

May 29, 1962

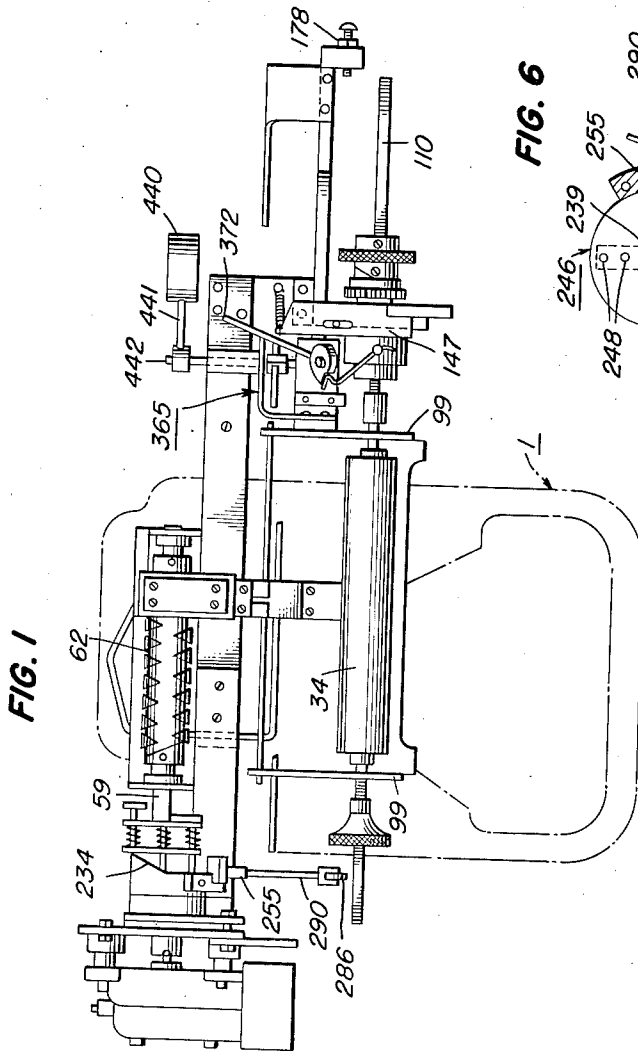
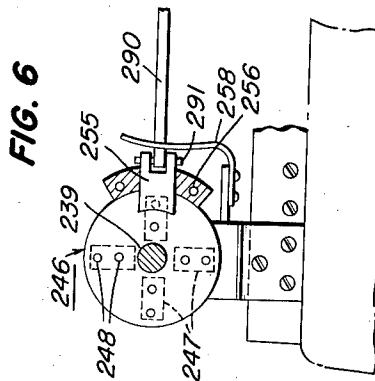
G. ZINT

3,036,685

TYPEWRITER WRITING CONTINUOUSLY IN OPPOSITE DIRECTIONS

Filed Oct. 24, 1960

6 Sheets-Sheet 1



INVENTOR

George Zint

BY

H. D. Wilkey & Co.

ATTORNEY

May 29, 1962

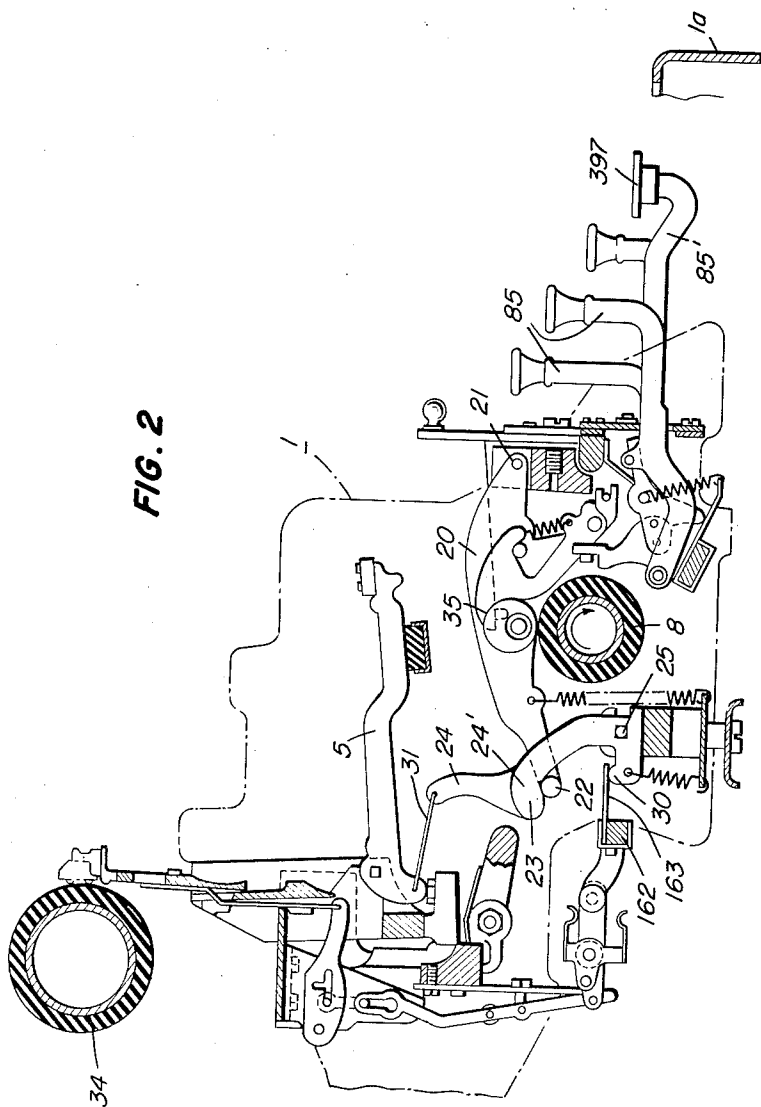
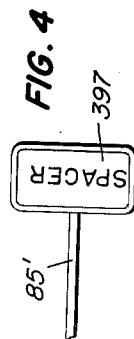
G. ZINT

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TYPEWRITER WRITING CONTINUOUSLY IN OPPOSITE DIRECTIONS

Filed Oct. 24, 1960

6 Sheets-Sheet 2



INVENTOR

George Zint

BY

H.B. Wilson & Co.

ATTORNEY

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G. ZINT

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TYPEWRITER WRITING CONTINUOUSLY IN OPPOSITE DIRECTIONS

Filed Oct. 24, 1960

6 Sheets-Sheet 3

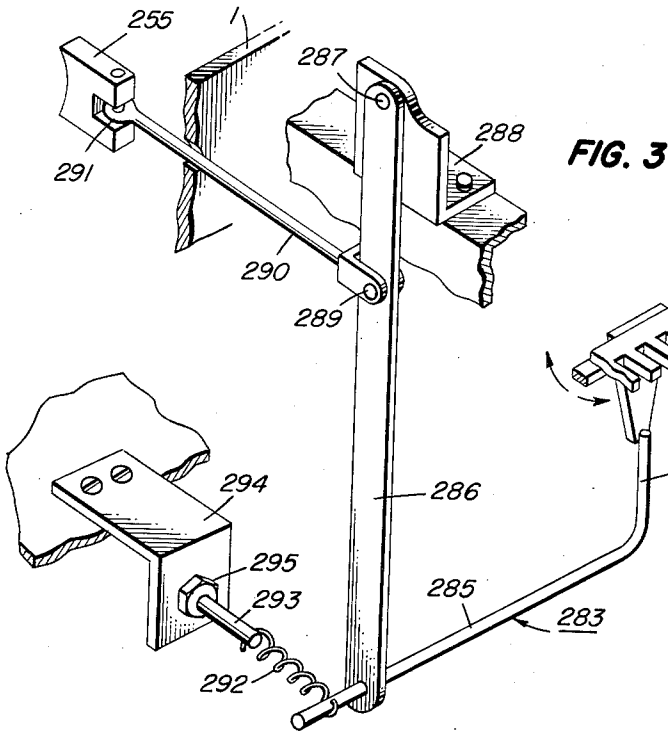


FIG. 3

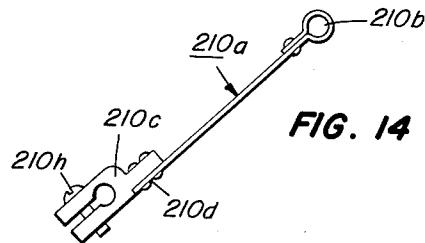


FIG. 14

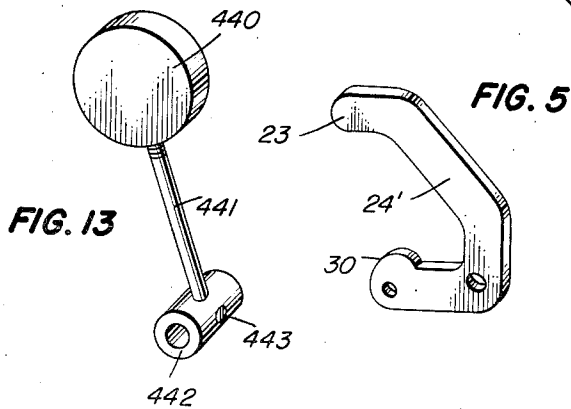
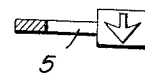


FIG. 5

FIG. 15



INVENTOR.
George Zint

BY

H.P. Wilmon, Co.
ATTORNEY

May 29, 1962

G. ZINT

3,036,685

TYPEWRITER WRITING CONTINUOUSLY IN OPPOSITE DIRECTIONS

Filed Oct. 24, 1960

6 Sheets-Sheet 4

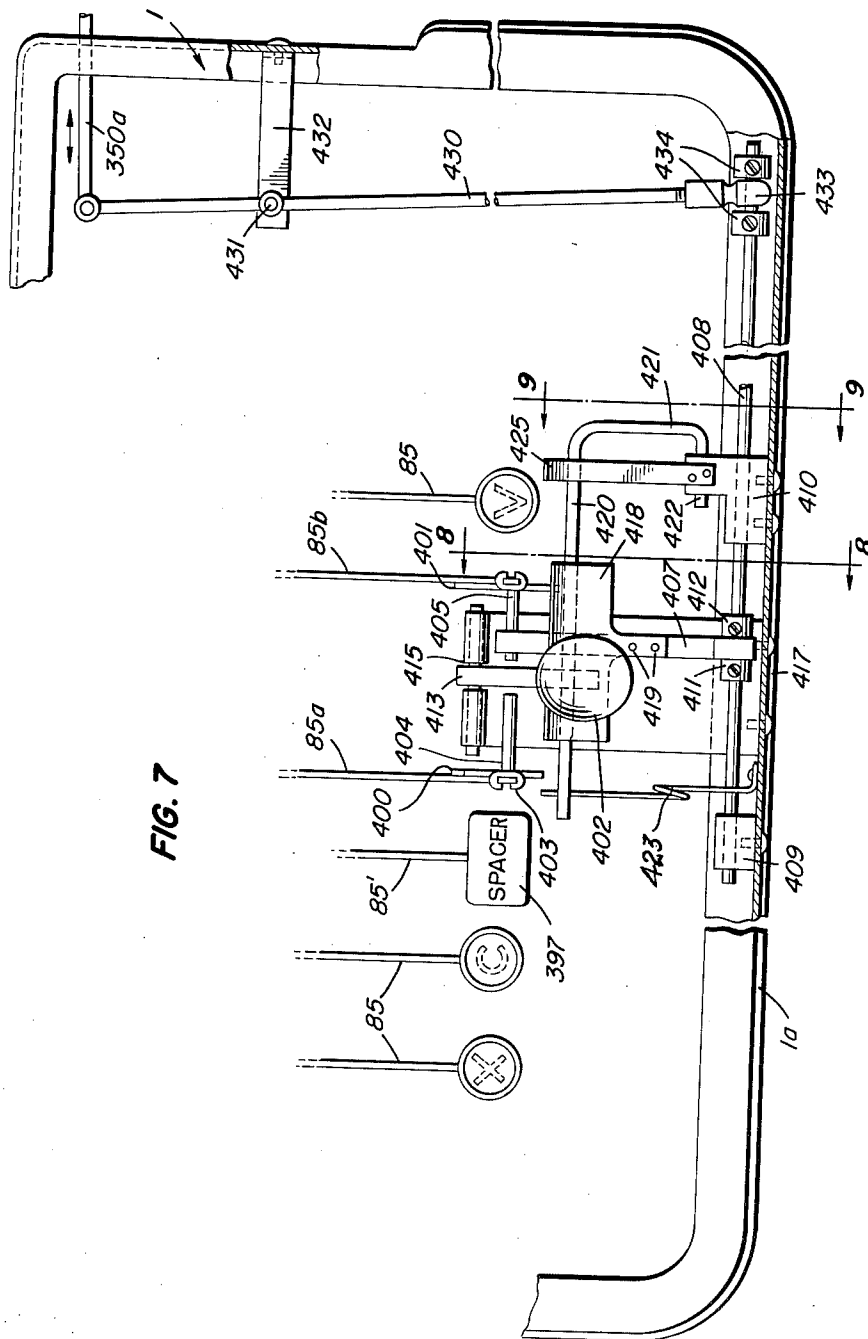


FIG. 7

INVENTOR.

BY

George Zint

H.B. Wilkey & Co.
ATTORNEY

May 29, 1962

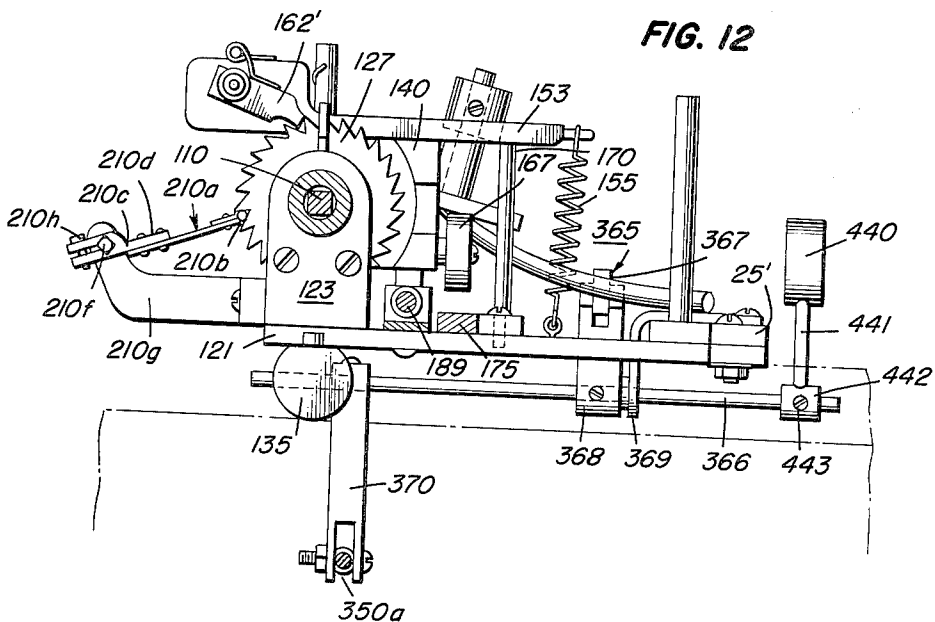
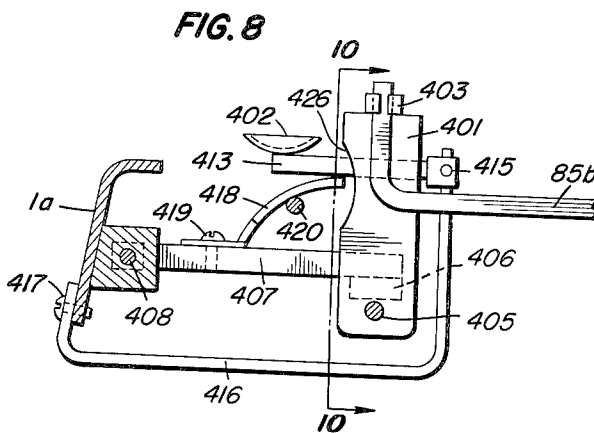
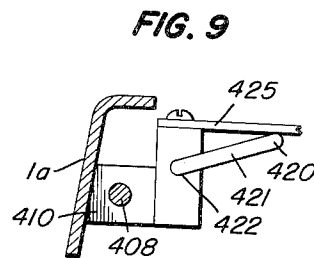
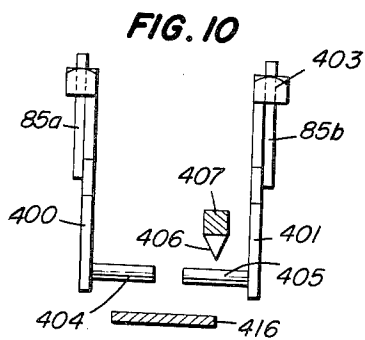
G. ZINT

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TYPEWRITER WRITING CONTINUOUSLY IN OPPOSITE DIRECTIONS

Filed Oct. 24, 1960

6 Sheets-Sheet 5



INVENTOR

George Zint

BY

H. B. Williams & Co.
ATTORNEY

May 29, 1962

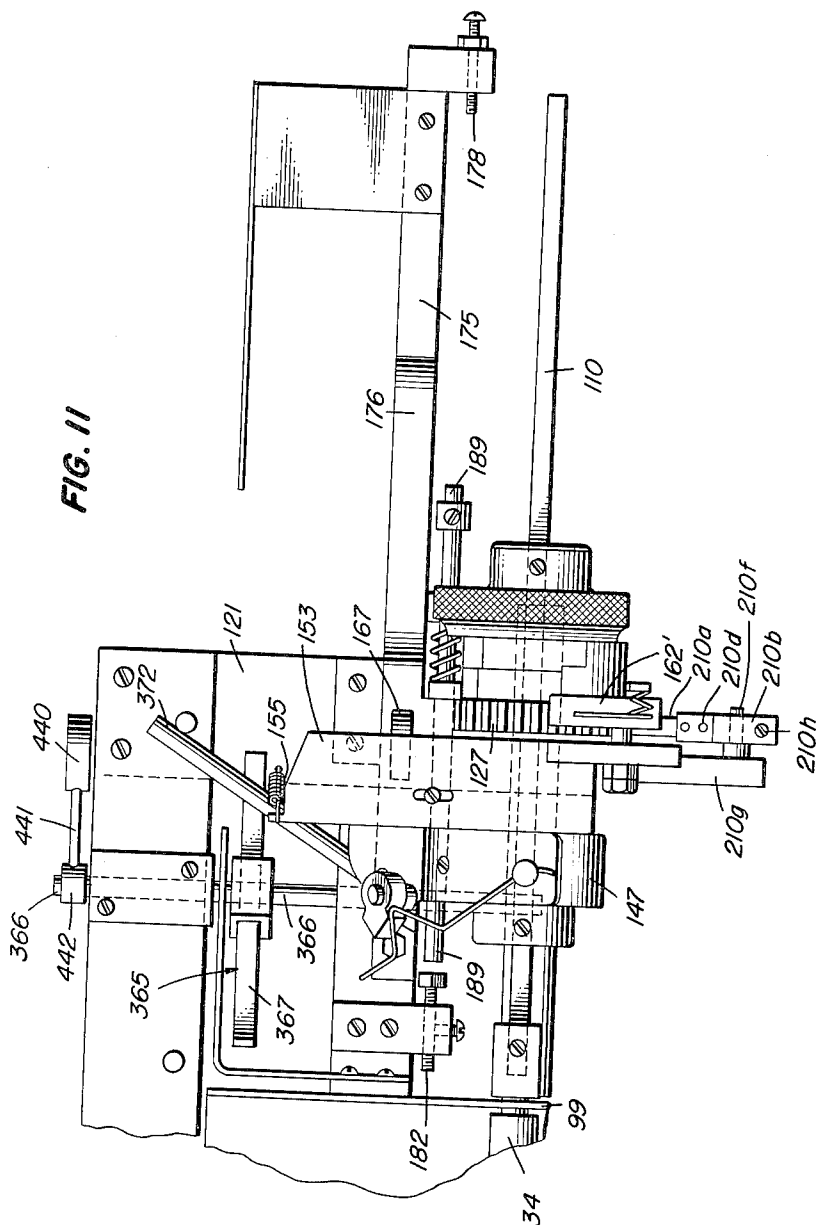
G. ZINT

3,036,685

TYPEWRITER WRITING CONTINUOUSLY IN OPPOSITE DIRECTIONS

Filed Oct. 24, 1960

6 Sheets-Sheet 6



INVENTOR.

George Zint

BY

H. D. Wilkerson & Co.

ATTORNEY

TYPEWRITER WRITING CONTINUOUSLY IN OPPOSITE DIRECTIONS

George Zint, 105 W. Silver St., Wapakoneta, Ohio
Filed Oct. 24, 1960, Ser. No. 64,581
7 Claims. (Cl. 197-84)

This invention relates generally to typewriters and particularly to improvements in the machines of my Patents Nos. 2,578,771, December 18, 1951, 2,701,632, February 8, 1955, and 2,809,737, October 15, 1957.

In the machines of those patents the reciprocatory carriage is power driven in both directions and the typing is done during each reciprocation of the carriage so that every other typed line must be read backward or from right to left. In Patent No. 2,701,632 the intermittent feed of the carriage for letter and word spacing is done by the ordinary keys and a spacing bar which operates a mechanism that converts the motion of a continuously rotated power driven shaft into intermittent unidirectional motion. In Patent No. 2,809,737 about the same spacing mechanism is used but a thumb actuated element replaces the usual spacing bar; and to the banks of character printing or type levers there are added two arrow printing levers, which print oppositely facing arrows at the ends of lines, sentences and elsewhere, when a thumb actuated element or key is struck by the operator, one function of the arrows being to facilitate reading of the typed matters since the arrows point in the direction in which a line is printed.

One object of this invention is to simplify the machine by having the variable spacing carriage feed mechanism of the two latter patents operated from the comb plate shaft of an electric typewriter such as the well known Remington Electric Typewriter, thus using one of the regular levers of the keyboard of such a machine to cause the spacing, such key lever being manually actuated by the left hand of the typist.

Another object of the invention is to do away with the special arrow-printing type levers of Patent No. 2,809,737 by using two of the regular printing levers of such an electric typewriter, to print the oppositely facing arrows, and to have two of the key levers, which control the operation of those two printing levers, operated by a single thumb actuated element under the control of the mechanism which reverses the direction of movement of the carriage, so that when the thumb actuated element is struck, the proper arrow printing lever will be actuated according to the direction in which a typed line is written.

Another object is to improve the pawl and ratchet means, of Patents Nos. 2,578,771 and 2,809,737, which causes the rotation of the platen for line spacing.

Another object is to improve the arrow printing mechanism of Patent Nos. 2,809,737 by adding a counterbalance weight to the rocker shaft of the cross bar that is actuated at each end of the travel of the carriage to bring the proper arrow printing lever into cooperative relationship with the thumb actuated element or key, thereby preventing creeping or shifting of the cross bar and associated parts so that the length of the typed lines will be more uniform and the proper arrow printing lever will be actuated according to the direction of movement of the carriage.

With the above and other objects and advantages in view, the invention resides in the novel combinations and arrangements of parts and the novel features of construction hereinafter described and claimed, and illustrated in the accompanying drawings which show the present preferred embodiment of the invention.

In the drawings:

FIG. 1 is a partial top plan view of my improved type-

writer mechanism adapted for a Remington Electric Typewriter, parts being omitted and parts being diagrammatically shown;

FIG. 2 is an enlarged vertical front-to-rear sectional view through an electrical typewriter with parts omitted and parts broken away, showing a well known type action and key lever mechanism but modified in accordance with my invention;

FIG. 3 is a diagrammatic perspective view showing parts added to the electric typewriter to cause the movement of the comb plate shaft to cause actuation of the control gate of the spacing mechanism of Patent No. 2,701,632;

FIG. 4 is a detail top view of a portion of the spacer lever forming a part of the keyboard of the machine;

FIG. 5 is a detail perspective view of the bell crank lever used in spacing the printed characters;

FIG. 6 is a detail view showing the manner in which the sliding gate is operated;

FIG. 7 is a somewhat diagrammatic plan view of parts of the machine to show how the new thumb piece operates one or the other of the arrow printing key levers according to the direction of movement of the carriage;

FIGS. 8 and 9 are detail sectional views taken respectively on the lines 8-8 and 9-9 in FIG. 7;

FIG. 10 is a detail section on line 10-10 in FIG. 8;

FIG. 11 is a detail plan view on an enlarged scale of parts directly actuated by two trip members of the carriage when the latter nears each end of its travel, showing two improvements in the mechanism of Patent No. 2,809,737;

FIG. 12 is a vertical cross sectional view through parts shown in FIG. 11;

FIG. 13 is a detail view of the counterbalance weight;

FIG. 14 is a detail view of the spring pawl and its mounting; and

FIG. 15 is a detail view of one end of one of the "arrow" symbol printing levers.

In FIG. 1 of the drawing I have shown most of the parts of Patent No. 2,809,737 adapted to the well known Remington Electric Typewriter marketed by Remington Rand, a division of Sperry Rand Corporation. The pertinent portions of that typewriter are disclosed in the F. W. Schremp Patent No. 2,638,199 and other patents. FIG. 2 shows those portions of that electric typewriter with a few changes and additional parts whereby the oscillatory or rocking movement of the comb plate shaft 162 of Patent No. 2,638,199 is utilized to reciprocate the slidable control gate 255 of the spacing mechanism of Patent No. 2,809,737, such spacing mechanism being more fully disclosed in Patent No. 2,701,632. In the Remington machine each time a key lever is struck, one of the type levers is actuated and the comb bar is rocked to actuate the ribbon vibrator mechanism. In this disclosure I use one of the keyboard levers as a spacer to cause the spacing between words and sentences; and I use two of those key levers to actuate type bars which print the oppositely facing arrows, these two levers being selectively actuated according to the direction of movement of the carriage, by a thumb piece struck by the right thumb. The use of the three ordinary keyboard levers for word spacing and arrow printing will cause the keyboard of the machine to be somewhat different from the standard typewriter keyboard; and in the test machine that I have made, I have used only one case.

Referring more particularly to FIG. 2 of the drawing, the numeral 1 denotes the main frame of the typewriter; 85 the key levers; 5 the type levers; 34 the platen; 24 a row of bell crank levers fulcrumed at 25 and having short arms 30 projecting rearwardly at their lower ends, their upper ends being connected by links 31 to the type levers and their intermediate portions having cam projections

23; 20 a row of power arms fulcrumed at 21 and having at their rear ends rollers 22 which coact with the projections 23, there being one power arm for each of the key levers and type levers; and 8 the continuously rotated power roll driven by an electric motor (not shown) and coacting with eccentrics 35 on the power arms, so that when one of the key levers is depressed the proper power arm will be swung upwardly to actuate the respective type lever, by the mechanism shown and described in the Schremp patent. While that mechanism is shown in FIG. 2, it is not described in detail herein since reference may be made to Patent No. 2,638,199. This FIG. 2 corresponds to FIG. 2 of that patent and the corresponding parts bear the same reference numerals. However it is obvious that equivalent mechanism may be used.

One of the key levers designated 85' will cause the actuation of a special bell crank lever 24' shown separately in FIG. 5. This bell crank 24' is like the bell cranks 24 but has its upper end omitted since it is not linked to a type lever and since it is used only in the mechanism for causing the spacing of words and sentences.

The universal rock shaft 162 has its ends pivotally mounted on the side plates of the frame 1 and to one of its flat faces is fixed the comb plate 163. The fingers of this comb plate overlie the short arms 30 of all of the bell cranks so that when one of the levers 85—85' is actuated the comb plate shaft 162 will be rocked. I add to that shaft a right angular arm 233 which has a vertical portion 283' with its upper end fixed to the shaft, as seen in FIG. 3, and a horizontal portion 285 which projects laterally from the lower end of the vertical portion and extends outwardly through an open portion of the left hand side plate of the frame 1. Mounted on the left side of the frame of the typewriter is an upright lever 286 which has its upper end pivoted at 287 to a fixed bracket 288 carried by the main frame and its lower end is pivotally engaged with the portion 285 of the arm 283. To an intermediate portion of the lever 286 is pivotally connected at 289 the front end of a link 290 which has its rear end pivotally connected at 291 to the gate 255 of Patent No. 2,809,737, the intermediate portion of link 290 being suitably guided in a fixed part on the main frame. Connected to the lower part of the lever 286 or to the arm 283, as seen in FIG. 3, is one end of a coil spring 292, the other end of the spring being connected to an adjusting screw 293. This screw is threaded through one arm of a right angular bracket 294 which has its other arm bolted to a portion of the main frame. A lock nut 295 on the screw holds it in an adjusted position. The spring 292 replaces the leaf spring 172 of Patent No. 2,638,199 which rocks the universal or comb bar 163 to hold it in engagement with the arms 30 of the bell cranks. It will be seen that when the spacer 85' is depressed, the proper power arm 20 will actuate the bell crank 24' against the tension of spring 292 to swing the comb bar and hence the arm 283 and the lever 286 so that the link 290 will actuate the gate 255 for word spacing.

The key lever 85' is one of the bank of key levers of the typewriter as above noted, and it has on its upturned front end a plastic tip 397 marked "Spacer" as shown in FIG. 4.

The operation of the sliding gate 255 is the same as that part in both of my Patents Nos. 2,809,737 and 2,701,632, and in FIG. 6 I have shown the gate associated with some of the parts of that spacing mechanism. That gate slides in part 256 and may be forced inwardly by either spring 258 or by the action of the coil spring 292. In FIG. 6, 239 is the constantly rotating shaft which imparts intermittent unidirectional motion to the shaft 59 of the duplex screw 62 that drives the typewriter carriage 99 (shown in FIG. 1), the drive being through the head 246 on shaft 59 and carrying the retractable pins 247 that coact with a driving tooth on the power shaft 239 and that are controlled by plungers 248 adapted to coact with a stationary cam 234 and with the gate 255,

as fully disclosed in Patent No. 2,701,632. When the gate is in its inner and normal position there will be regular spacing of the typed letters or characters and when the gate is retracted by operating the spacer key lever 85', to space between words and sentences, the carriage will be continuously moved until the lever 85' is released.

Two of the regular printing levers 5 are provided with means for printing arrows or similar characters such as shown in FIG. 15, the two arrows pointing in the opposite directions in which the carriage reciprocates. These two arrow printing levers are actuated by two of the key levers designated 85^a and 85^b in FIG. 7. As shown these two key levers are disposed at the central portion of the front of the keyboard and instead of bearing the usual finger tips, they have fixed to their upturned front ends depending extensions 400 and 401 either one of which is adapted to be pulled down, according to the direction of movement of the carriage, when a finger piece 402 is actuated, usually by the thumb of the right hand of the typist. These extensions are in the form of metal plates disposed in opposed relation against the upturned ends of the two key levers and rigidly fixed thereto as by bending and clinching the upper ends of the plates 400 and 401 around reduced upper ends of the levers as shown at 403. Fixed to the lower portions of these extension plates are oppositely disposed and inwardly projecting pins 404 and 405, either one of which is adapted to be engaged and moved downwardly by a wedge-shaped head 406 on an actuating member 407 mounted for movement in two directions. This actuator 407 is an arm or lever adapted to swing vertically to cause the actuation of one or the other of the levers 85^a or 85^b, and also to be shifted horizontally to bring its depending wedge 406 above one or the other of the two pins, as will be seen on reference to FIGS. 7 and 10. The front end of the actuator lever 407 swings on a horizontally shiftable actuating rod 408 mounted for longitudinal sliding movement in bearing blocks 409 and 410 fixed to the inside of the front bar 1^a of the frame. Adjustable collars 411 and 412 on the rod 408 on opposite sides of the lever 407 cause the lever to shift laterally when the rod is shifted.

The finger or thumb piece 402 is fixed to the front end of a lever 413 which has its rear end pivoted at 415 on the upwardly projecting rear arm of a U-shaped bracket plate 416, the front arm of which is fixed at 417 to the frame bar 1^a, as shown in FIG. 8. The lower edge of the lever 413 rests on and is adapted to actuate a transversely curved or arcuate plate 418 which has its central portion fixed as at 419 to the shiftable actuator lever 407. The plate 418 extends transversely of the lever 407 and is of such length that a portion of it remains under the thumb lever 413 when the actuator lever 407 is shifted into operative relation with either of the pins 404 or 405.

I provide spring means for holding the actuator lever 407 and the thumb lever 413 in their elevated positions with the wedge 406 above either of the two pins carried by the levers 85^a and 85^b. As shown a swingable spring actuated rod 420 is disposed longitudinally under the plate 418 and has one end bent into U-shape to provide a short arm 421 with an end 422 parallel with the rod and rotatably mounted in an opening in the bearing block 410, as seen in FIGS. 7 and 9. A coil spring 423 fixed to the frame bar 1^a and having an end underlying the rod 420, swings the latter upwardly to elevate both of the levers 407 and 413. Mounted on the bearing block 410 is a stop plate 425 adapted to limit the upward swinging of the angular rod. The front edges of the plate extensions 400 and 401 may be formed with notches 426 to provide clearance for the plate 418 when it swings downwardly and rearwardly.

The rod 408 is automatically shifted at the end of the travel of the carriage in each direction so that the proper arrow will be printed according to the direction in which the printing is done. This shifting of the rod 408 is performed by substantially the same mechanism as that which

shifts the slidable bar 350 of Patent No. 2,809,737. Most of that mechanism is shown in FIGS. 1, 11 and 12 and will be briefly described since reference may be had to said patent and to Patent No. 2,578,771 for a more detailed understanding.

As shown in FIG. 11, the rotary platen 34 on the carriage 99 has fixed to it the squared shaft 110 which extends rotatably and slidably through the U-shaped bearing 123 on a plate 121 secured to a fixed frame bar 25', the shaft 110 also extending through a square hole in the ratchet wheel 127 rotatable on the bearing so that when the ratchet wheel is rotated the platen will rotate for line spacing. The ratchet wheel is intermittently turned by the pawl 162' mounted on the vertically swinging pawl carrier 153. The latter includes the hub 140 rotatable on a tubular bearing on one of the arms of the U-shaped bearing, a lever extending rearwardly from the hub and having the pawl 162' on its front end, and the ring or collar 147. The spring 155 normally pulls the lever portion of the carrier down on the stop post 170. Mounted on hub 140 is the roller 167 adapted to be lifted by the traveling cam 176 on the bar 175 which has one end fixed to the carriage. During the travel of the carriage in each direction, the cam 176 swings the carrier to an elevated position to move the pawl 162' back on the ratchet wheel one or more teeth. The carrier 153 is temporarily held elevated until the carriage is near the end of its travel in one direction or the other, and it is then released so that the pawl will turn the ratchet wheel, and hence the platen, as the carrier is pulled down by the spring. The tripping device for holding the carrier elevated and for releasing it, comprises the slidable trip finger which moves under the carrier when the latter is elevated by the cam. That finger is on the slidable trip rod 189 mounted in spaced bearings on the plate 121. Coil springs surround rod 189 on opposite sides of the block fixed to the center of the rod, and thus the trip finger may be positioned under the carrier finger and may be moved to either side of the latter to release it, when the rod 189 is moved in one direction or the other. The rod is shifted to release the carrier as the carriage approaches the end of its travel in each direction, by the stops or trip dogs 178 and 182 mounted adjacent opposite ends of the cam carrying bar 175 and disposed in line with the slidable rod 189.

In Patent No. 2,578,771 a spring actuated pivotally mounted pawl was provided to prevent retrograde movement of the ratchet wheel 127 but it was found in the operation of the typewriter, that line spacing was irregular and unsatisfactory because such a spring pressed pivoted pawl would not hold the ratchet wheel immovable when the pawl carrier 153 is dropped on top of the stop 170 by the action of the spring 155. I have overcome this defect by using a spring pawl 210^a which holds the ratchet wheel immovable at the time the driving pawl 162' is moved back to take a new grip on the ratchet wheel. This pawl 210^a is made of a strip of flat resilient steel, the free end of which is bent back upon the strip to form a cylindrical head 210^b and then fastened by a rivet. The pawl end or head 210^b enters the space between adjoining teeth of the wheel and engages adjacent portions of the same so that the wheel will not be jarred or permitted to rotate in a backward direction. The other end of the leaf spring 210^a is fastened by screws 210^d to a metal block 210^c adjustably clamped on a pivot stud 210^f carried by an attaching bracket 210^e, the latter being secured by fastening bolts to the bearing 123. The block 210^c has a transverse bore to receive the cylindrical stud 210^f and is split from the bore to its lower end so that by tightening a screw 210^h in the split end, the block may be clamped in an adjusted position on the pivot stud.

As in Patent No. 2,809,737, the present invention utilizes the downward swinging movement of the pawl carrier 153 to tilt the rockable member 365 at each end of travel of the carriage and such movement is transmitted to the

rod 408 as hereinafter described. The rocker 365 comprises the rock shaft 366 supporting the cross bar 367 fixed between its ends to an upright lever arm 368 on the shaft. The shaft 366 has its rear portion rotatable in the bearing 369 on the fixed bar 25' and its front end rotatable in an opening in the fixed rod 135. Fixed to the shaft 366 is a depending lever arm 370. To the lower end of lever arm 370 is pivoted one end of a link 350^a which extends through an opening in the side frame of the typewriter and has its other end pivotally connected to a forwardly and rearwardly extending lever 430, as shown in FIG. 7. Lever 430 is pivoted between its ends at 431 to a bracket 432 extending inwardly from the adjacent side of the frame 1. The front end of lever 430 has an adjustably pivotal connection to the rod 408 by providing it with a forked head 433 to receive the rod and providing adjustable collars 434 on the rod on opposite sides of the fork. It will thus be seen that each time the rocker 365 is shifted at the end of each travel of the carriage, the rod 408 will be shifted to move the head on the actuator 407 over one or the other of the pins 404, 405. The manner in which the rocker 365 is operated at each end of the travel of the carriage is fully disclosed in Patent No. 2,809,737.

In the operation of the machine of Patent No. 2,809,737, it was found that each time the arm 370 was operated, there was a tendency for it (and the associated parts, the shaft 366 and the cross bar 367) to creep away from one or the other of their normal positions. That resulted in the machine failing to print the arrows. To overcome this trouble, I use a counterbalance weight on the shaft 366 to hold the arm 370 in either of its two positions until it is positively moved by the swinging arm 372 on the pawl carrier 153 striking one end or the other of the cross bar 367 of the rocker. In other respects the operation of the mechanism shown in FIGS. 11 and 12 is the same as that in Patent No. 2,809,737. The counterbalance weight 440 is on the end of an arm 441 which projects radially from the shaft 366 and it is adjustable thereon by fixing the arm to a collar 442 rotatable on the shaft and held by a set screw 443.

From the foregoing, taken in connection with the accompanying drawing, it will be seen that novel and advantageous provision has been made for carrying out the objects of the invention, and while preferences have been disclosed, attention is invited to the possibility of making variations within the scope of the invention as claimed.

I claim:

1. In a power operated typewriter, a frame, a bank of key levers, type actions, operating means for the latter controlled by said key levers, a universal rock shaft which is actuated by any of said type actions when the associated key lever is depressed, an additional spacing key lever in said bank, means for causing said shaft to be rocked when said additional key lever is depressed, a reciprocatory carriage carrying a platen, a continuously rotated power driven shaft, means driven by said shaft for imparting intermittent unidirectional motion to said carriage, the last mentioned means including a clutch mechanism having a slidable gate member, an upright lever mounted on said frame, means for imparting the motion of said rock shaft to said upright lever, means for imparting the motion of the latter to said gate member, and spring means for moving said upright lever in one direction.

2. In a power operated typewriter, a frame, a bank of key levers, type actions including bell cranks and printing levers actuated thereby, power arms for actuating said bell cranks, means controlled by said key levers for actuating said power arms, an additional power arm, an additional bell crank operated by said additional power arm, an additional spacer key lever in said bank for controlling the operation of said additional bell crank by said additional power arm, a universal rock shaft mounted in

the frame and carrying a comb plate coacting with all of said bell cranks, an angular arm having one end fixed to said shaft and its other end projecting laterally to one side of said frame, an upright lever having its upper end pivotally supported from the last mentioned side of the frame and having its lower end pivotally connected to said projecting end of the arm, a reciprocatory carriage carrying a platen, a continuously rotated power driven shaft, a nut and duplex screw shaft drive for reciprocating said carriage, clutch means between said driven shaft and said screw shaft to impart intermittent unidirectional rotation to said screw shaft from the continuously rotated driven shaft, said clutch means including a slidable gate member, and a link connection between said gate member and said upright lever.

3. In a power operated typewriter, a frame, type actions including printing levers, two of the latter having type for printing oppositely facing arrows or like symbols, a bank of key levers for controlling the operation of said printing levers, two of the key levers, which control the operation of said arrow printing levers, having their free ends disposed in parallel relation at the front of said frame, a reciprocatory platen-carrying carriage, a continuously rotated power driven shaft, means operated from said shaft for imparting manually-controlled intermittent unidirectional motion to said carriage in each direction of its travel, means including a rock shaft operated by the carriage at each end of its travel, a manually movable finger piece supported at the front of said frame, and means actuated by said finger piece and associated with said two key levers to automatically actuate one of the other of said two key levers according to the direction of travel of the carriage, the last mentioned means including a shiftable member operatively connected to said rock shaft to be shifted thereby at each end of travel of the carriage.

4. The typewriter of claim 3 together with a radially projecting arm on said rock shaft forming a counter-balance weight.

5. In a power operated typewriter, a frame, type actions including printing levers, two of the latter having type for printing oppositely facing arrows or like symbols, a bank of key levers for controlling the operation of said printing levers, two of the key levers, which control the operation of said arrow printing levers, having their free ends disposed in parallel relation at the front of said frame, a reciprocatory platen-carrying carriage, a continuously rotated power driven shaft, means operated from said shaft for imparting manually-controlled intermittent unidirectional motion to said carriage in each direction of its travel, means for reversing the direction of movement of the carriage at each end of its travel, means including a rock shaft operated by the carriage at each end of its travel, an axially shiftable rod slidably mounted on the front of said frame adjacent said two key levers, means for imparting the motion of said rock shaft to said shiftable rod, extensions depending from said two key levers and carrying oppositely projecting pins, a pin-actuating lever mounted for vertical

swinging on said rod but shiftable laterally therewith to move it into operative relation with either of said pins, a movable finger piece supported on said frame to depress said pin-actuating lever, and spring means for elevating said pin-actuating lever.

6. The typewriter of claim 5 in which said finger piece includes a forwardly and rearwardly extending vertically swingable lever disposed in a plane above that of said shiftable pin-actuating lever, and a horizontally extending plate having its intermediate portion fixed to said pin-actuating lever, said plate underlying and supporting said finger piece lever in any shifted position of said pin-actuating lever.

7. In a power operated typewriter, a frame, type actions including printing levers, two of the latter having type for printing oppositely facing arrows or like symbols, a bank of key levers for controlling the operation of said printing levers, two of the key levers, which control the operation of said arrow printing levers, having their free ends disposed in parallel relation at the front of said frame, pin-carrying elements depending from said ends of said two key levers and disposed in laterally opposed relation, oppositely projecting pins on said elements normally disposed in axial alignment, an axially shiftable rod slidably mounted in bearings on the inside of the front of said frame, a pin-actuating lever having its front end mounted on said rod for vertical swinging thereon and for lateral shifting therewith, the rear end of said pin-actuating lever having a portion to engage and actuate either of said pins depending upon the position of said rod, a transversely extending plate above the intermediate portion of said pin-actuating lever and having its intermediate portion fixed thereto, a bracket fixed to the front of said frame and having an upstanding arm disposed in rear of said plate, a forwardly and rearwardly extending manually actuated lever pivoted to said arm and having a finger piece at its front end, the last-mentioned lever extending across and being supported on said plate, the latter being long enough to underlie said manually actuated lever in either shifted position of said pin-actuating lever, spring means normally holding said pin-actuating lever, said plate and said manually actuated lever in their elevated positions, a reciprocatory platen-carrying carriage, power driven means for moving the carriage in each direction, the last mentioned means including a continuously rotated drive shaft, mechanism operated from the latter to impart manually controlled intermittent unidirectional movement to the carriage and means for changing the direction of movement of the carriage at each end of its travel, means including a rock shaft operated by the carriage at each end of its travel and means for imparting the movement of said rock shaft to said axially shiftable rod.

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