Feb. 20, 1934. C. E. ANSLEY 1,947,450

PLATEN AND PAPER FEED FOR TYPEWRITERS AND THE LIKE

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FIG. 1.

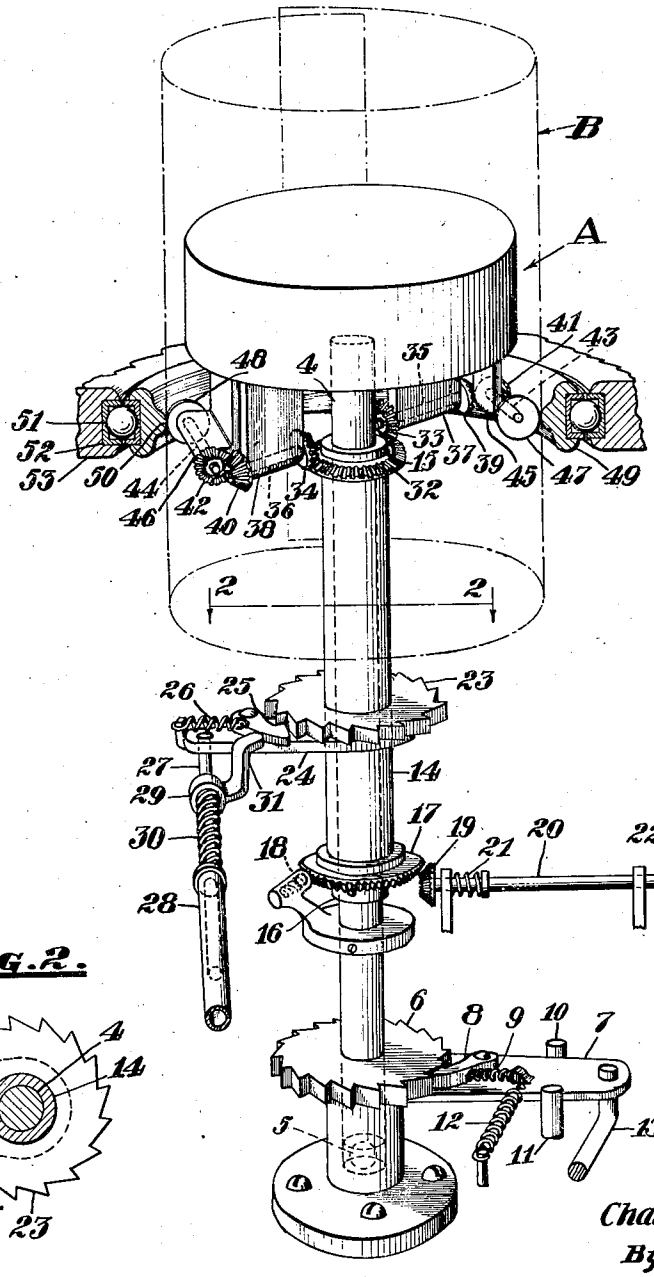


FIG. 2.

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PLATEN AND PAPER FEED FOR TYPEWRITERS AND THE LIKE

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4 Claims. (Cl. 197—10)

This invention relates to platen and paper feed mechanisms for typewriters and the like, and has as its primary object the provision of a means whereby a sheet of paper or the like in cylindrical form may be presented to the type of a typewriting mechanism and operated in such fashion that imprinting of the type thereon will be effected circumferentially of the paper cylinder and the latter moves vertically in the direction of its axis to effect desired spacing of contiguous lines of the typed matter, and whereby when a line has been written across the paper the latter will be positioned to receive the typed impression at the commencement of a following line thus obviating the use of a shiftable carriage as now commonly employed in typewriting machines.

Another object is to provide instrumentalities for accomplishing the foregoing stated mode of operation including a vertically disposed cylindrical platen with mechanism for rotating the platen with an intermittent movement adapted to be disengaged from the platen to permit free rotation thereof, and also including a mechanism for feeding the cylindrical sheet intermittently adapted to be operated independently to advance or to retract the sheet with a continuous movement throughout the desired portion of the length thereof and which are simple in construction, compact and efficient.

With the foregoing objects in view together with such other objects and advantages as may subsequently appear, the invention resides in the parts and the combination, construction and arrangement of parts hereinafter described and claimed and illustrated by way of example in the accompanying drawing in which:

Figure 1 is a perspective view partly in section depicting a mechanism for carrying the invention into effect;

Figure 2 is a detail in horizontal section taken on the line 2—2 of Figure 1.

Referring to the drawing more specifically A indicates a cylindrical platen arranged with its axis extending vertically and which platen is rigidly affixed to the upper end of a vertical shaft 4 the lower end of which is supported for rotary movement on a foot bearing 5 and is fitted adjacent its lower end with a ratchet wheel 6 fixed thereon. An arm 7 is pivoted on the shaft 4 adjacent the ratchet wheel 6 and has mounted thereon a pawl 8 which is maintained in operative relation to the ratchet wheel 6 under the urge of a spring 9 in such manner that rocking of the arm 7 will effect turning of the shaft 4 with a step by step movement. The arm 7 is positioned between a pair of spaced stops 10 and 11 which serve to limit the extent of swinging movement of the arm 7; the stop 10 limiting rearward movement of the arm and the stop 11 limiting forward movement thereof. A spring 12 acts to normally maintain the arm 7 in its forwardmost position. Connecting with the outer end of the arm 7 is an actuating rod 13 which leads to any suitable mechanism adapted to reciprocate the rod 13 to effect oscillation of the arm 7 and which mechanism, not necessary to be here shown, is controlled by the type bar operating mechanism of a typewriting machine in such manner that on depression of a typewriting key the bar 13 will be advanced in opposition to the spring 12 and on release of such key to cause the spring 12 to advance the arm 7 and thereby effect turning of the ratchet 6.

Revolubly encircling the shaft 4 is a sleeve 14 held against longitudinal movement of the shaft 4 by collars 15 and 16 affixed to the latter. Mounted on the lower end of the sleeve 14 is a bevelled gear 17 the teeth of which are normally engaged by a spring pressed detent 18 whereby the sleeve 14 is normally held against free rotation. A pinion 19 mounted on a reciprocal shaft 20 is positioned for engagement with the bevelled gear 17, being normally held out of engagement therewith by a spring 21 and which shaft is fitted with a hand wheel 22 whereby the shaft 20 may be advanced longitudinally to dispose the pinion 19 in and out of engagement with the gear 17 and also whereby the shaft 20 may be rotated to effect rotation of the sleeve 14.

Mounted on the sleeve 14 is a rachet wheel 23, and pivoted on the sleeve 14 contiguous the rachet wheel 23 is an arm 24 carrying a pawl 25 engageable with the teeth of the racket wheel 23, but normally held out of engagement therewith by a spring 26. Pivotally connecting with the outer end of the arm 24 is a rod 27 the outer end of which telescopes with a tubular bar 28 which leads to a suitable operating mechanism whereby the tubular bar 28 may be reciprocated, and slidably mounted on the rod 27 is a sleeve 29 between which and the tubular stem 28 is interposed a spring 30 which affords a yieldable connection between the sleeve and the rod. Mounted on the sleeve 29 is a finger 31 the outer end of which abuts against the pawl 25 in position to effect advance of the latter on forward movement of the rod 28.

Mounted on the upper end of the sleeve 14 is a bevelled gear 32 engaged on diametrically opposite sides thereof by pinions 33 and 34 fixed on shafts 35 and 36 journalled in bearings 37 and 38 fixed to the under side of the platen A and carried thereby. Mounted on the outer end of the shafts 35 and 36 are bevelled pinions 39 and 40 which mesh with pinions 41 and 42 fixed on shaft 43 and 44 extending at right angles to the shafts 35 and 36 and journalled in bearings 45 and 46 depending from and carried by the under side of the platen A.

Mounted on the shaft 43 and 44 are friction rollers 47 and 48 the perimeters of which are dis-

posed on a plane extending vertically through the axis of the platen A. A floating ring 49 is disposed horizontally on a plane beneath the platen A and has a roll flange 50 on its inner periphery the innermost portion of which is disposed contiguous the peripheries of the rollers 47 and 48, and which ring is supported for free revoluble movement on a series of ball bearings 51 disposed in a horizontally extending raceway 52 carried on a fixed or stationary member 53 of the machine frame, not shown.

In the operation of the invention a piece of paper or similar material on which type impressions are to be made is bent into the form of a cylinder, as indicated by the broken line B in Figure 1, and in this form is fed between the friction rollers 47 and 48 and the roll flange 50 on the floating ring 59 by introducing the upper margin of the sheet between the rollers and flange either from the under or upper sides thereof, and effecting rotation of the rollers 47 and 48 as by operation of the hand wheel 22 to rotate the sleeve 14 through the pinion 19 and gear 17 and thereby effect rotation of the friction rollers 47 and 48 in the desired direction through the bevelled gear 32, pinions 33—34, shafts 35—36, pinions 39—40, pinions 41 and 42, and shafts 43 and 44.

The cylindrical sheet may thus be disposed in any desired position around the platen A preferably eccentric thereto with a portion of the inner periphery of the cylindrical paper contacting the outer periphery of the platen A at the point of impact of type, not necessary to be here shown.

The paper cylinder will then be frictionally engaged by the rollers 47 and 48 carried by the platen A so that on operation of the bar 13 as before described, which effects intermittent rotary motion of the shaft 4 and the platen A, the cylindrical paper will be advanced with the latter so that impressions of the type will be made in a row circumferentially of the paper cylinder with the usual spacing.

By overlapping the end margins of the sheet in forming the cylinder B the underlying portion of the sheet may constitute a margin on the left hand side of the sheet. The paper cylinder is designed to be shifted vertically to effect spacing between contiguous lines of the matter types thereon which is here shown as accomplished through the medium of the tubular rod 28 which is actuated in any desired manner to advance it longitudinally toward the arm 24 and thereby cause it to act through the spring 30 to shift the sleeve 29 and thereby cause the finger 31 to move the pawl 25 into engagement with the teeth, of the rachet wheel 23 and then on continued movement of the rod 28 cause the arm 24 to advance and thereby turn the rachet wheel 23 a partial revolution thereby turning the sleeve 14 and effecting rotation of the friction wheels 47 and 48 as before described thereby effecting upward movement of the paper cylinder B the requisite distance to provide the necessary spacing.

By the provision of the ball detent 18 the sleeve 14 will be normally held against free rotation so that the paper cylinder B will be maintained in its various adjusted positions.

By the provision of the floating ring 49 the paper cylinder B will be permitted to freely rotate with the platen A.

While I have shown and described a specific embodiment of my invention I do not limit myself to the exact details of construction and arrangements shown but may employ such changes and modification of the parts and the construction and arrangement thereof as occasion may require coming within the meaning and scope of the appended claims; it being contemplated, for example, to employ a cylinder of any suitable material on which type impressions may be made which is turnable on its axis to effect spacing of adjacent impressions, which is shiftable longitudinally to effect spacing between contiguous lines of the imprinted matter, and which is adapted to be employed in conjunction with the key board and type mechanism of typing machines in such manner that movement of the cylinder may be controlled by operation of the key board, as will be readily understood.

I claim:

1. In a typewriting machine or the like, a cylindrical platen arranged with its axis extending vertically, means for supporting a sheet in cylindrical form around said platen, with the adjacent margins of the sheet overlapped, means whereby effecting rotation of said platen will turn said sheet circumferentially, and means for shifting said sheet longitudinally relatively to said platen, including friction rollers carried by the platen and engaged with the inner surface of said sheet.

2. In a typewriting machine or the like, a cylindrical platen arranged with its axis extending vertically, means for rotating said platen around its axis, means carried by said platen for holding a sheet in cylindrical form around the said platen with the adjacent margins of the sheet overlapped and for effecting longitudinal movement of said sheet relatively to said platen, said last named means also including a support, a ring rotatable on the support and surrounding said platen, and friction rollers on said platen arranged to grip the sheet between them and the inner periphery of said ring.

3. In a typewriting machine or the like, a cylindrical platen, a vertically extending shaft carrying said platen, means for effecting intermittent rotation of said shaft, means carried by said platen for supporting a sheet in cylindrical form around said platen, a sleeve encircling said shaft, means for intermittently rotating said sleeve, and means included in said sheet supporting means for advancing said sheet longitudinally relative to said platen on turning said sleeve, and including friction rollers engaged with the inner side of said sheet, and a rotatable ring engaged with the outer side of said sheet.

4. In a typewriting machine or the like, a floating ring, a support therefor, a platen surrounded by said ring, a plurality of friction rollers carried by said platen arranged in cooperative relation with the inner periphery of said ring adapted to engage and support a sheet in cylindrical form around said platen, said ring being spaced apart from said platen throughout the peripheries thereof whereby adjacent margins of said sheet may be overlapped between said ring and platen, means for rotating said friction rollers to effect longitudinal movement of said sheet, and means for turning such sheet circumferentially while engaged by said rollers.

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