

July 5, 1927.

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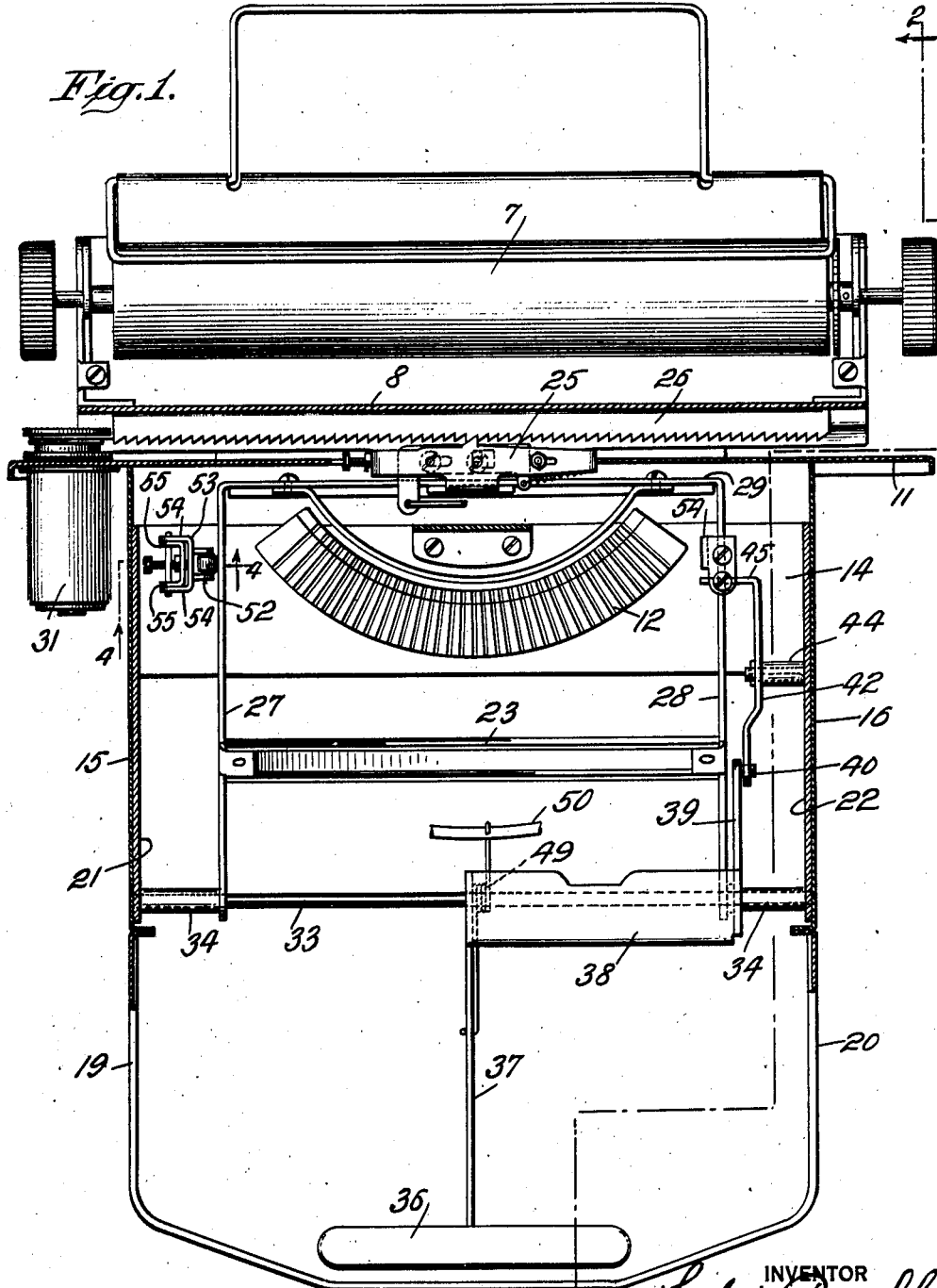
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CHILD'S TYPEWRITING MACHINE

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2 Sheets-Sheet 1

Fig. 1.



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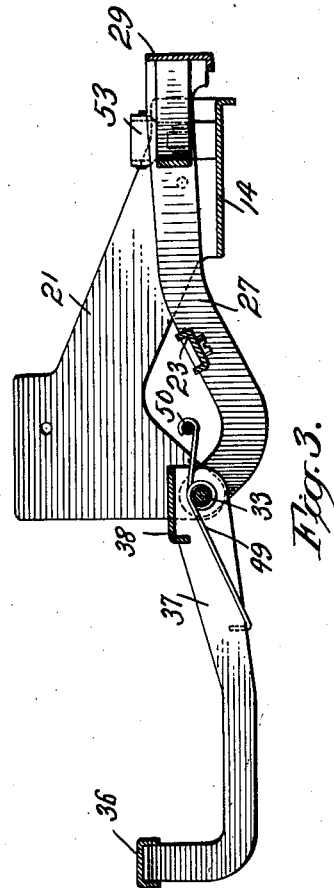
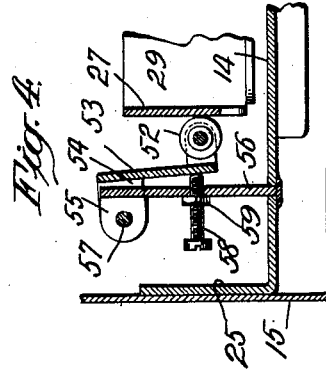
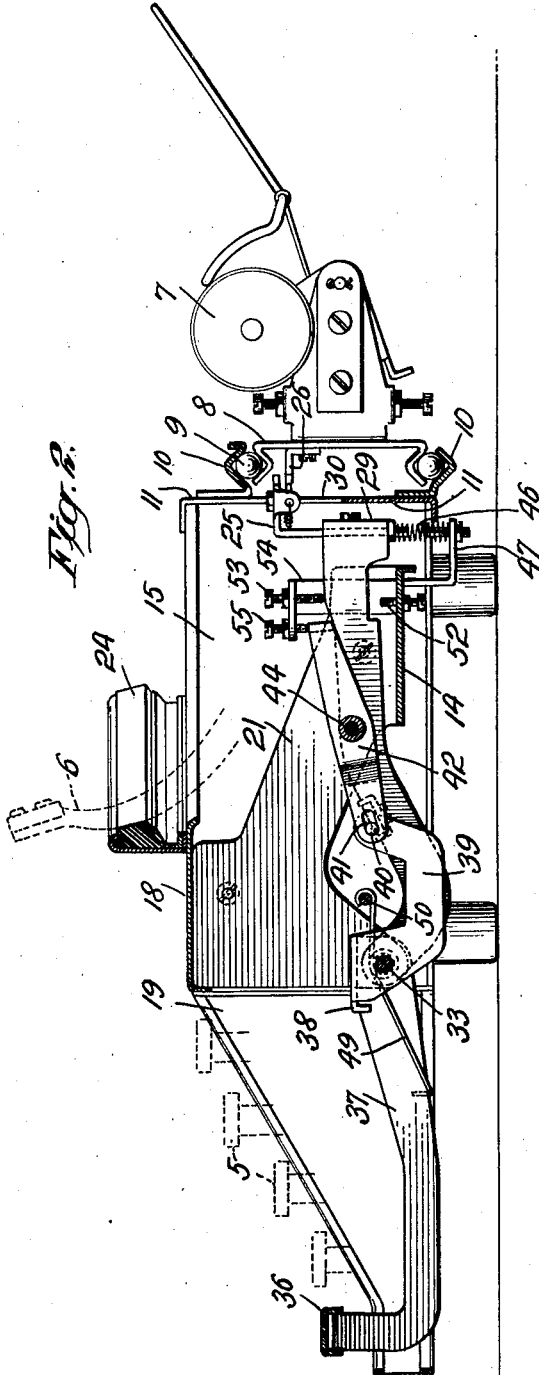
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CHILD'S TYPEWRITING MACHINE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

LUDWIG REISCHL, OF NUREMBERG, GERMANY, ASSIGNOR TO BING WERKE, OF NUREMBERG, GERMANY.

CHILD'S TYPEWRITING MACHINE.

Application filed February 19, 1926, Serial No. 89,255, and in Germany February 21, 1925.

The invention relates to an improvement in children's typewriting machines. The child's typewriting machine of the type to which this invention relates, although essentially a toy, is provided with a standard keyboard common to the better known brands of typewriters for commercial use. Since, however, toy typewriters for children must be constructed as cheaply as possible and yet be workable the machines differ radically in construction from the machines for commercial use. The type of child's typewriting machine to which the present invention relates is provided with a transversely arranged wall at the back end of the machine and on the rear side of which the carriage provided with the paper roller is mounted. The front side of the carriage is provided with a longitudinally disposed rack by means of which the carriage is advanced intermittently as the various letter keys and the spacing key are struck. The object of the present invention is to simplify, strengthen and render more effective the parts for supporting the pawl mechanism which engages with the rack on the paper roller carriage. To the accomplishment of this object the invention consists in the child's typewriting machine provided with the improved parts hereinafter fully described and particularly pointed out in the appended claims.

In the accompanying drawings Fig. 1 is a top plan, partly in section, of so much of a child's typewriting machine as is necessary to illustrate the application of the improvements of the present invention thereto; Fig. 2 is a longitudinal section through the machine, taken on the line 2—2 of Fig. 1, and showing the yoke for supporting the pawl mechanism and the space key levers in side elevation; Fig. 3 is a longitudinal section through the pawl supporting yoke and showing the space key and a part of the supporting frame in side elevation; and Fig. 4 is an enlarged section taken along the line 4—4 of Fig. 1.

The child's typewriting machine as illustrated in the drawings and in which the features of the present invention are incorporated comprises in common with typewriters of this class a standard key board indicated at 5 in Fig. 2. The individual keys of the key board are each connected with a type-bar 6 (only one being shown)

which, when its corresponding key is depressed, swings rearwardly and strikes on the paper rolled about the roller 7 supported on a carriage generally indicated at 8. This carriage travels transversely across the rear end of the main portion of the machine and is supported by anti-friction bearings 9 in guideways 10 secured to the transverse rear wall 11 of the frame of the machine. The slotted arcuate member 12 resting on the transverse support 14 serves to guide the type-bars 6. The frame of the machine consists of the transverse rear wall 11, two side walls 15 and 16 and a top wall 18. The side walls 15 and 16 are extended forwardly at 19 and 20 to constitute a fence around the keyboard. The transverse support 14 is provided at its ends with the upwardly and forwardly extending side members or arms 21 and 22 which are closely embraced by the side frame-walls 15 and 16. Arranged transversely across the top 18 of the frame of the machine is the arcuate bumper 24 against which the type-bars 6 rest while in normal, inoperative position.

The present invention is specifically an improvement in the means for supporting the pawl mechanism for controlling the actuation of the paper roller carriage and in certain parts cooperating therewith. Other novel features incidentally illustrated and described in connection with the foregoing parts form the subject-matter of my copending application for Patent Serial No. 95,003, filed March 16, 1926.

The member for supporting the pawl mechanism, generally indicated at 25, for cooperating with the rack 26 of the paper roller carriage is in the form of a U-shaped yoke comprising the side arms 27 and 28 and the cross-piece 29; to the middle of the upper edge of the latter the pawl mechanism 25 is attached. The cross-piece 29 of the pawl supporting yoke is located in front of the transverse wall 11 in which is cut an opening 30 so that the pawl mechanism may project therethrough and cooperate with the rack on the paper roller carriage and with the spring mechanism 31 to advance the carriage as described in my said copending application. The arms 27 and 28 of the yoke extend rearwardly from the cross-piece 29 and at their free ends are pivotally connected with a rod or stud 33

which extends transversely across the machine and is secured at its outer ends in the arms 21 and 22 of the support 14. A transversely arranged channel iron 23 holds the arms 27 and 28 firmly and lends rigidity to the yoke structure. The collars or bushings 34 hold the ends of the arms 27 and 28 spaced from the stud supporting arms 21 and 22. The construction of the pawl mechanism and its relation to the rack on the paper roller carriage are such that when the cross-piece 29 of the yoke has been depressed and rises again the carriage is advanced by the spring mechanism 31 one notch of the rack in a left hand direction, viewing Fig. 1.

The means for depressing the cross-piece 29 of the pawl supporting yoke consists of a space key 36, mounted in a novel manner for cooperating with the yoke. The space key 36 is carried on the forward end of an arm 37 pivoted at its rear end on the middle of the rod or stud 33. From the rear end of the arm 37 a hub member 38 extends laterally to an arm 39 pivoted at its front end on the rod 33. Thus the arms 37 and 39 together constitute a bell crank or space key lever. The free, rear end of the arm 39 is provided with a laterally extending pin 40 which is loosely engaged in a slot 41 in the forward end of an intermediate lever 42 pivoted on a stud 44 extending inwardly from the arm 22 of the support 14. The rear end 45 of the intermediate lever 42 is offset laterally and overlies the upper edge of the arm 28 of the yoke. The above described construction is such that when the space key 36 is struck to depress the cross-piece 29 of the yoke and thereby bring about an actuation of the paper roller carriage, the rear end of the arm 39 is raised, lifting the forward end of the intermediate lever 42 and causing the rear end thereof to descend on the arm 28, and thereby depress the cross-piece 29.

The cross-piece 29 is raised, when the space key 36 is released, by means of a coiled expansion spring 46, the upper end of which bears against the underside of the cross-piece 29 and the lower end of which bears against an angle iron 47 secured to and depending from the support 14. The space key 36 is raised to its normal position by means of a spring 49 coiled about the rod 33 and bearing at one end upon the under edge of the arm 37 and secured at the other end to a support 50. An adjustable stop screw 52 passing through the support 14 limits the downward movement of the cross-piece 29, and adjustable stop screws 53 and 55 supported in the upper end of an upright 54 rising from the upper surface of the support 14 limit the upward movement of the cross-piece 29 and of the rear end of the intermediate lever 42, respectively.

There is a constant effort to make children's typewriting machines as cheaply as possible in order that the machines may be within the reach of the purchasing power of the average buyer. The parts of the machine, however, must be strong and durable enough to withstand the rather rough usage to which children and inexperienced persons are likely to put them. Hence such machines to be commercially successful must not only be light and cheap but also strong and durable. The U-shaped yoke for carrying the pawl mechanism of the roller carriage is made of a single piece of sheet metal. The side walls and the cross-piece of the yoke being vertically arranged and the yoke as a whole being pivoted at a relatively great distance from the cross-piece, it is necessary to provide means at the rear end of the yoke for supporting it against the stresses to which it is subjected by the means for actuating the paper roller carriage. And since the rear end of the yoke has a substantially up and down movement it is necessary that the bracing means for the yoke be adapted thereto without imposing friction on the yoke. The means for bracing the rear end of the yoke so as to enable it to withstand the transverse stresses imposed upon it by the mechanism for advancing the paper roller carriage consists of a roller 52 pivoted on the lower end of an arm 53 provided at its upper end with the ears 54 which embrace the ears 55 of an upright 56 secured in the support 14. The arm or lever 53 is pivotally connected with the upper end of the upright 56 by means of the pin 57 which passes through the ears 54 and 55. A screw 58 which passes through the support 56 bears against the lower end of the arm 53 and provides means for adjusting the pressure with which the roller 52 bears against the outer surface of the arm 27 of the yoke. A check nut 59 secures the screw 58 in adjusted position. The axis of the roller 52 is arranged longitudinally with the arm 27 of the pawl supporting yoke so that the roller will turn as the yoke is depressed when the space key is struck, and rises again when the space key is released, thus eliminating friction, the roller at the same time preventing the yoke from being distorted under the stresses of the mechanism for actuating the paper roller carriage.

Having thus described the invention what I claim as new is:—

1. In a typewriting machine of the class described, a frame, a paper roller carriage, a rack on the carriage, a pawl for cooperating with the rack, a stud secured transversely in the frame, a U-shaped yoke on which the pawl is mounted, said yoke being pivotally mounted at the ends of its arms on the stud, a space key lever mounted on the stud, and an intermediate lever pivoted in the frame, said intermediate lever having a

loose connection with the space key lever and bearing upon the yoke so as to depress the cross-piece thereof when the space key lever is depressed.

5 2. In a typewriting machine of the class described, a frame, a paper roller carriage, a rack on the carriage, a pawl for cooperating with the rack, a stud secured transversely in the frame, a U-shaped yoke pivoted at the
10 ends of its arms on the stud and extending rearwardly in the machine for supporting the pawl, a space key lever mounted on the stud, and means connected with the space key lever for acting on the yoke.

15 3. In a typewriting machine of the class described, a frame, a paper roller carriage, a rack on the carriage, a pawl for cooperating with the rack, a support for the pawl pivotally mounted in the frame, and a lever
20 for actuating the pawl support pivoted coaxially with the pawl support.

4. In a typewriting machine of the class described, a frame, a paper roller carriage, a pawl for cooperating with the paper
25 roller carriage, a transverse rod in the frame, a support for the pawl pivoted on the rod, and a lever for actuating the pawl support also pivoted on the transverse rod.

30 5. In a typewriting machine of the class described, a frame, a paper roller carriage, a pawl for cooperating with the carriage, a support for the pawl mounted to have a substantially up and down movement, and an
35 anti-friction bearing for one side of the pawl carrying end of the pawl support.

6. In a typewriting machine of the class described, a frame, a paper roller carriage, a pawl for cooperating with the paper roller carriage, a support for the pawl mounted in the frame to have a substantially up and
40 down movement, a lever supported from the frame, and a roller pivoted in the lever and bearing against one end of the pawl support.

7. In a typewriting machine of the class
45 described, a frame, a paper roller carriage, a pawl for cooperating with the carriage, a U-shaped yoke pivoted at the free ends of its arms in the frame and extending rearwardly in the machine, the cross-piece of
50 the yoke serving to support the pawl, means for imparting an oscillating movement to the cross-piece of the yoke, and a roller supported from the frame and bearing against one of the side arms of the yoke.
55

8. In a typewriting machine of the class described, a frame, a paper roller carriage, a pawl for cooperating with the carriage, a stud fixed transversely in the frame, a U-shaped yoke pivoted at the free ends of its
60 arms on the stud, the cross-piece of the yoke serving to support the pawl, means for depressing the cross-piece of the yoke, a lever mounted on the frame, a roller mounted on the free end of the lever and bearing
65 against one of the side arms of the yoke, and means for adjusting the pressure with which the roller bears against the yoke.

LUDWIG REISCHL.