July 10, 1951 C. M. ABRAHAMSON 2,560,400

DESK

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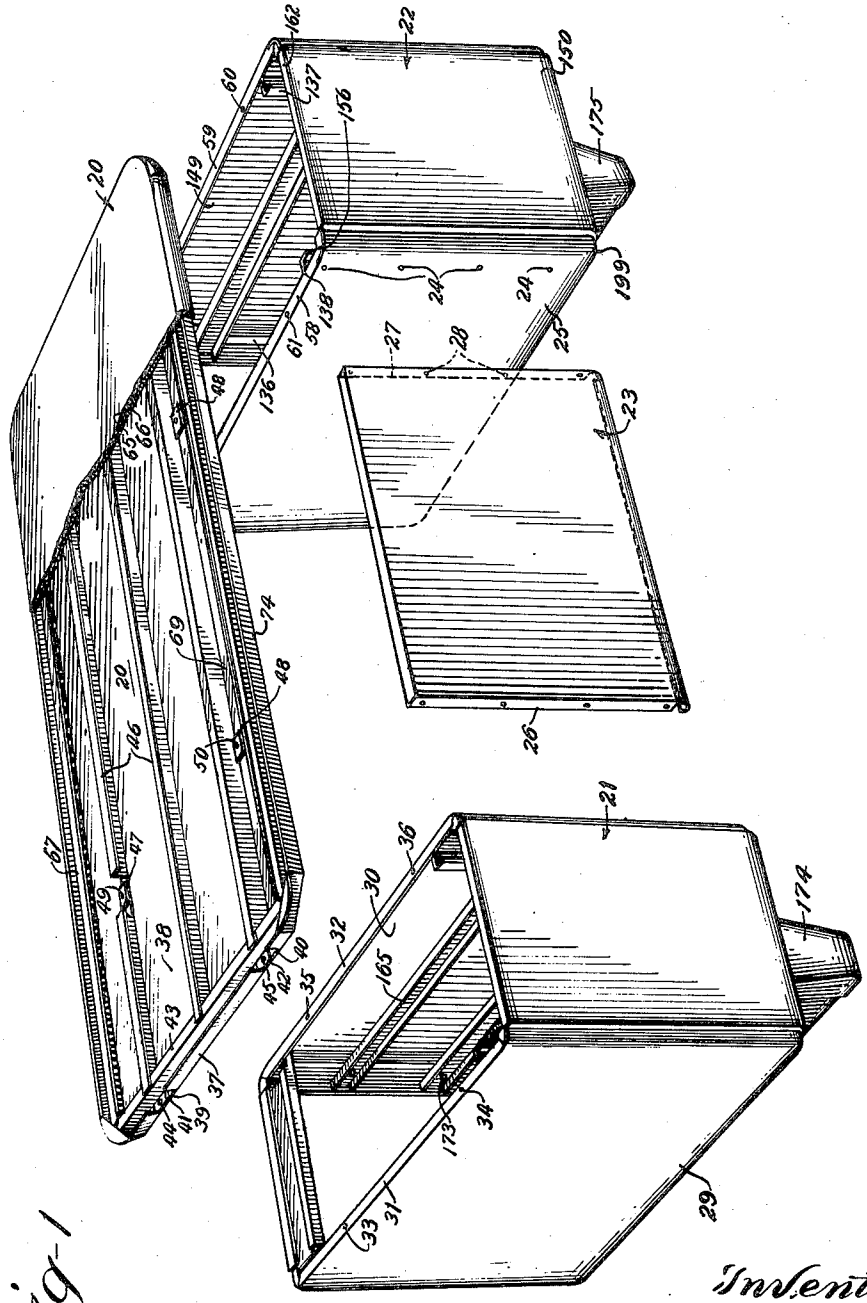


Fig. 1

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Fig-2

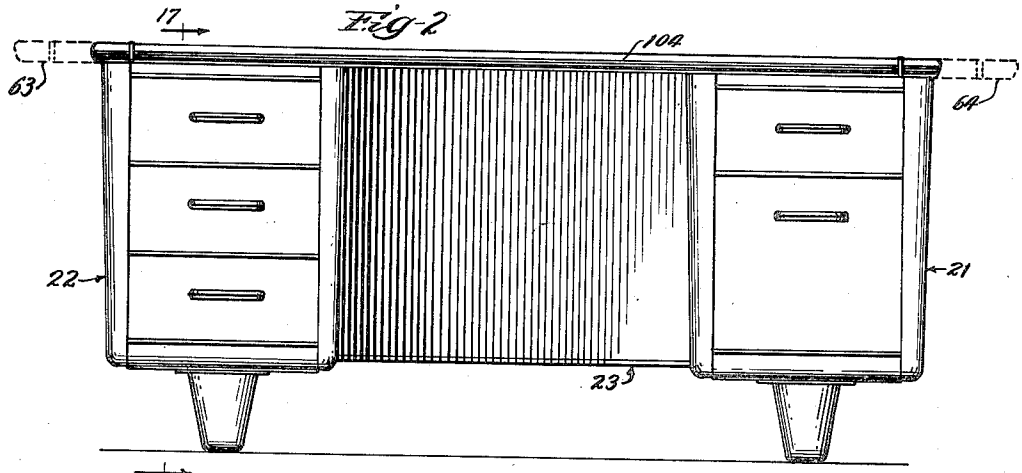


Fig-4

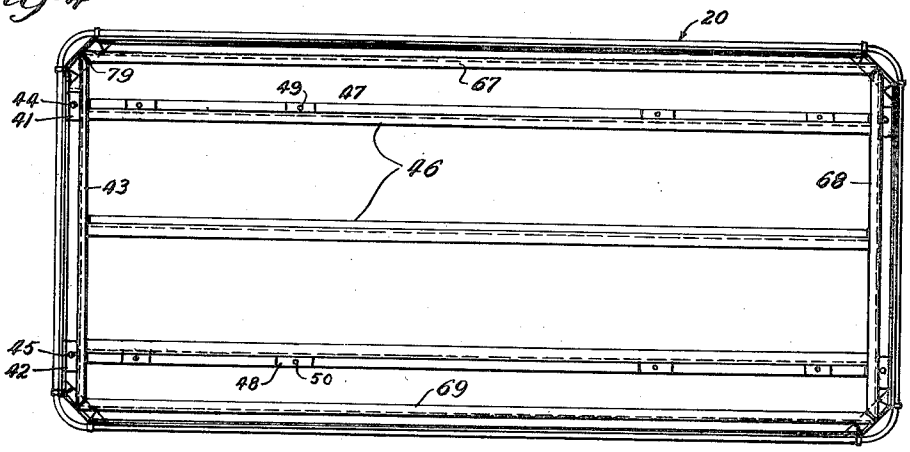
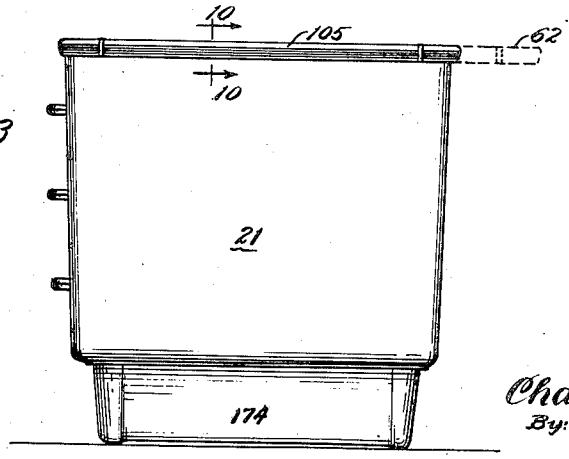


Fig-3



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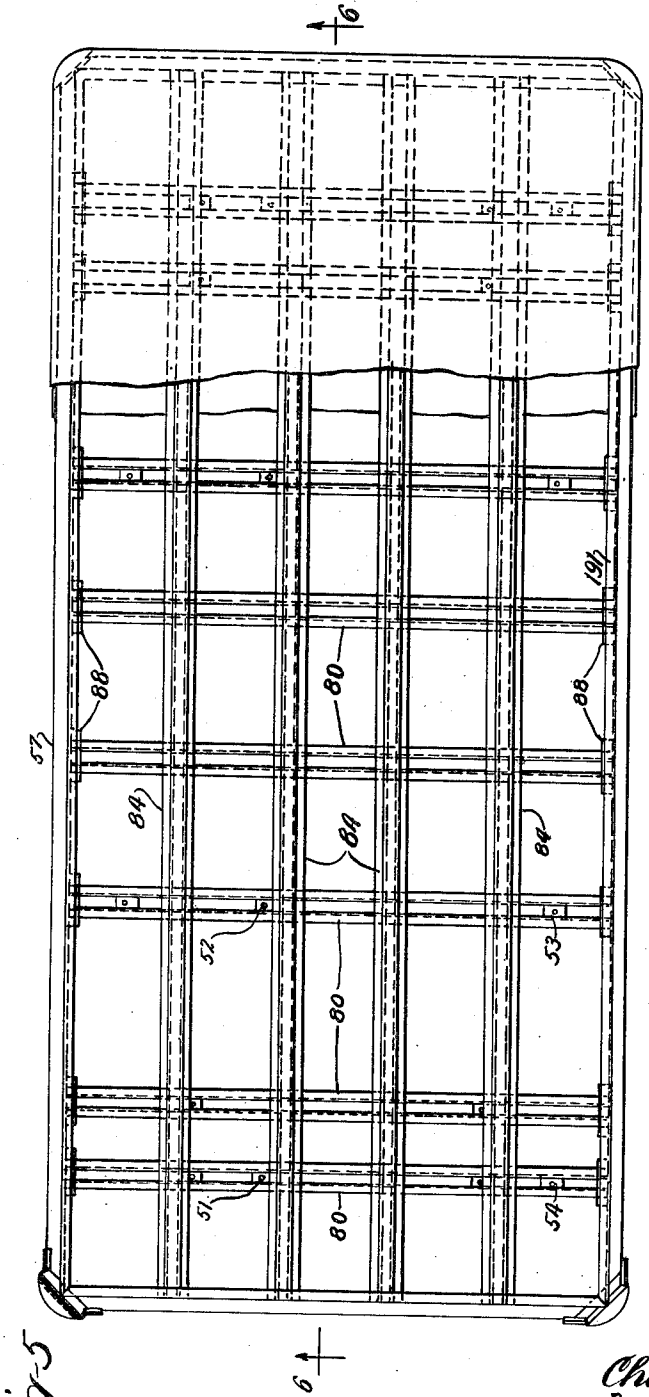


Fig-5

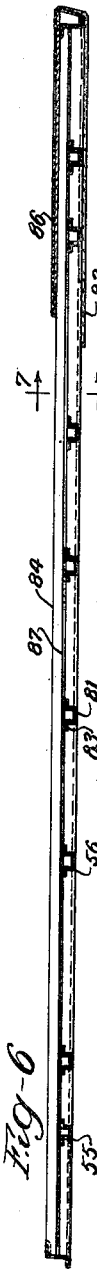


Fig-6

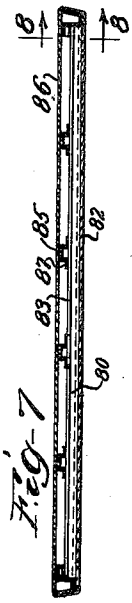


Fig-7

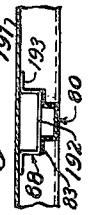


Fig-8

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Filed Sept. 18, 1946

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Fig-9

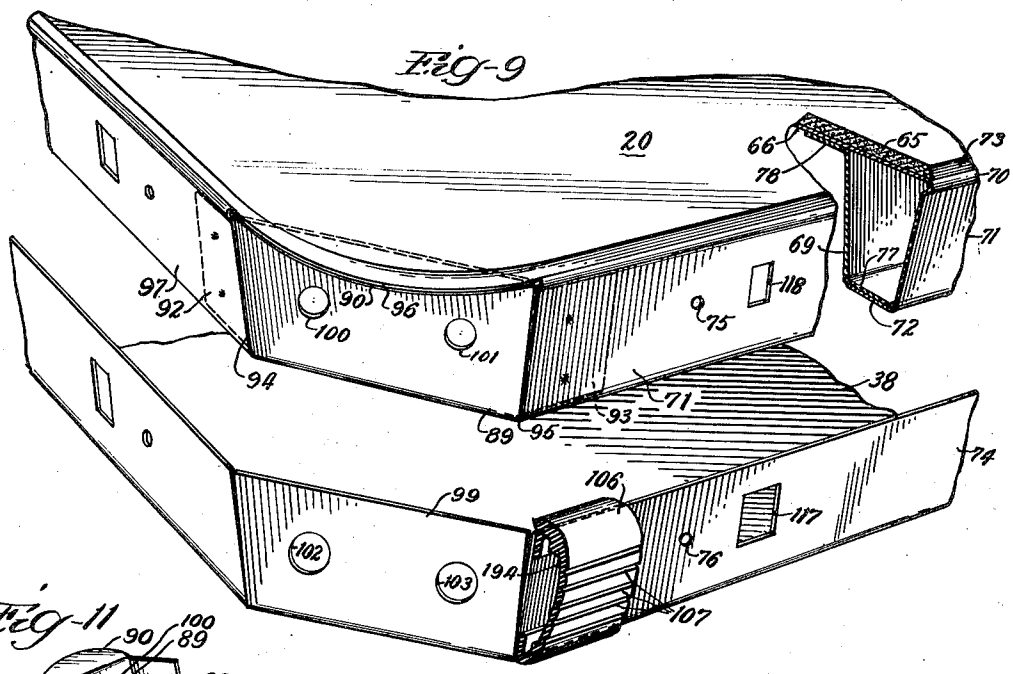


Fig-11

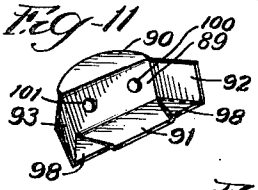


Fig-10

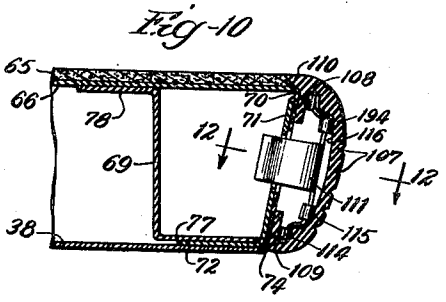


Fig-13

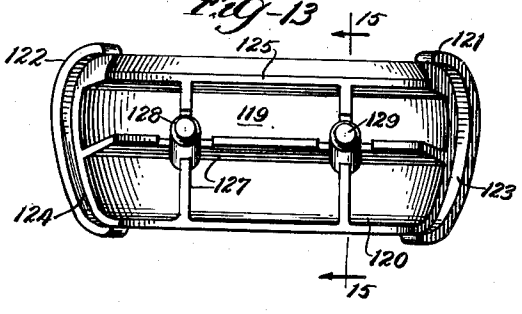


Fig-12

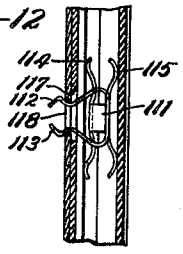


Fig-16

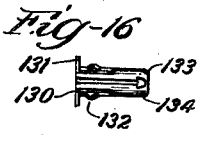


Fig-15

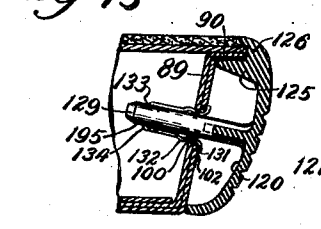


Fig-14



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Fig-17

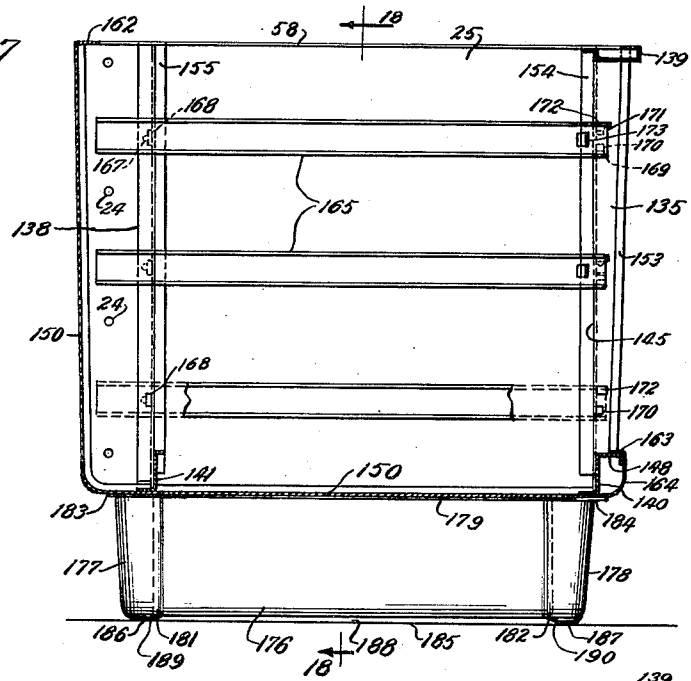


Fig-18

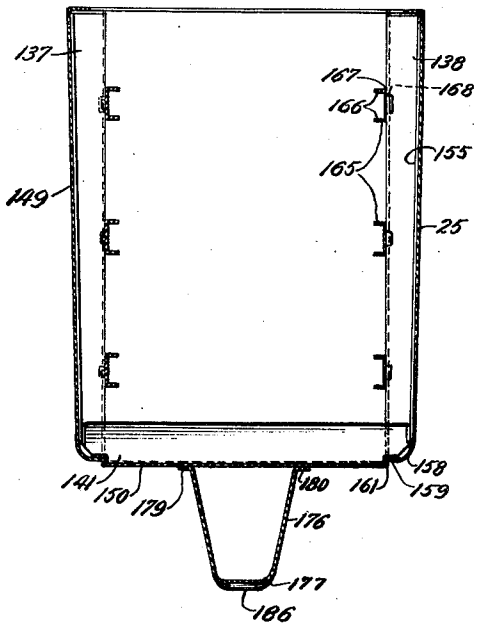
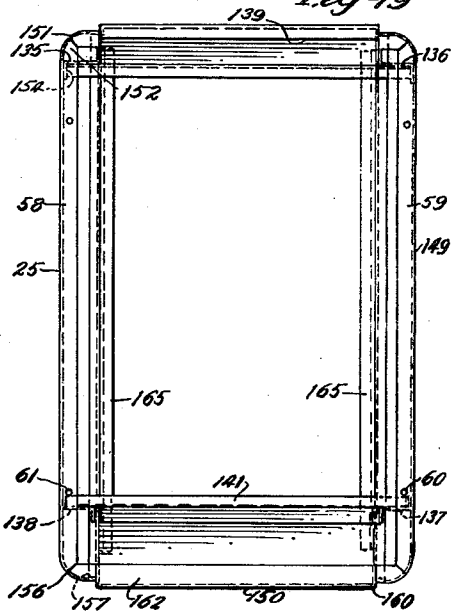


Fig-19



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DESK

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Fig-20

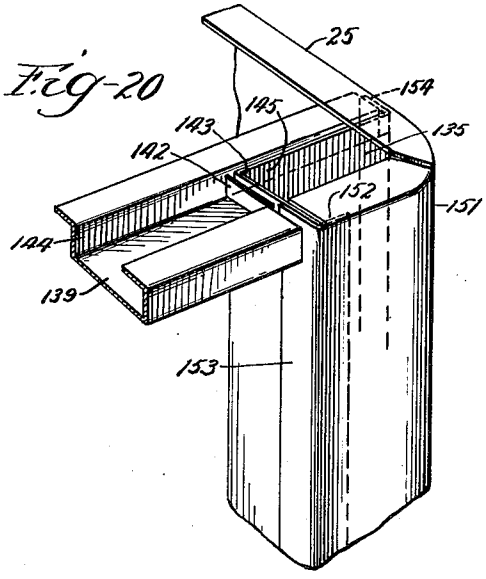


Fig-21

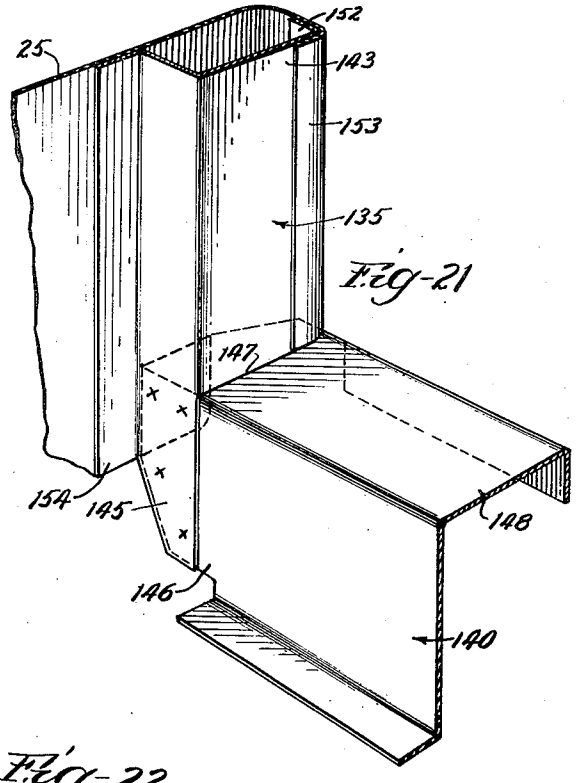
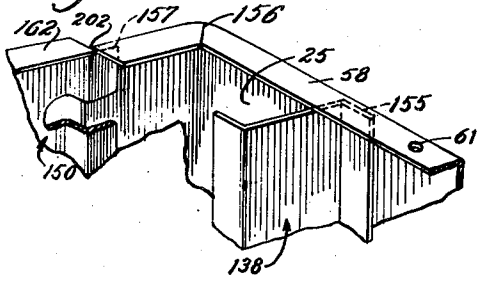


Fig-22



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Fig-23

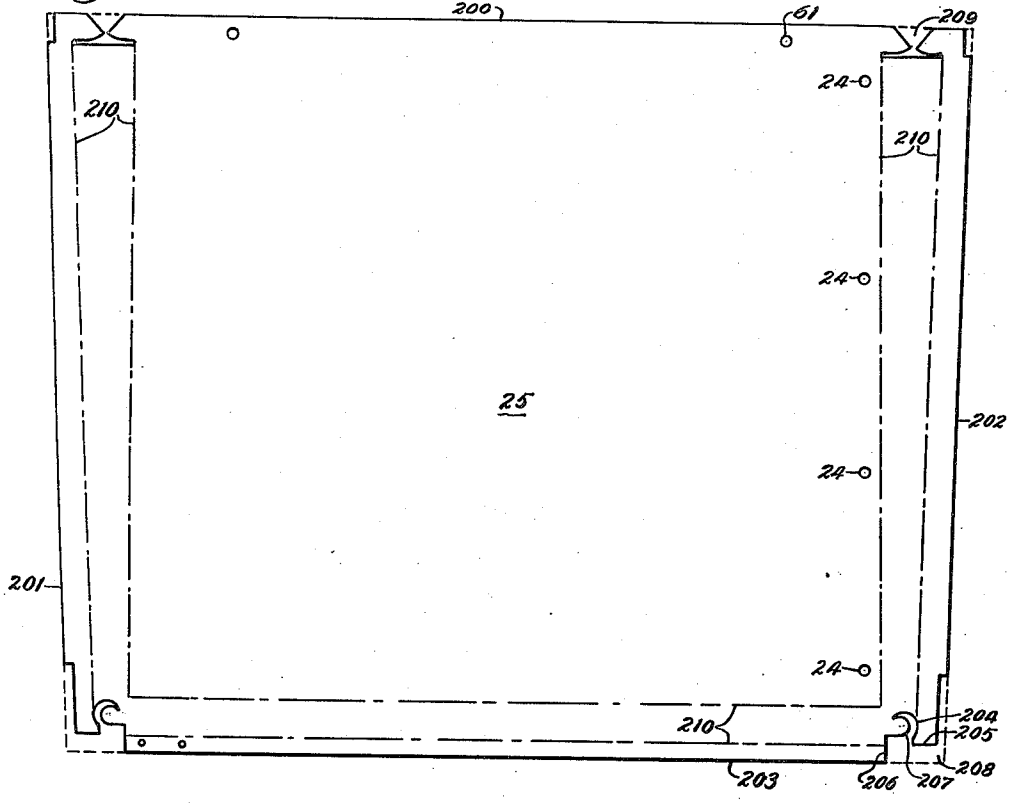
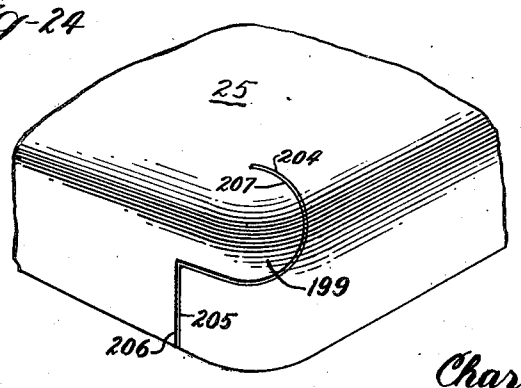


Fig-24



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Patented July 10, 1951

2,560,400

UNITED STATES PATENT OFFICE

2,560,400

DESK

Charles M. Abrahamson, Aurora, Ill., assignor to All-Steel Equipment Inc., a corporation of Illinois

Application September 18, 1946, Serial No. 697,760

3 Claims. (Cl. 312—194)

1

This invention relates to desk construction and more particularly to a knockdown pedestal type desk suitable for general office work.

The principal object of this invention is to provide a metal desk which is convenient to make and inexpensive to manufacture; which is capable of shipment in a semi-knockdown form, yet is readily re-assembled; which has interchangeable tops of different sizes so that the same pedestal unit or units can be used for both clerical and executive type desks, and which is light in weight and attractive to the eye.

In large organizations particularly, the current requirements for desks may vary considerably from time to time and it is extremely convenient to have a knockdown type of desk which may be stored in a minimum of space when not in use, and which may be equipped with interchangeable desk tops of different sizes to suit the particular need. Desks of this type are becoming more and more popular because of their versatility and the desk constituting the present invention wholly satisfies those requirements.

More specifically it is among the objects of the present invention to provide a new and improved knockdown pedestal type desk having among others the following features:

1. The component parts can be assembled and disassembled quickly and easily without requiring special tools or special skill.

2. Interchangeable desk tops of different sizes are provided which may be removably affixed to the pedestal type structure.

3. The desk tops are of light weight reinforced hollow nested pan construction, giving them exceptional rigidity.

4. The desk top has rounded corners of special construction which facilitate assembly and give the desk a nice appearance.

5. The desk top is provided with a continuous molding made up of straight extruded sections along the four sides of the top which interfit with molded corner caps to give the desk a finished appearance.

6. The pedestal skeleton is enclosed by pedestal side members and an integral back and bottom member which are formed for ready attachment to the pedestal skelton, which cover the pedestal skelton and define the drawer openings, and which are formed of components so embossed that when assembled the lines of juncture are substantially concealed giving a smooth finished appearance.

7. The pedestal pontoons are of simplified construction, yet are sturdy and strong.

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8. The overall construction is of minimum weight, consistent with strength, and presents a pleasing appearance.

These and other objects of my invention will become apparent from the following detailed description taken in conjunction with the attached drawings, in which

Fig. 1 is an exploded perspective of the desk as viewed from the left rear and in which the desk drawers are omitted and the desk top is shown broken away in part;

Fig. 2 is a front elevational view of the desk, assembled, and shows in dotted outline the overhanging of an oversized desk top;

Fig. 3 is an end elevational view of the desk, assembled, and shows in dotted outline the overhanging of an oversize desk top;

Fig. 4 is a plan view of the desk top, looking down on it from above, in which the linoleum top covering and the top pan construction, upon which the linoleum is placed, has been omitted, in part, to reveal the desk top reinforcement construction;

Fig. 5 is a plan view of an alternate desk top construction preferably used when a larger desk top is required and in which the linoleum top covering and the top pan construction, upon which the linoleum is placed, are broken away in part to reveal the desk top reinforcement construction;

Fig. 6 is a cross-sectional view taken on the line 6—6 of Fig. 5;

Fig. 7 is a cross-sectional view taken on the line 7—7 of Fig. 6;

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

Fig. 9 is a perspective view of a portion of the desk top corner with the sub-top being shown as spaced from the filler top, and in which the sub-top is broken away in part to reveal the edge construction;

Fig. 10 is a cross-sectional view of the desk top edge taken on the line 10—10 of Fig. 3;

Fig. 11 is a perspective view of the corner reinforcing plate for the desk top corners;

Fig. 12 is a cross-sectional view taken on the line 12—12 of Fig. 10;

Fig. 13 is an elevational view looking at the interior of the molding corner cap;

Fig. 14 is a perspective view of the molding corner cap as viewed from the exterior;

Fig. 15 is a cross-sectional view on the line 15—15 of Fig. 13 showing the molding corner cap assembled to the desk top;

Fig. 16 shows a molding corner cap retaining member;

Fig. 17 is a cross-sectional view taken on the line 17—17 of Fig. 2 with top and drawers omitted;

Fig. 18 is a cross-sectional view taken on the line 18—18 of Fig. 17;

Fig. 19 is a plan view of pedestal;

Fig. 20 is a perspective view of a front upper corner portion of the pedestal;

Fig. 21 is a perspective view of a portion of the front lower corner reinforcing construction of the pedestal;

Fig. 22 is a perspective view of an upper rear corner portion of the pedestal;

Fig. 23 is a layout of the metal side before bending; and

Fig. 24 shows the rounded metal corner after bending.

To facilitate an understanding of the various novel features of the embodiments of my invention which I have illustrated in the drawings, topic headings are employed to identify parts of the detailed description applicable to these various features.

Knockdown arrangement

The term "knockdown" as used in the specification and claims refers to a construction which can be easily assembled or disassembled at the point of use. While relatively speaking, all parts of a desk could be made readily separable from each other, there is a practical limit to which this may be carried to permit rapid assembly of the component parts at the point of use and also to permit certain component parts to be constructed as units of permanent form. With this in mind, and referring to Fig. 1, I have chosen the readily separable units to be the desk tops **20**, pedestals **21** and **22** and the knee space panel **23**. The term "knee space" refers, of course, to the space bounded by the pedestals, desk top and the rear plate connecting the two pedestals together. This latter plate is the knee space panel **23**.

Each pedestal has adjacent the rear edge of the pedestal side facing the knee space a series of spaced aligned openings. Thus, in pedestal **22** spaced openings **24** are provided adjacent the rear edge of pedestal side member **25**. The knee space panel **23** has substantially right angle flanges **26** and **27** at the sides thereof which face toward the knee space. Each of these flanges is provided with a series of spaced aligned openings which, for the respective flanges, match the openings at the rear of the pedestal sides. Thus, flange **27** has the spaced aligned openings **28** which match the openings **24**. With this construction, when the knee space panel is placed between the pedestals and the pedestals are moved toward each other until they abut against the knee space panel, the respective openings in the knee space panel and pedestals can be aligned so that bolts can be passed therethrough to detachably connect the parts together.

The pedestal sides have inturned substantially horizontal flanges at the tops thereof. With reference to Fig. 1, sides **29** and **30** of the pedestal **21** are provided with flanges **31** and **32**. Each of these flanges has openings therein, such as openings **33** and **34**, in flange **31** and openings **35** and **36** in flange **32**. Pedestal **22** is similarly constructed.

The desk top is provided with openings through the bottom thereof which, when the desk top is placed in position over the pedestals, match up with the openings in the substantially horizontal flanges at the tops of the pedestal sides. In the desk top construction shown in Fig. 1 the reinforcing Z-bars have attached thereto, at appropriate points, integrally threaded nuts held by nut retainers and these nuts receive the threaded bolts used to couple the desk top to the pedestals. For example, the upturned flange **37** of the desk top bottom pan **38** is broken away at **39** and **40** to reveal nut retainer members **41** and **42**, each of which retains an internally threaded nut, mounted on the bottom flange of Z-bar **43**. For purposes of reference, the openings in the nuts held by nut retainers **41** and **42** are identified as **44** and **45**.

The openings **44** and **45** are spaced apart the same distance as the openings **33** and **34** so that when the desk top is placed in position over the desk pedestals, opening **44** will match up with opening **33** and opening **45** will match up with opening **34**. Similarly, certain of the longitudinal Z-bars **46** have mounted thereon internally threaded nuts held by nut retainers. Thus, nut retainers **47** and **48** are shown mounted on the indicated bottom flanges of longitudinal Z-bars **46**. These nut retainers retain internally threaded nuts, the openings of which are indicated at **49** and **50**. The openings **49** and **50** are so positioned that, when the desk top is placed in position over the desk pedestals, opening **49** will match up with opening **35** and opening **50** will match up with opening **36**. The construction at the other end of the desk top **20** is the same so that this end of the desk can be coupled to pedestal **22**. Obviously, when the top is positioned over the desk pedestals so that the openings in the pedestal side flanges coincide with the internally threaded openings in the nuts retained within the desk top, threaded bolts can be passed through the pedestal side flanges and threaded into the nuts retained in the desk top to detachably secure the desk top to the pedestals.

When a larger size desk top is used which overhangs the pedestals at the sides and rear of the desk, the nut retainers, and nuts retained thereby, are positioned within the desk top in from the rear edge and sides thereof sufficiently so that the nut openings will match up with the openings in the pedestal side flanges. For example, in the desk top construction shown in Fig. 5, wherein flanged channel members are used to reinforce the desk top, the nuts and nut retainers are positioned for connecting the desk top to one pedestal, at **51**, **52**, **53** and **54**. Referring to Fig. 6, this positioning is in the valleys of flanged channel members **55** and **56**. In this arrangement the edge **57** is the rear edge of the top desk; i. e., the edge which overhangs at the rear of the desk. For the pedestals illustrated in Fig. 1, the threaded openings at **51**, **52**, **53** and **54** would match up with the openings in the pedestal side flanges **58** and **59** of pedestal **22**. Thus, the internally threaded opening at **51** would match up with the opening **60** in flange **59** and the internal threaded opening at **52** would match up with the opening **61** in flange **58**. Likewise, the threaded openings at **53** and **54** match up with the openings in the pedestal side flanges at the forward part of pedestal **22**; i. e., the openings corresponding in position to the openings **35** and **33** shown for pedestal **21**.

In assembling the desk top, pedestals and knee space panel, the top is first placed underside up, preferably on a pair of horses or a bench. On

top are placed the right-hand and left-hand pedestals, their drawers removed, at their respective ends of the inverted table top, with the drawer openings up and the open top of the pedestals toward the assemblers, the distance between the pedestals being slightly greater than the length of the knee space panel **23**. The knee space panel is inserted between the pedestals, flush side down, the pedestals are moved toward the knee space panel until they abut it, and the openings **28** in the knee space panel are aligned with the corresponding openings **24** in the pedestal sides **25** and **30**. Bolts are passed through these openings and tightened to retain these parts securely together. Following this, the assembly, consisting of the two pedestals and the knee space panel, is slid slightly to the rear, away from the assemblers, and rotated 90 degrees toward the assemblers so that the open tops of the pedestals are now adjacent to the underside of the desk top. The openings in the pedestal side top flanges are aligned with the corresponding openings in the bottom of the desk top. As the drawer openings are now facing the assemblers, convenient access may now be had to the interior, and fastening screws or bolts are inserted through the openings in the pedestal side top flanges and screwed into the nuts retained within the desk top. The completed assembly is removed from the support, inverted so that it now stands on the pedestals, and the drawers replaced. Of course, this method of assembly is merely illustrative and the desk components which I have illustrated could be assembled in other manners, but in the method described ease of access may be had for the insertion and tightening of all connecting bolts.

Top construction

For use interchangeably with the same pedestal and connecting knee space panel assembly, I provide different sizes of desk tops. What might be termed the standard size, say 28" x 60", is illustrated in Figs. 1 and 4, and is the solid line top construction shown in Figs. 2 and 3. It will be noticed that the edges of this size of desk top are substantially flush with the outer sides, backs and fronts of the desk pedestals.

The overhanging of a desk top of greater width than 28", say 36" x 60", is indicated by the dotted outline **62** in Fig. 3. Similarly, when an even larger size of desk top, say 36" x 76", is used it will not only overhang the rear of the pedestals, as is indicated at **62** in Fig. 3, but will also overhang the outer sides of the pedestals, as is indicated at **63** and **64**, in Fig. 2.

These various sizes of desk tops differ only in size and in details of reinforcement. Otherwise, they all include a hollow nested pan construction with reinforcing members within the hollow space between the pans and at the edges thereof, and additional corner reinforcing members plus a top surface covering and molding for the edge of the desk top.

Thus, referring to Fig. 1, the standard size desk top **20** is shown with the linoleum top surface **65** and the sheet metal sub-top **66**, upon which the linoleum surface **65** lies, broken away to expose the reinforcing members within the desk top. The sub-top **66** is coextensive with the top area of the desk top and has downturned flanges along its straight edges. The sub-top flange arrangement is shown in Figs. 9 and 10. Referring to Fig. 9, the sub-top **66** is shown as having a beaded edge **70** from which extends downwardly and integral therewith, a flange **71**, which is inclined slightly toward the interior of the desk top. At its lower extremity, the flange **71** is bent horizontal, as is shown at **72**. The linoleum surface **65** overlies sub-top **66** throughout the latter's entire area and has a beveled edge **73**. From this description, it is evident that the linoleum surface rests upon a sheet metal plate which has downwardly extending skirts at the straight sides thereof and that these skirts are provided with inturned flanges. In effect, the sub-top is an inverted shallow pan construction.

The bottom surface of the desk top is likewise a shallow pan construction but it has upturned flanges at the edges thereof which mate with the downturned flanges on the sub-top. Thus, the bottom surface of the desk, which is termed the "filler top," is designated at **38**, see Fig. 9, and has the upturned flange portion **74** which has the same slope as flange member **71** on the sub-top **66**. Obviously, although flange **74** is shown for only one of the straight sides of the filler top **38**, each of the four sides thereof has an upturned flange. With this arrangement, and since flanges **74** and **71** are substantially of equal height, the sub-top **66** will nest within the filler top **38** to form a hollow top construction. In Fig. 10 this nested relation is shown, and it will be noticed that flange **71** is set inward a sufficient amount, by virtue of beaded portion **70**, to accommodate flange **74** and cause the latter to lie substantially flush with the edge of the beaded portion **70**. Flanges **71** and **74** are provided with a series of aligned openings, such as **75** and **76** into which self-tapping screws can be threaded to retain the sub-top and filler top together.

The hollow nested pans; i. e., the sub-top **66** and filler top **38**, are reinforced by a plurality of Z-bars. Referring to Figs. 1 and 4, Z-bars **43**, **67**, **68** and **69**, form a rectangular outline adjacent the flanges of the sub-top. Z-bars **43** and **68** extend crosswise of the desk top; that is, in the direction of the width of the desk top and Z-bars **67** and **69** extend lengthwise of the desk top. The positioning of these particular Z-bars with respect to the flanges of the sub-top can be best observed in Fig. 9. There, Z-bar **69** has its lower horizontal flange **77** overlying the inturned horizontal portion **72** of flange **71** and has its upper horizontal flange **78** attached to the underside of sub-top **66**. The arrangement is the same for the Z-bars adjacent the edges of the other sides of the desk top. In all cases the lower horizontal flanges of the Z-bars extend outward from the center of the desk and the upper horizontal flanges of the Z-bars extend inward toward the center of the desk. The upper horizontal flanges, such as **78**, of the Z-bars adjacent the edges of the desk top are beveled at the corners of the desk top in order to match up correctly, as is indicated at **79** in Fig. 4.

In addition to the Z-bars constituting a rectangular framework for the hollow desk top, additional Z-bars extend lengthwise of the desk top and likewise lie between the sub-top and filler top. These Z-bars are indicated at **46**, Figs. 1 and 4. Their upper horizontal flanges contact the underside of the sub-top **66** and their lower horizontal flanges contact the upper surface of filler top **38**. All of the Z-bars are attached to the sub-top by spot welds.

For the oversize desk top construction, say 36" x 76", illustrated in Figs. 5–8, inclusive, the sub-top, filler top and edge Z-bar construction is the same as that which has been described for the so-called standard size top, illustrated in Figs.

1 and 4. However, the longitudinal Z-bars 46, used for reinforcing the central portion of the desk top, illustrated in Figs. 1 and 4, are replaced in the construction shown in Figs. 5–8, inclusive, by crisscrossed flanged channel members. A series of flanged channels 80 is placed crosswise of the desk top with the channel web 81 lying against the upper surface of the filler top 82. In this position the channel flanges 83 face upward. Abutting against the cross channels 80 and extending at right angles thereto and lengthwise of the desk top are a second series of flanged channel members 84. As is shown in Fig. 7, the channel webs 85 lie against the underside of the sub-top 86 and the channel flanges 87 abut against flanges 83 of the cross channels 80. Where the respective channel flanges so abut, the channel members are preferably spot welded together at these points.

Also, where the cross channels 80 extend under the top flanges of the edge Z-bars which extend lengthwise of the desk top such as top flange 191, an additional flanged channel section 88, shown in Fig. 8, is provided to fill the space between the ends of the cross channels and the top flanges of the lengthwise edge Z-bars thereby providing an additional reinforcement at these points. As is shown in Fig. 8, the channel section or spacer clip 88 is oversized as compared to the cross-channels 80 whereby the web portion 192 of channel 88 extends across the flanges 83 of the cross-channel 80 and is spot welded thereto. The flanged portions, such as 193, abut against and are welded to the underside of Z-bar top flange 191. It will be understood that a channel clip 88 is provided at each end of each cross-channel 80.

The crisscross arrangement of the flanged channel reinforcing members gives a reticulated or grid construction which is very strong and which adequately strengthens the overhanging edges of the desk top. Obviously, if the desk top is not to overhang the sides of the desk but only the rear of the desk, then fewer crisscross channel members 80 will be required.

Top corner construction

Additional reinforcement is provided for the rounded corners of the desk top by means of a corner plate which fits into the desk corners. This corner plate is illustrated in Fig. 11 and includes an inclined plate portion 89 having a substantially horizontal arc-shaped top flange or shelf 90 integral therewith, and a substantially horizontal bottom flange 91 integral therewith. As is shown in Fig. 9, the downwardly extending flanges of the sub-top 66, such as flange 71, extend only along the straight edges of the sub-top 66 and are discontinuous at the rounded corner portions of the sub-top. For example, see Fig. 9, the sub-top flanges shown discontinue at 94 and 95. This leaves gaps between the sub-top flanges, said gaps being located at the rounded corners of the desk top and the corner reinforcing members, illustrated in Fig. 11, fill these gaps to complete the flange arrangement of the sub-top and also to strengthen the desk corners.

Referring to Fig. 9, the plate portion 89 fills the gap between edges 94 and 95 of the sub-top flanges 71 and 97 and the arc-shaped upper horizontal shelf 90 on plate 89 abuts against the underside of the projecting rounded corner portion 96 of sub-top 66 and is coextensive therewith. Corner plate side flanges 92 and 93 lie against the inner sides of sub-top flanges 97 and 71 and are spot welded thereto. This positioning is indicated in dotted outline in Fig. 9. Also, the lower horizontal flange 91 on plate member 89 extends inward toward the center of the desk top, and tab members extending from the flange 91 overlie the lower horizontal flange portions of the sub-top flanges to form a substantially continuous lower horizontal flange throughout the lower periphery of the desk edge. For example, tab member 98, shown in Fig. 11, overlies flange member 72, shown in Fig. 9, the lower flange 77 of the Z-bar 69 being suitably cut away for this purpose. The filler top 38 has a flange portion 99 inclined upwardly and of substantially the same size as the plate member 89. Thus, when the sub-top is nested into the filler top, the inner surface of flange 99 abuts against the outer surface of plate 89. Openings 100 and 101 are formed in plate 89 and are aligned with openings 102 and 103 in flange 99. The arrangement of parts, described for one corner of the desk top, is the same for all four corners of the desk top.

Molding construction

The exposed surfaces of the filler top flanges, such as flange 74, and the exposed surfaces of the corner flanges, such as flange 99, are covered by molding. The molding is formed in straight strip portions which cover the straight edges of the desk top and corner cap portions which overlie the ends of the straight strip portions and which also cover the rounded edges of the desk top.

The appearance of the straight strip molding is shown at 104 in Fig. 2, and 105 in Fig. 3, and a section 106 of this molding is illustrated in greater detail in Fig. 9 and in cross section in Fig. 10. As will be seen in both Figs. 9 and 10, the strip molding which is preferably an extruded plastic molding is, in cross section, a crescent configuration having integral inturned flanges 108 and 109 at the ends of a crescent-shaped wall portion 194. The outer surface of the molding is artistically grooved, as indicated at 107. In the example shown, the inturned flanges 108 and 109 abut against the outer surface of flange 74 on filler top 38. The top of the strip molding is provided with a beveled flange 110, which lies against the beveled edge 73 of the linoleum surface 65 to form a smooth continuation of this surface.

The strip molding is retained in place by spring finger fasteners, such as fastener 111, illustrated Figs. 10 and 12. Fastener 111, has a pair of forwardly extending spring fingers 112 and 113 and also has flat type spring arms 114 and 115. The flat type spring arms 115 bear against the inner surface 116 of the crescent-shaped wall portion 194 and the spring arms 114 bear against the interior surfaces of flanges 108 and 109 on the strip molding, i. e., the surfaces that face the inner surface 116 of wall portion 194. Thus, the spring arms 114 and 115 wedge the spring fastener 111 in place within the strip molding. When so positioned, the spring fingers 112 and 113 extend from the interior of the strip molding and, in the example shown, are inserted through aligned openings 117 and 118 in flanges 74 and 71 respectively. Opening 117 is slightly larger than 118 and the spring fingers 112 and 113 engage the sides of opening 118 to retain the molding in place. A plurality of aligned openings, such as 117 and 118, are provided along the edges of the desk top and a corresponding num-

ber of fasteners are used to retain the strip molding in place. Prior to attaching the straight molding strips to the edges of the desk top, the spring fasteners are easily inserted into each molding strip from either end thereof.

Molded plastic corner caps, such as is illustrated in Figs. 13 and 14, complete the molding around the desk edges. These corner caps are, of course, rounded to conform to the round desk top corners and are grooved on the exterior in the same manner as is the strip molding so that a continuous molding appears. In effect, the corner caps are elbow sections which have integral offset flanges at the ends of the elbow which overlie the ends of the strip molding. Thus, referring to Figs. 13 and 14, each corner cap is shown as including an elbow-shaped wall portion 120, of crescent shape as viewed in a cross-section taken at a right angle to the elbow curve, see Fig. 15, and having offset flanges 121 and 122 integral therewith. The ends of the strip molding fit into notched recesses 123 and 124 in the flanges 121 and 122. A shelf section 125 projects inward from the top portion of wall 120. This shelf underlies the rounded flange 90 which projects outwardly from the corner plate portion 89. A continuation, shown at 126, of the wall portion 120 abuts against the beveled edge 73 of the linoleum top surface 65 to form a smooth continuation of this surface. In addition to the shelf portion 125, inner strengthening ribs 127 are formed integral with the wall portion 120. Also formed integral with the wall portion 120 and projecting beyond the strengthening ribs 127 are a pair of post members 128 and 129. When the molding corner cap is attached to a corner of the desk top, such as is illustrated in Fig. 9, post member 128 extends through aligned openings 103 and 101 and post member 129 extends through aligned openings 102 and 100. The arrangement is the same at all four corners of the desk top.

To retain the corner caps in position at the corners of the desk top a spring finger gripping member, shown at 130 in Fig. 16, is provided for each set of aligned corner openings such as, for example, aligned openings 102 and 100. The gripping member 130 has an annular collar portion 131 which abuts against the outer surface of the filler top corner flanges, such as flange 99. A second annular collar portion 132 abuts against the inner surface of the corner plate portions, such as 89. In this manner the gripping member 130 is held at the aligned openings, such as 102 and 100, so that when one of the molding corner cap post members, such as post 129, is inserted through the aligned openings it will also pass centrally through the gripping member 130. Gripping fingers 133 and 134 are biased against the outer surface 195 of the post member, and are turned inward to bite into this surface, should one attempt to pull the corner cap away from the desk top. By this construction, the molding corner caps are easily applied to the desk corners and are strongly held in position thereon.

Pedestal construction

In the following description, the term "pedestal" is taken to mean that portion of the desk which receives the desk drawers, includes the desk feet, and upon which the desk top is placed. Normally, for a conventional size desk, say 28"×60", two pedestals will be provided, these being spaced apart to form a knee space beneath the top of the desk. In the embodiment of my invention, which I have illustrated in the drawings, I use spaced pedestals and these pedestals are formed identically, except that certain features may be left-hand or right-hand, as required. To facilitate the task of illustrating the pedestal construction in the drawings, I have omitted the desk drawers in all views.

The main elements of the pedestals are the pedestal feet, the sheet metal members which form the sides of the pedestal and the back bottom and lower front thereof, and the skeleton framework which the sheet metal members inclose and to which they are attached.

With reference to Figs. 1, 17, 18 and 19, it will be observed that the pedestal framework is composed of four corner posts 135, 136, 137 and 138, a box channel member 139 which extends at the top of the pedestal between corner posts 135 and 136, and cross skeleton members 140 and 141. Cross member 140 extends across the bottom of the front portion of the pedestal between corner posts 135 and 136 and cross member 141 extends across the pedestal bottom at the rear of the pedestal between corner posts 137 and 138. With the exception of the box channel 139, all of the framework members; i. e., the four corner posts and the two cross members, are formed as Z-bars. Connection of one framework member to another is accomplished, preferably, by spot welding the parts together. Thus, referring to Fig. 20, the upturned end flange 142 of box channel 139 is spot welded to flange 143 of Z-bar 135. Likewise, the vertically extending wall 144 of box channel 139 is spot welded to web member 145 of the Z-bar 135. This method of attachment is duplicated at the other top corner portion of the pedestal front. Referring to Fig. 21, it will be observed that web portion 146 of Z-bar 140 is spot welded to web 145 of Z-bar 135. Flange 143 of Z-bar 135 is broken away at 147 to accommodate the top flange 148 of the transverse Z-bar 140. At the rear of the pedestal the web portion of the transverse Z-bar 141 likewise contacts the web portions of the corner post Z-bars 137 and 138 and these members are spot welded to each other at the areas of contact, as shown in Fig. 18.

The framework just described is enclosed by sheet metal side members 25 and 149 and by a continuous back and bottom and lower front sheet metal member 150. The side member 25 is the pedestal inner side member; i. e., the side that faces the knee space. As such, it is provided with the openings 24 through which are passed the members connecting the pedestal to the knee space panel 23. Both the inner side member 25 and the outer side member 149, are formed alike, one left-hand and the other right-hand. Each is provided with an inturned horizontal flange at the top thereon designated at 58 and 59, and these flanges contain the openings through which pass the bolts connecting the pedestals to the desk top. Two of these bolt openings are indicated at 60 and 61.

Taking the inner side 25, for example, a sheet of metal is cut out as indicated by the pattern shown in Fig. 23. A button-hook slot or cut-out of the shape indicated at 208 is made for the bending of the rounded corners, such as corner 199, Fig. 1. Such a cut-out leaves a rounded ball-shaped portion 207, a rounded socket-shaped portion 204, and two straight portions 205 and 206 of remaining metal at the corner (Fig. 23). When rounded 90-degree bends are made between guide lines shown at 210, the rounded ball-shaped portion 207 and the rounded socket-shaped por-

tion 204 fit together, and the two straight portions 205 and 206 fit together as is indicated in Fig. 24. Gas welding this joint together and grinding the surface smooth forms the finished rounded corner indicated at 199 in Fig. 1. The advantage of forming the rounded corners from such a pattern is that only one joint is required to form a smooth round surface instead of the two or more required from other methods of layout, and the welded joint is spaced from the apex of the rounded corner, thereby simplifying the bending, welding and grinding operations.

A cut-out of the shape indicated at 209, Fig. 23, is made in the metal sheet for side 25. The edge of the sheet of metal indicated at 200 is bent over at 90 degrees to form flange 58 (Figs. 1, 17, 19 and 22), and the aforementioned rounded bends are made between guide lines 210, Fig. 23, and the remaining metal surrounding cut-out 209 forms a rounded corner with a flange on the top, as shown at 156 in Figs. 1 and 22. Similar cut-outs and bends are made in the sheet to form the other two corners of side 25, the rounded front edge of side 25, as shown at 151 in Fig. 20, and the rounded bottom edge shown at 158 in Fig. 18.

Edge 201, Fig. 23, is bent around flange 152 of corner post 135, Figs. 20 and 21, to form flange 153. Edge 202, Fig. 23, abuts against back, bottom and lower front member 150 and overlies flange 157 of that member as shown in Fig. 22. Side 25 is spot welded to flange 157 at spaced points along the line of said overlap. Edge 203, Fig. 23, underlies flange 159 of the back, bottom and lower front member 150, Fig. 18, and abuts the side of member 150. Where the overlap of flange 159 and side 25 occurs, the two are spot welded together at spaced points.

The back, bottom and lower front member 150 is offset slightly outwardly from the pedestal side members 25 and 149. This is due to the depth from the outer face of member 150 to the face of flanges 157 and 159, against the face of which flanges the side members 25 and 149 are welded, being considerably greater than the thickness of the metal making up side members 25 and 149. I term this formation of member 150 an embossed formation. Since the edges of the sides, such as edge 202 of side 25, Fig. 22, abuts against the side of member 150 within such embossment, such edges are effectively concealed when the desk top is in place. The desk pedestal thus has the appearance of being constructed of one piece of metal.

Side member 25 is spot welded at spaced points to flange 154 of Z-bar 135, see Figs. 19, 20 and 21, and also to flange 155 of Z-bar 138, see Figs. 18 and 22. The method of forming and attaching the pedestal outer side member 149 to the framework and to the back, bottom and lower front member 150 is the same as that described for the pedestal inner side member 25.

The back, bottom and lower front member 150 (see Fig. 17) extends from the top flange 162 at the rear of the pedestal to the flange 163 which overlies and is in contact with the top flange 148 of transverse Z-bar 140. The member 150 is rounded at 164 to form the lower portion of the pedstal front. By virtue of its overlap connection with the pedestal side members 25 and 149, the back and bottom member 150 completes the enclosure of the pedestal framework.

Drawer guide channels, two of which are indicated at 165, Figs. 17 and 18, are attached to and supported by the pedestal corner posts 135, 136, 137 and 138. Naturally, the flange portions, indicated at 166 in Fig. 18, of these drawer guide channels face toward the interior of the pedestal. The guide channels are oppositely disposed to support each side of a desk drawer. In Figs. 17 and 18, three pairs of guide channels are shown.

The drawer guide channels are retained in position against the pedestal corner posts by integrally formed tabs which extend into slots formed in the pedestal corner posts and which are bent against the corner post sides to make a firm connection. For example, see Figs. 17 and 18, a tab 167 which is integral with drawer guide channel 165 is shown as being received within slot 168 in the pedestal corner post 138. The tab 167 and slot 168 are shown in dotted outline in Fig. 17. At the front portion of the pedestal, the drawer guide channels are similarly retained and, in Fig. 17, a tab 169 is shown, in dotted outline, as being received within a slot 170 in pedestal corner post 135. An additional tab 171 is bent over, through a slot 172 and engages corner post 135 to form a double retaining means at the front end of the drawer guide channel. A portion of each drawer guide channel is cut away and bent inwardly toward the interior of the pedestal to serve as a stop for the desk drawers. Such a portion is indicated at 173 in Fig. 17. See also Fig. 1. Each drawer guide channel is attached to the pedestal in the same manner and each is of substantially identical construction, the only difference being that one set of channels will be left-hand and the other right-hand.

The opening in the front of the pedestal; i. e., the space that receives the drawers is framed by the front pedestal corner posts 135 and 136 and the box channel 139 which extends across the top of the pedestal between these corner posts, plus the transverse Z-bar 140 which extends across the bottom of the pedestal between these corner posts. In addition, the back bottom, and lower front sheet member 150 laps over transverse Z-bar 140 at 163 and the pedestal side members 25 and 149 lap over the front corner posts 135 and 136, as is indicated at 153 in Fig. 20, using side member 25 as an illustration, to complete the frame for the opening in the front of the pedestal which receives the desk drawers.

Attached to the bottom surface of each pedestal is a foot member designated generally at 174 and 175 in Fig. 1. Each pedestal foot member is constructed in the same manner so that a description of one will suffice for both. Foot member 175 is shown in cross section in Fig. 18.

I designate the shape of each of these pedestal feet as a "pontoon" shape, intending this term to designate a configuration such as is shown in the drawings. Taking the pontoon-shaped foot 175 as an example, it includes an intermediate body member 176 and rounded end caps 177 and 178. The overall length of members 176, 177 and 178 is only slightly less than the length of the pedestal bottom.

The intermediate portion 176 is formed from a sheet metal section which is bent to an approximate U-shape, as viewed in cross section in Fig. 18. Horizontal flanges 179 and 180, formed on the intermediate portion 176, abut against the bottom surface of member 150 and are spot welded thereto at spaced points. Rounded end caps 177 and 178 overlap the ends of the intermediate body member 176 as indicated by the dotted line outlines 181 and 182 in Fig. 17. Spot weld connections are made at these overlaps.

Also, the end caps have horizontal flanges, indicated at 183 and 184, at the tops thereof which abut against the bottom surface of member 150 and are spot welded thereto. Flanges 183 and 184 are of the same width as flanges 179 and 180 and match these flanges to form a continuous flange surface at the top portion of each pedestal foot.

Only the end cap members rest against the floor surface to support the desk. As is indicated in Fig. 17, end caps 177 and 178 contact the floor surface 185 at 186 and 187. The intermediate body portion 176 and the portions of the end caps 177 and 178, which overlap the portion 176 at 181 and 182, are spaced from the floor surface as is indicated by the space 188. This means, of course, that the end caps 177 and 178 are notched away, as indicated at 189 and 190, to permit this spacing from the floor surface 185. In this manner, the whole desk bears against the floor surface at four spaced points, two for each pedestal foot member.

Summary

From the foregoing it is apparent that my desk construction is light in weight, artistic in appearance and yet does not sacrifice strength and rigidity to achieve these desirable features. The use of light-weight strong sheet metal sections throughout the desk, these members being spaced in the desk top to form a hollow top construction, keeps the overall weight of the desk to a minimum. The grooved plastic molding around the edge of the desk top, the tapered pedestals, and the novel pontoon foot construction all make for artistic appearance. Strength and rigidity are obtained by Z-bar and channel stiffening members which are located within the desk top and which form the pedestal framework. The embossed formation of the back bottom and lower front member of the pedestals conceals the joints with the sides of the pedestals.

Storage of desks, shipping of desks, and desk maintenance are all facilitated by the knockdown arrangement which I provide. The separable desk components can be assembled and disassembled quickly and without requiring special skill on the part of the person doing the work.

While I have described particular embodiments of my invention, I wish it to be unerstood that I do not intend to be restricted thereto, but that I intend to cover all modifications thereof which are apparent to one skilled in the art and which come within the subject and scope of my invention.

I claim as my invention:

1. In a desk, a pedestal construction comprising substantially vertical Z-bar front and rear corner posts, a first substantially horizontal Z-bar connected to the front corner posts adjacent the bottom ends thereof, said horizontal Z-bar extending transversely between said front corner posts, a second horizontal Z-bar connected to the rear corner posts adjacent the bottom ends thereof, said second horizontal Z-bar extending transversely between said rear corner posts, a box channel connected to said front corner posts adjacent the top ends thereof, said box channel extending transversely between said front corner posts, a continuous sheet member overlying the first horizontal Z-bar to form the lower front surface of said pedestal, said continuous sheet member also forming the bottom and back surfaces of the pedestal, and side sheet members, said side members being attached to the front and rear corner posts and overlapping the continuous sheet member.

2. In a desk, a pedestal construction including a skeleton framework, a continuous sheet forming the back, and a substantial part of the bottom, of the pedestal and secured thereto, said sheet having at least a portion of one side margin thereof embossed to provide a marginal attaching flange that is offset from but parallel to the main body of said sheet and connected thereto by a connecting web of substantially greater depth than the thickness of said sheet, a side sheet applied to said one side of the continuous sheet and having a marginal flange overlapping said attaching flange and substantially abutting said connecting web, thereby providing an offset in the juxtaposed sheets, and means for securing the side sheet to the continuous sheet through said overlapping and attaching flanges.

3. In a desk, a pedestal construction including a skeleton framework, a continuous sheet member forming the back, and a substantial part of the bottom, of the pedestal and secured thereto, a side sheet member applied to one side of the continuous sheet member to form an offset joint between said members, one of said members having a marginal attaching flange that is offset from but substantially parallel to the main body of the sheet member of which it is a part and connected thereto by a connecting web of substantially greater depth than the thickness of said sheet, the other member having a marginal flange overlapping said attaching flange and substantially abutting said connecting web, and means for securing the side sheet to the continuous sheet through said overlapping and attaching flanges.

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