

C. W. WALKER.
TYPE WRITING MACHINE.
APPLICATION FILED NOV. 26, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

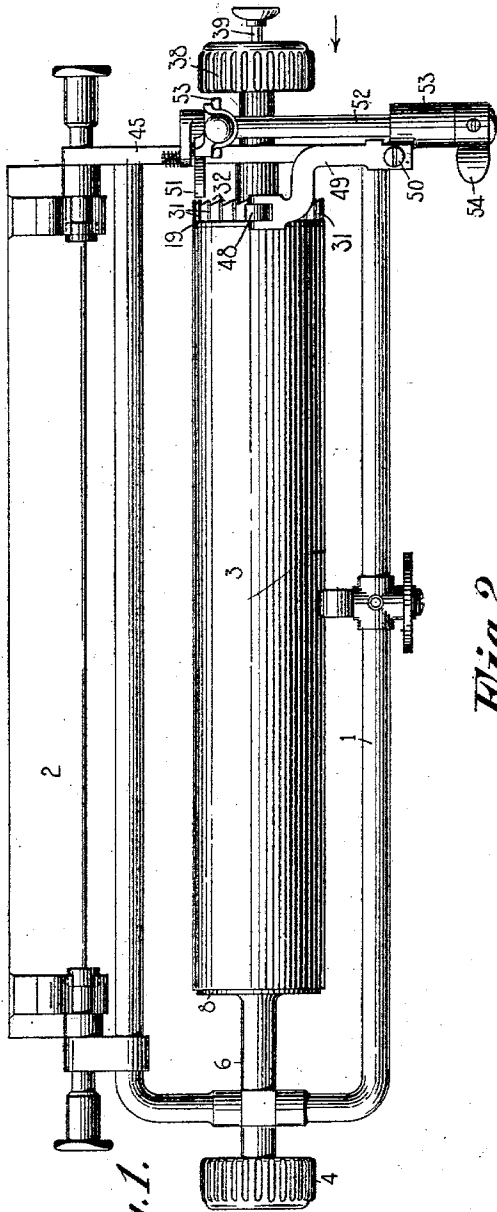


Fig. 1.

Fig. 2.

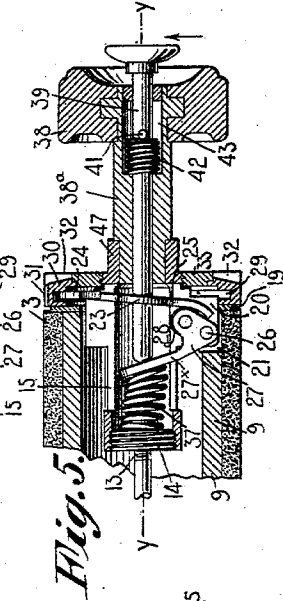
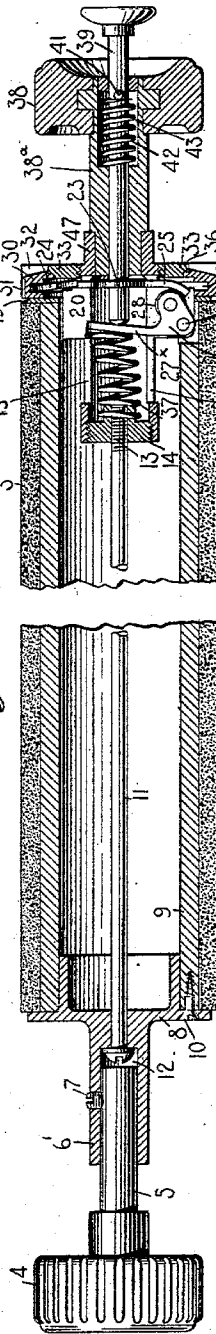


Fig. 5.

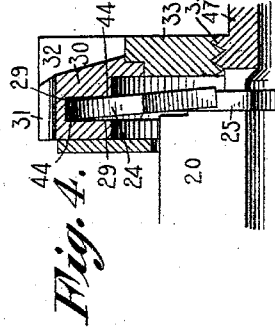


Fig. 4.

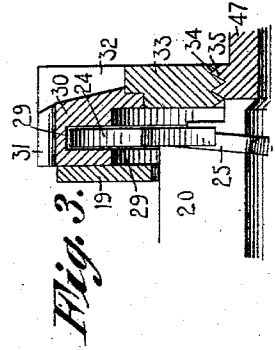


Fig. 3.

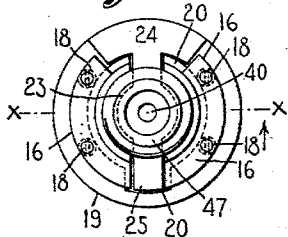
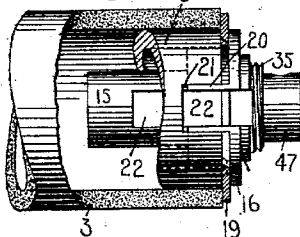
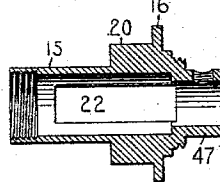
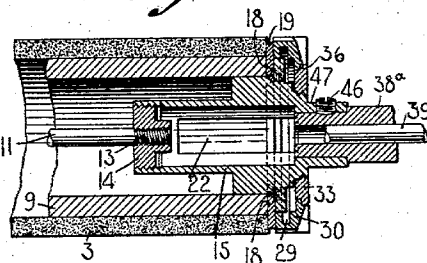
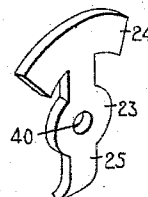
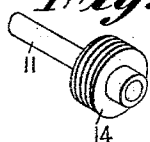
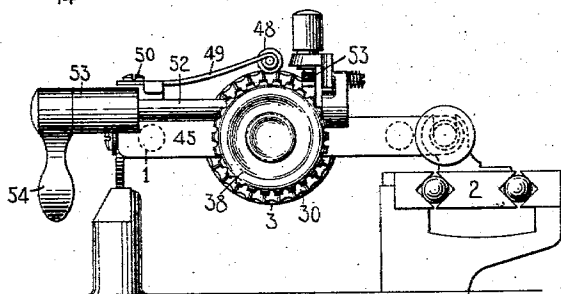
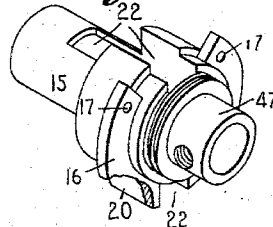
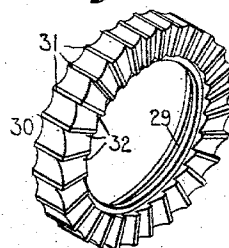
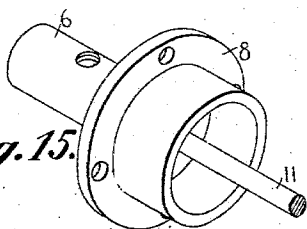
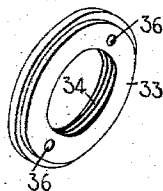
Witnesses:
R. V. Monovan.
Charles Smith

Inventor:
Charles W. Walker
by James F. Felt
His Attorney

C. W. WALKER.
TYPE WRITING MACHINE.
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NO MODEL.

2 SHEETS—SHEET 2.

Fig. 6.*Fig. 7.**Fig. 8.**Fig. 9.**Fig. 10.**Fig. 11.**Fig. 12.**Fig. 13.**Fig. 14.**Fig. 17.**Fig. 15.**Fig. 16.**Witnesses:*

K. V. Donovan.
Charles Smith

Inventor:
Charles W. Walker
by Jacob Falbel
His Attorney

UNITED STATES PATENT OFFICE.

CHARLES W. WALKER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO YOST WRITING MACHINE COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 720,762, dated February 17, 1903.

Original application filed December 21, 1901, Serial No. 86,821. Divided and this application filed November 26, 1902. Serial No. 132,890. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. WALKER, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My present invention relates to means for affording an ordinary line-spacing or a differential feed of the platen, as may be desired, so that the platen may be intermittently rotated a given distance at each operation in the usual manner by the line-spacing mechanism, or may be turned to any desired extent for differential spacing, so as to bring any space or line of the blank or sheet to the printing-line.

A further object of my invention is to provide a construction wherein the relation between the line-spacing wheel and platen is changed from time to time, so that the impact of the types on the platen will be distributed over the entire surface of the platen instead of being received on given lines.

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

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a plan view of a type-writer carriage, showing the devices of my invention applied thereto. Fig. 2 is an enlarged detail longitudinal sectional view of the platen and the devices co-operating therewith, the view illustrating the positions of the parts when the platen and line-spacing wheel are locked to rotate together. Fig. 3 is an enlarged detail fragmentary transverse sectional view taken through the line-spacing wheel and illustrating a disposition of the parts which permits the platen to be rotated independently of the line-spacing wheel. Fig. 4 is a like view of the same, showing a disposition of the parts when the line-spacing wheel and platen are locked to

rotate together. Fig. 5 is a longitudinal sectional view taken through the right-hand end of the platen and its associated parts, the view illustrating the disposition of the parts when the platen is free to be rotated independently of the line-spacing wheel. Fig. 6 is a detail end view of certain parts of the platen locking and releasing mechanism to be hereinafter more fully described. Fig. 7 is a side view of the same with parts broken away, the view looking in the direction of the arrow in Fig. 6. Fig. 8 is a longitudinal sectional view of certain of the parts represented in Fig. 6, the section being taken on the line *xx* of Fig. 6. Figs. 9, 11, 12, 14, 15, and 16 are detail perspective views of portions of the platen releasing and locking mechanism. Fig. 10 is a detail fragmentary longitudinal sectional view of the platen releasing and locking mechanism, the section being taken on the line *yy* of Fig. 5 and looking in the direction of the arrow in said figure and with portions of the structure omitted. Fig. 13 is an end view of the carriage looking in the direction of the arrow in Fig. 1. Fig. 17 is a detail perspective view of the line-spacing ratchet wheel or ring.

The present case is a division of my application, Serial No. 86,821, filed December 21, 1901.

A platen-frame 1 is connected to a carriage 2 and supports a platen 3, that is adapted to rotate in bearings therein. The finger-wheel 4 at the left-hand end of the platen has a stem 5, which is journaled in the platen-frame and which projects into a sleeve 6, a set-screw 7 being received within a threaded opening in the sleeve and bearing at its inner end against the stem to connect the stem and sleeve together. The sleeve 6 constitutes an integral portion of a platen-head 8, that is secured to the core 9 of the platen by screws 10. From an examination of Fig. 2 it will be seen that a headed rod 11 extends through the left-hand platen-head and has its head seated in an opening 12 in the sleeve 6 and is threaded at its inner end 13 to engage a screw-threaded opening in an exteriorly-threaded plug 14, which is

screwed into the inner end of a housing 15. (Shown in detail in Fig. 14.) This housing is formed with a circular circumferential flange 16, provided with threaded holes 17 for the reception of machine-screws 18, (see Fig. 10,) which pass through openings in a ring 19 to unite the ring and housing. The housing 15 has laterally-extending lugs 20, that are seated in an aperture 21 in the core 9 of the platen, as indicated in Figs. 2, 5, and 7, and thus prevent a rotation of the housing with relation to the platen. The housing 15 is likewise apertured transversely at 22 for the reception of an engaging piece or lever 23, which is shown in detail in Fig. 11. This engaging piece comprises a segmental end 24 and a laterally-extending lever-arm 25. Pivoted within the recess 22 in the housing, on a pin 26 supported in the lugs 20, is a bent lever 27, provided with a long arm 27^x, that extends transversely of the platen, and a short arm that carries an antifriction-roller 28, that bears upon the free end of the lever-arm 25 of the engaging piece. The segmental end 24 of the engaging piece is seated within a circular internal groove 29, formed in the platen feed or line-spacing ring or wheel 30, which is shown in detail in Fig. 17. This ring bears at one side against the face of the ring 19, which is secured to the housing, and the feed-ring 30 is adapted to rotate independently of the platen and of the housing. The feed or spacing ring is provided with teeth 31 on the periphery thereof and with teeth 32 on its end face and is maintained against displacement on the platen by a ring 33, (shown in detail in Fig. 16,) that is internally screw-threaded at 34 to enable it to cooperate with the screw-threads 35 on the housing and to be supported thereby. Openings 36 may be provided in the ring 33 to facilitate the mounting thereof by means of a spanner-wrench. Contained within the housing is an expansion-spring 37, which bears at one end against the long arm of the lever or engaging piece 27 and at its opposite end against the screw-threaded adjustable plug 14, by means of which the tension of the spring may be varied.

Projecting through the right-hand finger-wheel 38 of the platen is a hand-operated plunger-rod 39, which passes through an opening 40 in the engaging piece and bears against the long arm 27^x of the lever 27. This plunger-rod is provided with a laterally-extending pin 41, that limits the outward movement thereof and affords a bearing for a spring 42, that is contained within a recess 43 in the stem or hub 38^a of the finger-wheel and bears at its opposite end against an end wall of the recess to normally maintain the plunger-rod in its outermost position, as shown in Fig. 2. From an examination of Fig. 4 it will be seen that the segmental portion 24 of the engaging piece 23 is seated within the internal groove 29 of the line-space feed-ring 30 and bears by a leverage action against the side walls 44 of the groove which form fulcrum-points for the en-

gaging piece when it is under tension of the spring 37, so that by the pressure of the lever 27 the platen is caused to rotate with the line-spacing ring when the latter is turned. When, however, it is desired to rotate the platen independently of the feed wheel or ring, it is merely necessary to push in the plunger-rod 39, and thus move the two-arm lever 27 against the tension of its spring, thus relieving the friction clutch or lever 23 from pressure and permitting it to assume the position shown in Figs. 3 and 5, when the platen is free to be rotated by either finger-wheel independently of the platen feed-wheel 30 for any desired distance in either direction. By reason of the employment of a leverage action and of the use of long lever-arms 25 and 27^x a powerful and efficient binding action of the segmental portion 24 against the side walls of the groove is secured when the parts are in their normal positions, and hence when the line-spacing ring is rotated the platen is caused to turn therewith. Owing to the powerful leverage obtained it is necessary to use only a comparatively weak spring 37 to secure a firm and efficient connection or engagement between the platen and the line-spacing ring and one which may be easily released by an endwise movement of the rod 39.

It will be understood that by merely unscrewing the rod 11 from the housing the entire platen-releasing mechanism at the right-hand end of the platen may be disconnected therefrom without dismantling other portions of the structure, provided the platen is detached from its supporting-frame 1. It will also be seen that the platen-release mechanism may be put together or assembled apart from the platen and then subsequently attached thereto simply by screwing in the rod 11, the hand-wheel 38 being attached after the platen is mounted in its frame.

The spring 42 may be dispensed with, inasmuch as the expansion-spring 37 is sufficient to restore the plunger-rod 39 to its normal position; but the spring 42 is provided, nevertheless, principally to prevent any shake of the rod 39 in its bearings. The hub or hollow stem 38^a of the hand-wheel 38 passes through the end bar 45 of the platen-frame and is secured at its inner shouldered end by a screw 46 in the outwardly-projecting boss-like portion 47 of the housing.

Coöperating with the peripheral teeth 31 on the feed-wheel is a detent or pressure roller 48, which is mounted in bearings upon a spring 49, secured to the platen-frame at 50. A line-spacing pawl 51 coöperates with the teeth 32 on the side of the wheel and is actuated by a rock-shaft 52, that turns in bearings 53 on the platen-frame. The forward end of the rock-shaft has secured thereto a finger-piece 54, by which the rock-shaft may be turned to actuate the line-spacing pawl 51, and thus effect a line-feed movement of the platen, as common heretofore in Yost machines.

The above-described means by which the platen may be rotated with or independently of the line-spacing wheel 30 enable the operator to turn the platen to any desired position for irregular spacing or to bring a portion of the paper to the printing-line, which could not be brought there by the regular line-spacing mechanism.

From the foregoing description it will be seen that the engaging piece or lever 23 is loosely seated in the transverse opening 22 of the housing and is not pivoted, but is mounted in such a manner that it not only grips the line-spacing wheel, but also fulcrums thereon, so that great power is exerted by said lever on the line-spacing wheel to connect it and the platen to rotate together. It will also be seen that spring actuating means are provided for normally exerting a pressure on said lever to effect a connection between the line-spacing wheel and platen; that the said spring actuating means likewise apply pressure to the rod or spindle 39 to move it in one direction or to the normal position, and that the rod or spindle may be moved by hand in an opposite direction and in opposition to said actuating means to afford a releasing action of the lever 23. It will likewise be observed that the levers 27 and 23 constitute compound levers, one of which, 27, is pivoted to the platen and the other, 23, fulcrums on and grips the line-spacing wheel; that the spring 37 bears on the long arm of the lever 27 and the power of the spring is applied through the short arm of the lever 27 to the long arm of the lever 23, and that by this construction a firm and powerful grip on the line-spacing wheel is obtained and a rigid connection normally established between the line-spacing wheel and platen.

Various changes in construction may be made without departing from the spirit of my invention. Thus, for instance, while I have shown the engaging piece 24 and the oppositely-disposed engaging walls 44 of the line-spacing ring as having smooth or frictional faces it should be understood that from certain aspects of my invention they may be roughened or serrated, though in practice it has been found that the frictional faces provide a rigid binding of the parts.

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

1. In a type-writing machine, the combination of a platen, a line-spacing wheel provided with oppositely-disposed engaging walls, a lever-like engaging piece that coöperates with the engaging walls of the ring and exerts binding pressure thereon by a leverage action and means for moving said engaging piece.

2. In a type-writing machine, the combination of a platen, a line-spacing wheel provided with oppositely-disposed engaging walls, a lever-like engaging piece that coöperates with the engaging walls of the ring and fulcrums

thereon and exerts binding pressure on both walls by a leverage action and means for moving said engaging piece.

3. In a type-writing machine, the combination of a platen, a line-spacing wheel provided with oppositely-disposed engaging walls, a lever-like engaging piece that coöperates with the engaging walls of the ring and fulcrums thereon and exerts binding pressure on both walls by a leverage action, spring-pressed means for normally maintaining the engaging piece in engagement with the engaging walls of said ring, and hand-operated means for moving said engaging piece against the tension of its spring.

4. In a type-writing machine, the combination of a platen, a line-spacing wheel provided with oppositely-disposed engaging walls having frictional or smooth faces, and a lever-like engaging piece that has frictional engaging faces that coöperate with the frictional faces of the engaging walls and fulcrum thereon.

5. In a type-writing machine, the combination of a platen, a platen feed-ring, an internal groove in said ring, an engaging piece connected to said platen and arranged within said groove and binding against the side walls thereof by a leverage action to lock the said ring and platen to rotate together, a spring-pressed actuating-lever bearing against the said engaging piece, and hand-operated means for moving the actuating-lever against the tension of its spring to release the engaging piece so that the platen may be rotated independently of the feed-ring.

6. In a type-writing machine, the combination of a platen, a platen feed-ring, an internal groove in said ring, an engaging piece which extends into said groove, a housing which is removably seated within and turns with said platen and has a transverse opening for the reception of said engaging piece to cause the engaging piece and housing to rotate together, a spring-pressed actuating-lever within the housing and bearing against the said engaging piece, and hand-operated means for moving the actuating-lever and relieving the engaging piece from pressure, so that the platen may be rotated independently of the feed-ring.

7. In a type-writing machine, the combination of a platen, a housing which has a transverse opening therein and is provided with laterally-extending lugs that are seated in an aperture in the platen to cause the platen and housing to rotate together, a platen feed-ring which is carried by said housing and is adapted to rotate independently thereof, an internal groove in said ring, an engaging piece which extends into the transverse opening in the housing and into the internal groove in the said ring, a spring-pressed actuating-lever which is pivoted within the transverse opening in the housing and coöperates with the engaging piece, hand-operated means for moving said actuating-lever against the ten-

sion of its spring, and a connecting-rod which extends through the platen and holds the housing within the platen.

8. In a type-writing machine, the combination of a platen, a platen feed-ring with relation to which the platen is adapted to receive an independent rotation, an internal engaging groove in said ring, and a spring-pressed locking-piece within said groove and which is fulcrumed on and adapted to bind against the side walls of said groove by a leverage action to lock the said ring and platen to rotate together.

9. In a type-writing machine, the combination of a platen, a platen feed-ring with relation to which the platen is adapted to receive an independent rotation, an internal engaging groove in said ring, a locking-piece within said groove and fulcrumed on the walls thereof, a lever-arm connected to said locking-piece, a spring-pressed two-arm lever cooperating with the lever-arm, and hand-operated means for moving said two-arm lever against the tension of its spring.

10. In a type-writing machine, the combination of a platen, a platen feed-ring with relation to which the platen is adapted to receive an independent rotation, an internal engaging groove in said ring, a segmental locking-piece within said groove and fulcrumed on the walls thereof, a transversely-extending lever-arm connected to said segmental locking-piece, a spring-pressed two-arm lever cooperating with the lever-arm and a long arm of said lever extending transversely of the platen, and a hand-operated plunger for moving said two-arm lever against the tension of its spring.

11. In a type-writing machine, the combination of a platen, a platen feed-ring, an internal engaging groove in said ring, a segmental flat locking-plate seated within said groove and which is adapted to bind laterally against the side walls of said groove by a leverage action to lock the said ring and platen to rotate together, a transversely-extending lever-arm connected to said segmental locking-plate, a spring-pressed two-arm actuating-lever, an antifriction-roller carried by said two-arm actuating-lever and adapted to bear against the said lever-arm, and a hand-operated longitudinally-movable spindle for moving the two-arm actuating-lever against the tension of its spring to release the locking-plate.

12. In a type-writing machine, the combination of a platen, a platen feed-ring with relation to which the platen is adapted to receive an independent rotation, an internal engaging groove in said ring, locking-plate seated within said groove and which is adapted to bind laterally against the side walls of said groove by a leverage action on said walls to lock the said ring and platen to rotate together, said plate extending transversely substantially throughout the diameter of the

platen, a spring-pressed two-arm actuating-lever cooperating with the said plate and adapted to bear against it, and hand-operated means for moving the two-arm actuating-lever against the tension of its spring to release the locking-plate.

13. In a type-writing machine, the combination of a platen, a platen feed-ring with relation to which the platen may receive an independent rotation, an internal engaging groove in said ring, a locking-piece seated within said groove and fulcrumed on and adapted to bind against the side walls of said groove by a leverage action exerted thereon, spring-pressed means for normally maintaining the locking-piece in engagement, and hand-operated means for releasing said locking-piece from engagement.

14. In a type-writing machine, the combination of a platen, a platen feed-ring with relation to which the platen may receive an independent rotation, an internal engaging groove in said ring, a locking-piece seated within said groove and fulcrumed on and adapted to bind against the side walls of said groove by a leverage action, spring-pressed means for normally maintaining the locking-piece in engagement, means for varying the tension of said spring-pressed means, and hand-operated means for releasing said locking-piece from engagement.

15. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, and a lever that fulcrums upon and also grips said line-spacing wheel and connects the wheel and platen so that normally they may rotate together.

16. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, a lever that fulcrums upon and also grips said line-spacing wheel and connects the wheel and platen so that normally they may rotate together, and spring-actuated means for normally exerting a pressure on said lever.

17. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, a lever that fulcrums upon and also grips said line-spacing wheel and connects the wheel and platen so that normally they may rotate together, spring-actuated means for normally exerting a pressure on said lever, and hand-operated means for relieving the pressure of said spring-actuated means on the lever and thereby release the platen to be rotated independently of the line-spacing wheel.

18. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, a lever that fulcrums upon and also grips said line-spacing wheel, a hand-operated rod or spindle for releasing the gripping action of the lever, a spring, and means for applying the pressure of said spring to the lever and to said

rod or spindle, thereby normally causing a gripping action of said lever and also causing the rod or spindle to be maintained in normal position.

5 19. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, a lever that fulcrums upon and also grips said line-spacing wheel, a movable device that coöperates with said lever to effect a movement thereof, a spring for moving said device in one direction, and a hand-operated rod or spindle for moving the device in the opposite direction and in opposition to said spring.

15 20. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, and compound levers for connecting the line-spacing wheel and platen to rotate together.

20 21. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, and compound levers, one of which fulcrums on and grips the line-spacing wheel and connects said wheel and platen to rotate together.

25 22. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, spring-pressed compound levers that are adapted to connect the line-spacing wheel and platen together, and hand-operated means for afford-

ing a movement of said levers in opposition to their spring-pressure.

23. In a type-writing machine, the combination of a line-spacing wheel, a platen adapted to be rotated independently thereof, spring-pressed compound levers, one of which fulcrums on and grips the line-spacing wheel and connects said wheel and platen to rotate together, and hand-operated means for affording a movement of the said levers to effect a release of the platen from the line-spacing wheel.

24. In a type-writing machine, the combination of a line-spacing wheel, a platen and a pair of levers coacting to connect the wheel and the platen together, one lever being pivotally attached to the platen and the other being connected to the line-spacing wheel.

25. In a type-writing machine, the combination of a line-spacing wheel, a platen, the spring-pressed bent lever 27 connected to the platen and the coacting lever 23 connected to the line-spacing wheel.

Signed in the borough of Manhattan, city of New York, in the county of New York and State of New York, this 24th day of November, A. D. 1902.

CHARLES W. WALKER.

Witnesses:

K. V. DONOVAN,
E. M. WELLS.