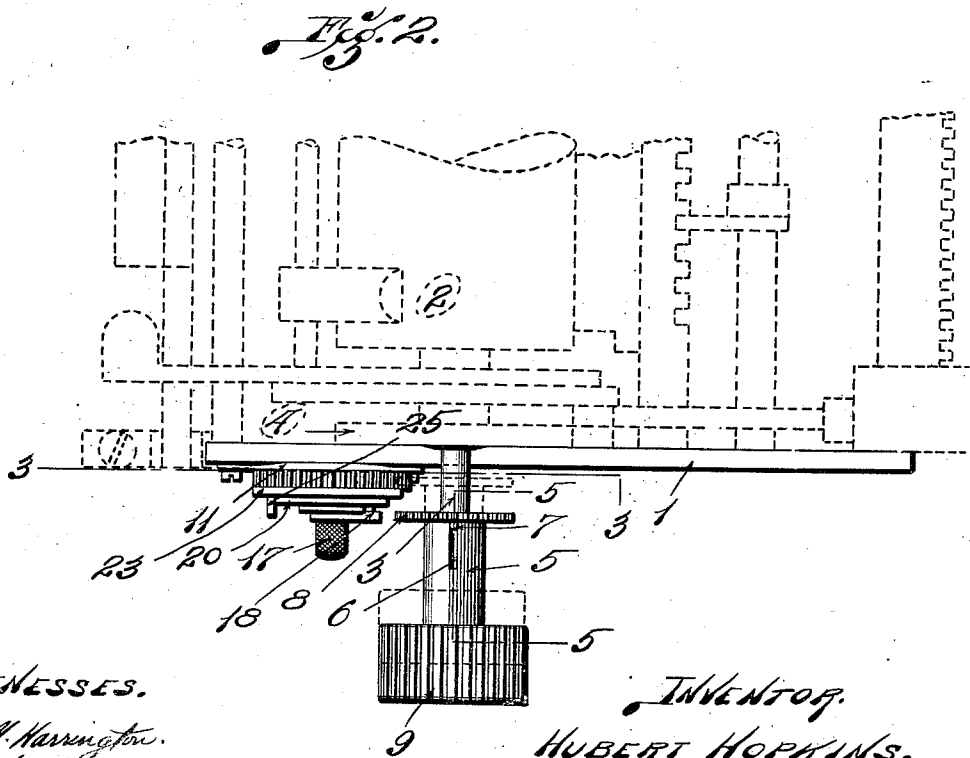
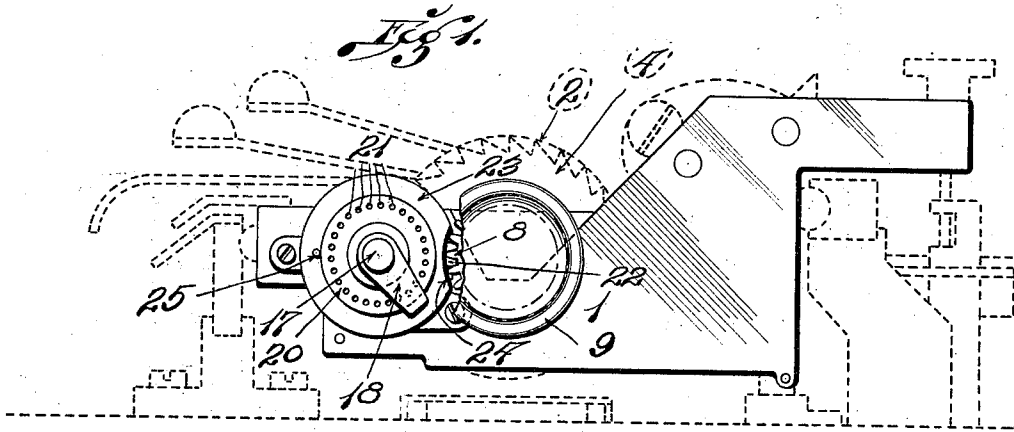


H. HOPKINS.
TYPE WRITING MACHINE.
APPLICATION FILED APR. 4, 1910.

985,675.

Patented Feb. 28, 1911.

2 SHEETS—SHEET 1.



WITNESSES.

E. M. Harrington.

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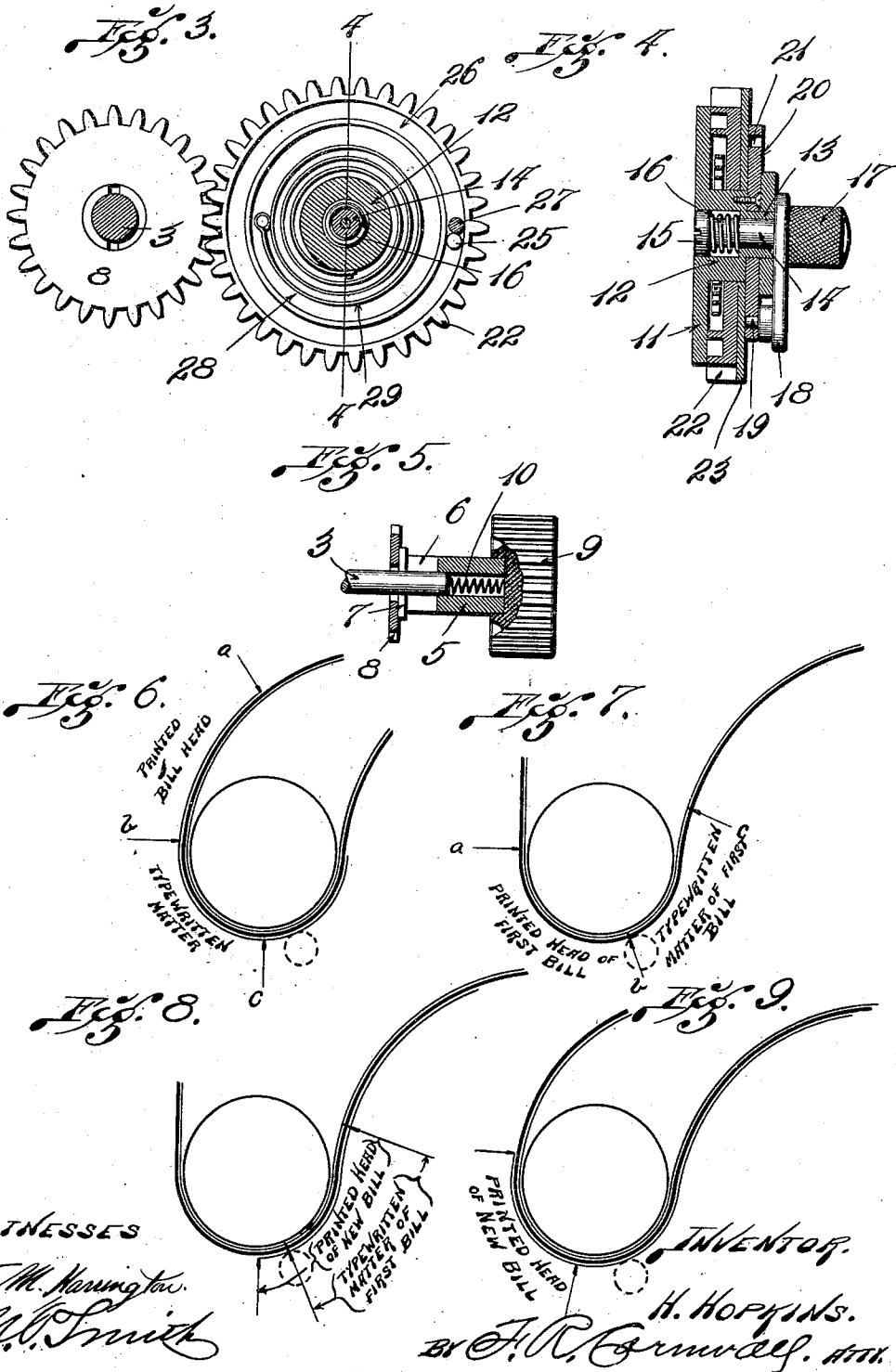
HUBERT HOPKINS.

BY J. R. Carmichael. ATTORNEY.

985,675.

Patented Feb. 28, 1911.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

HUBERT HOPKINS, OF MAPLEWOOD, MISSOURI.

TYPE-WRITING MACHINE.

985,675.

Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed April 4, 1910. Serial No. 553,204.

To all whom it may concern:

Be it known that I, HUBERT HOPKINS, a citizen of the United States, residing at Maplewood, Missouri, have invented a certain new and useful Improvement in Type-Writing Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of the platen carriage of a type writer the same being equipped with my improved attachment. Fig. 2 is a plan view of the end of the platen carriage and showing my improved attachment in position thereon. Fig. 3 is an enlarged section taken approximately on the line 3—3 of Fig. 2. Fig. 4 is a vertical section taken on the line 4—4 of Fig. 3. Fig. 5 is a vertical section taken on the line 5—5 of Fig. 2. Fig. 6 is a diagrammatic view illustrating the position of a carbon copy sheet, a carbon sheet, and a statement or bill on the platen, and showing the positions of the sheets after the matter forming the body of the statement or bill has been type written thereon. Fig. 7 is a diagrammatic view illustrating the positions of the carbon copy sheet, and the carbon sheet on the platen after the latter has been reversely rotated to permit the removal of the statement or bill. Fig. 8 is a diagrammatic view similar to Fig. 7, and showing a second bill or statement applied to the carbon sheet and carbon copy sheet on the platen and illustrating the position of the printed head of the bill or statement relative to the matter transferred or copied onto the copy sheet from the first bill or statement. Fig. 9 is a diagrammatic view similar to Figs. 6, 7 and 8 and illustrating the position of a carbon copy sheet, the carbon sheet and the second bill or statement after the platen has been rotated so as to carry the heading of the second bill past the printing line or the point where the type strike against the outer sheet carried by said platen.

My invention relates generally to type writing machines or billing machines, and more particularly to a platen gage and paper controlling mechanism for regulating the relative positions of successive sheets of paper in the form of bills or statements which are positioned upon a carbon sheet,

and a carbon copy sheet carried by the platen and which carbon copy sheet receives carbon copies of the matter recorded or type written upon the successive bills or statements.

My invention is of particular advantage in making out and recording bills and statements and by the use of the invention I am able to produce a condensed billing record, *i. e.*, a record or copy of a large number of bills upon a single record sheet, which latter after being filled is removed from the machine and placed in a suitable holder such as a loose leaf binder.

My invention consists in an adjustable gage and suitable shifting mechanism applied to the platen shaft, and which gage and shifting mechanism provide means whereby the platen can be quickly and accurately rotated backward and forward a predetermined distance so as to take up the space occupied by the printed heads of the bills or statements successively fed onto the platen, and thus the matter type written on the successive bills or statements will be closely written on the carbon copy sheet, thus producing a condensed carbon copy record by avoiding blank spaces upon the carbon copy sheet between the matter transferred thereonto.

My invention further consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

Referring by numerals to the accompanying drawings 1 indicates the usual platen carriage, 2 the platen, 3 the platen shaft and 4 the usual ratchet wheel which is fixed on the platen shaft adjacent the end thereof.

Arranged to slide on the end of the platen shaft 3 which projects beyond the carriage 1 is a sleeve 5 which is slotted as designated by 6 to accommodate a pin 7 seated in the shaft 3, and this manner of mounting the sleeve 5 permits the same to slide lengthwise upon the platen shaft and rotate therewith. Formed on or fixed to the inner end of this sleeve 6 is a pinion 8 and carried by the outer end of said sleeve 5 is a knob 9. An expansive coil spring 10 is positioned within the sleeve 5 between the outer end of the shaft 3 and the knob 9, and which spring normally maintains the sleeve 5 and parts carried thereby at the outward limit of movement.

Fixed on the outer face of the carriage

1 adjacent the point occupied by the platen shaft 3 is a plate 11 from the central portion of which projects outwardly a hub 12 and projecting outwardly from this hub is a short sleeve 13. This sleeve forms a bearing for a shaft 14 on the inner end of which is formed a head 15 the same occupying the opening within the hub 12 and positioned on the shaft 14 between the sleeve 13 and the head 15 is an expansive coil spring 16. The shaft 14 rotates in and slides freely through the sleeve 13, and is operated by means of a knob 17 positioned on the outer end of said shaft and projecting from said shaft adjacent the knob is an arm 18, which carries an inwardly projecting pin 19. A disk 20 is positioned on the sleeve 13 and is fixed in any suitable manner to said sleeve or to the hub 12 and formed through said disk adjacent the edge thereof is a circular row of apertures 21, which latter correspond in number to the number of line spaces on the platen.

Mounted for rotation on the hub 12 is a gear wheel 22 with which the pinion 8 is adapted to engage and fixed to the outer face of this gear wheel is a disk 23 the outer edge of which covers the outer faces of the teeth of the gear wheel 22, and formed in the edge of this disk 23 is a curved notch 24 the depth of which is equal to the depth of the teeth of the gear wheel 22. Seated in this disk 23 and projecting outward from and in the path of travel of the outer end of the arm 18 is a pin 25. This pin 25 projects through the gear wheel 22 and into a concentric groove 26 formed on the inner face of the gear wheel 22. Projecting from the face of the disk 11 into this groove 26 and into the path of travel of the pin 25 is a stop in the form of a pin 27. An annular recess 28 is formed in the inner face of the gear wheel 22 and occupying said recess is a spiral spring 29, one end of which is attached to the gear wheel 22, and the inner end being fixed to the hub 12. This spring is arranged on the gear wheel 22 in such a manner that when said gear wheel is rotated so as to carry the pin 25 away from the stop 27 said spring will be wound upon the hub 12, and when said gear wheel is released the power stored in the spring will return said gear wheel to its normal position with the pin 25 against the stop 27.

As hereinbefore described my invention is particularly adapted for use in getting out a large number of bills or statements and where it is desired to make a condensed record of the matter type written on the bills and statements said record being in the form of a long sheet which when filled is removed from the machine and positioned in a suitable binder. Before beginning the work of making out the bills or statements the operator ascertains the number of line

spaces taken up by the printed heading of the bill or statement, and assuming the number of line spaces to be seventeen the operator engages the knob 17 drawing the same outward to disengage the pin 19 from the one of the apertures 21 in which it has been seated and then rotates the shaft 14 to bring the pin 19 into position where it can be engaged in the seventeenth aperture from the aperture immediately adjacent the pin 25 when the same is in its normal position, as seen in Fig. 1. The operator now engages the knob 9, pushes inwardly on the same, thereby moving the sleeve 5 and pinion 8 inward and bringing said pinion into engagement with the gear wheel 22. The operator now rotates the knob 9 and parts carried thereby, and the pinion 8 meshing with the gear wheel 22 rotates the same until the pin 25 engages against the arm 18, and thus the platen is reversely rotated a distance of 17 line spaces. The operator now places the carbon copy sheet, the carbon sheet and the first bill or statement upon the platen, and engaging the knob 9 rotates the same in a direction reverse to the direction in which said knob was previously rotated until the pin 25 on the gear wheel 22 is brought into engagement with the stop 27, whereby the parts are placed in normal position, when the pinion 8 may move away from the gear 22 through the notch 24, and the sheets of paper on said platen are fed into the machine a distance of seventeen line spaces, thus bringing the blank spaces on the bill or statement in position to receive the first line of type written matter forming the body of the bill or statement. After the matter forming the body of the first bill or statement is type written the operator engages the knob, pushes the same inwardly until the pinion 8 engages the teeth of the gear wheel 22, and then rotates the knob 9 in such a manner as to turn the platen backward until the pin 25 engages against the arm 18, thus the platen is turned backward a distance of seventeen line spaces, and is therefore, set to receive the next bill or statement. If the printed matter of the first bill or statement is in excess of seventeen printed lines then the operator to remove the first bill or statement engages the proper lever to manipulate the feed wheels which bear against the under side of the platen, and the first bill or statement can now be withdrawn from the machine leaving the carbon sheet and the carbon copy sheet on the platen. A second bill or statement is now placed against the carbon sheet with the top edge of said bill or statement against the feed roller engaging against the platen and when so positioned the printed heading of the second bill or statement overlies the type written matter transferred from the first bill onto the carbon copy sheet, and the

operator now rotates the knob 9 in a reverse direction, thereby imparting forward rotary movement to the platen, and thus the second bill or statement together with the carbon sheet and the carbon copy sheet are fed into the machine around the platen thereof. During this feeding in movement the pinion 8 drives the gear wheel 22 and plate 23 carried thereby, and when the pin 25 carried by said plate 23 engages against the arm 18 the second bill will have been moved into the machine and around the platen a distance of seventeen lines spaces, which is the equivalent of the space occupied by the printed heading of the bill or statement, and thus the blank space of the second bill or statement is brought into position to receive the first line of the matter to be type written on said second bill or statement, and which type written matter will be recorded by means of the carbon sheet on the carbon copy sheet immediately adjacent the matter recorded on said carbon copy sheet at the time the first bill or statement was type written. This procedure is carried out with the succeeding bills or statements, and thus the type written matter forming the bodies of said bills or statements is recorded in condensed form upon the carbon copy sheet, that is, the type written matter of one bill will closely follow the typewritten matter of the preceding bill on the carbon copy sheet and by reversely rotating the platen each time a bill or statement is removed from the machine and lapping over the printed heading of the succeeding bill or statement upon the carbon copy of the body of the preceding bill or statement the spaces corresponding to the printed headings of the bills or statements are entirely eliminated from the carbon copy sheet.

The arm 18 forms a gage to stop the backward rotation of the platen and when the platen is rotated forward for effecting the feeding in of the succeeding bills or statements the pin 25 carried by the gear wheel 22 engages against the stop 27, and when the parts are so positioned the curved notch in the edge of the disk 23 is in position to permit the pinion 8 to move outward and when this action takes place the operator knows that the space on the bill or statement is in proper position to receive the first line of type written matter forming the body of the bill or statement. When the pinion 8 is moved inward to engage the gear wheel 22 and said pinion is rotated slightly by manipulating the knob 9 said gear wheel will be locked or held in engagement with the gear wheel 22 for the reason that the teeth of the pinion 8 are behind the edge of the disk 23, and the parts will be thus held in operative relation until the platen is elevated to disengage the pinion 8 from the gear wheel 22 or until the platen is rotated in a forward

direction which finally brings the notch 24 into such position as to permit the pinion 8 to move outward by reason of the expansive action of the spring 10 in the sleeve 5.

In Fig. 6 the space between the arrows *a* and *b* represents the printed heading of the first bill or statement and the space between the arrows *b* and *c* represents the type written matter forming the body of the first bill or statement.

Fig. 7 diagrammatically illustrates the platen rotated in a reverse direction far enough to permit the first bill or statement to be removed and the spaces between the arrows *b* and *c* represent the type written body of the first bill which is transferred by the carbon sheet onto the carbon copy or record sheet.

In Fig. 8 the second bill or statement is shown applied to the platen with the printed heading of said second bill or statement covering or overlying the space corresponding to the type written matter forming the body of the first bill and transferred to the carbon copy or record sheet.

In Fig. 9 the second bill or statement is shown as being fed into the machine a distance corresponding to the printed heading of said second bill or statement and the distance of feeding in movement corresponds as hereinbefore described to the position of the arm 18 relative to the normal position of the pin 25.

My improved adjustment is comparatively simple, is easily manipulated, can be advantageously employed in connection with nearly all forms of type writers and billing machines and provides means whereby much time and labor are saved in the writing of the bills or statements.

The carbon copy or record of the bills or statements is of condensed form, that is, with the type written matter forming the body of each bill closely following the type written matter forming the body of the preceding bill and by providing the adjustable gage or stop arm 18, the succeeding bills or statements can be rapidly fed onto the platen the proper distance required to bring the blank space on the face of the bill or statement into position to receive the first type written line forming the body of the bill or statement.

It will be readily understood that minor changes in the form and size of the various parts of my improved adjustment may be made and substituted for those herein shown and described without departing from the spirit of my invention.

I claim:

1. The combination with a typewriter platen and platen shaft, of a sleeve mounted to slide upon and rotate with said shaft, a pinion thereon, a pin fixed to the shaft creating in an elongated slot in the sleeve, a

gear wheel with which the pinion is adapted to engage, and adjustable means for limiting the rotary movement imparted to the gear wheel by the pinion.

5 2. The combination with a typewriter platen and platen shaft, of a sleeve having a pinion fixed at one end and a hand wheel at the other, arranged to slide upon and rotate with the shaft, a pin on the shaft co-
10 operating with the sleeve to prevent rotation on the shaft, a gear wheel with which the pinion is adapted to engage, means for limiting the rotary movement imparted to the gear wheel by the pinion, and means
15 whereby the pinion is held in engagement with the gear wheel while imparting rotary motion thereto.

3. The combination with a typewriter platen and platen shaft, of a pinion on the
20 platen shaft, a gear wheel with which the pinion is adapted to engage a fixed member adjacent thereto, a stop adjustable at pre-determined points to limit the rotary motion imparted to the gear wheel by the pinion,
25 and the points of adjustment of the stop corresponding with the line spaces on the platen said stop comprising an arm having a pin thereon adapted to engage openings in the fixed member.

30 4. The combination with a typewriter platen and platen shaft, of a pinion on the shaft, a gear wheel with which the pinion is adapted to engage for rotary motion in one direction, adjustable means for limiting the
35 rotary motion imparted to the gear wheel by the pinion, and a spring attached to said gear wheel to return it to normal position when the pinion is disengaged from said gear wheel.

40 5. The combination with a typewriter platen and platen shaft, of a pinion on the shaft, a gear wheel with which the pinion is adapted to engage for rotary motion in one direction, adjustable means for limiting
45 the rotary motion imparted to the gear wheel by the pinion, and means attached to said gear wheel to return it to normal position when the pinion is disengaged from said gear wheel.

50 6. The combination with a typewriter platen and platen shaft, of a pinion on said shaft, a gear wheel with which the pinion is adapted to engage, a relatively fixed adjustable member adjacent the gear wheel,
55 and a projection on the gear wheel which engages the adjustable member to arrest the rotary motion imparted to said gear wheel, and a fixed stop also adapted to engage the projection in its normal position.

60 7. The combination with a typewriter platen and platen shaft, of a pinion arranged to slide upon and rotate with the platen shaft, a rotary member adapted to be driven by said pinion in one direction, a spring for
65 moving the rotary member in the opposite

direction, and an adjustable member for limiting the rotary motion imparted to the rotary member by said pinion.

8. The combination with a typewriter platen and platen shaft, of a pinion ar- 70 ranged to slide upon and rotate with the platen shaft, a rotary member adapted to be driven by said pinion in one direction, a spring for moving the rotary member in the opposite direction, and a member adjustable 75 at various points around the axis of the rotary member for limiting the rotary movement imparted to said rotary member by the pinion and the points of adjustment corresponding to the line spaces on the typewriter 80 platen.

9. The combination with a typewriter platen and platen shaft, of a slotted sleeve mounted to slide upon and rotate with said shaft, a pinion thereon, a pin fixed to the 85 shaft operating in an elongated slot in the sleeve, a spring bearing against the end of the shaft at one end, and a fixed portion of the sleeve at the other, a gear wheel with which the pinion is adapted to engage, and 90 adjustable means for limiting the rotary movement imparted to the gear wheel by the pinion.

10. The combination with a typewriter platen and platen shaft, of a sleeve having a 95 pinion fixed at one end arranged to slide upon and rotate with the shaft, a gear wheel with which the pinion is adapted to engage having a notched flange attached thereto, and means for limiting the rotary move- 100 ment imparted to the gear wheel by the pinion.

11. The combination with a typewriter platen and platen shaft, of a pinion on the platen shaft, a gear wheel with which the 105 pinion is adapted to engage a fixed member adjacent thereto, a stop adjustable at pre-determined points to limit the rotary movement imparted to the gear wheel by the pinion and the points of adjustment of the 110 stop corresponding with the line spaces on the platen, said stop comprising an arm having a pin thereon adapted to engage openings in the fixed member, and a spring acting on the arm to position the pin in an 115 opening.

12. The combination with a typewriter platen and platen shaft, of a pinion on said shaft, a gear wheel with which the pinion is adapted to engage and an adjustable mem- 120 ber adjacent the gear wheel, and a projection on the gear wheel which engages the adjustable member to arrest the rotary movement imparted to said gear wheel, a fixed 125 stop adapted to engage the projection when in normal position, and a spiral spring attached to the gear wheel tending to move it to normal position.

13. The combination with a typewriter platen and platen shaft, of a pinion slidably 130

mounted on said shaft, a gear wheel with which the pinion is adapted to engage having a notched flange attached thereto, said notch being positioned normally adjacent the point of contact of the teeth on the pinion, and gear wheel, to allow of the lateral movement of the pinion on the shaft. 15
5
14. The combination with a typewriter platen and platen shaft, of a pinion slidably mounted on said shaft, a gear wheel with which the pinion is adapted to engage having a notched flange attached thereto, said notch being positioned normally adjacent the point of contact of the teeth on the pinion and gear wheel to allow of the lateral movement of the pinion on the shaft, and a spring adapted to move the pinion laterally through the notch. 20
In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 31st day of March, 1910.

HUBERT HOPKINS.

Witnesses:

M. P. SMITH,
B. S. REID.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."