Jan. 6, 1953 F. W. BOLLHOEFER 2,624,535

ELEVATING PLATFORM FOR TYPEWRITERS

Filed Aug. 20, 1947 2 SHEETS—SHEET 1

Fig. 1

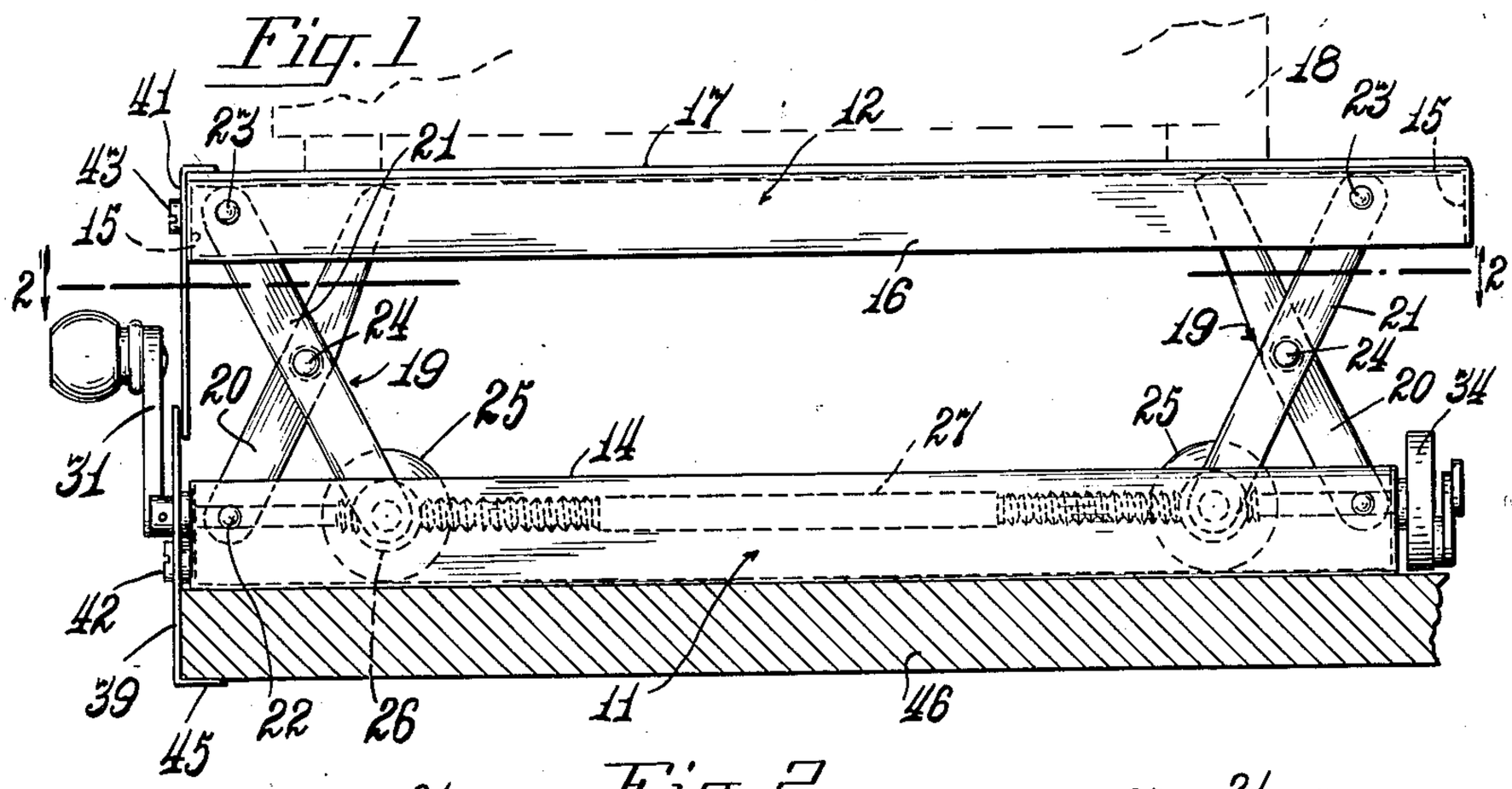

Fig. 2.

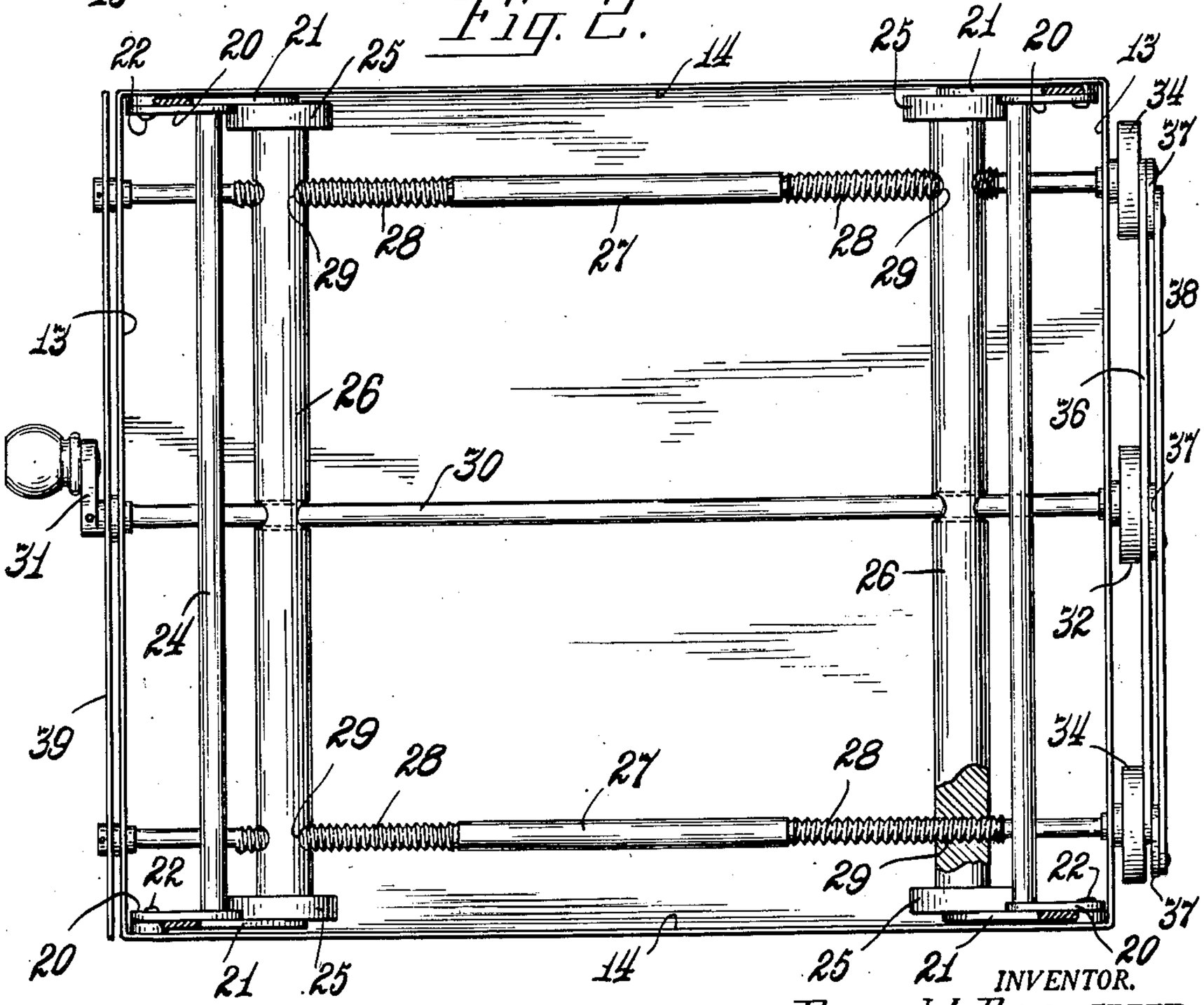

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Fig. 3.

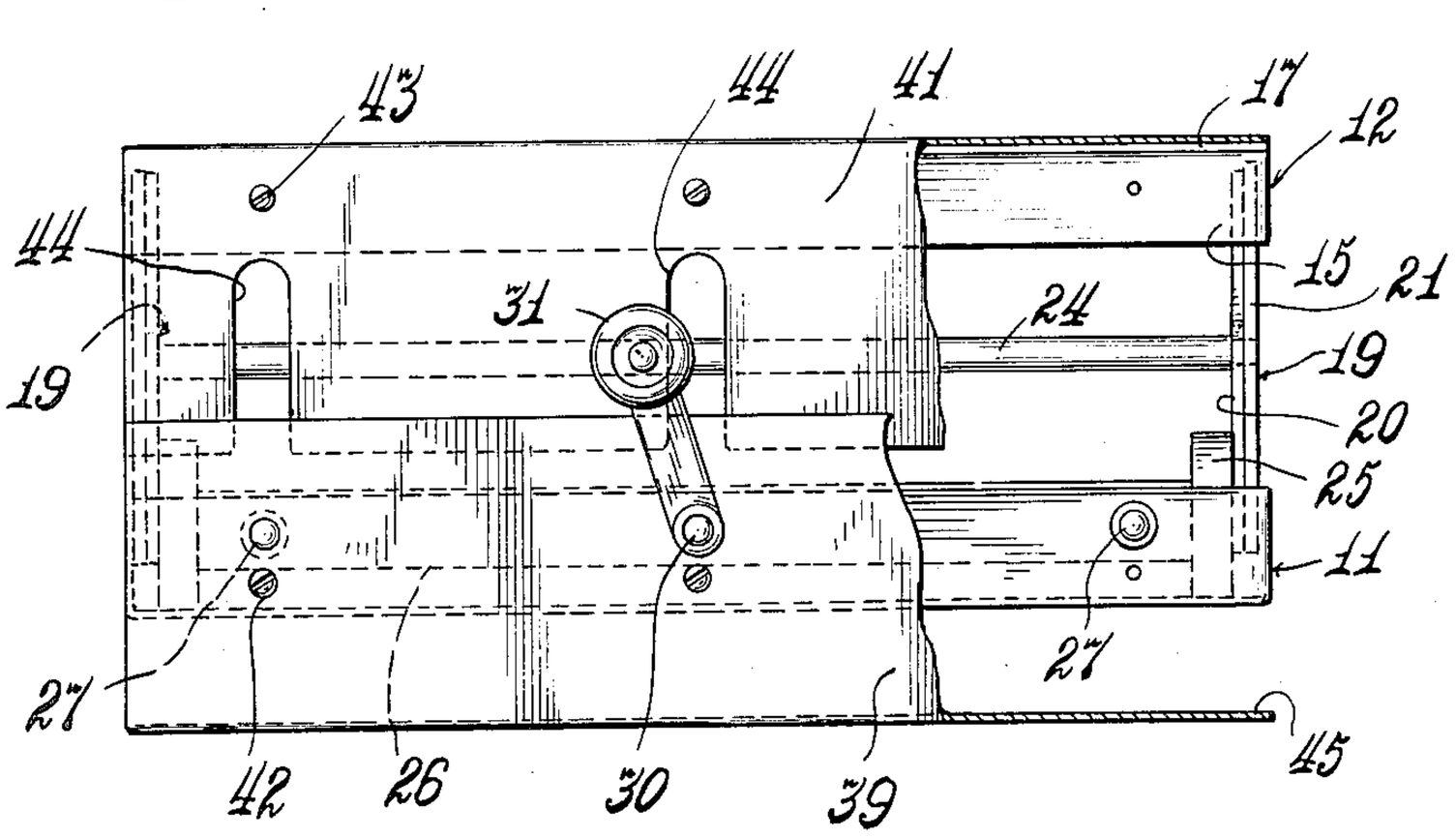


Fig. 4.

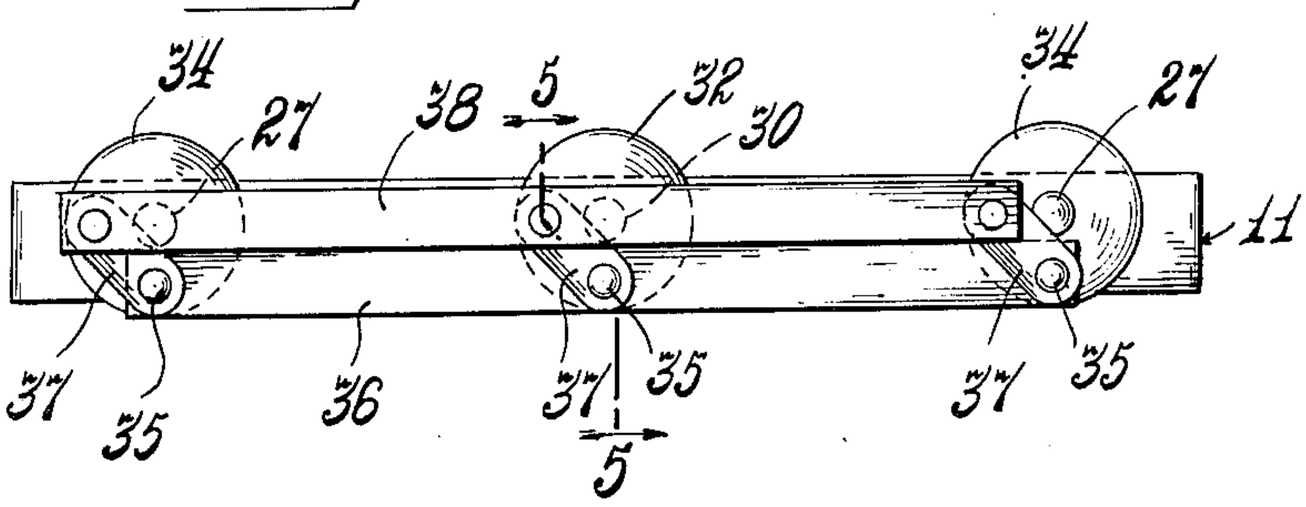
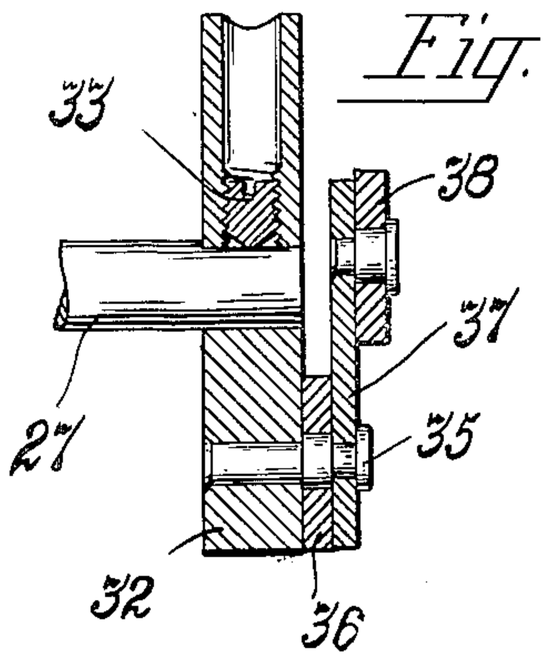


Fig. 5.



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2,624,535

ELEVATING PLATFORM FOR TYPEWRITERS

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2 Claims. (Cl. 248—23)

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The invention relates to improvements in elevating carriages and more particularly to a novelly constructed typewriter mounting of a kind that can be raised into a position for convenient use or lowered so as to be concealed in a drawer or beneath the top of a desk quickly and easily.

It is customary to provide a desk with a normally concealed shelf or a drawer adapted to have a typewriter mounted thereon so as to be moved from a concealed position within the desk into an exposed position for use. Most desk constructions, however, are such as to limit the height at which the typewriter is supported when positioned for use and as a consequence the typewriter frequently is below the plane most desired for convenient operation and efficient use. Various known devices or mechanisms heretofore devised to enable the typewriter to be raised above the plane of its mounting support are very unsatisfactory from the standpoint of ease of manipulation, steadiness of the supporting structure, and selection of the elevation most suited to the needs of the operator.

It is therefore an object of the invention to provide a vertically adjustable mounting of the kind which may be adjusted quickly and easily to any desired elevation within the range of its adjustability.

Another object is to provide a durable, inexpensively constructed adjustable mounting for a typewriter, and one which embodies many novel features of construction.

Another object is to provide a vertically adjustable mounting which is constructed in a manner to afford the rigidity required to provide a firm wobble-proof support for a typewriter.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings. Other embodiments of the invention embodying the same principle may be used, and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

Fig. 1 is a side elevational view of the elevating carriage showing it mounted upon a support.

Fig. 2 is a horizontal sectional view taken substantially on line 2—2 of Fig. 1.

Fig. 3 is a front elevation view showing portions of the dust guards broken away.

Fig. 4 is a fragmentary rear end elevation view of the base illustrating the operable connection between the actuating element and the adjusting means.

Fig. 5 is a sectional detail view taken on line 5—5 of Fig. 4.

The elevating carriage embodying the features of the present invention includes a base 11 and a platform 12 superposed above said base. The base is substantially rectangular and includes suitable end flanges 13 and side flanges 14 which extend upwardly therefrom around the periphery thereof. The platform 12 is rectangular also and it has depending end flanges 15 and side flanges 16 and includes a suitable cushion 17 preferably in the form of a rubber mat secured firmly to the top face thereof to afford a resilient surface upon which a typewriter 18 is mounted.

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The platform 12 is adapted to be moved vertically relative to the base 11 so that the elevation of the typewriter may be varied to suit the needs of the operator. To this end toggle-link structures, generally indicated at 19, provide adjustable means connecting the platform 12 to the base 11. The toggle-link structures 19 preferably are located one at each corner of the superposed base and platform in the manner shown and each includes a pair of links 20 and 21. Inasmuch as the construction of each of the toggle-link structures is identical, the following description will concern itself with the construction of one of said structures and like numerals will identify corresponding parts of each.

The link 20 has one of its ends pivotally secured, as by a rivet 22, to the side wall 14 of the base 11 adjacent an end flange 13. The other link 21 is pivotally secured as by a rivet 23 to the depending side flange 16 of the platform 12 adjacent an end flange 15. The link 20 is pivotally secured intermediate its ends to the link 21 substantially midway between the ends of said last-named link as by means of a tie-rod 24. The tie-rod extends transversely of the elevating carriage and has its ends connected one to each of the link structures located at the same end of the assembly. In this manner, the link structures are connected in pairs. The tie-rod 24 affords stability to prevent transverse shifting of the platform 12 relative to the base 11. The free end of the link 21 extends downwardly towards the base 11 and carries on its free end a roller 25 adapted to roll along the top face of the base 11 when the link is moved into various positions of adjustment and the free ends of the links 20 travel along the bottom surface of the platform 12 to help support the load thereon.

The roller 25 is mounted closely adjacent to the inside face of the link 21 on an axle 26 which extends transversely across the elevating carriage to further reinforce the link structures against transverse shifting. It should be quite evident at this time that any movement of the pivotally connected links 20 and 21 relative to each other will raise or lower the platform 12 relative to the base 11. Such movement of the links is attained

through operation of manually actuable means including screw-threaded rods operatively associated with the axle 26 of each pair of link structures.

As best shown in Fig. 2, the base 11 has a pair of screw-threaded rods 27 extending longitudinally thereof and journaled at their ends in the end flanges 12. The rods 27 are located one closely adjacent to each of the side flanges 14 and each includes right and left-handed screw-threaded portions 28 which extend through tapped openings 29 in the axles 26. Obviously, any rotation imparted to the screw-threaded rods 27 will move the axles 26 longitudinally of the base 11 to thereby adjust the relative positions of the links for raising and lowering the platform 12.

Means is provided for rotating the screw-threaded rods 27 in either direction and to this end an operating shaft 30 is provided in the base 11 midway between the screw-threaded rods 27. This operating rod is journaled in the end base flanges 13 and one end thereof projects forwardly of one of the end flanges to receive firmly thereon an operating crank 31. The other end of the shaft 30 extends rearwardly of the other end flange 12 and it carries on its projecting end a disc 32 which is firmly secured thereon, as by set screw 33, for rotation therewith. Similar discs 34 are firmly secured to projecting ends of each of the screw-threaded rods 27. Upon referring to Figs. 4 and 5 it will be observed that each disc 32 and 34 has a pintle pin 35 eccentrically arranged thereon and extending rearwardly thereof. A tie-bar 36, of sufficient length to bridge the spaces between the discs 32 and 34, is pivotally mounted on each of the pins 35 to thereby provide a bell-crank connection between the manually rotatable disc 32 and the discs 34. The pins 35 also carry links 37 which extend upwardly diagonally therefrom as shown and have pivotally connected to their free ends a second tie-bar 38.

In operation, the crank 31 is manipulated to rotate the shaft 30, which rotation is transmitted through the discs 32, 34 and tie-bars 36 and 38 to the screw-threaded rods 27. The construction and assembly is such that utmost rigidity is imparted to the link structures through their connection with the screw-threaded rods, which in turn are prevented from back-lashing or rotating inadvertently through the tie-bar connections operatively associating it with the manually rotatable shaft 30.

If desired, a dust guard may be provided on the front end of the elevating carriage. As shown, this guard consists of a pair of dust guard plates 39 and 41, suitably mounted as by screws 42 and 43 respectively, on the related end flanges of the base 11 or platform 12. These dust guard plates are of such length as to overlap, thereby completely closing the front of the elevating carriage irrespective of the position of elevation assumed by the platform 12. Suitable recesses 44 may be provided in the dust guard plate 41 to enable it to move downwardly beyond the plane of the journals for the shaft 30 and screw-threaded rods 27.

The dust guard plate 39 also preferably depends below the bottom plane of the base 11 and is provided on its lower edge with an inwardly turned flange 45 coextensive with its length to be engaged beneath the support 46, which in this instance may be a shelf or platform of the desk in which the elevating carriage and typewriter normally are concealed.

Although a preferred embodiment of the invention has been disclosed in the accompanying drawings and described in detail in the foregoing specification, it should be understood that the invention is capable of adopting a wide variety of modifications without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. An adjustable carriage comprising a rectangular base adapted to be placed upon a support, a rectangular platform superposed over said base, two pairs of X-shaped link structures each having upper and lower extensions, the link structures each connecting a corner of the platform to a related corner of the base, a pair of screw-threaded rods journalled in said base, the links of each pair having one of their lower extensions threaded on one of said rods, one upper extension of each link structure being connected to said platform with the other of said upper extensions being free to slide along said platform, and single means operable to rotate the screw-threaded rods in unison to move the extensions and thereby adjust the relative positions of the links to carry the platform toward and away from the base.

2. An adjustable carriage comprising a rectangular base adapted to be placed upon a support, a rectangular platform superposed over said base, two pairs of X-shaped link structures having upper and lower extensions, the link structures each connecting a corner of the platform to a related corner of the base, a pair of screw-threaded rods journalled in said base, the links of each pair having one of their lower extensions threaded on one of said rods, one upper extension of each link structure being connected to said platform with the other of said upper extensions being free to slide along said platform, a rotatable actuable element on said base, and an eccentric link structure connecting said actuable element with each screw-threaded rod so as to impart uniform rotation to the rods upon actuation of the actuable element to adjust the link structures for raising and lowering the platform.

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