

May 9, 1939.

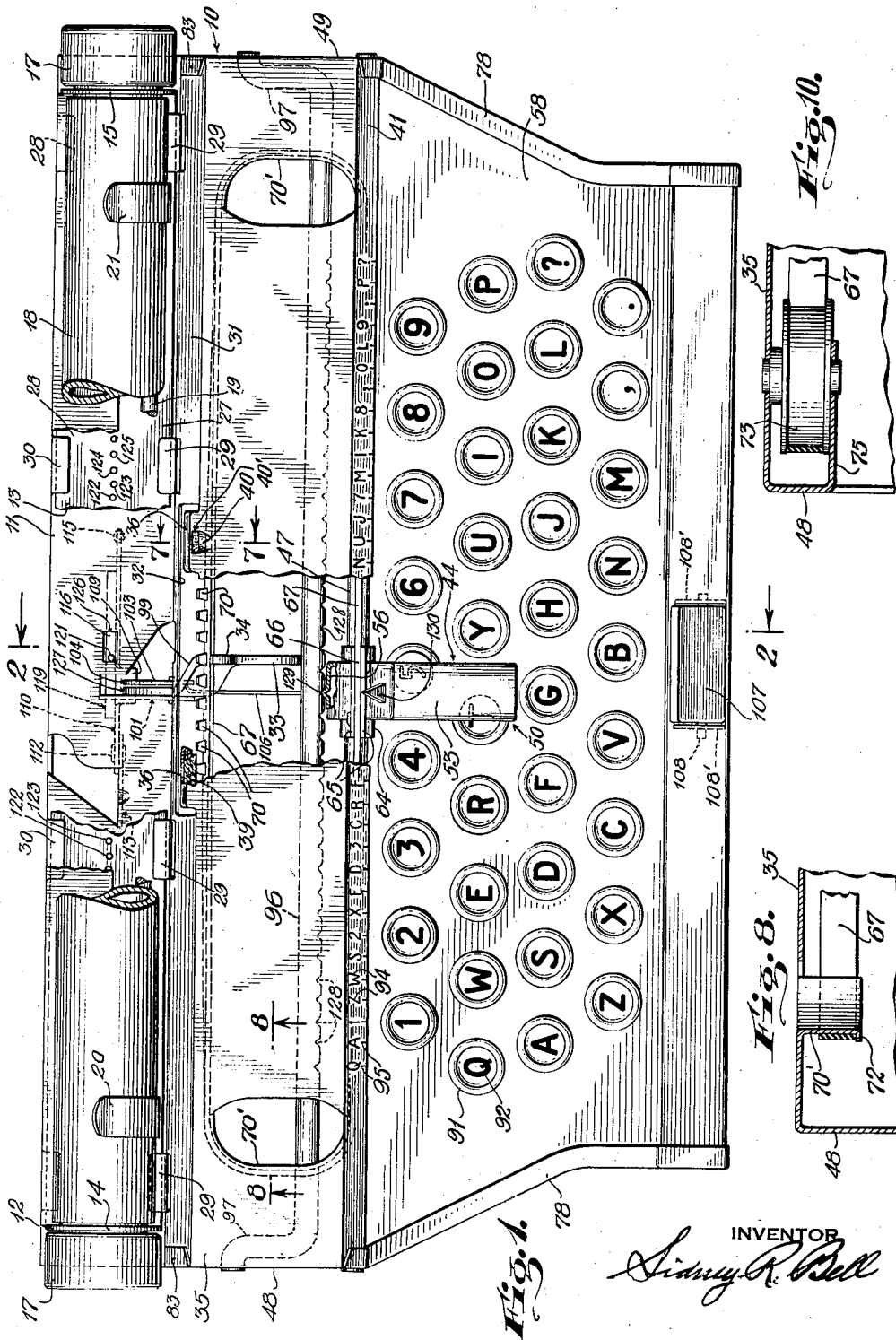
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TOY TYPEWRITER

Filed April 2, 1935

3 Sheets-Sheet 1



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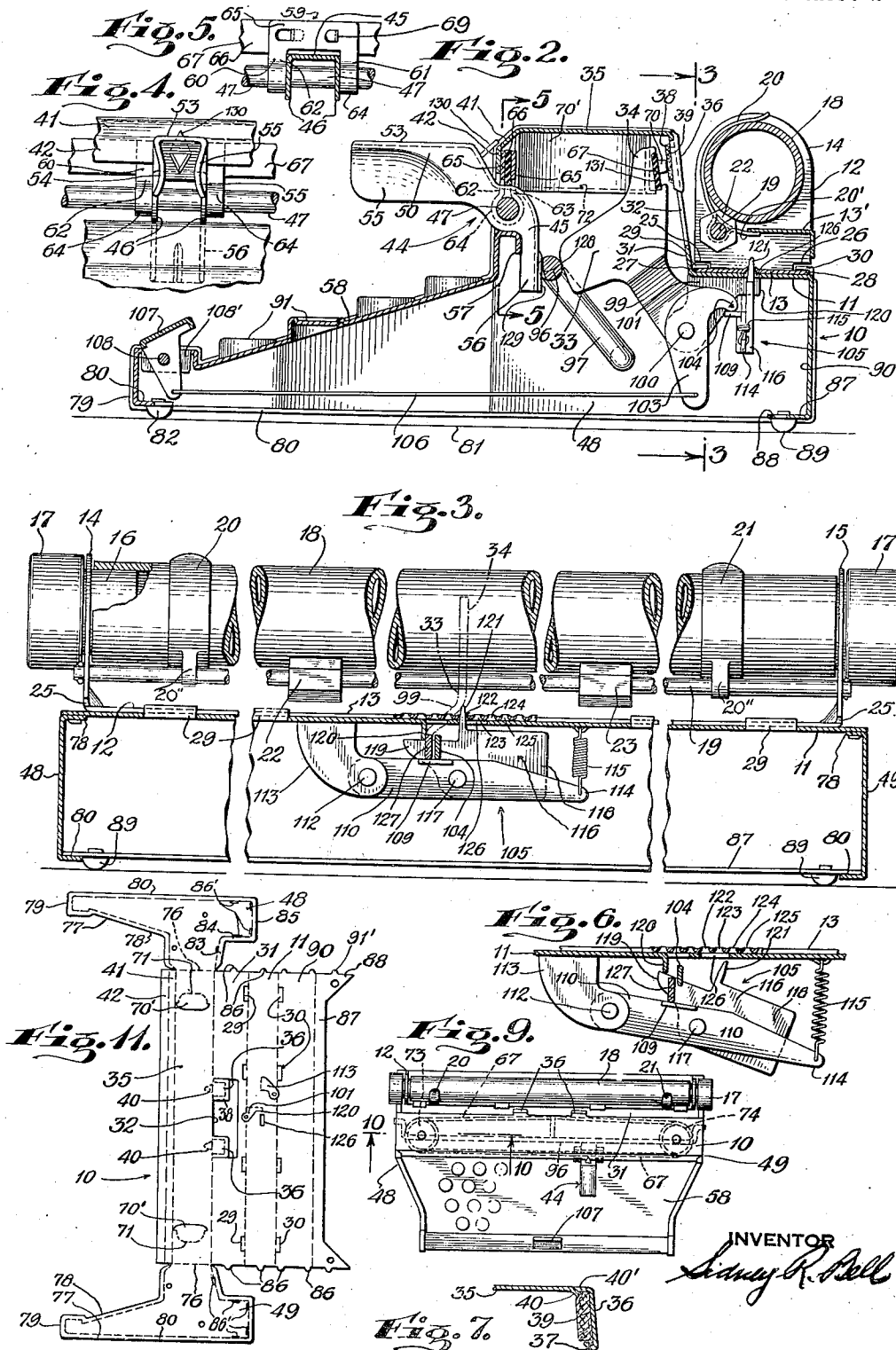
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INVENTOR

S. R. Bell

UNITED STATES PATENT OFFICE

2,157,108

TOY TYPEWRITER

Sidney R. Bell, Stamford, Conn.

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5 Claims. (Cl. 197-89)

The invention relates to an educational toy and has as an object the provision of an exceedingly simple, efficient form of toy typewriter simulating the appearance of a typewriter having a conventional keyboard. Further objects of the invention will appear from the following description when read in connection with the accompanying drawings showing illustrated embodiments of the invention wherein:

Fig. 1 is a plan view of a toy typewriter according to one embodiment of the invention, partly broken away to show the internal operating mechanism.

Fig. 2 is a section viewed on line 2-2 of Fig. 1.

Fig. 3 is a longitudinal broken sectional view along the line 3-3 of Fig. 2.

Fig. 4 shows an elevational view of the indicia selector for driving a type carrying endless belt.

Fig. 5 is a section along the line 5-5 of Fig. 2.

Fig. 6 is an elevational view of the escapement for advancing the platen carriage step by step.

Fig. 7 is a sectional view of an inking pad taken along the line 7-7 of Fig. 1.

Fig. 8 is a sectional view along the line 8-8 of Fig. 1.

Fig. 9 illustrates a plan view of a slightly modified form of toy typewriter, shown on a smaller scale.

Fig. 10 is a section along the line 10-10 of Fig. 9.

Fig. 11 is a plan view of a blank forming a complementary part of the frame of the toy typewriter according to the invention.

Fig. 12 is a view similar to Fig. 2 but illustrating the selector depressed and the presser arm actuated to position a selected portion of the type carrying endless belt against the platen.

Fig. 13 is a sectional view along the line 13-13 of Fig. 12.

Fig. 14 illustrates in perspective a slightly modified mechanism for actuating the presser arm or pivoted lever which slidably guides the type carrying endless belt.

Fig. 15 is a transverse sectional view of a modified linkage system for actuating a companion presser arm and

Fig. 16 is a plan view of Fig. 15.

As shown, the toy typewriter comprises an elongated hollow frame 10 suitably stamped out of sheet metal or the like. Mounted on a rear horizontal wall 11 of the frame is a slidable U shaped carriage 12 comprising an elongated horizontal flat perforated bar 13 having upstanding terminal perforated lugs or ears 14 and 15 each of which rotatably sustains a cylindrical shank

or trunnion as 16 carried by a knurled manipulator cylinder 17.

Rigidly secured to the spaced shanks 16 and bodily rotatable therewith is a hollow cylindrical platen 18 which may be made of relatively heavy cardboard or of any suitable rubber. It follows therefore that if either of the manipulating cylinders 17 be rotated the platen will also be rotated.

Arranged between spaced ears 14 and 15 and appropriately secured thereto is a rod 19 on which is slidably mounted spaced spring guide clips 20 and 21 adapted to removably hold a sheet of paper against platen 18. Spring clips 20 and 21 each include an intermediate reflexed or eye portion 20' integrally associated with rearwardly extending terminal 20' normally abutting paper guide 13 carried by the platen carriage. By this arrangement the spring clips exert the required pressure to hold the paper coiled about the platen in place.

A pair of resilient slidable or fixed hexagonal-shaped blocks or flat face members 22 and 23 carried by rod 19 are utilized to feed a sheet of paper in step by step fashion from the rear of the platen towards a front face thereof, the blocks 22 and 23 being in contact with the paper about the platen and constituting means for adjusting the paper relative to the platen for line spacing purposes. Accordingly, the need for utilizing of line spacing means in the form of a pawl and ratchet arrangement is eliminated. This is an important feature of the invention.

The lower corner portions of the spaced ears 14 and 15 each comprise spaced recesses or notches 25 and 26 permitting marginal portions 27 and 28 of the elongated bar 13 to be slidably disposed in an associated guide track or channel formed by the spaced flanges 29 and 30 struck out from frame 10. Hence platen 18 may be slidably guided longitudinally of the frame.

Extending upwardly and forwardly relative to horizontal wall 11 is an inclined wall 31 having an intermediately arranged opening 32 through which the forward portion 34 of the pivoted presser arm or lever 33 may be projected. Integral with and extending forwardly of the inclined wall 31 is the horizontal wall 35 from which depends spaced lugs 36, the sides and bottom of which include flanges 37 forming a rim 38 (see Figs. 7, 11 and 13) adapted to be flexed to removably crimp the lower and side marginal portions of an associated inking pad 39 having its upper portion removably secured by a prong as 40 struck out from horizontal wall 35. The form-

ing of this prong 40 also provides the opening 40' leaving exposed a small portion of the ink pad 39 to enable reinking of the pad by the use of an applicator such as a small stick dipped

into a bottle of ink and then touched to the pad. Extending downwardly and outwardly from the horizontal wall 35 is an inclined wall 41 from which depends the vertically disposed flange 42 in back of which is slidably arranged the rear portion of an indicia and type selector generally identified 44.

The selector 44 comprises a channel shaped body 45 having spaced sides 46 slidably mounted on a cylindrical guide rod 47 secured to the spaced sides 48 and 49 of the frame. The manipulating portion 50 of the selector 44 is disposed forwardly of flange 42 and comprises a top wall 53 having spaced inwardly curved depending sides 54 and 55 which may be easily grasped by the operator to shift the selector along rod 47. The rearward portion 56 of selector 44 is bent downwardly and is disposed at the back of depending guide flange 57 forming an integral part of the body of the embossed keyboard designated generally 58.

Closely straddling spaced sides 46 of channel 45 and slidably actuated by the selector is a U shaped saddle 59 having spaced sides 60 and 61 each of which includes transversely spaced arms 62 and 63 integrally interconnected by a suitable arcuate eye or bearing as 64 slidably guided on the fixed rod 47.

Common to corresponding arms of the sides of the saddle is a strap 65, the spaced straps forming a gap between which a portion 66 of a flexible type carrying endless belt 67 is rigidly secured, for example, by suitable prongs 69 struck out from the spaced straps 65, which prongs are driven into the resilient endless belt and subsequently bent against the sides of the latter. In other words, if the manipulating portion 50 of the selector be slidably displaced along the rod 47, saddle 59 will also be shifted and hence the endless type carrying belt 67 will be correspondingly displaced. The endless belt 67 may be of any suitable material such as cloth, or as shown of suitable rubber carrying spaced type as 70 selectable upon the actuation of the shiftable selector 44.

In Figs. 1 and 8, it will be observed, that the top wall 35 of the frame is provided with integral arcuate depending spaced guide portions 70' which are struck out from the wall 35 of the blank shown in Fig. 11 along the dotted lines 71 and subsequently bent downwardly to form means for slidably guiding the ends of the type carrying belt 67, which is retained on the guides 70' by an associated flange 72.

With the form shown in Figs. 9 and 10, the endless type belt 67 is mounted on a pair of rotatable spools 73 and 74 appropriately journaled to top wall 35 and a flange 75 struck out from an associated depending wing or side as 48 of the frame.

Wings or sides 48 and 49 are bent downwardly along the score lines 76 and the marginal rim 77 thereof is bent to provide inclined inwardly extending flanges 78 and vertical flanges 79 to which the inclined upper and front walls of the keyboard 58 are respectively and appropriately secured, such as by solder or the like.

Flanges 80 of the wings 48 and 49 are bent inwardly and are utilized as a seat to support the hollow casing formed by the frame and the keyboard on a horizontal surface 81 or if desired suitable cushion and resilient feet 82 may be attached to flanges 80 to prevent marring of surface 81.

In addition flanges 83 are suitably connected to

the ends of the inclined wall 31 and flanges 84 are similarly connected to the ends of horizontal wall 11 while flanges 85 are secured to the vertical rear wall 90. Tabs or tongues 86 of walls 31, 11 and 90 are utilized to interconnect with striations as 86' of wings 48 and 49 to connect these walls and flanges of the wings together in a manner well understood in the art of sheet metal working.

The rear vertical wall 90 is provided with a terminal flange 87 having end portions 88 to which is appropriately attached resilient or cushion feet 89 to prevent marring of supporting surface 81 and tongues or tabs 91' are utilized to facilitate securing end portions 88 to flanges 80.

The frame construction hereinbefore described may be considered as a hollow casing having complementary parts, one constituted by the blank disclosed in Fig. 11 and the other comprising keyboard 58 which is secured to the wings of the blank. In this connection, it will be observed that the keyboard is inclined and includes several rows of spaced bosses 91 each identified by suitable indicia 92, the arrangement being such as to simulate the appearance of a conventional typewriter keyboard.

Inclined flange 41 of the frame 10 is provided with spaced suitable indicia as 94 and guide lines 95, which line up with corresponding indicia as 92 of associated bosses on the keyboard 58. For example, letter W of flange 41 has a guide line 95 and the latter is in alinement with boss W on the keyboard. If desired the indicia may be embossed on the inclined wall 41. As an alternative, an indicia strip may be applied to inclined wall 41 in place of the embossing.

Swingable relative to the sides of frame 10 is a crank 96 which comprises a rod having offset ends 97 rotatably carried by sides 48 and 49. This crank is actuated by the tail or rear portion 56 of selector 44 slidably and rotatably carried by rod 47. That is to say, if the front manipulating portion 50 of selector 44 be depressed, tail 56 will be swung upwardly and consequently crank 97 will be swung rearwardly. Crank 97 in turn actuates the pivoted presser arm or lever 33 causing head portion 34 thereof to project rearwardly through opening 32 and against a selected part of the endless type belt 67, such that the selected portion thereof is distended and moved against the platen 18 where it casts an impression on the paper held thereabout. Upon removal of pressure from selector 44, lever 33 is urged forwardly by the resisting force in the belt due to contraction thereof to normal position.

Presser arm 33 has a lower offset portion 99 pivotally carried by a pin 100 rigidly secured to a flange 101 bent downwardly from the horizontal rear wall 11 of the frame.

Rotatably mounted on pin 100 is a lever 103 having at its upper end a cam shaped portion 60 or nose 104 for actuating an escapement mechanism generally designated 105. Lever 103 is actuated by a link 106 operatively attached to the lower end thereof. Link 106 is controlled by a depressible manipulator 107 pivotally sustained on a fulcrum pin 108 fixedly carried by spaced depending lugs 108' struck out from the keyboard at the forward marginal portion thereof. More specifically link 106 operatively interconnects lower portion of the depressible manipulator 107 and lever 103 such that if manipulator 107 is depressed nose 104 is swung downwardly.

Cooperating with nose 104 is a forwardly extending lug 109 of a lever 110 which has one end pivoted on pin 112 carried by fixed arm 113 de-

pending from and appropriately secured to horizontal wall 11 of the frame. To the other end 114 of lever 110 is connected a terminal of a helicoidal spring 115 having its upper portion anchored to wall 11 of the frame.

Pivotaly carried by lever 110 is a supplementary carriage locking lever 116. More specifically lever 110 has a fulcrum pin 117 on which supplementary lever 116 is pivotaly retained. Lever 116 has a relatively heavy or weighted end 118 and therefore when lever 110 has been depressed upon downward displacement of nose 104, lever 116 automatically tilts relative to lever 110 due to the action of the weighted end 118. Limit of the swing or tilt of lever 116 is controlled by an attenuated extension 119 thereof cooperating with a depending stop lug 120 of wall 11.

Extending upwardly from supplementary lever 116 is a tooth 121 which cooperates progressively and severally with a series of aligned and spaced similar perforations 122, 123, 124, 125 etc. disposed along the length of flat bar or wall 13 of the rectilinearly displaceable carriage 12 for advancing the latter step by step upon each complete cycle of lever 110. For example in Fig. 3, lever 110 is held normally raised by spring 115, lever 116 is disposed horizontally and tooth 121 thereof extends through an opening 126 of wall 11 and projects into and through an opening 122 of bar 13 of the carriage 12. If lever 110 be depressed, spring 115 becomes distended, and tooth 121 is moved out of its opening 122. Hence lever 116 tilts relative to lever 110. Consequently, tooth 121 is freed of bar 13 of the carriage and the latter may be said to be unlocked.

With the tooth 121 disposed in a perforation as illustrated in Fig. 3 carriage 12 is held locked. Where the tooth is free of the carriage, the latter may be advanced one step laterally on the return stroke of lever 110 which takes place automatically upon removal of manual pressure from spacing manipulator 107 or upon removal of pressure by the operator from the selector 44.

On the return stroke of lever 110, tooth 121 enters a next successive notch or opening as 123 of the carriage and accordingly the latter is shifted bodily one step to the left. It will be observed that upward displacement of lever 110 is limited by tooth 121 engaging the left end of slot 126 and extension 19 cooperating with stop lug 120.

If manipulator of selector 44 be depressed, crank 96 swings rearwardly and the forward portion 34 of presser arm 33 projects type 70 of a selected portion of endless belt 67 against platen 18. As the forward portion 34 of the presser arm swings rearwardly, cam or nose 127 thereof abuts lug 109 of lever 110 of the escapement. Consequently tooth 121 is freed from the platen carriage (see Fig. 12). Once tooth 121 is free, lever 116 tilts relative to lever 110. Upon removal of pressure from selector 44, spring 115 raises levers 110 and 116 and tooth 121 enters a next successive perforation as 123, advancing the platen carriage one step to the left and the carriage is locked, that is, tooth 121 interlocks with the carriage to prevent lateral movement of the latter. When tooth 121 is in engagement with a perforation of the carriage 12, the latter is operatively locked against lateral displacement to the left but the carriage may be pushed to the right for starting a new line of typing. In this connection tooth 121 clicks in and out of successive perforations against tension of spring 115.

With the carriage interlocked indicia selector

may be slidably moved along rod 47 in the selection of a character desired to be printed. If the selector be positioned to line up with the letter "W" of the keyboard, corresponding type W of the type carrying endless belt 67 is registered with opening 32 of the frame and with presser arm or member 34. Hence printing is effected upon depressing the forward part of selector 44, and pursuant to printing, the platen carriage is automatically advanced one step to the left.

As an aid to locating and holding the selector 44 in a predetermined position along rod 47, locking means have been provided to prevent accidental displacement of the selector after having been set for such position. For this purpose crank 96 is provided with a plurality of spaced indentations 128 which resiliently interlock with detent or rib 129 protruding from tail or rear portion 56 of selector 44. In other words after the selector is set, accidental displacement of the selector relative to supporting rod 47 is prevented.

Selector 44 carries an index or pointed portion 130 which is utilized to align the selector severally with guide lines as 95 associated with inclined wall 41 of the frame to facilitate the proper selection of type of the endless belt 67. When selector 44 is slidably displaced relative to rod 47, belt 67 is correspondingly displaced, the belt in its movement being guided by depending struck out projections 70' as shown in Fig. 1 or controlled in its displacement by spools 73 of the embodiment shown in Figs. 9 and 10. In either case, however, as the belt is displaced, the type thereof contacts the spaced inking pads 39 (see Fig. 13) so that selected type will be freshly coated with ink at the time of the registration with opening or window 32 of the frame.

With selector 44 slidably displaced along rod 47 but not depressed, however, endless type carrying belt 67 is slidably guided within the forward portion 34 of presser arm 33 in a retaining channel 131.

In accordance with the invention, the platen carriage may be laterally advanced independent of the operation of the selector. Hence from an inspection of Fig. 2, it will be observed, that if manipulator 107 be depressed, lever 103 swings on pin 100 relative to presser arm 33. Hence the escapement is operated although the presser arm is in an inoperative position.

In the form according to Fig. 14, selector 44 is slidably but non-rotatably mounted on a squared rod 135 which is journaled in the spaced slides as 48 and 49 of the frame. Non-rotatably attached to rod 135 is a U shaped yoke 136. When selector 44 is depressed, rod 135 is rotated and consequently yoke 136 is raised. Hence presser arm 33 is actuated and moves rearwardly to project a selected portion of the type carrying belt against the platen.

According to the form disclosed in Figs. 15 and 16, selector 44 which controls displacement of the endless belt 67 is slidably mounted on square rod 135 and as the latter is rotated upon depression of the selector, spaced arms 137 carried by rod 135 have their inner ends upwardly displaced and consequently move inner portions of the spaced arms 137' upwardly. Arms 137' are fixed to square rod 138 to which presser arm 33 is secured. Upon depression of selector 44, the inner portions of arms 137 and 137' are moved upwardly by reason of a lost motion connection, that is, each arm 137 carries a pin 139

which is disposed in an elongated slot 140 of a companion arm 137'.

When arms 137' are actuated, rod 138 which is journaled in the spaced sides of the frame, is also rocked, and consequently, the upper portion of presser arm 33 is projected against platen 18.

In the case of the embodiments disclosed in Figs. 14 to 16 inclusive, upon removal of manual pressure from selector 44, pressure arm 33 thereof automatically retracts from the companion platen as in the case according to the embodiment disclosed in Fig. 1.

After platen carriage 12 has been advanced step by step bodily to the left, it may be conveniently and quickly displaced to the right. In this connection, if a slight thrust towards the right is imparted to the left hand knob 17, locking tooth 121 is moved downwardly and becomes free of the carriage. The escapement bodily pivots on fulcrum pin 112 against the resistance of spring 115 which becomes slightly distended. Upon stopping of the platen carriage, tooth 121 automatically enters an opening as 123 and interlocks therewith.

Without further detailed discussion, it is apparent, that the present invention has as its primary object to provide an attractive educational toy having a simplified but practical construction particularly applicable for children's use and without further analysis, it is apparent that the toy typewriter of the character disclosed comprises relatively few parts, susceptible to inexpensive manufacture and ease of assembling.

In the broader aspects of the invention, I do not desire to be understood as limiting its embodiments to the structural elements herein shown illustratively and described in detail as a wide variety of modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. In a toy typewriter, a casing having an opening, a step by step shiftable carriage rectilinearly guided on said casing and having an elongated plate comprising a plurality of perforations, a step by step rotatable platen supported by said carriage, control means, pivoted escapement means actuated by said control means comprising a weighted member disconnectable from a perforation of said plurality to release said carriage, springs means cooperating with said escapement means to elevate said member to permit the latter to cooperate with a next successive perforation of said plurality to advance said carriage and removably interlock therewith, and spacer means independent of said control means for operating said escapement means to advance said carriage one step laterally.

2. In a toy typewriter, a casing, a carriage slidably guided on said casing and having a plate

comprising a plurality of aligned perforations, escapement means comprising a weighted pivoted member normally interlocked with a perforation of said plurality, manually controlled means for actuating said escapement means to disconnect said member from said last mentioned perforation, spring means effective upon removal of pressure from said manually controlled means for operating said member to coact with a next successive perforation of said plurality to advance said carriage one step laterally and removably interlock therewith, and driving means for actuating said escapement means independently of said manually controlled means.

3. In a toy typewriter, a casing, a carriage slidably guided by said casing and having a horizontal plate comprising a row of aligned perforations, an escapement member, means for pivotally supporting one end of said escapement member, spring means normally holding another end of said escapement member elevated, and an unbalanced member pivoted to said escapement member and including means adapted to cooperate with one of said perforations to advance said carriage one step laterally.

4. In a toy typewriter, a casing, a carriage slidably guided by said casing and having a horizontal plate comprising a row of aligned perforations, an escapement member, means for pivotally supporting one end of said escapement member, spring means for holding another end of said escapement member normally elevated, an unbalanced member pivoted to said escapement member and including projecting means cooperating with one of said perforations to prevent displacement of said carriage, and means to actuate said escapement member against the resistance of said spring means and automatically tilt said unbalanced member to remove said projecting means from one of said perforations.

5. In a toy typewriter, a casing, a carriage slidably guided on said casing and having a horizontal plate comprising a row of aligned perforations, an escapement member, means for pivotally supporting one end of said escapement member, spring means for holding another end of said escapement member normally elevated, an unbalanced member pivoted to said escapement member and including projecting means cooperating with one of said perforations to prevent displacement of said carriage, and means to actuate said escapement member against the resistance of said spring means and automatically tilt said unbalanced member to remove said projecting means from one of said perforations, said spring means pursuant to release of said actuating means causing said escapement member to be elevated to shift said unbalanced member whereby said projecting means enters another of said perforations to displace said carriage one step laterally.

SIDNEY R. BELL.