Dec. 5, 1939. S. SCHEINMAN ET AL 2,181,918

COLLAPSIBLE STORAGE FILE CASING

Filed April 3, 1935 2 Sheets-Sheet 1

Fig. 1.

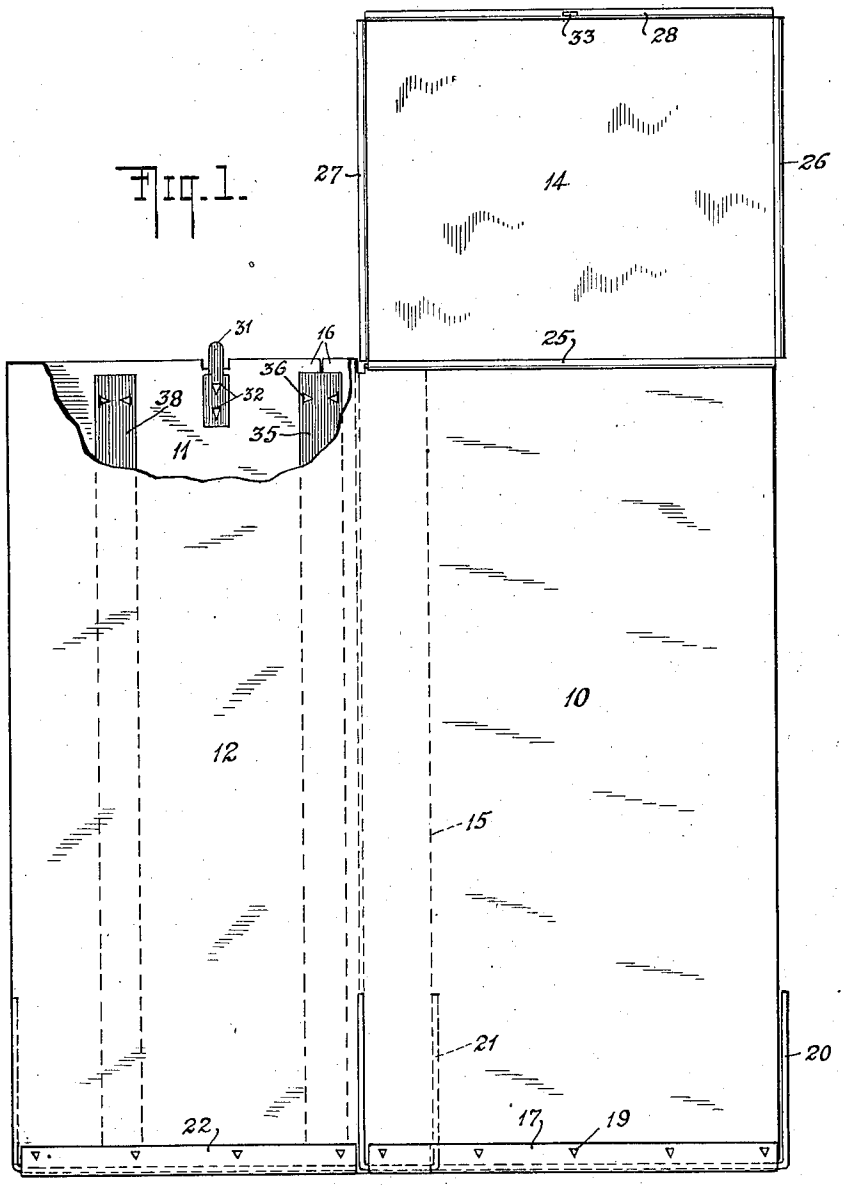
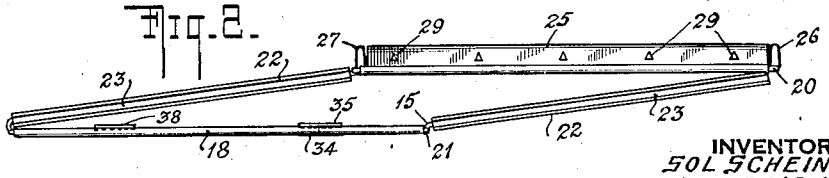


Fig. 2.



INVENTORS
SOL SCHEINMAN
JACOB MANDEL
BY Joseph Hirschman
ATTORNEY

Dec. 5, 1939. S. SCHEINMAN ET AL 2,181,918

COLLAPSIBLE STORAGE FILE CASING

Filed April 3, 1935 2 Sheets-Sheet 2

Fig. 3.

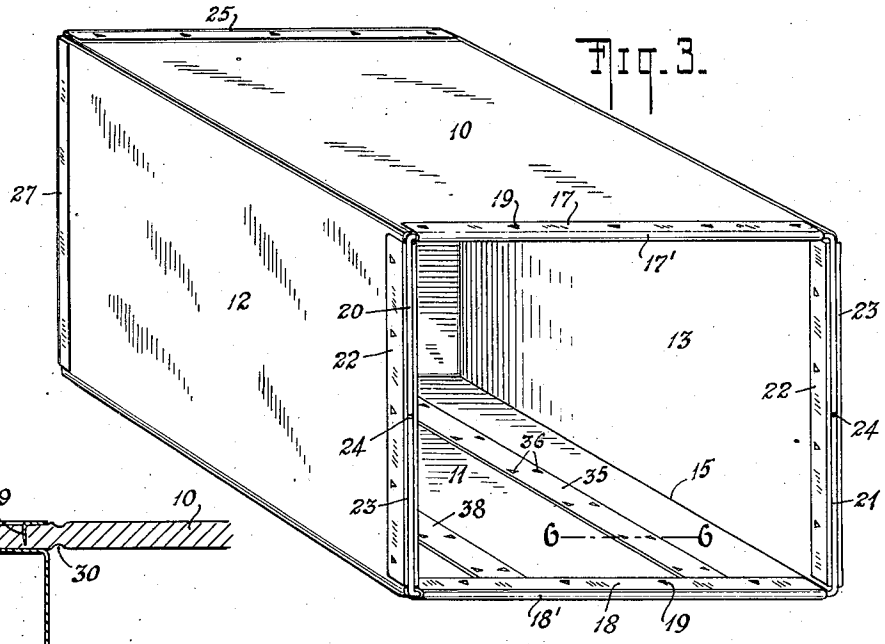


Fig. 5.

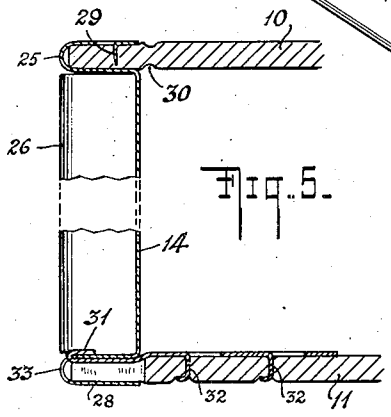


Fig. 6.

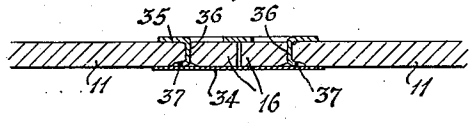
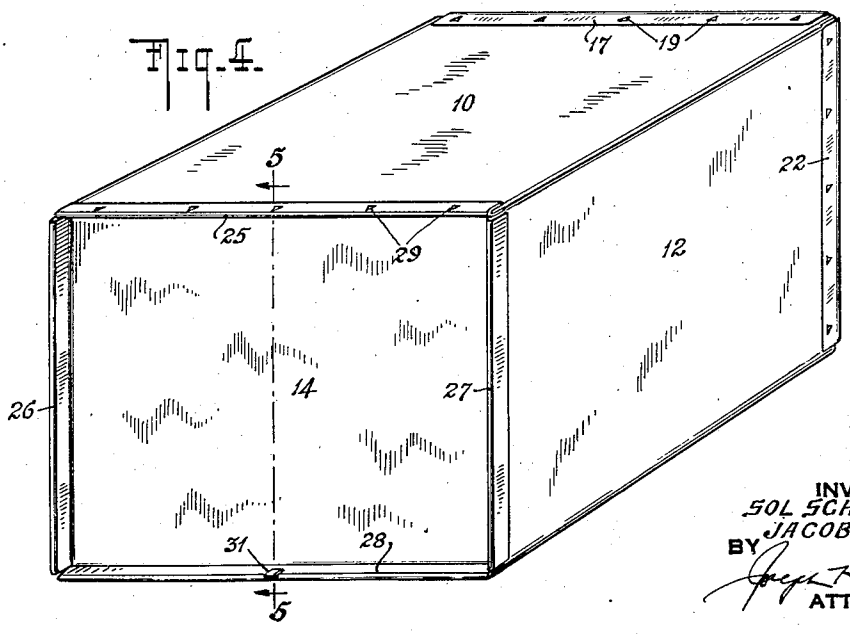


Fig. 4.



INVENTORS
SOL SCHEINMAN
JACOB MANDEL
BY
ATTORNEY

Patented Dec. 5, 1939 2,181,913

UNITED STATES PATENT OFFICE

2,181,918

COLLAPSIBLE STORAGE FILE CASING

Sol Scheinman, White Plains, and Jacob Mandel, Brooklyn, N. Y.

Application April 3, 1935, Serial No. 14,518

3 Claims. (Cl. 229—41)

The present invention relates to collapsible storage files which are adapted to be shipped in collapsed or knocked-down condition, of the type consisting of a shell or casing and a drawer member movable therein, and more specifically, to the construction of the casing member of such file.

It is an object of the invention to provide a storage file casing member which is composed, for example, of paper or other light and inexpensive fibrous or other material but is reinforced in such manner that it can withstand the weight of a number of filled storage files stacked above it.

In various collapsible storage files now on the market, the end wall of the casing is made up of two or more flaps extending from the side, top and bottom walls of the casing and connected together by means of a paper or cloth tape. Other parts of the casing, particularly the adjoining free longitudinal edges at the side, top or bottom walls, are likewise secured together by glued paper or cloth tape. We have found, however, that such tape, or rather the glue thereof, attracts mice, roaches and other vermin which eat the glue and also the tape and thereby damage the container, ultimately loosening it and exposing its contents.

It is accordingly a further object of the present invention to eliminate the back tape at the rear end wall of a storage file casing by constructing the rear wall in such a manner that it can be assembled with and attached to the rest of the casing without the aid of any tape; and also to eliminate the longitudinal strip of tape or so dispose it that it is inaccessible to vermin.

It is a further object of the invention to provide an improved reinforced construction for the rear end portion of the casing and particularly of the rear end wall portion of the casing while yet permitting the casing to be collapsed for shipping purposes or for storage prior to use. In the preferred form of the invention, the rear end wall is hinged to one of the other walls of the casing and may in part consist of a section of paper forming a continuation of the wall to which it is pivoted. The pivoted wall may be provided with means, such as metallic channel members, which facilitate interengagement of the end wall with the other walls of the casing. The end wall and at least one of the other walls may be, and preferably are provided with locking devices for holding the walls in assembled condition. The end wall may consist of one or more plies of sheet metal or it may consist, as already indicated, of a ply of paper forming a continuation of one of the side, top or bottom walls of the casing and covered upon one or both sides with sheet metal. The end wall may consist also of a panel of paper having a frame of sheet metal or other reinforcing means. In any event, the construction of the end wall is such, that it possesses adequate strength and rigidity to withstand very large vertical loads and together with the metallic reinforcements is permanently attached to the body of the casing.

It is one of the features of the present invention that although the rear wall assembly presents a rigid structure, it nevertheless does not interfere with the collapsible character of the casing. As already stated, the end wall is attached to one of the other walls of the casing so as to pivot thereon and thereby be capable of being moved into the plane of the collapsed casing. Where the end wall includes a paper panel forming a continuation of one of the other walls of the casing, the line of connection between such panel and wall may form the fulcrum for such wall; where, however, the end wall contains no paper section integral with the rest of the casing suitable means may be provided which enable such wall to be swung into and out of assembled conditon. Thus, the end wall may be provided with a metallic member which is attached to one of the walls of the casing, as by riveting, pinching etc. and the end wall may pivot either about such metallic portion or about the portion of the casing wall adjacent to the line of connection with such metallic member. The end wall is thus permanently attached to the end of the casing, loss of parts, which is frequently the case when reinforcing members are supplied in loose condition to the purchaser, being thereby avoided and assembly or collapsing of the structure thus facilitated. The metallic parts thus remain always attached to the rear portion of the casing, and in spite of the fact that they are relatively rigid, are so located and shaped that, while they still remain attached to the casing the latter can be completely collapsed.

To provide rigidity at the front of the casing we may make use of the metallic angular members disclosed in our prior application Ser. No. 666,895. These angle members are so mounted as to pivot upon one of the walls of the casing and to fit into channel grooves or other recesses provided in reinforcing members attached to one or more of the other walls. In this way a very rigid construction is provided at the four corners of the open end of the casing. Where the angle members are pivoted upon the horizontal

walls of the casing and fit into grooves in reinforcing members upon the vertical walls of the casing for taking up vertical loads, we prefer to make the ends of the top and bottom angle members meet and engage each other in such grooves so that vertical stresses can be transmitted directly from the vertical leg of the upper member or members to the lower member or members. In this way, the angle members not only stiffen the casing at the corners, but assist the vertical reinforcing members in taking up the vertical load. An important feature of our file casing is that although metallic reinforcing members are permanently secured to the front and rear end portions of the casing, the latter can be readily collapsed to the flat condition, thereby greatly reducing the cost of transportation and storage and eliminating the annoyance of attaching separate metal parts to the casing during its erection.

To make the longitudinal tape which connects the free longitudinal edges of the casing to each other, inaccessible to vermin, we may so construct the casing that when it is assembled for use, the two free edges lie in the bottom wall of the casing. The tape thus lies wholly at the bottom of the casing and cannot be reached by mice, roaches, etc. The longitudinal tape may, however, be entirely eliminated by connecting the free longitudinal edges by means of metallic or other connecting ribbon or plate. If desired, the longitudinal edges may be connected at one side by means of the metallic plate and upon the other by the paper or cloth tape.

In a further development of our invention the just-mentioned metallic plate is employed also to form a supporting rail for the drawer member of the file to reduce the friction incident to the movement of the drawer member, the metallic plate serving to space the bottom of the drawer member from the upper face of the bottom wall of the casing. In order to provide a more stable support for the drawer member, we prefer to provide two such rails one upon each side of the longitudinal center of the bottom wall of the casing. In such construction, the free longitudinal edges of the casing are made to meet to one side of the central longitudinal axis, one of the rails serving to connect such free edges while the other rail may serve only the purpose of supporting the drawer member.

The invention will be further described with the aid of the accompanying drawings forming part of this specification and illustrating a preferred embodiment of the invention; in said drawings

Fig. 1 is a top plan view of the casing in partially collapsed condition;

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

Fig. 3 is a perspective view from in front of the assembled casing.

Fig. 4 is a view similar to Fig. 3 but looking from the rear of the casing, and

Figs. 5 and 6 are enlarged sections taken along the lines 5—5 of Fig. 4 and 6—6 of Fig. 3 respectively.

Referring to the drawings, the casing member is composed generally of a top wall 10, bottom wall 11, side walls 12 and 13, and an end wall 14. The walls 10, 11, 12 and 13 are formed of an integral sheet of relatively light, inexpensive fibrous material, such as corrugated paper fiber board, etc., and are provided with scorings 15 along which the walls may be folded and collapsed for shipment, or for storage in the warehouse, as indicated in Figs. 2 and 3. The free longitudinal ends of such integral sheet of material are shown at 16 in Fig. 1 and are secured to each other in the manner described hereinbelow.

The edges of the walls 10, 11, 12 and 13 at the front, open end of the casing are reinforced with metallic facings of the type shown in our above-mentioned co-pending application. Thus the front edges of the walls 10 and 11 may be provided with metallic reinforcing members 17 and 18 which are permanently secured to such walls by means of lugs struck from such members and pinched into the body of such walls, as shown at 19. The members 17 and 18 are provided with enlarged loop portions 17' and 18' within which are disposed the central horizontal portions of two U-shaped locking devices 20 and 21, the vertical leg portions of such devices being adapted to fit into grooves formed within vertical reinforcing members 22 and 23 attached to the side walls 12 and 13 respectively. The metallic members 22 and 23 are permanently and non-removably secured to the casing in a manner similar to the horizontal members 17 and 18. We prefer to make the vertical leg members of the locking devices 20 and 21 engage each other when the casing is in assembled condition as shown at 24 in Fig. 3. In this way vertical stresses are transmitted at least in part by way of such vertical legs to the lower casing of a stack of files. The U-shaped locking devices thus serve not only to reinforce the open end of the casing at the corners thereof, but also to take up part of the vertical loads.

It will be understood that the reinforcing members 17, 18, 22 and 23 are so positioned and dimensioned that although permanently attached, they will not interfere with the collapsing and assembling movements of the walls of the casing. So far as possible it is advisable to have the vertical reinforcing members 22 and 23 fit within overlying and underlying portions of the horizontal members 17 and 18, so that vertical stresses will be transmitted as much as possible directly through the vertical facing members 22 and 23 and not intermediately through the paper corner portions of the casing.

In the embodiment of the invention illustrated on the drawings, the end wall is composed of a panel 14 of sheet metal having four flanges 25, 26, 27 and 28 extending at right angles from the panel and bent back upon themselves outwardly of the panel, as will be clear from Figs. 4 and 5. The upper flange 25 is adapted to fit over the free rear edge of the top wall 10 and is permanently secured thereto by means of lugs or tongues 29 (Fig. 5) struck from the body of the flanges and pressed into the substance of the wall 10. In this way the end wall 14 is pivoted to the top wall 10, the swinging movements of the end wall relatively to the top wall being facilitated by grooving or scoring the top wall 10 as shown at 30 (Fig. 5). It will be understood that the top wall is cut away from the side walls to the groove or scoring 30, i. e. is slitted, to permit the pivotal movements of the end wall, as can be seen just to the left of the flange 25 in Fig. 1.

The flanges 26, 27 and 28 are adapted to fit over and receive the rear marginal portions of the bottom wall 11 and the side walls 12 and 13, the whole thereby producing a dust-proof construction. If desired, the edges of the walls 11, 12 and 13 may be provided with metal facings or linings to facilitate the engagement of the flanges 26, 27

and 28; these facings may be so shaped as to provide a frictional lock between the end wall and the walls 11, 12 and 13, as by making such facing slightly thicker than the width of the space between the two portions of each flange. To insure retention of the end wall in assembled condition, the bottom wall and/or the side walls may be provided with any suitable locking device, such as a metallic tongue 31 which is permanently secured as shown at 32 to such wall and is adapted to pass through an opening 33 in the flange 28, when the latter is moved into its operative, assembled condition, the tongue 31 being then bent over the flange 28 as shown in Fig. 4.

In the collapsed condition of the casing structure described hereinabove, the wall 14 is swung outwardly about the grooved portion 30 of the top wall 10 so as to lie in approximately the plane of such wall, as shown in Figs. 1 and 2, while the angle members 20 and 21 take the positions shown in such figures. It will be seen that although the casing is reinforced at both the front and rear ends thereof to provide a thoroughly rigid structure in use, it can be readily collapsed; while all of the reinforcing parts are permanently fixed to the main body of such casing, thereby avoiding danger of loss of parts and facilitating assembly of the casing.

In order to make the connection between the free longitudinal edges 16 of the casing member invisible from the outside of the casing, and especially to make it inaccessible to mice and other vermin when it is made of material likely to be attacked by vermin, such as glued tape, we construct the casing in such manner that the free ends 16 are located in the bottom wall 11 of the casing. These ends may then be connected by means of tape 34 (Fig. 6) if desired, and there may be used in addition to the tape 34 or in place thereof a strip or plate 35 of sheet metal, from the body of which lugs 36 are struck and forced into the material of the bottom wall, the protruding ends of the lugs being then struck up against the bottom face of the bottom wall, as shown at 37 in Fig. 6.

We have found that the plate 35 can advantageously be employed as a rail for supporting the drawer member which is to fit within the casing. Although one such plate or rail may, if desired, be employed, in which case the free ends 16 are made to meet in the central longitudinal axis of the bottom wall, we prefer to employ two such rails, one upon each side of said axis. In the preferred illustrated embodiment of the invention one of the rails 35 is employed, either together with or without the tape 34, to connect the free longitudinal ends of the casing; and the second rail 38 is similarly attached to the bottom wall 11. The rails 35 and 38 can thus support the drawer member in stable fashion and serve to space the drawer member from the bottom 11 of the casing thereby reducing the friction between the drawer and the casing. It will be understood that the rails 35 and 38 can be given any desired cross-section. In order still further to reduce the friction between the drawer and casing the underside of the drawer may be provided with strips of metal registering with the rails 35 and 38 and adapted to rest thereon. In this way not only is friction between the parts reduced but wear on the drawer end casing is greatly diminished.

It will be understood that while I have shown the reinforcing members 20 and 21 in the form of U-members, these elements may be replaced by four L-shaped members or by a single closed rectangular member which may be pivoted upon the member 17 and fit into grooves in the side members 22 and 23 and also into a groove into the bottom reinforcing member 18, which in such case will be constructed similarly to the reinforcing members 22 and 23.

From the above, it will be seen that we have provided an improved reinforced storage file casing construction which is characterized by great rigidity and strength and is capable of withstanding even more than the usual loads without buckling. The structure is free of loose or detached parts, and as no glued tapes are present or, if present, are not accessible, the casing is completely mice and roach-proof. The casing can be easily manufactured in large quantities and at low cost and combines the strength, rigidity, dustproofness and vermin-proofness of an all-steel filing construction with the lightness and cheapness of a paper board structure.

Considerable variations from the specific details shown herein may be resorted to without departing from the spirit of the invention. As already indicated, the rear end wall may be composed entirely of metal or only partly of metal, but whatever the substance of the central or panel portion of the end wall, I prefer to provide such central portion with a metallic or similarly rigid frame work as represented by the flanges 25 to 28. While these flanges are disconnected from each other in the peripheral direction in the embodiment shown on the drawings (see Fig. 1), they may of course also be continuous, either by suitably connecting the adjacent ends of the flanges when constructed in the manner shown on the drawings, or by making the flange structure separate from the main body of the wall and then attaching it thereto. Thus, the central body portion of the end wall may be composed of paper to whose marginal sections is attached a rigid continuous frame presenting flanges one of which may be permanently connected to one of the walls of the casing and the other three of which may be shaped to interfit or interlock with the ends of the other walls of the casing.

We claim:

1. A collapsible storage file casing adapted to receive a horizontally movable drawer and comprising top, bottom and side walls of flexible fibrous material and a sheet metal end wall having integral reversely bent flanges extending therefrom and adapted to interengage with the rear marginal end portions of the aforesaid walls, one of said flanges being permanently attached to the rear edge portion of one of said walls and said end wall being adapted to pivot on such wall and to be moved pivotally outwardly in preparation for collapse of the casing, said rear edge portion being slitted at its ends to enable said end wall to pivot thereon.

2. A collapsible file casing adapted to receive a horizontally movable drawer and comprising top, bottom and side walls; and an end wall permanently attached directly to the rear edge portion of one of the aforementioned walls for pivotal movement thereon, said rear edge portion being slitted at its ends to enable the end wall to pivot thereon, means for connecting the end wall to the rear edge portion of still another wall in the assembled condition of the casing, said end wall including a vertically extending reinforcing element forming a permanent part of such wall and acting to take up vertical compressive stresses in the operative condition of the casing, said reinforcing element being movable with the

end wall as a unit to collapsed or erected condition and being of channel shape to receive the rear edge portion of the associated side walls in the erected condition of the casing.

3. A collapsible file casing adapted to receive a horizontally movable drawer and comprising top, bottom and side walls of paper material; a unitary end wall permanently connected directly to the rear edge portion of one of the top, bottom and side walls, the sides of the latter wall being slitted to enable the end wall to be moved outwardly of the casing, said end wall including permanently attached vertically extending metallic portions adapted to take up compressive loads on the casing, and means for securing the end wall to still another wall in the erected conditions of the casing.

SOL SCHEINMAN.
JACOB MANDEL.