UNITED STATES PATENT OFFICE.

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SHEET-METAL DESK.


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To all whom it may concern:

Be it known that I, Frank B. Stevens, a citizen of the United States of America, and a resident of Whitesboro, Oneida county, New York, have invented certain new and useful Improvements in Sheet-Metal Desks, of which the following is a specification.

My invention relates to a sheet-metal desk; and it consists in an article of manufacture, as hereinafter more particularly pointed out and claimed.

In the drawings, Figure 1 represents a front perspective view of my metal desk. Fig. 2 represents an edge elevation of a detail of the desk, showing the corners and the mode of producing the corners in the desk. Fig. 3 represents an edge elevation view of the top and side connections. Fig. 4 is a cross-section of a portion of the roll-top. Fig. 5 is a detail section of a portion of the roll-top. Fig. 6 is a detail perspective of a drawer and its track, the track being broken away and the drawer being shown diagrammatically. Fig. 7 is an end view of my metal desk with the outer section removed. Fig. 8 is a partial perspective view of one of the drawers. Fig. 9 is a plan view of the drawer and the hook for engaging and locking the drawer, broken lines indicating portions removed. Fig. 10 is a detail perspective of my drawer-locking device. Fig. 11 is a sectional view of a drawer-front, showing its swaged face. Fig. 12 represents a top view of the bottom of the desk looking downward, broken lines indicating parts removed, the desk-top being removed. Fig. 13 represents the mode of attaching or employing a fibrous bearing for the movement of the drawers of the desk, the same being shown in cross-section. Fig. 14 is a sectional view with the top of the desk removed, showing the formation of the drawer-division by lapping into parallel lines sections of the front for forming the division. Fig. 15 is a front view of a portion of the desk with the drawers removed.

My invention consists—

First, in the method of manufacturing an office-desk of the required pattern from commercial sheet metal which consists in cutting the individual blanks of the required form or shape so that when a series of blanks are cut in the required form all of the blanks together when properly treated to pressure between pairs of pressure-dies for drawing, paneling, angling, shaping, and cutting individual blanks, so that when all of the blanks are thus treated and assembled a complete desk of the required pattern is produced. My method of treating the individual blanks forming the completed desk after the same are cut of the required form from commercial sheet metal is to subject each blank to pressure between dies which are so constructed as to press the metal into shape, giving it the proper paneling, angling, curving, and such other lines as may be required in each blank to perform its function and part in the completed desk. The purpose of compressing the blanks is for strength and stability required in sheet metal for constructing a complete office-desk, and my method provides, further, for assembling the blanks and properly securing them by suitable joint-rivets or by any other well-known method for joining sheet-metal blanks, and, lastly, by painting and finishing the complete desk in the required color and finish.

Second, Another feature of my invention consists in an article of manufacture consisting of an office-desk of the required shape and form constructed from commercial sheet metal, from which suitable blanks are cut for forming a complete desk and which blanks treated to pressure between dies for paneling, angling, curving, shaping, and compressing the metal into the required form for making a complete desk.

Third, the mechanical arrangement of the parts hereinafter more fully pointed out and claimed.

In the drawings a roll-top office-desk of well-known form is shown. In the drawings similar numerals refer to corresponding parts in the several views.

My invention consists in forming an office-desk of sheet metal, treated in a manner hereinafter pointed out, so as to give sufficient solidity and strength to the parts by discarding substantially all wood and making the desk substantially of all metal. I accomplish the result as an article of manufacture in substantially the following manner: I provide mercantile sheet metal of the requisite size and thickness which is treated as follows: I cut the various blanks used for making the parts to the required size and proportions, turn the corner where a straight angle is required, as illustrated at 1, Fig. 2, by turning an angle in the metal, and where the back of the desk is required to be paneled I provide a curved joint 2, which unites with curve 3, and the parts are held together by rivet or
bolt and nuts 4, as illustrated in Fig. 2. At either end of the roll or metal top I provide a wood strip 5 for increasing the strength of the extremities of the roll-top itself. The wood strips in the roll-top, together with the metal top itself, run in grooves 6. (Best illustrated in Figs. 1 and 7.) This top can be moved forward or backward for opening and closing the desk in the ordinary manner. The roll-top 4 is made in corrugated form to permit of a degree of elasticity. The said roll-top 7 is made of sheet metal treated as before mentioned in order to give it the requisite degree of stiffness and smoothness, and likewise the top or platform 8 is made of the requisite size and treated in the manner before specified, and the outer edges of both the extreme top and platform are formed into the shape shown in Fig. 3 and are held to other parts of the desk by bolts and nuts 9 or a rivet, its equivalent. In forming the front portion of the desk 1 I take the blank sheet metal of the requisite size and shape and when the same is solidified by the application of force or blows, as hereinbefore specified, cut out the drawer-openings somewhat smaller than the standard size required when the front is completed. This extra metal which surrounds the drawer-openings is then turned inward, as indicated in Fig. 14, 18 19 20. The flange 18 is illustrated in this figure broken away, so as to show the division 10 between the drawers. This division is turned inward, as illustrated at 18 20. In the walls of the flanges surrounding the openings I provide perforations 11, which receive a fibrous packing 12, as best illustrated in Fig. 16, against which the sides of the drawers move to prevent the metal rubbing against metal and obviate the squeaking or grating which would otherwise be manifest when the drawers were opened and closed. On upper flange 18 I make similar openings in which to insert fibrous packing 13. (Best illustrated in Figs. 13 and 14.) I form the ends of the drawers by cutting the blanks to the requisite size and treating the same in such manner as to form the same into panels or smooth, as the case may be, and the back of the desk is formed in the same manner, and if it be desired to have a panel below and between the drawers on the back of the desk the metal at its ends is brought together, as indicated at 18 14, Fig. 2, and held together by bolt and nut or rivet 4 to form the circular corner, and the back of the desk 16, Fig. 2, is brought to a right-angle bend and united to the curved end by bolt and nut or its equivalent 17, Fig. 2. The walls of the desk are connected together by angle-flange 18, Fig. 12, and are riveted or bolted to the bottom of piece 19, as best illustrated in Fig. 12. It is obvious that the form or configuration stamped or pressed into the sheet metal forming the desk may be of any shape, and each of the angles or indentations thus formed serves to strengthen and stiffen the metal, when the blanks are assembled and the desk completed. The molding at the bottom of the desk is curved, as indicated at 20, Figs. 14 and 15, and the parts held together by rivets or bolts 21, Fig. 14.

The drawers in the desk are operated as follows: Between the division 10 between the drawers I place between the angles 18 19 of the division and rear of the drawer flanged track 22, Fig. 6, in a permanent position, and on this track I mount bracket 23, same figure, which is secured to rear of drawer 24, Figs. 6 and 8, which serves to support and carry the rear end of the drawer at the proper elevation. The drawer 25 is formed of sheet metal, the front preferably being paneled, as illustrated at 25, Fig. 11. The front of the drawer extends beyond its paneled edges, and to this flange 24a, Fig. 8, I secure spring-guide 26 at the front and rivet the same to the back end of the drawer at 27. The spring-guide on both sides of each drawer runs in contact with fibrous packing 13, Fig. 13. The flange 24a also extends below the bottom of the drawer, and to this I attach spring-guide 28, one on each side of the drawer, secured to the flange 24a at the front and to the bottom of the drawer toward the rear. These spring-guides run in contact with the fibrous packing in the flange of the division between the drawers, so that the drawer will always be centered and easily operated. For simultaneously locking the drawers I provide drawer-lock 29, Fig. 10, which is pivotally supported in the bottom of the desk in the rear of the drawers. The pivot 30 is fitted into the bottom of the desk and is elevated by coil-spring 31, which brings catches 32 into engagement with the slots 33, provided in the sides of the drawers, as best illustrated in Fig. 7. For unlocking the desk I provide at the top of 29 crank-arm 24, having an incline hook end 35, which is so located as to be engaged by the back end 5 of the roll-top, as best illustrated in Fig. 7. The weight of this top brought in contact with the incline hook 35 serves to turn the standard carrying catches 32 out of contact with the slots and permit the opening of the drawer or drawers, the spring operating to hold the catches in engagement; but when the roll-top engages the incline hook 35 on the crank-arm it moves the catches out of contact and permits the drawers to be opened, and when the top is closed down the spring carries the hooks into engagement with the slots in the drawers and automatically locks the drawers. Having in general terms described my office-desk, the chief features of which consist in constructing an office-desk from ordinary commercial sheet-metal blanks which are treated to pressure by hydraulic rolling or blows to prevent wrinkling or buckling of the parts.
by solidifying the granulation of the metal in the blanks, what I claim as new, and desire to secure by Letters Patent, is—

1. As an article of manufacture, an office-desk construction wholly of metal, the individual parts of the desk being formed of metal sheets stiffened by swaging, the meeting edges of said sheets having inwardsly-bent integral flanges, and a panel-blank introduced between said meeting edges and secured to each, whereby to offset the desk-blanks and form a panel in the outer surface.

2. As an article of manufacture, a desk constructed wholly of stiffened sheet-metal plates, the edges of the plates being inwardsly to form flanges, a panel-blank having inturned edges, and concealed means within the desk to secure the edges of the said blank to the edges of contiguous plates of the desk.

3. A sheet-metal desk comprising a base, vertical sheet-metal plates joining the base, said plates having inturned flanges along their vertical edges, means for securing the vertical flanges together, a top plate having an edge formed in a return-bend and overlying the top edge of a vertical plate, said vertical plate having a rearwardly-bent flange secured to the bottom of the return-bend of the top plate.

4. A sheet-metal desk comprising a base, vertical sheet-metal plates joining the base, said plates having inturned flanges along their vertical edges, means for securing the vertical flanges together, a top plate having its front edge joined in a return-bend and overlying the top edge of the front vertical plate, said front vertical plate having a rearwardly-bent flange secured to the bottom of the return-bend of the top plate, in rear of the forward edge of said top plate.

5. A sheet-metal desk comprising a top and vertical plates secured thereto, said vertical plates having drawer-openings and inturned flanges surrounding said openings, cushioning material supported by said flanges, sheet-metal drawers operative in said openings, and spring-guides carried by the drawers and engaging said cushioning material.

6. A sheet-metal desk comprising a top and vertical plates secured thereto, said vertical plates having drawer-openings and inturned flanges surrounding said openings,