Oct. 3, 1933. E. E. ASH 1,929,048

TYPEWRITER SUPPORT

Filed Oct. 24, 1930 4 Sheets-Sheet 1

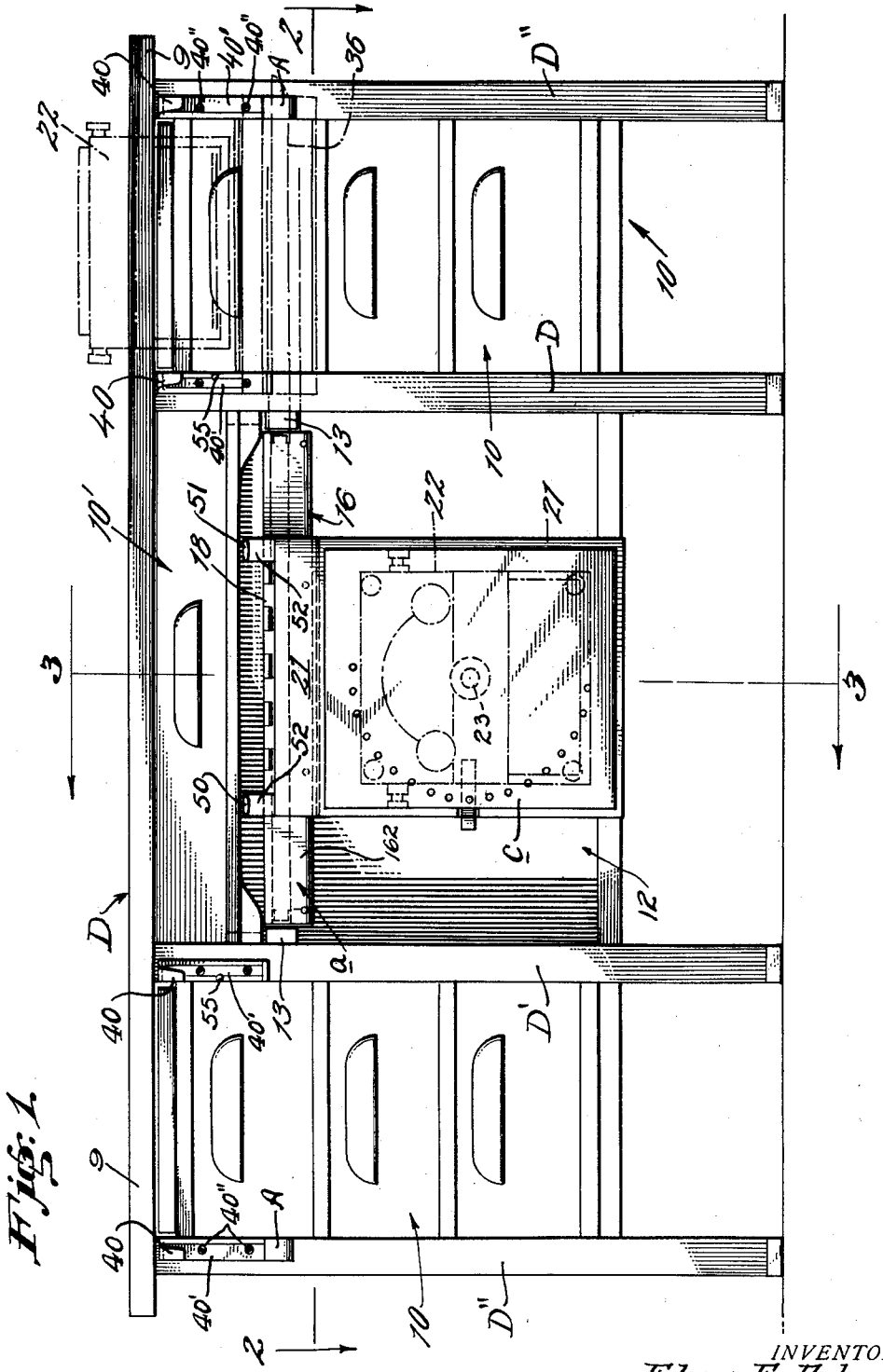

Fig. 1.

INVENTOR
Elmer E. Ash.
BY
Charles D. Larrabee
his ATTORNEY.

Oct. 3, 1933. E. E. ASH 1,929,048

TYPEWRITER SUPPORT

Filed Oct. 24, 1930 4 Sheets-Sheet 2

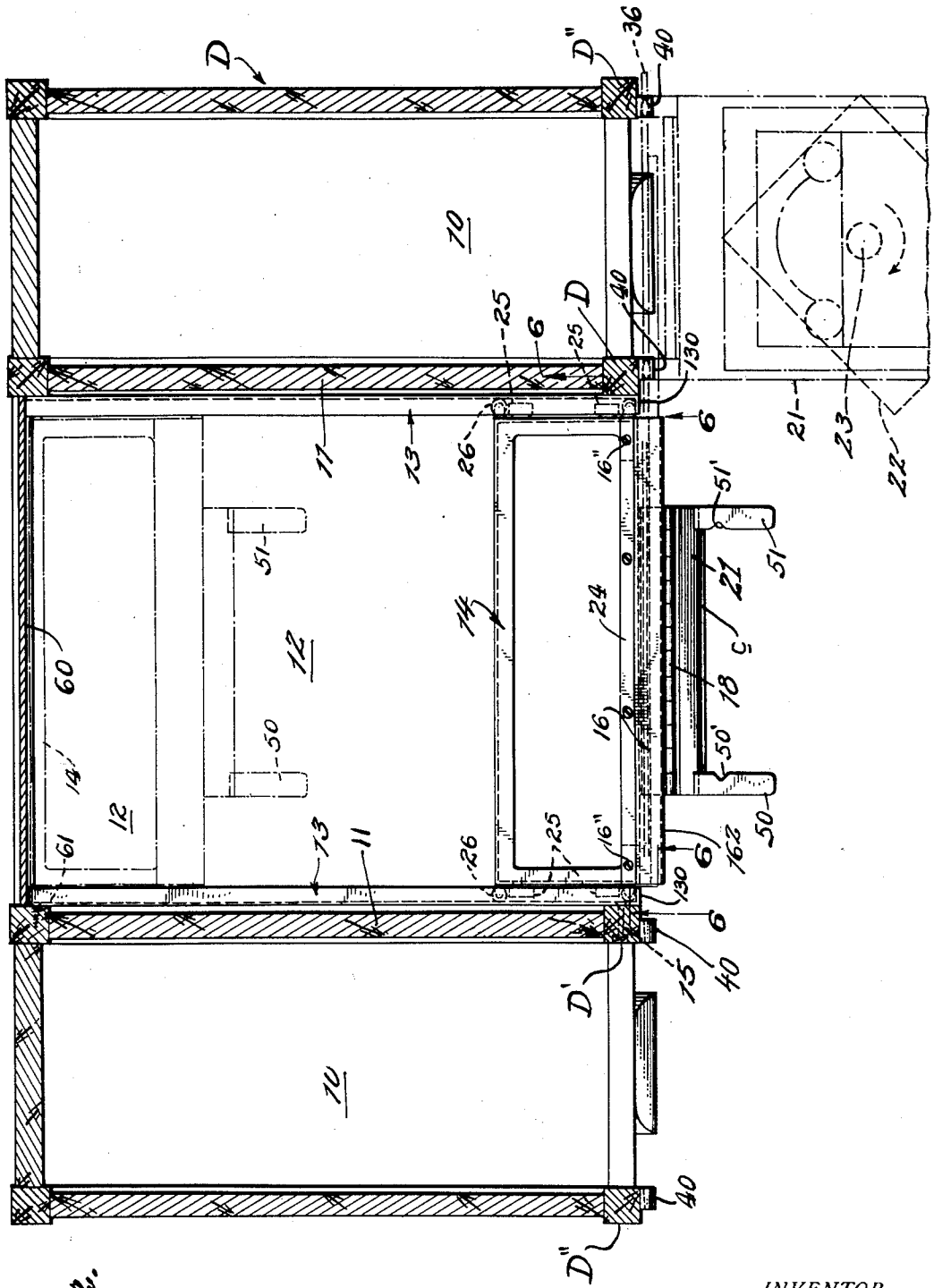

Fig. 2.

INVENTOR
Elmer E. Ash
BY
Curtis D. Larrabee
his ATTORNEY.

Oct. 3, 1933. E. E. ASH 1,929,048

TYPEWRITER SUPPORT

Filed Oct. 24, 1930 4 Sheets-Sheet 3

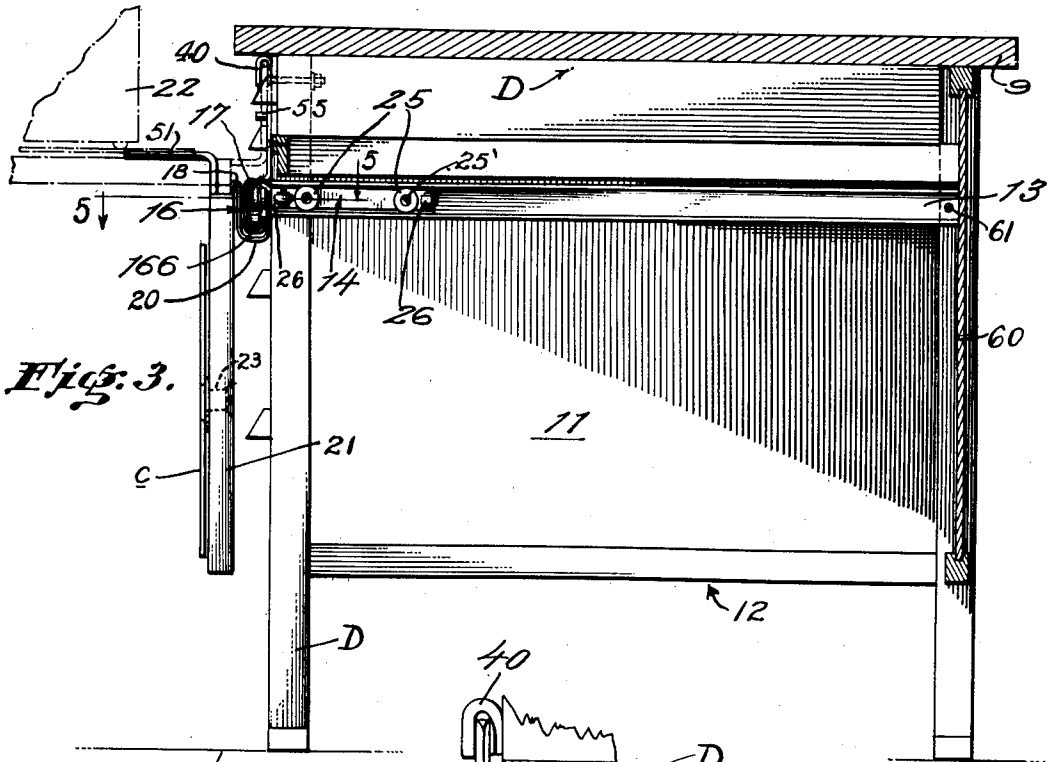

Fig. 3.

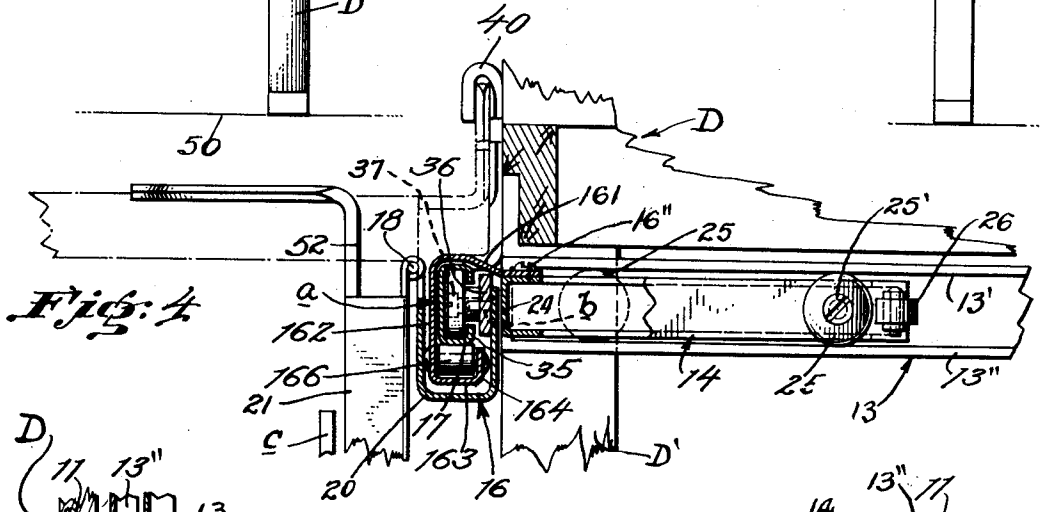

Fig. 4.

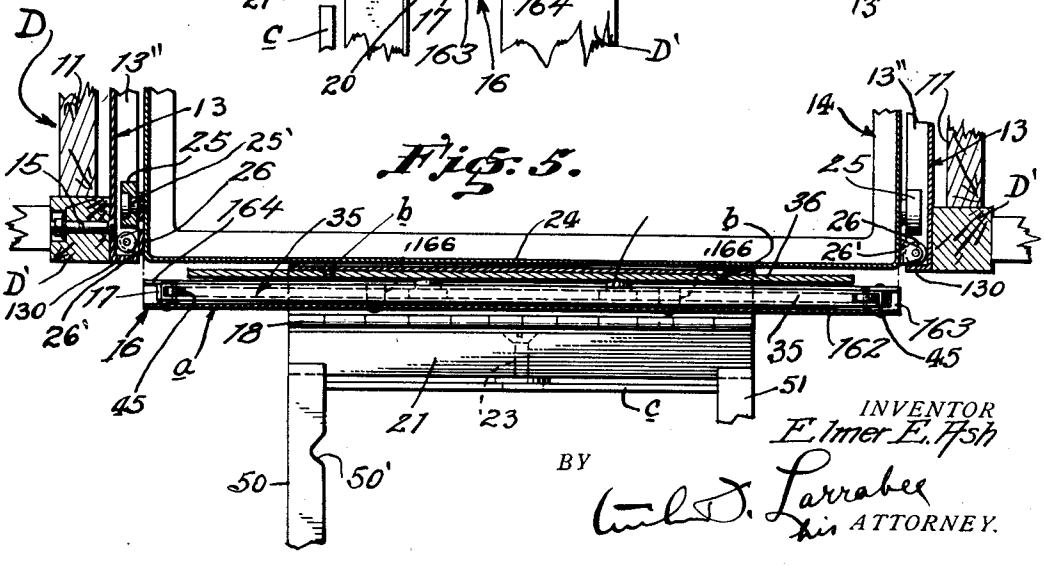

Fig. 5.

INVENTOR
Elmer E. Ash

BY

Charles D. Larrabee
his ATTORNEY.

Oct. 3, 1933. E. E. ASH 1,929,048

TYPEWRITER SUPPORT

Filed Oct. 24, 1930 4 Sheets-Sheet 4

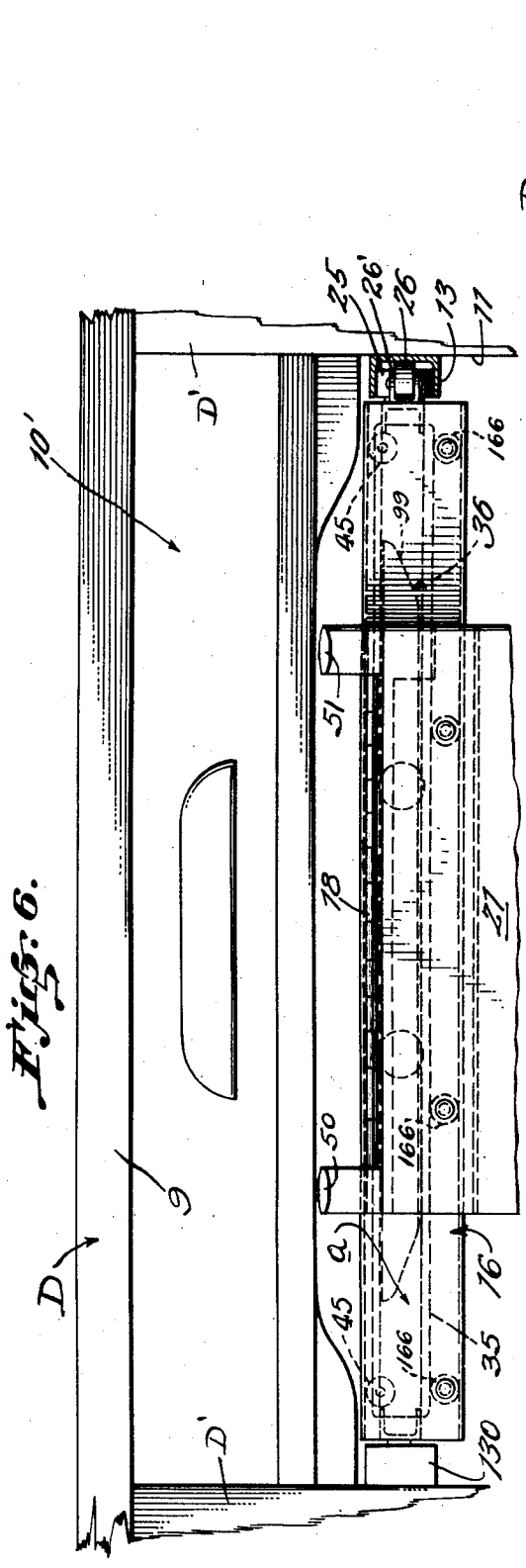

Fig. 6.

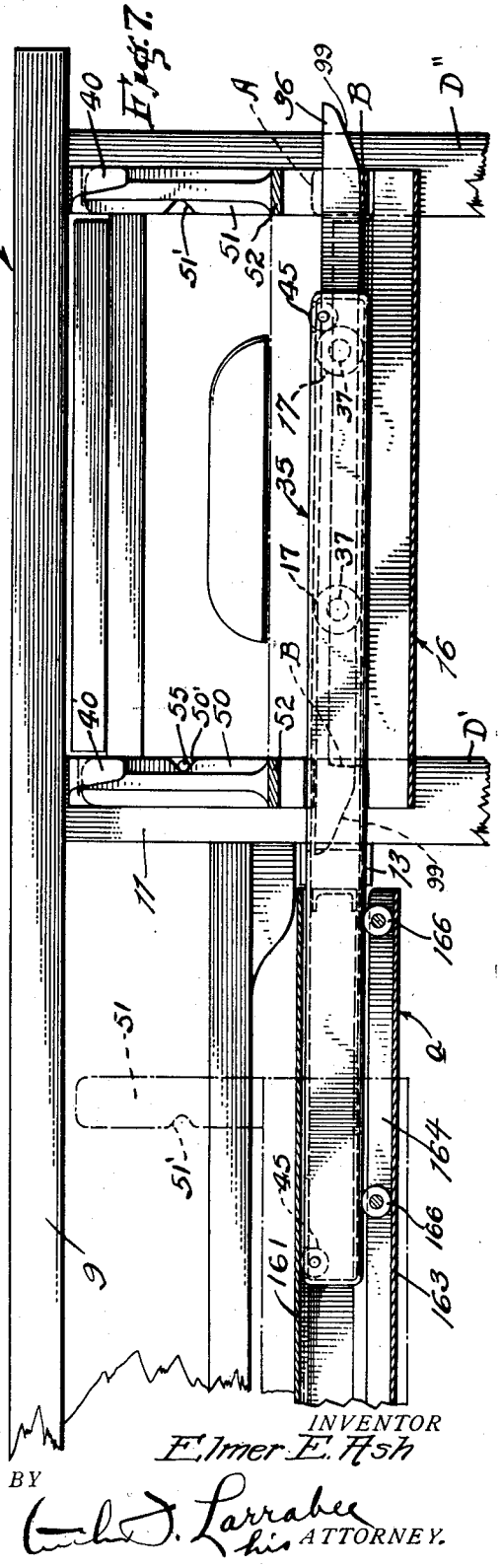

Fig. 7.

INVENTOR
Elmer E. Ash
BY
Charles D. Larrabee
his ATTORNEY.

Patented Oct. 3, 1933

1,929,048

UNITED STATES PATENT OFFICE

1,929,048

TYPEWRITER SUPPORT

Elmer E. Ash, Los Angeles, Calif.

Application October 24, 1930. Serial No. 490,915

15 Claims. (Cl. 312—29)

This invention relates to an improved support for devices such as, typewriters, comptometers or other office machines that are desired to be moved out of the way and into concealed positions and which support is adapted to be mounted upon an ordinary flat-top desk in conjunction with which the devices are used.

An object of this invention is to provide a novel and improved means for supporting a typewriter or like machine in the usual opening provided for knee-space in the desk and in such a manner that it will normally be out of the way of a person using the desk, invisible during customary use of the room, and which will permit an increased capacity for drawer space in a desk, and an uncut desk top, as well as to permit manufacturers to adapt the device to desks of the flat-top type and obtain either a right hand or a left hand typewriter support.

A further object of the invention is to provide improved means to support a typewriter or like machine and to render it movable to and from a housed position with relation to a desk in conjunction with which it is used.

The support may be made in various sizes, without departing from the spirit of my invention, to adapt such support to desks now in common use and having the usual 42, 52 or 60 inch top surface.

More specifically it is an object of the invention to provide improved means for supporting a typewriter or like device in the rear portion of the knee space provided underneath the desk top, and for moving said typewriter first forwardly and then laterally in order to bring it into a position for use, the typewriter being maintained while housed, in a perpendicular position with the key board thereof directed forwardly, in order to provide additional room for the limbs of a person sitting at the desk, and being restored to its upright position during the final part of the movement thereof into the position for use; the same movements being repeated in the reverse order when the typewriter is restored to its housed position.

The invention further relates to an improved construction and arrangement of telescopic members on one of which the supporting shelf is mounted for lateral movement with relation to the desk.

Another object of the invention is to provide improved means for locking the supporting shelf in the operative position with relation to either side of the desk.

A further object of the invention is to provide a novel and simple mechanism whereby an office machine may be moved from concealed or housed position and supported on either the right or left hand side of a desk to which my mechanism has been applied.

A still further object is to provide a novel and simple means for equipping a flat top desk having drawer spaces on each side of the usual knee space with a mechanism whereby office machines may be supported and housed in such knee space and moved to position for use on either side of said knee space without interfering with access to such drawers except the uppermost drawer on the side to which the office machine has been moved for support.

A still further object is to provide a supporting shelf for typewriters and novel mechanism to permit adjustment of such shelf to housed and unhoused positions and which mechanism is devoid of springs.

A still further object is to provide novel means for supporting a typewriter which when moved into position for use will support such typewriter rigidly and reduce vibration thereof when in use to a minimum.

A still further object is to provide a novel means for adjustably supporting a typewriter to an office desk which is devoid of cut-tops or special compartments for housing such supporting means.

A still further object is to provide novel typewriter supporting means that may be easily and quickly attached to desks now in common use without requiring a special construction of such desk.

Other objects, advantages and features of invention may appear from the accompanying drawings, that subjoined detail description, and the appended claims.

Referring to the drawings which illustrate what is deemed to be a preferred embodiment of the invention,

Figure 1 is a front elevation of a flat top desk showing the same equipped with my invention, the typewriter supporting means being adjusted to the front portion of the knee space wherein it is normally housed, the position of the typewriter support when adjusted for use at the right side of the desk being indicated in dash and dot lines.

Fig. 2 is a transverse section on line 2—2 of Fig. 1, the carriage which supports the typewriter being shown in full lines in the front portion of the knee space and its position when fully retracted being indicated in dot and dash lines.

Dash and dot lines also indicate the operative position of the typewriter and its supporting base when adjusted to the right hand side of the desk.

Fig. 3 is a cross-section on line 3—3 of Fig. 1, the carriage and supporting means being shown in elevation. Dash and dot lines indicating a fragment of the typewriter and its supporting base when adjusted to the operative position.

Fig. 4 is a fragmental sectional reproduction on enlarged scale of a portion of Fig. 3 illustrating more clearly the telescopic device which supports the typewriter platform, and parts which co-operate therewith. Some parts are shown in elevation for purpose of clearness.

Fig. 5 is a transverse section on line 5—5 of Fig. 3, parts being broken away to contract the view and disclose structures otherwise hidden.

Fig. 6 is an enlarged reproduction of the central portion of the elevation shown in Fig. 1, parts being broken away to contract the view.

Fig. 7 is an enlarged reproduction of the right hand upper portion of the elevation shown in Fig. 1, parts being broken away to contract the view and parts being sectioned to show more clearly underlying structure.

Referring in detail to the drawings, the invention is illustrated as applied to a flat top desk D having the outer pairs of legs D'' and the inner pairs of legs D'. Said legs D'' and D' support the desk top 9, stacks of side drawers 10 and middle drawer 10'.

To the upper portion of each of said side walls 11 of the knee space compartment 12 is secured a telescopic device having an approximately transverse horizontal rail or guide 13 along which travels or in which is slidingly mounted a tram 14 which is adapted to slide to the desk front and will presently be more fully described. Said rails 13 are secured to the desk by any suitable means a portion of which may consist of bolts 15 secured to legs D'.

Secured to the front end of the tram 14 is an extensible supporting carriage or hanger 16 and is adapted to be extended laterally therefrom at either end and comprises an external telescopic member 20, which extends in an approximately horizontal direction and which is of a U-shaped character. A supporting member *a* for the extensible support is provided with a wide slot or open side which extends from end to end thereof and which is directed toward the back of the desk. Said supporting member *a* is preferably a bent metal plate, and comprises a laterally extending top portion 161, an outer vertical portion 162 and the floor or bottom portion 163 which terminates in the inner, upwardly projecting flange 164.

Describing more fully the parts which are closely related to the tram 14 which travels along the rails 13, said rails are shown as being channel shaped and disposed with their open sides directed toward the knee space 12. The tram 14 also comprises channel shaped members which are integrally united at their front ends by a channel shaped cross bar 24 to which the top portion 161 of supporting member *a* is secured, preferably by the screws 16''. This construction provides an inner frame for the typewriter platform, said frame having secured thereto the track rollers 25 which are fitted with a working fit between the upper flange 13' and the lower flange 13'' of the channel shaped track rails 13. Said rollers 25 are shown mounted upon pivot screws 25' which screw into the channels on tram 14. Guide rollers 26 are mounted upon lugs 26' which project from the end portions of tram 14. Each track rail 13 has at its forward end an end flange 130 which forms a stop engageable by the roller 26 on its respective side.

Within the external telescopic member 20 and the supporting member *a*, telescopes the internal telescopic or extensible member 35 which is a plate bent to a C-shape as viewed in cross section. Within the supporting member *a* there is a space below the inner telescopic member 35, and in this space are placed anti-friction rollers 166 which are pivotally secured to supporting member *a* and upon which the inner telescopic or extensible member 35 slidably rests.

The external extensible or telescopic member 20 is U-shaped in cross section and has pivotally and hingedly secured thereto by hinge 18 the supporting platform or shelf 21 to which a typewriter 22 or other office machine may be attached. This member 20 has secured by suitable means, as rivets *b*, to the inner face of its rear limb, supporting means in the form of a bar 36 from which project the pivot screws 37 whereon are mounted the rollers 17 that are rotatably fitted within the inner extensible or telescopic member 35 to provide means for readily and easily shifting the typewriter platform laterally to the right or left with relation to the desk and at the same time keep said platform from rotational displacement with relation to its axis.

The movements of the extensible supporting member 16 leftward or rightward from the position thereof shown in Fig. 5 can only take place after the tram 14 has been moved forward to the edge of the knee space 12 and projects the member 16 beyond the front legs D'. Owing to the inner telescopic member 35 having mounted in each end portion thereof a roller 45 which is engageable by the adjacent roller 17 carried by the bar 36, the bar 36 moves independently of said member 35 until these rollers contact, whereupon the members 35 and 36 travel together until the movement of bar 36 is arrested by stop means described later.

The typewriter 22 is diagrammatically indicated by broken lines in an operative position in Fig. 2, where it is shown attached to a pivotally connected plate or shelf *c* that is secured to the base or machine supporting member 21 by means of a pivot post 23 in order to permit a rotational adjustment thereof in a horizontal plane.

To each side of the base 21 to which the typewriter is attached is secured an angular locking arm 50, 51. These arms each have a shank portion 52 which lies in the same plane as, and extends along the typewriter base 21, in order that the terminal portions of said arms may be positioned for interlocking with the locking means in the form of hooks or fingers 40 secured to the front of the desk. These hooks are by preference and as shown, formed integrally on hanger plates 40' which are secured to the desk by screws 40'', and the hooks 40 are beveled on their inner surfaces to provide easy insertion of locking arms 50 or 51.

The locking hooks 40 are spaced apart the same distance as the arms 50 and 51 of the typewriter support 21 with which they are adapted to cooperate. Said arms 50 and 51 are beveled at each side as shown in Figs. 1 and 4 to adapt them more readily to slide into engagement with said hooks 40, and then, when the swells between the bevels are moved beyond the centers of the hooks, the typewriter base, which is then in hori-

zontal position, is safely retained in position for the typewriter to be operated. Stop pins 55 cooperate with arms 50 and 51 to arrest the movements of the parts just mentioned when they reach fully extended position. Said arms 50 and 51 are preferably recessed respectively at 50' and 51' in order to provide seats which engage said stop pins.

The back of the desk may be provided with the usual rear wall 60. Screws 61, (see Figs. 2 and 3) may be provided to secure the rails 13 to the desk.

In mounting the device upon the desk, the typewriter should not be attached to the shelf c until after the other parts have been put in place. One of the tram supporting rails 13 should first be secured in place, and then the tram 14 should be edged into engagement with said rail, the other rail 13 having meantime been placed over the opposite end of carriage 14. Then the carriage as a whole, which has necessarily been tilted to perform the insertive movement just described, may be brought up to the proper approximately horizontal position, whereupon the rail last mentioned may be secured in place.

It will be apparent to those skilled in the art that an office machine such as the typewriter 22 may be secured in any suitable manner to the shelf c and when the tram 14 is moved to the rear of the desk space 12, the typewriter will be supported in a vertical plane where it will be out of the way of the knees or legs of a person using the flat top desk to which my device has been attached.

In operation, that is to say, when it is desired to move the office machine from the housed position in the desk space to an unhoused position where it is adapted for use, the tram 14 with the base 21 pivotally connected thereto, will be moved forwardly in the knee space 12 until the front rollers 26 engage the closed end 130 of the rails 13 and in which position the extensible supporting carriage 16 and base 21 will be projected beyond the front surface of the desk as well as beyond the handles of the drawers as shown in Fig. 3, and by grasping the base 21, the same may be moved either to the right or left as desired.

When the arms 50 and 51 attain a position close to the hooks 40, the base 21 is swung about pivot 18 until the same assumes a horizontal position and with a slight forward movement the arms 50 and 51 are brought into engagement by hooks 40, and stop pin 55 will prevent further longitudinal movement of the typewriter support.

The external telescopic member 20 is notched as at B to provide stop means to prevent the extensible supporting carriage 16 from being extended beyond a satisfactory supporting position. Such stop B engages the upturned end A of hangar plate 40'. Said upturned end A provides a supporting means for the bar 36 which is beveled at its ends as at 99 to provide for easy entry into the hooks formed by the upturned ends A.

When it is desired to house the typewriter support, the reverse operation will be apparent; and when it is desired to move the support either to the right or left, it is believed the same will be apparent from the foregoing.

When the typewriter shelf is positioned horizontally, the upper drawer 12 in the stack of drawers 10 will be closed off so that access thereto will not be possible until the support has been removed from in front thereof. However, the remaining drawers in the stack of side drawers 10 will be accessible for use.

The pivotally connected shelf c permits the office machine supported on my novel device to be adjusted for use by a person normally seated at the desk, regardless of whether the device is moved to the right or left hand side of the desk.

I claim:

1. In combination, a desk having a knee space opening, rails mounted upon said desk at the sides of said knee space, a tram adapted to normally support an office machine in the rear part of said knee space, means connecting said tram to said rails and being movable along said rails to convey the machine to one side of the desk, and a supporting member mounted upon said tram and movable in its entirety laterally with relation to said tram to either the right or left hand side of said knee space.

2. In combination, a desk having a knee space opening out at one side thereof, rails mounted upon said desk at the sides of said knee space, a tram adapted to normally support an office machine in the rear part of said knee space, means connecting said tram to said rails and being movable along said rails to convey the machine to one side of the desk, a laterally extendable device mounted upon said tram, and a support member attached to said extensible device laterally movable to either side from said knee space.

3. An adjustable support for an office machine comprising in combination with a desk having a knee space under the top thereof, supporting means connected to said desk within said knee space, two members slidably mounted on said supporting means and in telescopic relation to each other, one of said members being open ended and connected to said supporting means, a supporting member for an office machine normally connected to the other of said members and said other member being adapted to be moved from either end of said open ended member to either side of the knee space.

4. In a device for mounting an office machine upon a desk and for shifting it from one position to another with relation to such desk, a relatively stationary telescopic member of a partially tubular character having an open side, means to attach said member to the desk in a substantially horizontal position and with its open side directed toward one side of the desk, an internal telescopic member insertible within and extensible from said relatively stationary telescopic member, said internal member being substantially C-shaped in cross section and having its open side directed towards the open side of the other telescopic member, anti-friction rollers mounted within the lower portion of said stationary telescopic member to support said internal telescopic member during its extension and retraction; and a hanger to support an office machine in front of said telescopic members, said hanger comprising an elongate member which is substantially U-shaped in cross section and which includes between its limbs the lower portion of said telescopic members, said hanger having anti-friction rollers secured to the front side of its rear limb and located within said C-shaped telescopic member whereby it is extensibly supported from said C-shaped member.

5. An office machine supporting and adjusting means comprising in combination with a desk or like support, a telescopic device connected to said desk and slidable laterally relative thereto, a hinged support secured to said telescopic device; and a pivotal member on said hinged support adapted to pivotally support an office machine in a pendant position and to provide for rotating the office machine with relation to said desk, said hinged support permitting the machine to swing from such pendant position to an up-

right position, and retaining means secured to said desk to maintain the machine in an upright position at either side of the front of the desk while connected with said telescopic device, and said telescopic device is extended to either side of said desk.

6. An office machine supporting and adjusting means comprising, in combination with a desk or like support, a telescopic device attached to the desk, and including a carriage slidable laterally of said desk, a hinged base member supported by said carriage and swingable from a pendant to a substantially horizontal position, a pivoted element on the base member adapted to have an office machine attached thereto, and retaining means secured to the front of said desk to maintain said base member in a substantially horizontal position with the machine pivotally mounted on said pivoted element.

7. An office machine supporting and adjusting means comprising, in combination with a desk or like support, a telescopic device adapted to be extended along one side of the desk, a hinged base member supported by the telescopic device and adapted to support an office machine, said hinged base member being connected so as to swing to a horizontal or vertical position and be moved laterally of said desk when said telescopic device is extended, and retaining means on said desk to lock said base member in a position wherein the office machine is operable, said retaining means being engageable in a lateral manner as said telescopic device is extended to approximately the end of said desk.

8. An attachment for desks comprising transverse rail members, a tram associated with said rail members and adapted to slide to the desk front; a carriage connected to said tram by means of a telescopic device whereby it is adapted to be extended laterally therefrom at either end; a hinged supporting shelf connected to said carriage; and locking means comprising cooperating elements secured to the front of the desk and to the shelf adapted to maintain said supporting shelf in a horizontal position when said carriage has reached the limit of its travel in either direction.

9. An attachment for desks comprising rails, a tram slidably associated with said rails; a carriage supported by said tram by means of a telescopic device whereby it is adapted to be extended to either side of said tram; a hinged supporting member connected to said carriage; supporting means associated with said hinged member; a shelf pivotally supported by said hinged supporting member; and means for engaging said supporting means and for maintaining said supporting member and shelf in horizontal position.

10. A typewriter support comprising a slidably mounted tram; a carriage supported by said tram; means adapted to permit said carriage to be extended laterally from either end of said tram; a hinged supporting member connected to said carriage and adapted when said carriage is moved to housed position to depend therefrom in a substantially vertical position; and retaining means for maintaining said supporting member in substantially a horizontally plane when said supporting member is moved to unhoused and operative position.

11. In combination with a desk, supporting means secured transversely of the desk side beneath the desk top; a tram slidably related to said supporting means; a hinged supporting member slidably mounted relative to said tram; and retaining means connected to said desk to engage said supporting member to maintain said supporting member in horizontal position when said supporting member is shifted about its hinge and laterally of said tram.

12. In combination with a desk, supporting means secured transversely of the desk side beneath the desk top; a tram slidably connected to said supporting means; retaining means secured to the front of said desk; a supporting member pivotally and slidably mounted relative to said tram; and means adapted to engage said retaining means to maintain said supporting member in horizontal position when said supporting member is shifted about its pivot and laterally of said tram.

13. In combination with a desk, supporting means mounted transversely of the sides of said desk underneath the top thereof; a tram slidably connected to said supporting means, a supporting member pivotally and slidably connected to said tram; retaining means connected to said desk; and means extending from said supporting member to engage said retaining means when said supporting member is moved about its pivot and laterally from said tram.

14. In combination with a desk, supporting means mounted on the inner sides of said desk underneath the top thereof; a tram slidably connected to said supporting means, a carriage supported by said tram and including extensile means; a hinged supporting member connected to said carriage; locking arms secured to said supporting member; stop means secured to the front of said desk; and retaining members on the front of the desk; said arms being adapted to engage said retaining members and engage said stop means when said extensile means is extended and said hinged supporting member is moved to horizontal position.

15. In combination with a desk, supporting means mounted on the inner sides of said desk underneath the top thereof; a tram slidably connected to and supported by said supporting means; a carriage including extensile means connected to said tram; a hinged supporting member connected to said extensile means; and retaining means connected to said desk and supporting member adapted to maintain said supporting member in a substantially horizontal position when said supporting member is moved about its hinge and said extensile means are extended.

ELMER E. ASH.