Dec. 22, 1942. C. L. ELOFSON ET AL 2,306,209

DESK AND SUPPORT FOR CALCULATING AND THE LIKE MACHINES

Filed Feb. 15, 1940 3 Sheets-Sheet 1

Fig. 1.

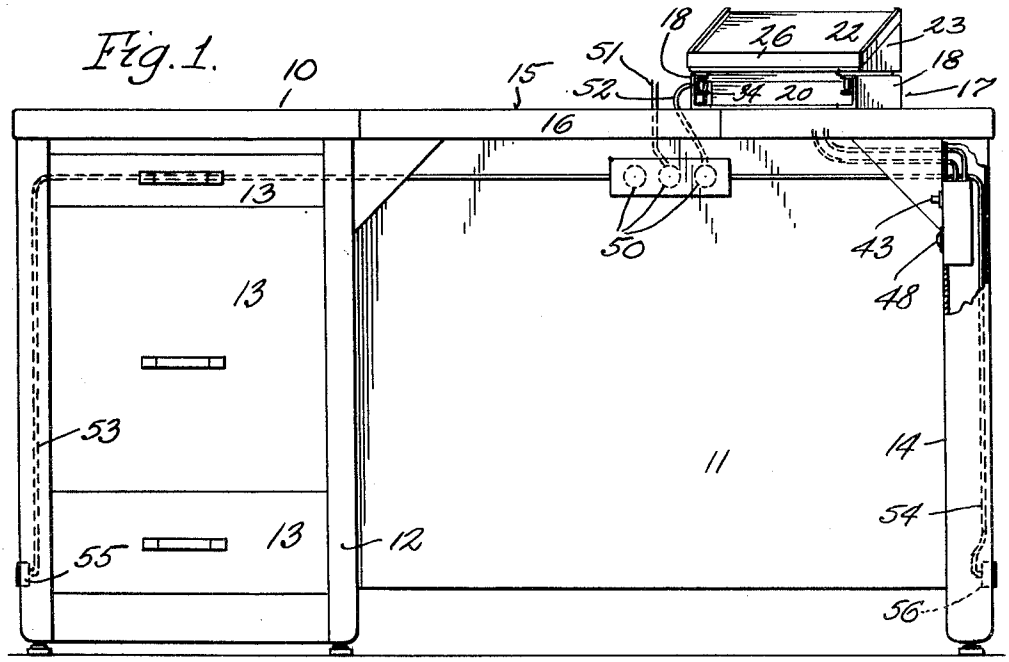
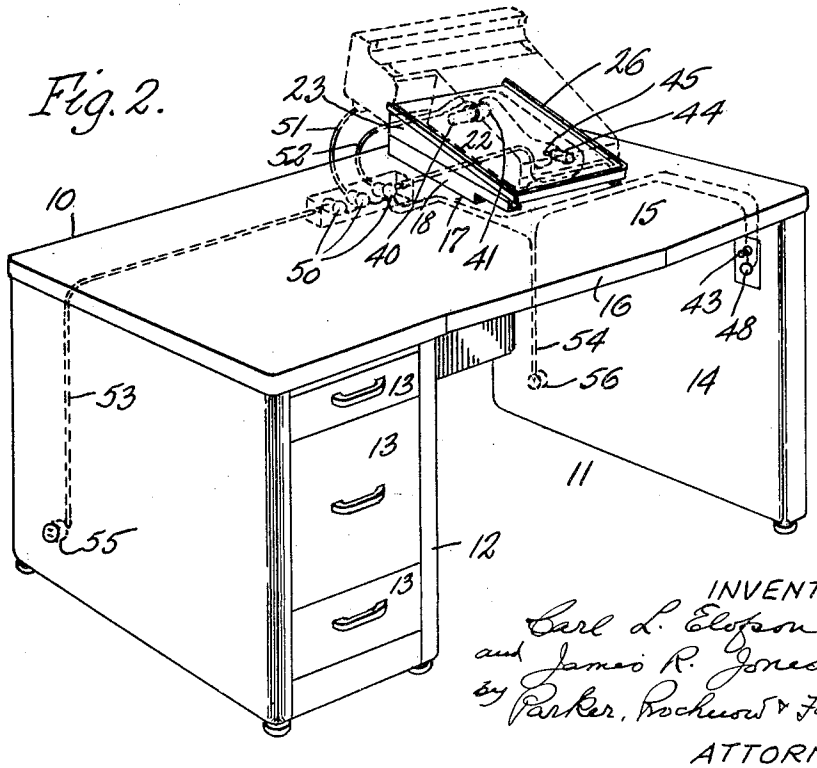


Fig. 2.



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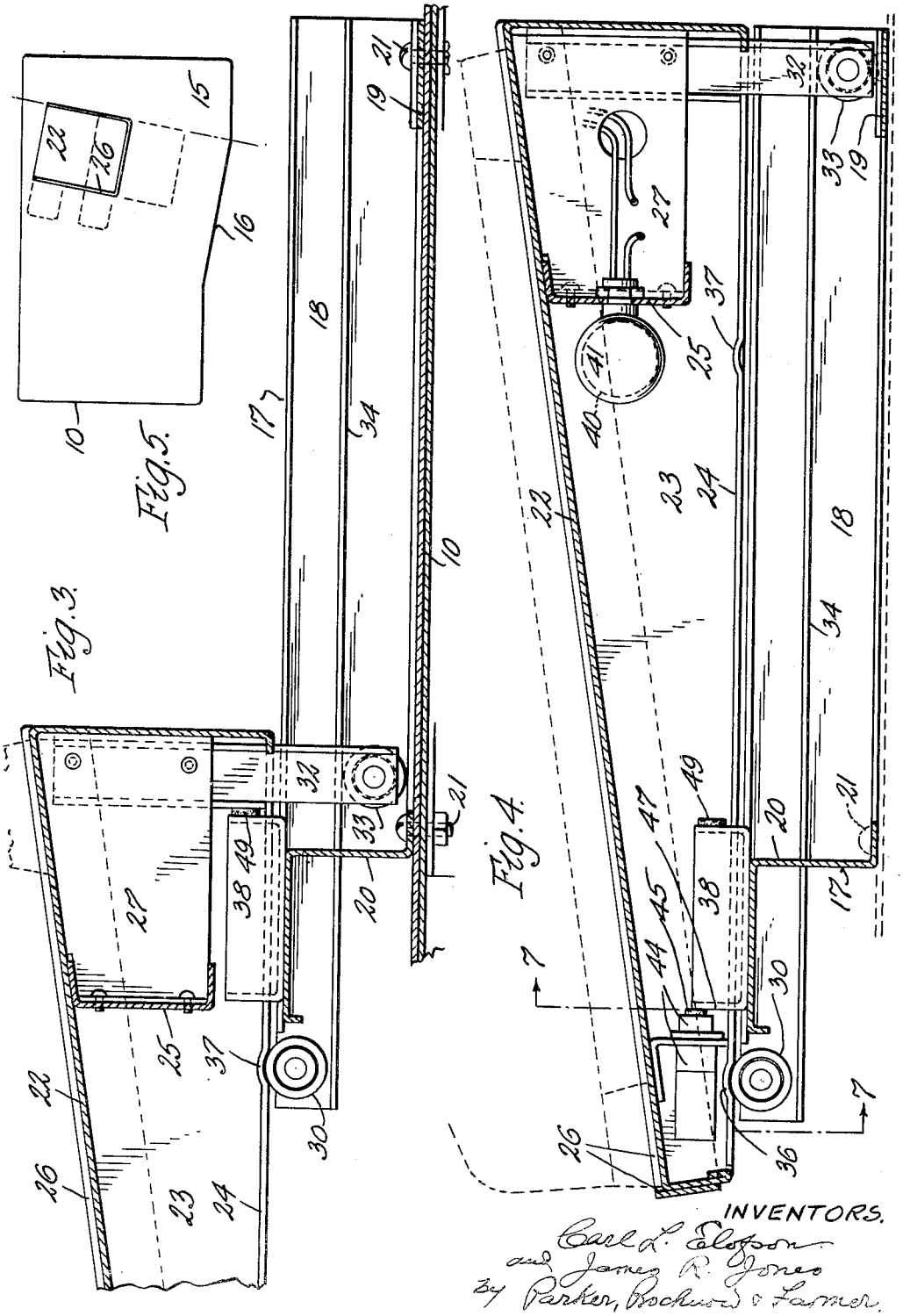
Filed Feb. 15, 1940 3 Sheets-Sheet 2



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Filed Feb. 15, 1940 3 Sheets-Sheet 3

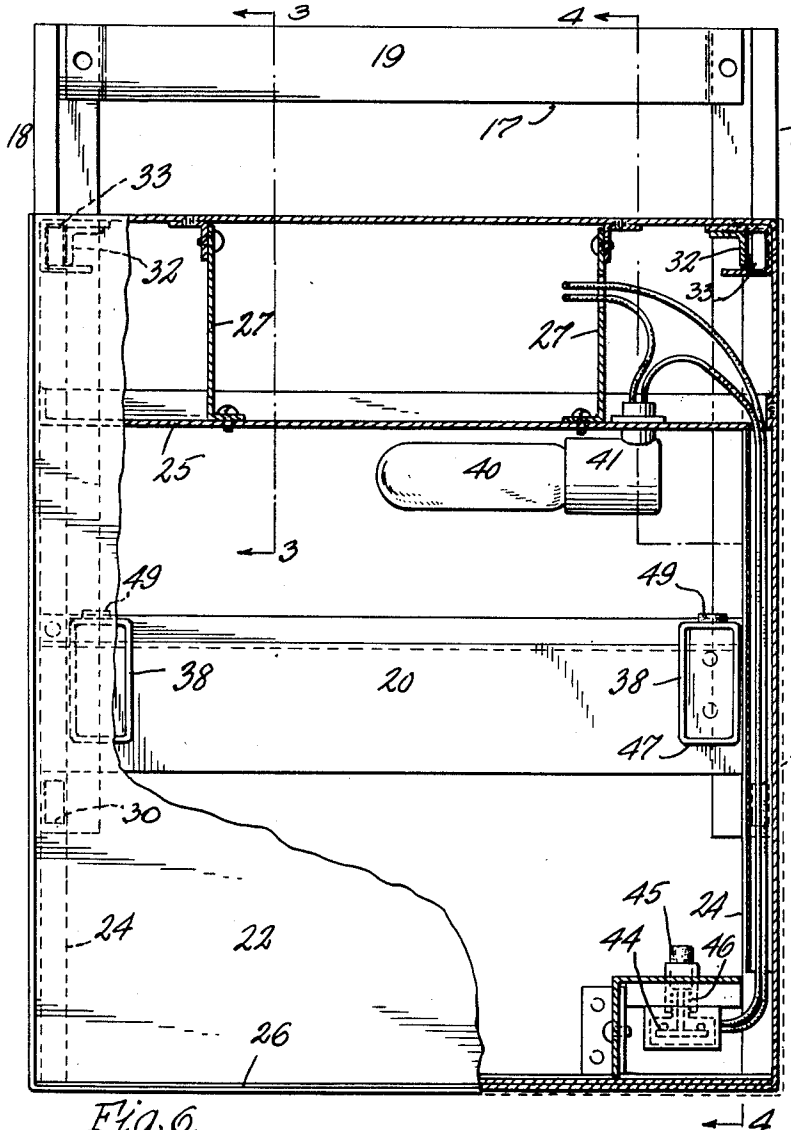

Fig. 6.

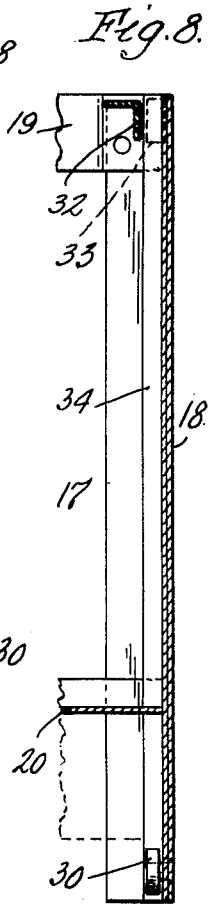

Fig. 8.

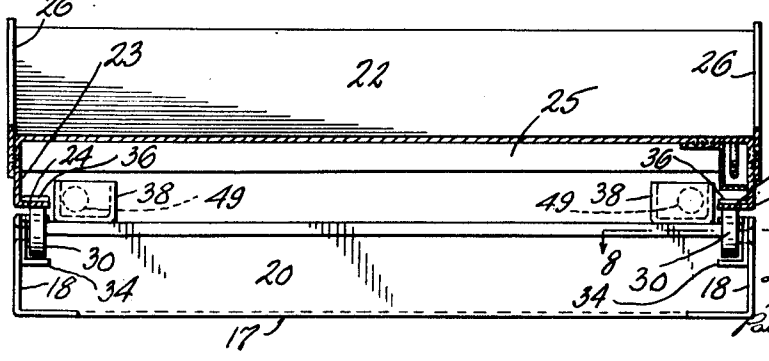

Fig. 7.

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DESK AND SUPPORT FOR CALCULATING AND THE LIKE MACHINES

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Application February 15, 1940, Serial No. 319,078

8 Claims. (Cl. 45—70)

This invention relates to supporting means or a desk and machine-support unit of a character particularly adapted for supporting a calculating or the like machine in position for the operation or use thereof.

Calculating machines, such as the Monroe adding-calculator for instance, are designed with the especial purpose in view of enabling the user to perform calculations or computations with maximum speed, and a primary object of this invention is to provide supporting means or a desk and machine-support unit for such machines by which the machine can be supported, positioned and operated in such a manner as to enable the user to operate the machine with the greatest facility and make entries of the answers or results of the calculations derived from the machine, on a record sheet or element in such a way as to take advantage of or utilize to the fullest extent the high speed possibilities of which the machine is capable.

Other objects of the invention are to provide a desk and a machine support of novel form, construction and arrangement which facilitate the use and speed of operation of the machine; which enable the machine to be placed quickly and easily in different positions most convenient for the use or operation thereof by the user; which facilitate entry of the results or answers derived from the machine upon the record sheet or member; and also to provide convenient electrical means for the operation of the machine and the lamp which illuminates the record sheet or member in the use of the machine.

Further objects and advantages of the invention will appear from the following specification of the preferred embodiment of the invention, shown in the accompanying drawings, and the novel features of the invention are set forth in the appended claims.

In said drawings:

Fig. 1 is a front elevation, partly in section, of a desk and support unit embodying the invention.

Fig. 2 is a perspective view thereof, indicating by broken lines the position of a calculating or the like machine on the machine support.

Fig. 3 is a broken, longitudinal, sectional elevation of the machine support on line 3—3, Fig. 6, showing the foremost position of the carriage.

Fig. 4 is a longitudinal, sectional elevation thereof on line 4—4, Fig. 6, showing the carriage in its rearmost position.

Fig. 5 is a reduced plan view showing the location of the machine support on the desk.

Fig. 6 is a plan view, partly in horizontal section, of the machine support.

Fig. 7 is a transverse section thereof on line 7—7, Fig. 4.

Fig. 8 is a sectional plan view of the support base on line 8—8, Fig. 7.

The machine supporting unit comprises a desk and a machine support proper which is secured in place on the desk top and includes a carriage on which the machine rests and which is movable to place the machine in a desired position nearer to or farther from the front of the desk.

Preferably, as illustrated in the drawings, the desk has a flat top 10 and is provided under the top with a knee space 11 and a pedestal 12 which is located under one end of the top at one side of the knee space and is furnished with drawers 13 or other compartments or containers of suitable arrangement for holding stationery or other articles necessary or desirable in the use of the machine. A single pedestal desk is shown having a drawer or compartment pedestal only at the end thereof to the left of the knee space, and merely a supporting member or pedestal 14, preferably of suitable hollow construction providing support for the other end of the desk top. The desk could have drawer pedestals at both ends, but a second drawer pedestal is not essential to the purpose of the invention. The portion 15 of the top which is located over the knee space and on which the machine is positioned is broader from front to rear than that portion of the top over the drawer pedestal 12 and, as shown, the broader portion 15 of the top has an oblique front edge 16 which inclines rearwardly toward the narrower end of the top located over the drawer pedestal.

The machine support by which the machine is movably mounted on the desk comprises a base which is secured in place on the broad portion 15 of the desk top and a carriage which directly supports the machine and is slidable or movable on the base for locating the machine in the desired position nearer to or farther from the front of the desk.

In its preferred construction, the base 17 of the machine support comprises opposite, spaced apart, metal side members 18 of channel form arranged with their flanges projecting inwardly, and rigidly connected by a rear cross bar 19 secured, as by welding, to the bottom flanges of the side members, and a front cross bar 20 of Z-form, arranged with its ends extending between the flanges of and secured, as by welding, to the side members. The base may be stationarily fastened in place on the desk by bolts

21 or any other suitable fastening means. The carriage of the machine support, as shown, is formed by a metal plate 22 having side portions bent downwardly and then inwardly to form upright side members 23 with inturned bottom flanges 24. Said carriage side members taper or decrease in height forwardly and the top of the carriage inclines downward forwardly so as to support the machine, which rests thereon, at the desired forward inclination. The carriage has front and rear end plates formed, as by downbent front and rear ends of the top plate. A flanged member 25 extending transversely of the carriage between its ends, from one to the other of the side members, beneath the top plate, may be suitably secured, as by spot welding, to the top and side members, so as to strengthen or stiffen the carriage and brace the carriage top plate. Preferably a curb strip 26 extends around the two sides and front end of the carriage and projects slightly above the top plate to confine the machine in place on the inclined carriage top plate. The carriage is further strengthened by brace members 27 connected to the cross brace and rear end plate.

The carriage is mounted so that it can be moved forwardly and rearwardly on the base, preferably by roller supporting means constructed as follows: 30 represents a pair of ball bearing rollers having journal studs fixed on the inner sides of the front portions of the base side members and on which the bottom flanges of the carriage side members bear and are adapted to roll. At its rear end portion, the carriage is provided with legs 32 which depend between and adjacent the base side members and have journalled thereon ball bearing rollers 33 which extend between the inwardly projecting guide flanges of guide rails 34, fixed as by welding, on the inner sides of the base side members, and the bottom flanges on the base side members 18. These rear rollers are adapted to roll either on the bottom or top flanges of the described guides and cooperate with the front rollers in providing antifriction or rolling supports for the carriage. When the carriage is moved to a position in which it projects forwardly beyond the front of the base, the bearing of the rear rollers 33 upwardly against the top guide flanges will prevent the carriage from tipping downwardly. Curved recesses 36 and 37 are shown in the bottom edges of the carriage side members adjacent their front and rear ends into which the front rollers are adapted to seat in the foremost and rearmost positions of the carriage to releasably hold the carriage from movement in these positions. Guide members 38 fixed on the front crossbar of the base and projecting upwardly therefrom adjacent the inner sides of the carriage side members. cooperate with the rear legs to guide the carriage in its movements and prevent displacement of its side members from the front rollers 30.

An electric lamp 40 provided in the carriage beneath its top plate, preferably just in front of the cross brace of the carriage. When the carriage is moved forwardly so as to project forwardly beyond the base, this lamp will be positioned at the front end of the base and is adapted to illuminate the space between the desk top and the forwardly projecting portion of the carriage so that a record sheet or element on the table and extending beneath the projecting portion of the carriage will be effectively lighted to facilitate the user of the machine in making or reading entries on said record element. This lamp preferably consists of an elongated tubular electric light bulb secured in an ordinary bulb socket 41 suitably mounted on the front side of the carriage cross brace.

Preferably, the electrical circuit of this lamp includes a hand switch 43, which may be of the push button type, located in a convenient position for operation at the front of the desk, to light or extinguish the lamp at will, and also an automatic cutoff switch 44 constructed and arranged to turn off the light when the carriage is shifted to its rearmost position, and turn on the light when the carriage is moved forwardly, provided the hand switch 43 is in position for lighting the lamp. As shown, the cutoff switch 44 is mounted in the front end of the carriage and has an actuating plunger 45 which is normally held by a spring 46 (Fig. 6), in a projected position, in which it closes the lamp circuit. When the carriage is moved forwardly from its rearmost position, this plunger will be held projected and light the lamp, provided the hand switch 43 is closed. Thus, the lamp will be lighted when the carriage is moved to any forward position, and when the carriage is returned to its rearmost position the plunger will engage an actuating part 47 on the base and will be pushed inwardly against the action of its spring and extinguish the lamp, regardless of whether or not the hand switch is closed. When the calculating machine is to be used, the hand switch 43 is closed for supplying current to the lamp, and then when the carriage with the calculating machine is moved forwardly to the desired operating position, the cutoff switch 44 will be automatically closed by its spring and light the lamp. Preferably, a pilot lamp 48 is connected in circuit with the hand switch 43 so as to light and show when the switch 43 has been closed to supply current to the lamp.

The hand switch 43 is preferably also connected in circuit with the usual driving electric motor of the calculating machine so that the closing of this switch will act to supply current to the machine motor as well as to the lamp 40.

Cushioning bumpers 49 are shown on the rear ends of the guide members 38 in position to engage corner pieces at the rear end of the carriage to noiselessly arrest the forward movement of the carriage, and the engagement of the spring plunger of the cutoff switch 44 with the front end of one of the guides 38, which constitutes the actuating member 47 for the plunger, serves to similarly arrest the rearward movement of the carriage.

The desk is suitably wired for connecting the machine motor and lamp with an electric current supply line. As shown, an outlet box is provided at the back of the desk furnished with three ordinary convenience outlets 50, into any of which the electric cords 51 and 52 for the machine motor and lamp 40 may be plugged in the usual way. These outlets are, by preference, connected by cables 53, 54, housed within the desk to outlets 55 and 56 located at the lower portions of the opposite ends of the desk so that the desk can be connected to the supply line at either end, whichever may be most convenient, and also a plurality of desks located end to end can be conveniently connected in series to the supply line.

The desk with the machine support constructed and arranged as herein disclosed enables the operator to take full advantage of the speed pos-

sibilities of the calculating machine. The desk top with the broadened portion having the oblique front edge over the knee space and on which the machine is located, and the machine mounted so that it can be easily shifted nearer to or farther from said front edge enable the machine to be placed without effort in the position most suitable for easy operation by the user. Ample space is provided on the desk top to facilitate the necessary writing on sheets or the like, and as it becomes necessary to write on the lower portions of the sheets, the upper portions thereof can extend under the machine carriage so as always to afford ample room in front of the machine for easy writing on the sheets. Nevertheless the sheet is well lighted so that even matter on portions thereof which may extend under the forward end of the carriage can be clearly seen. By providing a light reflecting finish or coating on the under surfaces of the carriage, the lighting effect can be further increased.

It should be understood that the operator, by grasping a pencil between the thumb joint and first knuckle joint of the index finger is enabled to strike the keys of the machine with all of the fingers and still be able to set down the results of the calculations without having to pick up the pencil, and the machine can be shifted to or from the operator with a slight touch, and will remain in any position desired or most suitable for the particular operator. All this, together with the described electrical control, makes it possible to perform high speed work with the machine with maximum ease and comfort, which results in increasing the operator's efficiency.

We claim as our invention:

1. A support for a calculating or the like machine comprising a base adapted to be secured on a desk, and a machine-supporting carriage movable forwardly and rearwardly on said base, said base comprising spaced connected side members, said carriage comprising a top and side members connected by the top and arranged over said base side members, rollers journalled on the forward portion of said base and on which said carriage side members bear, legs depending from the rear portion of said carriage between the side members of the base, and rollers journalled on said legs and arranged to roll and bear against upper and lower guides on said base side members.

2. A machine support according to claim 1 in which said guide members cooperate with stop members at the front and rear portions of the carriage to arrest the rearward and forward movements of the carriage.

3. A support for a calculating or the like machine, comprising a base adapted to be secured on the top of a desk in a location rearwardly distant from the front edge of the top, and a carriage which supports the machine in its operative position and is mounted on said base to move forwardly from a position over the base to a position in which a portion of the carriage projects forwardly beyond the front of the base over and spaced upwardly away from the desk top, an electric lamp arranged on said support to illuminate the space under the forwardly projected portion of the carriage when the latter is moved forwardly, and a control device for said lamp which is actuated by the movement of the carriage to light the lamp when the carriage is moved forwardly and to turn off the lamp when the carriage is moved to its rearmost position.

4. A support for a calculating or the like machine, comprising a base adapted to be secured on the top of a desk in a location rearwardly distant from the front edge of the top, and a carriage which supports the machine in its operative position and is mounted on said base to move forwardly from a position over the base to a position in which a portion of the carriage projects forwardly beyond the front of the base over and spaced upwardly away from the desk top, an electric lamp arranged on said support to illuminate the space under the forwardly projected portion of the carriage when the latter is moved forwardly, electric current supply means for said lamp and for operating said machine, a control device for said lamp which is actuated by the movement of the carriage to light the lamp when the carriage is moved forwardly and to turn off the lamp when the carriage is moved to its rearmost position, and a switch located in convenient reach at the front of the desk for controlling the supply of current to said lamp and to said machine for operating the machine.

5. A machine support according to claim 3, in which said control device consists of a cutout switch mounted on said carriage and includes a spring projected member arranged to engage a part of the base to be thereby actuated to turn off the lamp.

6. A support for a calculating or the like machine, comprising a base adapted to be secured on the top of a desk in a location rearwardly distant from the front edge of the top, and a carriage which supports the machine in its operative position and is mounted on said base to move forwardly from a position over the base to a position in which a portion of the carriage projects forwardly beyond the front of the base over and is spaced upwardly away from the desk top, an electric lamp arranged on said support to illuminate the space under the forwardly projected portion of the carriage when the latter is moved forwardly, and an operating circuit for said lamp including a hand switch at the front of the desk and also a cutout switch arranged to be actuated to light the lamp by forward movement of said carriage and to turn off the lamp by movement of the carriage to its rearmost position.

7. A support for a calculating or the like machine comprising a base adapted to be secured on a desk and having rigidly connected spaced apart side members, and a machine-supporting carriage movable forwardly and rearwardly on said base, rollers journalled on the forward portion of the base and on which said carriage bears, legs depending from the rear side portions of the carriage, and rollers journalled on said legs and arranged to roll and bear against upper and lower guides on said base side members.

8. The combination with a desk having a flat top, and a knee space under the same, a portion of said top which is over the knee space being broader from front to rear than an adjoining side portion of the top, of a support for a calculating or the like machine comprising a base which is secured on said broad portion of the top in a location distant rearwardly from the front of the top, and a carriage which supports the machine in its operative position and is slidable horizontally forwardly and rearwardly on said base for shifting the machine while maintained in operative position to locations at different distances from the front of the desk top, said carriage when moved forwardly having a portion thereof which projects forwardly beyond the front of the base over but supported

off of and spaced upwardly away from the desk top, leaving an unobstructed space in front of said base between the desk top and the bottom of the forwardly projecting portion of the carriage into which a record element lying on the desk top can extend, said broader portion of the desk top having an oblique front edge inclining rearwardly toward the narrower portion of the top, and said carriage being mounted in an oblique position with its front edge substantially parallel with said oblique front edge of the top.

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