J. B. SECOR.

TYPE WRITING MACHINE.

APPLICATION FILED JULY 28, 1910.

1,140,190.

Patented May 18, 1915.

5 SHEETS—SHEET 1.

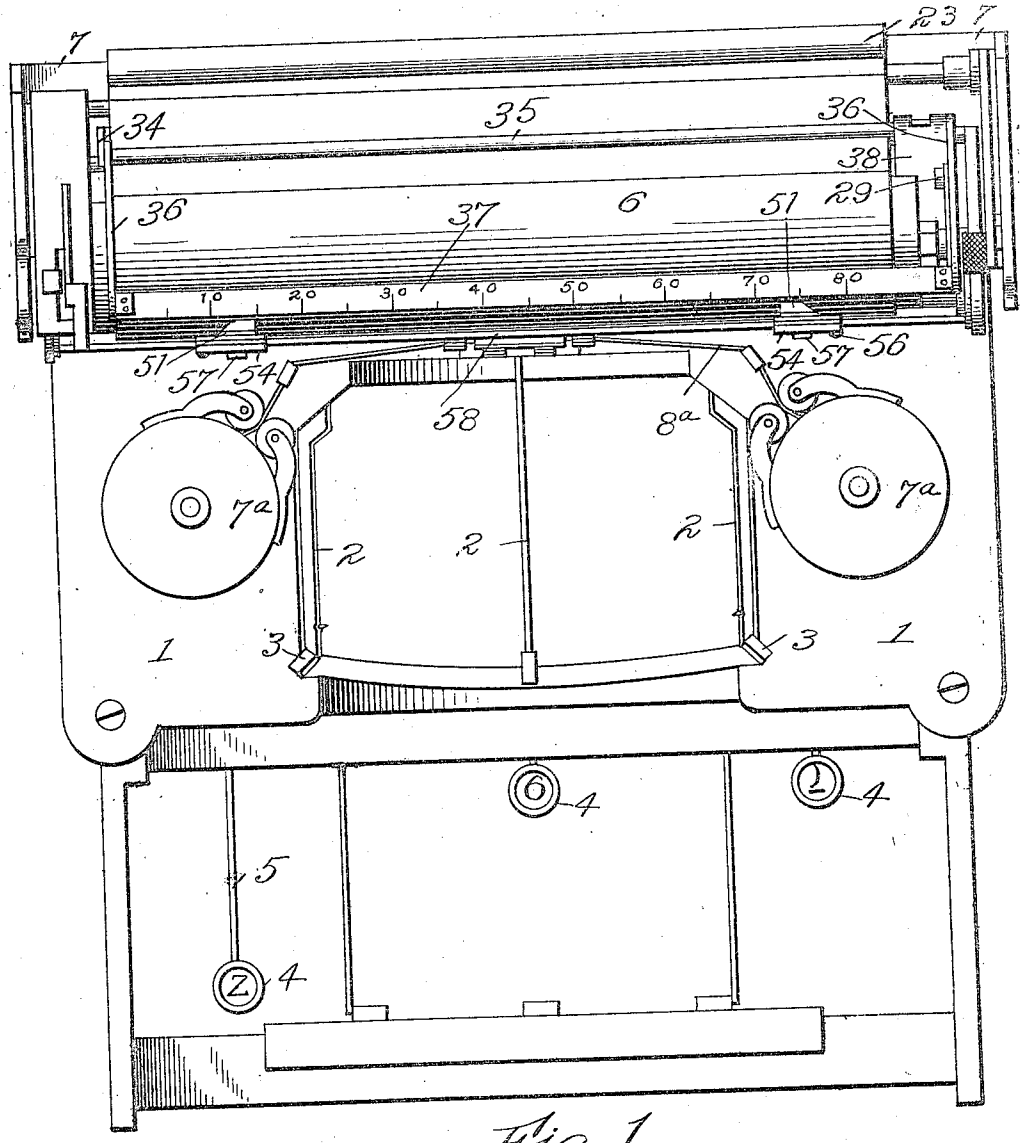


Fig. 1.

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5 SHEETS—SHEET 2.

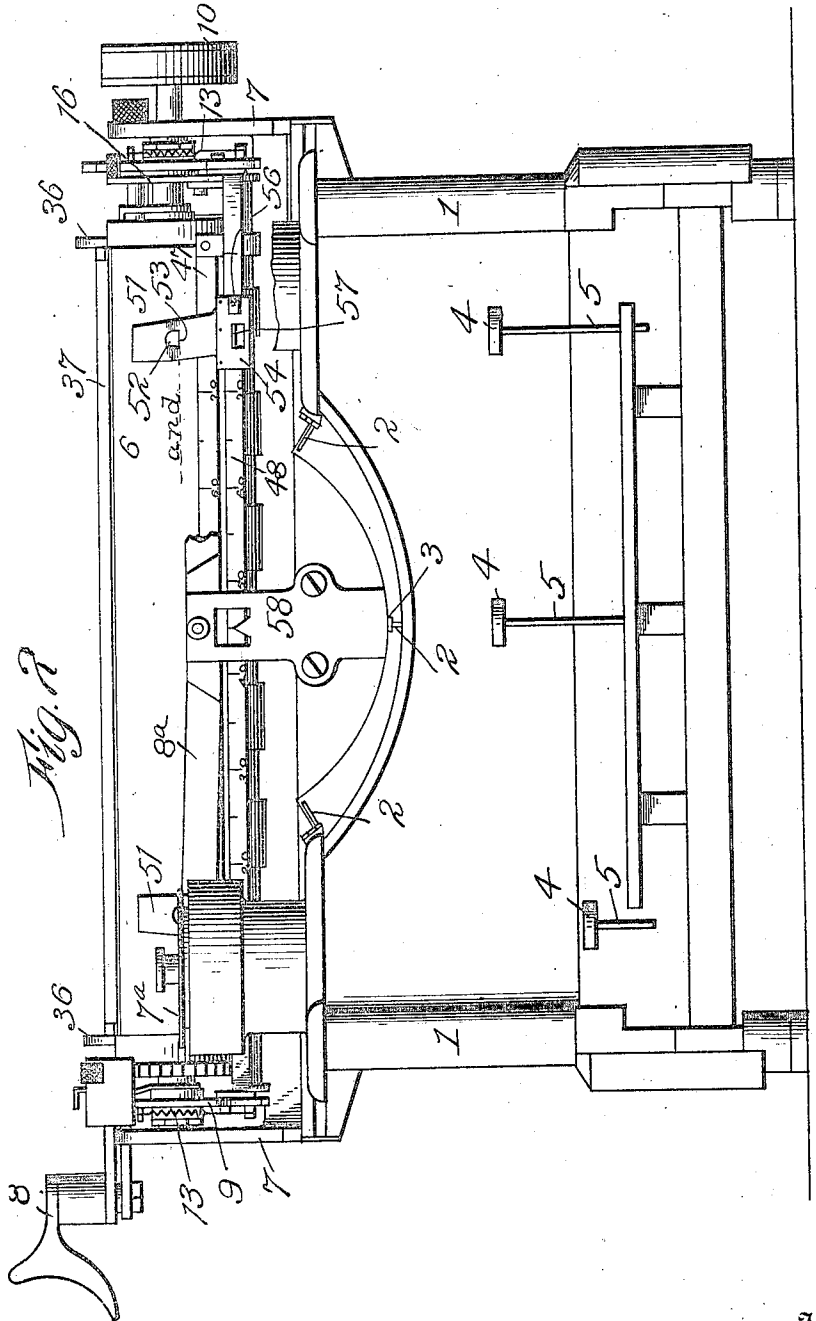


Fig. 1

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5 SHEETS—SHEET 3.

Fig. 3.

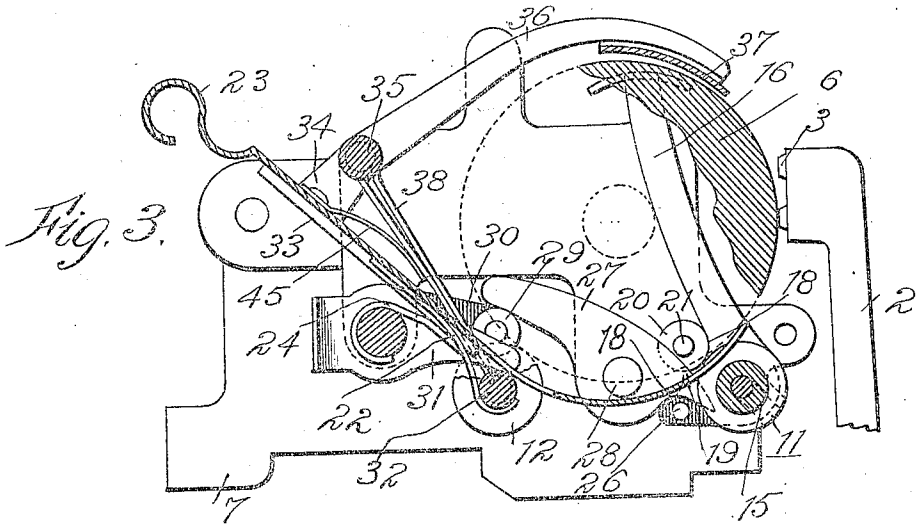
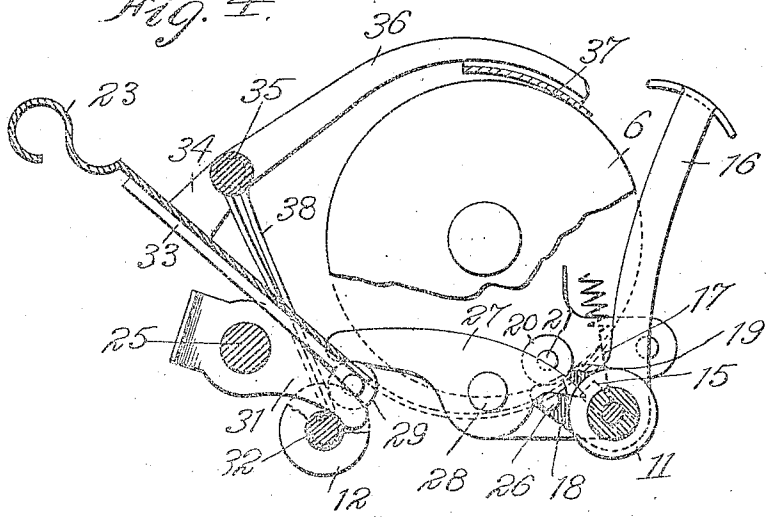


Fig. 4.



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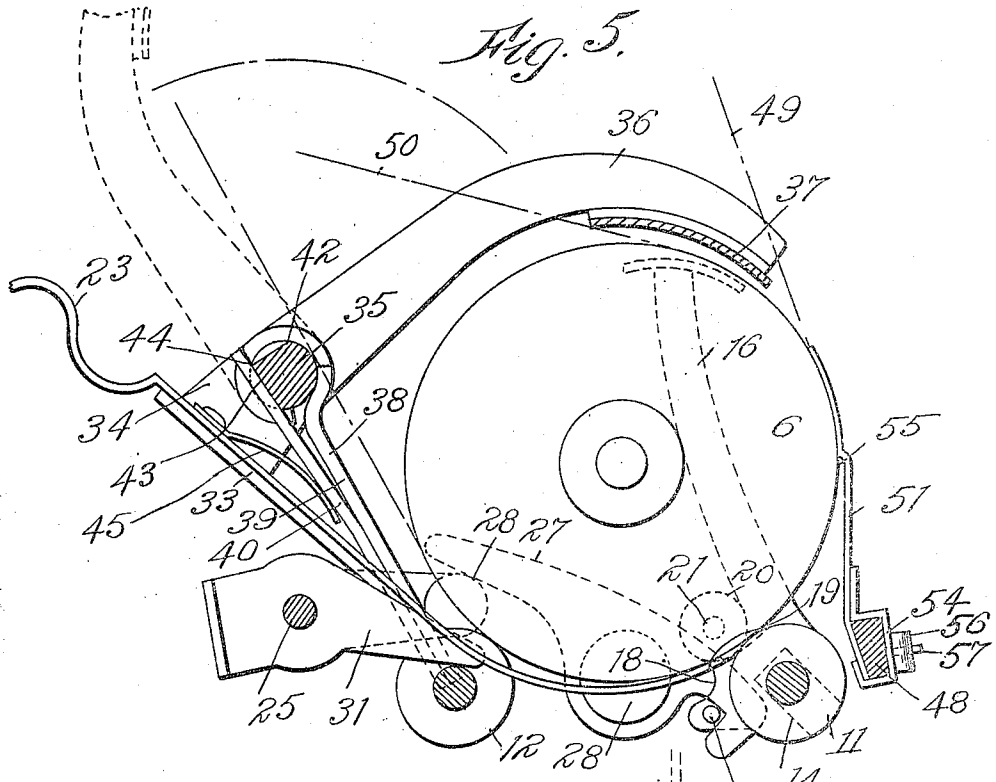
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5 SHEETS—SHEET 4.

Fig. 5.



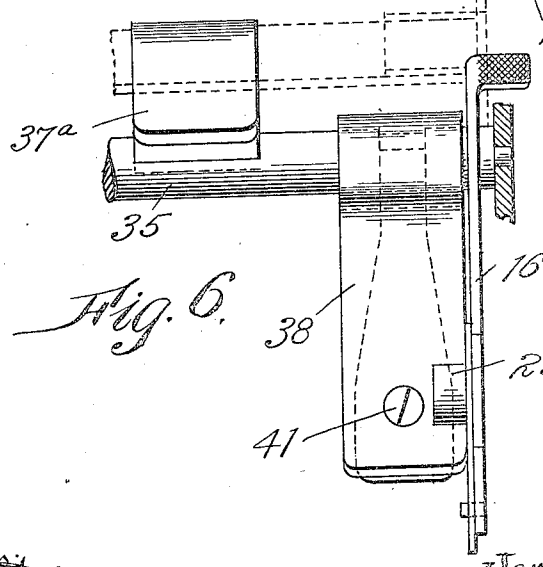


Fig. 6.

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TYPE WRITING MACHINE.

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5 SHEETS—SHEET 5.

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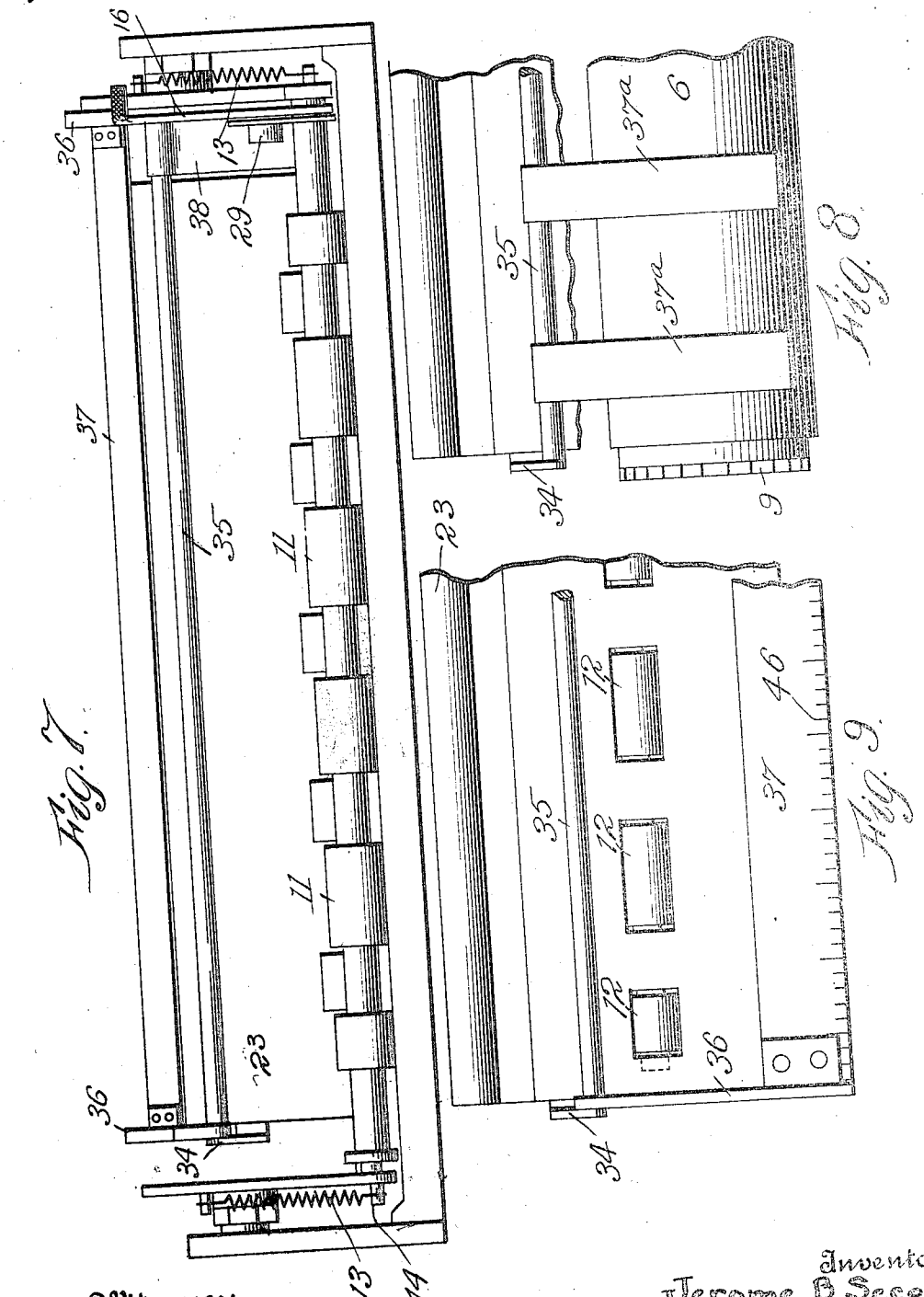


Fig. 7.

Fig. 8.

Fig. 9.

Witnesses:

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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

1,140,190. Specification of Letters Patent. Patented May 18, 1915.

Application filed July 28, 1910. Serial No. 574,258.

To all whom it may concern:

Be it known that I, JEROME B. SECOR, a citizen of the United States, residing at Derby, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to the paper feeding and controlling devices in type-writing machines, particularly those adapted for use in connection with those machines in which the types strike upwardly and rearwardly toward the front side of the platen, or, front strike machines, so called.

The object of my invention is to provide devices of the character set forth for the more convenient and rapid handling and adjustment of the paper or record sheets in the use of type-writing machines for writing bills and records. It is customary in many establishments to render bills of account to their customers at weekly or monthly intervals, but to make the entry of the items upon those bills at the time the goods are delivered, and, at the time of making such entry make one or more memorandum copies of the particular item of that date one of which may accompany the shipment and the others be retained for use in other departments. In many cases the record sheets are retained, as they contain the entries of successive bills. These record sheets may be of considerable length and are not removed from the machine between the making of entries thereon; only the shorter memorandum bill and records are removed. In this removal the paper feed rolls are released as usual, which would ordinarily free the record sheet so that in such removal of the bill the record sheet would also be movable and by being moved the registry of its written lines to the writing point would be lost, necessitating a readjustment. My devices are intended to obviate this disadvantage by providing means that will securely hold this record sheet in registry during such time as the usual feed rolls are released and means for providing a registry point for the edges of the new bill when it is inserted over the record sheet, so that when the feed rolls are engaged it will be in proper registry with the record sheet beneath it.

The device for carrying out my invention is associated with and is operated by the usual feed roll release lever in an entirely automatic manner and is so arranged as not to interfere with the use of the machine for all ordinary purposes.

I have shown my invention herein as it would be applied to a Secor typewriter, in which machine it may be readily adopted without altering the structural features of such a machine and it will be understood that my invention may be also readily applied to other styles of machines.

My invention consists of the features of novel construction, arrangement of parts and combination of devices having for their objects the above and other ends; described and illustrated in the accompanying drawings and specification and accompanying claims.

In the drawings, wherein similar reference characters indicate corresponding parts in the several views: Figure 1 is a plan view of so much of a type-writing machine embodying my invention as is necessary for the illustration of the latter. Fig. 2 shows a front elevation of the same machine which particularly illustrates my combined paper stop and feed finger. Fig. 3 shows a sectional view of the paper carriage of this typewriter with the greater portion of the platen broken away for the purpose of clearness in which the paper feed rolls are in engagement and my improved record sheet clip disengaged. Fig. 4 shows a similar sectional view in which the feed rolls are released and the clip is in engagement with the platen. Fig. 5 shows an enlarged sectional view as in Fig. 3 and Fig. 4 in which the record sheet clip is shown in normal position and in outline in its inoperative position. In this view my combined paper stop and feed finger are further illustrated. Fig. 6 shows a front view of a portion of the paper carriage with the platen removed to further illustrate the parts shown in Fig. 5. Fig. 7 shows the front elevation of a paper carriage with the platen removed with the record sheet clip in normal position showing the method of mount-

ing the same. Fig. 8 shows a partial plan view of a paper carriage and platen in which the engaging member of my improved clip is shown as comprising a series of fingers. Fig. 9 shows a partial plan view of a paper carriage with the platen removed, in which the engaging member of my improved clip is shown as a continuous strip bearing graduations corresponding with the regular paper and carriage scales of the machine.

In Figs. 1 and 2, 1 indicates the main frame of a Secor front-strike typewriter. Suitably mounted on this main frame are the type-bars 2, bearing types 3 which are actuated through the medium of proper connections (not shown) by the depression of the finger-keys 4 and key-levers 5 to swing upwardly and rearwardly to bring the types 3 to the printing point on the front side of the platen 6 as shown in Fig. 3. On this main frame and in front of the platen are the ribbon spools 7ª, from which the ribbon 8 is led across the machine from spool to spool in alternate directions and interposed between the type and platen at each printing operation. The platen 6 is mounted on the paper carriage 7, which has the usual longitudinal movement for providing for letter spacing at each printing operation under the control of main-spring and escapement mechanisms which are not shown. The platen 6 is revolved for line space feeding by means of the line space lever 8, (see Fig. 2) in a step by step manner, by means of a pawl operating on the ratchet wheel 9 and for varying distances at the will of the operator by means of the thumb wheel 10. Coöperating with the platen 6 to feed the paper, the front feed rolls 11 and the rear feed rolls 12 are provided, see Figs. 3, 4, 5, 7, and 9. The front feed rolls 11 are held against the platen 6 by the spiral springs 13, Figs. 2 and 7, one end of which are attached to the carriage frame and the other to the ends of the shaft 14 on which the feed rolls revolve. The shaft 14 is held in alinement with the platen 6 by the slots 15 in the carriage frame. The front feed rolls are released or thrown out of engagement with the platen by the feed roll release lever 16 which is fixed to the shaft 14. The heel of this lever 16 terminates in a cam portion comprising two curved seats with an intermediate detent. The axes of the curves of these seats are at different radial distances from the axis of the shaft 14. In Figs. 3, 4, and 5 these curved seats are designated as 17 and 18 and the intermediate detent as 19. A duplicate of this heel portion of the lever 16 is mounted on the opposite end of the shaft 14 and operates simultaneously therewith. These cam plates have a floating axis in the axis of their connecting shaft 14. The curved seats are held against the rollers 20 by the tension of the springs 13, drawing the shaft 14 upward in the slots 15 which are in line with the axis of the rollers 20 which have bearings on studs 21 fixed in the carriage frame 7. The axis of the normal seat 17 is nearest the axis of the shaft 14 and when this seat is in engagement with the roller 20, the feed roll 11 is in engagement with the platen as shown in Fig. 3. When the lever 16 is oscillated forward as shown in Fig. 4 the detent 19 rides over the periphery of the roller 20 and the seat 18 embraces said roller and the axis of this seat, being at a greater distance from the axis of the shaft 14, this shaft and the rolls 11 are forced radially away from and out of engagement with the platen 6. The rear paper feed roll 12 is suspended on the springs 22 which have their attachment on the rear under side of the paper table 23. The paper table 23 is supported by the sheet metal brackets 24 on the rod 25 which extends intermediate the ends of the carriage 7, see Fig. 3. The feed roll 12 is disengaged from the platen at the same time as the front roll 11. This is accomplished as follows: The stud pin 26 which is carried by the heel of the paper feed-roll release lever 16 engages the forward end of the lever 27. When the release lever is operated to operate lever 27 on its pivotal support 28 which is fixed in the carriage frame, the rear end of lever 27 is depressed and bears upon the roller 29 which roller is mounted on the forward end of the lever 30. This lever 30 extends rearwardly and has a bearing support on the rod 25. This lever is at the right hand end of the carriage and its rear end is bent to the left and extends parallel with the rod 25 to a point intermediate the ends of the carriage where it again extends forwardly as the lever 31 which also has a bearing support on the rod 25 and bears upon the upper side of the shaft 32 upon which the sections which make up the rear feed-roll 12 are mounted. As the forward end of lever 31 is thereby depressed through the instrumentality of the roll 29 on lever 30 the feed-roll 12 is disengaged from the platen 6 at the same time as the feed-roll 11. The feed-roll 12 is held in the position shown in Fig. 4 by the detent 19 as is the case with the feed-roll 11. The relative positions of the parts just described are fully illustrated in the two views, Figs. 3 and 4, in which they are shown in both the engaged and released positions.

Attached to the under rear side of the paper-table 23 are the stiffening plates 33 which extend down between the paper table and the supporting brackets 24, there being one of these plates at each end of the paper table. From these plates extend arms 34 beyond the ends of the paper table and

then are bent at right angles so that they extend upwardly and forwardly to serve as a bearing support for the rock-shaft 35 which extends across the paper table from end to end at the rear of the platen 6. Rigidly attached to the rock-shaft 35 are the radial arms 36 which extend forwardly with their ends terminating in a line intermediate the writing point and the top of the platen. Attached to the forward ends of the arms 36 is the record sheet clamp plate 37. The rock-shaft 35 is operated by the lever 38. This lever is in the form of a split grip comprising the members 39 and 40 of which 40 is a spring. They are held together by the screws 41. One end of the member 39 is formed into an eye portion which encircles the rock-shaft 35, which at this point is half-squared as shown in Fig. 5 to present two right angled faces 42 and 43 with an intermediate detent 44. As shown in dotted outline in Fig. 6, the end of the spring member 40 is narrowed and normally lies in spring contact with the flattened surface 43 and maintaining a yielding but operative connection for the lever 38 with the rock-shaft 35. As shown in Fig. 6, one edge of this lever lies below the roll 29 on the lever 30 and is held in constant contact therewith by the leaf spring 45 attached to the paper table 23, which also serves to maintain the arms 36 and the record sheet clamp 37 in a normally elevated position, as illustrated in Figs. 3 and 5. When these parts are in this normal position, the paper feed-rolls 11 and 12 are closed or in engagement with the platen 6. When the feed-roll release lever 16 is drawn forward to release the feed-rolls and free the paper or sundry sheets which may be interposed between the feed-rolls and the platen, the roll 29 is thereby depressed as hereinbefore described carrying with it the forward end of the lever 38, which operates to depress the forward ends of the arms 36 and the record sheet clamping bar 37 in engagement with platen 6 at a point intermediate the printing point and the top of the platen, engaging any sheets which may have been so placed in the machine as to pass underneath the same and holding them in register with the writing line, while any sheets which do not pass under this bar may be removed from the machine without disturbing these sheets and others inserted in their stead.

If it is desired to temporarily dispense with the use of the record sheet clamp, the bar 37 and the arms 36 are forced upwardly, and rearwardly to the position shown in the dotted outline in Fig. 5. When this is done, the lever 38 is cranked on the shaft 35, the detent 44 forces the spring member 43 away from the axis of this shaft and the flattened portion 42 engages the spring member, thus maintaining the record sheet clamping device in an inoperative position as shown. These parts may be readily placed in this position at any time for convenience in placing record and other sheets in the machine.

In Fig. 9 is shown a portion of the left hand end of the paper table 23 with a portion of the record sheet clamp 37 bearing graduations 46 which correspond with those on the regular paper and carriage scales 47 and 48, Fig. 2. These are for convenience in setting the record sheets with reference to vertical rulings.

In Fig. 8 is shown a modification of the clamping means in which spring fingers 37^a replace the arms 36 and the bar 37. Their operation and function are the same as in the preferred construction already described. In this figure a portion only of the paper table 23, rock-shaft 35 and platen 6 are shown.

Referring to Figs. 2 and 5: 51 is my improved line-indicating and paper-gaging paper guides. These paper-guides are sheet metal plates, curved at their upper portion to conform with the radius of the platen 6. At an intermediate point at 55 they are bent to form a shoulder or abutment from which point they are flat or straight to their support on the carriage scale bar 48, on which they are slidably mounted by the housing 54. These paper guides may be moved along on the scale bar 48 to engage the edges of sheets of paper of different widths by the finger loops 56 which are formed up from an extension of the metal of the housing bent forwardly and back as shown in Fig. 1. These paper guides are prevented from passing the printing point to the possible injury of the types striking on metal, by the stops 57 which are also formed out of the body of the sheet metal housing by striking up the forwardly projecting tongue which forms these stops as shown in Figs. 1 and 5. In the movements of the carriage right and left, the stops 57 will engage the type-bar guide plate 58 at its edges, arresting the progress of the paper guides beyond that point if the operator should inadvertently set either of these guides within the printing field intermediate the points determined by the right and left margin guides usually found on all typewriting machines. These paper guides are provided with line indicating perforations 51 which perforations are semicircular in form, the straight lower side of which indicates the bottom of a written line as shown in Fig. 2. The shoulder at 55 serves a very useful purpose in the placing of paper in the machine. When the paper feed rolls are released, a sheet of paper or in fact several sheets with accompanying carbon sheets may be passed between the feed-rolls and the platen and their forward edges brought up to and in abutment with this shoulder,

which enables the operator to square the sheets with the platen and to secure a definite starting point for the sheets. When the feed rolls have been closed and the paper fed forward, the leading edges are forced past this shoulder and between the paper guide and the platen.

The operation of my device is as follows: In Fig. 5, 49 represents a bill or sheet of paper which has been inserted in the machine and which, as it passes above the writing line, is fed above the clamping bar 37. 50, in the same figure, represents a record sheet and its accompanying carbon sheet, which, as it leaves the writing line, passes beneath the clamping bar 37 and is in a position to be engaged thereby when the feed rolls are opened by the operation of the lever 16 as shown in Fig. 4. When the feed rolls are thus opened, the closing or engagement of the clamping bar takes place, the two separate paper clamping means engaging and reëngaging invariably in inverse order. The feed rolls operate to feed the paper during rotation of the platen and hold the same during the writing operation. The clamping bar is for the purpose of holding a selected number of the sheets in engagement with the platen when the same is stationary with their written lines in registry with the writing line. In inserting the record and carbon sheets, the clamping bar will be raised as shown in the dotted outline in Fig. 5, and the feed rolls will be released as shown in Fig. 4. The sheets will then be passed in over the paper table as usual and the location of the first writing line positioned by the line gages 53, see Fig. 2, when the clamping bar will be lowered to the position shown in Fig. 4 engaging the sheets in that position. Additional sheets or a bill is then inserted with their or its advance edges directed to pass over the clamping bar 37, and similarly positioned, when the feed rolls are closed as in Fig. 3, clamping the same and the record sheets to the platen in condition for simultaneous line-space feed, the clamping bar 37 now being disengaged. When this first operation is completed the feed rolls are opened, releasing all the sheets from line-space feed and feed roll engagement with the platen while the record sheets are engaged by the clamping bar and held in fixed relation thereto. The bill or other sheets may now be removed and others inserted in their places with their advance edges ordinarily in abutment with the edge of the bar 37. The feed rolls are then closed as before and the platen line-spaced to bring a new line on the record sheets to the writing line and the desired space on the new bill to the same point, when the work is proceeded with as before. Thus it will be seen that I provide a device which automatically engages the sheets that the operator wishes to keep in register on every occasion of the feed rolls being opened without thought having to be given to the matter and that through the use of but one operating lever for both purposes.

The use of my device with a series of fingers as 37ª in place of the bar 37 is the same as that set forth above.

The construction herein set forth is preferential only as applied to a particular machine and it is susceptible of change in its various details for application to any other machine without departing from the invention in which—

I claim—

1. In a typewriting machine, the combination of a platen, a rock shaft journaled on an axis parallel thereto, arms extending forwardly from said rock shaft above said platen, a clamping bar carried by said arms, yieldable means acting on said rock shaft to normally hold said clamping bar away from said platen, and means for overcoming said yieldable means to force the clamping bar against said platen.

2. In a typewriting machine, the combination of a platen, a rock-shaft mounted parallel therewith, arms rigidly attached thereto and extending forwardly to a point intermediate the writing point and the top of said platen, a clamping bar extending intermediate the arms, an operating lever for said rock-shaft yieldingly attached thereto, a spring acting on said lever to normally maintain said clamping bar out of engagement with said platen and hand operated means for engaging said clamping bar with the platen.

3. In a typewriting machine, the combination of a platen, a rock shaft mounted parallel therewith, a non-rotatable clamping member attached thereto and extending forwardly to a point intermediate the writing point and the top of said platen, an operating lever for said rock shaft yieldingly attached thereto, a spring acting on said lever to normally maintain said clamping member out of engagement with said platen and hand operated means for engaging said clamping member with the platen.

4. In a typewriting machine, the combination of a carriage, a platen rotatably mounted on said carriage, paper feed-rolls normally under spring pressure coöperating therewith, a rock shaft on which said feed-rolls are rotatably mounted, radial slots in said carriage for the support of said rock shaft, cam plates rigidly attached to said rock shaft having a plurality of concaved surfaces different radial distances from the axis of said rock shaft, roller studs mounted on said carriage and coöperating with said cam plates to force the rock shaft radially away from the platen.

5. In a typewriting machine, the combina-

tion of a carriage, a platen rotatably mounted on said carriage, paper feed-rolls normally under spring pressure coöperating therewith, a rock shaft on which said feed rolls are rotatably mounted, radial slots in said carriage for the support of said rock shaft, cam plates rigidly attached to said rock shaft having a plurality of concaved surfaces different radial distances from the axis of said rock shaft, detents intermediate said concaved surfaces, roller studs mounted on said carriage and coöperating with said cam plates to force the rock shaft to a locked position radially away from the platen.

6. In a typewriting machine, the combination of a platen, a rock shaft, a clamping bar carried by said rock shaft, a paper feed roll also carried by said rock shaft, yieldable means normally pressing said feed roll against the platen, said clamping bar being normally retained out of engagement with the platen by said yieldable means, and means for oscillating said rock shaft to remove the feed roll from the platen and to move the clamping bar to the platen.

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