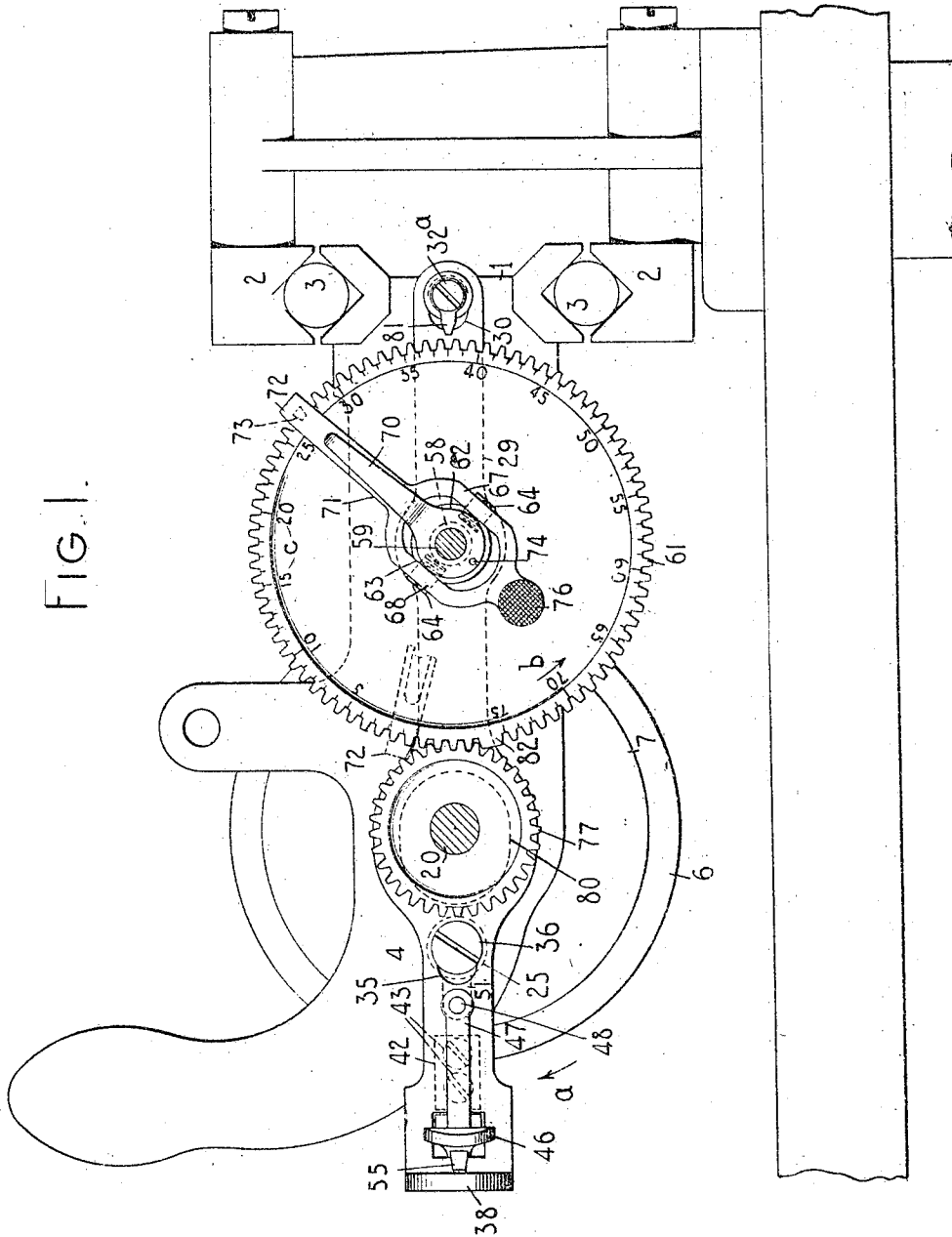


957,995.

4 SHEETS--SHEET 1.



INVENTOR:

Stefan Nielson

HIS ATTORNEY

S. NIELSEN.
TYPE WRITING MACHINE.
APPLICATION FILED MAR. 6, 1909.

957.995.

Patented May 17, 1910.

4 SHEETS—SHEET 2.

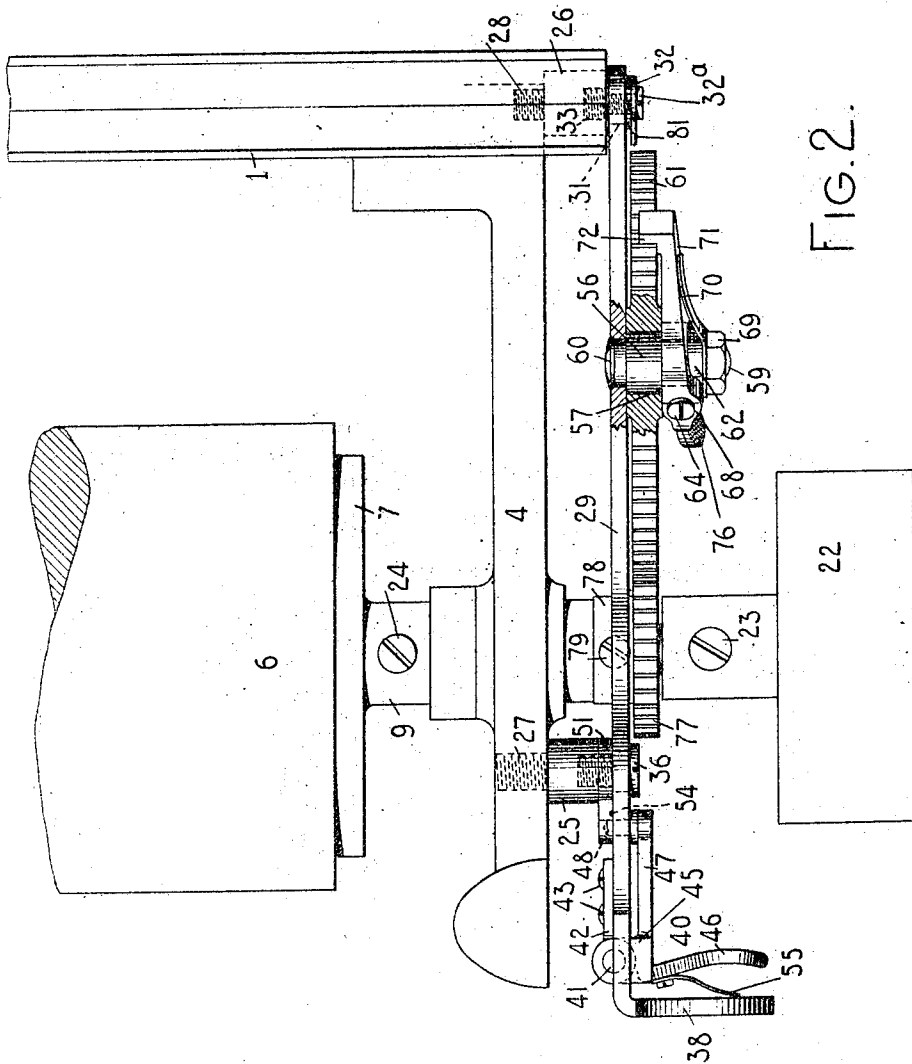


FIG. 2.

WITNESSES:

J. B. Reeves.
H. F. Hammer.

INVENTOR.

Stefanus Nielsen
By Jacob Falck
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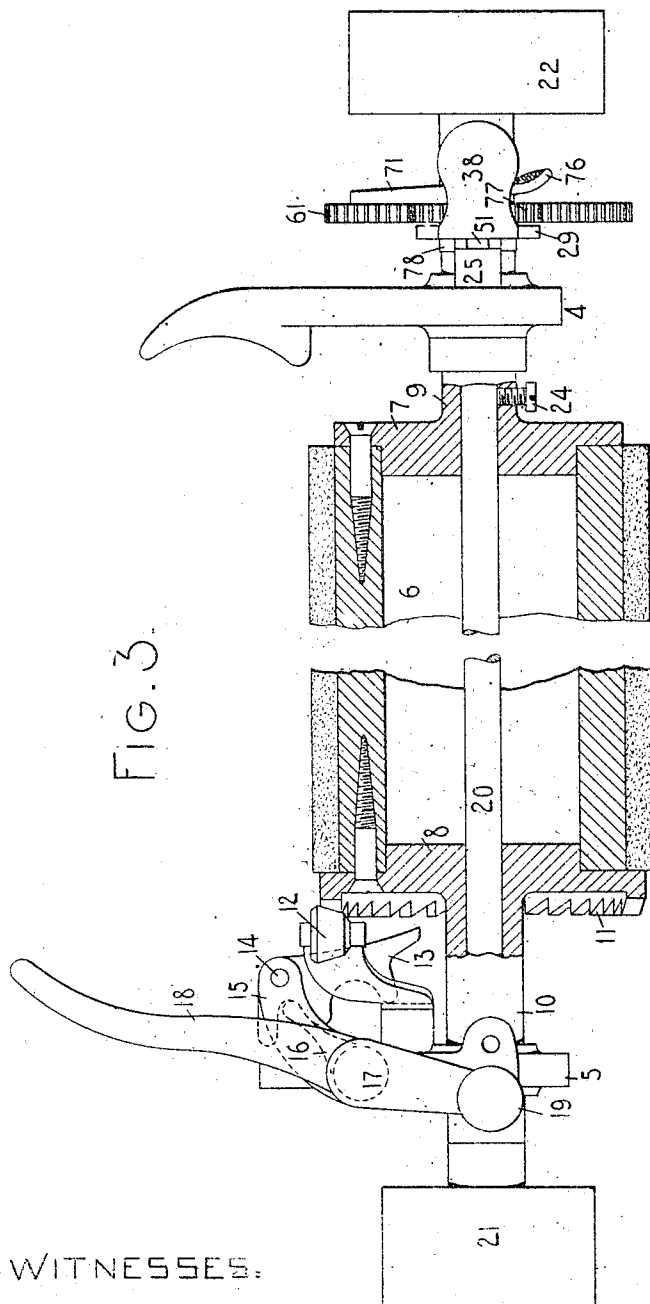
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TYPE WRITING MACHINE.
APPLICATION FILED MAR. 6, 1909.

Patented May 17, 1910.

4 SHEETS—SHEET 3.

FIG. 3.



WITNESSES:

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957,995.

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TYPE WRITING MACHINE.
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Patented May 17, 1910.
4 SHEETS—SHEET 4.

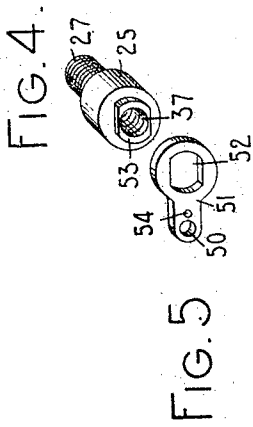
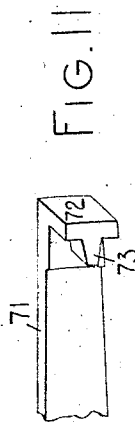
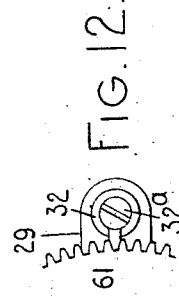
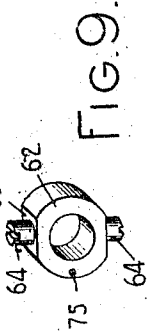
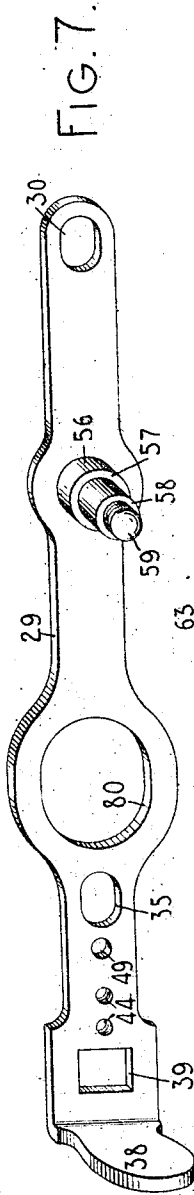
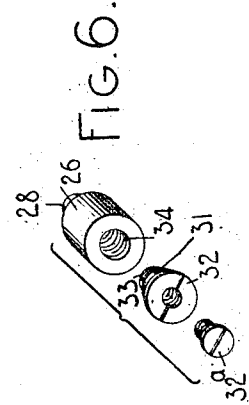


FIG. 5

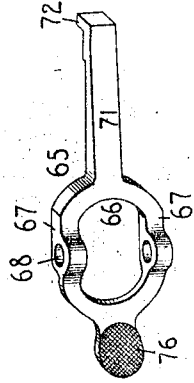


FIG. 10

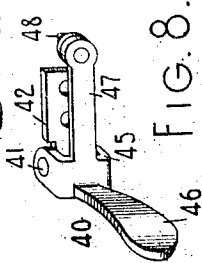


FIG. 8

WITNESSES.

J. B. Reeves.
M. H. Schumacher

INVENTOR:

Stefanus Nielsen
By Jacob J. Schumacher

HIS ATTORNEY.

UNITED STATES PATENT OFFICE.

STEFANUS NIELSEN, OF NEW YORK, N. Y., ASSIGNOR TO UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

957,995.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed March 6, 1909. Serial No. 481,638.

To all whom it may concern:

Be it known that I, STEFANUS NIELSEN, citizen of the United States, and resident of the borough of Brooklyn, 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.

My invention relates particularly to means for arresting the rotative movements of the platen so as to predetermine the extent of its forward movement and the extent of its backward movement as is sometimes desirable when doing condensed record work.

The main object of my invention is to provide a simple and convenient construction for this and other classes of work.

To these ends my invention consists in the features of construction and combinations and arrangements of parts all as will be hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side view partly in section of a Monarch typewriter with my invention embodied therein. Fig. 2 is a partial plan view of the same. Fig. 3 is a front elevation of a carriage with the platen in section. Fig. 4 is a perspective view of a screw stud. Fig. 5 is a similar view of a keeper. Fig. 6 is a perspective view of another screw stud, a shouldered screw and a retaining screw which co-operates therewith. Fig. 7 is a perspective view of the slide bar. Fig. 8 is a similar view of the latch-lever which engages the sliding bar and the keeper. Fig. 9 is a similar view of a collar. Fig. 10 is a similar view of the adjustable stop device which is pivotally mounted on said collar. Fig. 11 is an enlarged perspective view of part of the stop device showing more particularly the stop proper. Fig. 12 is a fragmentary side elevation showing part of one of the gear wheels and the detent for holding the same in its disused position.

In the various views the same parts will be found designated by the same numerals of reference.

1 represents the carriage back bar, 2, 2 carriage guide rails, 3 interposed roller bearings, 4 the right-hand carriage end bar, 5 the left-hand carriage end bar, and 6 a rotary platen having heads 7 and 8, the sleeves 9 and 10 of which are supported by the end bars 4 and 5 in the usual or any suitable

way, the precise mode of mounting the platen to enable it to be rotated being immaterial.

At the left-hand end of the platen is the usual line space ratchet wheel 11, for which is provided a spring-pressed detent roll 12 and a line spacing pawl 13 pivotally mounted at 14 upon an arm 15 and adapted to be actuated by a crank arm 16 projecting from a rock shaft 17 that is operated by a handle or line space lever 18.

19 designates the usual line space regulator.

A platen shaft 20 passes through the platen, through the sleeves 9 and 10 and through the side bars 4 and 5 and at its extended ends the shaft is provided with hand wheels 21 and 22, said hand wheels being securely fastened to the ends of said shaft by screws 23, and the platen being secured to the shaft 20 through the screw 24.

The construction thus far described is common to the Monarch typewriter and the parts now to be described are new parts.

Projecting rightward from the right-hand end bar 4 are two studs or supports 25 and 26 which are preferably secured to said end bar by being threaded thereinto as indicated at 27 and 28. These studs 25 and 26 support a slide bar 29 which is slotted at 30 to embrace the cylindrical portion 31 of a shouldered screw 32 whose shank 33 is threaded into a tapped hole 34 in the stud 26. Said slide bar is also slotted at 35 to embrace the shouldered portion of a screw 36, the threaded shank of which engages a tapped hole 37 in the stud 25. The bar 29 is thus connected to or supported by the carriage and in a way to enable the bar to be slid longitudinally at right angles to the axis of the platen, or to and fro transversely of the carriage.

The bar 29 is provided with a finger piece 38 and is formed with a square opening designated by the numeral 39 to receive part of a locking or holding contrivance. This comprises an angular lever 40 vertically pivoted at 41 upon a plate 42 which is secured to the bar 29 by screws 43 which enter tapped holes 44 in the bar 29. The angular lever 40 consists of a bifurcated portion 45, (through which the pivot 41 passes, said pivot also passing through an eye in the plate 42) a finger piece 46 adjacent the finger piece 38, and an arm 47 carrying a pin 48 adapted to pass in and out of a hole at 49.

The pin is adapted also to pass into a hole at 50 in a keeper 51 which is slotted at 52 to fit upon the shoulder or neck 53 at one end of the screw stud 25, and the keeper is held thereupon by the same screw 36 which connects the bar 29 to the stud 25, the keeper being arranged between the body of the stud and the inner side of the bar. When the bar is in its forward position the pin 48 engages the holes 49 and 50 and the bar is thus locked in its forward position. When the pin is withdrawn from the keeper by pressing upon the finger piece 46 the bar 29 may be slid rearwardly a short distance and may be held in this position by the end of the pin 48 engaging a depression 54 in the keeper and in the rear of the hole 50. The pin is pressed toward the keeper by a spring 55 arranged between the finger pieces 38 and 46. Toward the rear end of the bar is a stud 56 having two shoulders 57 and 58 and three diameters; the end of the stud terminating in a threaded portion 59. The stud is preferably riveted to the bar as shown at 60. Mounted on the larger diameter or body of the stud 56 is a toothed wheel or spur gear 61. Upon the smaller diameter is fitted a collar or sleeve 62, the inner side of which bears against the shoulder 57, thus holding the wheel 61 properly in position upon its bearing on the stud. The collar 62 is flattened on diametrically opposite sides as at 63 and is perforated and threaded to receive two pivot screws 64. Mounted upon the flattened faces 63 of the collar is a stop device 65, comprising a branched portion 66, which provides arms or side bars 67 adapted to be seated upon the faces 63. The arms or bars 67 are formed with perforated ears 68 through which the screws 64 pass after the stop device has been fitted upon the collar, the screws operating to hold the stop device upon the collar in a manner such that the stop device and the collar may be rotated together about the stud and also such that the stop device may have an independent pivotal or vibratory movement about the screws 64, as will hereinafter more fully appear.

The collar and the stop device are held upon the stud by a nut 69 which screws upon the threaded end 59 of said stud. Between the nut and the collar is secured on the stud a leaf spring 70 which bears at its free end against an arm 71 carrying the stop proper designated by the numeral 72 and which in this case consists of the end of the arm or carrier 71 bent at right angles thereto and provided on its under side with a single radial tooth 73 adapted to engage the space between any two teeth of the gear wheel 61 and hold the stop device in any adjusted position upon said wheel. The heel or root of the spring 70 is preferably provided with a pin 74 to engage a depression 75 in the collar 62 so as to prevent the spring from turning

independently of the arm 71. The stop trivance 65 is provided with a finger piece 76 to facilitate the operations of adjusting the stop.

The spur gear 61 is adapted to mesh with a pinion or toothed gear 77 having a sleeve 78 which is secured by a screw 79 upon the platen shaft so that the wheel 77 turns always with the platen shaft and the platen. The bar 29 is enlarged near its middle and formed with an opening at 80 to surround the sleeve 78, the opening 80 being large enough to avoid any interference with the back and forth sliding movements of the bar 29.

In Figs. 1 and 2 the bar 29 carrying the gear 61 is shown in its forward position and the gear 61 in mesh with the gear 77. When the bar is pushed rearwardly the gear 61 is moved out of mesh with the gear 77. At this time the gear 61 is as seen at Fig. 12 preferably moved into engagement with a single tooth or detent 81 fixedly held between the head of the shouldered screw 32 and the retaining screw 32^a, so that there may be no accidental rotative movement of the gear 61 whereby its stops will lose their predetermined relationship to the gear 77.

It will be observed that at 82 there is an uncut tooth in the wheel, or in other words, the tooth at 82 equals the distance of two teeth and a space which is normally cut between two teeth. This uncut tooth 82 constitutes a stop and what may be termed a fixed stop on the wheel 61, the stop 72 being an adjustable and relatively movable stop. Any of the teeth of the wheel 77 constitutes a cooperating stop for each of the stops 72 and 82 as will be presently more fully explained.

Referring more particularly to Figs. 1 and 2 it will be observed that when the platen is rotated either by the knobs or by the line spacing mechanism or otherwise the gear 77 will turn with the platen and by reason of its mesh with the gear 61, will turn the latter simultaneously, and the stops 72 and 82 will be carried around in one direction or another with the wheel 61 in accordance with the direction of rotation of the platen. For example, if the platen be rotated forwardly or in the direction of the arrow *a* the stop 82 will leave the gear wheel 77 and will travel in the direction of the arrow *b*, and the stop 72 will travel toward the gear wheel 77 until it is arrested thereby, as indicated by the dotted lines at Fig. 1. This will in turn arrest the rotation of the gears 61 and 77 and of the platen as well. When the platen is rotated backwardly or in a direction opposite that shown by the arrow *a* the stop 72 will be rotated away from the gear 77 and the stop 82 will be carried toward the gear 77 and will finally be arrested by a tooth of said gear as shown at Fig. 1. The

stops 72 and 82 may of course be set as far apart as desired and within the range of adjustment afforded by the gear 61.

The extent to which the platen may be turned to feed the paper forwardly will depend upon the distance that the stop 72 is located away from the contacting point on the wheel 77.

In the relationship of the parts shown at Fig. 1 the adjustable stop 72 is set to permit the platen to rotate forwardly, say, 27 line spaces. As the stop 72 travels around toward the teeth of the wheel 77 of course the stop 82 travels around similarly but is ineffective during this forward rotation of the platen. When, however, the platen is rotated in the opposite direction, that is backwardly, then the wheel 61 is rotated in the opposite direction, but both of said stops turn reversely with said wheel at this time, the stop 72 passing away from the wheel 77 and the stop 82 traveling toward the wheel 77 until it is arrested thereby. If it should be desired to arrest the platen in its forward rotation at an earlier period than that provided for at Fig. 1, the stop 72 is adjusted in a left-hand direction toward the stop 82 but if it should be desired to arrest the platen at a later period than that provided for at Fig. 1 the stop 72 is adjusted around the wheel 61 in a right-hand direction. These adjustments are usually determined by the printed heading of bills, invoices or the like or when the mechanism is to be used for condensed record work in connection with a long sales sheet and whereby a plurality of bills or invoices are to be condensed on said sales sheet. The operation or method of performing condensed record work is so well known that no further explanation seems to be necessary. In setting said stops for a given heading I prefer first to bring the stop 82 into engagement with one of the teeth of the wheel 77, as illustrated at Fig. 1, then insert the paper and rotate the platen until the first line to be printed is in register with the printing point, assuming at this time that the stop 72 is at a remote rearward point so as not to interfere with this adjustment of the paper. The stop 72 will then be adjusted by rotating it in left-hand direction until it strikes the teeth of the wheel 77, as illustrated by the dotted lines at Fig. 1. It will be understood of course that in adjusting the paper forwardly for the first printing line the stop 82 is rotated backward simultaneously and away from the wheel 77. When the stop 72 shall have been adjusted as explained then the distance apart of the stops 72 and 82 will represent the extent of backward and forward rotations to which the platen may be subjected before it is arrested. If desired, numbers (c) or other indicating marks may be applied to or in the vicinity of the teeth of

the wheel 61 to facilitate the adjustment of the stop 72, as shown at Fig. 1.

When the paper has been fed into the machine and adjusted as explained and it be desired to begin the typewriting, the wheel 61 is thrown out of mesh with the wheel 77 by pushing the slide bar or carrier 29 rearwardly as before explained, and at the same time causing the stationary tooth 81 to engage between two teeth of the wheel 61 so that the said wheel may not lose its proper relationship to the wheel 77 when said wheels are again put into mesh by the drawing or forwardly of the slide 29, and it may be desired to insert a fresh sheet and continue the condensing of the bill on the sales sheet.

It will be observed that the billing mechanism is arranged at one side of the carriage, is compact and occupies but very little room and is not at all in the way of any of the usual devices furnished with the machine. These desiderata are accomplished largely by the use of the two spur gears arranged in the same vertical plane and by use of the slide bar arranged to be operated transversely of the carriage or fore and aft of the machine, that is, to and from the operator. It will also be noted that the spur gears may be of any desired relative sizes, so that the stops 72 and 82 may make less or more than a full revolution of the platen.

The wheels 77 and 61 may be so proportioned that the mechanism may be used for a page-end lock—that is, means for stopping the forward rotation of the platen when the end of the sheet has been reached or nearly so.

In the present construction the platen ratchet wheel and the spur gear 77 have thirty-three teeth while the spur gear 61 contains more than seventy-five teeth, whereby the spur or stop carrying gear 61 is adapted to more than two revolutions of the platen.

If it be desired to stop the rotation of the platen in one direction only then one or the other of the stops 72 or 82 may be dispensed with. For example, if it be desired to stop the backward rotation of the platen only then the stop 82 alone will be used, and if it be desired to stop the forward rotation of the platen only, then the stop 72 alone will be used.

Various changes may be made without departing from the spirit and scope of my invention.

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

1. In a typewriting machine, the combination of a platen, a spur wheel fixed to rotate therewith, a companion spur wheel mounted to rotate in the same vertical plane as the first mentioned spur wheel, means for engaging and disengaging said spur wheels by a bodily movement of one of said wheels relatively to the other, and means for stop-

ping their rotation and thereby stopping the rotation of the platen.

2. In a typewriting machine, the combination of a platen, a spur wheel fixed to rotate therewith, a companion spur wheel both wheels being arranged in the same vertical plane, a slide on which said companion spur wheel is mounted, and means for stopping the rotation of said wheels and thereby arresting the rotation of the platen.

3. In a typewriting machine, the combination of a platen, a spur wheel fixed to rotate therewith, a companion spur wheel arranged in the same vertical plane as the first mentioned spur wheel, means for bodily moving said wheels into and out of mesh, and stops carried by said companion spur wheel, one of said stops being adjustable.

4. In a typewriting machine, the combination of a platen, a spur wheel fixed to rotate therewith, a companion spur wheel, a slide carrying said companion spur wheel and movable fore and aft of the machine, and stopping means mounted directly on said companion spur wheel for arresting the rotation of the platen.

5. In a typewriting machine, the combination of a platen, a spur wheel mounted to rotate therewith, a horizontal slide adapted for a fore and aft movement, a companion spur wheel mounted on said slide, and stopping means carried directly by said companion wheel for arresting the rotation of the platen.

6. In a typewriting machine, the combination of a platen, a spur wheel fixed to rotate therewith, a companion spur wheel arranged in the same vertical plane as the first mentioned wheel, and a fixed stop and an adjustable stop carried by said companion wheel, said stops cooperating directly with the teeth of the first mentioned spur wheel.

7. In a typewriting machine, the combination of a platen, a spur wheel fixed to rotate therewith, a companion spur wheel, a slide parallel with said wheels and carrying the companion wheel, and stopping means for said wheel.

8. In a typewriting machine, the combination of a platen, a spur wheel fixed to rotate therewith, a companion wheel movable fore and aft of the machine in a vertical plane engaging and disengaging the first mentioned spur wheel, and stopping means for said wheels.

9. In a typewriting machine, the combination of a platen, a spur wheel adapted to rotate therewith, a companion spur wheel engageable with and disengageable from said first mentioned wheel, and a stop on one of said wheels adapted to abut against the teeth of the other of said wheels and thereby arrest the rotation.

10. In a typewriting machine, the combination of a platen, two spur wheels both

arranged in the same vertical plane and on one side of the carriage, one of said wheels being arranged axially of the platen and the other adapted to be engaged with and disengaged from said axially arranged wheel, one of said wheels having a stop portion adapted to engage directly with the teeth of the other of said wheels for arresting their rotation.

11. In a typewriting machine, the combination of a platen, a pair of spur wheels adapted for engagement and disengagement with each other, one of said wheels carrying a stop portion adapted to engage the teeth of the other of said wheels and stop the rotation of both of said wheels and the platen.

12. In a typewriting machine, the combination of a platen, a spur wheel arranged axially thereof, and a companion spur wheel movable back and forth to engage and disengage the first mentioned wheel, said companion wheel having an uncut tooth portion adapted to engage with the teeth of the axially arranged wheel.

13. In a typewriting machine, the combination of a platen, a spur wheel fixed axially of the platen, a slide, a companion spur wheel mounted on said slide, a fixed stop carried by said companion wheel and adapted to abut the teeth of the first mentioned wheel, and an adjustable stop also carried by said companion wheel.

14. In a typewriting machine, the combination of a platen, a spur wheel fixed axially thereof, a slide bar carrying a companion spur wheel, said wheels and bar being parallel, means for holding said slide bar in one or the other of two positions, and stopping means for arresting the rotation of said wheels and said platen.

15. In a typewriting machine, the combination of a platen, a platen axle, a spur wheel fixed on said platen axle, a slide bar constructed to embrace said platen axle, a companion spur wheel mounted to turn on said slide bar, and stopping means.

16. In a typewriting machine, the combination of a platen, a platen axle, a spur wheel fixed on said platen axle, a slide bar, a companion spur wheel mounted to turn on said slide bar, latching devices for holding the slide bar in either one of two positions, and means for arresting the rotation of said spur wheels and said platen.

17. In a typewriting machine, the combination of a platen, a platen axle, a spur wheel secured to said axle, a slide adapted to move back and forth transversely of said axle, a companion spur wheel mounted on said slide and carrying stops, and means for holding said slide in position to maintain the said wheels in operative engagement.

18. In a typewriting machine, the combination of a platen, two spur wheels both

5 nation of a platen, a platen axle, a slide adapted to move transversely of said axle, a companion spur wheel mounted to rotate on said slide and carrying stopping means, and means for holding said companion wheel out of engagement with the wheel that is mounted on the platen axle.

10 19. In a typewriting machine, the combination of a platen, a pair of spur wheels one of which is fixed always to rotate with the platen, and the other of which is bodily movable into and out of engagement with said relatively fixed wheel, and means for directly engaging and locking said bodily movable wheel when it is disengaged from said relatively fixed wheel.

20 20. In a typewriting machine, the combination of a platen, a pair of spur wheels one of which is relatively fixed axially of the platen and the other of which is movable bodily toward and from the relatively fixed wheel, a detent adapted to engage the teeth of the bodily movable wheel when it is disengaged from the relatively fixed wheel, a stop for arresting the rotative movements of said wheels and said platen when they are connected to rotate together.

30 21. In a typewriting machine, the combination of a platen, a spur wheel, a bodily movable companion spur wheel, and an adjustable stop mounted to rotate with said wheel, also to be adjustable circularly of said wheel and also pivoted to be swung to and from said wheel.

35 22. In a typewriting machine, the combination of a platen, a platen axle, a spur wheel

fixed on the platen axle, a slide bar adapted to be moved back and forth transversely on said axle, a companion spur wheel mounted to rotate on said slide bar, stops carried by said companion spur wheel, a latching device adapted to said slide bar, and a detent for said companion wheel.

23. In a typewriting machine, the combination of a platen, a pair of gear wheels adapted to go in and out of mesh, one of said wheels carrying a stop and the teeth of the other of said wheels being adapted to act as a cooperating stop.

24. In a typewriting machine, the combination of a platen, a pair of engageable and disengageable gear wheels, and a fixed stop and an adjustable stop on one of said wheels, said stops being adapted to cooperate directly with the teeth of the other of said wheels.

25. In a typewriting machine, the combination of a platen, and a pair of gear wheels movable into and out of mesh, one of said wheels carrying an adjustable stop which engages directly the teeth of said wheel, and said stop being adapted to cooperate directly with the teeth of the other of said wheels.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 5th day of March A. D. 1909.

STEFANUS NIELSEN.

Witnesses:

M. F. HANNWEBER,
CHARLES E. SMITH.