Dec. 5, 1939. F. A. SCHMITZ 2,182,037

OFFICE FURNITURE

Filed April 21, 1937 3 Sheets-Sheet 1

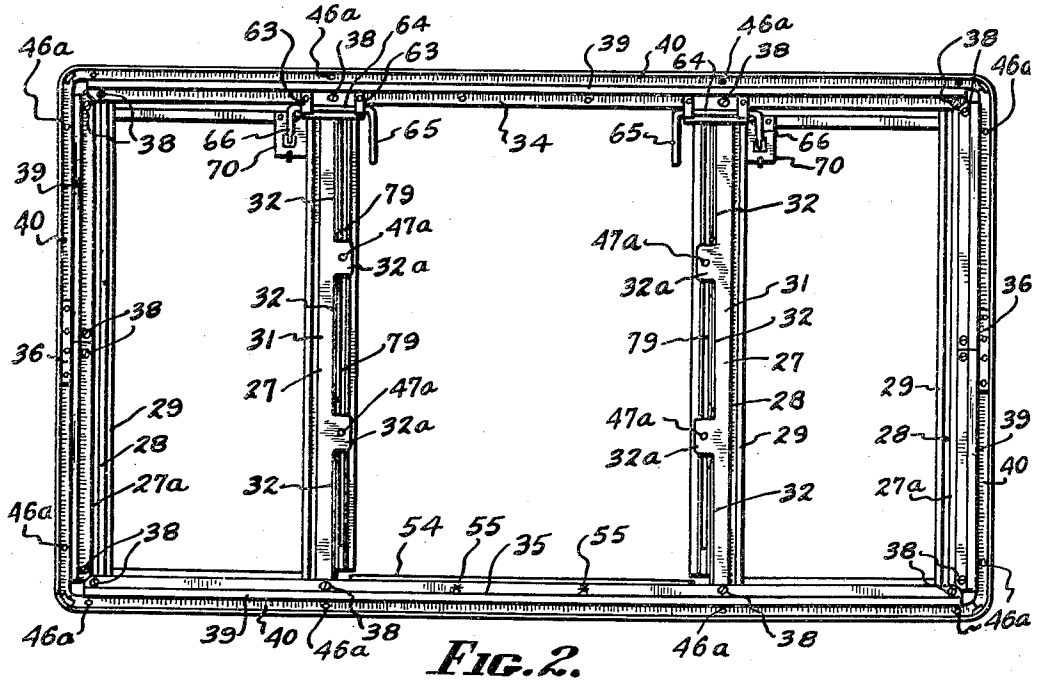


FIG. 2.

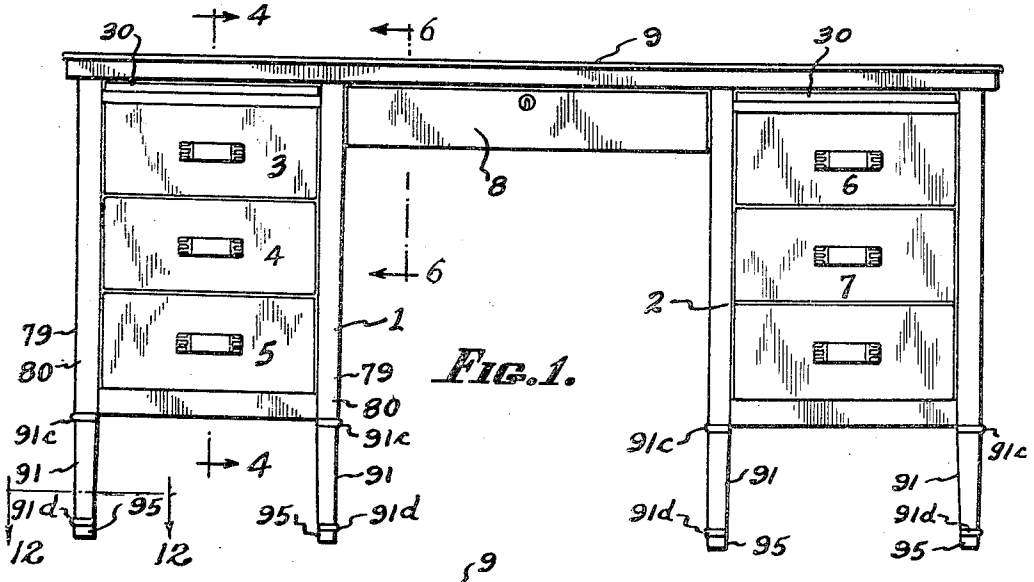


FIG. 1.

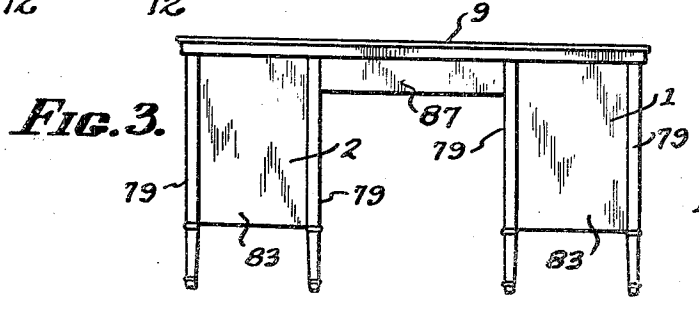


FIG. 3.

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Filed April 21, 1937 3 Sheets-Sheet 2

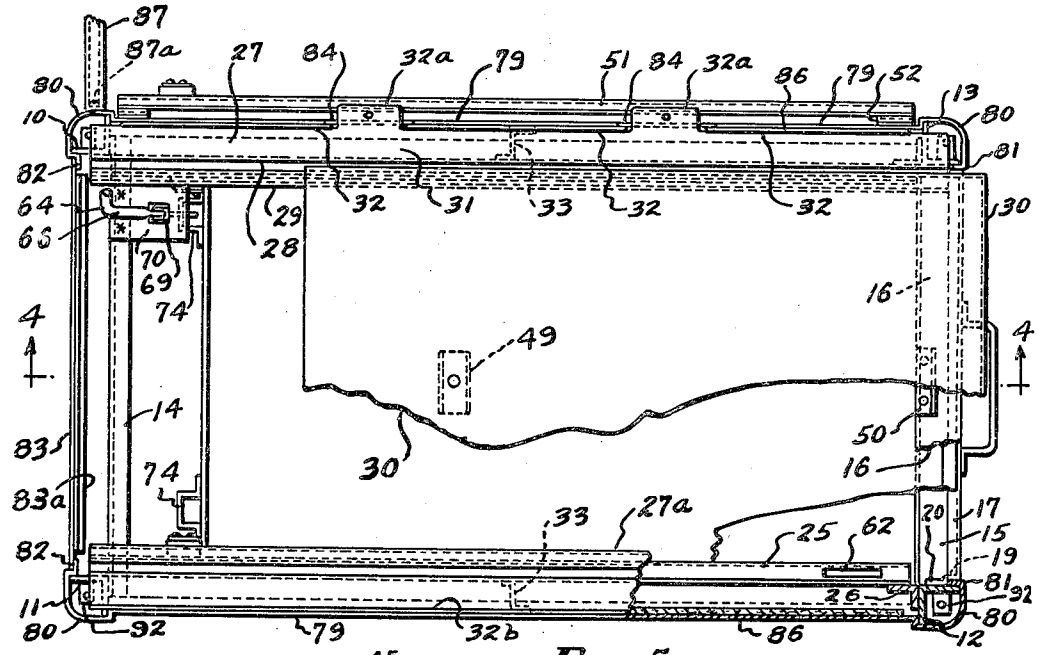


FIG. 5.

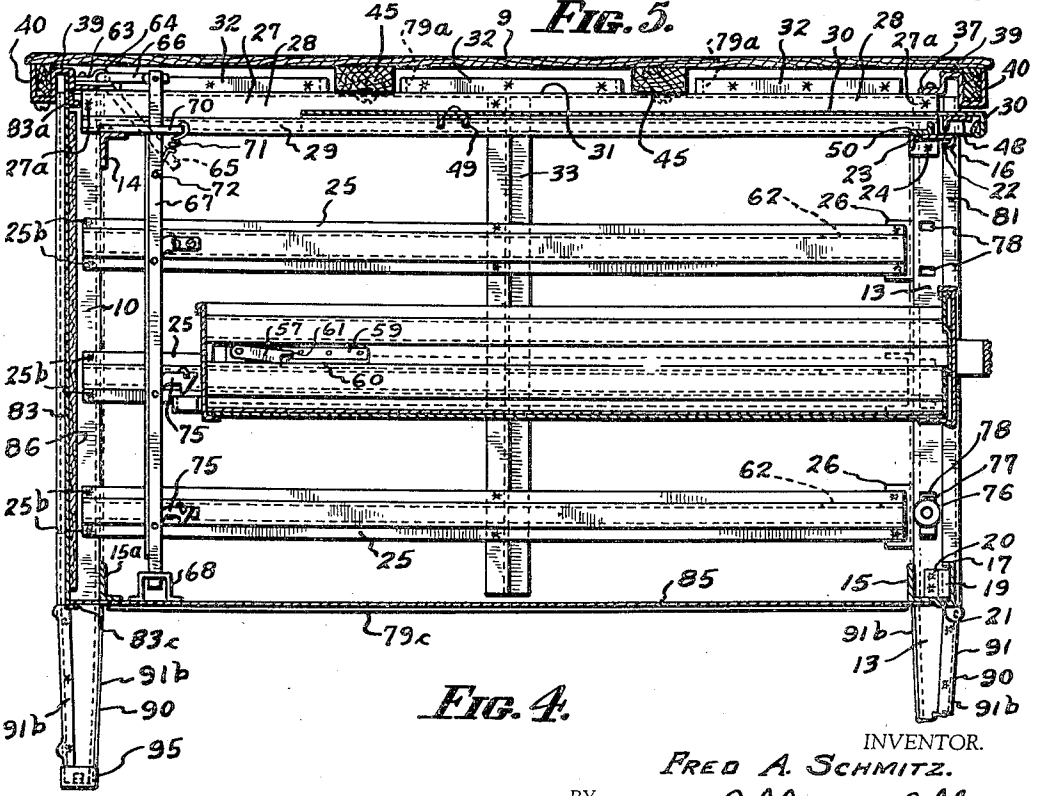


FIG. 4.

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Dec. 5, 1939. F. A. SCHMITZ 2,182,037

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Filed April 21, 1937 3 Sheets-Sheet 3

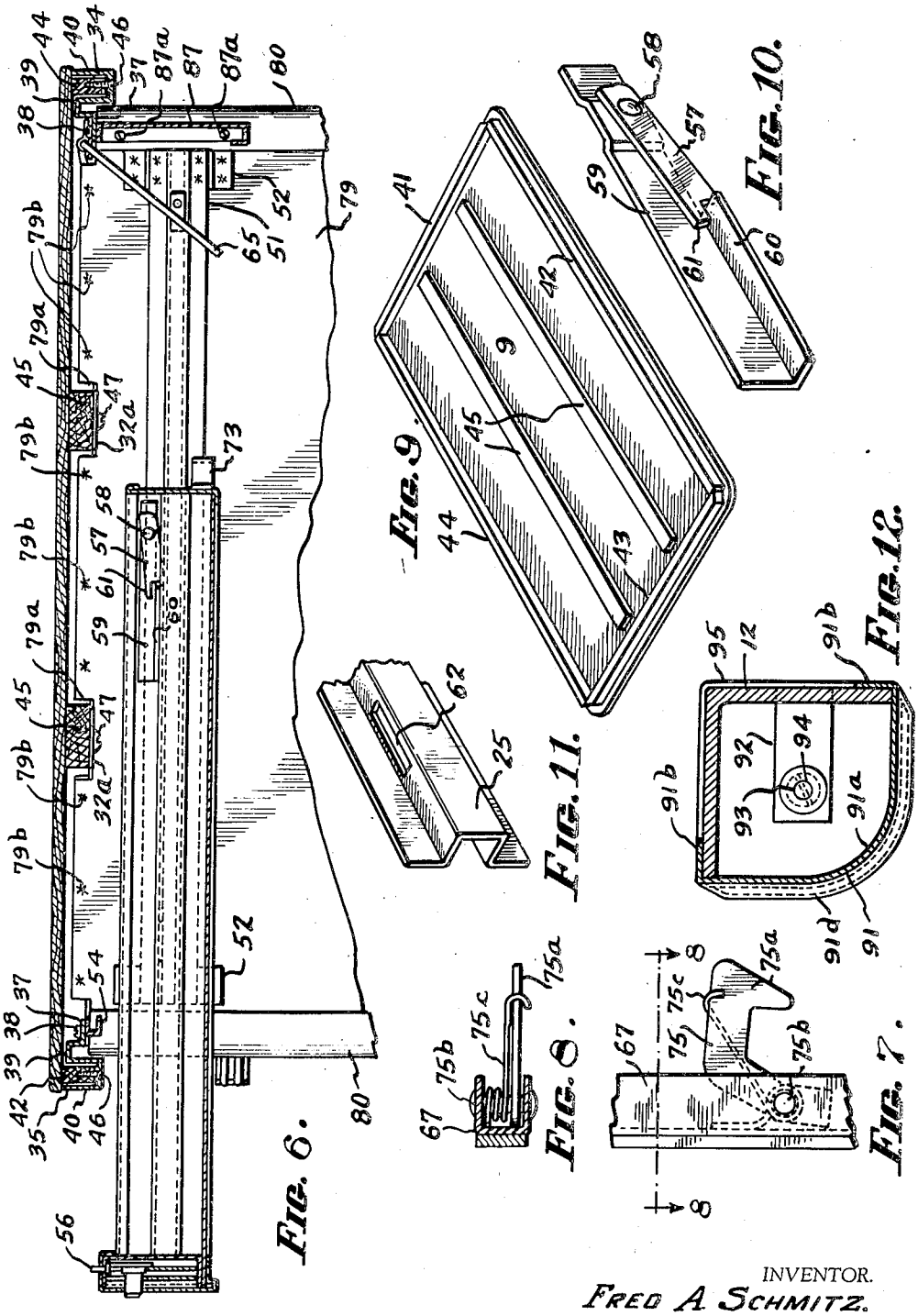


FIG. 6.

FIG. 9.

FIG. 10.

FIG. 11.

FIG. 12.

FIG. 8.

FIG. 7.

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Patented Dec. 5, 1939

2,182,037

UNITED STATES PATENT OFFICE

2,182,037

OFFICE FURNITURE

Fred A. Schmitz, Cincinnati, Ohio, assignor to Globe-Wernicke Company, Norwood, Ohio, a corporation of Ohio

Application April 21, 1937, Serial No. 138,221

1 Claim. (Cl. 45—6)

My invention relates to office furniture and more particularly to metal knee-hole type flat top desks.

There has been a rather well defined trend in this art toward metal furniture on account of the fact that such furniture is considered to be more durable and more resistant to the ravages of uneven temperature and uneven humidity than similar furniture constructed from wood, unless the wooden furniture used is of extremely high grade and correspondingly expensive. In the past steel furniture and in particular steel desks have been made of relatively heavy metal so that they could withstand hard usage.

For this reason steel desks have in the past been extremely heavy and difficult to move about, and their appearance has not been of the best.

It is an object if my invention, therefore, to provide a steel desk of novel construction which eliminates the disadvantages referred to above, and which is durable, light and neat in appearance.

Other objects of my invention which will be pointed out hereinafter or which will appear to one skilled in the art upon reading the specification, I accomplish by that certain construction and arrangement of parts of which I shall describe an exemplary embodiment.

Reference is made to the drawings in which

Fig. 1 is a front elevation of a desk according to my construction.

Fig. 2 is a plan view of the desk with the top removed in order to show inner construction.

Fig. 3 is a rear elevation of my desk.

Fig. 4 is a cross sectional view of one of the pedestals taken on the line 4—4 of Figs. 1 and 5.

Fig. 5 is a plan view of the left pedestal assembly with the top and top frame removed.

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

Fig. 7 is an elevation of one of the drawer locking hooks.

Fig. 8 is a cross sectional view of the same taken on the line 8—8 of Fig. 7.

Fig. 9 is a perspective view of the underside of the desk top.

Fig. 10 is a perspective view of the drawer latch on the inside of the drawer.

Fig. 11 is a partial perspective view of an end of one of the drawer guides.

Fig. 12 is a section through one of the legs, being taken on line 12—12 of Fig. 1.

Briefly in the practice of my invention, I provide a desk formed from various structural shapes such as angles and channels and the like, welded together to form a rigid integral framework. I then cover this framework by spot welding thereto a finishing material comprising sheet metal of light gauge which may if desired have an exterior deckle. By this construction I provide a desk which is fully as rigid as any metal desk known in the art and more rigid than most. At the same time the desk is made less expensive by virtue of my construction, and the weight of the desk is reduced from in the vicinity of three hundred pounds to about one hundred fifty pounds.

I have shown in Fig. 1 an exemplary desk comprising the pedestals indicated generally at 1 and 2, which pedestals carry the drawers 3, 4, 5, and 6 and the double drawer 7, as is usual. In the knee-hole portion there is a flat drawer 8 and the desk is provided with a top for writing surface 9.

The pedestals 1 and 2 are substantially identical in construction except in so far as one is a left hand and the other a right hand pedestal. I will, therefore, describe only one pedestal and it will be understood that the description thereof will apply to the other. Referring to Figs. 4 and 5, I provide corner members for the pedestal comprising angle irons 10, 11, 12 and 13. The two rear angle irons 10 and 11 are connected together by means of the crosswise disposed angle irons 14 and 15a which are welded respectively to the members 10 and 11. The two front angle irons 12 and 13 are connected by means of the channel members 15 and 16. The member 15 is roughly channel shaped and is provided with an inturned flange 17 which serves as a parting strip with the bottom of the bottom drawer. The front web of this channel has an inturned portion 19 which has an offset extension 20. The portion 20 is welded to the forwardly projecting leg of the angle iron 12. As may be seen in Fig. 5, the purpose of the offset in the flange 19 is to accommodate an edge of the finishing material as will be described hereinafter. Likewise it will be noted that the piece of the channel member 15 is offset as at 21 for the purpose of accommodating the bottom of the pedestal, as may clearly be seen in Fig. 4.

The member 16 which connects the members 12 and 13 together at the top is approximately J-shaped in cross section. The inturned flange 22 serves as a parting strip for the top of the uppermost drawer and the rear flange 23 serves to strengthen the structure.

The front and rear angle irons 10 and 13, and 11 and 12, respectively, are connected by means

of the drawer guides which I have indicated generally at 25. These guides are shown in cross section in several of the views. At the rear these drawer guides are welded directly to the angle irons 10 and 11, respectively, as indicated at 25a, and at the front they are welded to small angle iron members 26, which are themselves welded to the angles 12 and 13, respectively. This construction is most clearly shown in Fig. 5. At the top the front and rear angles 10, 13 and 11, 12, respectively, are connected by the elements 27 and 27a. These members are welded to the front and rear angle iron members as indicated at 27b in Fig. 4. The members 27 and 27a are provided with vertical portions 28 which are welded, as above pointed out, to the front and rear angle irons. At the lower end of the portions 28 there are provided the hook members 29 which serve as supports and guides for the pull-out shelves 30. From the upper end of the portions 28 there extend outwardly the flat horizontal portions or webs 31 which rest on and may be welded to the tops of the angle irons 10, 11 and 12, 13, respectively. As may be seen in Fig. 4, portions of the web 31 of member 27 are cut and bent upwardly, as indicated at 32 for a purpose which will be described hereinafter. Bending of the portion 32 upwardly leaves the intervening portions 32a extending from the web 31. Due to my construction the outer member 27a does not require the extending portions 32a but does have the upstanding portion 32b extending throughout its length, as best seen in Fig. 5. In order to further brace the pedestal structure I provide the Z-shaped members 33 which are welded to the members 27 and 27a and also to the drawer guide members 25, as may be seen in Figs. 4 and 5.

The framework for connecting the two pedestals together and for supporting the desk top is best seen in plan view in Fig. 2 and in cross section in Figs. 4 and 6. I construct this member generally from two U-shaped pieces 34 and 35 which are connected together by strips 36 as shown in Fig. 2. In cross section this framework comprises the flange 37 which is screwed to the members 27 and 27a which were described hereinabove, as indicated at 38. The frame further comprises an upwardly extending portion 39 and a downwardly extending channel 40.

The desk top itself which is best seen in inverted position in Fig. 9 comprises a slab of masonite in my particular construction, although other similar materials may be used. To the underside of this writing surface which I have indicated generally at 9 there are glued 4 wooden members 41, 42, 43 and 44. To strengthen the writing surface further, I prefer to glue slats 45. When the member 9 is placed in position the members 41, 42, 43 and 44 rest in the channel portion 40 of the frame 34, 35 and the slats 45 rest on the portions 32a of the members 27 which were not turned up. For permanence, the writing surface 9 may be attached to the frame member by means of screws 46 extending through holes 46a in the bottom of the channel 40 into the members 41, 42, 43 and 44, and screws 47 extending through holes 47a into the slats 45.

The pull-out shelf members 30 ride in the guides provided by the members 27. On the underside of the members 30 I provide at the front a piece of angle iron 48, and near the rear a small piece of channel iron 49. Welded to the member 16 is a piece of channel iron 50 which cooperates with the members 48 and 49 to limit the inward and outward movement of the shelf members 30.

The drawers 3, 4, 5 and 6 are of conventional construction. The drawer 7 is a double depth drawer made to appear on the front as two single drawers as is well known in the art. It will be noted that they are provided with channel shaped indentations along the sides which are adapted to ride on the guide members 25. The double drawer 7 is provided with two such indentations so that the drawers are entirely interchangeable. That is, the double drawer 7 may be used in any one of four positions i. e. at the bottom or at the top of each pedestal.

The guides 51 for the center drawer are welded to supporting members 52 which themselves are welded to the sheet of finishing metal 79 in the inside of each pedestal. The members 79 will be described in more detail hereinafter. To the bottom of the top frame member 35 at the center I weld a channel shaped element 54 as indicated at 55. This member serves as a parting strip for the upper edge at the front of the center drawer, and also serves as an abutment behind which the latch member 56 of any conventional lock may abut.

Each of the drawers is provided on its inside adjacent the channel portion which rides on the drawer guide with a latch member 57. The member 57 is pivoted as at 58 to a member 59 which is fastened to the inside of the drawer, as may be seen in Figs. 4 and 6. The member 59 is provided with an inturned flange 60 which cooperates with an extension 61 on the latch member 57 to prevent the latter from dropping beyond a predetermined distance. In each of the drawer guides adjacent the front thereof I have provided a cut out portion 62, as best seen in Fig. 11. As the drawer is pulled out the latch member 57 rides along on the top of the drawer guide 25 until the rear of the drawer reaches the cut out portion 62. At this point the latch member 57 drops down and engages in the cut out portion 62, preventing accidental complete withdrawal of the drawer. If it is desired to remove the drawer, this may be readily accomplished by simply lifting the latch member 57 out of the cut out portion 62.

The locking mechanism for my desk is more or less conventional. Hinged in members 63 which are attached to the flange 37 of the frame I have provided bell crank members indicated generally at 64. Arms 65 thereof extend inwardly from both pedestals and normally occupy a position such as is indicated in dotted lines in Fig. 4 and in solid lines in Fig. 6. Arms 66 of the bell crank extend inwardly into the respective pedestals and normally occupy a horizontal position. To the reduced ends of the arms 66 are pivoted the locking bars 67. At the bottom of the pedestals the bars 67 are guided in the members 68 which are attached to the bottom of the pedestal. This bottom member will be described hereinafter in more detail. Near their upper ends the bars 67 are guided in a slot 69 in a plate 70 which is attached in any desired manner to the angle member 14. A spring element 71 acting between the plate 70 and a point 72 on the member 67 tends to maintain the latter in the drawer shown in Fig. 4.

In order to lock the desk the center drawer is pushed in all the way, whereby the members 73 which are attached to the back of the drawer abut the end of the arms 65 of the bell crank levers and oscillate them against the tension of

the springs 71, whereby the bars 67 are moved downwardly. Each of the drawers is provided in its rear with channel shaped members 74, one at each side in order to make the drawers interchangeable. The downward movement of the bars 67 causes the hook members 75 to engage the members 74 and lock the drawers in their closed position. The construction of the members 75 is more clearly shown in Figs. 7 and 8. They comprise the hook members 75a which are pivoted at 75b at appropriate points on the member 67. Springs 75c urge the hook members 75a downwardly so that if the center drawer should be pushed in all the way while one of the other drawers is still open, it is still possible to push the latter drawer in and the front edge of the hook member 75a will be pushed upwardly against the tension of the spring 75c and will be urged downwardly again to latch the member 74 when the drawer is closed.

As shown in Fig. 4, I have provided an accessory comprising a roller 76 pivotally mounted on a bracket member 77. This accessory is more fully described and claimed in my copending application Ser. No. 200,169, filed April 5, 1938, as a division of the present application.

In order to present a finished appearance, I cover the framework of the pedestals with sheet metal of light gauge which is preferably treated in some way to provide a pleasing external appearance. As may be seen in Fig. 5, I provide two similar pieces 79 to cover the sides of the pedestal at the outside of the desk and in the knee-hole portion. These members are provided with the radius portions 80 to cover the unsightly appearance of the corner angles and in the front are provided with an inturned flange 81 which fits into the recessed portion 19 in the channel 15 which was described heretofore. At the rear the members 79 are provided with flanges 82 for attachment of the back cover member 83. The members 79 are spot welded at strategic points to the angle irons 10, 11 and 12 and 13, respectively, and the back portion 83 is spot welded to the flange 82. The cover portion 79 for the inside of the pedestal has cut out portions 79a to provide clearance for the slats 45 and is welded as at 79b to the portions 32 of the member 27 which was described heretofore. The cover portion 79 for the outside of the pedestal is welded along its top edge to the upstanding flange 32b of member 27a.

The bottom cover members 85 are welded respectively to the channel members 15 and 15a as best seen in Fig. 4. At the front of the pedestals the bottom member 85 fits into the recessed portion 21, and may be welded thereto. This bottom plate 35 is also welded at its sides and back to the inturned flanges 79c and 83c of the cover members 79 and 83 respectively. In order to eliminate unnecessary noise when opening and closing drawers and the like, I prefer to line the cover elements with layers of felt, as indicated at 86 in the various figures.

At the rear of the knee-hole portion, in order to cover up the back of the center drawer I provide a finishing member 87 which is screwed to the inner members 79 as indicated at 87a.

To reinforce the back cover member 83 at its upper end I have welded thereto an angle piece 83a, said angle piece extending between the flanges 82, 82 of the inner and outer cover members 79.

The vertical angles 10, 11, 12 and 13 extend below the body of the desk as at 90 and constitute the leg portions of the desk. As seen in Figs. 1 and 12 these leg portions have coverings 91 with a rounded portion 91a and short side walls 91b by which the coverings are welded to the vertical angles. Beaded formations 91c and 91d at the top and bottom of the leg coverings are merely to enhance the appearance of the desk. Each of the vertical angles above mentioned has near its extreme lower end an inturned ear 92 threaded as at 93 to receive a screw 94. The screw 94 serves to attach a socket like member 95 which completes the leg structure.

Due to the construction herein disclosed all of the metal framework and covering employed may be formed of light sheet material, with the exception of the vertical cover members 10, 11, 12 and 13, which may be of angle iron or pressed steel. I have found in actual practice that for the average size desk the cover members in general may be formed of material .018 of an inch in thickness. The various reinforcing angles, drawer slides and channels need not exceed .050 of an inch in thickness and the vertical frame angles 10, 11, 12 and 13 may be formed from a good grade of steel .109 of an inch in thickness. It is thus apparent to those skilled in the art that I have substantially reduced the weight of the desk. The figures given above are, of course, exemplary, and do not constitute limitations on my invention.

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

In a metal desk comprising a pair of pedestals formed from structural elements welded together to form integral braced structures and covered with a finished sheet metal material of light gauge, a frame having an upwardly opening channel element fastened to said pedestals to space them and hold them together, and a desk top providing a writing surface and having elements adapted to fit within said channel elements fastened to its under side.

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