

(No Model.)

5 Sheets—Sheet 1.

C. SPIRO.
TYPE WRITING MACHINE.

No. 463,464.

Patented Nov. 17, 1891.

Fig. 1.

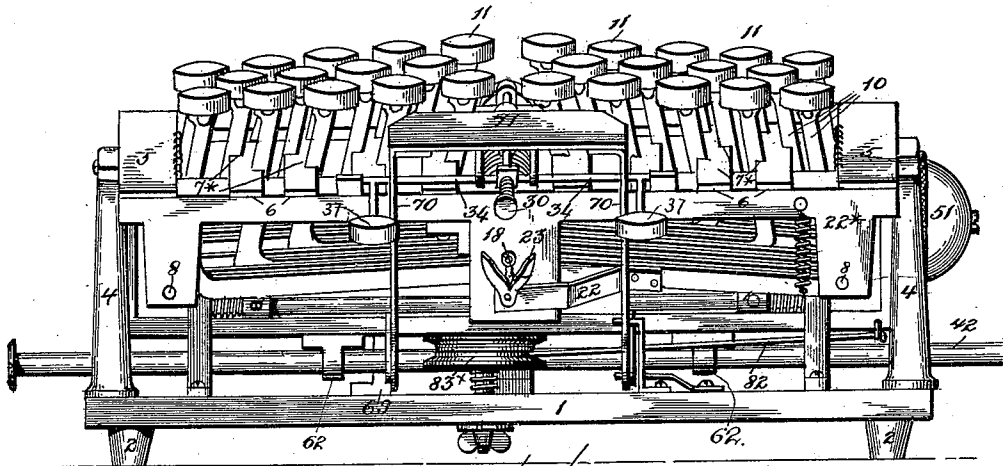
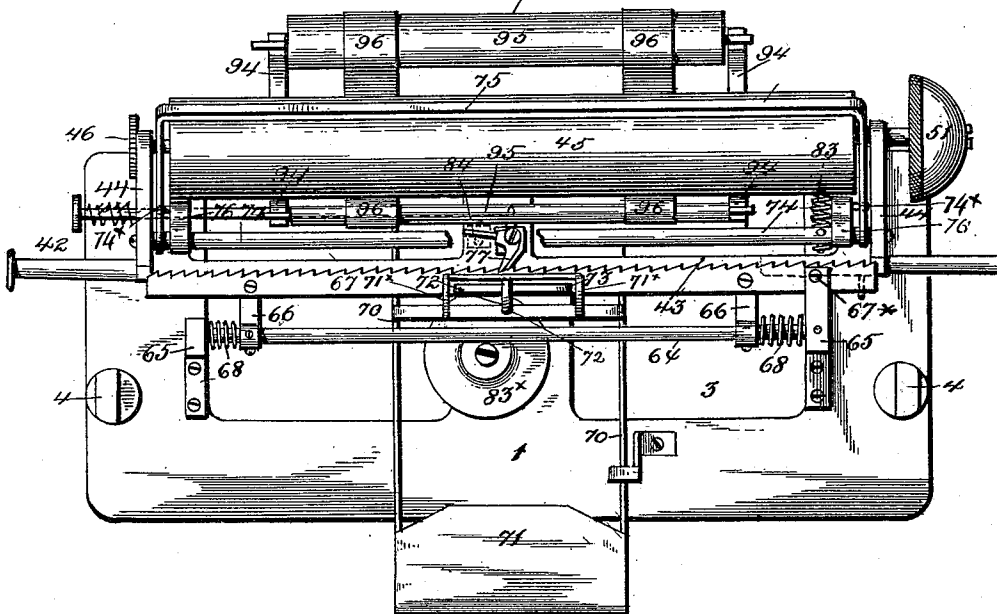


Fig. 2.



Witnesses:

L. C. Hill
W. A. Duwall

Inventor:

Charles Spiro.
By C. B. Stocking
Attorney

(No Model.)

5 Sheets—Sheet 2.

C. SPIRO.
TYPE WRITING MACHINE.

No. 463,464.

Patented Nov. 17, 1891.

Fig. 3.

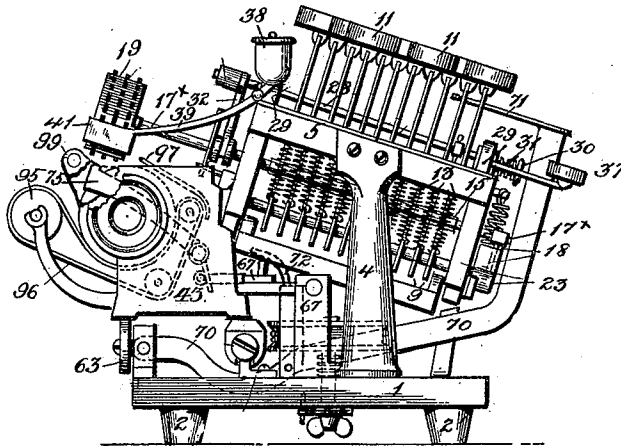
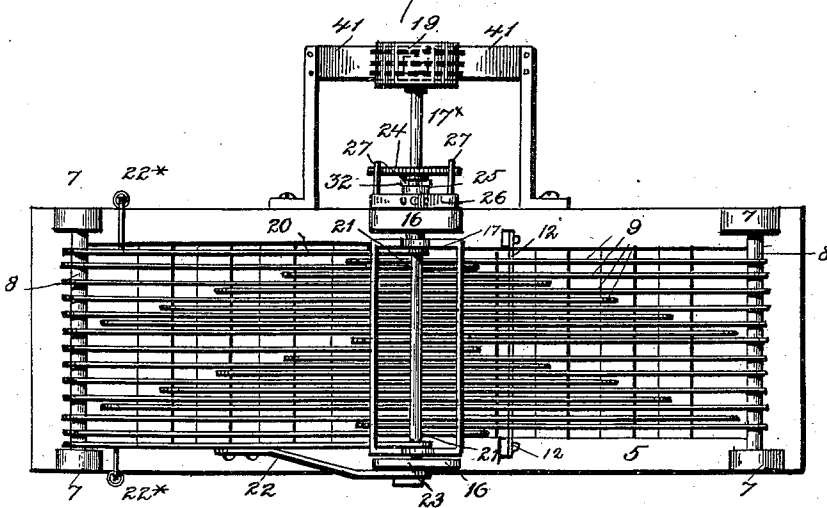


Fig. 4.



Witnesses:

L. C. Hills.
W. A. Duwall.

Inventor:

Charles S. Spiro.
By E. B. Stocking.
Attorney.

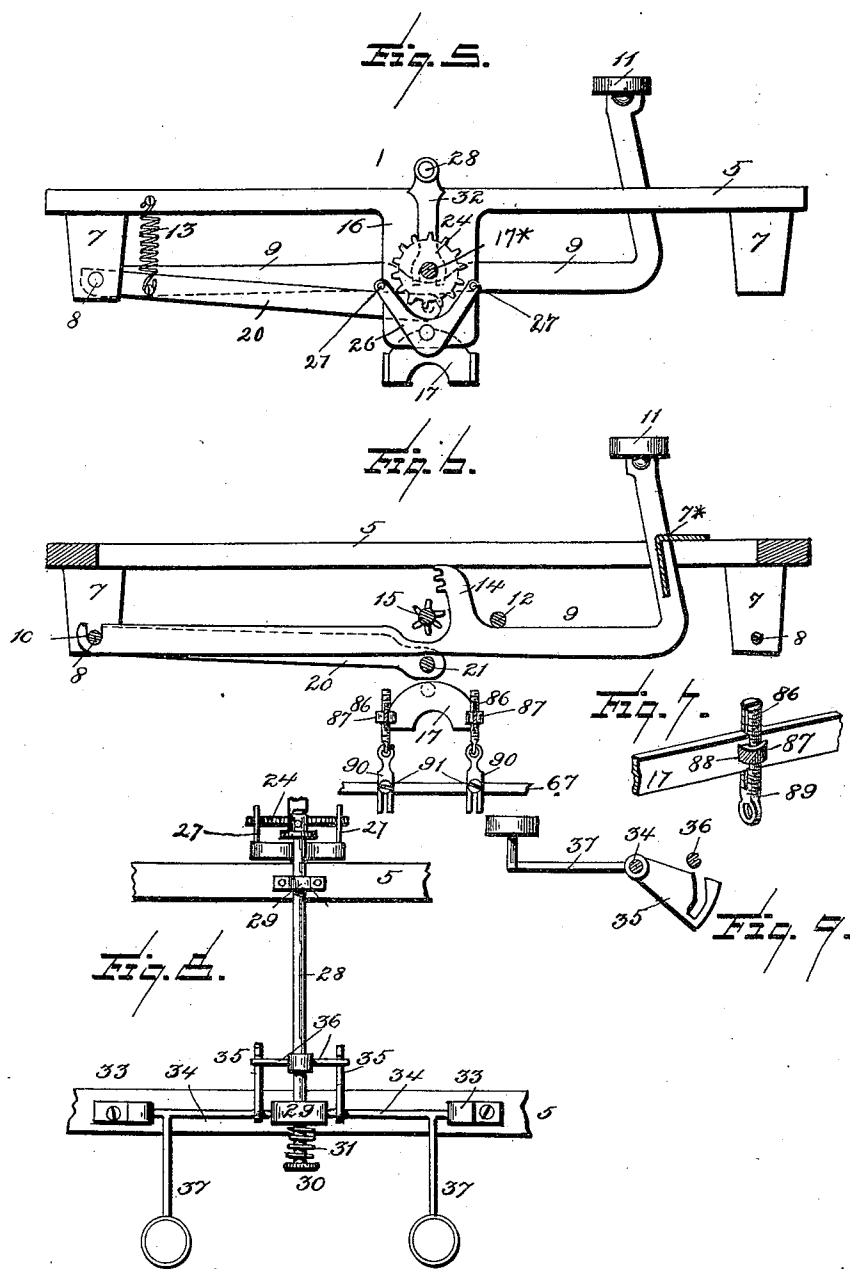
(No Model.)

5 Sheets—Sheet 3.

C. SPIRO.
TYPE WRITING MACHINE.

No. 463,464.

Patented Nov. 17, 1891.



Witnesses:

L. C. Hills.
W. D. Duwall.

Inventor:

Charles Spiro.
By E. B. Stocking
Attorney.

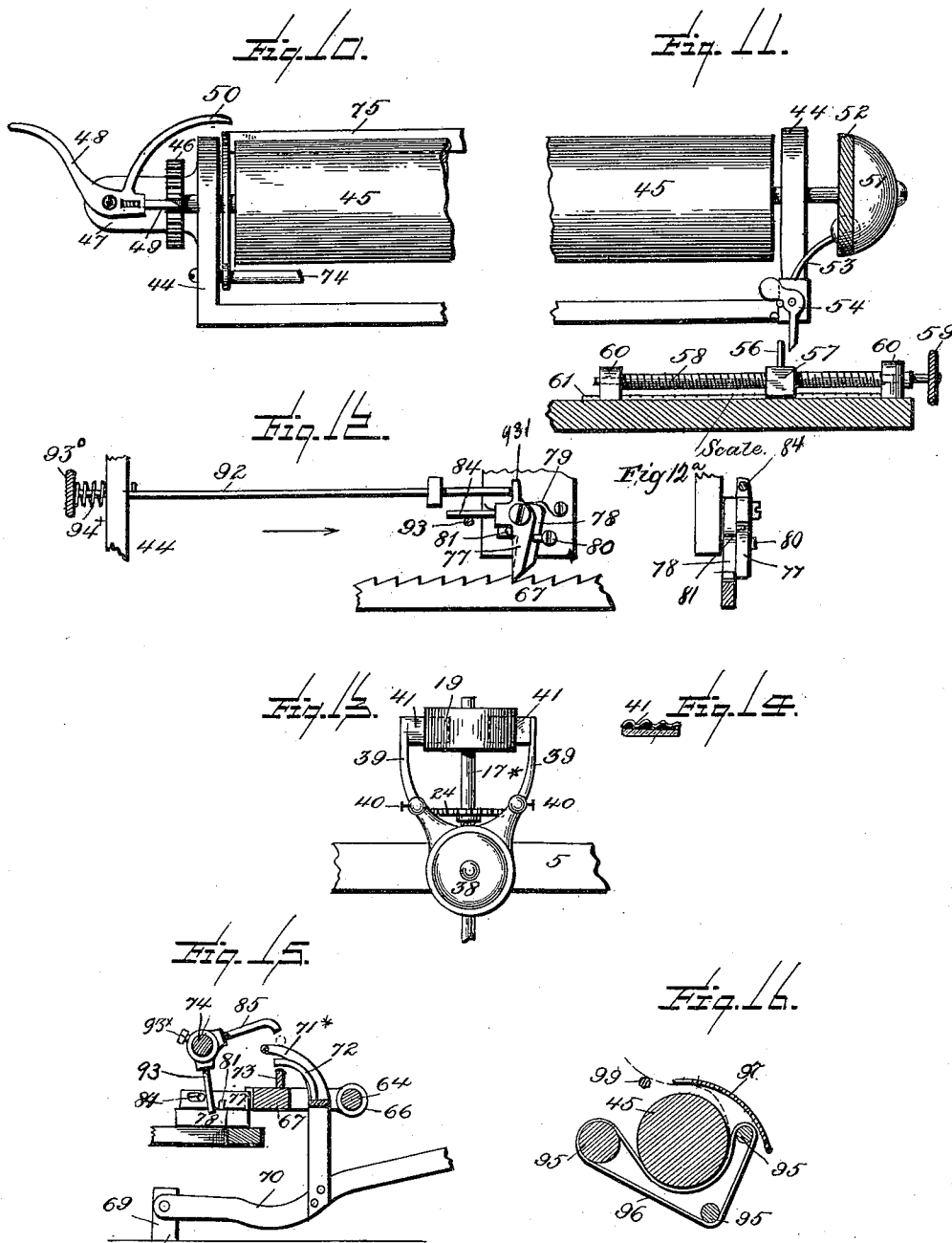
(No Model.)

5 Sheets—Sheet 4.

C. SPIRO.
TYPE WRITING MACHINE.

No. 463,464.

Patented Nov. 17, 1891.



Witnesses:
S. C. Hill
W. A. Duwall.

Inventor
Charles Spiro.
By E. B. Stocking
Attorney.

(No Model.)

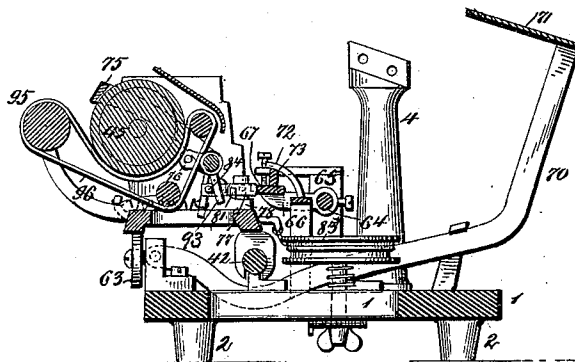
5 Sheets—Sheet 5.

C. SPIRO.
TYPE WRITING MACHINE.

No. 463,464.

Patented Nov. 17, 1891.

Fig. 17.



Witnesses
L. C. Hills.
E. H. Bond.

Inventor
Charles Spiro.
By E. B. Stocking
Attorney

UNITED STATES PATENT OFFICE.

CHARLES SPIRO, OF ENGLEWOOD, NEW JERSEY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 463,464, dated November 17, 1891.

Application filed August 13, 1888. Serial No. 233,080. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SPIRO, a citizen of the United States, residing at Englewood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to that class of type-writers in which a type-wheel having one or more printing-fields is employed, and among the prime objects in view is to produce a more simple, efficient, and compact machine to imprint by means of a type-wheel and hammer-bail, the latter being so arranged as to permit of the insertion of paper in rear of the platen, to dispense with all intermediate driving-levers for imparting motion to the type-wheel, hammer-bail, and locking mechanism, and to accomplish the rotation of the wheel by a direct contact of the key-levers with a pinion or other well-known rotating device formed rigid with the type-wheel, and, further, to improve and simplify all of the parts and combination of parts, so as to secure a direct action and convenience and ease of operation.

Further objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a front elevation of a type-writing machine constructed in accordance with my invention. Fig. 2 is a plan of the base, the key-lever frame or bed being removed. Fig. 3 is a side elevation of the complete machine. Fig. 4 is a bottom plan of the key-lever frame removed. Fig. 5 is an elevation of the type-wheel locking mechanism. Fig. 6 is an elevation of the type-wheel operating and spacing mechanism. Fig. 7 is a detail in perspective of the adjustable connection employed between the locking-bail and rack. Fig. 8 is a detail in plan of the type-wheel-shifting mechanism. Fig. 9 is a detail of the shifting-cams. Fig. 10 is a side elevation of the carriage-feeding mechanism. Fig. 11 is a similar view of the bail-tripping mechanism. Fig. 12 is a detail of the carriage-releasing mechanism. Fig. 12^a

is a detail looking in the direction of the arrow in Fig. 12. Fig. 13 is a detail in plan of the inking devices. Fig. 14 is a detail in cross-section of the ink-pads and supplying-ducts. Fig. 15 is a sectional view of the hammer-bail-reversing mechanism. Fig. 16 is a detail in cross-section of the platen, paper-feed, and guide. Fig. 17 is a vertical cross-section through Fig. 2.

Like numerals of reference indicate similar parts in all the figures of the drawings.

1 represents the base of the machine, which is supported upon any suitable legs 2, and is formed for the purpose of lightening the structure with an interior opening 3.

Mounted upon the base 1 by means of upwardly-projecting standards 4 is an inclined key-lever-supporting frame 5, the inclination being toward the front of the machine, whereby the keys mounted therein are more convenient for manipulation. The key-lever frame 5 is also formed with an interior opening, and is provided at intervals with intermediate cross-bars 6, having kerfs 7^x for the support and guidance of the key-levers, which are mounted within the key-frame, as I will now proceed to describe.

Referring more particularly to Fig. 4, which is a bottom plan of the key-lever frame, it will be seen that the same is formed with depending lugs 7 at each side of the frame, in which are secured opposite fixed rods 8, extending transversely across the frame.

9 represents the key-levers, which, as shown in Fig. 6, are slotted, as at 10, to receive the rods 8, a series of levers being projected from each of the rods 8, the series projecting from one side alternating with those at the other side of the frame. The levers 9 at their free ends are bent at substantially a right angle to their body portion and projecting through the kerfs 7^x above the frame 5 and are provided with the usual key-buttons 11. It will be noticed that a portion of the keys are formed with a longer leverage than others, whereby a longer depression is required for making an impression upon the paper. For this reason those keys that influence the letters that are used oftener than others are formed with a longer leverage, whereby a lightness of touch necessary to imprint is secured. Each of the keys is maintained against

an abutment-rod 12 (see Fig. 6) by means of a series of light coiled springs 13, connecting the keys with the under surface of the frame 5. Intermediate the point of depression of each key and its point of pivot upon the rod 8 is formed an upwardly-projecting rack-arm 14, which is provided with an upper toothed end and a lower plain portion, the tooth portion being adapted by the depression of a key to be thrown into connection with and rotate a long pinion 15, extending transversely across and under the frame 5 and over the series of key-levers 9. The segmental racks 14 are formed upon the key-levers 9 at that side of the pinion 15 farthest away from the fulcrum of the lever, and said levers normally remain at an altitude free from engagement from the pinion, so that each lever may drive the pinion without hinderance or obstruction from the remaining levers. These toothed extensions of the levers are located on each side of the pinion, so that the longest drive of the pinion necessary is a half-revolution each way, intermediate drives being gradually distributed to the other levers, so that each key may present the letter it indicates at the printing-point upon a depression thereof.

Pivoted in hangers 16 at the front and rear of the key-frame 5, or, in other words, in a support in which the long pinion 15 is journaled, is a rocking locking-bail 17, which extends transverse underneath the bank of key-levers and is adapted to be rocked either side by the depression of the lever near the end of its stroke.

Rigid with the long pinion 15 and projecting to the rear of the machine and to the front through the hangers 16 there is a shaft 17*, which at its front end carries a wedge-shaped centering-arm 18 and at its rear end an ordinary type-wheel 19.

Pivoted to one of the cross-rods 8 of the key-frame and at each side thereof is a swinging bail 20, the free ends of which are connected by a cross-bar 21, extending under the bank of keys at the center of the frame, the bail being maintained in a horizontal position and directly in contact with the key-levers by springs 22*. From that side of the bail that is at the rear of the frame there is secured and projects an arm 22, which terminates directly under the front end of the shaft 17*, and is provided with a fixed upwardly-projecting bifurcated V-shaped centering device 23, adapted to receive and maintain a wedge-shaped arm 18 in a fixed position and to release the same by being depressed at the depression of any of the keys of the machine, and when the key is released from pressure to again center the shaft 17*, and consequently return the type-wheel to its normal position.

Intermediate the type-wheel and the rear hanger 16 upon the shaft 17* there is rigidly mounted with the shaft a locking-wheel 24, which is formed with an annularly-grooved hub 25 in rear thereof.

From the pivot of the rocking locking-bail 17 and at its rear end outside of the hanger 16 there is mounted and adapted to oscillate with said rocking bail a V-shaped arm 26, from which project laterally at each of its members locking-pins 27, designed for operation at each side of each of the teeth of the locking-wheel 24. The pins remain normal—that is, when the bail is not influenced by any of the key-levers—so as to remain horizontally out of contact with the locking-wheel, and are adapted to be brought into engagement with the same when the rocking bail is rocked to either side, thus arresting the further movement of the locking-wheel, and consequently the pinion and type-wheel. The space between each two teeth of the locking-wheel is greater than the width of the locking-pin, so that said wheel may be locked on either side of its teeth, so that the number of locking-teeth do double service—that is, they do service for twice the number of stops or less on a single row or circle of type upon the type-wheel, or, in other words, each tooth serves for two stops—one when the pin is engaged upon one side of the tooth and another when it is engaged upon the other side—and thus the said wheel 24 is locked on each side of its teeth. The relative arrangement of the key-levers, the bail 17, pins 27, and pinion 15 is such that the depression of a key-lever which is pivoted on the left side of the locking-wheel will depress the right side of the bail, which will bring the locking-pin 27 on the left side of the locking-wheel into contact therewith. The teeth on the wheel 24 are placed at such a distance apart that the said wheel has a slight movement before the pin 27 will act against the edges of two adjacent teeth and therefore lock the wheel at two different points in its rotation, thus reducing by one-half the number of teeth necessary in the wheel 24. When a key-lever pivoted on the left is depressed, it rotates the locking-wheel from left to right and brings the left-hand pin 27 into contact with the upper side of one of the teeth on the wheel 24. If after the first key-lever is released a second left-hand pivoted key-lever is depressed, it also rotates the wheel 24 from left to right and causes the left-hand pin 27 to engage the upper side of another tooth in the locking-wheel. In short, all the key-levers pivoted on the left-hand side cause the pin 27 on the left hand to engage the upper sides of the teeth on the locking-wheel, and this left-hand pin, being operated by no other levers, cannot abut against the lower edge of the next adjacent tooth. The right-hand levers when depressed cause the locking-wheel to rotate in the opposite direction—that is, from right to left—and thus cause the right-hand pin 27 to engage the lower edges of the teeth of the locking-wheel. It will thus be seen that the locking-wheel necessarily has but one-half the number of teeth required by other constructions. The locking-pins are made of sufficient

length to intercept the locking-wheel at any point in the line of its longitudinal movement.

The pinion 15 and its shaft 17*, carrying the type-wheel 19, have longitudinal movement as well as rotative, in order that the several fields of printing-circles of type may be brought to the printing or impression point. This reciprocation of the pinion, its shaft, and wheel is accomplished in the following manner: A reciprocating rod 28 is mounted in bearings 29, projecting upwardly from the upper surface of the frame 5, and is provided at one end with a key-button 30, interposed between which and its front bearings 29 is a coiled spring 31, so that said rod is held at a predetermined or normal position when not otherwise influenced. From the rear end of the rod 28 there depends a fixed bifurcated arm 32, the bifurcations of which embrace the annularly-grooved hub 25 of the locking-wheel. Now it is evident that by the reciprocation of this rod the type-wheel will be accordingly reciprocated, and, as will be hereinafter apparent, different fields of type will be brought to the printing-point and directly over the impression-hammer bail. The means for operating this rod 28, as shown in Fig. 8, is as follows: Pivoted in bearings 33 at each side of the bar 28 there are independent rock-shafts 34, the opposite ends of which have bearing in the bearings 29. From each of these shafts there project rearwardly slotted cams 35, which are adapted to be thrown into connection with transverse rods or pins 36, projected laterally from the rod 28. The rock-shafts 34 are operated by key-levers 37. The slots in the cams 35 are of different curvature, so that each cam will, when brought into connection with the pin 36, by its respective lever 37, throw the shaft 28 different distances, thus bringing the type-wheel at different points, so that the printing-field represented by that lever will be brought into action. In this instance there are three printing-fields employed, and while the spring 31 maintains one printing-field in operation each of the levers 37 operates the remaining printing-fields.

Referring more particularly to Figs. 3, 13, and 14, in which I have shown a preferred form of inker, 38 represents the ink-supply fountain or reservoir, from opposite sides of which there extend duct 39, provided intermediate their ends and their communication with the fountain with valves 40 to regulate the supply of ink and at their extremities with ink-delivery pads 41, which embrace each side of the type-wheel 19. By this construction liquid ink is conveyed in limited quantities through the ducts 39 and distributed over the pads, and during the rotation of the type-wheel is conveyed from thence to the surface of the type.

Upon the base of the machine and at its rear end there extends across the same a carriage track or rod 42, upon which is mounted for longitudinal reciprocation a paper car-

riage 43, having vertical end walls 44, in which is journaled the paper-carrying roller 45, the same being provided at one end with a ratchet-wheel 46. Upon the bracket 47, projecting from one of the side walls 44 of the carriage, there is pivoted a lever 48, carrying at its front end a spring-pressed pawl 49, adapted to engage with the teeth of the ratchet 46, and also carrying an upwardly-curved arm 50. The curved arm 50 of the lever is thrown into the path of the hammer-bail and prevents the same from making a false impression. By pushing forward the lever 48 it is obvious that the roller will be rotated one notch and thus the line-spacing of the paper accomplished.

At the opposite end of the roller there projects and is mounted upon its spindle a bell 51, the outer circumference of which at its edge is milled, as at 52, whereby said bell will serve also as a thumb-nut for rotating and retracting the roller. The hammer 53 is pivoted to the carriage below the bell and is adapted to be thrown into contact therewith by the dog 54, operated by the trip 56, projecting from a sleeve 57 and adjustably mounted upon a worm-screw 58, which is rotated by the nut 59 and journaled in bearing 60, the bearing being mounted upon the base of the machine and in proximity to the carriage, all as shown in Fig. 11. By the adjustment of the sleeve 57 in the trip 56 upon the shaft 58 through the medium of its nut 59 the said sleeve will travel along the shaft, it being unable to rotate, and thus the alarm given at any predetermined point on the paper, which point is determined by means of a scale 61, arranged in juxtaposition with the worm-shaft 58. The carriage is supported in position at its front end upon the rod 42 by means of clips 62 and at its rear end upon the small roller 63, journaled in the base of the machine.

Upon a rod 64, mounted in standards 65, projecting from the base of the machine and in front of the carriage, are projecting rock-arms 66, at the opposite end of which is secured a vertical oscillating rack-bar 67, the same being maintained up against a set-screw or stop 67* by means of a coiled spring 68, secured upon the rock-shaft 64.

Pivoted in bearings 69 at the rear of the base 1, as clearly shown in Fig. 15, is a spacer-lever 70, which projects forward to the front of the machine and up to substantially on a level with the keys, and is provided with a touch-plate 71, whereby spaces between the words may be accomplished, as I will now proceed to describe. From the lever there extends a curved bail 71* and below the same a curved tooth 72, the tooth being adapted, when depressed by the spacing-lever 70, to come in contact with a block 73, mounted on the rack-bar 67, and thus depressing said rack-bar, so as to oscillate the same from one to the other of said pawls.

Pivoted loosely upon a rod 74, journaled in

the end walls of the carriage, which rod is adapted to oscillate or partly rotate, is a hammer-bail 75, which normally lies slightly to the rear of the platen 45, the ends embracing the ends of the platen and, as before mentioned, loosely connected with the rod 74. Secured upon the rod 74 at each end is a rock-arm 76, having a pin 74*, which projects under the hammer-bail 75 at each end thereof.

Upon the base of the carriage-frame there are pivoted, one above the other, two pawls 77 and 78, the latter being spring-pressed by means of the spring 79, a stop 80 serving to limit its movement, as shown in Fig. 12. The pawl 77 is adapted to move with or independently of the pawl 78, and is limited in its movement by the stop 80 and a stop-pin 81, projecting from the face of the pawl 78 opposite to the stop 80. The carriage receives its movement from a cord 82, which passes around the spring-drum 83^x, and the pawl 77 is normally in mesh with the rack-bar 67. Now by a depression of the spacer the curved arm 72 comes in contact with the block 73, arranged on the rack-bar 67, and oscillates the rack-bar downwardly, so as to throw said rack-bar out of mesh with the pawl 77 and into mesh with the lower pawl 78, in which position it is held. When the pawl 77 is released from contact with the bar 67, the pawl is swung to the left against the stop 81 through the medium of a depending arm 93, which projects downwardly from the rock-shaft 74, the rock-shaft being drawn to the rear through the medium of a spring 83, connecting it with the rear of the carriage. The arm 93 is made adjustable upon the rod 74 by means of the set-screw 93*, and the carriage-bail and the hammer-bail and its rod 74 are maintained in the lowered or normal position and against oscillation as long as the upper tooth or pawl 77 is in mesh with the rack-bar. When out of mesh and the rack-bar is thrown into connection with the lower pawl 78, the spring 83 draws upon the rod 74 and partially oscillates the same and causes the depending arm 93 to come against the arm 84, projecting from the tail or rear end of the pawl 77 and at a right angle thereto. This oscillates the pawl upon its pivot one notch, and the same takes into the next notch or tooth of the rack-bar. By the mechanism just described word-spacing is accomplished, and in a somewhat similar manner is also the letter-spacing. In the latter instance, however, the rocking bail 17 is made to operate the bail 71* and causes a depression of the rack-bar 67. When the key-lever is depressed by the construction and arrangement described, the rack-bar is depressed, which liberates the upper pawl 77, as described, which in turn liberates the rocking bail or shaft 74, and the same is drawn back or oscillated by the spring 83, and the arms 76, mounted on said shaft, being fixed therewith, are moved with said shaft. These arms are provided with pins, which, as before described, project under each

end of the hammer-bail 75, and thus said bail is struck or raised to the printing-point and the impression of the type upon the paper is consummated.

When spacing for words, it is undesirable that the hammer-bail 75 should be operated, as such an operation would cause a misprint or blur upon the work. For this reason and to prevent its operation a second arm 85 projects from the rod 74 and directly over the curved bail 71*. By this arrangement when the pawl 77 is released and the shaft 74 consequently oscillated the oscillation of said shaft is arrested to prevent the arms 76 from operating the hammer-bail 75. In printing, however, the key-levers operate the locking-bail 17, which in turn operates directly upon the rack-bar 67.

As shown in Figs. 6 and 7, I transversely recess the arms of the bail 17 at opposite sides thereof for the reception and retention against displacement of a slotted or bifurcated screw 86, which is held in position and made to ride within the slot by means of a thumb-nut 87, which embraces the bifurcations of the screw and for the reception of which the bail is formed with an opening 88. The lower end of the screw 86 is provided with an eye 89, which is connected to the rack-bar 67 by the slotted link 90 and a screw 91, as shown in Fig. 6. By this device an extremely fine and convenient adjustment is provided for the liberation of the feed-pawls from the rack-bar.

Passing through one of the end walls 44 of the carriage-frame there is a rod 92, having a head 93^o, and a spring 94*, interposed between the head and the wall. The opposite end of this rod 92 abuts against a projection 931 of the pawl 77 and serves to liberate the pawl from the rack in order that the carriage may be returned to any point along a printed line for the purpose of a correction or a misprint or otherwise, as shown in Fig. 12.

As clearly shown in Figs. 2, 3, and 16, there is mounted in rigid supports 94, extending under the platen 45 and to each side thereof, rolls 95, which are rigid so far as their movement toward and away from the platen is concerned. Over these rollers is extended, at each side thereof, a rubber band 96, one portion of which is always in snug contact with the platen 45 and serves to maintain the paper snugly thereagainst.

The guard 97 is provided in rear of the platen and serves to guide the paper after it leaves the guiding influence of the rubbers 96. This guard 97 may be provided with a scale (not shown) and a rod 99, extended in front of the guard 97, whereby that portion of the paper not held by the platen is supported away from the printing-wheel.

The lever 48 is provided with a curved arm 50, projecting therefrom at substantially right angles to the axis of the paper-carrying roller 45, and is adapted, when the lever is operated, to be thrown in the path of the hammer-bail

and prevent the same from rising and making a false impression.

Having described my invention, what I claim is—

1. In a type-writing machine, a key-frame having keys pivoted at opposite sides and formed with rack-arms between their ends, in combination with a pinion carrying a printing device and extending transversely across and under the frame and adapted to be operated by the rack-arms on the keys, substantially as described.

2. In a type-writing machine, a key-frame having keys provided with segmental racks, in combination with a pinion mounted in the frame between the ends of the key-levers and carrying a type-wheel adapted to be operated by the racks and means for reciprocating the pinion, substantially as specified.

3. In a type-writing machine, a locking-wheel having a series of teeth mounted on a shaft carrying a type-wheel and having half as many teeth as there are letters on a single row of the type-wheel, and means, substantially as described, for locking said wheel on either side of each of its teeth, substantially as specified.

4. In a type-writing machine, a shaft adapted to be operated by the key-levers of the machine and carrying a type-wheel and a locking-wheel having an annularly-grooved hub, in combination with a rod mounted upon the machine and engaging with the hub and rock-shafts having keys for reciprocating said rod, whereby different fields of type are brought to the printing-point, substantially as specified.

5. In a type-writing machine, a shaft carrying a type-wheel and opposite pins and connections between said shaft and pins, in combination with levers provided with keys and having cams adapted to be operated by the keys and to throw the cams in connection with the pins, whereby said shaft is actuated to bring different fields of type to the printing-point, substantially as specified.

6. In a type-writing machine, and in combination with the wheel thereof, an ink-reservoir having ducts at opposite sides provided with valves and terminating in pads at each side of the wheel, substantially as specified.

7. In a type-writing machine, a series of key-levers and a bail arranged below the same and adapted to be depressed thereby and carrying a bifurcated centering-arm, in combination with a pinion carrying a type-wheel and a wedge-shaped arm adapted normally to be held in position by said centering-arm and be released therefrom at each depression of the key-lever, substantially as specified.

8. In a type-writing machine, a key-lever frame having key-levers and a pinion adapted to be operated by the levers and carrying a type-wheel and a locking-wheel, in combination with a rocking bail pivoted under the levers and adapted to be rocked thereby and provided with a bifurcated arm having locking-

pins adapted to be thrown into connection with the locking-wheel at either side, substantially as specified.

9. In a type-writing machine, a key-lever frame having keys provided with segments and a pinion pivoted in the frame and carrying a printing-wheel and a toothed locking-wheel, in combination with a double rocking ball pivoted under the levers and provided with a bifurcated arm having pins adapted to be thrown into either of the teeth of the locking-wheel and in accordance with the lever depressed, substantially as specified.

10. In a type-writing machine, the combination, with a rocking locking-bail having transverse recesses and the rack-bar, of the slotted screw working in the recess in the bail, the thumb-nut 87, embracing the bifurcations of the screw, the screw formed at its lower end with an eye 89, and the slotted link 90 and screw 91, connecting said screw with the rack-bar, substantially as and for the purpose specified.

11. In a type-writing machine, a movable carriage having feed-pawls, in combination with a rack-bar, a block mounted on said rack-bar, a spacing-lever pivoted to the base and projecting to the front of the machine and provided with a curved bail, an arm 85, projecting over said bail, a curved tooth between said bail and rack-bar, and the hammer-bail checked or held from striking by the curved bail, substantially as described.

12. In a type-writing machine, the combination, with the carriage, the roller, the hammer, and the bail parallel with the roller, of the keys, the spacer, and connections between the keys and spacer and the bail, whereby by the depression of a key the bail is drawn to the printing point and retained against movement at the depression of the spacer, substantially as described.

13. In a type-writing machine, the combination of a feed-pawl and carriage carrying a hammer-bail adapted to be thrown to the printing-point by the liberation of the pawl, substantially as specified.

14. In a type-writing machine, the combination of a carriage-frame carrying a pivoted hammer-bail and a spring-pressed shaft having arms extending under the bail, a feed-pawl pressed by a depending arm extending from the shaft, and a rack-bar adapted to be thrown into and out of connection with the pawl, substantially as specified.

15. In a type-writing machine, a carriage carrying a rock-shaft having a depending arm adapted to press against a pawl mounted in the carriage, and a spring for actuating said rock-shaft, in combination with a feed-rack adapted to be thrown in and out of connection with the pawl, whereby when in the latter position said pawl is advanced one tooth by the oscillation of the rock-shaft, substantially as specified.

16. In a type-writing machine, a carriage carrying feed-pawls and a rock-shaft re-

- strained from oscillation by one of said pawls and having a laterally-extending arm, in combination with a feed-rack for operating the pawls, and a spacing-lever having a lower curved arm for operating the feed-rack, and an upper bail designed to be thrown against the lateral arm at the depression of said spacing-lever and thus prevent the complete oscillation of said shaft, substantially as specified.
- 10 17. In a type-writing machine, a carriage-frame having a bracket and a pivoted hammer-bail, in combination with a platen carrying a ratchet-wheel, and a lever pivoted to the bracket and having a spring-pressed bolt adapted to rotate the ratchet, and a curved arm projected from the lever and adapted when the lever is operated to be thrown in the path of the hammer-bail and prevent the same from rising and making a false impression, substantially as specified.
- In testimony whereof I affix my signature in presence of two witnesses.
- CHARLES SPIRO.
- Witnesses:
W. S. DUVALL,
L. C. HILLS.