

G. A. SEIB.
TYPE WRITING MACHINE.
APPLICATION FILED MAR. 16, 1906.

947,499.

Patented Jan. 25, 1910.

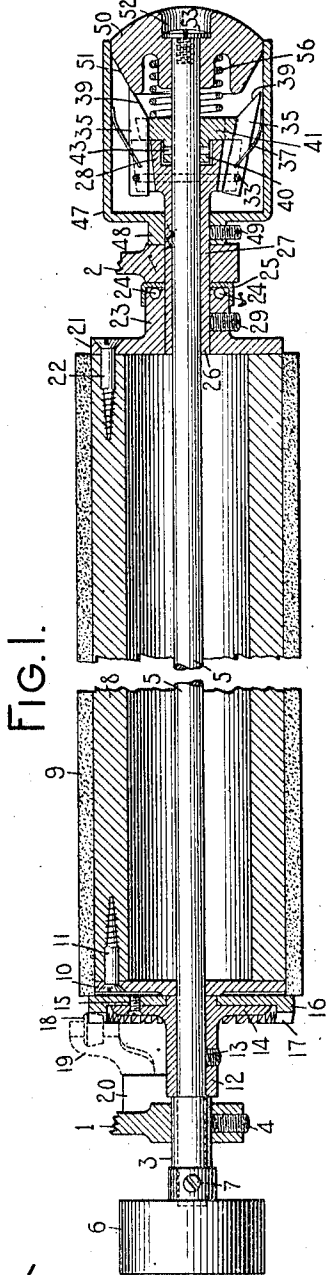


FIG. 1.

FIG. 7.

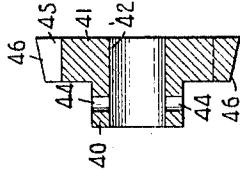
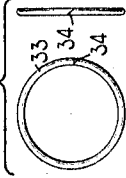


FIG. 4.

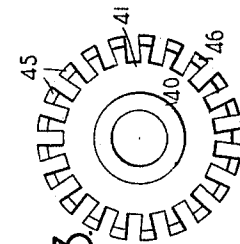


FIG. 3.

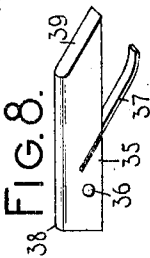


FIG. 8.

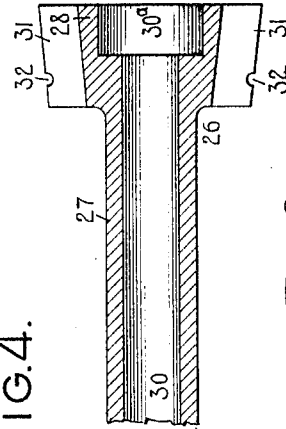


FIG. 6.

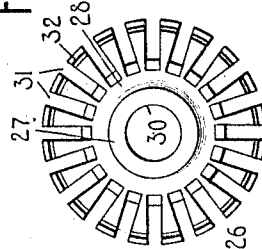


FIG. 5.

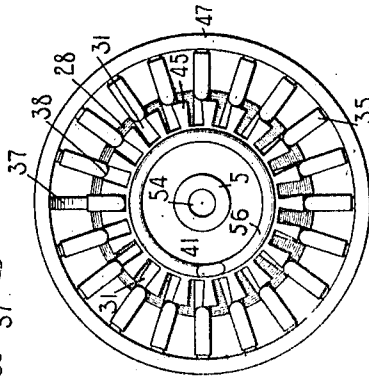


FIG. 2.

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UNITED STATES PATENT OFFICE.

GEORGE A. SEIB, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

947,499.

Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed March 16, 1906. Serial No. 306,332.

To all whom it may concern:

Be it known that I, GEORGE A. SEIB, citizen of the United States, and resident of Syracuse, in the county of Onondaga 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 to platen releasing mechanism for typewriting machines and has for its main object to provide improved devices for connecting and disconnecting the platen from its line space wheel whereby said platen is enabled to be turned, at the will of the operator, irregular distances independent of said line space wheel.

To the above and other ends the invention consists in the features of construction, combinations of devices and arrangements of parts hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a fragmentary longitudinal sectional view of a platen and its support showing my invention. Fig. 2 is an enlarged end view of the right-hand platen finger wheel and the devices contained therein, a part, hereinafter termed a releasing cam member, being removed to give a clear view of the interior of the finger wheel. Fig. 3 is a detached face view of a part hereinafter termed a toothed wheel drawn to an enlarged scale. Fig. 4 is a central longitudinal sectional view of the toothed wheel shown in Fig. 3. Fig. 5 is a detached face view of a part, hereinafter termed the detent support or sleeve, drawn to an enlarged scale. Fig. 6 is a central longitudinal sectional view of the sleeve shown in Fig. 5, part of said sleeve being broken away. Fig. 7 shows detached face and edge views of a part hereinafter termed a fulcrum wire. Fig. 8 is an enlarged perspective view of a part hereinafter termed a detent.

In the drawings, 1 and 2 are the left and right-hand side bars respectively of a platen frame or carrier of any suitable construction. A bearing sleeve 3 is adjustably secured in the side bar 1 by a set screw 4. A platen axle 5 bears at its left hand end portion in the sleeve 3, and 6 is a platen finger wheel secured to the left hand end of the platen axle by a screw 7. The platen may be of any suitable construction, that shown in the drawings generally resembling

the platen of the Monarch typewriter and comprising a wooden core 8 and a rubber sheath or cover 9. A platen head 10 is secured to the left end of the wooden core by wood screws 11, said platen head being perforated to permit of the passage of the platen axle 5 on which said platen head bears. A sleeve 12 is fixed to the platen axle by a set screw 13, said sleeve being arranged between the platen head 10 and the inner end of the sleeve 3 and being provided with a flange 14 which has secured to it, by means of screws 15, a line space wheel 16 provided with crown ratchet teeth 17. A detent roller 18 coöperates with the teeth of the line space wheel to maintain the latter in any desired position, said roller being pivoted on the end of a spring arm 19 which is suitably secured to a lug 20 projecting inwardly from the side bar 1. Line spacing devices (not shown) of suitable construction are adapted to coöperate with the line space wheel to give it line space movements.

The right hand platen head 21 is secured to the core 8 by wood screws 22, said platen head being provided with an outwardly projecting central boss or hub 23, the end whereof is formed with an annular groove or race-way which receives anti-friction balls 24, said balls coöperating with the bottom of a cap-piece 25 which abuts against the inner face of the side bar 2, the construction being such that end thrust is readily taken up. The cap piece and the right hand platen head are centrally perforated to receive a sleeve portion of a so-called detent holder, support or sleeve 26 which is shown in detail in Figs. 5 and 6 and comprises an elongated body or sleeve portion 27 and a head 28. The platen is maintained in a fixed relation with said holder by a set screw 29 which enters a threaded opening in the hub 23 of the right-hand platen head and abuts against the body or sleeve portion 27 of the holder 26 near its inner or left-hand end. The holder 26 is bored out centrally as indicated at 30 to permit of the passage of the platen axle, and the head 28 is counterbored as indicated at 30^a for a purpose presently to appear. The head 28 of the holder or sleeve is provided with a series of radial slots 31, twenty of said slots being shown in the drawings, although it is to be understood that a greater or less number may be employed. As shown most clearly in Fig. 6,

the bottoms of the slots 31 are beveled or inclined, so that said bottoms are contained in the surface of a cone, the apex whereof lies in the center of rotation of the platen inwardly or toward the left hand of the head 28. The periphery of the head 28 is provided with an annular groove 32 which receives a fulcrum ring 33 made preferably of spring wire, said ring being best shown in Fig. 7 and being split as indicated at 34 in said figure.

Arranged in each slot 31 is a holding member or detent 35 which is best shown in Fig. 8. Each detent 35 is perforated as shown at 36 to allow the fulcrum wire 33 to pass through, said wire serving as a pivot or fulcrum for all the detents. Each detent carries a flat spring 37, said spring being received in a kerf in the outer face of the detent, the walls of the kerf being pressed toward each other to hold the spring 37 in place. The inner edge of each detent is rounded as indicated at 38 and the right hand end of the detent is beveled as indicated at 39. The counter bore 30^a in the head of the holder 26 receives the central hub or boss 40 of a wheel 41, shown in detail in Figs. 3 and 4. The wheel is perforated as indicated at 42 to allow it to be mounted on the platen axle and is maintained in fixed relation with said axle by a pin or rivet 43 which is driven through said axle and through openings 44 in the hub of the wheel. The wheel 41 is provided with a series of radially disposed teeth 45, there being one more of said teeth than there are detents 35, so that, in this case, the teeth 45 are twenty-one in number. The peripheries of the teeth 45 are beveled as shown at 46, the inclination of the bevel corresponding substantially with the inclination of the bottoms of the slots 31 in the head 28 of the holder 26.

A finger wheel 47 is provided at the right hand end of the platen, said finger wheel having a central hub or boss 48 which abuts against the outer face of the side bar 2 and is secured in fixed relation with the sleeve 26 by a set screw 49. The body portion of the finger wheel 47 is elongated and hollow, serving, as clearly shown in Fig. 1, as a housing or cover for the detents 35 and their support, and also for the toothed wheel 41 with which said detents cooperate, these devices forming a two-part clutch mechanism, the operation of which is to be described later. The outer or right hand end of the finger wheel 47 is open, and fitting into the open end of said finger wheel is a releasing cam member 50 having a coned cam face 51 adapted to cooperate with the beveled edges 39 of the detents. The cam member is counterbored at 52 and is slidably mounted on the end of the platen axle 5, being held against displacement therefrom by a headed

screw 53 which passes through the counter-bore and enters a threaded opening 54 in the end of the platen axle 5. The inner face of the cam member 50 is provided with a deep annular groove 55 which receives a coiled expansion spring 56, the outer end whereof bears against the bottom wall of the annular groove. The inner end of said spring abuts against the outer face of the toothed wheel 41 and serves to maintain the cam member 50 normally pressed against the head of the screw 53 in inoperative position.

In assembling the parts, the platen, with its two heads 10 and 21 secured in place, is arranged between the side bars 1 and 2 of the platen frame or carrier. The detent holder 26, with the hollow platen finger wheel 47 fixed thereto, is then placed in position with its inner end entering the hub 23 of the platen 21, and is properly secured by the set screw 29. Thereafter the platen axle 5 with the toothed wheel 41 fixed thereon, is passed through the bore 30 of the holder 26 from the right-hand side of the platen toward the left and passes through the bore of the sleeve 12, which, with the line space wheel attached, is passed down between the end of the platen and the side bar 1. The left-hand end of the shaft is also passed through the bearing sleeve 3 and projects beyond the bar 1. The platen axle is arrested by the contact of the inner face of the toothed wheel 41 with the outer face of the head 28 and thereafter the sleeve 12 is fixed to said axle by the set screw 13 and the left-hand finger wheel 6 is secured in place. The cam member 50, with its spring 56 in place, is now inserted in the right-hand platen head 47 and secured in place by the headed screw 53.

It will be noted that the line space wheel 16 is fixed to the platen axle 5 which also has fixed to it the toothed wheel 41. It will also be noted that the detent holder 26 is fixed to the platen and that the finger wheel 47 is also fixed to said holder. The springs 37 of the detents 35 contact with the inner surface of the finger wheel 47 and tend constantly to press said detents toward a common center, said center being in the longitudinal axis of the platen. The series of detents are disposed substantially longitudinally of the platen axle and their springs 37 press them toward the toothed wheel 41. The number of the teeth 45 in said wheel exceed the number of detents by one, it will be recalled, so that one only of the detents at a time can ever enter the wheel 41 between two of the teeth 45. This will be best understood from a consideration of Fig. 2 wherein, it will be noted, the detent 35 at the top and center is engaged with the opening between two of the teeth 45, while all of the other detents engage and are pressed

against the peripheries of the teeth 45. The detent adjacent to the engaging detent at each side has its rounded edge 38 just ready to enter the space between two of the teeth 45, so that a slight relative movement between the toothed wheel 41 and the detent supporting member in either direction would enable one or the other of these two teeth to be pressed into engaging position by its spring.

To enable the relative movement between the two parts to be effected it is, of course, necessary to move the engaging detent to inoperative position and this movement of the detent may be caused by pressing the cam member 50 inwardly against its spring 56 and so that the cam face 51 of said member, pressing against the beveled edge 39 of the engaging detent, will force the latter outward radially of the platen until the lower edge of said detent clears the toothed wheel 41. It will be apparent that when this disengagement takes place the cam face 51 will be in engagement with the inclined edges of the other detents so that, on further inward movement of the cam member 50, the entire series of detents will be moved outwardly away from the common center toward which they are pressed by their springs, and will be separated entirely from the toothed wheel 41. If now, the pressure against the cam member 50 be maintained and rotary movement be communicated to the finger wheel 47, the platen will be turned with said finger wheel but the line space wheel 16 will remain motionless, since it has been disconnected from the platen by the separation of the detents 35 from the toothed wheel 41 and is therefore held against movement at this stage by the roller 18. When the parts are thus disconnected a rotary movement of the platen will carry with it the detent support 26 and the detents 35. It will be apparent from what has already been said and from a consideration of Fig. 2, that a slight rotary movement communicated to said detents will be sufficient to bring one or another of them into position to be seated in one or another of the openings between the teeth of the wheel 41 and to positively connect the line spacing wheel and platen to rotate together. As has been stated there are twenty-one of these teeth and twenty detents, so that a very slight relative rotary movement between the platen and line spacing wheel, of approximately one-twentieth of the width of one of the teeth 45, will be sufficient to bring a detent into position to engage with the toothed wheel, and that at every additional slight relative rotary movement, another one of the detents will in turn be brought to position to engage the toothed wheel between two of its teeth. When the platen has been rotated independently of the line space wheel to the desired position by

means of the finger wheel 47, the cam member 50 is released by the operator and said member will be restored to normal position by its spring 56, thereby permitting one of the detents 35 to engage operatively with the toothed wheel 41 and restoring operative connection between the platen and its line space wheel. In operating the platen releasing mechanism the second finger of the right hand of the operator is preferably employed to move the cam member 50 inwardly, thus leaving the thumb and fore finger of the right hand free to turn the platen finger wheel 47.

It will be noted that by my invention I provide means for freeing the platen from the control of the line space wheel so as to enable said platen to be turned irregular distances ranging from the most minute to a complete rotation or more; that said means comprises a two-part clutch device which positively unites the parts, one of said members of said two-part clutch device, that is the detent support 26 and the detents 35, being fixed to the platen and the other of said parts, that is the toothed wheel 41, being fixed to the line space wheel; and that this two-part clutch device is outside of the platen and is housed or inclosed in one of the platen finger wheels, the releasing member 50 serving as a closure for said finger wheel and the construction being such that the parts of the platen releasing mechanism may be removed for repair or adjustment without dismembering the platen as is usually necessary with this class of devices. Furthermore, it will be seen that actuation of the clutch releasing means is effected by pressure exerted longitudinally of the platen so that there is no danger in effecting a relative accidental displacement between the line spacing wheel and platen by the pressure exerted to effect a clutching and unclutching engagement between the parts.

Where in the following claims it is recited that a detent support and detents pivoted thereon are maintained "in fixed relation" with another part, what is meant is that there is no movement of translation of the detent support and the detents with respect to said other part; and not of course that the detents may not receive rotary movements on their pivots.

Various changes may be made in the details of construction and arrangements of parts without departing from the 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 cylindrical platen, a line space wheel, a two-part clutch device one part comprising a toothed wheel and the other part comprising a plurality of pivoted de-

tents the number of said detents being one less than the number of the teeth in said toothed wheel, one of the parts of said clutch device being maintained in a fixed relation with the platen and the other part in a fixed relation with the line space wheel, and means for moving said detents into and out of engagement with said toothed wheel.

2. In a typewriting machine, the combination of a cylindrical platen, a line space wheel, a toothed wheel having a fixed relation with said line space wheel, a detent support having a fixed relation with said platen, a plurality of detents pivoted on said support and numbering one less than the number of teeth in said toothed wheel, and means for moving said detents into and out of engagement with said toothed wheel.

3. In a typewriting machine, the combination of a cylindrical platen, a line space wheel, a two-part clutch device one part comprising a toothed wheel and the other part a plurality of pivoted detents, one of the parts of said clutch device being maintained in a fixed relation with the platen and the other part in a fixed relation with the line space wheel, and a cam member operative on said detents to cam them out of engagement with said toothed wheel, one only of said detents being fully engaged with said toothed wheel at one time.

4. In a typewriting machine, the combination of a cylindrical platen, a line space wheel, a two-part clutch device one part comprising a toothed wheel and the other part comprising a circularly arranged series of detents, each detent being disposed longitudinally of the platen, one of the parts of said clutch device being maintained in a fixed relation with the platen and the other part in a fixed relation with the line space wheel, and means for moving said detents into and out of engagement with said toothed wheel, one only of said detents being fully engaged with said toothed wheel at one time.

5. In a typewriting machine, the combination of a cylindrical platen, a line space wheel, a two-part clutch device one part comprising a sleeve having radial slots containing detents and the other part comprising a wheel having radial teeth, one of the parts of said clutch device being maintained in a fixed relation with the platen and the other part with the line space wheel, and a cone-shaped cam operative to press said detents out of engagement with said toothed wheel.

6. In a typewriting machine, the combination of a cylindrical platen, a line space wheel, a two-part clutch device one part comprising a sleeve having radial slots containing detents and the other part comprising a wheel having radial teeth, the number of the teeth of said toothed wheel ex-

ceeding the number of detents by one, one of the parts of said clutch device being maintained in a fixed relation with the platen and the other part with the line space wheel, and a cone-shaped cam operative to press said detents out of engagement with said toothed wheel.

7. In a typewriting machine, the combination of a line space wheel, a platen adapted to move relatively thereto, a sleeve fixedly connected with the platen and provided with a plurality of radial slots, spring detents pivotally mounted in the slots of said sleeve, a wheel fixedly connected with said line space wheel and having a plurality of radial teeth with which said spring detents are adapted to engage, a cone-shaped cam operative to disengage said spring detents from said toothed wheel, and a spring acting to maintain said cone-shaped cam in inoperative position.

8. In a typewriting machine, the combination of a line space wheel, a platen adapted to move relatively thereto, a sleeve fixedly connected with the platen and provided with a plurality of radial slots, a fulcrum wire on said sleeve, spring detents pivoted on said fulcrum wire and guided in said slots, a wheel maintained in a fixed relation with said line space wheel and having a plurality of radial teeth with which said spring detents are adapted to engage, said detents being operative one at a time, the number of radial slots being one greater than the number of spring detents, a cone-shaped cam operative to disconnect said spring detents from said toothed wheel, and a spring acting to render said cam normally inoperative.

9. In a typewriting machine, the combination of a platen frame, a platen axle journaled thereon, a platen journaled on said axle, a line space wheel fixed to said axle at one end of said platen, a sleeve fixed to said platen at the other end thereof and provided with a series of radial slots, a fulcrum wire on said sleeve, a series of spring detents contained in said slots and pivoted on said fulcrum wire, a wheel fixed to said platen axle adjacent to said slotted sleeve and provided with a plurality of radial teeth with which the detents engage, and a cone-shaped cam slidable on said platen axle and operative to disconnect said spring detents from said toothed wheel.

10. In a typewriting machine, the combination of a cylindrical platen, a line space wheel, a two-part clutch operative to connect and disconnect said platen and said line space wheel, a hollow finger wheel for said platen, said finger wheel being open at one end, said finger wheel being operative to turn said platen and serving as a housing for said two-part clutch, and means for rendering said clutch inoperative, said means

serving as a closure for the opening in said finger wheel.

11. In a typewriting machine, the combination of a platen frame, a platen axle journaled thereon, a platen journaled on said axle, a line space wheel fixed to said axle, a two-part clutch device one part fixed to said platen axle and the other part to said platen, and a platen finger wheel fixed to said platen and operative to turn the same, said finger wheel being hollow and serving as a housing for said two-part clutch device.

12. In a typewriting machine, the combination of a platen frame, a platen axle journaled thereon, a platen journaled on said axle, a line space wheel fixed to said axle, a two-part clutch device one part fixed

to said platen axle and the other part to said platen, means slidable on said platen axle for unclutching said clutch device, and a hollow finger wheel fixed to said platen and operative to turn the same, said finger wheel being open at one end and serving to house the two-part clutch device, said slidable unclutching means serving as a closure for the open end of said platen finger wheel.

Signed at Syracuse, in the county of Onondaga, and State of New York this 12th day of March A. D. 1906.

GEORGE A. SEIB.

Witnesses:

JOHN S. MITCHELL,
W. J. LOGAN.