No. 890,867. PATENTED JUNE 16, 1908.

J. C. McLAUGHLIN.

TYPE WRITING MACHINE.

APPLICATION FILED JAN. 2, 1908.

Fig. 1.

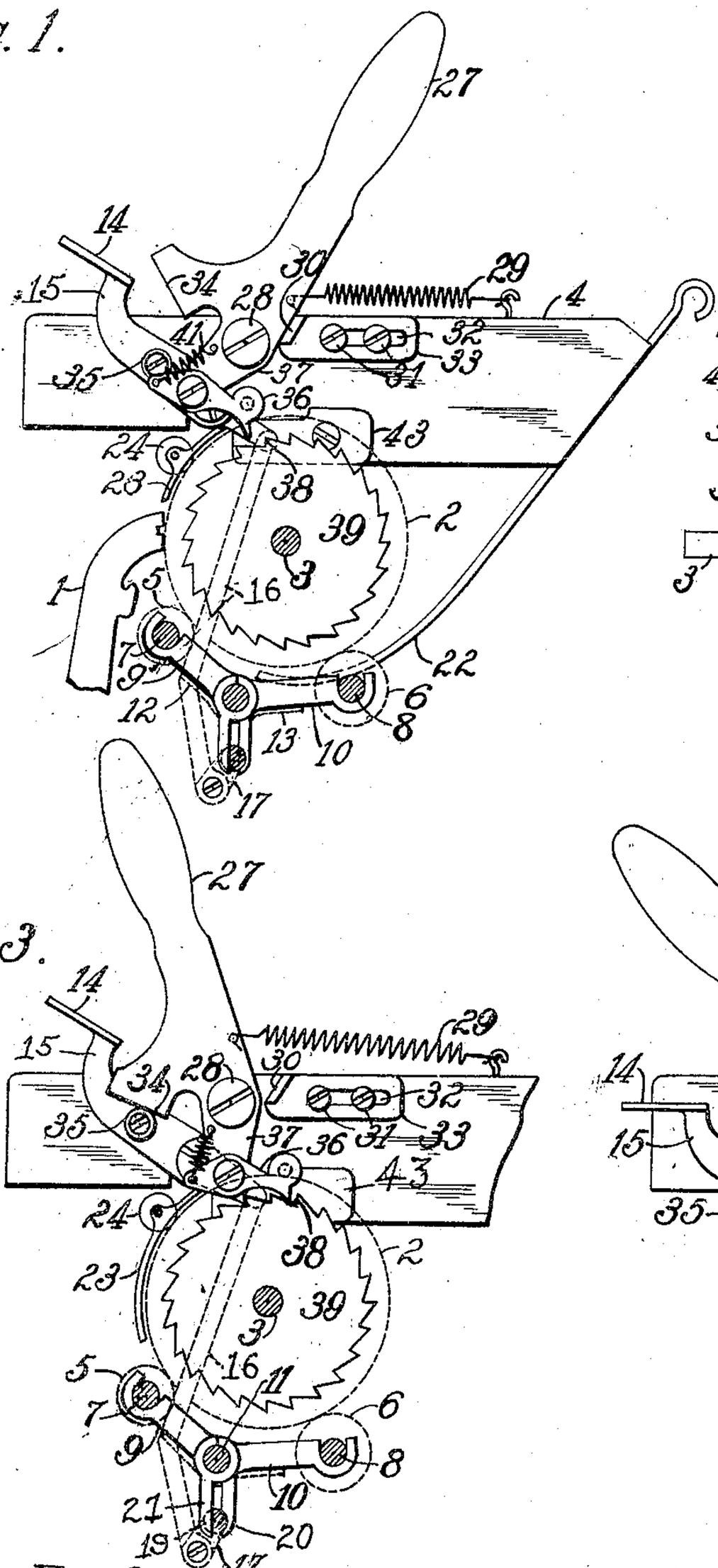

Fig. 2.

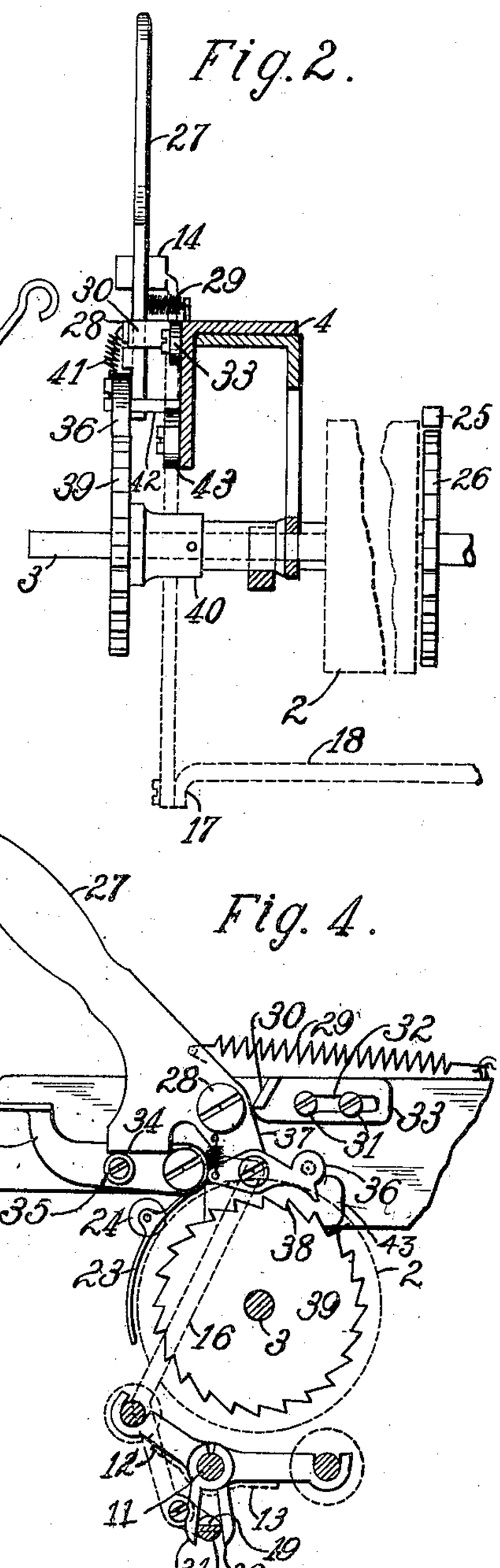

Fig. 3.

Fig. 4.

Fig. 5.

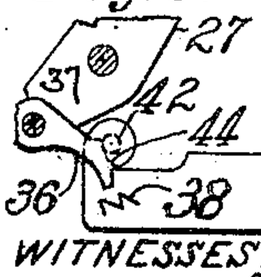

Fig. 6.

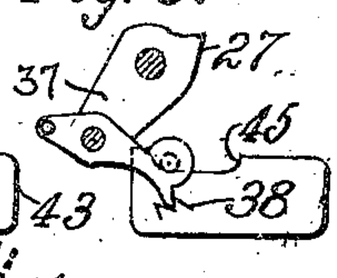

Fig. 7.

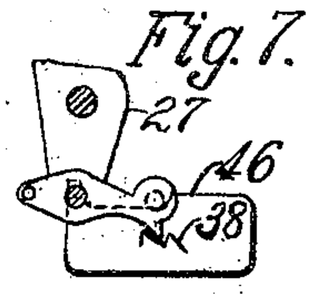

Fig. 8.

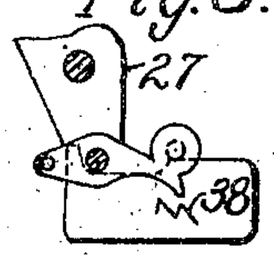

Fig. 9.

WITNESSES:
E. H. Adams.
John C. Seifert.

INVENTOR,
John C. McLaughlin,
By B. Stickney
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN C. McLAUGHLIN, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 890,867. Specification of Letters Patent. Patented June 16, 1908.

Application filed January 2, 1908. Serial No. 409,044.

To all whom it may concern:

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

This invention relates to the paper feeding devices of typewriting machines, and particularly to machines intended for use in writing bills, in which a long record sheet and carbon sheet remain in the machine, whereby records of several successive bills are made one after another upon the record sheet.

According to one method of writing bills and records, the usual pressure rolls are cast off after a bill is written, to permit the written bill to be withdrawn, and a fresh bill inserted and adjusted around to the printing line; and generally in practicing this method, the record sheet is made much wider than the bill sheets, so that the side edges of the record sheet may be caught by the usual front paper guiding fingers, whereby the record sheet and carbon are held stationary during the manipulation of the bill sheets, the latter being sufficiently narrow to pass between said guiding fingers. In practicing this and other methods, it is necessary for the operator to remember always to advance the record sheet after completing a bill, so that the first line of the succeeding bill will not be imprinted upon the last written line on the record sheet—that is, so as to leave a space between records.

The principal object of my invention is to relieve the operator of the necessity of remembering to space the record sheet for this purpose, and to avoid the liability of annoyance caused by writing one line upon top of another on the record sheet.

In carrying out my invention, I provide in addition to the usual line-spacing mechanism a device whereby, when the operator casts off the usual pressure rolls for the purpose of removing the written bill to insert a fresh bill, the platen is automatically advanced to leave the desired spacing between bills on the record sheet.

In the preferred form of the invention, a line-spacing lever, separate from the usual lever, is mounted upon the platen frame, and by means of a pawl turns a ratchet wheel, which is connected to the platen. This lever also has means to cast off the pressure rolls; and therefore, the operator when releasing the bill sheet, necessarily advances the platen for the purpose specified. The usual key for releasing the pressure rolls is also employed so as to permit releasing of the paper without feeding the platen.

In the accompanying drawings, Figure 1 is a side elevation partly in section of the platen frame of an "Underwood" front strike writing machine, embodying my improvements; the parts being shown in normal positions, to permit free rotation of the platen in either direction. Fig. 2 is a sectional rear view of several parts seen at Fig. 1. Fig. 3 shows the record spacing lever as having been swung forwardly to advance the platen and to come into contact with the pressure-roll releasing devices. Fig. 4 shows the movement of said lever completed, the rolls being released from the platen. Figs. 5 to 9 are diagrammatic views of the successive steps in the operation of said lever, to illustrate the relation of the pawl thereon to the ratchet wheel during the entire forward stroke of the lever.

Type bars 1 strike upon the front side of a cylindrical platen 2, which is mounted by means of an axle 3 in the ends 4 of a platen frame in the usual manner. Front and rear rolls 5, 6 run upon the under side of the platen, being mounted upon shafts 7, 8, which in turn are carried upon spring-pressed arms 9, 10, pivoted upon a common shaft 11, the springs being indicated diagrammatically at 12, 13, Fig. 4.

The rolls are releasable by means of a key 14 provided upon a lever 15 connected by a link 16 to a crank 17 provided upon the end of a rock shaft 18, which is provided with cams or flats 19 upon its opposite sides to engage fingers 20, 21 formed upon the arms 9, 10. The fingers normally occupy said recesses, as at Fig. 3; but upon depressing said key, the shaft 18 is given a quarter turn, and the fingers forced apart as at Fig. 4, thereby releasing the pressure rolls from the platen.

It will be seen that at Fig. 4 the fingers rest upon the cylindrical periphery of the shaft 18, and are hence locked so that the rolls are mechanically maintained away from the platen, thus permitting manipulation of the bill sheets, the fresh sheet being slipped around between the usual curved guiding plate 22 and the record sheet, which during this operation is held against the platen by

means of the usual front guiding fingers 23 and rolls 24. It will be understood that the parts 23 and 24 are arranged at the ends of the platen to engage the side edges of the record and carbon sheets, while the bill sheets are so narrow as to pass between the front guiding fingers. When the parts are in the Fig. 1 position, the platen may be rotated in the usual manner, as by means of the usual pawl 25 and ratchet wheel 26 regularly provided at the other end of the platen, Fig. 2. As so far described, the parts are in common use upon said Underwood typewriting machine.

After completing the writing of a bill, the operator instead of depressing the usual key 14, pulls forwardly a lever 27, pivoted at 28 upon the end of the platen frame, and normally held back by a spring 29 against the stop 30, which may be adjusted to different positions and secured by screws 31 passing through a slot 32 in the stop plate 33. This lever has a part 34 to engage and bear down a pin or roll 35 provided upon the lever 15 which releases the pressure rolls 5, 6, so that by a full forward swing of the lever 27, the rolls 5, 6, are released, as at Fig. 4.

Prior to the roll-releasing operation however, a pawl 36, pivoted upon an arm 37 of the lever 27, engages a tooth 38 of a ratchet wheel 39, and rotates the latter together with the axle 3, upon which it is secured by means of a hub 40, thereby advancing the platen 2. Thus by a single stroke of the lever 27, the platen is advanced to feed the record sheet up to receive a new record, and the rolls 5, 6 are cast off to release the written bill. The spring 29 returns the lever to normal position, and after a new bill is inserted, the release key 14 may be raised to cause the rolls 5, 6 to act again.

As seen at Figs. 1 and 5, the pawl 36 is normally out of engagement with the ratchet wheel 39, to permit rotation of the platen in either direction. A spring 41 tends constantly to press the nose of the pawl downward or towards the axis 3 of the ratchet wheel 39. The pawl is provided with a projecting pin 42 which rides upon the top edge of a guide plate 43 secured upon the side face of the platen frame end 4. At the initial portion of the forward stroke of the lever 27, the pin 42 rides down an incline 44 in said plate 43 to permit the nose of the pawl to engage the ratchet tooth 38, Fig. 6. The pawl then drives or advances the ratchet tooth, and hence the ratchet wheel and platen, for a distance preferably equal to two ordinary line spaces, whereupon the pin 42 engages an incline 45 formed upon the plate 43, whereby the pawl is tripped out of engagement with the ratchet wheel 39. This is done at about the time that the release of the rolls 5, 6 begins, so that rotation of the platen is completed while said rolls are holding the sheets thereagainst. Thereafter and during the completion of the forward stroke of the lever 27, the pin 42 in the pawl rides idly along the top edge 46 of the plate 43, whereby the pawl is maintained out of engagement with the ratchet wheel, so that the platen is stationary during the roll-releasing operation. Thus it will be seen that a single stroke of the lever 27 advances the platen, releases the rolls 5, 6 and effects the locking of the latter away from the platen to permit the necessary manipulation of the bill sheets.

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

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a revoluble platen and regular line-spacing devices therefor, of a pressure roll to run upon the platen, and an auxiliary mechanism for rotating the platen between entries, said auxiliary mechanism including a lever, and means operated by said lever to release said pressure roll while the platen remains stationary.

2. In a typewriting machine, the combination with a revoluble platen, of a line spacing wheel connected thereto, a lever and pawl to advance said wheel and platen, a pressure roll to run upon the platen, and means operated by said lever to release said pressure roll after the platen is advanced by the lever.

3. In a typewriting machine, the combination with a revoluble platen, a ratchet wheel connected thereto, and a pressure roll to run thereon, of a lever, a pawl operated by the lever to drive said ratchet wheel and platen, means for disengaging the pawl from the ratchet wheel upon the completion of the platen movement, and means operated by the lever during the final portion of its stroke after such disengagement to cast off said pressure roll.

4. In a typewriting machine, the combination with a revoluble platen and a pressure roll to run thereon, of a ratchet wheel connected to said platen, of a lever, a pawl normally out of engagement with said ratchet wheel and movable by said lever to engage and rotate said ratchet wheel, means for enabling said lever during the final portion of its initial stroke to release said pressure roll, and means for effecting disconnection of the pawl from the ratchet wheel during the roll releasing action of the lever.

5. In a typewriting machine, the combination with a revoluble platen and a pressure roll to run thereon, of a lever, a pawl pivoted thereto, a ratchet wheel connected to the platen, means normally holding said pawl away from said ratchet wheel, means operated during the initial lever movement to disconnect the pawl from the ratchet wheel after turning the platen, and means turned by the

initial stroke of the lever after such disconnection to release the pressure roll.

6. In a typewriting machine, the combination with a revoluble platen and a pressure roll to run thereon, of a lever, a pawl pivoted to the lever, a returning spring for said lever, a trip normally engaged by said pawl, whereby the latter is normally held away from the ratchet wheel, a second trip to disengage the pawl from the ratchet wheel after the platen is turned, and means operable by the lever after such disengagement and during the latter part of the initial stroke of the lever to release said pressure roll.

7. In a typewriting machine, the combination with a platen and regular line-spacing devices therefor, of a pressure roll to run upon the platen, a lever to release the pressure roll, and an auxiliary mechanism operated by said lever to effect a line-spacing movement of the platen while said roll is pressing thereon.

8. In a typewriting machine, the combination with a revoluble platen and a pressure roll to run thereon, of means to release the pressure roll, and means operated by said releasing means to effect a partial rotation of the platen; means being also provided to release the pressure roll independently of the platen rotating means.

9. In a typewriting machine, the combination with a revoluble platen, and a pressure roll to run thereon, of a finger piece having means to release the pressure roll, and a lever having means both to release the pressure roll and effect a partial rotation of the platen; said finger piece being operable independently of said lever.

10. In a typewriting machine, the combination with a platen and means coöperating therewith to feed the paper, of means connected to the platen and to the paper feeding means to simultaneously advance the platen and release the paper, and means to release the paper without advancing the platen.

11. In a typewriting machine, the combination with a platen and means coöperating therewith to feed the paper, of means connected to the platen and to the paper feeding means to simultaneously advance the platen and release the paper, means to release the paper without advancing the platen, and means to advance the platen without releasing the paper.

12. In a typewriting machine, the combination with a revoluble platen and pressure rolls to run thereon, of a lever, and means connected thereto to advance the platen and release said rolls and lock the rolls away from the platen.

13. In a typewriting machine, the combination with a revoluble platen, of a lever, a ratchet wheel connected to the platen, a pawl operable by said lever to turn the ratchet wheel and platen during the initial portion of the stroke of the lever, and means to trip said pawl away from the ratchet wheel, pressure rolls to run upon the platen, and means operable by said lever after the tripping of said pawl to release said rolls from the platen.

14. In a typewriting machine, the combination with a revoluble platen, of a lever, a ratchet wheel connected to the platen, a pawl operable by said lever to turn the ratchet wheel and platen during the initial portion of the stroke of the lever, and means to trip said pawl away from the ratchet wheel, pressure rolls to run upon the platen, and means operable by said lever after the tripping of said pawl to release said rolls from the platen and lock them in released positions.

15. In a typewriting machine, the combination with a revoluble platen, of a lever, a ratchet wheel connected to the platen, a pawl operable by said lever to turn the ratchet wheel and platen during the initial portion of the stroke of the lever, and means to trip said pawl away from the ratchet wheel, pressure rolls to run upon the platen, means operable by said lever after the tripping of said pawl to release said rolls from the platen and lock them in released positions, and a finger key movable independently of said lever to release and lock said rolls, and subsequently restore the same to normal positions.

JOHN C. McLAUGHLIN

Witnesses:
JOHN O. SEIFERT,
K. FRANKFORT.