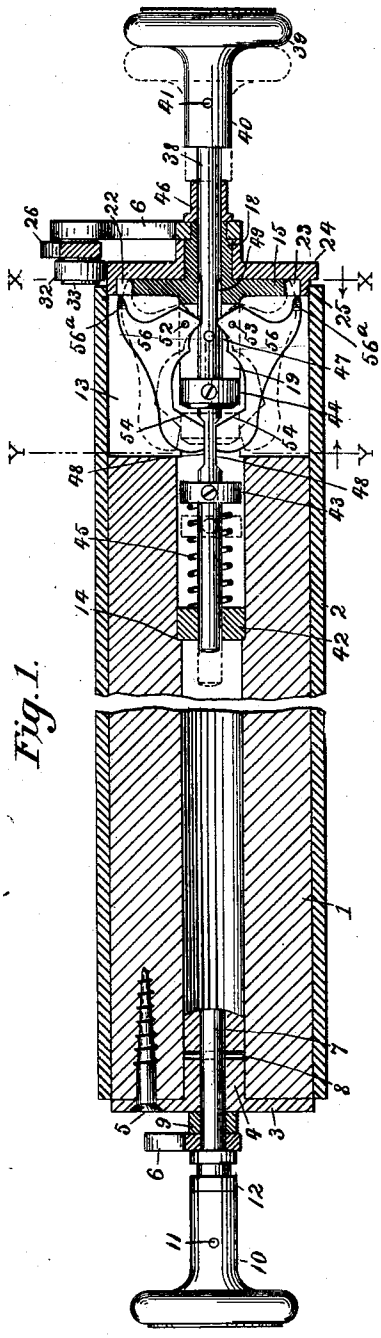


Fig. 1.

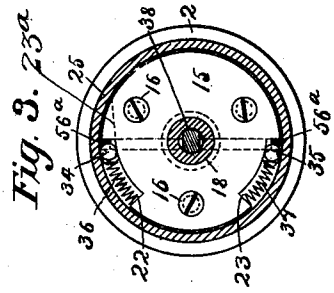


Fig. 3.

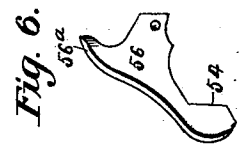


Fig. 6.

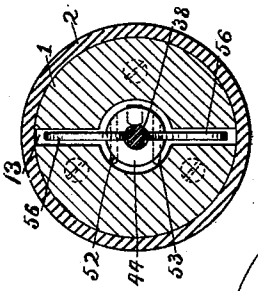


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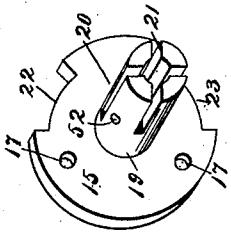


Fig. 5.

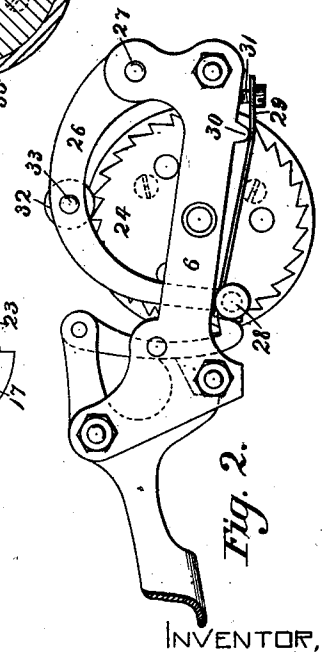


Fig. 2.

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No. 694,602. Patented Mar. 4, 1902.

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(No Model.) 5 Sheets—Sheet 2.

Fig. 7.

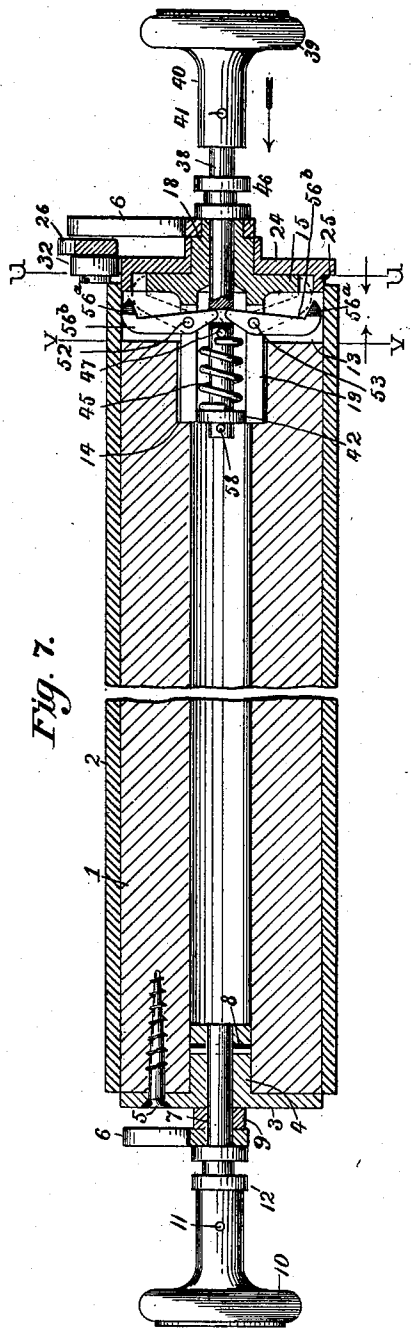


Fig. 8.

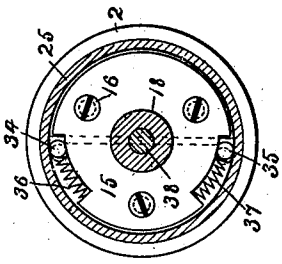


Fig. 9.

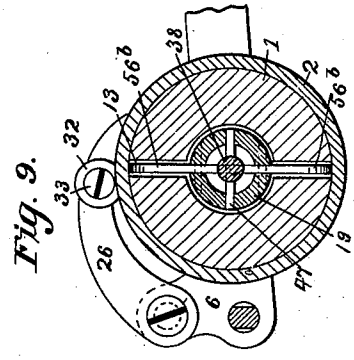


Fig. 10.

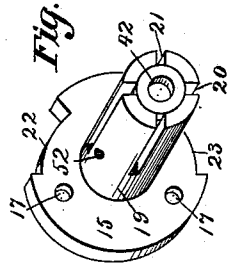


Fig. 11.

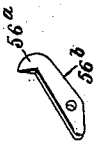
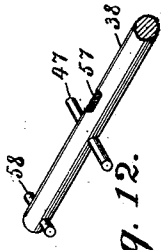


Fig. 12.



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No. 694,602. Patented Mar. 4, 1902.

W. J. BARRON.

TYPE WRITING MACHINE.

(Application filed Nov. 27, 1899.)

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Fig. 13.

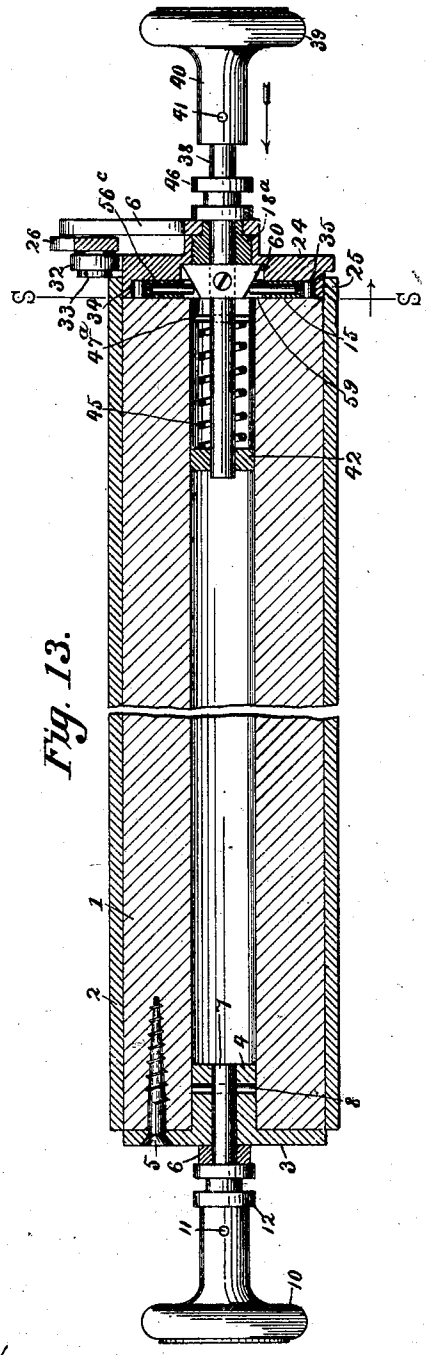


Fig. 14.

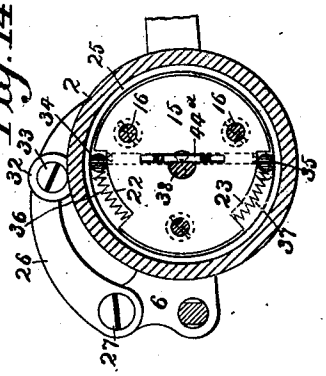


Fig. 15.

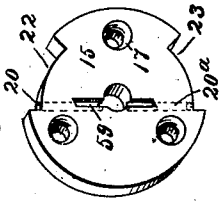


Fig. 16.

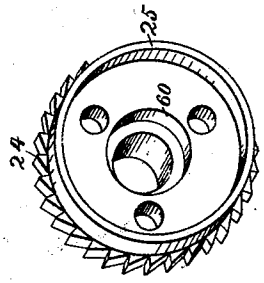
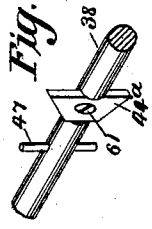


Fig. 17.



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TYPE WRITING MACHINE.

(Application filed Nov. 27, 1899.)

(No Model.) 5 Sheets—Sheet 4.

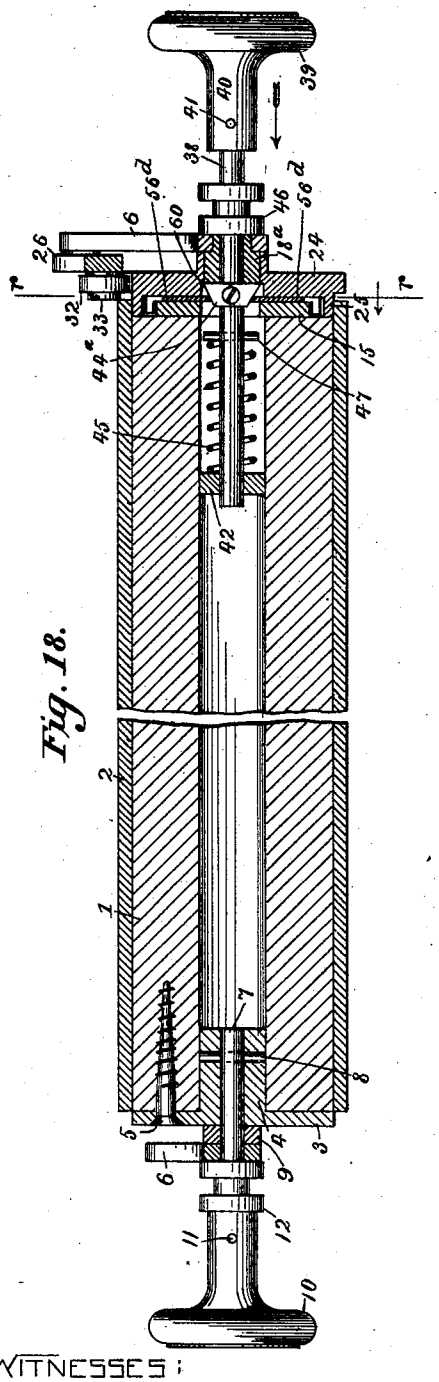


Fig. 18.

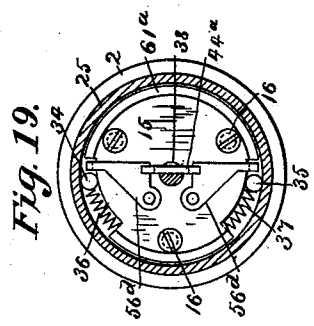


Fig. 19.

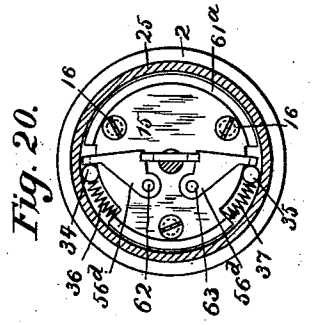


Fig. 20.

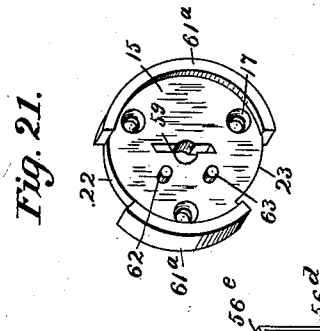


Fig. 21.

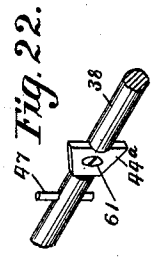


Fig. 22.

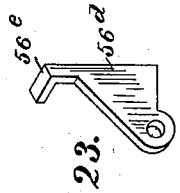


Fig. 23.

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No. 694,602. Patented Mar. 4, 1902.

W. J. BARRON.

TYPE WRITING MACHINE.

(Application filed Nov. 27, 1899.)

(No Model.) 5 Sheets—Sheet 5.

Fig. 24.

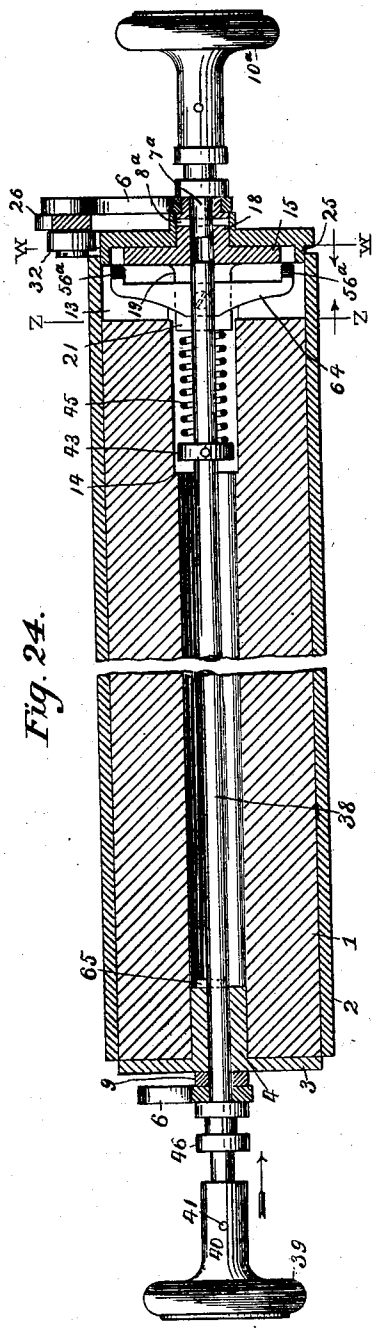


Fig. 25.

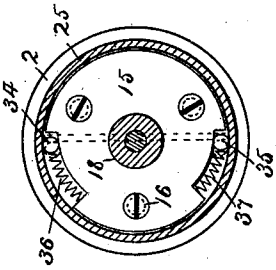


Fig. 26.

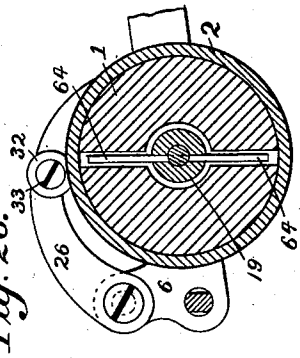


Fig. 27.

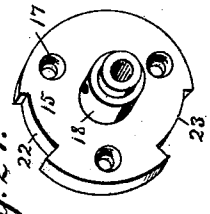
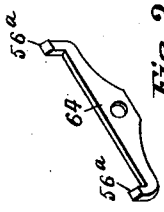


Fig. 28.



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by Jacob Feltel

HIS ATTORNEY.

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UNITED STATES PATENT OFFICE.

WALTER J. BARRON, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE DENSMORE TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 694,602, dated March 4, 1902.

Application filed November 27, 1899. Serial No. 738,392. (No model.)

To all whom it may concern:

Be it known that I, WALTER J. BARRON, a citizen of the United States, and a resident of the borough of Brooklyn, in the city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

The present invention relates to improvements in platens for type-writing machines, the immediate object of the invention being to release the platen from its line-spacing ratchet-wheel, so that it may be turned independently thereof in either direction and to any position relatively thereto, and to reconnect the platen to the line-spacing wheel in such adjusted position for the purpose of printing upon or between lines, as in printed forms having blank spaces to be filled in with the type-writer, and at such reconnection to lock the platen to the line-space wheel, so that they will travel together without liability of overthrow or creeping of the platen at the usual line-spacing operation.

My invention further relates to certain features of construction and combinations of devices, as hereinafter described, and more particularly pointed out in the appended claims.

The preferred form and sundry modifications of the invention are illustrated in the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central longitudinal section of a platen and shows the preferred form of the invention. Fig. 2 is an end view of a platen and carrier such as may be found in the Densmore type-writing machine, this being the make of machine to which I have applied the invention in practice. At this view the Densmore line-spacing lever and pawl are illustrated as just having effected a partial rotation of the platen, the line-space wheel being positively arrested by means of a horn which is integral with said lever and is adapted to press the pawl into a notch in the wheel, whereby overthrow of the wheel is prevented. Fig. 3 is a sectional view on the line X X in Fig. 1 looking in the direction of the arrow. Fig. 4 is a sectional view on the line Y Y in Fig. 1 looking in the direction of the arrow. Fig. 5 is a detail perspective view of a disk shown in Fig. 1. Fig. 6 is a detail perspective view of a clutch-opening lever shown also in Fig. 1. Fig. 7 is a central longitudinal sectional view of a platen and showing a modification of the invention. Fig. 8 is a cross-sectional view upon the line *u u* in Fig. 7 looking in the direction of the arrow. Fig. 9 is a view similar to Fig. 8, but upon the line *v v* and looking in the direction of the arrow. Figs. 10, 11, and 12 are detail perspective views of various parts shown in Fig. 7. Fig. 13 is a central longitudinal sectional view of the platen and showing a second modification of the invention. Fig. 14 is a sectional view upon the plane indicated in Fig. 13 by the line S S looking in the direction of the arrow. Figs. 15, 16, and 17 are detail perspective views of parts shown in Fig. 13. Fig. 18 is a central longitudinal sectional view of a third modification of the invention. Fig. 19 is a sectional view upon the plane indicated in Fig. 18 by the line *r r* looking in the direction of the arrow. Fig. 20 is a view similar to Fig. 19, but with the parts in a different position. Figs. 21, 22, and 23 are detail perspective views of parts shown in Fig. 18. Fig. 24 is a central longitudinal sectional view of a platen and showing a fourth modification of the invention. Fig. 25 is a sectional view upon the plane indicated in Fig. 24 by the line W W looking in the direction of the arrow. Fig. 26 is a sectional view upon the plane indicated in Fig. 24 by the line Z Z looking in the direction of the arrow, and Figs. 27 and 28 are detail perspective views of parts shown in Fig. 24.

The same part will be referred to by the same numeral of reference in the drawings.

The preferred form of the invention illustrated at Figs. 1 to 6, inclusive, will now be described.

1 indicates a hollow wooden core; 2, a rubber sheath upon said core; 3, a metal disk having a hub 4 and secured to the left-hand end of the core 1 by wood-screws 5; 6, the platen carrier or frame; 7, a short shaft journaled in a left-hand bar of the frame 6 and fitting a bearing in the hub 4, to which it is

secured by a pin 8, passing through perforations in the hub and shaft; 9, a loose collar or washer between the disk 3 and the frame 6; 10, a hand-wheel secured to the shaft 7 by a pin 11, which passes through both the hub of the hand-wheel and the shaft; 12, a sleeve or collar arranged upon the shaft between the hub of the wheel 10 and the frame 6.

At the right-hand end of the platen the sheath 2 projects slightly beyond the core 1. The end of the core is provided with a deep diametrical slot 13 and is also bored out to form a shoulder at 14. A metal disk 15 is secured to the right-hand end of the core 1 by screws 16, which pass through perforations 17 in the disk and engage the core 1. The disk is formed with a hub 18, which is shouldered or reduced at the end to take a bearing in a hole in the right-hand end bar of the platen-frame carrier 6, as shown in Fig. 1. The disk 15 is also provided with a hub 19 upon the opposite side thereof from the hub 18, and the end of hub 19 is provided with deep crosswise or intersecting diametrical slots 20 21, thus splitting it into four segments, as shown in Fig. 5. The hub 19 extends into the bore of the core 1. Two tapering or angular notches or recesses 22 23 are formed in the periphery of the disk 15, the bottoms of which are formed on inclined arcs which are struck from a center eccentric to the disk-axis, the degree of inclination of the arc being determined by the distance of its generating-point from the disk-axis. Both notches are arranged upon one side of a diametrical line, and as the arcs are struck from a common center it results that one of them is inclined in one direction and the other in the other direction with respect to the peripheral line of the disk. So long as the notch is deep at one end and shallow at the other it is not essential that it should be arched or curved, inasmuch as it may be flat or straight. Preferably the shorter end walls of the notches are at diametrically opposite points upon the disk. However, the notch may, if desired, terminate at this point in a tangential line, as illustrated by a dotted line at 22^a, Fig. 3.

Outside of the disk 15 and loosely mounted upon the hub 18 thereof is a line-space ratchet-wheel 24, which is provided with an integral inner flange or ring 25, passing loosely within the overhanging end of the sheath 2 and loosely encircling the disk 15, as indicated in Fig. 3.

26 is a detent-arm pivoted at 27 to the platen-carrier 6 and bent downwardly from above the platen to a point underneath the frame 6, as illustrated in Fig. 2, where it is provided with a laterally-extending flanged stud 28.

29 is a flat spring fulcrumed upon a lug 30 under the right-hand end bar of the platen-carrier 6 and at one end pressing upon the upper side of the stud or roller 28. The other end of the spring is engaged by the head of an adjusting-screw 31, which enters a threaded hole in the said end bar.

32 is a detent-roller pivoted upon a stud 33, secured to the arm 26 aforesaid and engaging the teeth of the ratchet-wheel 24 to properly position the ratchet-wheel.

34 and 35 are small rollers placed respectively in the races formed by the flange 25 and the angular recesses 22 and 23 aforesaid. These rollers may be either balls or short cylinders, the latter being preferred. Roller 34 is pressed toward the narrower end of the race 22 by a spiral spring 36, which abuts at one end against the deeper radial end of the race and at the other end against the said roller, while the roller 35 is similarly pressed toward the narrower end of the race 23 by a spring 37. Each roller is of a diameter such that upon one side it engages with the bottom of the notch or recess and upon the opposite side with the inner wall of the flange 25 at a point near the end wall of the recess, at the shallow portion thereof, and owing to the converging arrangement of the bottom of the recess with reference to the inner surface of the flange each roller performs the function of a wedge. In Fig. 3 if the flange 25 be turned toward the right roller 34 jams, binds, or wedges the flange still more firmly against rotation independently of the disk 15, or if the flange be turned in the opposite direction the other roller 35 jams the flange and disk together more tightly, so that in either case the ratchet-wheel and platen are caused to turn or move integrally—that is, the flange, notches, rollers, and springs taken together form a self-binding clutch or lock for securing the platen to the line-space wheel, or assuming the flange to be stationary the same binding action would result from an attempt to turn the disk 15 relatively thereto.

The hub 18 is provided with a central bore in which is placed an inwardly-sliding device 38, which may be made in the form of a rod, shaft, or tube or sleeve. To the outer end of the rod or shaft is secured a finger-piece, preferably in the form of a wheel 39, by means of a pin 41 passing through its hub 40. Within the platen and abutting against the shoulder 14 aforesaid is placed a bushing 42 to afford a sliding bearing for the inner end of the shaft 38. To the shaft are secured two collars 43 44. Between the bearing 42 and the collar 43 is a coiled compression-spring 45, abutting at one end against the bearing and at the other end against the collar and tensioned to slide the shaft 38 outwardly to the extent allowed by the collar 44, which normally abuts against the end of the hub 19 aforesaid. The inward movement of the shaft is limited by contact of hub 40 with a collar 46, placed on the shaft outside of the carrier 6, as indicated by dotted lines in Fig. 1. To prevent the shaft from turning independently of the hub 19, the former is provided with a cross-pin 47, which engages with the slot 21 in the hub. A portion of the shaft between

the collars 43 and 44 is flattened upon opposite sides, the flat surfaces being designated as 48 and being parallel with the slot 21 and at right angles to the slot 20.

At a point near its bearing in the disk 15 the shaft is also provided with flattened portions or recesses 49 parallel with the flattened portions 48 and having abrupt ends. Oppositely arranged in the slots 20 in the hub 19 are two similar levers 56. These latter are pivoted to the hub at points 52 53 and extend into the clearance-slot 13, provided in the wooden core 1. Each lever is provided with a tooth 56^a, normally standing in proximity to one of the rollers 35 and provided with a bevel, as indicated at Fig. 6. At their left-hand ends the levers normally bear upon the flattened portions 48 of the shaft 38, which act as stops for the levers. Each lever is also provided near its pivot with a short heel which extends into one of the recesses 49 in the shaft and normally abuts against the left-hand end thereof. Near their left-hand ends the levers are provided with sloping faces 54, which face the collar 44, and the latter may be provided with a corresponding bevel.

In operation the hand-wheel 39 is used as a push-button and pressed toward the left, forcing inwardly the shaft 38 and all of the parts secured thereto and compressing the spring 45. The collar 44 contacts with the sloping faces 54 of the pair of levers and by a wedging action separates the levers, which turn upon their pivots, the teeth 56^a being caused to enter the recesses 22 23 in the disk 15 between the rollers and the end walls of the recesses, the position of the parts at this time being shown in dotted lines at Fig. 1. The beveled portions of the teeth engage the rollers and by a wedging action force the latter toward the deeper portions of the races, so that the rollers no longer contact with both the bottoms of the recesses and the inner surface of the flange. By this operation the disk 15 and the platen secured thereto are released from the control of the line-space wheel and the detent 26 and may therefore be rotated independently to any extent. The position of the rollers at the end of the releasing operation is indicated at Fig. 3 in dotted lines. Either hand-wheel may be used for turning the platen after its release, so long as the hand-wheel 39 is held in the dotted-line position. As soon as the platen has been turned far enough in either direction to bring the paper to the desired position the operator releases the hand-wheel or finger-piece or release-key 39, and by the spring 45 it is returned to normal position, together with the shaft 38. During this movement the short heels upon the levers 56 are engaged by the left-hand ends of the recesses 49, and the levers are thereby rocked upon their pivots until their left-hand ends again contact with the flattened sides 48 of the shaft. As the teeth 56^a are withdrawn from the recesses 22 23 the springs 36 37 force the rollers toward the narrow ends of the races until reengagement is effected between the flange, the rollers, and the bottoms of the recesses, and hence reconnection is established between the platen and the line-space wheel. Writing may then proceed in the usual manner and the type impressions falling upon the desired line on the paper. This adjustment is especially useful either in making corrections upon a page, when it is necessary to bring the line of writing exactly to the printing-point, or in writing upon ruled paper or in filling blanks in printed matter. Ordinarily lines can be written upon the paper only at certain variable intervals, as determined by the pitch of the teeth or the distance between the notches in the line-space wheel, and in cases where it is desired to write at some intermediate point or points upon the paper it is usual to grasp the sheet and pull it backwardly around the platen without moving the latter. By this invention the paper is not adjusted with reference to the platen; but both the paper and platen are by a simple operation adjusted with reference to the line-space wheel and after such adjustment may be again locked to the line-space wheel. As a result of frequent adjustments of the platen in this manner the entire printing-surface of the platen is subjected to the blows of the types instead of certain longitudinal lines thereof, so that the formation of the depressions caused by successive type-blows is to a great extent avoided.

In the several modifications illustrated the parts bearing the same numerals of reference are substantially identical with parts previously described and have similar functions.

Referring to Figs. 7 to 12, inclusive, the hub 19 of the disk 15 abuts against the shoulder 14 and the bearing 42 is secured within said hub 19, Figs. 7 and 10, which has a bore for the reception of spring 45, which abuts against the bearing 42 and the pin 47 and is tensioned to move the shaft 38 outwardly. The teeth 56^a are borne by a pair of levers 56^b, pivoted at 52 and 53, respectively, to the hub 19 and having ends extending inwardly of the hub and engaging a slot 57 in the shaft 38, whereby the levers may be moved in either direction. A pin 58, fast in the shaft 38 at its inner end, abuts against the inner side of the bearing 42, and so limits the outward motion of the shaft 38. The operation of this modification is substantially the same as that of the preferred form of the invention already described.

Referring to Figs. 13 to 17, inclusive, the ratchet-wheel 24 is rotatably mounted upon a boss or stud 18^a, which is fixed to the right-hand end of the platen-frame 6. The means for releasing the rollers 34 35 are in the form of oppositely-disposed cone-pointed radial pins 56^c, which slide in perforations 20^a in the disk 15 to engage the rollers 35. The disk 15 is provided with a radial slot 59, into which the inner ends of the pins 56^c extend. The inner face of the ratchet-wheel 24 is pro-

vided with a depressed or countersunk portion 60. To a rabbet formed in the shaft 38 is secured, by a screw 61, a double cam-plate 44^a. This cam-plate enters the circular depression 60 and engages the slot 59, so as to turn the disk and platen either relatively to the line-space wheel or together therewith, as the case may be. The inner ends of the pointed pins 56^c rest upon the inclined edges of the cam-plate 44^a. By pressure upon the finger-wheel or push-button 39 the shaft may be moved endwise in the direction of the arrow, compressing the spring 45 and causing the cam-surfaces on the plate 44^a to force the pins 56^c outwardly, so that their toothed ends engage the rollers 35 and by a wedging action force them toward the wider portions of the races, as indicated in dotted lines at Fig. 14. After the desired adjustment of the platen is effected and the finger-piece 39 released the latter is returned to normal position by the spring 45, which bears at its right-hand end against a pin 47^a, which transfixes the shaft 38, and the pins 56^c are forced inwardly by the spring-pressed rollers 34 35 as the latter resume their normal locking positions.

Referring to Figs. 18 to 23, inclusive, the disk 15 is provided with a peripheral flange 61^a, which is cut away at 22 23 to form the hereinbefore-described reversed angular recesses. Pivoted upon studs 62 63, projecting laterally from the face of the disk, are a pair of levers 56^d, each of which is provided with a lateral tooth 56^e, that enters one of the races 22 23 in position to engage the roller therein at the releasing operation. Each of the levers is provided with an edge or face adapted to be engaged by one of the cam-surfaces on the above-described plate 44^a. In this modification the line-space wheel is like that shown at Figs. 16, and the disk 15 is provided with a slot 59, as shown at Fig. 15, wherein the plate 44^a works and by which it is splined to the platen. When the button 39 is pressed to the left, the cam edges of the plate 44^a bear upon the levers 56^d and swing them about their pivots, whereby the lever-teeth 56^e are caused to move the roller-wedges 34 35 to the wider portions of their races, as shown at Fig. 20. Upon the return of the button 39 to normal position the levers 56^d are caused to resume normal position by the action of the spring-pressed rollers 34 35 during the movement of the latter to relock the disk to the line-space ratchet-wheel.

In the modification illustrated at Figs. 24 to 28, inclusive, the endwise-movable shaft may, if desired, extend through the platen and beyond the platen-frame and may be provided at each end with suitable finger-pieces, either of which may be manipulated to turn the platen and line-space wheel together or to release the platen from the line-space wheel or to turn the platen independently after the releasing operation; but preferably the right-hand thumb-wheel 10^a is provided with a short shaft 7^a, which is rigidly secured to the hub of the line-space wheel 24 by a pin 8^a. The left-hand finger-piece 39 is provided with an endwise-movable shaft 38, slidably journaled in the left-hand bar 6 of the platen-frame and extending through the platen, its right-hand end being adapted to slide in a bore formed in the hub 19 of the disk 15. The shaft 38 is splined to the disk by means of a cross-arm 64, fixed to the shaft by a rabbet and screw and working in a radial slot 21 in the hub 19. Upon the ends of the cross-arm are formed bevel-end teeth 56^a, in register with the ball-recesses, near the narrow ends thereof. The spring 45 works between the end of the hub 19 and the collar 43, fixed upon the shaft, and is tensioned to press the shaft to the left, the movement of the shaft being limited by a projecting pin 65, abutting against the said hub 4. Pressure upon the button 39 will move its shaft in the direction of the arrow and cause the teeth 56^a to enter the recesses and force the balls to an inoperative position, thereby releasing the platen. Upon the relief of the key 39 from pressure the parts are returned by spring 45 to normal position, and the spring-pressed rollers relock the disk to the line-space wheel. In case the shaft 38 be extended through the right-hand end of the platen-frame, as aforesaid, it is obvious that the relation of the cross-arm 64, the disk, and the ratchet-wheel may be reversed, so that the release may be effected by a pressure to the left. One way of effecting this reverse would be to turn the entire platen structure end for end, so that the line-space wheel would stand at the left-hand end of the platen, as in some well-known makes of type-writing machines.

Many other changes may be made within the scope of my invention, the gist whereof resides in releasably locking the platen to the line-space wheel at any position of the platen.

It will be noted that the platen is locked to the line-space wheel by a self-binding action. The best form in which this idea can be carried out is one involving the use of rollers or balls; but I do not wish to be limited altogether thereto, since it is plain that various changes in detail construction, arrangement, and forms of parts may be made involving the idea of positively locking or wedging the parts together without departing from the gist of my invention.

It will be observed that in all forms of my invention a positive lock is effected between the line-spacing ratchet-wheel and the platen, whereby these two parts must of necessity always move together as one piece and so that there cannot be any creeping or movement of the platen relatively to the line-space wheel when the line-space lever is violently actuated and suddenly arrested, such as is liable to occur in all constructions wherein some form of friction clutch or device is arranged between the line-spacing wheel and the platen. It will of course be understood that where the platen may overthrow relatively to

the line-space wheel at the end of the line-spacing operation the line-spacing of the paper is irregularly produced and objectionable, and for this reason many of the frictional devices heretofore used between the platen and the line-space wheel have been discarded, owing to their inefficiency to prevent such overthrow. In the concluding claims, where I use the term "lock," I mean not a frictional connection between the platen and the line-space wheel, but a positive locking means which is not dependent at all upon frictional engagement between the members of the parts to be connected together.

In certain other prior constructions means are provided for positively locking together the platen and the line-space wheel, such means consisting of intermediate ratchet wheels and pawls; but these devices are objectionable for the reason that the platen cannot be locked in any position, but only in such positions as are permitted by the intervals or notches between the teeth of the ratchet-wheel, which makes it impossible to obtain exact registration of the line to be filled in with the printing-point, whereas in my construction every portion of the surface of the platen is adapted to be brought to exact registry with the printing-point and locked thereat. It will also be observed that in my clutch mechanism the devices employed are in a sense self-binding, since they are so arranged that the greater the force applied to turn the ratchet-wheel the greater the binding of the clutching devices, which is radically different from the mode of operation of frictionally-acting constructions or mechanisms in which the clutching or binding action of the parts is due generally to the power of a spring and in which the greater the force applied to turn the part the more liable are the parts to move relatively to each other. It will also be noted that I have provided mechanism, such as oppositely-acting clutches, for connecting together the platen and the line-space ratchet-wheel at any relative position thereof, that the platen and line-feed wheel have a common axis, and that a wedging or locking device is movable around said axis independently of both the platen and the line-feed wheel and adapted to lock the platen to the line-feed wheel; that the locking of the platen to the line-feed wheel is preferably effected by a pair of oppositely-disposed and oppositely-acting releasable turning or rolling wedges, that a manually-actuable device provided with teeth is adapted to engage the wedges and move them so as to release the platen, and that said release is preferably effected by the manual pressure in a direction lengthwise of the platen, and that the hand-wheel 39 is adapted to operate the shaft or rod 38 so as either to turn the platen and line-feed wheel together or to release the platen from the line-feed wheel or to turn the platen alone after such releasing action.

Where in the claims I use the term "lock" I do not mean to include any device that does no more than merely offer frictional opposition to the independent movement of the platen relatively to the line-space wheel. The principal objection to such frictionally-acting clutches is that they can be forced, and hence the platen when violently actuated is liable to overthrow, thus making the lines of writing appear at irregular intervals upon the page. This objection is overcome by my locking-clutch, which is self-binding, so that any force that may be applied to the platen for turning it independently of the line-space wheel only tends to bind the platen even more closely to said wheel. In view of this feature of operation it will be understood that the slight rotative shocks which are constantly being received by the platen at the ordinary line-spacing operations tend always to lock the platen to the line-space wheel, and it will also be seen that no matter how firmly it may become locked it is still readily releasable by the described mechanism.

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

1. In a platen-release mechanism, the combination of a platen, a line-feed ratchet-wheel, and mechanism for releasably locking the two against independent rotation in all relative positions thereof.

2. In a platen-release mechanism, the combination of a platen, a line-feed ratchet-wheel, and means for locking the platen and the wheel together in any relative position thereof against independent rotation and for releasing the platen from the wheel, whereby the platen may be rotated in either direction to any desired position relatively to the printing-point and to the wheel and may then be relocked to the wheel.

3. In a platen-release mechanism, the combination of a platen, a detent-held line-feed ratchet-wheel, a clutch mechanism locking the platen and wheel against independent rotation in any relative position thereof, and means for opening the clutch mechanism and releasing the platen, whereby the latter may be rotated independently in either direction to any desired position and may then be relocked to the ratchet-wheel by the closing of the clutch.

4. In a type-writing machine, the combination of a platen, a ratchet-wheel, oppositely-acting clutches, one clutch acting to oppose rotation of the platen in only one direction, and the other to oppose rotation in only the opposite direction, said clutches connecting said wheel and said platen together, and means for disengaging the said clutches to permit independent rotation of the platen.

5. In a type-writing machine, the combination of a line-feed ratchet-wheel and a relatively movable platen connected together by releasable self-binding devices, the construction and arrangement being such that attempted relative movement between the line-feed wheel and the platen effects a more pow-

erful binding action of the said connecting devices.

6. In a type-writing machine, the combination with a line-feed ratchet-wheel and a platen rotatable relatively thereto, of mechanism for locking the platen and line-feed wheel against relative rotary movement in only one direction, mechanism for locking the platen and line-feed wheel against relative rotary movement in only the other direction, and means for releasing both of said locking mechanisms.

7. In a type-writing machine, the combination of a line-feed ratchet-wheel, a platen whose axis coincides with the line-feed-wheel axis, said platen being rotatable relatively to the line-feed wheel, and a locking device movable around the common axis independently of both the platen and the line-feed wheel, and adapted to lock the platen to the line-feed wheel.

8. In a type-writing machine, the combination of a line-feed ratchet-wheel and a platen connected together by independent releasable self-binding wedges arranged between the platen and the line-feed ratchet-wheel and locking the two together.

9. In a type-writing machine, the combination of a platen, a line-feed ratchet-wheel, and mechanism, including a pair of oppositely-disposed independent releasable wedges movable around the axis of the platen and locking the platen and wheel together.

10. In a type-writing machine, the combination of a platen, a line-feed ratchet-wheel, and a releasable and rotatable wedge constructed to lock the two together by a turning movement of the wedge.

11. In a type-writing machine, the combination of a platen, a line-feed ratchet-wheel, and mechanism, including a pair of oppositely-disposed releasable and rotatable wedges, for locking the platen and wheel together.

12. In a type-writing machine, the combination with a line-feed ratchet-wheel and a platen rotatable relatively thereto, of a wedge for locking the platen to the ratchet-wheel, and normally disconnected means for engaging said wedge to move it and release the platen.

13. In a type-writing machine, the combination with a line-feed ratchet-wheel and a platen rotatable relatively thereto, of a pair of wedges for locking the platen to the ratchet-wheel, and a pair of levers constructed to engage said wedges to move them and release the platen.

14. In a type-writing machine, the combination with a line-feed ratchet-wheel and a platen rotatable relatively thereto, of a wedge for locking the platen to the ratchet-wheel, a lever constructed to engage said wedge to move it and release the platen, and a rod for operating said lever.

15. In a type-writing machine, the combination with a line-feed ratchet-wheel and a platen rotatable relatively thereto, of wedges for locking the platen to the ratchet-wheel, and a manually-operable device provided with teeth for engaging said wedges and moving them so as to release the platen.

16. In a type-writing machine, the combination with a platen, of a line-feed mechanism including a line-feed ratchet-wheel and releasable means for locking the platen to the line-feed wheel at all relative positions thereof, said line-feed mechanism comprising a member that may be pressed in a direction lengthwise of the platen to effect such release.

17. In a type-writing machine, the combination of a line-feed ratchet-wheel, a platen rotatable relatively thereto, means for locking the platen by a wedging action to the line-feed wheel at all relative positions thereof, and a rod movable relatively to the platen and provided with means for releasing the platen from the line-feed wheel.

18. In a type-writing machine, the combination of a line-feed ratchet-wheel, a platen rotatable relatively thereto, means for locking the platen by a wedging action to the line-feed wheel at all relative positions thereof, and a platen-rotating shaft provided with a hand-wheel and movable endwise relatively to the platen and also provided with means for releasing the platen from the line-feed wheel.

19. In a type-writing machine, the combination with a line-feed ratchet-wheel and a platen rotatable relatively thereto, of means for locking the platen by a wedging action to the ratchet-wheel, and an endwise-movable shaft splined to the platen and provided with means for releasing the platen from the line-space wheel, and provided also with a hand-wheel, whereby the shaft may be operated either to turn the platen or to effect said release.

20. In a type-writing machine, the combination with a line-feed ratchet-wheel, a platen rotatable relatively thereto, means for locking the platen by a wedging action to the line-feed wheel at all relative positions thereof, and a hand-wheel constructed to rotate both the platen and ratchet-wheel when locked together and provided with means for releasing the platen from the ratchet-wheel, and also constructed to rotate the platen after the releasing operation.

21. In a type-writing machine, the combination of a platen, a ratchet-wheel, oppositely-acting clutches for connecting the platen and the wheel together, one acting to oppose rotation of the platen in one direction, the other to oppose rotation in the opposite direction, a shaft movable axially of the platen, and means operated by the shaft for disengaging said clutches to permit independent rotation of the platen in either direction.

22. In a type-writing machine, the combination of a platen, a ratchet-wheel, oppositely-acting clutches for connecting the platen and ratchet-wheel together, a shaft movable axially of the platen, and movable teeth operated thereby for disengaging the

said clutches, to permit independent rotation of the platen in either direction.

23. In a type-writing machine, the combination of a platen, a ratchet-wheel, oppositely-acting clutches for connecting the platen and wheel together, a shaft movable axially of the platen, and pivoted actuators connected to the shaft and operated thereby to disengage the said clutches to permit independent rotation of the platen in either direction.

24. In a type-writing machine, the combination of a platen, a ratchet-wheel, oppositely-acting clutches for connecting the platen and the wheel together, a shaft movable axially of the platen, and clutch-opening levers, pivotally connected with the platen by axes at right angles to the axis of said shaft, and operatively connected with the shaft for opening said clutches to permit rotation of the platen in either direction.

25. In a type-writing machine, the combination of a platen, a ratchet-wheel, oppositely-acting clutches for connecting the platen and wheel together, clutch-opening levers pivotally connected with the platen upon axes at right angles to the axis of the platen, and a shaft movable axially of the platen and having a collar adapted to operate said openers by a camming action.

26. In a type-writing machine, the combination of a platen, a ratchet-wheel, oppositely-acting clutches for connecting the platen and the wheel together, pivoted clutch-openers, and a shaft movable axially of the platen and provided with a cammed part for actuating said openers.

27. In a type-writing machine, the combination of a platen, a line-feed ratchet-wheel, and a releasable wedge constructed to work between two surfaces, one of which surfaces is curved concentrically to the platen and the other of which is inclined to said concentrically-curved surface, one of said surfaces being secured to the platen and the other to the wheel.

28. In a type-writing machine, the combination of a platen, a ratchet-wheel, a disk alongside the ratchet-wheel and fast to the platen and provided with recesses whose bottoms are inclined some one way and some the other with respect to the periphery of the disk, a flange on the wheel exterior to the periphery of the disk, spring-pressed rollers in said recesses adapted to engage with said flange and said bottoms to lock the platen and the wheel together, and means for moving said rollers in said recesses to disengage the same, to permit rotation of the platen independently of the ratchet.

29. In a type-writing machine, the combination of a platen, a disk fast thereto, and having recesses in its periphery whose bottoms are inclined some one way and some the other with respect to said periphery, a ratchet-wheel exterior to the said disk, spring-pressed rollers in said recesses adapted to coact with the bottoms of said recesses and with the wheel to clutch or fasten the wheel and the platen together and also adapted to be moved in the recesses to disengage the platen from the wheel, and means for moving the said rollers toward the wider portions of said recesses to effect said disengagement.

30. In a type-writing machine, the combination of a platen, a disk fast to the platen and provided with tapering recesses, a loose ratchet-wheel provided with a flange opposing said recesses, spring-pressed rollers in said recesses adapted to engage with said bottoms and said flange to lock the platen and said wheel together and to be moved toward the wider parts of the recesses to disengage the platen from the wheel, a shaft movable axially of the platen, and means operated by said shaft for moving said rollers toward the said wider parts of the recesses to effect such disengagement.

31. In a type-writing machine, the combination of a platen, a line-space ratchet-wheel, a disk fast to the platen and provided with tapering recesses whose bottoms are reversely inclined, a surface on said ratchet-wheel opposing said recesses, spring-pressed rollers in said recesses adapted to engage with both said ratchet-wheel and said bottoms to lock the platen and the wheel together, and means for moving said rollers toward the wider parts of said recesses to disengage the disk from the wheel.

32. In a type-writing machine, the combination of a platen, a disk fast thereto and provided with tapering recesses in its periphery whose bottoms are reversely inclined, a ring exterior to said periphery and having line-space ratchet-teeth connected thereto, spring-pressed rollers in said recesses adapted to coact with the bottoms thereof and with the said ring to clutch or wedge together said ring and the disk, and means for moving said rollers toward the wider portions of said recesses.

33. In a type-writing machine, the combination of a platen, a disk fast thereto and provided with reversely-inclined tapering recesses, a ratchet-wheel provided with a surface opposing said recesses, spring-pressed rollers in said recesses adapted to engage said ratchet-wheel to lock the disk and ratchet-wheel together, a shaft movable axially of the platen, and means operatively connected with said shaft for moving said rollers toward the wider parts of the recesses.

34. In a type-writing machine, the combination of a platen, a disk fast to said platen and provided with reverse angular recesses, a ratchet-wheel having a flange opposing said recesses, spring-pressed rollers in said recesses adapted to coact with the bottoms thereof and with the flange to lock the wheel and platen together, a shaft movable axially of the platen, and wedges operatively connected to the shaft and adapted to force the rollers toward the wider portions of said recesses to disengage the disk and flange.

35. In a type-writing machine, the combination of a platen, a disk fast thereto and having reverse angular recesses, a ring opposing said recesses and connected to a line-space ratchet-wheel, spring-pressed rollers in said recesses adapted to coact with the bottoms thereof and with said ring to lock the platen and ratchet-wheel together, a shaft movable axially of the platen, wedges for moving said rollers to release the platen from the ratchet-wheel, pivoted arms carrying said wedges, and operative connections between said arms and said shaft.

36. In a type-writing machine, the combination of a platen recessed at one end, a disk secured to the recessed end of the platen and provided with reverse angular recesses in its periphery, a line-space ratchet-wheel having a flange surrounding the periphery of the disk, spring-pressed rollers in said recesses for engaging with the bottoms thereof and with said flange to lock the platen and wheel together, an endwise-movable shaft arranged partly within and partly without said platen, and means connected with said shaft for moving said rollers toward the wider portions of said recesses.

37. In a type-writing machine, the combination of a platen recessed at one end, a disk secured to said recessed end and provided with reverse angular recesses in its periphery, a line-space ratchet-wheel having a flange or shoulder surrounding said disk, spring-pressed rollers in said recesses adapted to coact with the bottoms thereof and with the flange or shoulder to lock the platen and wheel together against independent rotation, a shaft partly within and partly without the platen and movable endwise independently thereof, wedges for moving said rollers toward the wider portions of said recesses, pivoted arms carrying said wedges, and operative connections between said arms and said shaft.

38. In a type-writing machine, the combination of a platen-carrier, a platen recessed at one end, a disk 15 secured to the recessed end of the platen and provided with reverse angular recesses 22, 23, a hub 18 on said disk and journaled in the platen-carrier, a line-space ratchet-wheel loosely mounted on the hub 18 between the disk 15 and the platen-carrier and having a flange 25 surrounding the disk 15, spring-pressed rollers 34 35 in said angular recesses, a hub 19 having intersecting slots 20, 21, extending longitudinally thereof, said hub being on the disk 15 and extending into the platen, levers 50, 51, pivotally connected with the hub 19, an endwise-movable shaft 38 sliding in bearings in the hubs 18, 19, and having a pin 47 engaging the slot 21 and also having flattened portions 49 with abrupt ends for engaging with extensions of levers 50, 51, a collar 44 in said shaft for engaging said extensions of the levers 50, 51, and a hand-wheel 38 on said shaft.

39. In a type-writing machine, the combination of a platen, a disk fast thereto and provided with reverse angular recesses in its periphery, a ring exterior to said periphery and connected to a line-space ratchet-wheel, spring-pressed rollers in said recesses adapted to coact with the bottoms thereof and with the ring to lock the wheel and the platen together against independent rotation, a shaft movable axially of the platen, wedges for moving said rollers to disengage the disk and ring, and connections between said spring-pressed shaft and said wedges for actuating the latter.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York, this 25th day of November, A. D. 1899.

WALTER J. BARRON.

Witnesses:
M. W. POOL,
E. M. WELLS.