

June 2, 1931.

C. F. WOLTERS

1,807,948

MONOLITHIC FILING CABINET AND ATTACHMENT THEREFOR

Filed June 16, 1925

5 Sheets-Sheet 1

Fig. 1

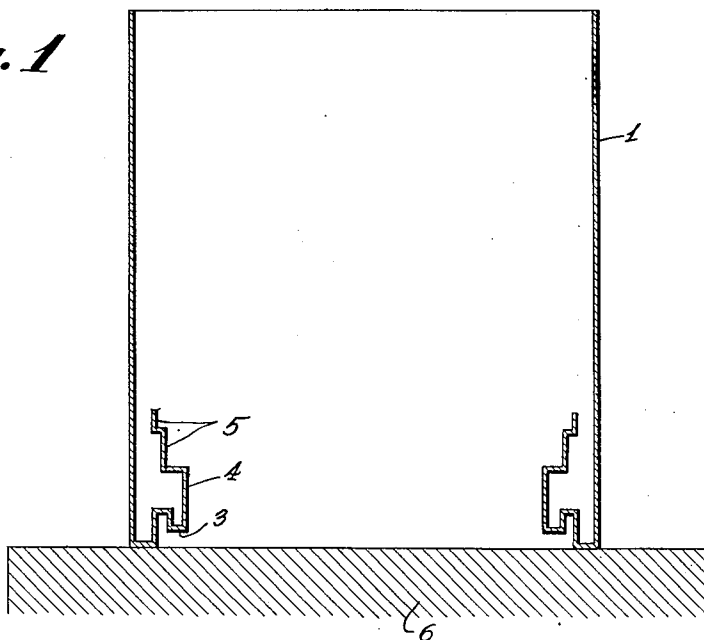
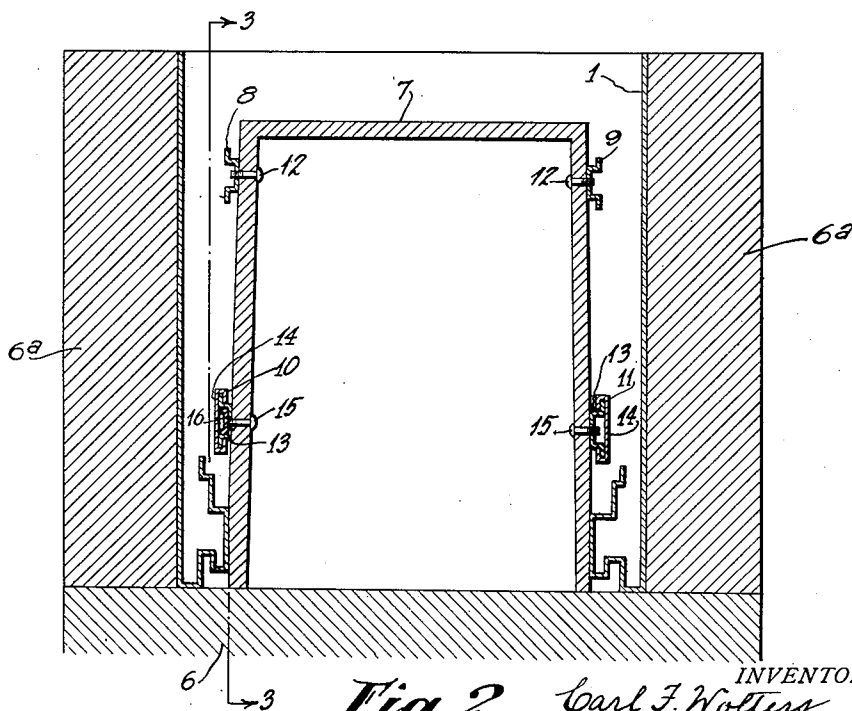


Fig. 2

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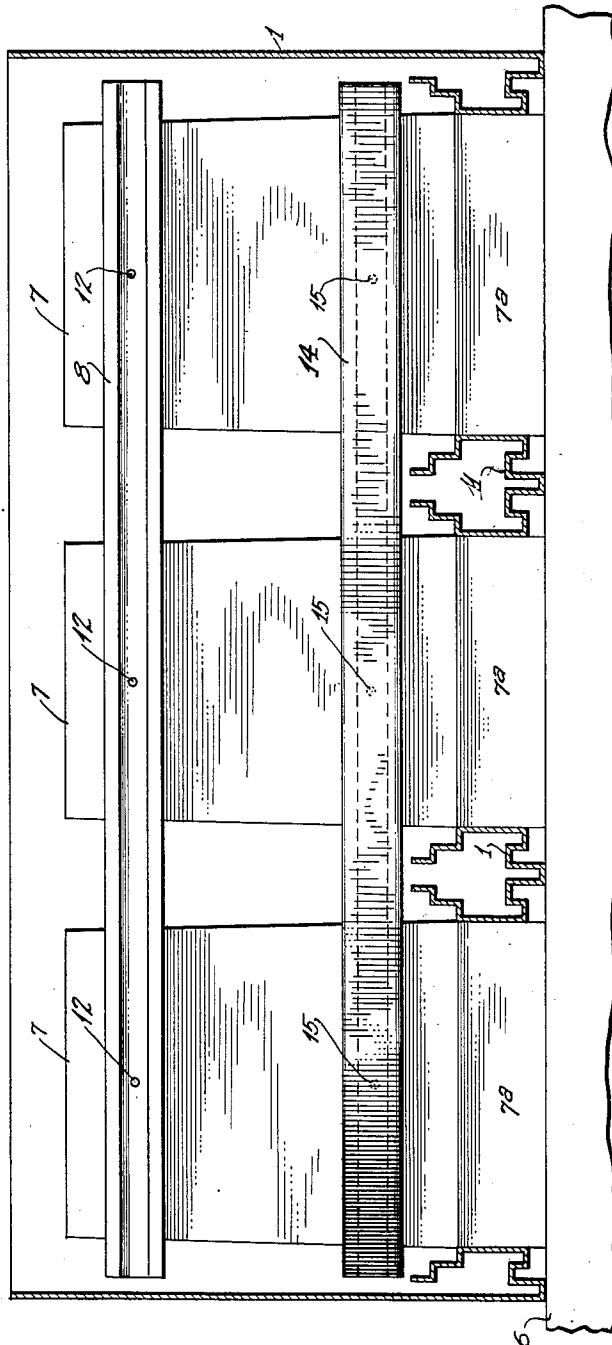
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5 Sheets-Sheet 2

Fig. 3



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5 Sheets-Sheet 3

Fig. 4

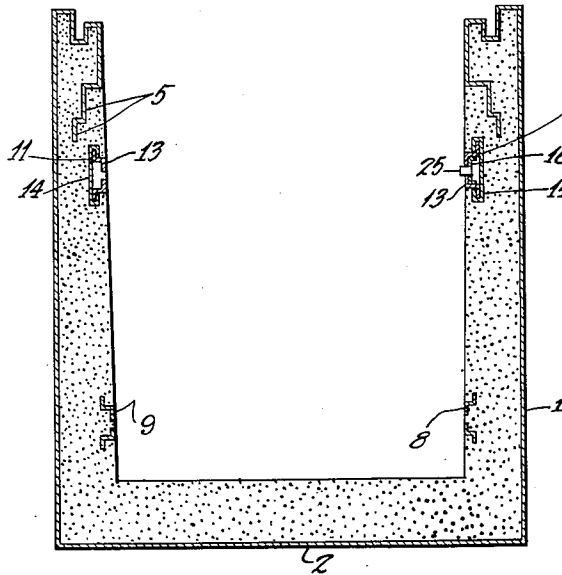
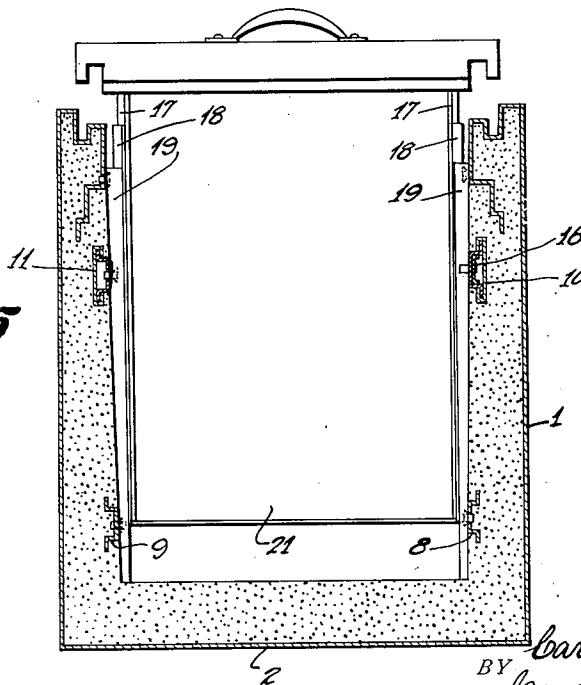


Fig. 5



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5 Sheets-Sheet 4

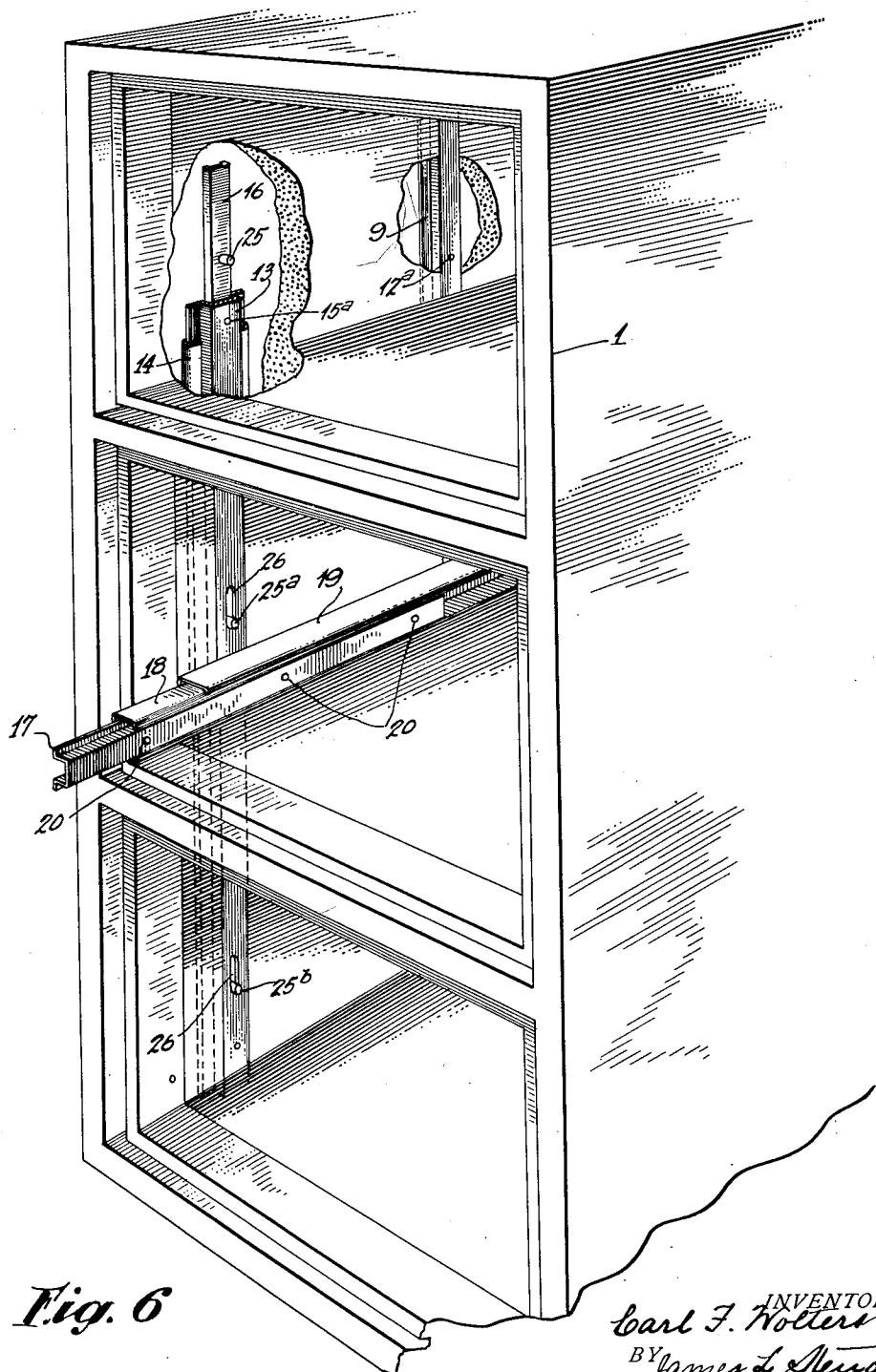


Fig. 6

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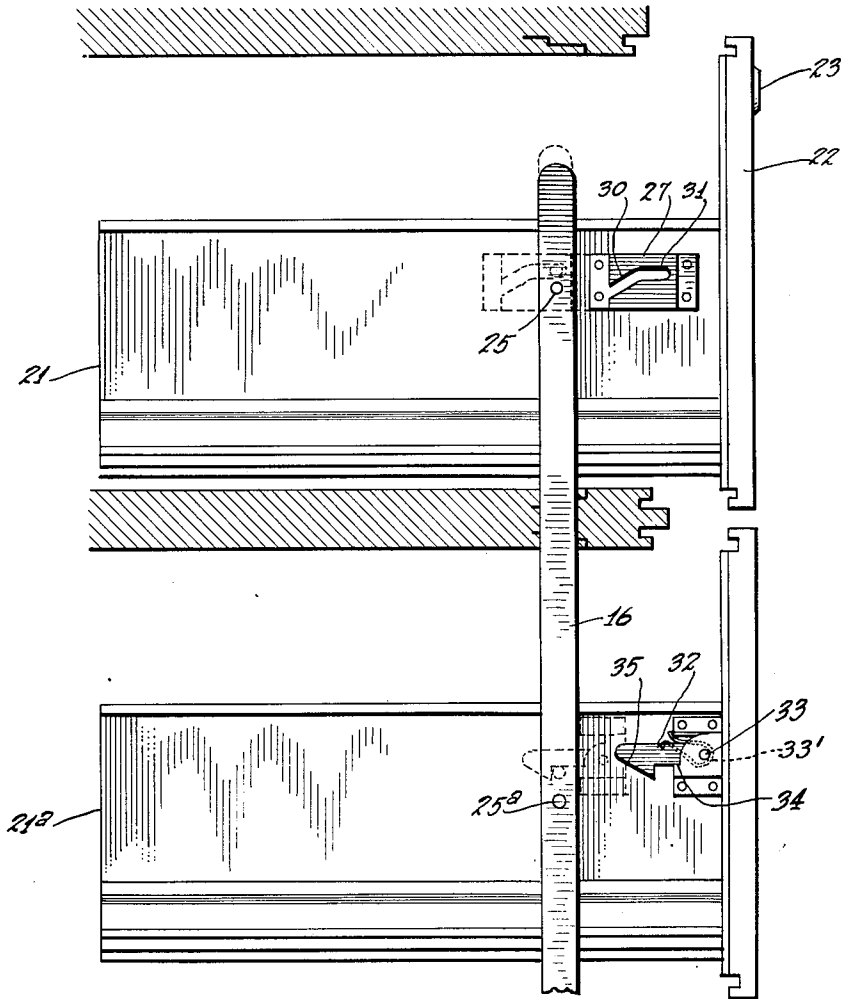


Fig. 7

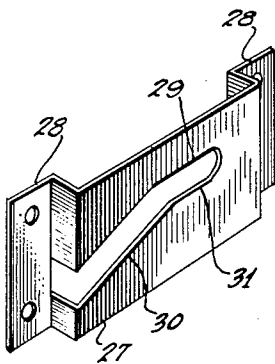


Fig. 8

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UNITED STATES PATENT OFFICE

CARL F. WOLTERS, OF MARIETTA, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO REMINGTON RAND INC., OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

MONOLITHIC FILING CABINET AND ATTACHMENT THEREFOR

Application filed June 16, 1925. Serial No. 37,527.

This invention relates to improvements in vertical filing cabinets and, more particularly, cabinets adapted to afford safe storage space for vertical files.

- 5 Cabinets of this character preferably have a cast monolithic body provided with a plurality of superimposed separate and independent compartments in each of which a drawer is mounted for sliding movement.
- 10 These drawers are supported on guides which must necessarily be suspended from suitable anchorages, and it is also desirable to provide means whereby the drawers may be locked.

- 15 Considerable difficulty has been experienced in finding satisfactory means whereby suitable anchorage for the drawer guides may be established in the cast body structure, the nature of the cast being such as to preclude the possibility of attachment of the such anchorages by the usual screws, bolts or nails.

- 20 Therefore, the primary object of this invention is to provide practical means for supporting the drawer guides as well as to obtain an economical method by which such means may be incorporated in the cast cabinet body.

- 25 This invention provides a novel method of making a filing cabinet in which a preformed sheet metal outer casing is positioned in a mold and receives core molds for forming the independent compartments which are held in position by the casing so that the monolithic body will be cast integrally with the metal casing and have a substantially uniform section throughout.

- 30 The method of this invention further provides a convenient way of placing and retaining the independent core molds in position through the back of the metal casing with the ends engaged in the compartment defining portions at the front portion of the casing, where they are retained in proper relation during molding of the monolithic material therein so that the drawer guides may be readily mounted in proper position in the completed cabinet for supporting and guiding the drawers in and out of the compartments without binding, and to align the drawer front for even interfitting engagement with the front of the cabinet in the closed position for sealing the compartment.

A further object of the invention is to so constitute the drawer locking means that it too, may be efficiently incorporated into the structure.

Monolithic cabinet bodies are usually cast 55 and, in accordance with this invention, the anchorages or supports for the drawer guides are cast directly in the monolith; in the preferred embodiment of the invention, the drawer guides are supported on upright metallic elements, which extend for the greater portion of the height of the cabinet, and serve to support all of the guides. These elements are introduced into the construction by mounting them on the cores of the mold which is utilized in effecting the casting of the monolith. In this manner, said elements may be accurately positioned and spaced with respect to one another, and when the casting is made, they are embodied directly therein. After the casting is set, the retaining means, by which such elements were secured to the cores, are released and said cores are withdrawn, leaving the supporting elements permanently in position. 75

I have further found that it is highly practical to so fashion one of the drawer supporting elements that it serves as a housing for a drawer locking bolt which may thus also be included in the cabinet body during casting thereof. 80

The invention therefore provides, not only efficient and practical means for supporting drawers within a monolithic cabinet body, but also includes a novel method of incorporating such means within the monolith. 85

Features of the invention other than those adverted to, will be apparent from the hereinafter detailed description and claims, when read in conjunction with the accompanying drawings. 90

The accompanying drawings illustrate one practical embodiment of the structural features of this invention, as well as one manner 95 in which the method may be performed, but it will be understood that this showing is for the purpose of illustration only and does not define the limits of the invention.

Figure 1 is a transverse section of the outer 100

sheet metal skin of the body of the cabinet, as initially constructed.

Figure 2 is a view similar to Figure 1, but illustrating the mold and cores in section and in a position ready for the casting operation.

Figure 3 is a section on the line 3—3 of Figure 2 showing the outer skin in section, but the male mold member in elevation.

Figure 4 is a transverse section through the finished monolithic body of the cabinet with the back in place.

Figure 5 is a view similar to Figure 4, but showing the drawer guides and the drawer in position.

Figure 6 is a perspective view of the body of the cabinet with the drawers removed and certain parts broken away in the interest of clearness.

Figure 7 is a fragmental vertical front-to-rear section through the cabinet showing the drawers and their locking means in elevation and the body of the cabinet in section; and

Figure 8 is a perspective view of a lock actuating member mounted on the uppermost drawer of Figure 7.

In building a cabinet in accordance with the present invention, the outer skin 1 is first constructed and formed into proper shape. This outer skin is of sheet metal and is made in the size and proportion desired. It is preferably rectangular, is closed on its sides, top and bottom, while its sixth side is provided with drawer openings 4. The back is left open, the rear wall being later attached, for reasons which will be hereinafter explained. About the margin of each drawer opening 4, the sheet metal skin is stepped and shaped in the usual manner as shown at 3, and interiorly of each door opening the skin is stepped back as shown at 5.

After the outer skin has been formed as described, it is laid face down on a molding board 6 and thereafter a female mold or form 6a is placed about the skin. This form serves to hold the skin in proper shape and to preclude its walls from bulging when plastic material is subsequently introduced into the interior of such outer skin. Tapered hollow cores 7 are thereafter adapted to be brought into cooperation with the outer skin and since a three drawer cabinet is chosen for illustration, three cores will be employed.

Before placing these cores within the outer skin they are very carefully arranged in proper relation and the drawer supporting elements are mounted thereon. These supporting elements are designated 8, 9, 10 and 11. The elements 8 and 9 are mounted near the smaller ends of the cores in parallel relation to one another and in a position to be upstanding in a finished cabinet, while the elements 10 and 11 are mounted nearer the larger ends of the cores in parallel relation to each other and to the elements 8 and 9. The

elements 8 and 9 are of channelled cross section and have stepped flanges. They are mounted with their flat sides abutting the cores and are held in position by screws 12, which are inserted from the interior of the cores.

The supporting elements 10 and 11 are each of a box-like construction and embody a channelled section 13, corresponding in shape to the channelled sections 8 and 9, and a cover plate 14, the lateral edges of which are lapped over the flanges of the channelled sections 13 to form a hollow box-like construction. The supporting elements 10 and 11 are secured to the cores by means of screws 15, introduced from the inside of the cores.

Prior to securing the several supporting elements to the cores, a bar 16 is positioned within the element 11 and this bar constitutes part of the locking means for the several drawers and will be hereinafter more fully described in this connection. Suffice it to state here that it is housed within the box-like supporting element 11 and is introduced therein prior to securing this element to the cores 7. After the drawer supporting elements have been rigidly secured to the several cores 7 in the manner described the cores are transported to and lowered into the outer skin. They come to a seat on the molding board 6 as shown in Fig. 3 and it will be noted from this figure that those portions 7a of the cores which extend through the drawer openings of the skin are not tapered as the remainder of said cores, but are straight. This permits the cores to be introduced in the manner described and during this operation the cores will be automatically centralized.

These straight portions 7a have the largest size of the cores, and slidably fit in the openings formed in the front wall portion of the preformed casing member or skin 1. The fit is close so that no plastic material will enter between the portions 7a of the cores and the adjacent portions of the casing member at 4 which defines the outer end of each compartment. This relation between the casing member and the cores provides a means for properly aligning the cores so they will form the compartments in the proper relation in the cabinet. The bars 8, 9, 10 and 11 also cooperate in retaining the cores in proper spaced and aligned relation with the casing so that in the completed cabinet the drawer guides will support the drawers for even movement in and out of the compartments and always align the fronts 22 so the grooves around the marginal portions will seat in the complementary portions 3 on the casing, and effectively seal the contents of the chambers when the drawers are closed.

After the cores, with the drawer supports assembled thereon, have been brought into proper cooperation with the skin, as described, the material which is to form the

monolithic structure is introduced in plastic condition and fills the entire confines of the outer skin exteriorly of the cores and in so doing thoroughly embeds the stepped portion 5, which constitutes the free edge of the skin, as clearly shown in Figure 4, so as to thoroughly anchor the margin of the skin at its free edges. At the same time the flanges of the supporting elements 9 and 10, as well as the corresponding parts of the supporting elements 10 and 11 are embedded in the material and are firmly anchored therein with the inner surface of the cast material flush with the surface 4 of the skin and with the corresponding exposed surfaces of the supporting elements.

The outer skin is filled to its upper edge, and the plastic material thereupon left to set or solidify. After sufficiently hardened, either naturally or artificially, the metallic back plate 2 is applied to the monolithic body by welding said plate, or otherwise securing it to the side walls.

It is feasible, moreover, in practice to secure the back plate in position immediately after the casting is made and without waiting for it to set.

The female mold members or forms 6a are now removed and the cabinet body, with cores therein, is tilted over to provide access to the interior of the cores. The screws 12 and 15 are now removed to release the supporting elements 8, 9, 10 and 11 and the cores are thereupon withdrawn. The casting, with the outer skin and supporting elements now permanently associated therewith is now ready to receive the drawer guides.

It will be understood from the above description that this invention provides a new method of making monolithic filing cabinets having a plurality of independent compartments in the monolithic body so that the material filed in each compartment is insulated from fire in the other compartments and also fire exterior of the cabinet. Further, in making the improved filing cabinet, the metallic casing member forms a female mold to impart the proper exterior shape to the monolithic body and while it is preferred that the casing member and monolith be integral in the finished cabinet, it is obviously not necessary, as it may be molded separately and afterwards slipped in and retained by the back wall. But the integral construction is preferred because the edges of the casing are embedded in it and the monolith adheres to the walls of the casing thereby making the structure rigid, sound proof, and preventing bulging of the casing relative to the monolith. The casing also provides stress reducing portions at the front edges of the cabinet and along the front portions of the walls separating the compartments, and with the bar members 8, 9, 10 and 11, cooperates to provide a substantially strong fire resistant cabinet.

The casing also forms a substantial protection to the monolithic body to prevent checking, chipping or breaking during moving and handling the cabinet as well as aiding in preserving its integrity from a fall resulting during a fire. This casing member further protects the monolith from the direct action of a fire and where fire is applied to one side or corner portion as frequently happens, it will tend to dissipate the heat by conduction and radiation to other portions thereof. Where a monolithic body is used having moisture chemically retained therein which is released under the heat of a fire, the casing will retain the released moisture and effectively apply it to prevent burning of the contents of each and all the compartments.

While the different forms of guides may be employed, a very satisfactory arrangement is shown in Figure 6 as comprising three telescoping sections 17, 18 and 19, it being understood that two such guides are associated with each drawer when positioned on opposite sides thereof. Each guide section 19 is secured to one of the supporting elements 8 and the corresponding supporting element 10 by means of screws passed through such guide sections and entering the tapped holes 12a and 15a in the supporting elements which were previously occupied during the casting operation by the screws 12 and 15. The insertion of these screws serve to firmly mount the telescoping section 19 in position. The section 17 is permanently secured to the corresponding side of the associated drawer by screws or rivets passed through holes 20, while the section 18 is interposed between the sections 17 and 19 and interfits with both. This arrangement permits the drawer to be withdrawn almost entirely from its compartment while remaining properly supported on the guides.

It will of course be understood that each of the three compartments shown is fitted with guides in the same manner as described in connection with the single guide already referred to, and that the drawer is cooperable with each compartment. In Figure 7 of the drawings, two drawers are shown, the upper or top drawer being designated 21, and next lower drawer being designated 21a. These two drawers are identical in construction and the bottom drawer is constructed in a like manner. The body of each drawer is preferably made of sheet metal and the front of each drawer is made in the form of a monolithic slab, provided with an outer skin of sheet metal. The four margins of each slab are shaped as usual to interfit with the drawer openings of the cabinet body when the drawers are closed.

Reference has hereinbefore been made to the locking bar 16 which is mounted for sliding movement within the supporting element 11. This bar constitutes a locking bolt and

carries locking pins 25, 25a and 25b which project through slots 26 formed in the channeled section 13 and extend for an appreciable distance into the interior of each drawer cavity and into cooperative relation with locking means mounted on the several drawers.

By reference to Figure 7, it will be noted that the means mounted on the drawer 22 and adapted for cooperation with the pin 25 constitutes actuating means for the bar and is in the form of an off-set plate 27. This plate is shown in perspective in Figure 8 as having feet 28 perforated for attachment to the side of the drawer. The plate is provided with a slot 29, a portion 30 of which is inclined, while a further portion 21 of which is horizontal.

The locking bar 16 normally gravitates into its lowermost position as shown in full lines in Figures 7 and the plate 27 is mounted in such relative position on the drawer that when the drawer is moved from open to closed position, the pin 25 of the locking bar will enter and be engaged by the inclined portion 30 of the slot, so that as closing movement of the drawer continues, the locking bar will be elevated. When the drawer is fully closed, the pin will occupy the horizontal portion 31 of the slot and the bar will be locked in its uppermost dotted line position of Figure 7.

The vertical operation of the locking bar is necessary in order that the bar may be shifted to bring the pins 25a and 25b into and out of cooperation with locking devices mounted on the lower drawers. The locking devices for each of such drawers is the same in both instances and embodies a spring pressed latch 32 pivoted at 33 and cooperating with a stop 34. The pivot 33 and stop 34 are rigid with the drawer and the nose of the latch is inclined as shown at 35.

When either of the lower drawers are opened, their latches 32 will be forced by the spring 33' into substantially horizontal position and if the uppermost drawer 21 is opened, the lower drawers can be opened and closed without effecting any movement of the latch or any locking of the parts. This is because of the fact that the locking bar will be in its depressed position and will hold the locking pins 25, 25a and 25b out of the paths of the latches. However, if the upper drawer is closed, and the locking bar consequently elevated, the subsequent closing of one of the lower drawers will cause this latch to ride over the locking pin (for example locking pin 25a) and to automatically engage with such pin, as shown in dotted lines in Figure 7.

When any lower drawer is locked by engagement with the locking pin in the manner described, it cannot be opened until the top drawer is opened to permit lowering of the locking bar 16. In practice, the top drawer is preferably provided with a suitable key actuated lock 23, so that it may be locked in

closed position independently of the locking means which I have hereinbefore described and since it controls the operation of such locking means, it necessarily follows that the locking of the top drawer in closed position will preclude the opening of any of the other drawers. It will be equally clear, however, that if any of the other drawers are opened at the time of locking the top drawer, these open drawers may be closed at will and will automatically lock upon the completion of such operation.

It will be apparent from the foregoing detailed description that the invention provides a novel method for incorporating drawer supports in a monolithic filing cabinet. The monolith may be economically and efficiently produced and by casting the supports directly in the monolith a strong and rigid construction results and there is no possibility of the supports becoming disengaged through excessive strains or hard usage. These supports, in fact, become a permanent part of the cabinet and cannot under any circumstances be torn therefrom. An important consideration resides in the ease and exception with which the method may be carried on. The casting of the supports directly within the monolith during the casting operation does not require appreciably more time than was heretofore necessary to simply cast the cabinet without such supports. Moreover, when the supports are cast in, all the time heretofore required for subsequently installing supports for the drawers is eliminated and a better construction results.

So far as the structure is concerned, independently of the method, it is a marked improvement on prior practice. I do not only obtain a better construction from the standpoint of anchorage, but, furthermore reinforce the entire cabinet by the inclusion of such supports. They extend substantially the full height of the cabinet and impart thereto great rigidity which is particularly desirable in maintaining the integrity of the parts when a cabinet falls as in the event of fire.

Of considerable practical importance also is the housing of the locking bolt within one of the supports. This assemblage not only maintains the locking bolt in concealed position wherein it is fully protected against damage, but proper guiding means is thereby afforded for the operation of such bolt. Moreover, the casting of the locking bolt in the wall of the cabinet conserves the space within the drawer chambers and the drawers can be made wider than has hitherto been possible under the practice of mounting the locking means inside of said chambers.

The foregoing detailed description sets forth the invention in its preferred practical form, but the invention is to be understood as fully commensurate with the appended claims.

What I claim is:

1. The method of incorporating in a monolithic structure, adapted for use as a vertical file, metallic devices adapted for cooperation with drawers suitable for use in said structure, which consists in mounting said devices on the exterior of a core by means detachable from the interior of the core, then casting the monolith and releasing said securing means.

2. The method of incorporating in a monolithic structure, adapted for use as a vertical file, metallic devices adapted for cooperation with drawers suitable for use in said structure, which consists in providing a plurality of hollow cores and mounting on the exterior of said cores suitable metallic drawer anchorage and locking means, and securing the same to said cores by means controllable from the interior of the cores, then casting said monolithic structure with such anchorage and locking means incorporated therein, then releasing said metallic elements from the cores.

3. The method of incorporating in a monolithic structure, adapted for use as a vertical file, metallic devices adapted for cooperation with drawers suitable for use in said structure, which consists in mounting metallic bars on the exterior of said cores in parallel relation, and securing the same to the exterior of said cores by means controllable from the interior of the cores, such bars being adapted to serve the purpose of anchorage or locking means, in cooperation with said drawers, then casting said monolith and releasing the attachment between the cores and said bars.

4. The method of incorporating in a monolithic structure, adapted for use as a vertical file, metallic devices adapted for cooperation with drawers suitable for use in said structure, which consists in mounting metallic bars on the exterior of said cores in parallel relation, and securing the same to the exterior of said cores by means controllable from the interior of the cores, such bars being adapted to serve the purpose of anchorage or locking means, in cooperation with said drawers, one of said sets of parallel bars being provided with suitable apertures which are adapted to cooperate with drawer suspension means, and the other set of said bars being in the form of a sheath adapted to receive a locking bolt and suitable to cooperate with corresponding locking means carried by the drawers, then casting said monolith and releasing the attachment between the cores and said bars.

5. The method of making a fire-resisting filing cabinet, consisting in forming sheet metal into side, top, bottom, back and front walls, forming the front wall to provide a plurality of drawer compartment openings and a covering for the front edges of the walls and partitions of a lining therefor, pro-

viding an opening in one of the other wall portions, and integrally joining said walls for forming an outer casing, inserting said casing in an outer mold, inserting core molds into said casing and outer mold and engaging the ends of said core molds in the drawer compartment openings in the front wall of said casing to position said core molds for cooperation with said casing to define the wall surfaces of drawer compartments in said casing, filling said casing around said core molds through the opening in said other wall portion with plastic material to form a monolithic lining in said casing having integral outer walls, and partition walls between drawer compartments with the front edges of said walls embraced by the front wall of said casing and the inner surfaces of said lining forming inner exposed walls of drawer compartments, placing a sheet metal casing portion in the opening in said other wall to form a complete outer casing covering said monolithic lining, and removing said core molds from said lining and casing.

6. The method of making a monolithic body for filing cabinets having a plurality of drawer compartments, which consists in forming a female mold to define the outer side, top and bottom walls of said body, with a front wall portion defining the open ends of the compartments in the body; placing compartment defining core molds in said female mold with an end portion of each slidably interfitting in one of the openings of the front wall portion; applying connecting elements to the opposite ends of said core molds to retain them in aligned relation and at proper spaced intervals; filling said female mold around said core mold with body forming plastic material to form unitary walls with said connecting elements embedded therein and after hardening of said material removing said body from said female mold and said core molds through the openings defined by the front wall portion after detachment of said core molds from said connecting elements.

7. The method of making a monolithic filing cabinet having a plurality of independent drawer compartments, which consists in placing a preformed casing member front downwards in an open-topped female mold, said casing member being formed to provide outside top, bottom and side walls for the cabinet, and having a front wall portion formed to define the open ends of said compartments; inserting core molds into said casing member through the upper end of said female mold to engage the lower ends of each core mold in one of the openings in said front portion, said front portion spacing and aligning said core molds whereby they define the wall surfaces of said compartments; attaching connecting members to the upper ends of said core molds to hold them in

spaced aligned relation; filling said casing member around said core molds with plastic material to form a monolithic lining in said casing and the walls of said compartments; 5 applying a metallic backing member to said casing member; removing said casing from said female mold; and finally detaching said core molds from said connecting members and removing said core molds through the 10 openings in the front portion of said casing member.

8. The method of making a monolithic filing cabinet having a plurality of independent drawer compartments, which consists in 15 placing a preformed casing member front downwards in an open-topped female mold, said casing member being formed to provide outside top, bottom and side walls for the cabinet, and having the front wall portion 20 formed to define the open ends of said compartments; inserting a plurality of core molds through the open top of said female mold into said casing member, each of said core molds engaging in one of the openings 25 in the front portion of said casing member and being positioned in aligned relation thereby, said core molds having a transverse section of smaller dimension than the openings in said front wall portion; attaching a 30 plurality of bar members to said core molds extending from the top to the bottom portion of said casing for retaining said core molds in fixed, spaced and aligned relation; filling said casing member around said core 35 molds with plastic material to form a monolithic body integral therewith and in which said bar members are embedded; applying a metallic back member to said casing member and body; removing said casing member 40 from the female mold; detaching said core molds from said bar members; and finally withdrawing said core molds through the openings in the front wall portion of said casing member.

45 9. The method of making a fire resisting filing cabinet, consisting of forming an outer sheet metal casing having a front wall formed to define drawer compartment openings, inserting forms into said drawer com- 50 partment openings to define drawer compartments in said casing, attaching bars to said forms extending along the sides of the compartments to be formed, filling said casing with plastic material in the spaces around 55 said forms to provide a monolithic lining, and removing said forms leaving said bars embedded in the surface of said lining.

Signed by me at Marietta this 2d day of May, 1925.

60

CARL F. WOLTERS.