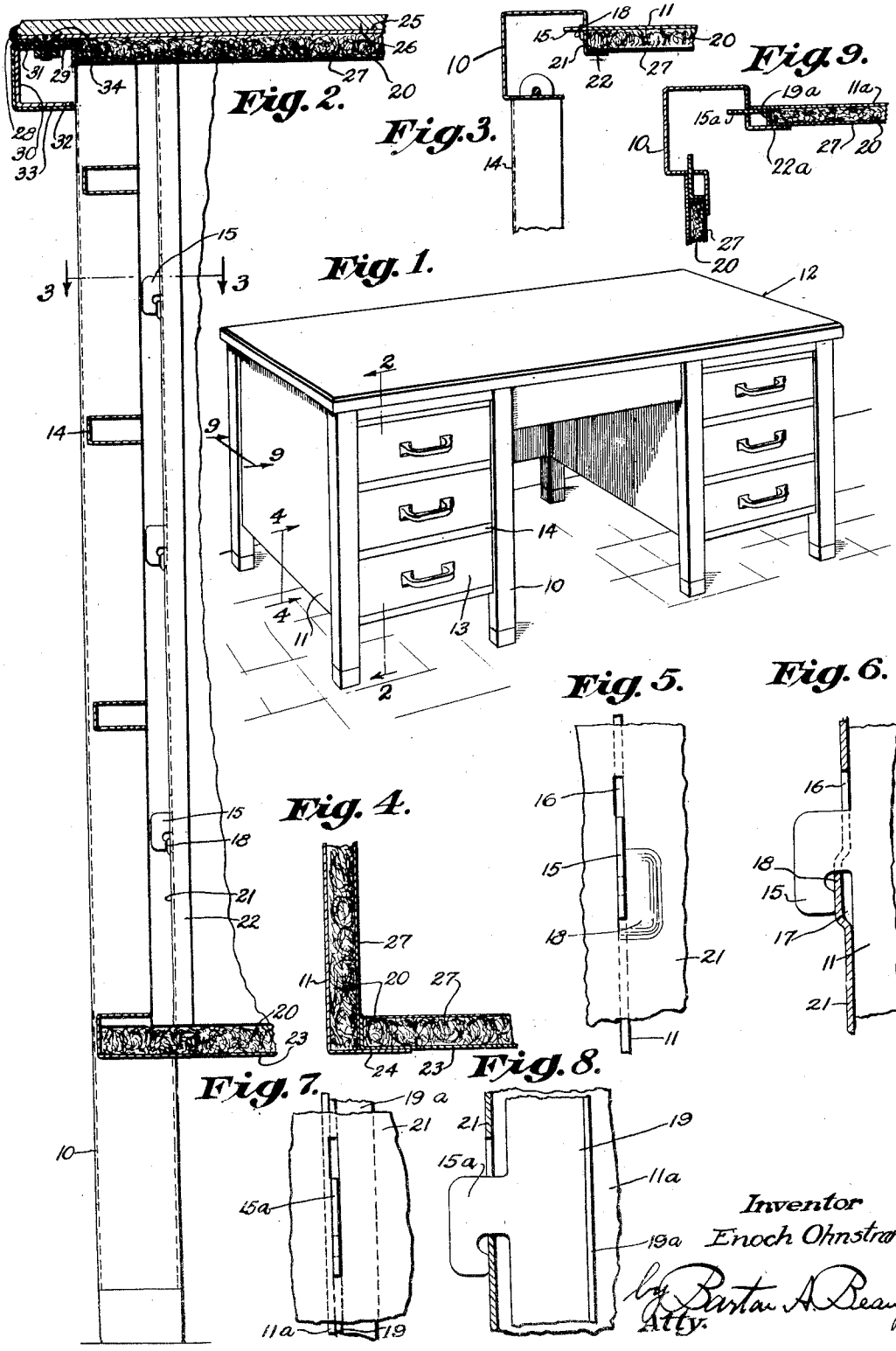
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INSULATED FURNITURE CONSTRUCTION

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INSULATED FURNITURE CONSTRUCTION

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This invention relates to furniture construction and has reference more particularly to the construction of the knock-down type of furniture in which the walls are lined with insulating material.

In the construction of metal furniture and especially of metal desks, considerable annoyance has been experienced by users due to the fact that the vibration of the metal in use causes sounds which are unpleasant to the ear. This is especially noticeable when an empty metal drawer is moved in and out in its supporting guideways or slides. Another objection to metal furniture, and especially metal desks which are adapted to contain valuable papers, is that in case of fire the metal conducts the heat so rapidly to the inside of the desk that the papers therein are charred and destroyed before the fire can be extinguished.

An object of this invention therefore is to provide a practical knock-down construction for metal furniture and especially desks.

Another object of the invention is to provide a furniture construction of the class described in which the wall members are lined with insulating material for sound proofing purposes and for protection against fire.

A further object of the invention is to provide a simple and efficient attaching means for the walls and frame members of metal desks.

A still further object of the invention is to provide a composite top construction for metal desks employing fiber board as an insulating material and linoleum as a wear proof upper surface; also to improve furniture construction in other respects hereinafter specified and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which,

Fig. 1 is a perspective view of my improved desk,

Fig. 2 is a fragmentary sectional elevation through the desk on the line 2—2 of Fig. 1,

Fig. 3 is a transverse fragmentary section through the desk on line 3—3 of Fig. 2,

Fig. 4 is a fragmentary sectional elevation through the desk on line 4—4 of Fig. 1,

Fig. 5 is a fragmentary elevation of the hook attaching means,

Fig. 6 is a fragmentary side elevation of the hook attaching means shown in Fig. 5, and

Figs. 7 and 8 are fragmentary elevations of hook attaching means similar to Figs. 5 and 6 but of a modified form of construction.

Fig. 9 is a sectional view similar to Fig. 3 but applied to the modified form shown in Figs. 7 and 8.

Referring to the drawings by numerals, the desk is provided with a plurality of metal legs 10 between which are suitably attached a plurality of metal wall members 11. A desk top 12 is supported on the upper ends of legs 10, and a plurality of drawers 13 are mounted on suitable slideways 14 between legs 10.

My improved desk is preferably of a knock-down construction so that it may be shipped in a comparatively small container and then easily assembled by the user. In order to make a simple form of attachment between the legs 10 and wall members 11, I provide a plurality of hooks 15 formed on the edge of each wall member 11, said hooks being adapted to be inserted into slots 16 formed in legs 10. The hooks 15 are separated from the wall member 11 by a space 17 called the "throat" and considerable difficulty has been experienced in the past in forming this throat by a punch, since the thickness of the leg metal is so small that the corresponding punch for the throat 17 is very thin and is subject to frequent breakage. In order to avoid this breakage I provide an offset pad 18 on leg 10 adjacent each slot 16 which serves to increase the width of the throat 17 and also the corresponding thickness of the punch for forming said throat. Due to the greater thickness of the throat punch, the breakage of the latter is practically eliminated. The throat 17 is preferably made slightly less in width than the distance between the outer face of pad 18 and the inner face of leg 10 so that in assembly the pad 18 is slightly depressed and yieldingly and firmly maintains the hook 15 in detachable connection with said pad 18.

I have found it desirable in constructing

my improved desk to use a comparatively thin metal for the wall sections 11, which considerably lowers the cost of construction of the desk. However the hook 15, with very thin metal, is somewhat weak and is apt to be bent in shipment and broken in assembly. Also the edge of slots 16 may often be observed from the outside of the desk due to the fact that the slot 16 is some wider than the thickness of the metal forming hooks 15. In order to overcome these two disadvantages I provide a modified construction as shown in Figs. 7 and 8 in which an attaching strip 19 is secured along each edge of wall member 11*a* by spot welding or other means. This member 19 can be of metal having a greater thickness than wall member 11 so that the hooks 15*a* are very strong and are not apt to be bent in shipment or ruptured in assembly. Also in the improved construction shown in Figures 7 and 8, the edge of the metal wall member 11*a* overlaps the slot 16 so that said slots are concealed by said wall members and can not be observed from the outside of the desk, thus materially improving the outside appearance of the desk.

In order to make the metal desks sound proof in use and insulated against fire, I preferably attach to the inner surface of walls 11 and 11*a*, fiber boards 20. This fiber board is preferably formed from sugar cane bagasse manufactured in accordance with the process described in Patent No. 1,457.285. This fiber board has a high insulating value, and in case of fire, it merely chars after a long exposure to extreme heat, and at the same time the temperature inside of the desk remains lower than that necessary to char the papers contained therein. In the claims of this application, the words "fiber board", however. are contemplated to include other types of fibrous materials either vegetable or mineral such as asbestos, mineral wool, plaster board or the like.

The surface of the fiber board 20 is comparatively rough and is usually of a pale yellow color. The fibers are somewhat loose on the surface of the board, and in order to "lay" the fibers and to render same further fire proof, I preferably coat the inner surface of the fiber board 20 with a solution of water glass, which hardens and forms an efficient coating which prevents all loose fibers from the surface of the board from falling into drawers 13 and also renders said board more resistant to fire. The metal work on the desk is usually coated with baked enamel and in order to also color the inner surface of the boards 20, I preferably mix a pigment of a color similar to that of the baked enamel, so that the inner surface of the board matches in color the other metal work of the desk. The fiber boards 20 may be attached to the inner face of wall members 11 in any suitable way, but they may be conveniently attached by flanges 21 and 22 formed on the legs 10, said flanges being adapted to embrace the edges of said fiber boards. The bottom 23 of the desk is also adapted to support fiber boards 20, said bottom being supported by inturned flanges 24 formed along the bottom edge of wall members 11.

In the modified form of construction shown in Figs. 7 to 9, the edge of the fiber board 20 may abut against laterally extending flanges 19*a* formed on strips 19 so that leg flanges 22*a* cooperate with flanges 19*a* to embrace the edge of the fiber board and hold same securely in place.

The top 12 of my improved desk is preferably a composite structure comprising a sheet of metal 25, such as steel, which is covered on its upper surface by a layer of battleship linoleum 26, the latter providing a wear proof and scratch proof upper surface for the desk top 12. To the lower face of sheet metal 25 is attached a layer of the fiber board 20, and said fiber board is coated with water glass 27 as above described. The linoleum 26 and fiber board 20 are preferably attached to sheet metal 25 by gluing the layers together under relatively heavy pressure.

The outer edge of the linoleum layer 26 is preferably concealed by the edge flange 28 which has a section 29 extending under the metal sheet 25. An edge channel or strip 30 has a leg 31 extending under section 29 and a lower leg 32 extending inwardly to engage the outer surface of legs 10 and properly position the desk top 12 relative to said legs. The outer surface of the strip 30 may be enclosed by a metal cover 33 if desired, and the various sections may be attached to metal sheet 25 by a bolt 34.

It should be understood that the various features are shown as applied to desk construction, but may be also applied to the construction of other furniture, such as home and office furniture, if desired. The constructions which are especially adapted for wider furniture construction than desks are the hook attached means and the insulating feature.

I would state in conclusion that while the illustrated examples constitute a preferred embodiment of my invention, I do not limit myself precisely to the details herein described, since manifestly the same can be considerably varied without departing from the spirit of the invention as defined in the appended claims.

I claim:—

1. In a furniture construction, a plurality of leg and wall members having interlocking slots and hooks for detachably connecting said members together, a plurality of sheets of fiber board, and flanges associated with said leg members adapted to retain said fiber boards against the surfaces of said wall members when said leg and wall members are connected.

2. In a desk construction, a vertical metal leg, a metal wall member, interconnecting hooks between said wall member and leg, a fiber board, and a flange on said leg adapted to engage the edge of said fiber board so as to secure said fiber board to the inner face of said wall member.

3. In a desk construction, a metal top on said body portion, a fiber board attached to the lower surface of said top, a metal edge piece attached around the lower edge of said top, and a flange on said edge piece adapted to abut against the edge of said fiber board.

4. Metal furniture, comprising a sheet metal leg having a pair of adjacent walls extending in substantially right angular relation, a flange extending inwardly from the free edge of one wall terminating in a laterally outwardly extending portion, said flange having a slot formed therein, and a wall member having one edge engaged with said flange and having a hook carried by said member extending through said slot and engaging said flange to lock said wall member to said leg, said laterally extending portion cooperating with said wall member to retain said member and leg in fixed assembled relation.

5. Metal furniture, comprising a sheet metal leg having a pair of adjacent walls extending in substantially right angular relation, a flange extending inwardly from the free edge of one wall terminating in a laterally outwardly extending portion, said flange having a slot formed therein, a wall member having one edge engaged with said flange and having a hook carried by said member extending through said slot and engaging said flange to lock said wall member to said leg, and an insulating sheet having an edge portion interposed between said wall member and laterally extending portion and retained thereby.

6. Metal furniture, comprising a sheet metal leg having an outer imperforate wall portion, a flange on the side edge of said outer wall extending inwardly and having a laterally extending portion on the inner edge, a wall member having an edge engaged with said flange, and cooperating means on said flange, and said wall member for detachably locking said wall to said leg, and a heat insulating sheet applied to said wall member and retained by said laterally extending portion.

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