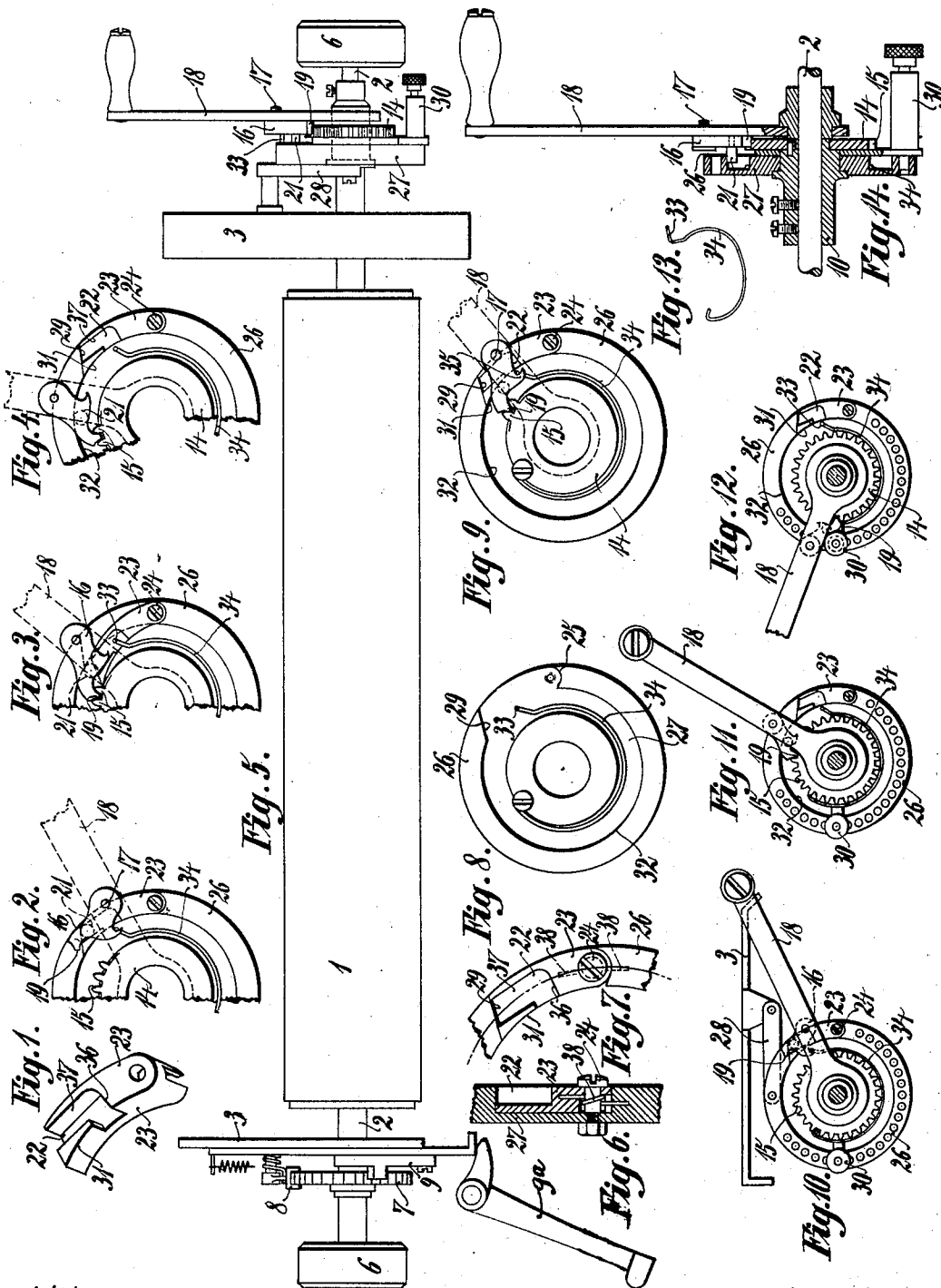


L. D. BROUGHTON.
TYPE WRITING MACHINE.
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Patented Oct. 26, 1909.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

938,454.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LYMAN D. BROUGHTON, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines; of which the following is a specification.

This invention relates to means for securing blank spaces between the carbon entries of successive bills on a record sheet which is retained in the machine, and is in the nature of an improvement upon the mechanism disclosed in applications of U. G. Fuller, filed April 24, 1908, No. 428,908 and filed May 18, 1908, No. 433,532. In said applications, a crank is shown mounted on the platen frame, but is normally out of engagement with the platen, a single swinging movement of the crank serving to rotate the platen. The crank is mounted loosely upon the platen axle, and a pawl or dog is pivoted upon the crank in position to engage a notched or toothed wheel, the latter being fixed to the platen; a spring normally holding the pawl out of engagement with the notched wheel. A single movement of the crank throws the pawl into engagement with the notched wheel, such engagement being mechanically maintained until the crank is swung back to normal position, whereupon the spring throws the pawl or dog out of engagement with the toothed wheel, and also serves to hold the crank in its normal position. In said applications, the crank-operating dog is caused to skip one or more notches or teeth of the wheel during the initial portion of the initial stroke of the crank (or other finger-piece) and then to engage said wheel to turn around, so that the platen is turned backwardly during the remainder of said stroke of the crank. The engagement of the dog with said wheel is also maintained during the entire return movement of the crank to normal position, so that the forward rotation of the platen effected by said wheel is greater than the backward rotation thereof. Thus the platen is caused to turn backwardly a relatively short distance to receive a bill, and then forwardly a relatively long distance to bring the bill to printing position; and in this manner a space is left between the carbon records on the long record sheet, which is retained in the machine during the writ-

ing of successive bills, as understood in this art. That is to say, the record sheet is turned back with the platen through a certain arc to the point where a new bill is introduced, and is then turned forward with the platen through a greater arc, so that the record of the new bill is separated by a space on the record sheet from the record of the immediately preceding bill.

The object of the present invention is to simplify and improve the construction and operation of the latch or trip mechanism, which causes the dog or pawl to skip the teeth of the notched wheel to effect the spacing between the successive bills on the carbon sheet.

In the accompanying drawings, Figure 1 is a perspective view of a trip or latch used in causing a space to be skipped between entries on the record sheet. Figs. 2, 3 and 4 are diagrams, the first showing the parts in normal position, the second showing the pawl engaged to the notched platen wheel, and the third showing the wheel as having been turned by the pawl. Fig. 5 is a plan of a portion of the platen frame and platen of an Underwood front strike writing machine showing my improvements applied thereto. Fig. 6 is a sectional view to illustrate the construction of the trip, etc. Fig. 7 is a face view of a fragment of the disk or rim upon which the trip is mounted, and illustrates the trip in normal position. Fig. 8 is a face view of the disk upon which the trip is mounted and the spring to control the pawl. Fig. 9 illustrates the manner in which the pawl rides over the trip during the return stroke of the crank. Fig. 10 is a view similar to Fig. 2, but showing the connection of the disk to the platen frame, etc., the parts being shown in normal positions. Fig. 11 is a view similar to Fig. 10, but showing the parts in the Fig. 4 position. Fig. 12 is a view similar to Fig. 11, but showing the forward stroke of the crank as arrested by the stop. Fig. 13 is a view of a pawl-controlling spring. Fig. 14 is a sectional plan of the platen-controlling devices.

The usual cylindrical platen 1 of an Underwood typewriting machine is fixed upon an axle 2 journaled in the ends 3 of a platen frame, the end of the axle projecting through the platen frame end and having a finger-wheel 6 thereon by means of which the platen may be rotated forwardly or back-

wardly to an unlimited extent. The platen is also provided with the usual line-spacing devices, of which a toothed line-space wheel 7 and a yielding detent 8 therefor are seen at Fig. 5. Said line-space wheel is advanced

intermittently by a pawl 9 and lever 9^a. Upon the end of the platen axle is secured a hub 10 of a wheel 14 having teeth or notches 15 agreeing in number with the teeth on the line-space wheel 7. The wheel 14 is rotatable by means of a pawl 16 pivoted at 17 upon a crank 18, the tooth 19 of the pawl normally disengaged from the wheel, as at Figs. 2 and 10, to permit independent rotation of said wheel and the platen 1.

A pin 21 projecting from the pawl 16 normally occupies an L-shaped slot 22 formed in one end of a trip or latch 23, which is pivoted at its other end by means of a screw 24 in a recess 25 formed in a rim 26, the latter provided upon a disk 27 and connected by a link 28 to the platen frame end 3. When the crank is swung forwardly, said pin 21 engages the beveled or cam-formed front edge 29 of the slot 25, whereby the tooth 19 of the pawl 16 is caused to engage a tooth 15 of the wheel 14, the pawl moving from the Fig. 2 to the Fig. 3 position. The continued forward movement of the crank 18 swings the wheel 14 and platen 1 around until arrested by a stop 30, Fig. 12. Then the crank is swung backwardly together with the wheel 14 and the platen; but the backward movement of the wheel and platen is prolonged beyond the forward end of the recess 25 by reason of the pin 21 riding upon the inside edge 31 of the latch 23, said edge forming a continuation of the inner surface or guiding wall 32 of the rim 26, which maintains the connection of the pawl and wheel. When the pin 21 comes opposite the L-slot 22 in the latch 23, a finger 33 on a spring 34 engages a notch or recess 35 formed in the pawl 16 between its pivot 17 and tooth 19, and snaps the pawl away from the wheel 14, the pin 21 entering the slot 22. The return stroke of the crank is arrested by the engagement of said pin 21 with the rear wall 36 of said slot, which serves as a stop or abutment. During the initial forward stroke of the crank, the pin 21 slides along the upper wall 37 of the L-slot to the Fig. 2 position, when the described cycle of operations is repeated. A spring 38 is coiled around the shoulder of the screw 24 to return the latch to normal position after it is pressed aside by the pin 21 moving from the Fig. 2 position to the Fig. 3 position.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a platen frame, a revoluble platen, a notched wheel connected to the platen, and a crank mounted to swing about the axis of said notched wheel, of a pawl normally disengaged from the wheel and pivoted upon said crank, a pin upon said pawl, a member fixed upon the platen frame and having an annular rim to guide said pin, to retain the pawl tooth in engagement with said notched wheel, a latch pivoted at one end upon said rim member and having at the other end two L-shaped walls cooperating to form an L-shaped or angle slot open at both ends, said latch occupying a recess in said rim and at its free end forming a substantial continuation of the rim, a spring to lift said pawl and throw the pin into said slot, and a spring to lift said latch; the recess in said rim having a beveled wall to be engaged by said pin during the forward stroke of the crank to force the latch one side and cause the pawl tooth to engage a notch in the wheel.

2. In a typewriting machine, the combination with a platen frame, a revoluble platen, a notched wheel connected to the platen, and a crank mounted to swing about the axis of said notched wheel, of a dog normally disengaged from the wheel and mounted upon said crank, a pin upon said dog, an annular guide for said pin, a recess in said guide, one end of said recess being beveled or cam-shaped, and a latch occupying said recess and having two L-shaped walls cooperating to form an L-slot open at both ends to receive said pin.

3. In a typewriting machine, the combination with a platen frame, a revoluble platen, a notched wheel connected to the platen, and a crank mounted to swing about the axis of said notched wheel, of a dog normally disengaged from the wheel and mounted upon said crank, a pin upon said dog, an annular guide for said pin, a recess in said guide, one end of said recess being beveled or cam-shaped, a latch occupying said recess and having two L-shaped walls cooperating to form an L-slot open at both ends to receive said pin, a spring for said latch, and a spring to cause the pin to enter the L-slot.

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