Nov. 2, 1943. C. J. BATES ET AL 2,333,511

INSULATED FILING CABINET MANUFACTURE AND THE LIKE

Filed Oct. 2, 1941 6 Sheets-Sheet 1

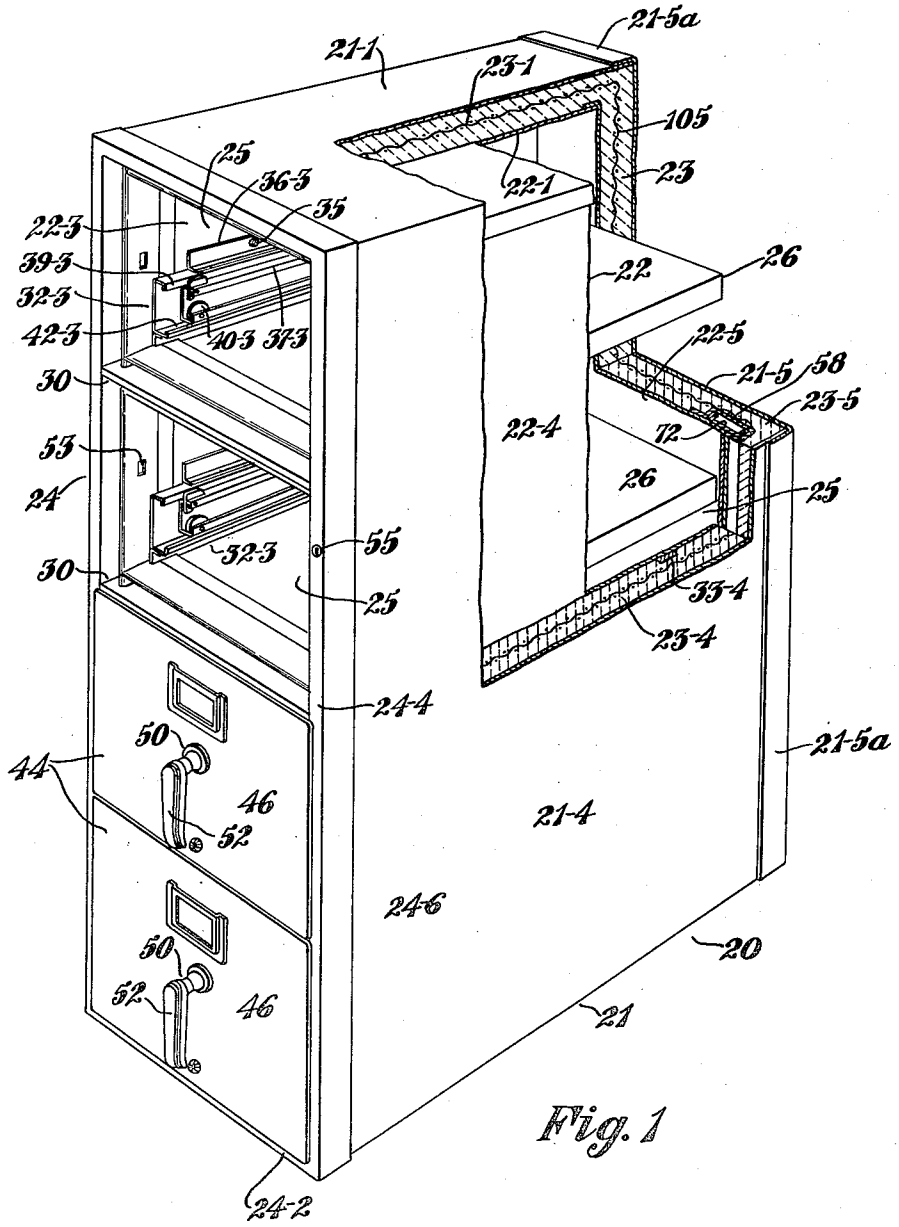


Fig. 1

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INSULATED FILING CABINET MANUFACTURE AND THE LIKE

Filed Oct. 2, 1941 6 Sheets-Sheet 2

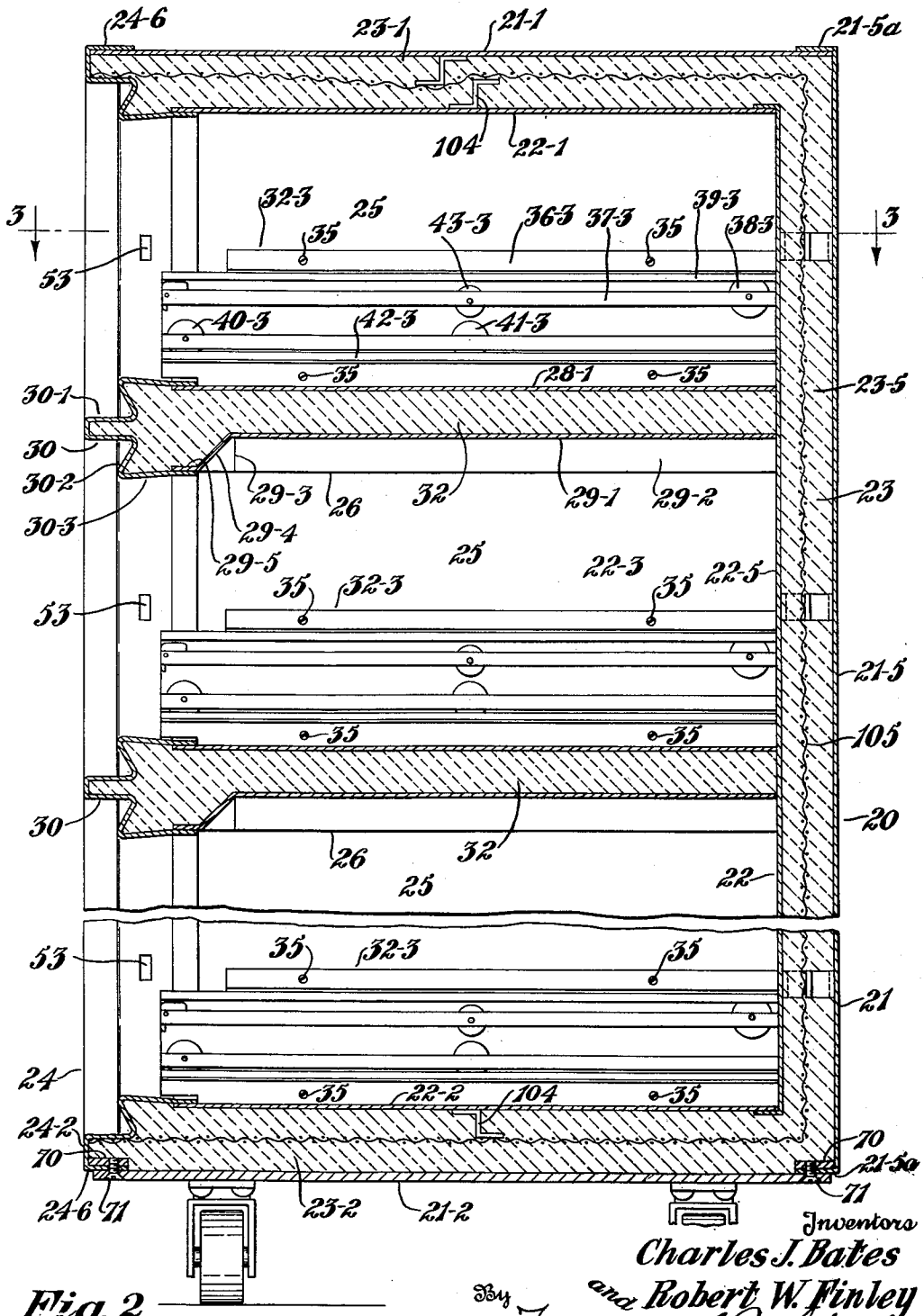


Fig. 2

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INSULATED FILING CABINET MANUFACTURE AND THE LIKE

Filed Oct. 2, 1941 6 Sheets-Sheet 3

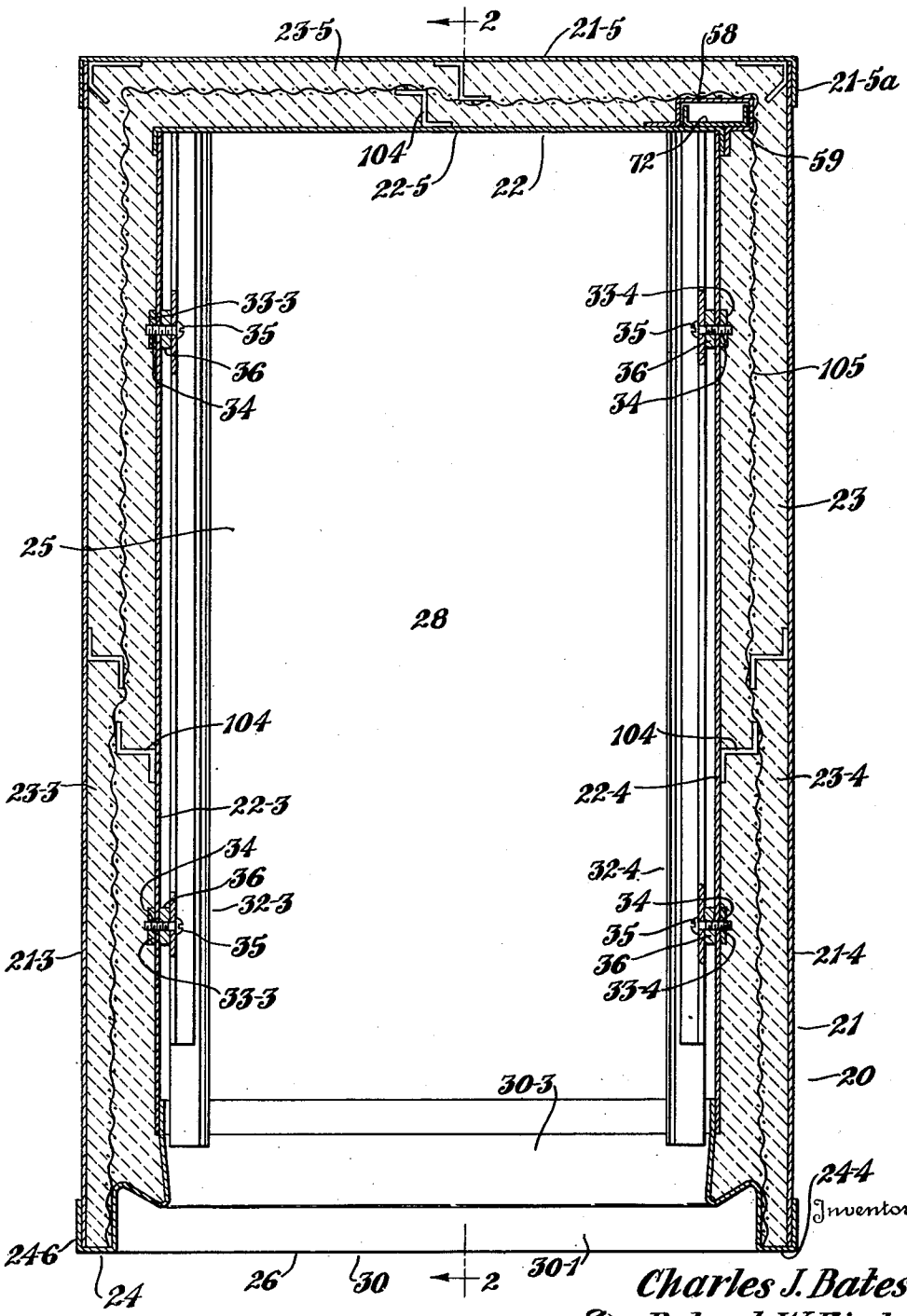


Fig. 3

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INSULATED FILING CABINET MANUFACTURE AND THE LIKE

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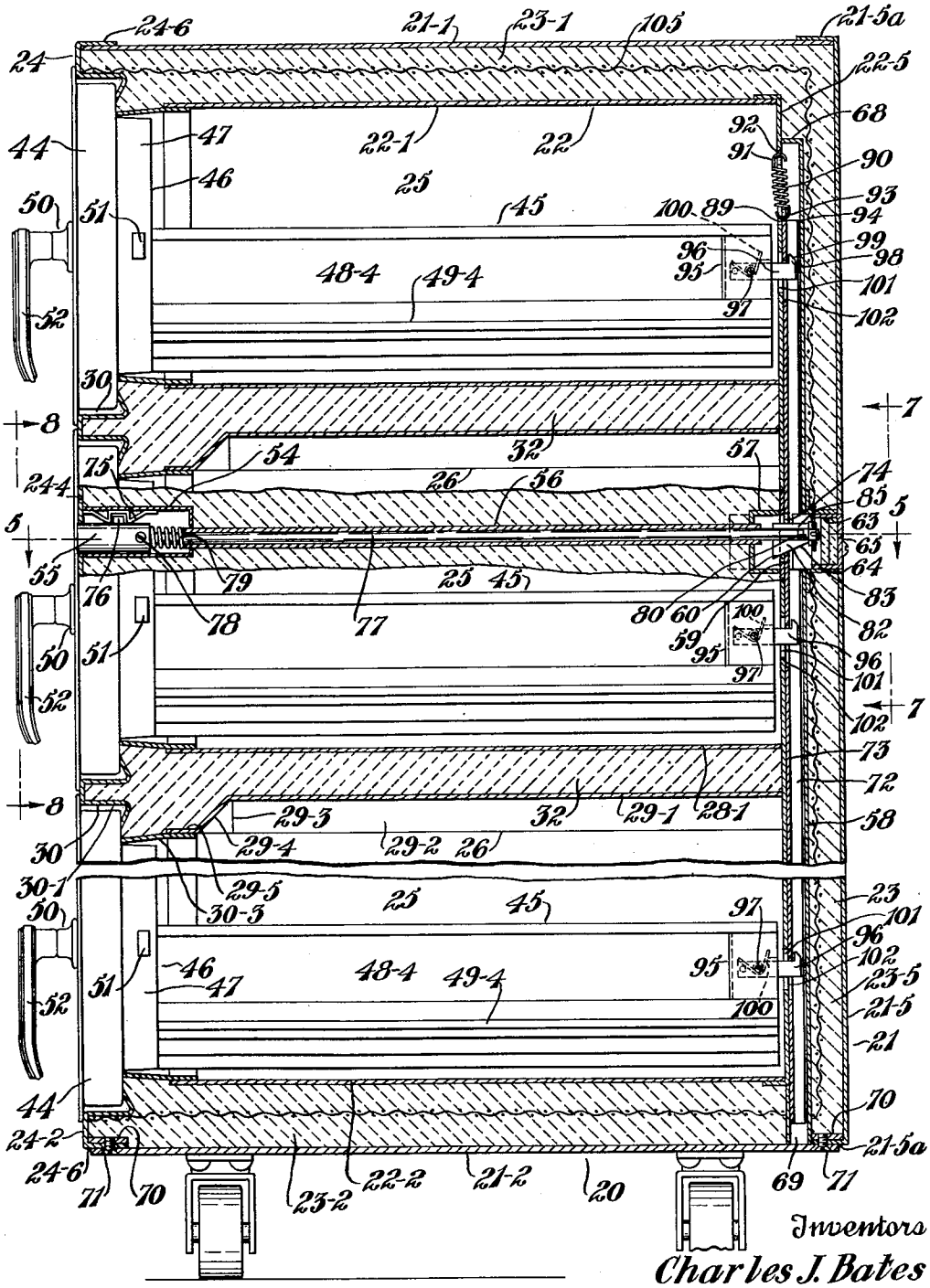


Fig. 4

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INSULATED FILING CABINET MANUFACTURE AND THE LIKE

Filed Oct. 2, 1941 6 Sheets-Sheet 5

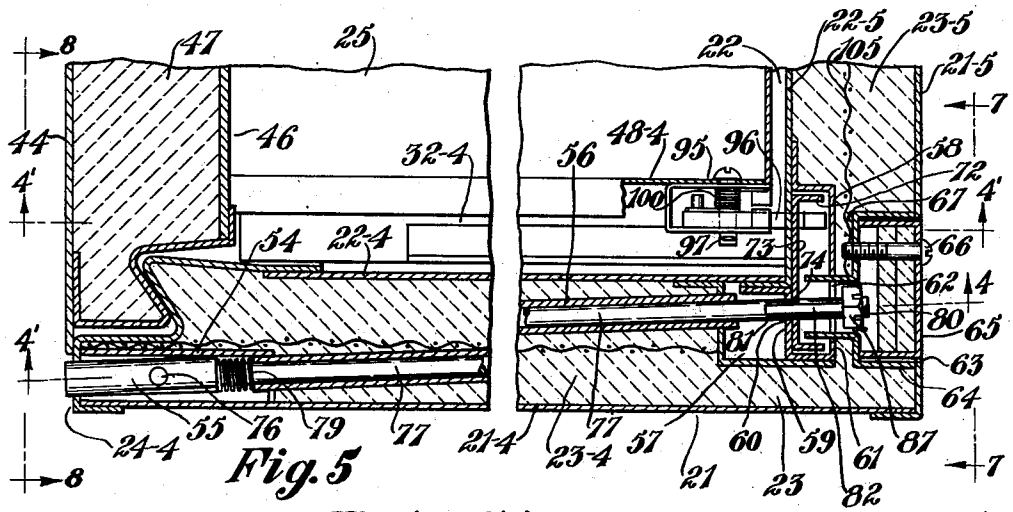


Fig. 5

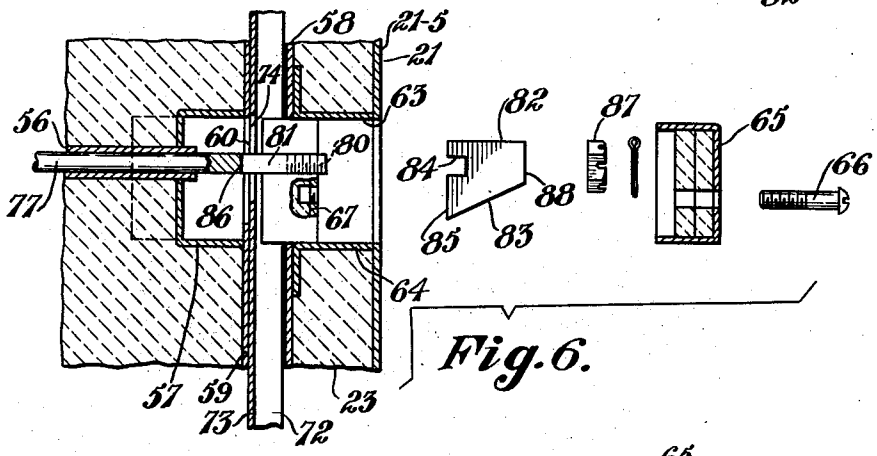


Fig. 6.

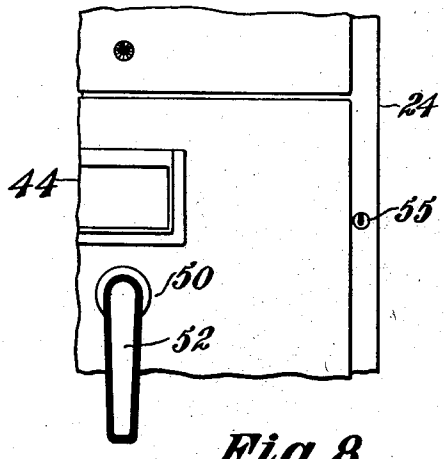


Fig. 8

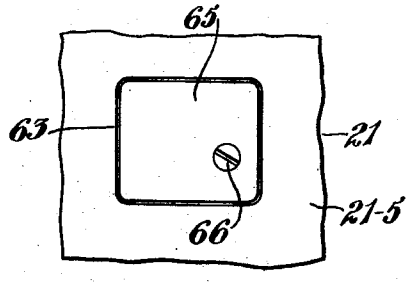


Fig. 7

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INSULATED FILING CABINET MANUFACTURE AND THE LIKE

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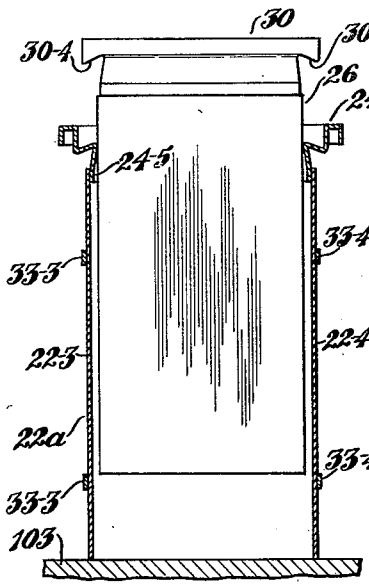


Fig. 12

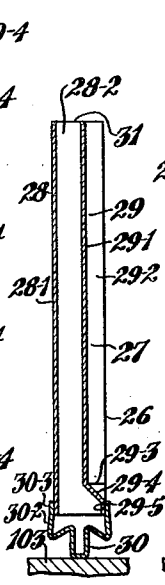


Fig. 11

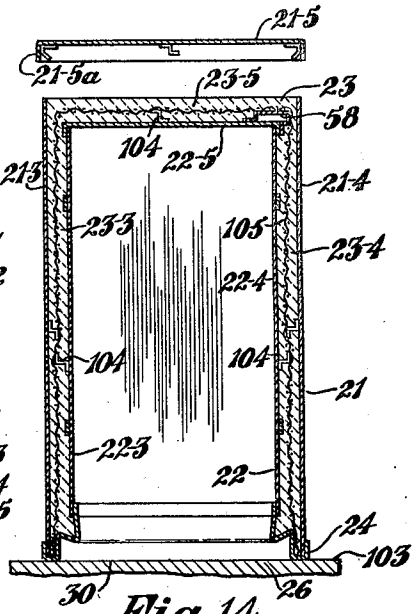


Fig. 14

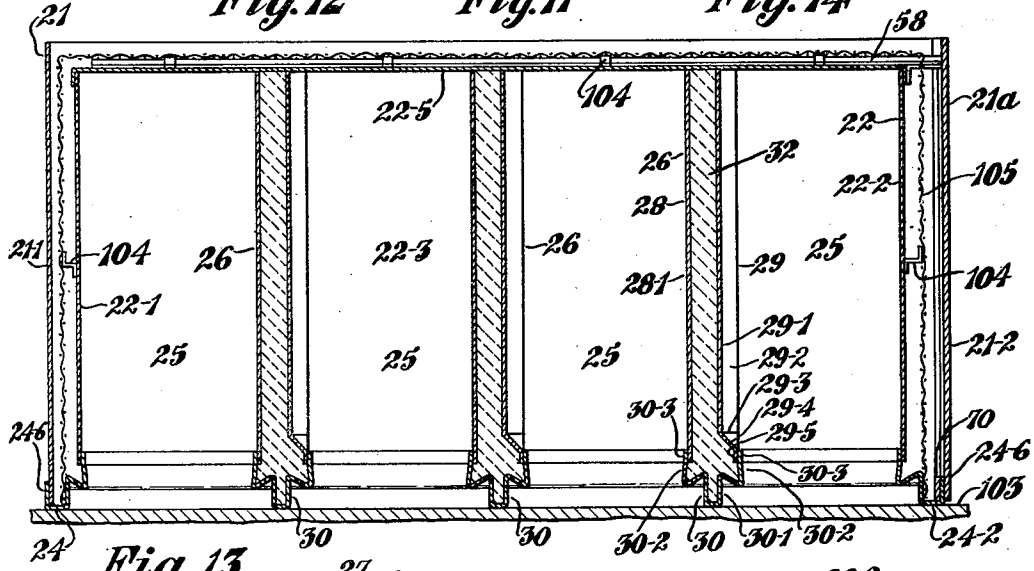


Fig. 13

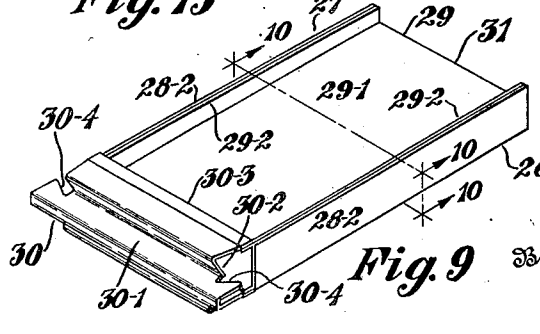


Fig. 9

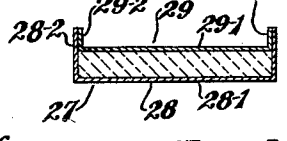


Fig. 10

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Patented Nov. 2, 1943 2,333,511

UNITED STATES PATENT OFFICE

2,333,511

INSULATED FILING CABINET MANUFACTURE AND THE LIKE

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Application October 2, 1941, Serial No. 413,286

6 Claims. (Cl. 109—53)

Insulated filing cabinets, each including a plurality of compartments arranged in a vertical row one above the other with a drawer in each compartment, have been made usually each with a sheet metal outer shell or case enclosing a one-piece structure of insulation material forming the plurality of compartments, without any inner sheet metal lining walls for the drawer compartments.

In such a usual insulated filing cabinet, one or more transverse partition walls form with outer walls the plurality of compartments in the one-piece structure of insulation material. Under the action of heat there is a tendency for cracks to develop in the one-piece multiple compartment insulation material structure at the corners where the partition walls connect with the outer walls, thus structurally weakening the corners or joints.

Each drawer of an insulated filing cabinet usually is formed of sheet metal and includes an insulated front wall having jambs interfitting with jambs about the front opening of the compartment in which the drawer operates. Such a drawer particularly when filled with files of letters or documents or with other material is relatively heavy.

The suspension of the drawers in a multiple compartment filing cabinet having no inner sheet metal compartment walls presents difficulties which have required embedding metal drawer suspension supporting members in the side walls of the insulation material structure, with an inherent tendency under the action of heat for the metal supporting members to separate from the embedding insulation material.

From a structural standpoint, it is undesirable so to depend upon insulation material as a component for supporting the drawer suspensions. The insulation material is best utilized when it serves primarily as insulation and not as a structural component.

It is moreover desirable to have as few metallic connections as possible between the drawers and drawer suspensions and the outer metal shell or case of an insulated filing cabinet to minimize transmission of heat from the outer metal shell to the drawers and their contents.

Where insulation material is relied upon as a supporting structural component of the drawer suspensions in a multiple drawer insulated filing cabinet, the construction is relatively difficult and expensive, involving for each cabinet the accurate placement of removable forms and the metal supporting members to be embedded in the insulation material.

In general, from the structural standpoint, usual insulated filing cabinets and similar multiple compartment constructions including metallic outer shells and walls of insulation material for the compartments, have not structurally as a whole utilized the maximum strength of the component parts, and these usual insulated filing cabinets and the like have been relatively complicated and expensive to manufacture.

In many instances, it is desirable in an insulated filing cabinet to provide drawers of different heights. In some cabinets, it may be desirable to have some drawers of one height, and some drawers of another height; and it may be desirable to provide one cabinet with drawers of one height, and another cabinet with drawers of another height.

To provide this variability in the height of the drawers of insulated filing cabinets is practically prohibitive in cost in cabinets utilizing monolithic insulation material structures for forming the multiple drawer compartments.

In order to minimize the overall weight of an insulated filing cabinet and the like, it is desirable to utilize only such wall thicknesses of insulation material in the several walls of the construction, as is necessary to attain the desired degree of heat and fire protection.

In order to minimize production costs, in the assembly of the sheet metal walls of an insulated filing cabinet and the like, it is desirable to utilize spot welding as much as possible.

An insulated filing cabinet to meet usual requirements must be provided with a collective drawer lock mechanism, which when in locked position engages each drawer as it is pushed in and closed, and requires operation to the unlocked position to enable the drawers to be pulled out and opened. Considerable difficulties have been encountered in the construction and arrangement of collective drawer lock mechanisms in insulated filing cabinets to provide for easy assembly in manufacture, and easy accessibility for maintenance purposes.

The objects of the present invention include in general the provision of improvements in insulated filing cabinet manufacture, including an improved multiple compartment construction of sheet metal and insulation material, the construction as a whole by the formation and connection of its component parts, particularly its sheet metal parts, having relatively great strength as compared with usual multiple compartment constructions of sheet metal and insulation material, and the improved construction at

the same time being adapted for simplified and economical manufacture.

Further particular objects of the present invention include the provision of an improved multiple compartment construction of sheet metal and insulation material including outer walls and inner partition walls forming a plurality of compartments, and in which there is no connection between insulation material in the partition walls and insulation material in the outer walls, and thus no structural utilization of the insulation material to connect the partition walls with the outer walls, thereby avoiding structural weakening at the connections or joints of the partition walls and outer walls due to cracks developing in the insulation material under the action of heat.

Further particular objects of the present invention include the provision of an improved multiple compartment construction of sheet metal walls and insulation material walls abutting each other and forming composite walls, and in which the sheet metal walls are arranged for assembly by a maximum utilization of spot welding.

Further particular objects of the present invention include the provision of an improved multiple compartment construction of sheet metal walls and insulation material walls abutting each other and forming composite walls including outer composite walls and one or more composite partition walls, each composite partition wall having its sheet metal walls and insulation material wall arranged for having a required thickness in one portion of its insulation material wall reduced from the required thickness in another portion, simultaneously minimizing the weight of the insulation material and facilitating assembly by spot welding of the sheet metal walls of the composite partition wall with each other and sheet metal walls of the outer composite walls.

Further particular objects of the present invention include the provision of an insulated filing cabinet and the like, including a multiple compartment construction formed by outer walls and one or more inner partition walls, each partition wall being adapted for assembly with the outer walls at any selected position for forming compartments of selected heights to accommodate drawers of selected heights.

Further particular objects of the present invention include the provision of an insulated filing cabinet and the like, including a drawer compartment construction including composite walls forming a drawer compartment, each composite wall including one or more sheet metal walls and an insulation material wall, a drawer, and drawer suspension means operatively mounting the drawer in the compartment, the drawer compartment construction being adapted for supporting the drawer suspension means without utilizing the insulation material.

Further particular objects of the present invention include the provision of a multiple drawer insulated cabinet having a collective drawer lock mechanism, the parts and housings of which are operatively mounted in walls of the insulated cabinet in such manner as to permit easy and economical manufacture and maintenance.

Further particular objects of the present invention include the provision of a multiple compartment construction including sheet metal walls and insulation material walls, the sheet metal walls being arranged for assembly with each other so as to provide forms into which plastic insulation material may be poured during the course of manufacture to form the insulation material walls, thus eliminating the necessity for separate forms for the insulation material walls as is required when precast insulation material walls are utilized.

The foregoing and other objects are attained by the insulated filing cabinets and the like, constructions, parts, combinations, and sub-combinations, which comprise the present invention, and the nature of which is set forth in the following general statement, and preferred embodiments and steps of which together with their mode of use are set forth by way of example in the following description, and which are particularly and distinctly pointed out and set forth in the appended claims forming part hereof.

The nature of the insulated cabinet of the present invention may be stated in general terms as including a five walled composite structure including opposite preferably rectangular top and bottom walls, opposite preferably rectangular side walls extending between and having tops and bottoms connecting at corners with the sides of the top and bottom walls, and a preferably rectangular back wall having a top and a bottom and opposite sides each connected respectively with one end of the top and bottom and opposite side walls, the other ends of the top and bottom and side walls extend about an opening which is in the sixth face of a six faced polyhedron constituting the general outline of the five walled structure.

Each of the walls of the five walled structure is a composite wall including spaced inner and outer sheet metal walls and an insulation material wall between and preferably in abutment with each inner and outer sheet metal wall. All the outer sheet metal walls are connected with each other at the corners and constitute an outer sheet metal case; all the inner sheet metal walls are connected with each other at the corners and constitute an inner sheet metal case; and all the insulation material walls are connected with each other at the corners and constitute an insulation material shell between the inner and outer sheet metal cases.

The ends of the inner and outer case walls about the opening are connected by a preferably rectangular sheet metal jamb frame extending over the ends of the insulation material shell walls about the opening.

The interior of the five walled composite structure is divided into a plurality of front opening compartments by one or more composite partition walls, each composite partition wall including sheet metal walls forming a case having opposite top and bottom walls, opposite side walls connecting the side edges of the top and bottom walls, a sheet metal jamb connected to one end of each of the top and bottom walls, and an insulation material wall within the case and preferably in abutment with the interior faces of the top and bottom and side walls and the jamb.

Each composite partition wall is connected with the inner sheet metal case of the five walled composite structure, preferably by spot weld connections only between preferably flanges on the parition wall sheet metal case side walls in abutment with the side walls of the inner sheet metal case of the five walled composite structure.

In each compartment drawer suspension

means are secured and supported only upon each inner case sheet metal side wall.

A drawer having an insulated front is mounted in a usual manner on each set of drawer suspension means in each compartment, the insulated front being provided with usual jambs interfitting with the jambs at the front end of each compartment.

Improved collective drawer locking means are provided and include housings extending through walls of the insulation material shell and secured to outer faces of the inner sheet metal case and interior faces of the rectangular jamb frame.

The nature of the improved method of making the improved insulated cabinets of the present invention may be stated in general terms as including forming the sheet metal cases for the composite partition walls, pouring plastic insulation material in the partiton wall cases prevous to or after assembly with the side walls of the inner case, assembling the top and bottom and side and back walls of the inner sheet metal case and the rectangular jamb frame and the top and bottom and side walls of the outer sheet metal case, the top and bottom and side walls of the inner and outer cases being spaced from each other, pouring plastic insulation material between the spaced walls of the inner and outer cases and upon the inner case back wall, and assembling the outer case back wall on the back ends of the outer case top and bottom and side walls.

By way of example, embodiments of the invention in an insulated filing cabinet and parts thereof are illustrated in the accompanying drawings forming part hereof, in which

Figure 1 is an isometric view of a four drawer vertical insulated filing cabinet embodying the present improvements, the upper two drawers being removed, and portions being broken away and shown in section, for more clearly illustrating details of the improvements;

Fig. 2, an enlarged fragmentary longitudinal vertical sectional view thereof as on line **2—2**, Fig. 3, all the drawers being removed;

Fig. 3, a horizontal sectional view thereof as on line **3—3**, Fig. 2;

Fig. 4, another fragmentary longitudinal vertical sectional view thereof, with certain portions as on line **4—4**, Fig. 5, and other portions as on line **4'—4'**, Fig. 5, showing details of the construction and arrangement of the collective drawer lock mechanism in the improved vertical filing cabinet, all the drawers being shown pushed in, closed, and locked by the collective drawer lock mechanism;

Fig. 5, a fragmentary horizontal sectional view thereof as on line **5—5**, Fig. 4;

Figs. 6, enlarged fragmentary views similar to Fig. 4, showing rear parts of the collective drawer lock mechanism disassembled;

Fig. 7, a fragmentary rear elevation view of the improved cabinet looking in the direction of the arrows **7—7**, Figs. 4 and 5;

Fig. 8, a fragmentary front elevation view of the improved cabinet looking in the direction of the arrows **8—8**, Figs. 4 and 5;

Fig. 9, an isometric view of one of the improved separate composite partition walls for the improved cabinet, the composite partition wall being turned upside down for clearly illustrating details of construction;

Fig. 10, a transverse sectional view thereof as on line **10—10**, Fig. 9;

Fig. 11, a longitudinal sectional view, showing the preferred case of sheet metal walls for one of the composite partition walls in position ready to have poured therein insulation material for forming the insulation material wall;

Fig. 12, an elevation and sectional view showing the method of assembling the separable partition walls with the side walls of the inner sheet metal case of the cabinet, during the course of manufacture;

Fig. 13, a longitudinal sectional view, showing the inner sheet metal case assembled with the composite partition walls and their jamb members and outer jamb members and walls of the outer sheet metal case, walls of the inner and outer sheet metal cases being spaced from each other and providing forms for having poured therein the outer insulation material shell; and

Figs. 14, transverse sectional views showing the insulation material poured between the sheet metal walls of the inner and outer sheet metal cases, and the sheet metal back wall of the outer case in position for final assembly.

Similar numerals refer to similar parts throughout the several views.

The insulated filing cabinet embodying the present improvements is indicated generally by **20**, and includes an outer sheet metal case indicated generally by **21**, and an inner sheet metal case indicated generally by **22**, the inner and outer cases each including sheet metal walls spaced from each other, and an insulation material shell indicated generally by **23** is located between and in abutment with the spaced walls of the inner and outer sheet metal cases.

The outer and inner sheet metal cases **21** and **22**, and the insulation material shell **23**, each in outline is a six faced polyhedron, and each includes five rectangular walls in five of the faces of the six faced polyhedron.

The five rectangular walls of each metal case **21** and **22** and of the insulation material shell **23**, include oppositely spaced top and bottom walls and two oppositely spaced side walls connected with each other at side corners, and a back wall connected with the top, bottom, and side walls at corners at one end thereof.

At the other end, the borders of the top, bottom, and side walls of the outer and inner sheet metal cases **21** and **22** are connected by a rectangular jamb frame indicated generally by **24**.

Taken as a whole, the outer and inner sheet metal cases **21** and **22** and the insulation material shell **23** therebetween, constitute a structure having five composite walls, each composite wall including inner and outer sheet metal walls with an insulation material wall therebetween.

The interior of this outer five walled structure of the cabinet **20** is divided into four drawer compartments, each indicated generally by **25** by three partition walls each indicated generally by **26** and each of which according to the present improvements is a composite partition wall including outer sheet metal walls and an inner insulation material wall.

Each composite partition wall **26** is in itself a separate structure connected only with the composite outer walls of the cabinet **20**, preferably by welding abutting sheet metal parts.

One of the composite partition walls **26** will be described in detail, by reference to Figs. 9, 10, and 11, and includes a sheet metal case indicated generally by **27** and including an outer channel indicated generally by **28** having a longitudinally extending web wall **28—1** from the op-

posite parallel side edges of which extend transversely in the same direction parallel laterally spaced flange walls 28—2.

An inner channel indicated generally by 29 is located within the confines of the outer channel 28, and includes a longitudinally extending web wall 29—1 spaced from and parallel with the web wall 28—1, and from the opposite longitudinal side edges of the web wall 29—1 extend transversely in the same direction parallel flange walls 29—2 having outer faces in abutment with the inner faces of the flange walls 28—2 of the outer channel 28.

The flange walls 29—2 also extend transversely in the same direction as the flange walls 28—2, the flange walls 29—2 being transversely shallower than the flange walls 28—2, and the web wall 29—1 of the inner channel 29 being located between the web wall 28—1 and the outer edges of the flange walls 28—2 of the channel 28.

Each set of abutting flange walls 28—2 and 29—2 are secured to each other preferably by spot welding.

At one end of the channel 29, the web wall 29—1 extends beyond the end edges 29—3 of the flange walls 29—2 in a sloping angled flange 29—4 extending laterally between the flange walls 28—2 of the outer channel 28 and including a terminal leg 29—5 laterally alined with the outer alined edges of the flange walls 29—2 and 28—2. The terminal leg 29—5 is thus offset from the web wall 29—1 so as to make the transverse distance between the terminal leg 29—5 and the web wall 28—1 greater than the transverse distance between the web walls 28—1 and 29—1.

The sheet metal partition wall case 27 furthermore includes a laterally extending jamb indicated generally by 30 formed of sheet metal and including walls which comprise a central U channel 30—1 each side edge of which connects with an inner edge of an inner leg of a V angle 30—2.

The outer border 30—3 of one of the V angles 30—2 overlaps the terminal leg 29—5 of the web wall 29—1 of the inner channel 29, the overlapping V angle leg border 30—3 being secured to the web wall terminal leg 29—5 as by spot welding.

The outer border 30—3 of the outer leg of the other V angle 30—2 overlaps end border portions of the web wall 28—1 of the outer channel 28 opposite the angle flange 29—4 of the web wall 29—1 of the inner channel 29, the outer border portion 30—3 of the outer leg of the other V 30—2 overlapping the end border portions of the web 28—1 being secured thereto as by spot welding.

The end 31 of the sheet metal partition wall case 27 opposite the jamb 30 is preferably open, providing a convenient entrance into the interior of the shell 27 through which plastic insulation material may be poured for forming the insulation material wall 32 of the composite partition wall 26.

In the sheet metal partition wall case 27 the opposite ends of the laterally extending jamb 30 extend laterally beyond the outer faces of the outer channel flange walls 28—2, and the V angles and the outer edges of the U channels at each end of the jamb 30 have formed therein V notches 30—4 for fitting with the V angles of the outer rectangular jamb frame.

The sheet metal walls of the outer case 21 include a top wall 21—1, an opposite bottom wall 21—2, laterally spaced side walls 21—3 and 21—4, and a back wall 21—5.

The sheet metal walls of the inner case 22 similarly include a top wall 22—1, an opposite bottom wall 22—2, laterally spaced side walls 22—3 and 22—4 and a back wall 22—5.

The insulation material walls of the shell 23 similarly include a top wall 23—1, an opposite bottom wall 23—2, laterally spaced side walls 23—3 and 23—4, and a back wall 23—5.

In the cabinet 20, in each composite partition wall 26, the web wall 28—1 of the outer channel 28 is uppermost, and the outer sheet metal channel flange walls 28—2 fit with their outer faces in abutment with the inner faces of the sheet metal side walls 22—3 and 22—4 of the inner sheet metal case 22.

The sheet metal flange walls 28—2 and 29—2 of each composite partition 26 may be secured to the sheet metal side walls 22—3 and 22—4 by any desired means such as riveting, rivet welding, or spot welding.

For attaining minimum production costs, spot welding is preferred; and also spot welding permits easy variation in the height of each compartment 25.

The above described details of construction of each composite partition wall 26 enables the necessary thickness of insulation material within the jamb 30 and a reduced thickness of insulation material between the sheet metal channel web walls 28—1 and 29—1, thereby minimizing the overall weight of insulation material and at the same time permitting each set of channel web walls 28—2 and 29—2 to be spot welded to each other and to one of the inner case sheet metal side walls 22—3 or 22—4, or permits the convenient use of other connecting means for securing the channel flange walls to each other and to the inner case sheet metal side walls.

In the cabinet 20, on the inner case sheet metal side wall 22—3 of each compartment 25 there is supported drawer suspension means indicated generally by 32—3 and on the opposite inner case sheet metal side wall 22—4 in each compartment 25 there is supported drawer suspension means indicated generally by 32—4.

In order to permit the inner case sheet metal side walls 22—3 and 22—4 to be made of relatively light gauge material, on the outer face of the sheet metal side walls 22—3 there is secured preferably by spot welding a pair of preferably parallel metal bands 33—3 whose thickness is greater than that of the wall 22—3 and adequate for having threaded apertures 34 formed therein which register with apertures formed in the wall 22—3.

The suspension means 32—3 is secured to the wall 22—3 by removable headed screws 35 each of which includes a threaded shank screwed into one of the threaded apertures 34 of one of the metal bands 33—3, and there is preferably interposed on each screw shank between the inner face of the wall 22—3 and the suspension means 32—3 a spacer washer 36.

On the outer face of the inner case sheet metal side wall 22—4 there is similarly provided a pair of metal bands 33—4 having threaded apertures 34 formed therein and registering with apertures in the wall 22—4 for receiving the shanks of headed screws 35 with washers 36 interposed on the shanks between the wall 22—4 and the suspension means 32—4, whereby the suspension means 32—4, whereby the suspension means 32—4

is supported on the inner case sheet metal side wall 22—4.

Thus the suspension means 32—3 and 32—4 are removably supported entirely by and upon the inner case sheet metal side walls 22—3 and 22—4 without any utilization of the insulation material of the insulation material shell 23.

The suspension means 32—3 and 32—4 are of usual construction and each includes similar but oppositely arranged parts. Thus for example, each suspension means 32—3 includes a track member 36—3 which is the part of the suspension means secured to the wall 22—3 by the screws 35.

An intermediate telescoping channel 37—3 is roller supported for telescopic movement by an upper roller 38—3 operating in the upper track 39—3 of the track member 36—3, and lower rollers 40—3 and 41—3 operating in the lower track 42—3 of the track member 36—3.

The rollers 38—3 and 40—3 are rotatably mounted adjacent the ends of the intermediate member 37—3. The lower roller 41—3 is rotatable in a slot in the central portion of the intermediate channel 37—3 and directly above the centrally located lower roller 41—3 is rotatably mounted an upper roller 43—3.

The similar but oppositely arranged parts of the suspension means 32—4 will not be described in detail.

In each compartment 25 the opposing upper and lower surfaces of the rollers of the intermediate channels of the suspension means 32—3 and 32—4 are arranged to telescopingly support in a usual manner a file drawer indicated generally by 44, and which as shown includes a sheet metal file container indicated generally by 45 having usual rectangular bottom, side and rear walls, and a front indicated generally by 46 including an insulated metal case indicated generally by 47 having jambs formed in its rear face to interfit in a usual manner with jambs of the rectangular outer jamb frames and a jamb or jambs on one or a pair of the composite partition walls.

In Fig. 4 is illustrated in side elevation a plurality of the drawers 44, in each of which one container side wall 48—4 is shown in elevation and upon which is secured a longitudinally extending suspension track 49—4 which rolls on top of the lower rollers and below the upper rollers on the intermediate channel of one of the suspension means 32—4. On the other side of the drawer, not shown, a similar track is secured for operating between the rollers of the opposite suspension means 32—3.

Each drawer is provided with an individual locking means indicated generally by 50 including at each side of the drawer front 46 a retractable latch 51 operated by a handle 52 operatively mounted on the front face of the drawer front 44, each latch 51 being engageable and retractable with and from a latch catch opening 53 in one of the side members of the outer jamb frame 24.

Collective drawer locking means are operatively arranged in a novel manner in the cabinet 20 in novel housing means as illustrated in Figs. 4 to 8 inclusive. The novel housing means for the collective drawer lock mechanism includes in the wall 23—4 of the insulation material shell 23, metal walls forming a forward lock and latch housing 54 which is secured to the inner face of the side member 24—4 of the rectangular jamb frame 24, and the jamb side member 24—4 has an aperture formed therein through which extends the outer end of a cylinder lock 55.

From the rear of the housing 54 communicatingly extends an operating rod bearing and housing tube 56 connecting and communicating with a cam housing 57 associated with and connected to the outer face of the inner case sheet metal side wall 22—4 and the inner case sheet metal back wall 22—5 at their rear upright corner connection.

Sheet metal walls associated with the inner case walls 22—4 and 22—5 at their rear upright corner connection form an upright transversely rectangular collective lock bar guide and housing tube 58 which extends longitudinally in the insulation material walls 23—5 and 23—4 at their rear upright corner connection.

The guide and housing tube 58 juts beyond the rear corner connection of the inner case walls 22—4 and 22—5 in the direction of the wall 22—5 towards the outer case wall 21—4 and overlaps the rear end of the cam housing 57 and there is provided in a common upright wall 59 of the cam housing 57 and the upright guide and housing tube 58, an aperture 60 alined with the rear end opening of the tube 56 entering the cam housing 57.

Opposite the wall 59, in another upright wall 61 of the upright guide and housing tube 58 another aperture 62 is provided which is alined with and larger than the aperture 60.

Opposite the aperture 62 there is provided in the outer case sheet metal back wall 21—5 a rectangular access aperture 63, and walls extending between the aperture 63 and the aperture 62 provide a shouldered closure plug housing 64. An insulated sheet metal cup closure plug 65 is removably secured against the shoulder of the housing 64 as by headed screw means 66 extending through an aperture provided in the plug 65 and screwed into a suitable threaded aperture in a shoulder wall 67 of the housing 64.

The upright collective lock bar guide and housing tube 58 as shown in Fig. 4 has a closure wall 68 at its upper end, and the tube 58 extends downwardly from the wall 68 the entire length of the insulation material back wall 23—5 where its lower open end 69 in the assembled cabinet 20, abuts against the bottom wall 21—2 of the outer sheet metal case 21.

Among other purposes, for providing access for assembly and maintenance to the interior of the guide and housing tube 58, the outer case bottom wall 21—2 is separably secured to reinforced metal flange means indicated generally by 70 extending inwardly from the lower ends of the side walls and back wall of the outer metal case 21 and from the bottom member 24—2 of the rectangular jamb frame 24.

The separable securing means for the outer case bottom wall 21—2 as shown are a plurality of headed screws 71 extending through suitable countersunk apertures in the outer borders of the outer case bottom wall 21—2 and screwed into registering internally threaded apertures in the reinforced flange means 70.

Within the upright guide and housing tube 58 there is located an upwardly and downwardly slidable collective lock channel bar indicated generally by 72, made of sheet metal, and having a web 73 whose inner face is slidable in abutment against the outer face of the corner border portion of the inner case back wall 22—5, forming one of the wall portions of the guide and housing tube 58.

The lock channel bar web 73 also extends transversely in abutment with the common wall

59 of the guide and housing tube 58 and the cam housing 57. In registry with the aperture 60 in the wall 59, the web 73 of the lock channel bar 72 has a cam follower aperture 74 formed therein.

The lock and latch housing 54 has secured on its upper wall a latch 75 for receiving the upwardly and downwardly movable lock plunger 76 of the cylinder lock 55.

A cam operating rod 77 is located in the bearing and housing tube 56 and extends beyond the forward end thereof where it is removably secured to the rear end of the cylinder lock 55 as by screw means 78. The operating rod 77 is smaller in diameter than the cylindric housing of the cylinder lock 55 and a compression spring 79 is interposed between the rear end of the cylinder lock housing and the forward end of the bearing and housing tube 56.

The rear end of the cam operating rod 77 extends through the alined apertures 60 in the wall 59 and the cam follower aperture 74 in the lock channel bar web 73 and into the interior of the housing 64. Rear terminal portions of the cam operating rod 77 are provided with external threads 80, and the rear end of the cam operating rod 77 is also provided with a vertical notch 81 which separably receives a cam blade 82 having a lower cam face 83 sloping upwardly from front to rear. The cam blade 82 has a forward notch 84 formed in its front face 85 which engages with upper and lower surfaces of rear end portions of the rod 77 beyond the inner end 86 of the slot 81.

The cam blade 82 is removably retained in the slot 81 by a nut 87 which screws upon the threads 80 on the rear end of the rod 77 and abuts against the rear face 88 of the cam blade 82 retaining the blade in the slot 81 and the notch 84 thereof in overlapping engagement with the upper and lower faces of rear end portions of the rod 77 beyond the inner end 86 of the slot 81, and the inner end 89 of the notch 84 in abutment with the inner end 86 of the notch 81.

In Figs. 6, the closure plug retaining screw 66 and the closure plug 65 are shown separated and removed from the housing 64, and the cam blade retaining nut 87 and the cam blade 82 are shown removed and separated from connection with the rear end of the operating rod 77, which is the relative arrangement of the parts either before assembly of the cam blade 82 on the rod 77, or before removal of the rod 77 by forward withdrawal of the cylinder lock 55 from its housing 54 pulling the operating rod 77 along with it.

The lock channel bar 72 is inserted into or removed from the guide and housing tube 58 before insertion of or after withdrawal of the lock rod 77 into or from the tube 56 and the housing 57 and the housing 64, the outer case bottom wall 21—2 being removed for the purpose of inserting or withdrawing the lock channel bar 72 into the guide and housing tube 58.

In the assembled cabinet 20 as shown in Fig. 4, the back wall 22—5 of the inner case 22 has formed in its upper end portion forming part of the upper end of the guide and housing tube 58, a spring access aperture 89 in which a tension spring 90 is located. The upper end of the tension spring 90 has a hook 91 removably connecting with a spring connecting aperture 92 provided in the inner case back wall 22—5, and the lower end of the tension spring 90 has a hook 93 removably connecting with a spring connecting aperture 94 provided in the upper end of the lock channel bar web 73 which extends above the lower end of the spring access aperture 89 in the inner case back wall 22—5.

At the rear end of the side wall 48—4 of the file container 45 of each drawer, spring pressed lever latch means indicated generally by 95 are operatively mounted, and include a lever latch 96 whose forward end is pivotally mounted upon the drawer side wall 48—4 as by a pivot pin 97 and which extends rearwardly beyond the rear end of the drawer and is provided at its rear end with an upwardly protruding cam latch hook 98 having an upper rearwardly and downwardly sloping cam face 99.

Spring means indicated generally by 100 yieldingly urge the lever 96 upwardly. Opposite the rear end of the lever 96, in each compartment 25 there is provided in the inner case rear wall 22—5 an aperture 101 for providing passage of the rear end of the lever and its cam latch hook 98 therethrough.

Registering with each aperture 101, the web wall 73 of the lock channel bar 72 has formed therein a latch catch aperture 102.

In Figs. 4 and 5, the collective drawer locking means are shown in locked position, with the lower cam face 83 of the cam blade 82 operating against the opposed face of the cam follower aperture 74 in the channel bar web 73 having forced the lock channel bar 72 downwardly against the opposition of the spring 90 so that the latch catch apertures 102 in the web 73 are in locking engagement behind the latch hooks 98.

When the cylinder lock 55 is unlocked, the plunger 76 is withdrawn from the latch 75 and the spring 79 pushes the cylinder lock forward pulling the cam operating bar 77 and the blade cam 82 forwardly and permitting raising of the locking bar 72 upwardly so that the latch catch apertures 102 clear the latch hooks 98, permitting withdrawal of any of the drawers by operation of the individual drawer lock handle 52 in a usual manner.

If the cylinder lock 55 is moved to the locked position, and any of the drawers happen to be open, merely pushing any of the open drawers all the way in, permits locking of the same by the lock bar 72 by camming action of the catch aperture 102 for the particular drawer against the upper cam face 99 of the lock hook 98 on the associated spring pressed latch lever 96.

The foregoing described construction for the collective drawer locking means and its housings, provides a housing construction therefor which is adaptable for inclusion in the improved construction of the outer five walled composite shell of the cabinet 20, and at the same time provides a simplified and easily manufactured construction and arrangement of the parts of the collective drawer lock means and a simplified and easy assembly thereof in their respective housings, and subsequent easy and economical maintenance thereof by reason of easy removal from their respective housings.

The complete insulated filing cabinet 20 as above described may in other words be stated as including a multiple compartment composite construction including a five walled composite box structure including a five walled insulation material shell 23 having top and bottom and side and back walls, end faces of the top and bottom and side walls opposite the back wall bordering a front opening, sheet metal walls encasing all the inner and outer faces and the front opening bordering end faces of the insulation material shell,

and one or more composite partition walls dividing the interior of the five walled composite box structure into a plurality of compartments, each composite partition wall including an insulation material wall having top and bottom and laterally spaced side faces, front jamb faces between one end of the top and bottom and laterally spaced side faces, and a back face between the other end of the top and bottom and side faces, and sheet metal walls forming a case enclosing the top and bottom and sides and jamb faces of the insulation material wall, the walls of the sheet metal case for the composite partition wall including opposite side flanges in abutment with opposite inner side walls of the sheet metal encasing walls of the five walled composite structure, and means such as spot welding, securing the composite partition wall case flanges to the opposite inner sheet metal side walls of the sheet metal encasing walls.

The insulation material may be any suitable heat resisting material such as gypsum or the like which may be poured from a plastic state and will harden to a solid state.

The sheet metal walls are preferably sheet or strip steel.

The multiple compartment composite construction may include the housings for the collective drawer lock means and may have added thereto the drawer suspensions and the drawers.

The multiple or plural compartment composite construction as above described, comprising a component part of the complete filing cabinet **20**, is made preferably by the improved methods of the present invention, the steps of which will now be described and certain steps of which are illustrated in Figs. 12, 13, and 14.

The inner case top wall **22—1**, bottom wall **22—2**, and side walls **22—3** and **22—4** of sheet metal, are first formed in the shape of a rectangular tube indicated generally by **22*a*** open at each end as shown in Fig. 12, the suspension supporting preferably steel bands **33—3** and **33—4** having been secured as by spot welding to the outer faces of the inner case side walls **22—3** and **22—4**, and the outer rectangular jamb frame **24** has an inner flange indicated generally by **24—5** which telescopes within one end of the rectangular tube **22*a***, the flange **24—5** being secured to the telescoped border portions of the tube **22*a*** as by spot welding.

The rectangular tube **22*a*** with the jamb frame **24*a*** secured to one end may then be rested upon its other end upon the floor or other preferably horizontal support **103** as shown in Fig. 12, and either a plurality of the composite partition wall sheet metal cases **27** or the complete composite partion walls **26** may then be inserted within the interior of the rectangular tube from above as illustrated in Fig. 12, where one of the complete composite partition walls **26** is shown partially inserted into place.

After the composite partition wall sheet metal cases **27** or complete composite partition walls **26** have been inserted into place in the rectangular tube **22*a***, the flanges **29—2** and **28—2** of the partition wall cases are secured preferably by spot welding to the inner case side walls **22—3** and **22—4**, after which the sub-assembly thus formed is turned over so that the rectangular jamb frame **24** rests upon the floor **103**.

If the partition wall cases **27** have not previously been filled with insulation material, the same may then be filled by pouring plastic insulation material into the upper open ends thereof.

The inner case back wall **22—5** is then secured as by spot or rivet welding to the rear ends of the inner case top, bottom, and side walls, and the walls forming the several housings for the collective drawer lock means are secured in place on the outer faces of the inner case walls and interior faces of the jamb frame **24**.

A plurality of tie clips **104** may be secured upon the outer faces of the inner case top, bottom, side, and back walls, and reinforcing metal fabric **105** may be supported on the clips **104**. A rectangular tube **21*a*** formed by the top, bottom, and side walls of the outer sheet metal case **21** is then secured at one end to the outer flange indicated generally by **24—6** of the jamb frame **24** forming a sub-assembly shown in Fig. 13 having the jamb frame **24**, and the jambs **30** of the composite partition walls resting upon the floor **103**. This sub-assembly is ready for having poured between the spaced top, bottom, and side walls of the outer and inner cases **21** and **22** and upon the outer and in the position shown in Fig. 13 upper face of the inner case back wall, the five walled insulation material shell **23**.

In Fig. 14 the plural compartment construction is shown after pouring the insulation material shell **23** and just before securing the back sheet metal wall **21—5** of the outer case **21** to the rear end borders of the top, bottom, and side walls of outer case **21**, as by providing a cup flange **21—5*a*** extending from one side of the edges of the rectangular back wall **21—5**, telescoping the cup flange **21—5*a*** over the rear border portions of the outer case top, and side walls, and rivet welding the flange **21—5*a*** to the telescoped border portions of the outer case top, and side walls.

The embodiments of the present improvements illustrated and described herein are by way of example, and the scope of the present invention is not limited to the same or to the particular details thereof, but is commensurate with any and all novel subject matter contained herein which may at any time properly under the patent laws be set forth in the claims hereof or originating herein, and the elements of any such claims are intended to include their functional or structural equivalents.

We claim:

1. A composite partition wall for a plural compartment construction and the like, the composite partition wall including a case including an outer sheet metal channel having a web wall and opposite flange walls extending from side edges of the web wall, an inner sheet metal channel fitting between the flange walls of the outer sheet metal channel, the inner sheet metal channel including a web wall opposite the web wall of the outer sheet metal channel and opposite flange walls extending from side edges of the web wall in abutment and connected with the flanges of the outer channel, and a sheet metal front end frame member connected with the web walls, and an insulation material wall within the partition wall case.

2. A composite partition wall for a plural compartment construction and the like, the composite partition wall including a case including an outer sheet metal channel having a web wall and opposite flange walls extending from side edges of the web wall, an inner sheet metal channel fitting between the flange walls of the outer sheet metal channel, the inner sheet metal chan-

nel including a web wall opposite the web wall of the outer sheet metal channel and opposite flange walls extending from side edges of the web wall in abutment and connected with the flanges of the outer channel, and a sheet metal front end jamb frame member connected with the web walls and having ends formed for fitting with an outer jamb frame, and an insulation material wall within the partition wall case.

3. A case for a composite partition wall and the like including a case including an outer sheet metal channel having a web wall and opposite flange walls extending from side edges of the web wall, an inner sheet metal channel fitting between the flange walls of the outer sheet metal channel, the inner sheet metal channel including a web wall opposite the web wall of the outer sheet metal channel and opposite flange walls extending from side edges of the web wall in abutment and connected with the flanges of the outer channel, and a sheet metal front end frame member connected with the web walls.

4. A case for a composite partition wall and the like including a case including an outer sheet metal channel having a web wall and opposite flange walls extending from side edges of the web wall, an inner sheet metal channel fitting between the flange walls of the outer sheet metal channel, the inner sheet metal channel including a web wall opposite the web wall of the outer sheet metal channel and opposite flange walls extending from side edges of the web wall in abutment and connected with the flanges of the outer channel, and a sheet metal front end jamb frame member connected with the web walls and having ends formed for fitting with an outer jamb frame.

5. A composite partition wall for a plural compartment construction and the like, the composite partition wall including a case including an outer sheet metal channel having a web wall and opposite flange walls extending from side edges of the web wall, an inner sheet metal channel fitting between the flange walls of the outer sheet metal channel, the inner sheet metal channel including a web wall opposite the web wall of the outer sheet metal channel and opposite flange walls extending from side edges of the web wall in abutment and connected with the flanges of the outer channel, a sheet metal front end frame member connected with the web walls, transverse portions of the front end frame member being spaced a greater distance from each other than the channel web walls, and an insulation material wall within the partition wall case.

6. In a filing cabinet and the like, inner sheet metal walls forming an inner case having a back wall and an opening opposite the back wall, outer sheet metal walls forming a frame around the opening and an outer case including a back wall opposite the frame and spaced from the back wall of the inner case and outer walls spaced from the other walls of the inner case, opposite apertures in the frame and outer case back wall, upright sheet metal walls forming a housing and guide tube extending along one upright rear corner of the inner case back wall and jutting beyond the corner between the frame and outer case back wall apertures, the guide tube jutting walls including spaced walls having opposite apertures formed therein, walls forming a first housing and a bearing tube and a second housing extending between the frame aperture and one of the guide tube apertures, and walls forming an access and closure housing extending between the other guide tube aperture and the outer case back wall aperture, the upright housing and guide tube terminating at one end adjacent the bottom wall of the outer case, insulation material walls forming a shell between the inner and outer cases, some of the insulation material walls embedding the first housing and the bearing tube and the second housing and the housing and guide tube and the access and closure housing, and means providing access to the lower end of the housing and guide tube.

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