

June 14, 1955

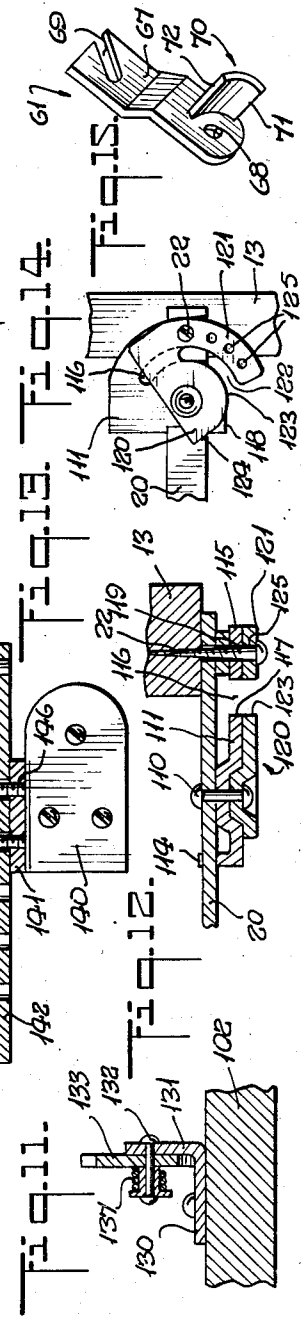
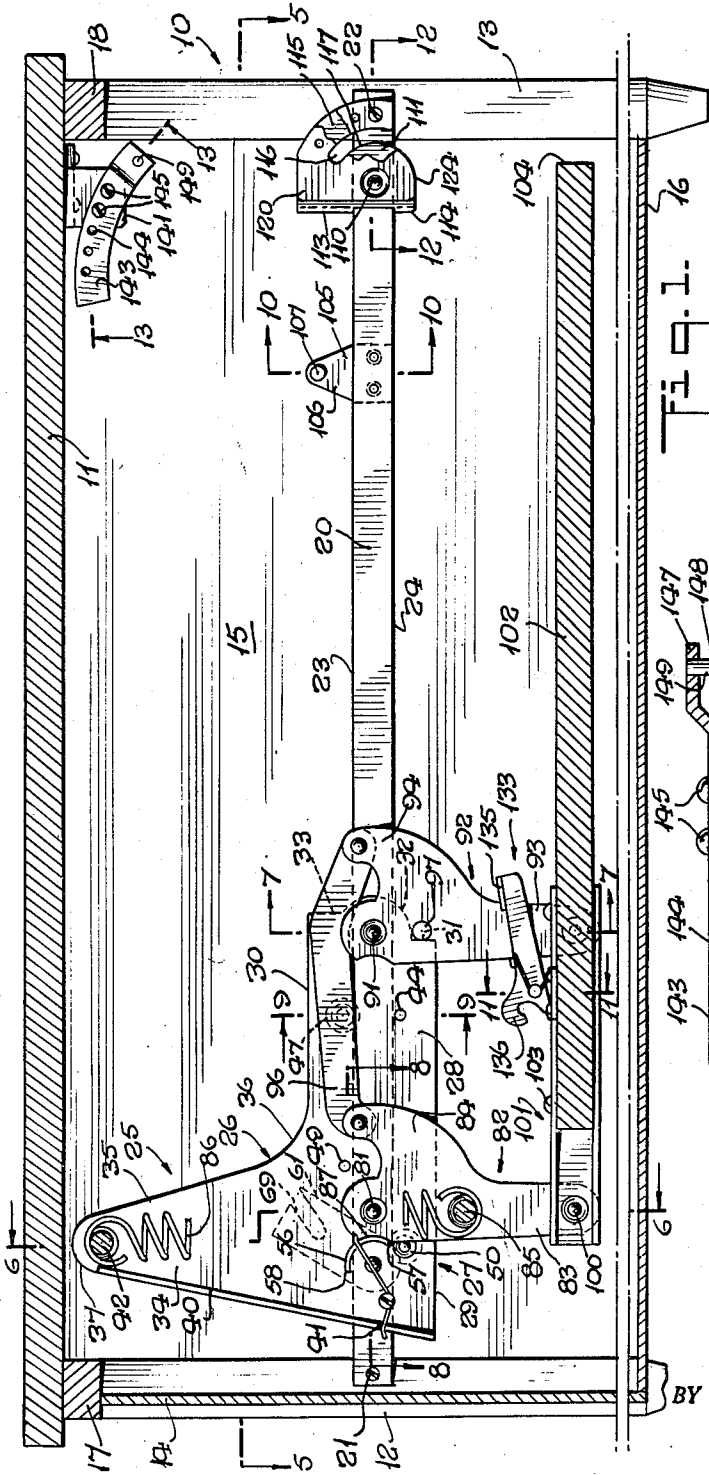
M. E. CHAFT

2,710,783

EXTENSIBLE TYPEWRITER SUPPORTS

Filed Feb. 9, 1952

3 Sheets-Sheet 1



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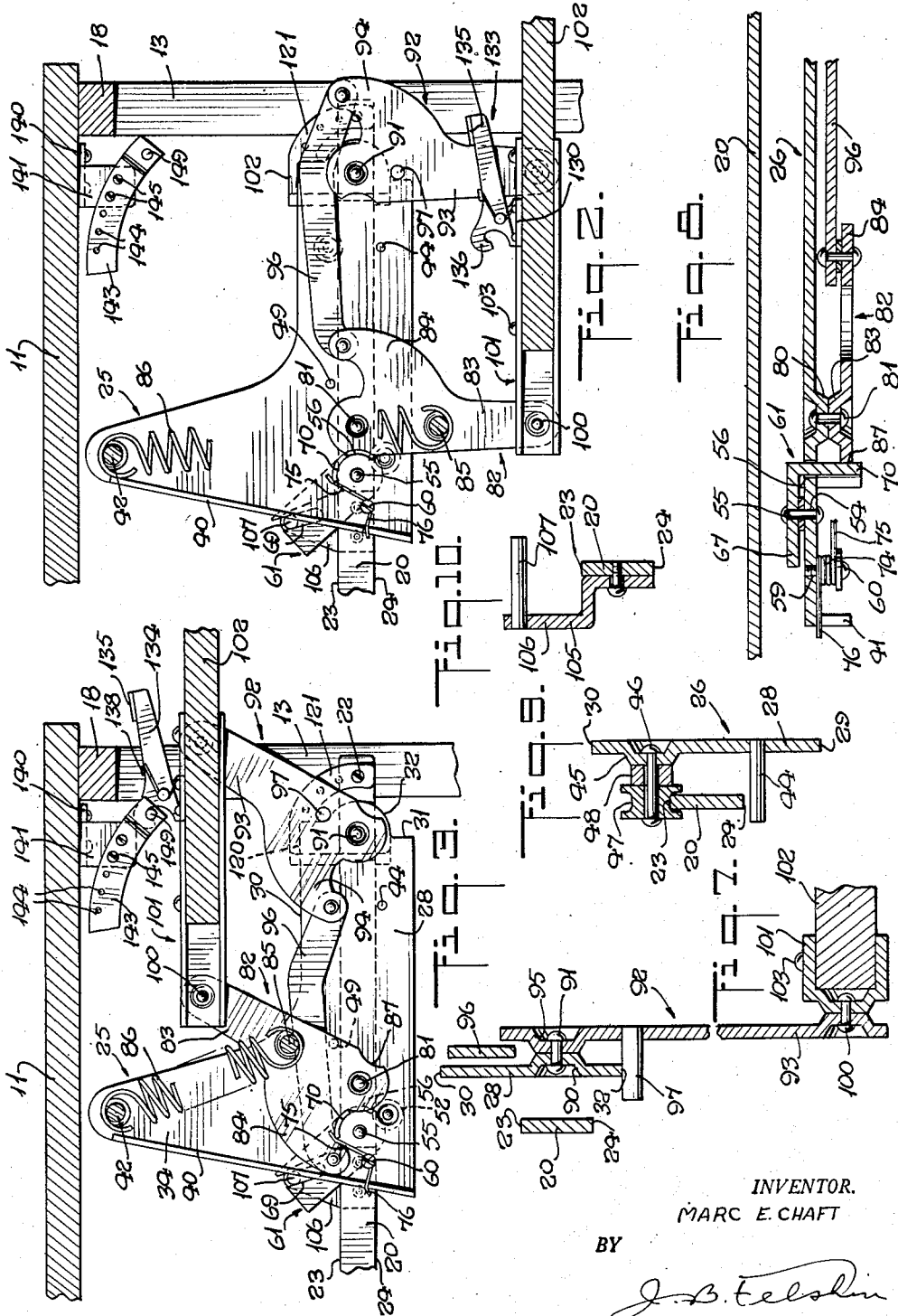
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EXTENSIBLE TYPEWRITER SUPPORTS

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3 Sheets-Sheet 2



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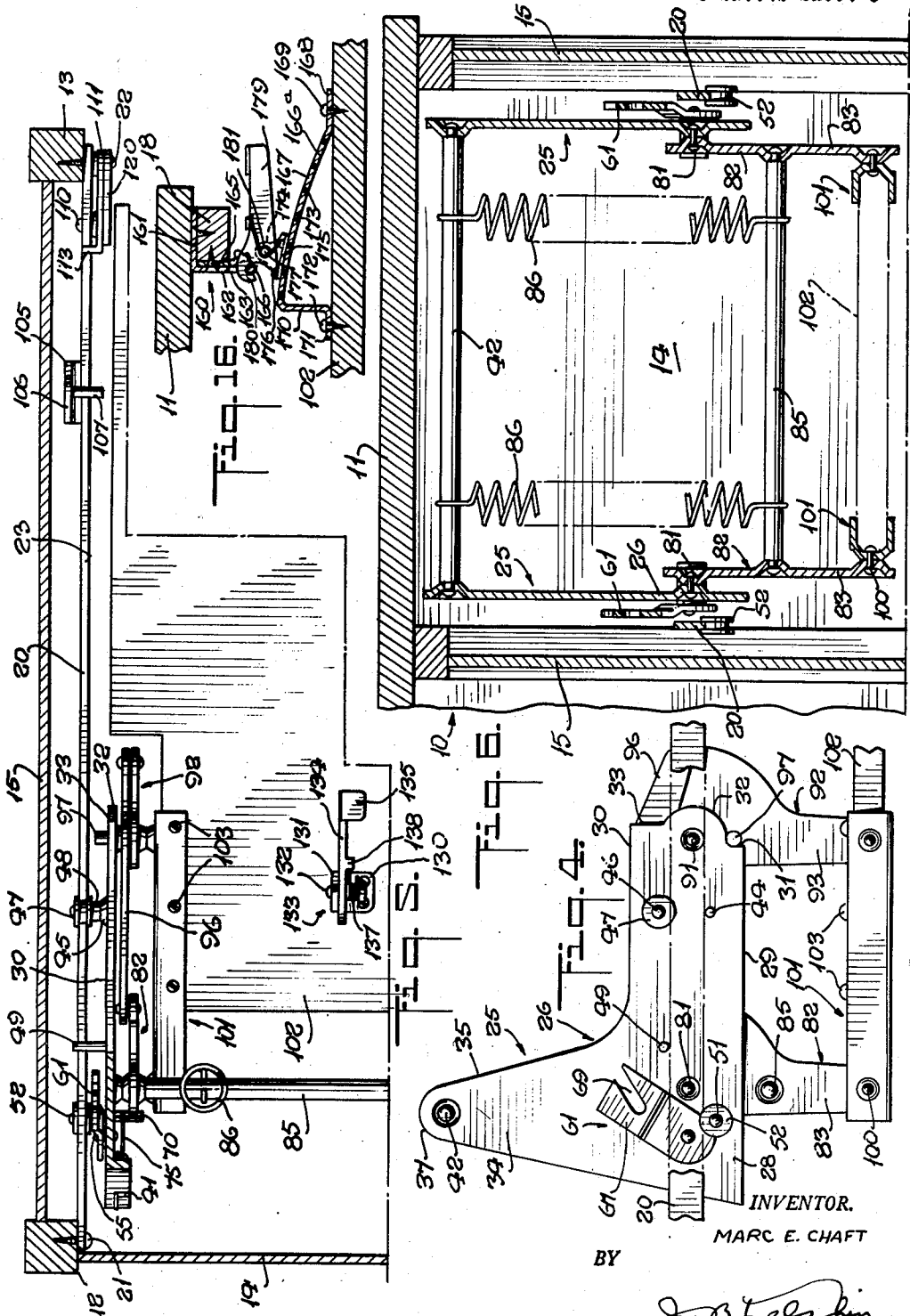
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EXTENSIBLE TYPEWRITER SUPPORTS

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3 Sheets-Sheet 3



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2,710,783

## EXTENSIBLE TYPEWRITER SUPPORTS

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Application February 9, 1952, Serial No. 270,776

22 Claims. (Cl. 312-28)

This invention relates to extensible typewriter supports.

An object of this invention is to provide an extensible typewriter support comprising a pair of slide rails, a carriage slidably mounted thereon, bell cranks pivoted to the opposite sides of the carriage, a typewriter platform forming a link pivotally interconnecting pairs of similar arms of the bell cranks, links interconnecting other pairs of similar arms of the bell cranks, to form interpivotated parallelograms, highly improved means for locking the parallelograms against pivotal movement relative to the carriage as the carriage is slidably moved forward from its rearward position, means for releasing the locking means when the carriage has reached its forwardmost position, and other locking means to retain the carriage in its forwardmost position while permitting rotation of the bell cranks about their pivotal points to the carriage, as the platform is swung upwardly from its lowermost to its uppermost position.

Another object of this invention is to provide in a device of the character described, means to adjust the height to which the platform may be swung upwardly, and adjustable spring latch means to retain the platform in its various, raised, adjusted positions.

Still another object of this invention is to provide a strong, rugged and durable device of the character described which will be relatively inexpensive to manufacture, sure and positive in operation, and practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

In the accompanying drawings in which are shown various, illustrative embodiments of this invention,

Fig. 1 is a longitudinal, vertical cross section through a typewriter desk provided with a typewriter supporting means embodying the invention and showing the carriage in its rearmost position with the typewriter supporting the platform at its lowest level;

Fig. 2 is a partial view similar to Fig. 1 and showing the carriage at its forwardmost position and the platform in its lowest position just prior to raising the platform;

Fig. 3 is a view similar to Fig. 2 but showing the platform fully raised;

Fig. 4 is a partial, vertical view of the carriage shown in Fig. 1;

Fig. 5 is a cross sectional view taken on the line 5-5 of Fig. 1;

Fig. 6 is a cross sectional view taken on the line 6-6 of Fig. 1;

Fig. 7 is a cross sectional view taken on the line 7-7 of Fig. 1;

Fig. 8 is a cross sectional view taken on the line 8-8 of Fig. 1;

Fig. 9 is a cross sectional view taken on the line 9-9 of Fig. 1;

Fig. 10 is a cross sectional view taken on the line 10-10 of Fig. 1;

Fig. 11 is a cross sectional view taken on the line 11-11 of Fig. 1;

Fig. 12 is a cross sectional view taken on the line 12-12 of Fig. 1;

Fig. 13 is a cross sectional view taken on the line 13-13 of Fig. 1;

Fig. 14 is a side elevational view of a front locking mechanism in adjusted position;

Fig. 15 is a perspective view of one of the rear locking members; and

Fig. 16 is a vertical transverse cross sectional view illustrating a modified adjustable latching construction.

Referring now in detail to the drawing, 10 designates a typewriter desk embodying the invention. The same comprises a desk top 11 supported by rear legs 12 and front legs 13. The rear legs 12 are interconnected by a rear desk wall 14. Each pair of front and rear legs is interconnected by a side wall 15. Near the lower ends of the front and rear legs is a bottom wall 16.

The desk is open at the front but may be closed by a door (not shown) if desired. The rear legs 12 may be reinforced by a top cross bar 17 and the front legs 13 may be reinforced by a top cross bar 18. The cross bars 17 and 18 may be attached to the underside of the desk 11.

Attached to the front and rear legs are a pair of parallel, horizontal, similar metal rail bars 20. The rail bars 20 are attached to the inner sides of the rear legs 12 by screws 21 and to the inner sides of the front legs 13 by screws 22. The rails 20 are located substantially half way between the bottom wall 16 and the desk top 11. Said rails are in vertical planes and have upper edges 23 and lower edges 24.

Slidably mounted on the rails 20 is a carriage 25. The carriage 25 comprises a pair of similar, symmetrical side carriage frame members or plates 26. Each plate 26 comprises a vertical wall having at its lower end, a forwardly projecting portion 28 formed with a lower, horizontal edge 29 and a horizontal, upper edge 30.

Extending upwardly from the forward end of the lower edge 29 is a vertical abutment edge 31. Extending forwardly and upwardly from the upper end of the abutment edge 31 is a curved edge 32, and extending upwardly therefrom is a vertical edge 33 which extends to the forward end of the upper edge 30. Extending from the lower portion 28 is an upwardly extending portion 34 having a forward, upwardly and rearwardly inclined edge 35 connected to the rear end of the upper edge 30 by a curved edge 36. Extending from the upper end of the inclined edge 35 is a curved edge 37.

At the rear of each plate 26 is an inwardly extending, forwardly and upwardly inclined flange 40 formed, above its lower end, with a slot or notch 41 for the purpose hereinafter appearing.

The two frame members 26 are interconnected by a top horizontal cross bar 42 located at the center of curvature of the upper edges 37 and passing through suitable openings in said plates and riveted thereto. Fixed to the plates 26 are horizontal, outwardly extending guide pins 44 substantially engaging the under edges 24 of the rails 20. The pins 44 are located above the lower edges 29 and rearwardly of the abutment edges 31.

Said plates 26 are furthermore formed with outwardly extending, apertured bosses 45 through which extend pivot pins 46. Rotatably mounted on each of the pins 46 is a grooved wheel or roller 47 engaging the upper edge 33 of a rail 20. Washers 48 may be interposed

between the wheels 47 and the bosses 45. The wheels 47 are located vertically above the pins 44.

Also fixed to the plates 26, rearwardly of the wheels 47, are outwardly extending guide pins 49 substantially contacting the upper edges 23 of rails 20. Said plates 26 are also formed, adjacent their rear, lower ends, with bosses 50 through which extend pivot pins 51 carrying grooved rollers or wheels 52 engaging the lower edges 24 of the rails 20. The wheels 52 are located rearwardly of the pins 49.

It will now be understood that the grooved wheels 47 and 52 engage opposite sides of the rails 20. The tendency of the carriage is to tilt in a clockwise direction looking at Fig. 1. The pins 44 and 49 are guide pins and prevent accidental rotation of the carriage in the opposite direction.

Each of the plates 26 is furthermore formed, somewhat above the boss 50, and somewhat rearwardly thereof, and substantially at the level of a center line between the upper and lower edges 23 and 24, with a through opening 54 through which extends a pivot pin 55. Each plate 26 is furthermore formed with an arcuate slot 56 concentric with the pivot pin 55 and having an angular extent of about 135 degrees. The lower end 57 of the slot 56 is located substantially at the level of the lower edges 24 of the links 20, and the slot extends upwardly to a point 58 located somewhat rearwardly and above the axis of the pivot pin 55.

Each plate 26 is furthermore formed, rearwardly of the pivot pin 55 and somewhat therebelow, with a screw threaded opening 59 to which is screwed a headed screw 60 projecting inwardly of the plate. Pivoted to each pin 55 and located at the outside of the plate 26 is a locking member 61 comprising a plate 67 formed with an opening 68 to receive the pin 55. The plate 67 is formed with an inclined slot 69 extending to the outer edge of the latter.

Extending from the plate 67, inwardly thereof, is a transversely curved lug 70 of the same curvature as the slot 56 and passing through said slot. The lug 70 has an angular extent of about half of that of the slot 56. In the locked position of Fig. 1, the lower edge 71 of the lug 70 contacts the lower end 57 of the slot 56, and the upper edge 72 of said lug is spaced from the upper end of said slot. In such position, the locking bar 61 is inclined upwardly and forwardly. The upper end of each bar 61 may be offset outwardly as shown in Fig. 15 of the drawing.

As will be seen hereinafter, each locking member 61 may be swung in a counter-clockwise direction from the locking position of Fig. 1 to the released position of Figs. 2 and 3. When that is done, the lug 70 moves through the slot 56 until the upper edge 72 of said lug contacts the upper end 58 of the slot.

On each pin 60 is a torsion spring 74 having one arm 75 contacting the upper edge 72 of the lug 70, and a second arm 76 engaging within the notch 41. Thus, the torsion springs 74 serve to bias the locking members 61 in clockwise directions.

Each plate 26 is furthermore formed with an inwardly extending boss 80 at the center of which is a fixed pivot pin 81 located substantially at the level of the center line between the upper and lower edges of the rails 20. Pivoted to each pivot pin 81 is a rear bell crank 82 having an apertured boss 83 contacting the boss 80 and through which the pivot pin 81 passes. Each bell crank 82 has a downwardly extending arm 83 and a forwardly and upwardly extending arm 84.

The pivot pins 81 are located forwardly of the cross bar 42. The two bell cranks 82 are interconnected by a cross bar 85 located directly below the pivot pins 81 and substantially midway between the upper end of the bell crank and the lower end of the arm 83. The cross bar 85 is interconnected to the cross bar 42 by a pair of coil tension springs 86.

It will be noted that a plane passing through the axes of the cross bars 42 and 85 is located rearwardly of the pivot pins 81 so that the springs 86 will tend to rotate the bell cranks 82 in a counter-clockwise direction relative to the carriage 25, for the purpose hereinafter appearing.

Each bell crank 82 is formed adjacent its rear, upper end, with an inwardly curved edge 87 similar in curvature to the outer curved surface of the lug 70. When the parts are in the position shown in Fig. 1, the lugs 70 engage the edges 87 to prevent rotation of the bell cranks 82 relative to the plates 26. The edges 87 are substantially coextensive with the lugs 70. When the locking members 61 are rotated in a manner hereinafter appearing from the position of Fig. 1 to the position of Fig. 2, the lugs 70 will clear or pass beyond the edges 87 to permit rotation of the bell cranks 82 relative to the plates 26.

The plates 26 are formed adjacent their forward edges with inwardly extending bosses 90 carrying central pivot pins 91. The pivot pins 91 are located at the center of curvature of the edges 32 and at the horizontal level of the pivot pins 81.

Pivoted to the pivot pins 91 are front bell cranks 92 similar to the rear bell cranks 82, and each is also formed with a downwardly extending arm 93 and a forwardly and upwardly extending arm 94. The bell cranks 92 are formed with bosses 95 contacting the bosses 90 and receiving the pivot pins 91. The upper ends of the arms 84 and 94 are interpivoted by links 96 somewhat arched upwardly so as to extend above the pivot pins 91.

Fixed to the front bell cranks 92 are outwardly extending pins 97 contacting the abutment edges 31 when the parts are in the position of Fig. 1 and the arms 83 and 93 project straight downwardly.

Interconnecting the lower ends of the arms 83 and 93, as by rivets 100, are a pair of parallel, similar, symmetrically disposed, inwardly opening channel members 101. The distance between the lower ends of the arms 83 and 93 is equal to the distance between the pivot pins which interconnect each link 92 to the upper ends of the arms 84 and 94, thus forming an interpivoted parallelogram for the purpose hereinafter appearing.

Mounted on and between the channels 101 is a typewriter supporting table or platform 102. The side edges of the table or platform are received within the flanges 101 and are fixed thereto by screws 103. The platform is shown in its lowermost position in Fig. 1 and extends forwardly of the channels 101 so that the front end 104 of said platform is located close to the front legs 12.

It will now be understood that the platform 102 cannot be raised, and the bell cranks 92 and 82 cannot be swung about their pivots relative to the plates 26 because of the engagement of the lugs 70 with the edges 87 of the rear bell cranks. A typewriter or other office machine or any other object may be placed on the platform 102 and attached thereto so as to be supported thereon.

However, the front end of the platform may be grasped, and said platform together with the entire carriage 25 may be rolled or slidably moved forwardly on the rails 20. Means is provided to rotate the locking members 61 to a releasing position as the carriage reaches its forward end. To this end, there is fixed to each rail 20 a bracket 105 having an outwardly offset, upwardly extending portion 106. Attached to the upper end of each portion 106 is an inwardly extending, horizontal pin 107 located at the level of the mouth of the slot 69.

As the carriage is moved forwardly, the pins 107 will enter slots 109 so that continued movement of the carriage will cause the locking members 67 to be rotated in a counterclockwise direction to the position of Fig. 2. During such movement, the lugs 70 will clear the edges 87 to release the bell cranks for rotation. As the locking members 61 are rotated in a counter-clockwise direction, the torsion springs 74 will be tensioned.

Means is provided to limit the forward movement of the carriage to a predetermined point, at which point

the bell cranks are released for pivotal movement so that the platform 102 may be swung upwardly, and to limit the upward movement of the platform, and to prevent the rearward movement of the carriage after the platform starts moving upwardly.

To this end, there is fixed to each rail 20 rearwardly of the screw 22, a pin 110. Fixed to each rail 20 by the pivot pin 110 is a back plate 111, having at its rear end a pair of spaced, vertical flanges 113 and 114 contacting the opposite edge of rail 20. The grooved wheels 47 will strike the flanges 113 to limit forward movement of the carriage. Said plate 111 is formed with a downwardly and forwardly curved finger 115 and with an upwardly and rearwardly curved slot 116. The lower end of the finger 115 is substantially at the level of the lower edges of the rail 20.

The plate 111 has an inner, curved edge 117 which extends downwardly beyond the slot 116 and terminates in a rearwardly extending, horizontal edge 118 located just above the level of the top of the pins 97. The finger 115 is formed with a through opening 119 through which the screw 22 passes. Pivoted to each pivot pin 100 and contacting the inner side of the plate 111 is an adjustable plate 120, likewise formed with a curved finger 121 overlying the curved finger 115, and with a slot 122 adapted to register with the slot 116 with an inner curved edge 123 registering with the inner curved edge 117. The curved edge 123 extends down below the slot 122 and terminates in a horizontal, rearwardly extending edge 124 registering with the edge 118 of the plate 111.

The finger 121, however, is formed with a plurality of angularly spaced openings 125. In the position of Fig. 1, the lowermost opening 125 registers with the opening 119 so that the screw 22 will pass therethrough. By removing the screws 22, however, the plates 120 may be rotated relative to the plates 111 in a clockwise direction to various adjusted positions. The screw 22 can be passed through any of the openings 125 which registers with the opening 119.

The brackets 105 are so located that just as the locking members 61 are swung to fully released positions, the pins 97 will ride under the edges 118 and 124 to permit the platform 102 to be swung upwardly. Forward movement of the carriage is stopped when the front wheels or rollers 47 strike the upper flanges 113 on the plate 111. As the platform 102 is swung upwardly, and the pins 97 ride into the slots 116, the carriage is held against rearward movement. When the pins 97 strike the upper end of the slot 116 or 122, upward movement of the platform is stopped. When the plate 120 is adjusted from the position of Fig. 1 to that of Fig. 14, the vertical height to which the platform 102 may be raised, is lowered.

Latch means is provided to retain the platform in any fully raised, adjusted position. To this end, there is mounted on the rear end of the platform 102, a bracket 130 having an upwardly extending flange 131 carrying a horizontal pin 132.

Pivoted on the pin 132 is a latching lever having a forwardly extending handle 134 formed with an offset lug or finger 135. At the rear end of the lever 133 is a latching finger 136. On the pin 132 is a tension spring 137 having one arm contacting the bottom of the bracket 130, and another arm engaging an offset arm 138 on the handle.

The torsion spring normally tends to rotate the lever 133 in a counter-clockwise direction, looking at Fig. 1 of the drawing. Said lever 133 is preferably located at about a midsection 102 between the sides thereof.

Fixed to the underside of the table top 11 adjacent the forward end thereof, is a bracket 140 having a downwardly extending wall 141. Fixed to the wall 141 are a pair of longitudinally curved, superimposed plates 142 and 143 formed with a plurality of registering openings 144. A pair of screws 145 pass through a pair of ad-

acent, registering openings 144 and are screwed into screw threaded openings 146 in the plate 141.

The front end of the plate 143 is offset as at 147 so as to form a space or slot 148 with the adjacent end of the plates 142. Traversing the space 148 is a pin 149. Said pin is so located that as the platform 102 is swung upwardly, the latching finger 136 will snap into engagement with said pin. By unscrewing the screws 145, the plates 142 and 143 may be adjusted relatively by a bracket 140 so as to change the vertical and horizontal position of the pin 149.

Adjustment of the pin 149 is made to correspond to the adjustment of the plate 120 so that the pin will be engaged by the latching hook 136 as the platform reaches its uppermost limit of movement, and the pins 97 reach the upper ends of the slots 122. If desired, the slots 116 and 122 may be made to increase in width towards their bottom ends to facilitate reception of the pins 97.

It will be noted that the springs 86 being located in back of the pivot pins 81, serve to press the pins 97 against the abutment edges 31 when the platform 102 is in its downmost position. When the carriage 25 has been moved forwardly, and the locking members 61 have been swung to releasing positions, the tensioned springs 86 tend to raise the platform and to urge it upwardly towards raised position.

In Fig. 16, there is shown a modified, adjustable latch retainer construction forming part of a typewriter support device embodying the invention. In Fig. 16, 11 is the top of a desk, and 18 is the transverse cross strip beneath the top of the desk and at the front thereof. Attached to the cross strip 18 is a bracket 160 having a top wall 161 contacting a groove in the top of the cross strip, and from which extends downwardly a wall 162 formed adjacent its lower end with a vertical slot 163. At the inner side of the wall 162 and fixed thereto is a second bracket 165 having at its lower end a downward and forwardly inclined notched flange 166.

Fixed to the top of the support 102 is a bracket 166<sup>a</sup> having an arched wall 167 provided with a flange 168 at one end screwed to the support 102 by a screw 169. At the other end of the arched wall 167 is a downwardly projecting wall 170 formed with a flange 171 contacting the top of the typewriter support 102. The flange 171 is fixed to the support by one or more screws 172.

The arched wall 167 is formed with a row of spaced, screw threaded openings 173. Screwed to any pair of adjacent openings 173 is a bracket 174 having a bottom flange 175 longitudinally arched so as to ride on the wall 167. The flange 175 is formed with a pair of through openings through which extend screws 176 screwed into a pair of threaded openings 173.

The bracket 174 carries a pivot pin 177 on which is pivoted a latch 178 provided with a handle 179 at one end and a hook 180 at the other end. On the pin 177 is a torsion spring 181 having one arm engaging the flange 175 and another arm engaging a lug on the handle 179. The torsion spring tends to rotate the latch in a counter-clockwise direction. As the typewriter support is swung upwardly, the hook 180 passes through a guiding notch in the flange 166 and snaps into the opening of the slot 163 to hookingly engage the opening of said slot. As the limit of upward movement of the torsion spring 102 is adjusted by the adjustment of the plate 120, the bracket 174 may be correspondingly adjusted on the arched surface 167 by screwing the screws 176 into any desired, adjacent pair of threaded openings 173.

Thus, whereas in the first form of invention, the bracket 142, 143 is adjusted to vary the position of the pin 149, in the modification, the position of the latching lever is adjusted.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination, a pair of parallel, fixed, horizontal rails, a carriage slidably mounted on said rails, front and rear bell cranks pivoted to said carriage, link means interconnecting said bell cranks, a platform inter-pivoted to said bell cranks and constituting link means to complete an inter-pivoted parallelogram with said bell cranks and first link means, a locking member pivoted to said carriage, a concave surface on said locking member, one of said bell cranks having a concave surface engaging said convex surface in the locking position of said locking member and with the platform in its lowermost position, and means fixed to one of said rails for rotating said locking member about its pivot as said carriage is moved forwardly, to move said convex surface out of engagement with said concave surface to permit said platform to be swung upwardly.

2. The combination of claim 1 in combination with means to prevent rearward movement of the carriage as said platform is swung upwardly.

3. The combination of claim 2 in combination with means to limit the upward movement of said platform in various, adjusted positions.

4. The combination of claim 1 in combination with means to limit the forward movement of the carriage.

5. The combination of claim 3 in combination with latch means to retain the platform in said adjusted, upwardly swung positions.

6. In combination, a desk, a pair of fixed, horizontal rails within the desk, a carriage comprising a pair of side plates having forwardly extending portions and upwardly extending portions, a cross bar interconnecting said upwardly extending portions, wheels on said plates engaging opposite sides of said rails, rear bell cranks pivoted to said plates and having downwardly extending arms and forwardly extending arms, a transverse cross bar interconnecting the intermediate portions of said bell cranks, tension springs interconnecting said cross bars, a pair of front bell cranks similar to the rear bell cranks and pivoted to the forwardly extending portions of said plates and having downwardly extending arms and forwardly extending arms, links interconnecting the forwardly extending arms of said front and rear bell cranks, links interconnecting the downwardly extending arms of said front and rear bell cranks, a platform adapted to support a typewriter or other article mounted on and between said last mentioned links, locking members pivoted to said plates, convex lugs on said locking members, said rear bell cranks having concave edges adapted to be engaged by said lugs.

7. The combination of claim 6 in combination with curved slots formed in said plates through which said curved lugs pass, said curved slots being of greater angular extent than the curved lugs whereby said locking members may be rotated to a position where the curved lugs clear the curved edges of said rear bell cranks.

8. The combination of claim 7 in combination with open notches formed in said locking members, and means fixed on said rails adapted to be received in said notches, and said carriage is moved on the rails to rotate said locking members to clearing position.

9. The combination of claim 7 in combination with means fixed to the rails for rotating said locking members to move said lugs beyond said curved edges as said carriage is moved forwardly towards its forward position.

10. The combination of claim 9 in combination with

pins on said front bell cranks, and members attached to said rails and formed with curved slots adapted to receive said pins as said platform is swung upwardly in the forward position of said carriage.

11. In combination, rail means, a carriage movable thereon, a pair of bell cranks pivoted to said carriage, links interconnecting said bell cranks to form an inter-pivoted parallelogram, a platform adapted to support a typewriter or other article fixed to one of said links, means to lock said bell cranks against pivotal movement relative to said carriage, means to release said locking means as said carriage is moved toward a forward position, a member at the forward end of said rail means formed with an arcuate slot, and a pin on the front bell crank of said pair adapted to enter said slot as the platform is swung upwardly in the forward position of the carriage after the locking means has been released.

12. The combination of claim 11 in combination with means to adjust the angular position of said slotted member whereby to vary the upper limit of movement of said platform.

13. The combination of claim 12 in combination with a spring latch in the platform, means to support a pin in position to be engaged by the spring latch in the uppermost position of said platform, and means to adjust the position of said pin to correspond to the adjustment of said slotted member.

14. The combination of claim 11 in combination with a spring latch, and means adapted to be engaged by the spring latch in the uppermost position of said platform.

15. In combination, rail means, a carriage movably mounted thereon for forward and rearward movement, a pair of links pivoted to the carriage, a typewriter support, said links being pivoted to said support, said carriage, links and support forming a parallelogram, a member at the forward end of said rail means and formed with an arcuate slot, and a pin on one of said links and adapted to enter said slot as the support is swung upwardly when the carriage is in its forward position.

16. The combination recited in claim 15 wherein the upper end of said slot is closed to abut against said pin to limit the upward swinging movement of the support, and means for adjusting the angular position of the slotted member to raise or lower said slot closed end thereby to vary the upper limit of movement of the support.

17. In combination, a rail, a carriage slidably mounted on the rail for horizontal forward and rearward movement, a pair of links pivoted to the carriage, a support for a typewriter, said links being pivoted to said support, said carriage, links and support forming a parallelogram, a locking element pivoted to the carriage and having a locking part, one of said links having a locking part engageable with said locking part of said locking element in a first angular position of the latter to prevent rotation of said one link, and being disengageable from said locking part of said locking element in a second angular position of the latter to permit rotation of said link, and means fixed relative to said rail for positively engaging and positively rotating said locking element to said second angular position when said carriage is moved forwardly to a predetermined forward position and for positively engaging and positively rotating said locking element to said first angular position when said carriage is moved rearwardly from said predetermined forward position, said locking element being provided with a slot, said last-recited means comprising pin means engaging within said slot for rotating the locking element to said first and second positions.

18. In combination, a rail, a carriage slidably mounted on the rail for horizontal forward and rearward movement, a pair of links pivoted to the carriage, a support for a typewriter, said links being pivoted to said support, said carriage, links and support forming a parallelogram, a locking element pivoted to the carriage and having a

locking part, one of said links having a locking part engageable with said locking part of said locking element in a first angular position of the latter to prevent rotation of said one link, and being disengageable from said locking part of said locking element in a second angular position of the latter to permit rotation of said link, and means fixed relative to said rail for positively engaging and positively rotating said locking element to said second angular position when said carriage is moved forwardly to a predetermined forward position and for positively engaging and positively rotating said locking element to said first angular position when said carriage is moved rearwardly from said predetermined forward position, said locking part of the link comprising a concave surface, said locking part of the locking element comprising a convex surface conforming to said concave surface and having a center of curvature coincident with the axis of rotation of the locking element.

19. In combination, a rail, a carriage slidably mounted on the rail for horizontal forward and rearward movement, a pair of links pivoted to the carriage, a support for a typewriter, said links being pivoted to said support, said carriage, links and support forming a parallelogram, a locking element pivoted to the carriage and having a locking part, one of said links having a locking part engageable with said locking part of said locking element in a first angular position of the latter to prevent rotation of said one link, and being disengageable from said locking part of said locking element in a second angular position of the latter to permit rotation of said link, and means fixed relative to said rail for positively engaging and positively rotating said locking element to said angular position when said carriage is moved forwardly to a predetermined forward position and for positively engaging and positively rotating said locking element to said first angular position when said carriage is moved rearwardly from said predetermined forward position, a member at the forward end of said rail and formed with an arcuate slot, and pin means on one of said links and entering said slot upon rotation of said locking element to said first position and upward swinging movement of the support for retaining said carriage against rearward sliding movement on said rail.

20. The combination recited in claim 19 wherein the said slot is provided with an abutment surface engageable with said pin, means to limit the upward swinging movement of the support, and means for adjusting the angular position of the slotted member to raise or lower said abutment surface thereby to vary the upper limit of movement of the support.

21. In combination, rail means, a carriage movably mounted on the rail means, a pair of bell cranks pivoted to the carriage, link means interconnecting the bell cranks to form an interpivoted parallelogram, a platform fixed to one of said link means, means to lock said bell cranks against rotation while permitting the carriage to be moved forwardly on said rail means, means to release the locking means as the carriage approaches its forward position to permit raising of the platform, and adjustable means to limit the upward movement of the platform at various adjusted positions, with adjustable means to retain the platform in any of the adjusted positions of said platform, with means to retain the platform in any of the upper, adjusted positions of said platform, said last means comprising a keeper fixed relative to said rails, a latch on said platform, and means to attach said latch to said platform in various, adjusted positions corresponding to the adjustments of said limiting means.

22. In combination, rail means, a carriage movably mounted on the rail means, a pair of bell cranks pivoted to the carriage, link means interconnecting the bell cranks to form an interpivoted parallelogram, a platform fixed to one of said link means, means to lock said bell cranks against rotation while permitting the carriage to be moved forwardly on said rail means, means to release the locking means as the carriage approaches its forward position to permit raising of the platform, and adjustable means to limit the upward movement of the platform at various, adjusted positions, with adjustable means to retain the platform in any of the adjusted positions of said platform, with means to retain the platform in any of the upper, adjusted positions of said platform, said last means comprising a keeper, means to attach said keeper in various, adjusted positions relative to said rails corresponding to said various, adjusted limit positions, and a latch on said platform adapted to engage said keeper in its various, adjusted positions.

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