Aug. 27, 1935. S. SCHEINMAN ET AL 2,012,857

REENFORCED DRAWER CONSTRUCTION

Original Filed April 19, 1933 3 Sheets-Sheet 1

Fig. 1.

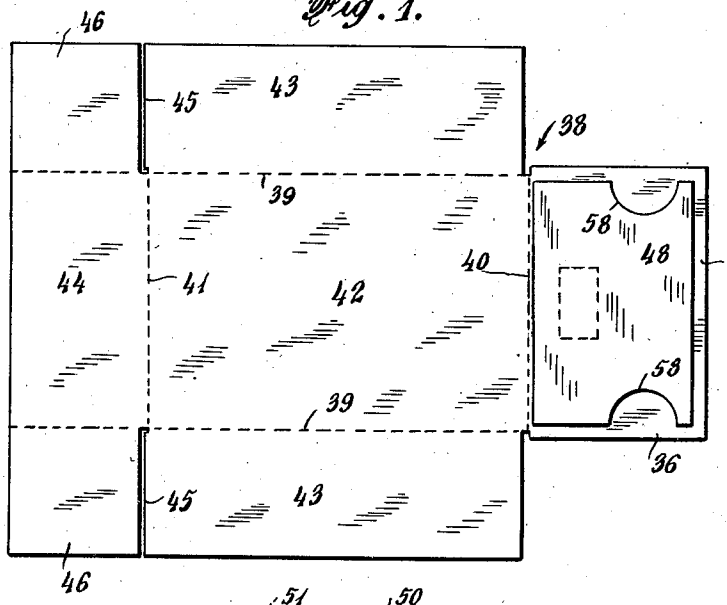


Fig. 2.

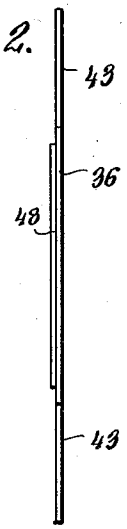


Fig. 3.

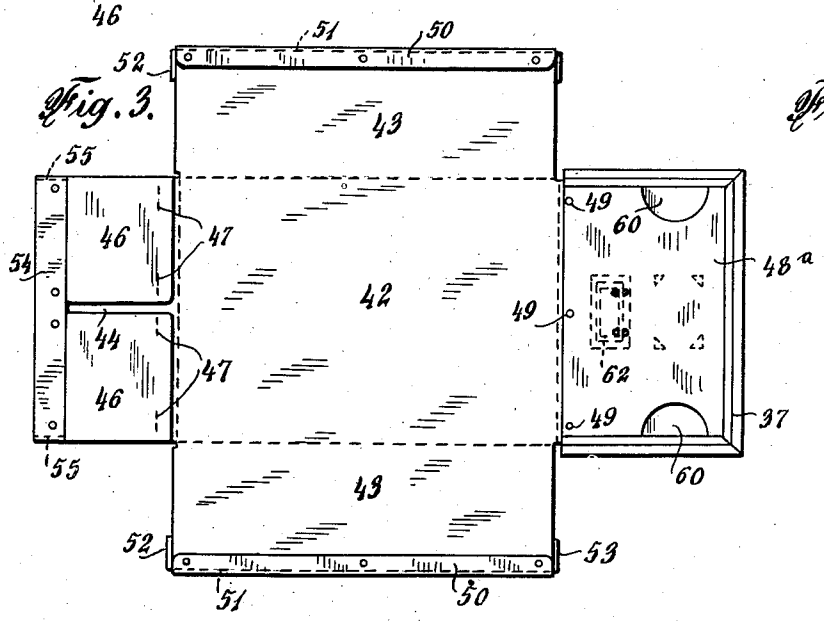


Fig. 4.

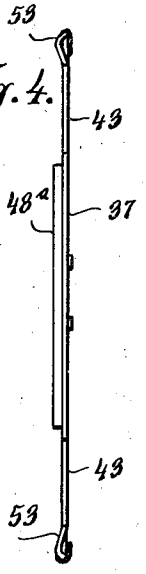
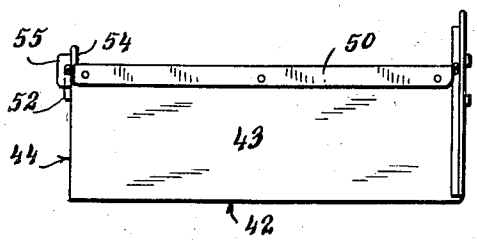


Fig. 5.



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Fig. 6.

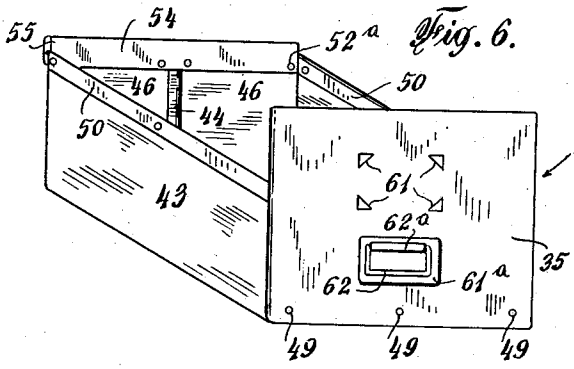


Fig. 7.

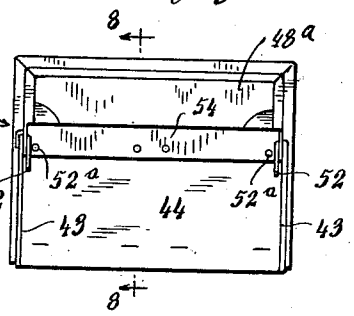


Fig. 8.

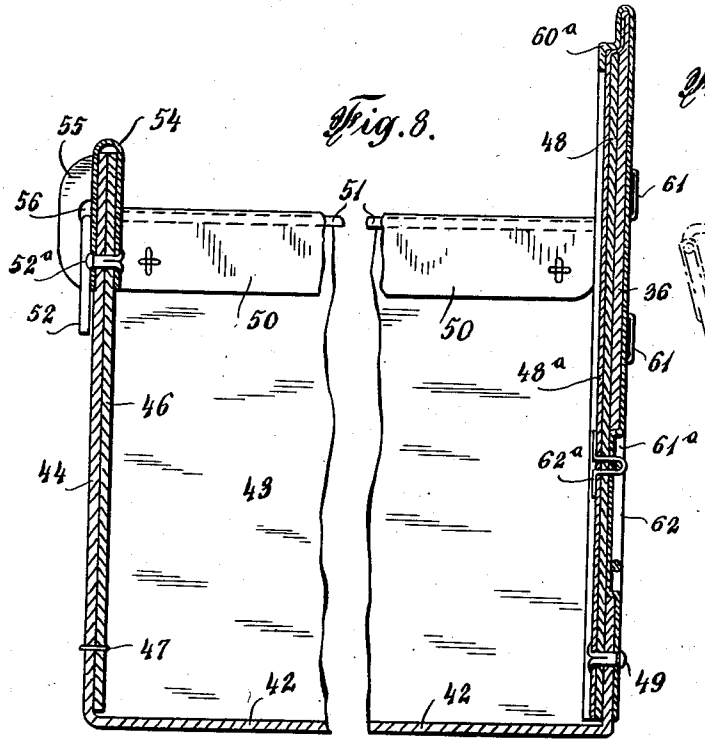


Fig. 9.

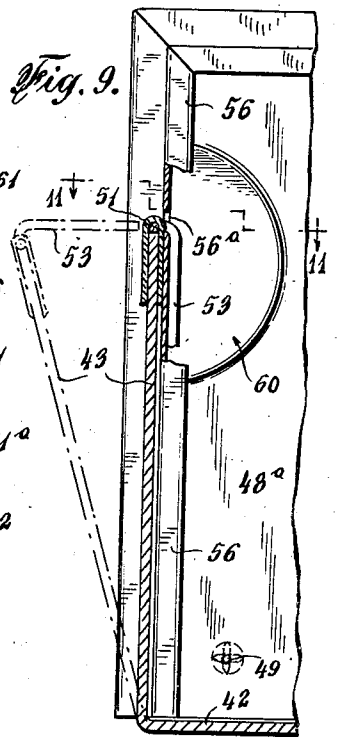


Fig. 10.

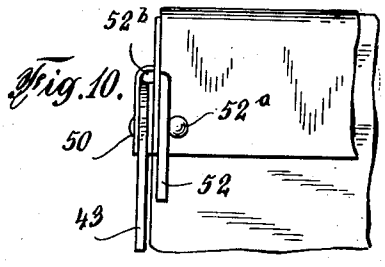
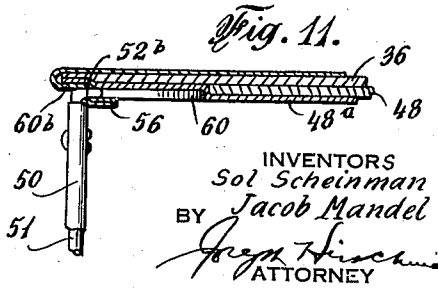


Fig. 11.



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Fig. 12.

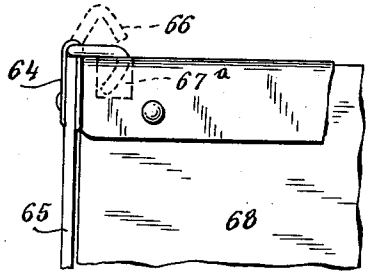
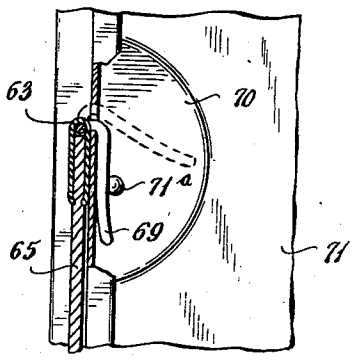


Fig. 14.



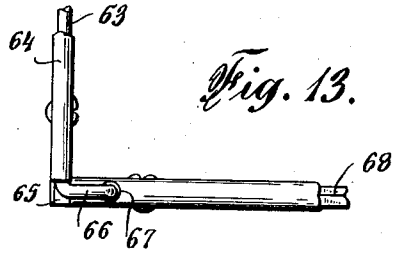


Fig. 13.

Fig. 16.

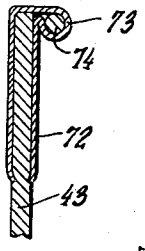


Fig. 15.

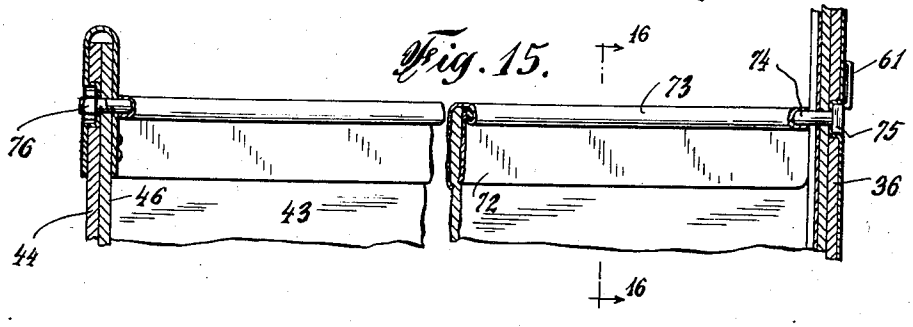
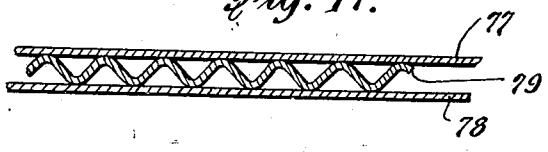


Fig. 17.



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UNITED STATES PATENT OFFICE

2,012,857

REENFORCED DRAWER CONSTRUCTION

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Original application April 19, 1933, Serial No. 666,895. Divided and this application April 3, 1935, Serial No. 14,519. In Canada April 14, 1934

22 Claims. (Cl. 229—9)

This invention relates to the fabrication of receptacles, and particularly of transfer or storage files, suitable for receiving and storing files of correspondence and other papers, and is a division of our copending application Ser. No. 666,895, filed April 19, 1933.

It is the general object of the invention to provide an improved construction for receptacles of the type indicated in which such receptacles are supplied to the consumer in knock-down condition to be erected and assembled by him before use.

More specifically, it is an object of the invention to provide a transfer or storage file of the collapsible or knock-down type, and particularly a drawer member which is adapted to slide within a casing and is of extremely simple form and can be easily erected and assembled with a few very simple movements requiring no study or ingenuity on the part of the purchaser.

It is also an object of the invention to provide a drawer element for storage files which is made of inexpensive materials, including paper board, thin sheet-metal, wire and the like as preferred components, combined in novel forms which provide adequately for strength with unusual lightness, and for a desirably low inflammability, with an appearance simulating, when assembled, an all-metal structure, but at much lower cost for materials and labor in fabrication and installation. In particular it is an object of the invention to provide a drawer member whose front wall has a metallic surface which, in addition to imparting to the assembled drawer and casing the appearance, from in front at least, of an all-metal structure, provides the moisture-proof and neat, abrasion-resisting surface characteristic of metallic sheets or layers.

An additional object of the invention is to provide a metallic or metal-faced front wall for sliding drawers of paper and similar materials and to devise inexpensive means for securing such wall to the bottom and side walls of the drawer.

It is a further object of the invention to provide a knock-down file drawer which is composed primarily of paper, preferably corrugated paper board, and is reenforced with sheet-metal at certain limited areas, thereby combining the advantages of paper board, namely lightness and inexpensiveness, with the strength, durability and neat appearance of sheet-metal.

Another object of the invention is to provide an improved drawer member of knock-down construction combining elements so connected at the place of manufacture as to involve a minimum of effort in erection by the consumer, and having connecting devices of simple but very sturdy components, so that their manipulation requires no particular degree of mechanical knowledge, and when erected are capable of withstanding heavy loads and hard usage without requiring any unusual degree of care.

It is a still further object of the invention to provide a reenforced paper file construction wherein locking or securing means are provided which are so constructed and associated with the reenforcing parts of the structure as to engage and interlock with the same in the assembled condition of the receptacle, thereby insuring a firm and wear-free anchoring and interlocking of the securing means with metallic or similar strong and rigid structure.

Other objects of the invention will appear from the description following and the features of novelty will be set forth in the appended claims.

Two embodiments of the invention are illustrated by way of example in the accompanying drawings, in which

Fig. 1 shows a plan view of a blank used in the fabrication of the drawer or container which is adapted to be inserted into a suitable casing, the blank being shown in its initial stage of fabrication.

Fig. 2 is an end view of the blank shown in Fig. 1.

Fig. 3 is a view similar to Fig. 1, after the application to said blank of certain reenforcements, the structure being shown substantially in the condition in which it is transported and sold.

Fig. 4 is an end view of the reenforced drawer structure shown in Fig. 3.

Fig. 5 is a view in side elevation of the assembled drawer or container formed with the knock-down structure shown in Figs. 3 and 4.

Fig. 6 is a view in perspective of the structure of Fig. 5.

Fig. 7 is a rear view thereof in elevation.

Fig. 8 is a view in vertical section on the line 8—8 of Fig. 7, upon a larger scale.

Fig. 9 is a detail view of a locking device with associated portions of the container walls, the same being viewed from the rear of the front plate or wall of the drawer.

Fig. 10 is a fragmentary, detail view in rear elevation, looking from left to right at the upper left-hand corner of Fig. 8.

Fig. 11 is a fragmentary, detail plan view in section on the line 11—11 of Fig. 9.

Fig. 12 is a fragmentary detail view of a modi-

fied form of locking device for the rear of the drawer.

Fig. 13 is a plan view of the parts shown in Fig. 12.

Fig. 14 is a fragmentary, detail view of a modification of the device shown in Fig. 9.

Figs. 15 and 16 show a different form of locking means, Fig. 15 being a fragmentary view in elevation, partly in section, of the erected drawer looking at the inner face of a side wall, while Fig. 16 is an enlarged vertical section taken on the line 16—16 of Fig. 15.

Fig. 17 is an enlarged cross-section through the paper structure of the drawer showing the corrugated paper construction.

While the drawer structure about to be described is designed primarily for use in combination with a casing of the type disclosed in our application Ser. No. 666,895, it is adapted for use in any field for which it is suited by the nature of my improvements.

The form of drawer element selected for illustration and description is shown in completed form in Figs. 6 and 7, where it is designated generally by the reference character D, and comprises a body portion made preferably of a non-metallic material such as corrugated paper board, with a front wall having an all-over facing 35 of sheet-metal which is extended around the edges of the front wall portion 36 of the body to form a metal binding 37.

In fabricating a drawer element of this type, we preferably make use of a blank which is shown in its initial stage of manufacture in Fig. 1, being there designated generally by the reference character 38, the material being of any suitable character, such as stout paper board.

This blank is scored longitudinally, as at 39, and transversely as at 40, 41, to define the junctions between the bottom 42 of the drawer and the side walls 43, the front wall 36 and rear wall 44 thereof.

The corner material at each of the front corners is cut away, as shown, leaving the front wall 36 projecting beyond the ends of the side section 43, while the material of the rear flap 44, extending beyond the scorings 39, may be left integral with the rear wall, being severed from the side walls 43 by the slits 45. This permits these flaps 46 to be folded over, as shown in Fig. 3, and secured to the rear wall 44, as by rivets or staples 47, thereby constituting reenforcements of the rear wall. The flaps 46 may, however, be dispensed with, if desired.

The front wall is preferably increased in bulk or thickness by the addition of a ply of material 48, such as paper board, which may be riveted thereto, as indicated at 49, along the lower inner front edge, while its outer margin may be embraced within the binding 37 and so held firmly in place (see Fig. 3).

The margins of the side walls are each preferably provided with sheet metal bindings 50, for the purpose of reenforcement, resisting forces tending to cause collapse or buckling of the side walls, and also to serve as a mounting for rotatably supporting the holding member 51 of U-shaped stiff wire having latch portions 52, 53 adapted to be engaged with cooperating portions of the rear end wall and front end wall, respectively, as described hereinbelow.

The rear end wall is provided with a similar sheet-metal binding strip 54 which may, and preferably does, have end extensions or wings 55, with apertures 56 (Fig. 8), through which the latches 52 extend in the assembled drawer, these wings serving as wear-resisting abutments, and also to stiffen the structure. The latch portions 52 may be held yieldingly in place by the heads of suitably positioned rivets, or by equivalent means, as shown at 52a, and over which the latch portions 52 snap into final position.

At the front end of the drawer element the hook-like latches 53 extend downwardly against a cooperating part 56 of the front wall binding, as shown in Figs. 9 and 11, when in operative and assembled position. The part 56 is suitably apertured to receive the latch portion 53, as shown at 56a.

The inner paper ply 48 is cut away as s own at 58 (see Fig. 1), and a rear metallic facing plate 48a is depressed, as shown at 60 (Figs. 3, 9, and 11) to afford clearance for the swinging movement of latch 53, the indented metallic portion 60 serving also to protect the paper section 36. The inner portions of the metal facing plate 37 are bent over the edge portions of the plate 48a, 36 and 48, the whole forming a neat, strong and rigid structure, to clamp therebetween the paper sections as shown at 60a and 60b (Figs. 8 and 11).

The front sheet-metal face of the drawer element is shown in Fig. 6 as offset forwardly at four points 61, defining the apices of a quadrangle, to provide retaining means for an index card; and said sheet metal face may desirably be offset inwardly as at 61a to provide a recess in which is mounted swingly a bail or handle 62, for convenience in manipulation of the drawer. The handle may be pivotally supported in a clip 62a which passes through the whole front wall, as shown in Fig. 8, the free ends of the clip being struck down against the inner plate 48a.

The assembly of the drawer member just described will be clear from the foregoing and may be briefly described as follows: Beginning with the structure in the condition shown in Fig. 3, the front and rear walls are raised into the position in which they are approximately at right-angles to the bottom 42. The side walls are then bent into similar vertical position and the latch members 52 and 53 are inserted in their respective apertures 56 and 56a. As the contiguous edges of the walls are brought into engagement, the latch members are forced downwardly into the positions shown in Figs. 7 to 11. The latches 52 will snap into position after riding over the heads of the rivets 52a. The connecting bends 52b between the latch members and the longitudinal portions of the U-shaped locking members are of such length that the latch members engage firmly and closely against the respective retaining metal plates, so that the walls of the drawer are rigidly locked together. It will be observed that the several sections of the drawer are of simple configuration and the manner of their erection becomes immediately evident on inspection.

From the above it will be evident that the paper front wall section 36 serves as a connecting member between the sheet-metal front wall structure 35, 48a and the bottom 42 of the drawer; however, other modes of connecting the metal wall to the drawer bottom will suggest themselves to those skilled in the art.

Figs. 12 and 13 show a form of wire holding means which is similar in structure and operation to those already described, having a shank-portion 63 mounted rotatably in a metallic binding-strip 64 upon the upper margin of each side wall 65 of the drawer member. The latch por-

tion 66 of this device is shown as of arcuate shape, and is adapted to enter retentively into engagement with an apertured portion 67 of the metal binding upon the adjacent portion of the rear wall 68. The aperture opens into an enlarged pocket 67a which is of sufficient size to accommodate the swinging movement of the latch 66.

In Fig. 14 we have shown the forward end of this holding member as provided with a latch 69, adapted to swing in an armored recess 70 provided in the front wall 71 as already described, the latch being of resilient construction and arranged to snap into position to one side of a rivet or stud 71a. The free end of the latch is bent outwardly to facilitate engagement thereof for releasing the latch. In the embodiment of the invention shown in Figs. 15 and 16, the fastening or locking means shown in Figs. 3 to 14 are replaced by bolts extending from the front to the rear wall of the drawer, and, like the locking means of Figs. 3 to 14, supported preferably within the reenforcing members on the upper edges of the side walls. As shown in Fig. 15 the reenforcing member 72 attached to the upper edge of each of the side walls 43 is provided with a laterally and inwardly directed hollow portion 73 which receives the stem of a bolt 74 whose angularly shaped head 75 is received within a similarly shaped recess in the front wall 36, while its opposite end is threaded to receive a nut 76 which bears against the rear face of the rear wall 44, 46, and preferably against the metallic reenforcement secured to such rear wall. In this way the foldable front, rear and side walls are rigidly held in assembled condition, the locking means, as in the case of the previously described locking means being supported on and engaging the reenforcing elements associated with the walls of the drawer.

Fig. 17 represents a section taken through the paper body portion of the drawer and illustrates the corrugated paper construction thereof. This corrugated paper construction is composed, as is known, of two outer paper layers 77 and 78 which are glued or cemented to an intermediate corrugated paper layer 79.

From the foregoing, it will be seen that we have provided a drawer component of a file structure which is characterized by simplicity, strength, lightness and inexpensiveness, and can be used with any suitable complementary casing structures. When a filing construction employing my improved drawer element is used as a unit, or in an assembly composed of similar units, the effect produced is that of an all-metal unit or assembly, when viewed from the front. As practically all of the edges of the receptacle are faced or lined with metal, the neat appearance of the assembly is retained indefinitely. Moreover, the receptacles are much more nearly fire-proof and moisture-proof than files composed wholly of paper. The individual elements are lighter than all-metal elements of equivalent capacity, and are less expensive to fabricate, both as to material and labor.

In view of the fact that the front wall of the drawer does not have to withstand vertical compressive stresses, it will be recognized that the metallic facing need not be provided by a thick sheet of metal; on the contrary, this facing may consist of an extremely thin metallic covering which, even though it may not add materially, if at all, to the compressive strength of the sheet of corrugated or other paper forming the body of the front wall of the drawer, nevertheless in other respects performs all of the functions of a stronger layer of metal. Thus, even an extremely thin metallic facing is impervious to moisture, is fire-resisting to a certain degree, resists abrasion and preserves the neat, smooth appearance of the drawer wall. Moreover, it will simulate the appearance of a solid all-metal structure and to all intents and purposes will perform the functions of a thick metal structure in the front wall of a drawer while at the same time it will be considerably lighter and cheaper.

The knock-down form of the drawer element renders it easy to transport in quantities, and as they occupy a minimum of space they can be kept in stock in large quantities by dealers, or kept in reserve at offices where they are to be used eventually.

If not needed, individual units can be knocked down, and the office space thus saved can be used for other desirable purposes, the knocked-down units being retained for later expansion of the storage files.

Variations from the specific constructions illustrated and described may be resorted to within the scope of the appended claims without departing from the spirit of the invention.

We claim:

1. A drawer or container member of the class described, comprising an open quadrilateral structure having a body formed of an integral blank of non-metallic material scored along its portions serving as longitudinal corner edges and transverse corner edges, the material of said blank being cut away at the two front corners, leaving a front end-wall portion and two side wall portions, and the side wall portions having transverse marginal slits in the line of the rear corner edge scoring, to form reenforcing flaps bent back against the rear-wall portion and secured thereto, said side and rear wall portions respectively having their upper margins faced with sheet-metal binding strips, and said front wall portion having its vertical margins and its front surface similarly faced with metal, and means for holding said front, side and rear walls detachably in upright relation.

2. A drawer member as set forth in claim 1, wherein said holding means comprise U-shaped wires with shank portions mounted rotatably in said side wall binding strips, and swinging latch portions engaged retentively with said end walls.

3. A drawer member as set forth in claim 1, wherein said holding means comprise U-shaped wires with shank portions mounted rotatably in said side wall binding strips, and swinging latch portions engaged retentively with said end walls, the rear wall binding being provided with apertured metal wings adapted to be engaged by the rear latch portions of the holding members and to serve as wear-resisting abutments therefor.

4. A drawer member as set forth in claim 1, wherein said holding means comprise U-shaped wires with shank portions mounted rotatably in said side wall binding strips, and swinging latch portions engaged retentively with said end walls, the front wall binding being formed with an apertured keeper portion adapted to cooperate retentively with the corresponding latch portions of said holding members.

5. A drawer member as set forth in claim 1, wherein said holding means comprise U-shaped wires with shank portions mounted rotatably in said side wall binding strips, and swinging latch portions engaged retentively with said end walls, the front wall binding being formed with a keep-

er portion adapted to cooperate retentively with the corresponding latch portions of said holding members. said front-wall comprising plural plies of non-metallic material of which the inner ply is cut away to afford clearance for the swinging movement of said latches, said cut-away portions being faced with metal.

6. A drawer member as set forth in claim 1, wherein a portion of sheet-metal facing of the front wall is offset inwardly to form a recess for a distance not substantially greater than one thickness of the material forming the blank, the front end wall of the blank being cut away to receive said inward offset, so that the inside surface of the front wall remains smooth at the rear of such offset, and a handle mounted swingingly in said recess.

7. A blank for use in fabricating a drawer member of the class described, said blank comprising an elongated flat strip of non-metallic sheet material in rectangular form, having parallel scorings extending longitudinally of said strip, and parallel transverse scorings extending across said strip, said scorings defining the junction edges between the bottom of the drawer member and the upright front, rear and side walls thereof, the front corner portions of said blank being cut away, and metallic reenforcing strips permanently attached to certain of the edges of the blank and forming the upper edges of the assembled drawer member to impart rigidity to the assembled drawer member and locking means permanently mounted on the side walls and interengageable simultaneously with the front and rear walls to lock the same together.

8. A blank for use in fabricating a drawer member of the class described, said blank comprising an elongated flat strip of non-metallic sheet material in rectangular form, having parallel scorings extending longitudinally of said strip, and parallel transverse scorings extending across said strip, said scorings defining the junction edges between the bottom of the drawer member and the upright front, rear and side walls thereof, the front corner portions of said blank being cut away, and sheet-metal bindings along the upper margins of said side wall and rear wall portions respectively, and over the front face and around the entire margin of said front wall portion.

9. A collapsible drawer member for storage files of the class described, comprising an open quadrilateral structure having a body including front, rear, and side walls hinged to a bottom wall, all formed of an integral strip of non-metallic material, the front wall being higher than the adjacent portions of the side walls, metal facings upon the upper edges of the side walls and at least upon those portions of the front and rear walls which are adjacent to the upper edges of the side walls, and locking means mounted on the metal facings on certain of the walls and cooperating with but disengageable from the metal facings on the other walls to lock the walls together into a rigid structure.

10. A collapsible drawer member comprising a body of rectangular form folded from an integral piece of non-metallic material, substantially rigid reenforcements attached to certain of the free edge portions of said member which form the top edges of the assembled drawer member, releasable locking means permanently mounted on certain of said reenforcements for holding the folded portions of said member rigidly in their assembled positions, the front wall being higher than the adjacent portions of the side walls, and metallic reenforcing means on the front wall adapted for engagement by the locking means.

11. The structure as set forth in claim 10 wherein reenforcing strips are attached to the top edges of the side walls, and reenforcing means are attached to the rear wall, the locking means comprising elements pivoted upon the reenforcements on the side walls and interlocking with the reenforcing means on the front and rear walls.

12. In a filing receptacle of the class described, a collapsible drawer member adapted to fit within a casing and having a body of non-metallic material, the front wall of said drawer being faced with metal and thereby protecting the contents of the drawer from the effects of moisture and fire in front of the drawer, a plurality of stacked assembled drawers and their associated casings thus presenting a fire-resisting facade which protects the drawer and casing structures to the rear thereof.

13. A collapsible drawer member of the class described comprising a body formed of an integral blank of non-metallic material scored along its portions serving as longitudinal and transverse corner edges, said blank being shaped to provide side, bottom and front and rear end walls, and means for holding the walls of the erected drawer in right-angled relation, the front end wall of the drawer being encased in a metal sheathing and thereby protecting the contents of the drawer from the effects of moisture and fire in front of the drawer, a plurality of grouped drawers with their front walls aligned thus presenting a fire-resisting facade which protects the rear portions of the drawers and the materials stored therein.

14. A blank for use in fabricating a collapsible drawer member of the class described, said blank comprising a flat strip of non-metallic sheet material having parallel scorings extending longitudinally of said strip and parallel scorings extending transversely of said strip, said scorings defining the junction edges between the bottom of the drawer member and the upright front, rear and side walls thereof, metallic reenforcements permanently attached to the upper edges of the side wall portions of the blank, reenforcements on the front and rear walls, the front wall being higher than at least a considerable portion of the length of the side walls and extending a considerable distance thereabove, and rigid releasable locking means mounted on the reenforcements on certain of said walls and adapted to engage with the reenforcements on the other walls to hold the walls in erected condition.

15. A blank for use in fabricating a collapsible drawer member of the class described, said blank comprising a flat strip of non-metallic sheet material having parallel scorings extending longitudinally of said strip and parallel scorings extending transversely of said strip, said scorings defining the junction edges between the bottom of the drawer member and the upright front, rear and side walls thereof, and metallic reenforcing strips permanently attached to the side walls longitudinally thereof to impart rigidity to the assembled drawer member, the outer surface of the front wall being faced with metal.

16. A collapsible drawer member of the class described, comprising an open quadrilateral structure having a body including side, a bottom wall and foldable side and rear and bottom walls formed of an integral strip of non-metallic material, and a foldable front wall faced with metal

and secured to the bottom wall, reenforcing metallic strips secured to the side walls longitudinally thereof, and interengaging devices for releasably securing the rear, front and side walls to each other in erected condition.

17. A collapsible drawer member of the class described comprising an open quadrilateral structure having a body including a bottom wall and foldable side and rear walls formed of non-metallic material and a foldable front wall secured to the bottom wall, the front wall being considerably higher than at least a portion of the length of the side walls, and interengaging metallic members permanently mounted upon the side, rear and front walls and cooperating to hold the drawer member in erected condition.

18. In a storage file structure, a collapsible drawer member adapted to fit within a casing and comprising a bottom wall and foldable side and rear walls made of paper material, a foldable front wall secured to the bottom wall, and means for securing the front, rear and side walls in erected condition, the front wall being faced with metal to protect the contents of the drawer from the effects of moisture and fire in front of the drawer, a plurality of grouped drawers with their front walls aligned thus presenting a fire-resisting facade which protects the rear portions of the drawers and the materials stored therein.

19. A collapsible drawer member of the class described comprising a bottom wall and foldable side, rear and front walls, hollow metallic reenforcing members secured to certain of said walls, locking devices pivotally mounted in said hollow reenforcing means, and rigid elements provided upon the other walls for interengagement with said locking devices to hold the walls in erected condition.

20. A collapsible drawer member of the class described comprising a bottom wall and foldable side, rear and front walls, hollow metallic reenforcing members permanently secured to the upper edges of the side walls, the front wall being higher than and extending above the said side walls, locking devices pivotally mounted in said hollow reenforcing means, and metallic members secured to the front and rear walls and adapted to be interengaged by the locking devices for holding the walls in erected condition.

21. A collapsible drawer member of the class described, comprising a bottom wall and foldable side walls made of an integral piece of paper material, and foldable rear and front walls secured to the bottom wall, rigid reenforcing members permanently secured to the upper edges of the rear and side walls, a rigid reenforcing member secured to the front wall, latching devices pivotally mounted on the side wall reenforcing members and cooperating with the reenforcing members on the front and rear walls to secure the drawer in erected condition.

22. A collapsible drawer member of the class described, comprising a bottom wall and foldable side walls formed of an integral strip of paper material, and foldable rear and front walls secured to the bottom wall, the front wall extending above the upper edge of at least a considerable portion of the side walls, rigid reenforcing strips permanently secured to the upper edges of the side walls, locking devices pivotally mounted on said reenforcing members, the front wall having a facing of metal at the front thereof and having a rigid reenforcement at the rear thereof, said rear wall likewise provided with a rigid reenforcement, the reenforcements on the front and rear walls being engaged by the locking devices in the erected condition of the drawer.

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