Sept. 14, 1926. 1,599,794

J. A. B. SMITH

TYPEWRITING MACHINE

Filed Nov. 12, 1924 2 Sheets-Sheet 1

Fig. 1.

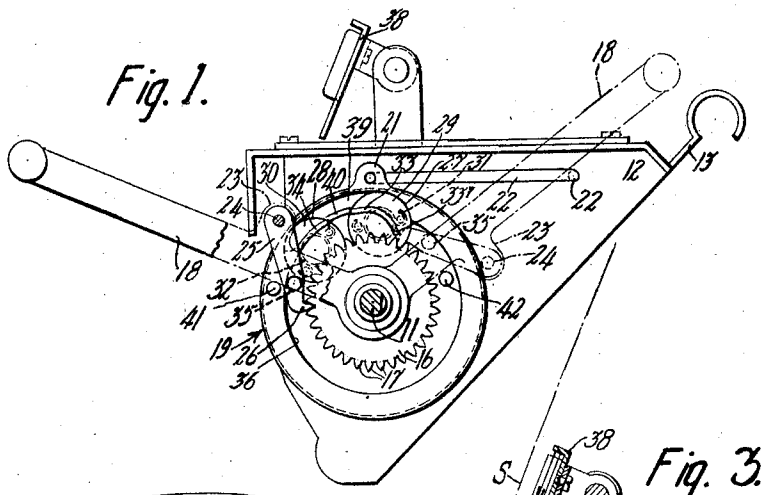


Fig. 3.

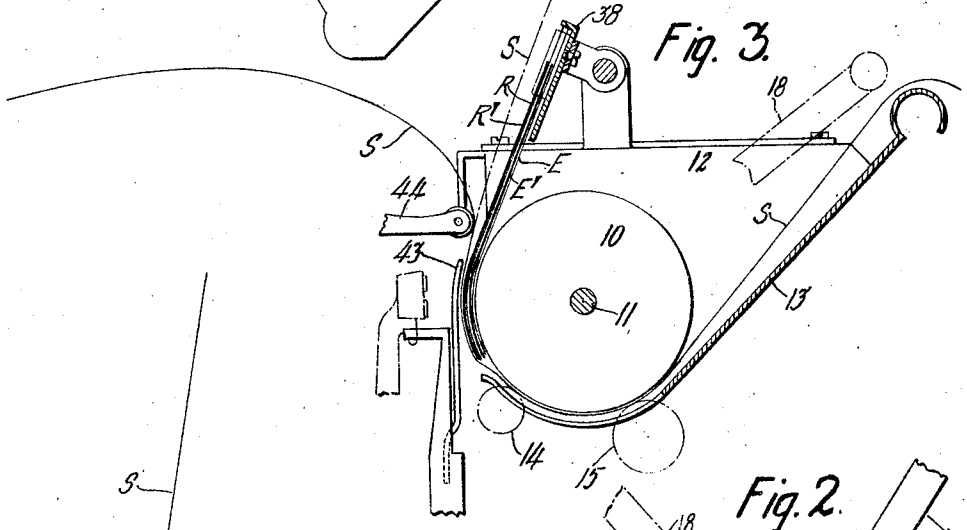


Fig. 4.

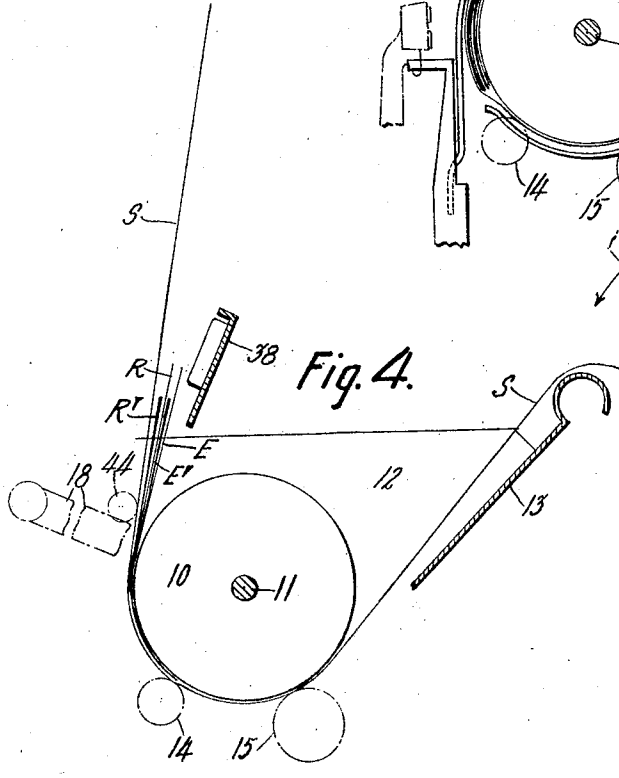
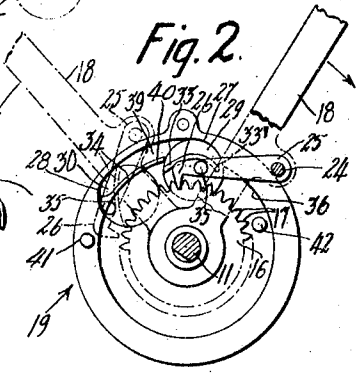


Fig. 2.



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Fig. 5.

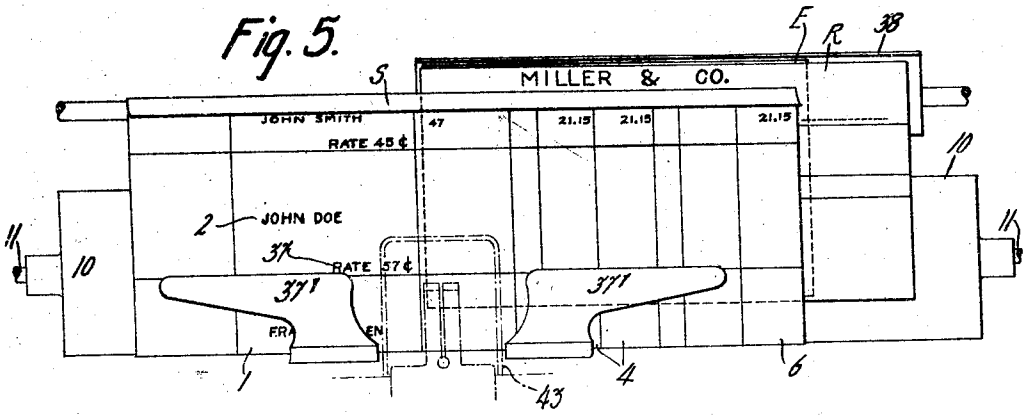


Fig. 6.

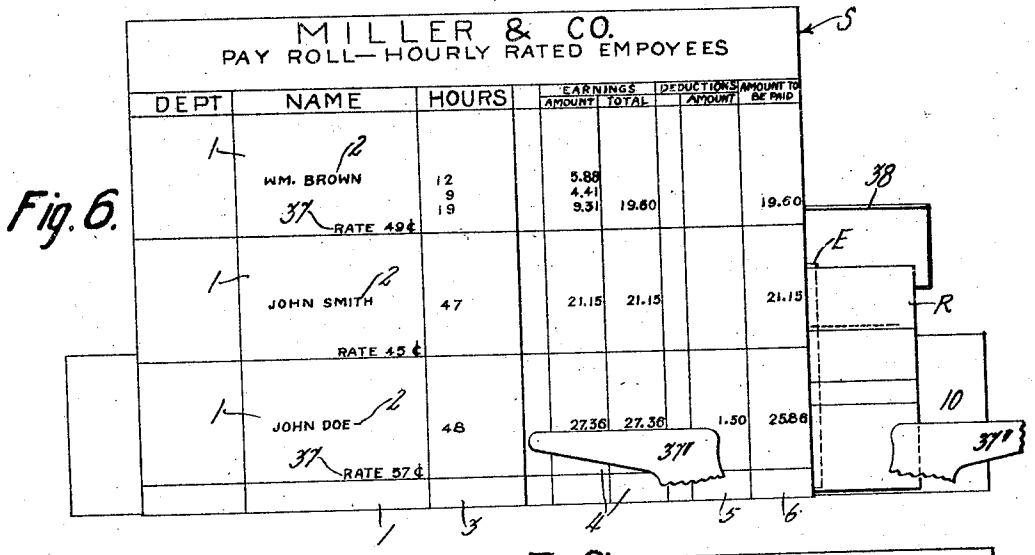


Fig. 7.

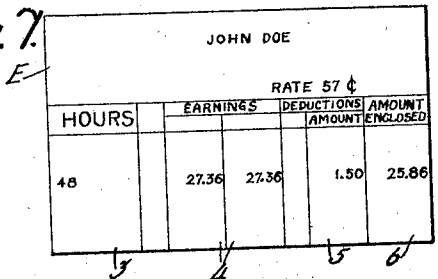
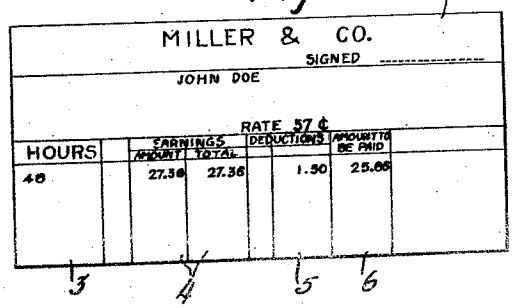


Fig. 8.



Inventor:
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Patented Sept. 14, 1926. 1,599,794

UNITED STATES PATENT OFFICE.

JESSE A. B. SMITH, OF STAMFORD, CONNECTICUT, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPEWRITING MACHINE.

Application filed November 12, 1924. Serial No. 749,359.

This invention relates to special paper-feeding devices for typewriting machines designed to facilitate the writing of bills or the like, and simultaneously recording them in a manner commonly known as "condensed billing", and is in the nature of an improvement on the mechanism disclosed in the co-pending application of Harry H. Vickers, Serial No. 543,971, filed March 15, 1922 (now Patent No. 1,569,900, dated January 19, 1926.)

In preparing a typewritten pay-roll or record-sheet, it has been found desirable to write said sheet at the same time that the payee's individual receipt and pay envelope are written, thus avoiding errors that might otherwise occur, and also saving time. A record-sheet usually comprises a printed form subdivided by vertical and horizontal lines into a number of separate blocks or spaces into which may be written the names of employees and data relative to their pay. In cases where employees are paid on an hourly basis, it is customary to print by the use of metal stencils, in vertically-arranged blocks adjacent the left margin of the record-sheet, the names of the employees, one name appearing at approximately the middle of each block. The rate of hourly pay corresponding to each employee is stenciled beneath his name and spaced so as to occupy a position closely adjacent the lower marginal line of its enclosing block. In making out such a pay-roll, the typist is furnished with certain data relative to each of the employees, and types said data in an appropriate block or column usually to the right of the block containing the employee's name and rate. An individual reecipt blank and a pay envelope, each having an overlying carbon, are placed beneath the pay-roll or record-sheet and are typed simultaneously therewith. It is necessary while typing such data upon the record-sheet and associated papers to first advance the platen so as to throw the record-sheet upwardly a sufficient distance to bring the stenciled hourly rate of an employee above the printing line to enable said rate to be observed. This is done so that the typist may compare and check up said stenciled rate with certain rate data furnished by the foreman, and thus eliminate any possibility of mistake or rectify any discrepancies which may appear. After having observed the stenciled rate and properly checked the same with the information furnished her, the typist brings the name of the employee appearing on the record sheet to the printing field and then starts typing in the columns to the right of said name. These columns usually include the number of hours worked, the earnings, deductions and the total amount to be paid. After having typed the data relating to one of the employees, the platen is next turned so as to bring the rate of the next employee into view, a new receipt blank and pay envelope are inserted, and, after observing the new rate and having properly checked the same as above outlined, the platen is turned in the opposite direction so as to bring the new employee's name to the printing line.

One of the features of the present invention is the provision of means whereby the platen may be quickly rotated to advance the initial typing line of a work-sheet beyond the printing field to enable information appearing beneath said initial typing line to be observed, and then upon reversal of the platen to quickly bring said line to the printing field for typing.

Another feature of the invention is the provision of means for gaging the ends of additional work-sheets or the like, which are inserted behind the record-sheet, and then run to the printing line to be simultaneously typed with said record-sheet.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a side elevation of the platen-frame of a typewriting machine, showing my invention applied thereto.

Figure 2 is a fragmental view similar to Figure 1, and showing the positions assumed by the various parts during certain operations of the mechanism.

Figure 3 is a transverse section through a platen and work-table, illustrating a record-sheet thrown back, and an envelope and individual receipt blank being introduced.

Figure 4 is a view similar to Figure 3,

showing the position assumed by the record-sheet, envelope and receipt blank after they have been run to the printing line.

Figure 5 is a front elevation of the upper portion of a typewriting machine, showing in elevation the sheets indicated in Figure 3.

Figure 6 is a view showing in front elevation the record-sheet illustrated in Figure 4.

Figure 7 is a view of a pay envelope.

Figure 8 is a view of an employee's individual receipt blank.

The usual platen 10 is rotatably mounted by means of an axle 11 in a platen-frame 12, which includes a work-table 13 and feed-rolls 14 and 15, the latter being equipped with suitable throw-off mechanism (not shown) for releasing the rolls from the platen when required. A wheel 16, having teeth or notches 17, is fixed to the axle 11 adjacent one end of the machine, and a crank 18 is mounted upon the axle and is swingable in an arc adjacent the wheel 16. A housing 19 in the form of an annular rim surrounds the wheel 16, and is held against movement by means of a tie-rod 20 fixed at one end 21 to the housing 19, and at the other end 22 to a portion of the platen-frame 12. The crank 18 has an offset portion 23 for the reception of a pin 24, which provides a pivotal mounting for a dog 25, the end of the latter being formed with a tooth 26 for engagement with the notches 17 of the wheel 16. As the crank 18 is thrown forwardly and rearwardly, the dog operates to turn the wheel 16, and thereby rotates the platen forwardly and rearwardly to simultaneously lower a record-sheet, a receipt blank and an envelope, or to raise them with relation to the printing field. In handling a pay-roll or record-sheet, it is customary to advance the same through a regularly-spaced distance after certain data relative to one payee is typed, so that the rate of pay of the succeeding payee may be observed and the pay envelope and individual receipt blank removed and new ones introduced. Mechanism is therefor provided for permitting the platen to be turned through a full stroke during a rearward movement of the crank 18 to carry the printing line of the record-sheet above the printing field, whereas a forward movement of said crank results in a shorter movement of the platen in the opposite direction to bring said record-sheet down to the printing field for typing.

In order to accomplish this result, there is provided adjacent the top of the housing 19 suitable latch mechanism including a pair of annular recesses 27 and 28 into which are received a pair of disk-like turning members 29 and 30, which move about their axes within said annular recesses and are returned to normal position by means of coil springs 31 and 32, in a manner similar to the mechanism disclosed in the patent to W. H. Woodford, No. 923,749, granted June 1, 1909.

The disk member 29 includes a latch 33 and the disk member 30 includes a latch 34. The dog 25 has a pin 35 which normally rides around the interior of the housing 19 against an annular surface 36.

Attention is directed to Figure 3, which illustrates the method of introducing work into the machine. S represents a record-sheet or pay-roll which has been introduced into the machine along the rear paper-table 13 after having first thrown the crank 18 to the rear and released the feed-rolls 14 and 15, so as to permit the record-sheet to be introduced around the platen to bring an employee's rate 37 to the printing field to be observed.

Upon inspection of Figure 6 it will be seen that the record-sheet S may include vertically-arranged blocks 1, each of which contains an employee's name 2 spaced above his rate 37, and also a number of blocks 3, 4, 5 and 6, which may have respectively typed therein hours, earnings, deductions and amounts to be paid. With the record-sheet S in this position, an individual receipt blank R and pay envelope E, each having blocks or spaces similar to the blocks 3, 4, 5 and 6 of the record-sheet S, are interleaved with carbons R′ and E′ and placed behind said record-sheet, and then gaged against a gage 38, which may be fixed upon the platen-frame, as clearly illustrated in Figure 3. After having observed the rate 37, the typist throws the crank 18 forwardly to move the sheet S, the receipt blank R and pay envelope E simultaneously to the printing field, that is, to bring the name 2 of the record-sheet down to typing position, so that the blocks 3, 4, 5 and 6 to the right thereof may be typed in line with said name.

During the forward movement of the crank 18, the pin 35 rides against the annular surface 36 of the housing 19, thereby holding the dog 25 in engagement with the notched wheel 16 until the pin 35 reaches a depending lip 33′ of the latch 33 (see Figure 1). The dog 25 then rides up over the lip 33′, thence over the body of the latch 33 and thence into a recess 39, thereby withdrawing the tooth 26 of the dog 25 from the notches 17 of said wheel. As the crank 18 continues in its movement the pin 35 rides off of the latch 33, onto a bridge portion 40 forming a portion of the housing 19 and then onto the latch 34. The continued movement of the crank 18 causes the pin 35 to be deflected from the recess 39, and causes the latch 34 to be turned axially against the tension of its spring 32 to permit the pin 35 to ride out of the recess 39 and drop to position to re-engage the teeth of the wheel 16, as clearly illustrated in the dot-and-dash lines of Figure 2. The platen is thus moved

another short distance until the edge of the crank 18 is stopped against a pin 41. After typing all of the data necessary to be written relative to this particular employee, the crank 18 is moved rearwardly to a position indicated in dotted lines in Figure 1. During this movement the pin 35 rides beneath the latch 34 and causes the tooth of the dog 25 to remain in engagement with the teeth of the wheel 16 for the full return stroke of the crank, and it will be noted, that as the pin 35 comes in contact with the depending lip 33′ of the latch 33, the pin 35 cams thereagainst and causes the disk 29 to revolve about its axis against the tension of its spring 31 sufficiently to allow the pin 35 to pass freely beyond said lip and to position against the annular surface 36. (See full lines of Figure 2.) The rearward movement of the crank 18 is stopped by a pin 42. The record-sheet S has now been advanced to bring the next rate to view and also to permit the envelope E and receipt R, which have been typed upon, to be removed from the machine, so that new ones may be introduced and brought to position against the gage 38. A paper-guide 43 and a paper-finger 44 may be used to hold the sheet S, the receipt blank R and envelope E in position while being written upon, and a wing scale 37′ may also be used. The finger 44 functions as a support for the sheet S when the same is thrown forwardly of the machine to permit easy access to the work being introduced against the gage 38.

It will be seen that by use of the above-described mechanism work-sheets may be readily introduced into the machine and certain portions thereof quickly brought to view for observation, and then quickly run to position to be typed upon, thus saving much time in typing this character of work, and adding greatly to the ease and facility with which it may be handled.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a revoluble platen, of a notched wheel fixed thereto, a crank movable about the axis of said notched wheel, a pin-carrying dog pivoted to said crank and movable into and out of engagement with said notched wheel, a forward latch, a rearward latch, the latches being rotatable and including guiding ribs, and a stationary rib providing a bridge between the guiding ribs, when the latter are in normal position, all of said ribs thereby forming a continuous guide for the pin, whereby said dog is withdrawn and held out of engagement with said notched wheel during a portion of a platen-sweeping stroke of the crank in one direction, said latches permitting the dog to re-engage the notched wheel, adjacent the end of said stroke, the dog remaining so engaged during a full stroke of the crank in the reverse direction.

2. In a typewriting machine, the combination with a revoluble platen and a platen-shaft, of a notched wheel fixed to said shaft, a crank swingable around said shaft about the axis of said notched wheel, a pin-carrying dog pivoted upon the crank and movable into and out of engagement with said notched wheel, a stationary housing, a forward disk, a rearward disk, the disks being rotatably mounted in said housing and provided with guiding ribs, returning springs associated with the disks, and a stationary rib providing a bridge between the guiding ribs when the latter are in normal position, the housing being provided with a segmental recess adjacent said disks, all of said ribs combining to form with said recess a continuous channel for the pin whereby said dog is withdrawn and held out of engagement with said notched wheel during a portion of a platen-sweeping stroke of the crank in one direction, said latches permitting the dog to re-engage the notched wheel, adjacent the end of said stroke, the dog remaining so engaged during a full stroke of the crank in the reverse direction.

3. In a typewriting machine, the combination with a revoluble platen and a platen-shaft, of a notched wheel fixed to said shaft adjacent one end of the platen, a crank swingable around said shaft about the axis of said notched wheel, a dog pivoted upon said crank and effective to engage or be disengaged from said notched wheel, a pin fixed to said dog, a forward latch, a rearward latch, each of the latches being rotatable and including guiding ribs, and a stationary rib normally forming a bridge between the guiding ribs, the rib of said rearward latch being curved to provide a cam for engaging the pin to withdraw the dog from the notched wheel during a portion of a forward throw of said crank, the pin being then directed by said stationary rib onto the guiding rib of the forward latch, the latter permitting release of the pin before the crank reaches the limit of its forward stroke, thereby permitting the dog to re-engage the notched wheel, the pin being effective to engage the curved rib to move the same out of the path of said pin during a reverse stroke of the crank.

4. In a typewriting machine, the combination with a revoluble platen, of a notched wheel fixed thereto, a crank swingable about the axis of said notched wheel, a dog operable by said crank and movable into and out of engagement with said notched wheel, means for withdrawing said dog from the notched wheel after said crank has been moved through a portion of a forward

stroke, so that said dog moves idly around said notched wheel, and means for causing said dog to re-engage the notched wheel before said crank reaches the limit of its forward stroke, to thereby turn the platen during the remainder of the stroke of said crank.

5. In a typewriting machine, the combination with a revoluble platen, of a notched wheel fixed thereto, a crank movable about the axis of said wheel, a dog swingable upon said crank and movable into and out of engagement with said notched wheel, a pin fixed to said dog, a forward latch, and a rearward latch, both of said latches turnable about their axes and co-operating with said crank, dog and notched wheel to control the movements of the platen, said rearward latch being effective to engage said pin to withdraw said dog from the notched wheel after the crank has been thrown forwardly a short distance, said forward latch being arranged to receive said pin during continued movement of said crank and then to turn about its axis to permit the pin to pass therefrom, so as to cause said dog to re-engage the notched wheel, and thereby cause the platen to be turned during the remainder of the forward throw of said crank.

6. In a typewriting machine, the combination with a revoluble platen, of a notched wheel fixed thereto, a crank swingable about the axis of said notched wheel, a pin-carrying dog associated with said crank and movable into and out of engagement with said notched wheel, and a pair of independently-operating latch-devices including guiding ribs upon which the pin is arranged to ride, whereby to maintain said dog disengaged from the notched wheel during the greater portion of a forward stroke of the crank.

7. In a typewriting machine, the combination with a revoluble platen, of a notched wheel fixed thereto, a crank swingable about the axis of said notched wheel, a dog pivoted to said crank, so as to be moved into and out of engagement with said notched wheel, a pin fixed to said dog, and a pair of independently-movable latch devices for controlling the movements of the platen, one of said latch devices co-operating with said pin to cause said dog to be withdrawn from the notched wheel after the platen has been rotated rearwardly through a portion of a forward stroke of said crank, and the other of said latch devices co-operating with said pin to cause said dog to be thrown into engagement with said notched wheel before the crank reaches the limit of its forward stroke.

8. In a typewriting machine, the combination with a platen-frame and a revoluble platen, of a notched wheel fixed to said platen, a crank swingable about the axis of said notched wheel, means for limiting the throw of said crank in both directions, a pin-carrying dog associated with said crank and movable into and out of engagement with said notched wheel, a housing surrounding said notched wheel and stationary with respect to said platen-frame, and a pair of rotatable disks mounted in said housing, one of said disks including pin-guiding means for withdrawing the dog from the notched wheel, during a forward throw of the crank, the other of said disks including guiding means arranged to receive the pin during said forward throw, to maintain the dog in disengaged condition, the last-named disk permitting release of the pin before the crank reaches the forward limit of its throw, whereby the dog re-engages the notched wheel.

9. In a typewriting machine, the combination with a revoluble platen, of a notched wheel fixed thereto, a crank movable about the axis of said notched wheel, means for limiting the throw of said crank when moved in either direction, a dog operable by said crank and movable into and out of engagement with said notched wheel, a pin fixed to said dog, a pair of rotatable latch devices associated with said crank, dog and notched wheel to control the movements of the platen, one of said latch devices acting as a cam against the pin to raise said dog out of engagement with the notched wheel so that said dog is carried idly around said notched wheel during a portion of a forward throw of said crank, the other latch device being arranged to receive said pin and permit the same to ride thereover until the crank has nearly reached the end of its forward stroke, whereupon said last-mentioned latch device operates to permit said pin to pass therefrom and allow the dog to re-engage the notched wheel to move the platen until the crank reaches the forward limit of its throw.

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