Nov. 17, 1936. S. SCHEINMAN 2,061,485

REENFORCED COLLAPSIBLE FILE CASING

Filed May 16, 1936 2 Sheets-Sheet 1

Fig. 1.

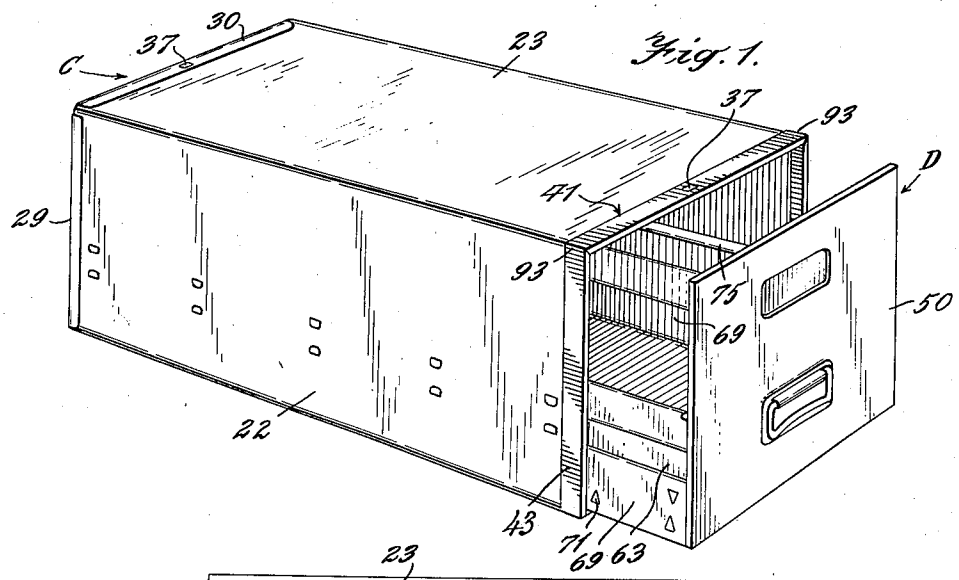


Fig. 2.

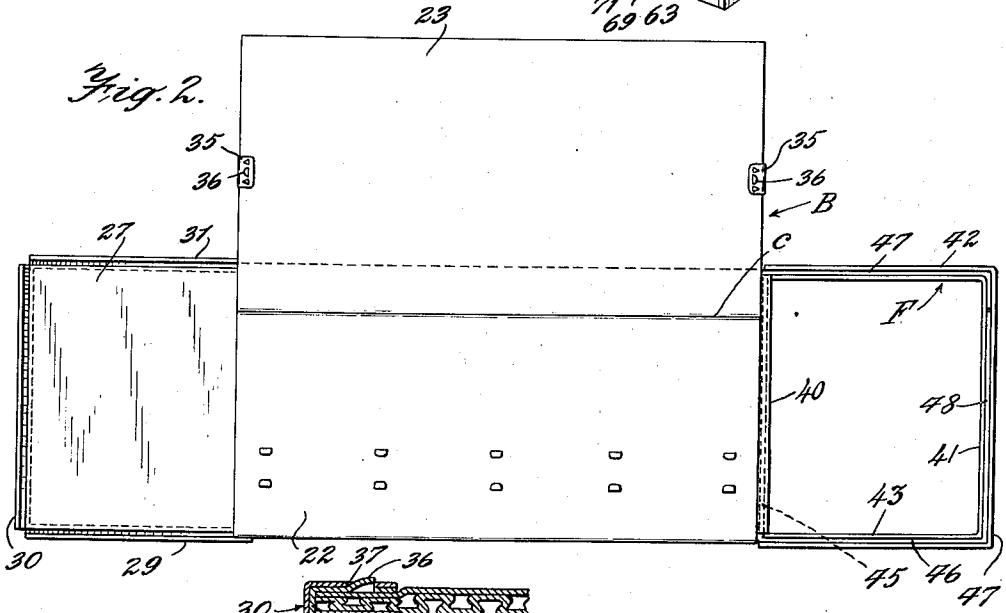
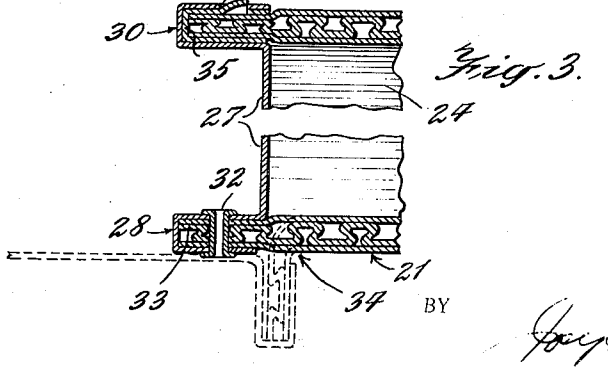


Fig. 3.



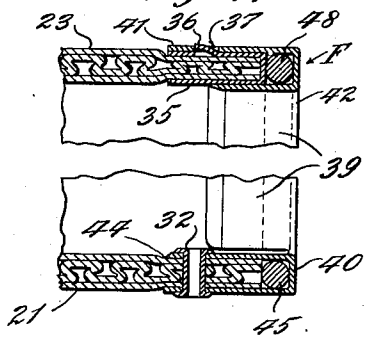
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Fig. 4.



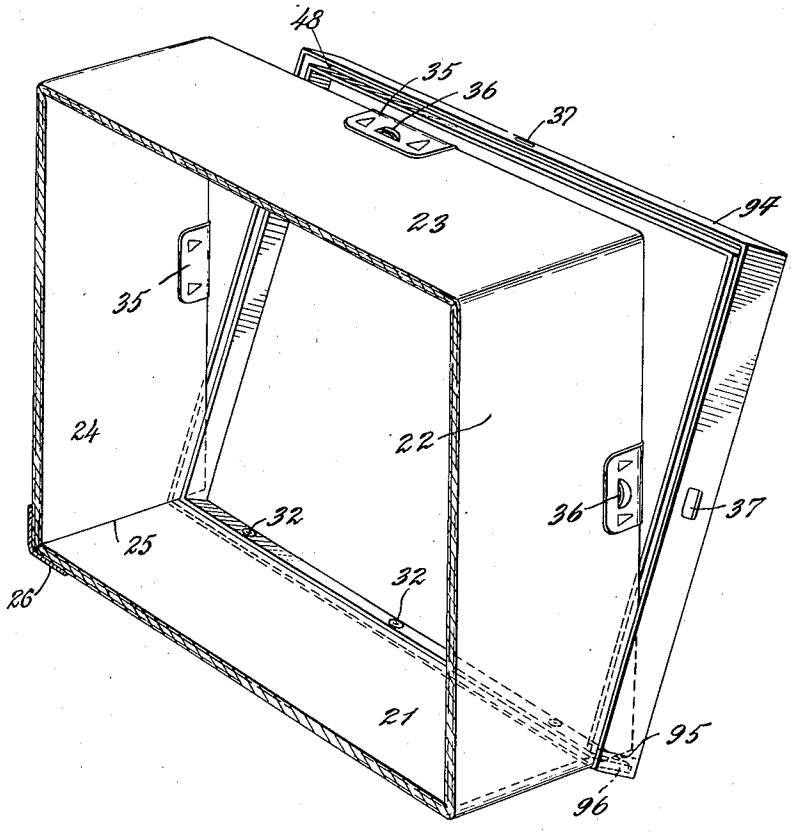


Fig. 5.

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UNITED STATES PATENT OFFICE

2,061,485

REENFORCED COLLAPSIBLE FILE CASING

Sol Scheinman, White Plains, N. Y.

Application May 16, 1936, Serial No. 80,147

15 Claims. (Cl. 45—2)

This invention relates to the fabrication of receptacles, especially of filing equipment, including transfer or storage files, suitable for receiving and storing correspondence and other papers and articles, and more particularly of filing equipment of the drawer and casing type which is supplied to the user in knocked-down or collapsed condition, to be erected and assembled by him for use.

More specifically, an object of the invention is to provide a filing receptacle of the general character of that disclosed and claimed in the copending application of Sol Scheinman and Jacob Mandel Serial No. 17,218, filed April 19, 1935 and equipped with improved reenforcing devices for the collapsible casing. The receptacle which constitutes the subject-matter of the present application has in common with that of the earlier application the characteristic formation of the components of the receptacle out of inexpensive materials, primarily corrugated paper board, reenforced with sheet metal at certain limited areas, combined in novel forms which provide the advantages of paper board, namely lightness and inexpensiveness, with the strength, durability, fire-proofness and neat appearance of sheet metal.

A further object of the present invention wherein it is differentiated from the disclosure of the earlier application, comprises the provision, in a collapsible file casing constructed essentially of corrugated or other paper board, of a rigid front frame and a similar rigid rear-end frame which distribute between them the load on the casing. It is a still further object of the invention to provide a front end reenforcing frame for collapsible file casings which is rigid and provides a neat metallic facing for the front edges of the casing, and is permanently attached to the body of the casing in hinged relation. In particular, it is an object of the invention to provide front and rear reenforcing frames, each joined swingingly, and more or less permanently, along one edge, to an adjacent edge of the paper-wall structure, and each adapted to be swung outwardly therefrom in an arcuate path to clear the casing. These front and rear end members are so disposed that when they are swung away from the ends of the casing, and while they remain attached to the casing, the casing walls can be collapsed into more or less flat condition, whereby the entire structure including the side walls, the top and bottom walls and the end frames will occupy substantially a single plane, for convenience in accumulating a quantity of the collapsed devices, and for transportation and storage thereof prior to use.

The invention accordingly contemplates the provision of a file structure which is composed essentially of paper, but wherein the stresses are all taken up by rigid, continuous metal frames, the paper material having sufficient bulk for anchoring the metallic parts and being in general stressed only in the directions of its maximum strength.

In supplement of each of the objects comprised within the purview of the present invention as summarized above, it is an underlying purpose of the idea of means herein disclosed to eliminate to the maximum possible extent all destructive and distorting stresses upon the paper components of my novel file receptacle structure, while realizing to an optimum extent the already recited advantages accruing from the utilization of paper as a preponderant structural component.

Other objects and advantages of the invention will appear as the description of the particular physical embodiment selected for illustration and disclosure of the invention proceeds.

In the accompanying drawings, like characters of reference have been applied to the corresponding parts throughout the several views; in said drawings,

Fig. 1 is a perspective view of a filing receptacle including a casing element constructed in accordance with the invention and a drawer element cooperating therewith;

Fig. 2 shows the casing in the collapsed or knocked-down condition thereof;

Fig. 3 illustrates a fragmentary detail view in central, vertical section of the rear-end construction of the casing;

Fig. 4 is a similar view of the front end of the casing; and

Fig. 5 is a fragmentary view showing a modified form of front end frame.

In the embodiment of the invention illustrated, I have included a casing element designated generally by the reference character C, and which is made from a blank B of suitable nonmetallic material, such as a corrugated paper board, the casing element being preferably of elongated, rectangular form, for use as a unit or component of a storage or file cabinet.

The blank B is scored with a plurality of transverse indentations *c*, at spaced intervals, to facilitate bending the strip into the form of the open-ended casing element C. The latter is quadrilateral in cross-section, comprising the side panels 22 and 24, the bottom panel 21, and the

top panel 23. The scored grooves c extend along, and define, three of the longitudinal edges of the casing, and the fourth edge is defined by the lengthwise joint 25 between the bottom panel 21 and the side panel 24. A strip of adhesive paper or cloth 26 is provided to complete this joint, preferably overlapping adjacent marginal portions of the walls 21 and 24. The strip serves as a hinge along the joint 25 when the casing is to be folded flat, as in Fig. 2.

The rear end of the casing C, when erected, is closed by a rectangular panel 27 which is preferably formed of sheet metal, being provided along each of its four sides with a flange or channel 28, 29, 30, 31, each of the channels being of U-shape in cross-section, and each adapted to receive and serve as a binding or protector for an adjacent edge of one of the panels 21—24, when the casing is in its erected position, as shown in Figs. 1 and 3, while at the same time stiffening the rear panel and enabling it to receive large loads, such as the weight of a number of files positioned above it, without distortion or buckling.

The flanges impart a high degree of rigidity to the end panel 27, and the latter serves as a means by which the various walls of the casing will be held in the relative positions occupied by them as shown in Fig. 1 when the casing has been erected from the flat, knocked-down condition shown in Fig. 2, which latter is, of course, the most convenient form for storage and for transportation.

The rear end wall or panel 27 is adapted to swing downward to the position illustrated in Fig. 2 in plan, and shown in fragmentary detail on a larger scale and in dotted lines in Fig. 6, wherein the flange 28 is riveted, as at 32, permanently to the edge 33 of the bottom panel 21, the flexible character of the corrugated paper board of which the panel is composed being utilized by me to provide a flexible hinged connection along the line 34 (see Fig. 3). It will be understood that the channel-shaped ends 29, 30 and 31 are not connected to the respective ends of the side walls 22, 23 and 24, or only temporarily to permit ready collapse of the casing. As will readily be understood, the connecting portions between the bottom wall and the side walls are slitted at the rear of the casing, preferably in line with the scorings for a sufficient distance to permit the end panel 27 to be swung downwardly as shown in Fig. 3.

In order to provide a more secure fastening of the end panel 27 to the abutting edges of the panel walls, I have affixed to the top surface of the uppermost panel 23 a metal clip 35 of relatively rigid material—sheet metal in the instance shown—formed with an upwardly offset tongue 36 (see Fig. 3), which projects into position to spring into a complemental orifice 37 with which the top flange 30 of the end panel is provided. When so engaged, the end panel 27 is held firmly in place and acts in turn to grip firmly the rear edges of the side and top panels of the casing, holding them in accurate quadrilateral relationship, and at the same time providing them with an effective binding, as best seen in Figs. 1 and 3.

A similar reenforcing frame is provided by me at the forward end of the casing, with the important difference, however, that as this end must be open to receive the drawer D, it has no such central web of sheet metal as exists in the rear-end element 27.

The front frame F comprises a continuous, rigid, sheet metal channel member 39 of channel or U-shape in cross-section, the frame sections 41, 42 and 43 being adapted to fit snugly upon and receive the front end edges of the top panel 23, and the side panels 22 and 24. With this frame is associated a binding strip 40 which is permanently secured, as by rivets 32 (Fig. 4), to the forward edge 44 of the bottom panel 21.

Within the channel strip 40 is confined one leg 45 of a rigid quadrangular wire loop of which the other three sides 46, 47, and 48 are respectively fitted permanently, as by welding or soldering, or even frictionally within the side and top flanges of the frame F, reenforcing the latter to a very great extent, especially at the corners. The lower leg 45 is revolubly disposed in the binding strip 40, so that the frame F, when the casing is to be knocked down, can be swung downward through an arcuate path, around the wire 45 as a pintle, into the position shown in Fig. 2, where it lies in the general plane occupied by the flattened casing structure, being entirely out of the way of the panel components as they are being folded down. It is, however, in proper position to be readily swung upward, by a reversal of the above recited procedure, when the casing is to be re-erected, as will be readily understood from the foregoing disclosure. It will be seen that the frame F, like the rear wall 27, is a normally permanent and inseparable part of the casing, the whole forming a single, unitary structure.

The frame F has in its top section an orifice 37 (see Figs. 1 and 4), adapted to be entered by a tongue 36, formed on a clip 35 secured to the forward edge of the top panel 23 and operating to hold the frame F in place, in a manner similar to the securing of the rear end member 27 in place at the other end of the casing.

The casing C constitutes, accordingly, a sturdy container, well adapted for its intended use, and is also capable of use in other applications. It will be noted that the casing is composed of a minimum number of sections, all of simple configuration, and the assembly of the structure requires only the most elementary of movements and can be accomplished by persons of no particular mechanical aptitude and without elaborate instructions.

It will also be noted that the swinging front frame F and the swinging rear-end panel 27 not only serve to reenforce the paper casing, but prevent fraying and wear of the edges of the casing, and maintain the same in neat condition for an indefinite time. The locking devices engage these metallic frames and they are thus securely held in place without strain or wear on the paper sections.

I have shown in the drawings a form of drawer element D which is primarily designed for use in combination with a casing C of the type already described, but which is also adapted for use in any field for which it is suited by the nature of my improvements.

The form of drawer element D selected for illustration is described in detail in my divisional application Serial No. 101,444, filed Sept. 18, 1936, and comprises a body portion made preferably to a major extent of a non-metallic material such as corrugated paper board, with a front wall having an over-all facing 50 of sheet metal which is extended around the edges of the front wall portion of the body to form a metal binding 51 along the interior surface of the front wall.

The side walls of the drawer element D are composed of sheet metal plates 69 which are secured, as by teeth punched out of the body of sheet metal as shown at 71, to paper side wall sections integral with the paper bottom wall of

the drawer. The plates 69 are recessed at 63 so as to engage and slide over rollers and extension rails supported upon rollers fixed to the interior surfaces of the side walls of the casing, as shown in detail in the above-mentioned divisional application. The upper portions of the plate 69 are bent to form loops 75 which receive rotatively U-shaped wire members (not shown) which interlock with the front and rear walls of the drawer to hold the walls of the drawer in erected condition. The casing is of course not limited in its use to the type of drawer illustrated in the above-mentioned divisional application as any other suitable drawer may be employed, for example, that shown in the patent to Scheinman and Mandel No. 2,012,857.

From the foregoing, it will be seen that I have provided a casing component for a file structure which is characterized by simplicity, strength, lightness and inexpensiveness.

When a filing unit composed of such a casing element and complemental drawer element is used either as a unit or in an assembly composed of similar units, the effect produced is that of an all-metal unit or assembly, whether viewed from the front, or from the rear. As practically all of the edges of the receptacle are faced or lined with metal, the neat appearance of the assembly is retained indefinitely. This effect is due in large part to the fact that the front frame 41 is smooth and continuous, especially at the corners 93. Moreover, the receptacles are much more nearly fire-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 to labor.

In the form of the invention illustrated in Fig. 5, the front end reenforcing frame for the casing is in the form of a rigid quadrilateral structure whose four sides are each of channel cross-section, similar to the frame shown in Figs. 1, 2, and 4. The outer flange 94 is continuous and provides a smooth metallic facing, not only along the walls, but also at the corners. One of the sides of the frame is permanently attached, as by rivets 32, to the front edge portion 96 of the bottom wall, such portion being separated from the side walls 22 and 24 by slits of suitable length, as indicated at 95, to enable the attached frame to hinge upon the portion of the bottom wall adjoining the attached side of the frame. The frame may be held in its erected condition by one or more lugs or detents 36 projecting from plates 35 secured to the front edge portions of the walls of the top and/or side walls and adapted to snap into openings 37 in the outer flange of the frame to hold the frame in the erected position and secured against disengagement from the casing upon outward movement of the drawer element. The frame, like that shown in Fig. 4, may be provided with a looped wire 48 secured to the interior of the frame and acting to increase the rigidity thereof, particularly at the corners.

It will be noted that the frame in both embodiments of the invention comprises rigid members facing the side and top walls and rigid connecting portions at the corners, so that the frames impart adequate rigidity to the erected casing to enable it to withstand both vertical stresses and lateral stresses tending to distort it. The front edges of the frame are preferably continuous with the flanges so that the front edges of the casing are smoothly and neatly faced with metal.

The knocked-down form of each 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 in offices where they are to be used eventually. If not needed, individual units can be knocked down easily, and the office space thus saved can be used for other desirable purposes, the knocked-down units being kept for later expansion of the storage files.

It is to be noted that by my improved structure it is rendered unnecessary for a dealer to supply detached parts to a user to be assembled by him; the casing being, in its preferred form, a single unitary structure.

It will be understood that suitable provision may be made for holding vertical stacks and horizontal rows of the casings in proper alignment, as by means of sockets at the sides of the frame F and stacker elements as shown in my copending application Ser. No. 65,037.

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.

Thus, frame F could be entirely separate from the casing and be held in place on the erected casing by any suitable holding devices, such as the outer sides of the plate 74, the latter being suitably depressed where necessary.

I claim:

1. A collapsible file casing having hingedly connected bottom, side and top panels of paper material constituting when erected a tubular container of rectangular outline, said casing having a quadrilateral, open, rigid, continuous, metallic front end frame engaging the front end edges of said panels to hold the latter in their predetermined angular relationship in the erected condition of the casing and adapted to take up compressive loads on the casing, said frame being movable out of its operative position with relation to said panels to enable the casing to be collapsed, and means for releasably securing the frame to the erected casing.

2. A collapsible file casing having hingedly connected bottom, side and top panels of paper material constituting when erected a tubular container of rectangular outline, said casing having a quadrilateral, open, rigid, continuous, metallic front end frame connected hingedly along one of its sides to an end portion of one of said panels, and movable to engage and face the front end edges of the other panels in the erected position of said casing and hold the panels in right-angular relation, said end frame being adapted to be swung on said hinged side away from the edges of the other panels into a position in which it occupies approximately the same plane as the panel to which it is attached to enable the casing to be collapsed.

3. A collapsible casing as set forth in claim 15, wherein the frame is permanently hinged to one of the walls of the casing.

4. A collapsible casing as set forth in claim 15, including a metallic binding strip secured to the bottom wall of the casing, and means hingedly mounting the frame on the binding strip.

5. A collapsible file casing having hingedly connected bottom, side and top panels of paper material constituting when erected a tubular container of rectangular outline, a rigid metallic reenforcing end frame hingedly connected at one side to an end edge of a panel at each end of the casing and movable into position to engage the

end edges of the panels in the erected condition of the casing to hold said panels in their predetermined angular relationship, said end frames taking up compressive loads on the casing and being swingable on their hinged sides away from the end edges of the other panels to enable the casing to be collapsed, and locking devices for holding the frames to said other panels in the erected condition of the casing, the reenforcing frame at the front end of the casing being open for the reception of a drawer member.

6. A collapsible file casing having hingedly connected bottom, side and top panels of paper material constituting when erected a tubular container of rectangular outline, said casing having a quadrilateral, rigid, continuous, metallic front end frame engaging the front end edges of said panels to hold the latter in their predetermined angular relationship in the erected condition of the casing and adapted to take up compressive loads on the casing, the sides of the frame being of channel cross section and receiving the panel edges within the channels, said frame being pivotally secured to one of the panels and being movable out of its operative position with relation to said panels to enable the casing to be collapsed.

7. A collapsible file casing comprising a rectangular shell of non-metallic material having top, bottom and side walls meeting at score lines along which such walls are foldable to collapse or erect the casing, and an open front end metallic frame for reenforcing the casing at the corners and for taking up compressive loads on said casing said frame being pivotally associated with one of the walls of the casing and being movable into supporting engagement with the other walls in their erected condition to hold the casing rigid and being disengageable from such other walls to enable the casing to be collapsed, said frame comprising a continuous member having at least two side sections and a connecting top section of channel cross-section for receiving therewithin the forward marginal portions of the side and top walls, said frame sections overlapping and covering the forward marginal portions of the side and top walls of the casing and being continuous at the corners so as to overlie the forward portions of the scored hinges betweeen the top and side walls, whereby a continuous band of metal extends from approximately the bottom of the casing, exteriorly along the side of one side wall, along the top wall, and along the second side wall.

8. A collapsible file casing adapted to receive a drawer member and having hingedly connected panels of paper material forming when erected the top, side and bottom walls of a tubular container of rectangular outline, and a rigid reenforcing end frame hingedly connected to an end edge of a panel and movable into position to cooperate with the corresponding end edges of other panels in the erected position of the casing for holding the walls in their predetermined angular relationship, said frame including sheet metal reenforcing portions engaging the ends of the walls and also rigid angular portions permanently connected to the first-mentioned portions at the corners and acting to hold the frame against collapse, said frame taking up compressive loads on the casing and being hingedly movable out of engagement with said other panels to enable the casing to be collapsed.

9. A collapsible file casing comprising integral paper panels forming the top, side and bottom walls, said panels being divided by score lines along which the panels are foldable to erect or collapse the casing, and a swinging reenforcing front end frame associated with the casing for holding the latter in erected condition and for taking up vertical stresses on the casing, said frame being formed as an open, unitary three-sided rectangular sheet-metal structure within which a drawer for said casing is adapted to be moved, said frame engaging the top and side walls of the casing in the erected condition of the latter and including rigid portions at the corners thereof permanently secured to the sheet metal portions of the frame to stiffen the same, said frame being shaped to fit upon the forward end portions of the panels in the erected position of said casing; a separately formed binding strip attached to the bottom panel; and a fulcrum member attached to the frame and rotatably mounted in said binding strip.

10. A collapsible file casing having hingedly connected paper panels adapted to be erected to form right-angularly disposed top, side and bottom walls, and a rigid, open rectangular reinforcing frame permanently secured in hinged relation to the paper panels in the collapsed condition of the casing and movable pivotally with relation to the panels so as to be disposed at the front end of the erected casing in cooperating relation with the walls of the casing to hold the latter rigid and to take up vertical stresses thereon.

11. A collapsible file casing adapted to receive a drawer member and comprising hingedly connected paper panels adapted to be erected from the collapsed condition to form right-angularly disposed top, side and bottom walls, and a reenforcing structure at the front end of the casing, pivotally associated with the panels and comprising side, top and bottom members facing the front end portions of the walls of the erected casing, said structure including a rigid continuous loop element interengaging with said members and cooperating with said members to hold the walls of the casing rigidly in the erected right-angular condition.

12. A collapsible file casing adapted to receive a drawer member and comprising hingedly connected paper panels adapted to be erected from the collapsed condition to form right-angularly disposed top, side and bottom walls, and a reenforcing structure at the front end of the casing, pivotally associated with the panels and comprising side, top and bottom members of channel cross-section receiving therewithin the front end portions of the walls of the erected casing, and a rigid continuous loop element interengaging with said members and cooperating with said members to hold the walls of the casing rigidly in the erected right-angular condition and to take up vertical stresses on the casing.

13. A collapsible file casing adapted to receive a drawer member and comprising hingedly connected paper panels adapted to be erected from the collapsed condition to form right-angularly disposed top, side and bottom walls, and a reenforcing structure at the front end of the casing permanently connected in hinged relation to the casing to form a unitary structure therewith, said frame comprising side, top and bottom members engaging the front end portions of the walls of the erected casing, and a relatively rigid continuous wire element interengaging with said members and cooperating with said members to hold the walls of the casing rigidly in the erected right-angular condition and to take up vertical stresses on the casing.

14. A filing receptacle of the class described including a collapsible casing element having hingedly connected panels constituting when erected a tubular container of rectangular form, said casing being provided at its front end with a rigid, releasable integral frame composed of sides which are channel-shaped in cross-section and are adapted to engage and receive front edge portions of the casing, and a member permanently secured to said sides and attached to the front edge portion of one of the panels so as to enable said frame to hinge on said panel into and out of the erected condition to hold the casing rigidly in such condition or to enable the casing to be collapsed, respectively.

15. A collapsible file casing comprising a rectangular shell of non-metallic material having top, bottom and side walls meeting at score lines along which such walls are foldable to collapse or erect the casing, a unitary, open front end metallic frame for reenforcing the casing at the corners and for taking up compressive loads on said casing and movable bodily to casing collapsing and casing erecting positions, said frame comprising a continuous sheet metal member having at least two side sections and a connecting top section free of inwardly extending projections so as to be capable of snugly accommodating a drawer member, said sections overlapping and covering the forward marginal portions of the side and top walls of the casing and being continuous at the corners so as to overlie the forward portions of the scored hinges between the top and side walls, whereby a continuous band of metal extends from approximately the bottom of the casing, exteriorly along the side of one side wall, along the top and along the second side wall, said frame including an angular member bridging the corners and secured to the sheet metal member to stiffen the frame at the corners, and means for securing the frame to the casing in the assembled, erected condition.

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