May 2, 1933. H. M. WARREN 1,907,022

CONTAINER

Filed June 22, 1931 2 Sheets-Sheet 1

Fig. 1.

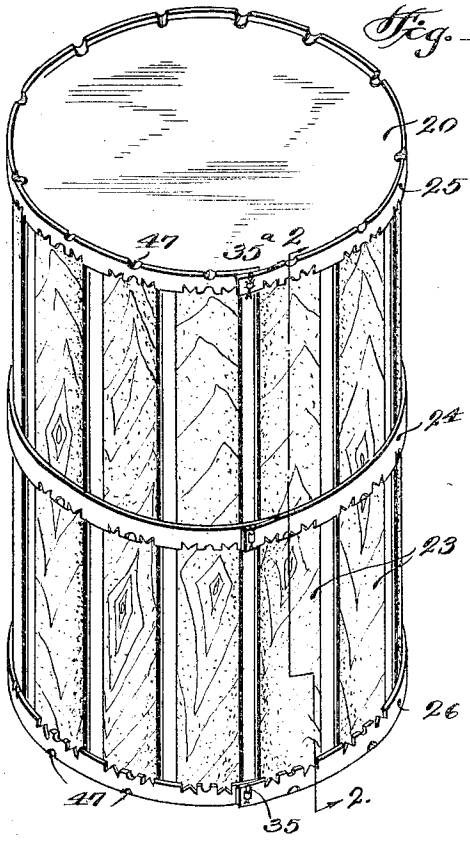


Fig. 2.

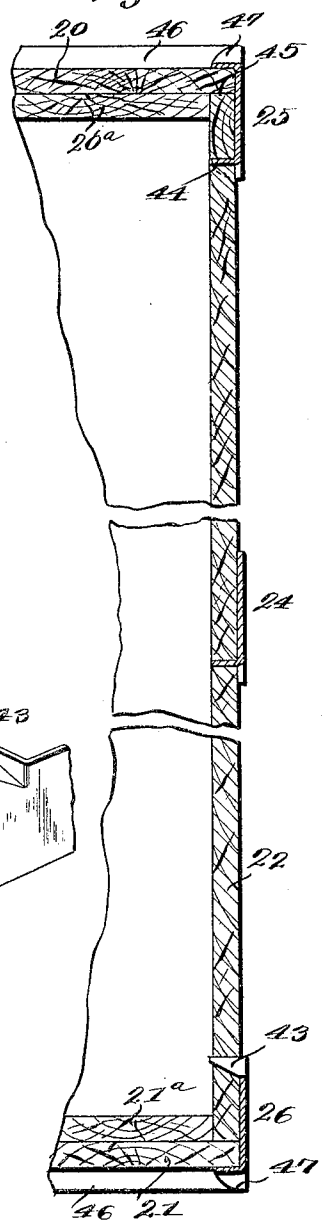
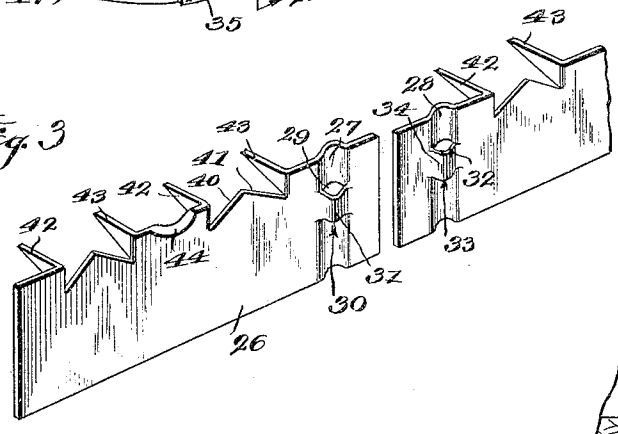


Fig. 3



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Fig. 4.

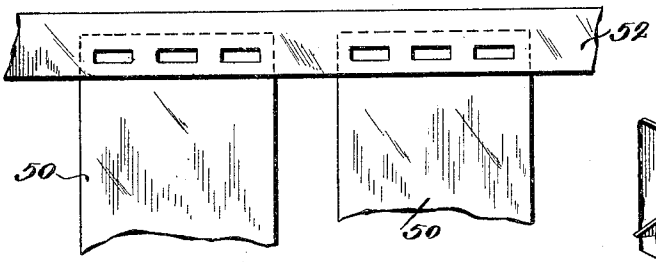


Fig. 5.

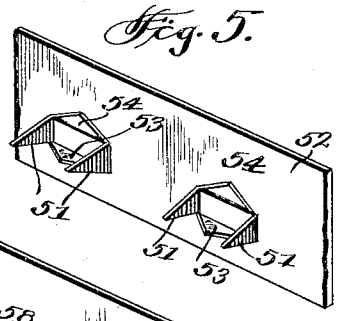


Fig 6.

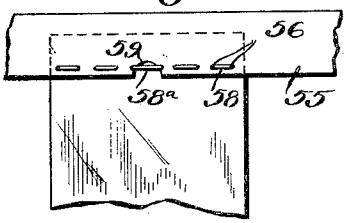


Fig. 7.

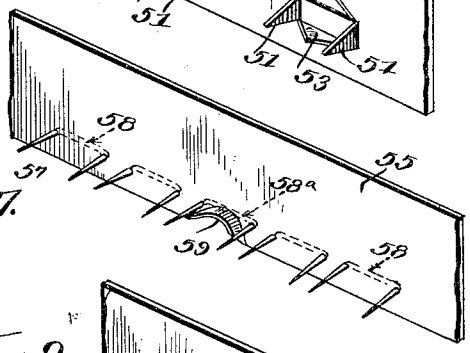
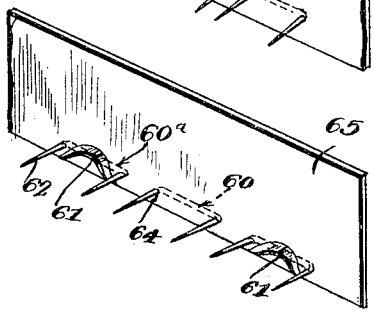


Fig. 9.



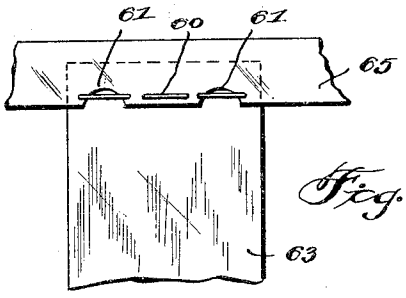
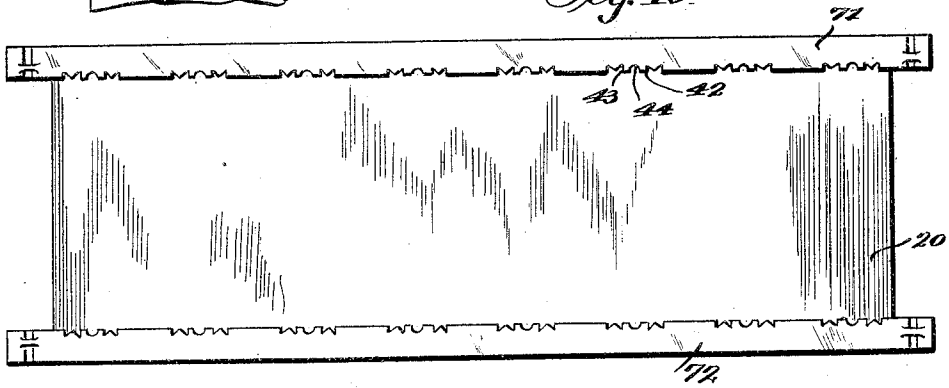


Fig. 8

Fig. 10



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Patented May 2, 1933 1,907,022

UNITED STATES PATENT OFFICE

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CONTAINER

Application filed June 22, 1931. Serial No. 546,085.

This invention relates to containers of knockdown construction.

An object of the invention is the provision of a container which is formed of flats, a top and a bottom which may be readily assembled or disassembled without the use of nails.

Another object of the invention is the provision of a container in which the side walls are formed of fibrous materials to which are connected flat metal straps or strips having penetrating prongs projecting from the metal strips for securing said strips to the walls, the end strips on the container providing means for removably securing the heads of the bottom and top of the container in position, the free ends of the straps being removably secured together.

A further object of the invention is the provision of a container having side walls, a top and bottom secured together by metal straps having means projecting therefrom for attaching the straps to the side walls with anchoring means for the straps and projecting from said straps in close association with the attaching means, said anchoring means consisting of relatively broad curved members which are adapted to be impressed into the side walls.

A still further object of the invention is the provision of a flat which is formed as a unit in any approved manner and includes a plurality of spaced strips of fibrous material or a flat sheet of fibrous material to which are connected thin flat metal strips by means of penetrating prongs having their free ends clinched over upon one face of the material in close association with anchoring means formed by swaging or cutting the metal bands to provide a relatively broad resistance surface.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawings forming a part of the specification; nevertheless it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a view in perspective of a container constructed in accordance with the principals of my invention,

Figure 2 is a vertical section taken along the line 2—2 of Figure 1,

Figure 3 is a view in perspective of the disassembled ends of a pair of flat metal strips constructed in accordance with the principles of my invention,

Figure 4 is a fragmentary plan view of a modified form of a flat which forms the side wall of the container,

Figure 5 is a fragmentary view in perspective of the metal strip employed in Figure 4,

Figure 6 is a plan fragmentary view of a flat showing a modified form,

Figure 7 is a fragmentary view in perspective of the metal strip employed in Figure 6,

Figure 8 is a fragmentary plan view of a further modified form of flat,

Figure 9 is a fragmentary view in perspective of the metal strip employed in Figure 8, and

Figure 10 is a plan view of a flat showing the metal strips disclosed in Figs. 1 to 3, inclusive, applied to a sheet of veneer.

Referring more particularly to Figs. 1 to 3, inclusive, it will be seen that the container comprises a top 20, a bottom 21 and a side wall 22.

The side wall in this instance consists of a plurality of strips of fibrous material such as wood, heavy cardboard, either plain or corrugated, or some form of composition material suitable for the purpose. These strips of material are secured together by means of flat metal strips 24, 25 and 26. It will be noted that the metal strips 25 and 26 are substantially identical while the metal strip 24 is varied somewhat in configuration due to the fact that it is located intermediate the ends of the strips of material 23 and must be anchored along its opposite edges for retaining the metal strip in position.

The metal strip 25 or 26, as shown more particularly in Figure 3, has its opposite ends grooved transversely, as shown at 27 and 28

so that when the ends are fitted together the groove 27 will be received within the groove 28. The metal strip is cut, as shown at 29 and 30, and then punched in the opposite direction to the curvature of the groove 27 to provide a catch 31. The opposite ends of the strip as shown at 32 and 33 are cut and punched outwardly in a direction which is opposite to the curvature or groove 28 to provide a second catch 34 which is adapted to be received within the catch 31 and a cotter pin 35 is inserted within the co-operating members 31 and 34 for securing the ends of the metal strip 26 or 25 together.

The ends of the metal strips 24 are constructed in a manner which is identical with the ends of the strips 25 and 26 and are also secured together by means of a cotter pin.

One edge of either the metal strips 25 or 26 is cut as shown at 40 and 41 and the material of the metal strips is bent outwardly at right angles to the plane of the strips to provide penetrating prongs 42 and 43. These prongs are forced through the strips of fibrous material 23 or through the veneer and the projecting ends of the prongs are clinched over upon the opposite face of the side wall for securing the metal strips to said side walls or to the strips of fibrous material 23.

The material of the strips 25 and 26 between a pair of the prongs 42 and 43 is swaged inwardly to provide a curved anchoring member 44 and such anchoring member when the prongs 42 and 43 are forced through the side wall is impressed into the side wall but does not penetrate the same. The anchoring member 44 presents a relatively broad resistance surface and co-operates with the prongs 42 and 43 for securely anchoring the metal strips 25 and 26 and likewise the strip 24 to the side walls. The member 44, however, performs an additional function which will be presently described.

After the top and bottom have been placed in position and are resting upon the upper or lower ends 45 of the side wall 22, as shown in Figure 2, portions of the edge 46 of the metal strips which project beyond the opposite edges of the side wall are swaged over as shown at 47 to provide means for securing the tops and bottoms in position. It will be also noted that the top and bottom securing means 47 are directly opposite the curved anchoring members 44 and the anchoring members 44 co-operate with the swaged over portions 47 for aiding in retaining the straps 25 and 26 in position and for rigidly securing the tops and bottom in position since the curved members 44 and the swaged over portions 47 are bent towards each other. These members will act as a substantial clamping means.

The flats which comprise the side walls are formed in a machine and the metal strips 24, 25 and 26 are secured directly to the side wall by forcing the prongs 42 and 43 through the side walls, clinching them over while at the same time impressing the curved anchoring members 44 into the material of the side wall.

These flats may be formed into any shape desired to provide a container and the free ends of the straps are secured together by placing the catch member 31 over the catch member 34 and then inserting the cotter pins. The bottom 21 is then placed in position with the peripheral portion of the bottom resting upon the lower edges of the side wall 22 and the outer projecting edges of the strap 26 are then swaged over the bottom so that the bottom is rigidly clamped in position.

The containers may then be filled with a comestible after which the top 21 is placed in position and the projecting edges 46 of the metal strips 25 are then swaged over as shown at 47 for securely clamping the top in position.

The tops 20 may be removed when it is desired to discharge the container of the comestibles by removing the cotter pin 35a, thus releasing the upper edge of a side wall so that the top 20 may be forced from its position. If it be desired to return the shipping case or container to its initial point of shippage, all of the cotter pins may be removed and the side walls are then flattened out and packed together with their respective tops and bottoms. It will thus be seen that the re-shipping of the container may be done at little expense due to the fact that the containers may be formed in neat compact units which will take up very little space.

In the modified form shown in Figs. 4 and 5, the strips of fibrous material 50 are connected together by means of penetrating prongs 51 punched from a flat metal strip 52 after said prongs have been forced through the strips or slats 50 and after the ends of the prongs have been clinched over the opposite face of the fibrous strips. In the form shown in Figure 5 the punching out of the prongs 51 also provides an anchoring member 53 which has a relatively broad resistance surface and a triangularly-shaped piece of metal 54 which is forced flat against the inner face of the metal strip 52. If desired, the member 54 may be cut off instead of forcing the same in flat contact with the metal strip 52. It will be noted that the anchoring member 53 is of less length than the prongs 51 so that the anchoring member may be impressed into the side wall without penetrating the same.

In the modified forms shown in Figs. 6 and 7 the flat metal strip 55 is perforated at 56 so that the prongs 57 of staples 58 may be inserted through the metal strips 55. The prongs 57 of the staples it will be appre-

ciated perform the same function as the prongs 51 of the construction shown in Figs. 1 and 5 and the prongs 42 and 43 of the construction illustrated in Fig. 3.

At spaced points along the inner edge of the metal strips 55 are provided anchoring members 59 which are formed by swaging the metal of the strips inwardly and the staple, as shown at 58*a*, embraces the anchoring member 59. It will also be noted that a pair of staples are located upon opposite sides of the anchoring member 59 in addition to the staples 58*a*.

Referring more particularly to the further modifications shown in Figs. 8 and 9 it will be seen that the elements employed in Figs. 6 and 7 are substantially the same except that the arrangement has been varied. In this form the staple 60 is employed intermediate a pair of anchoring members 61 while a staple 60*a* straddles the anchoring members. The prongs 62 of the staples are adapted to be forced through the side wall member 63 after they have entered perforations 64 in the metal straps 65. The anchoring members 61, however, are adapted to be impressed into the material but do not cut entirely through the same. The free ends of the prongs 62 are clamped over the inner face of the side wall member 63.

Figure 10 discloses a flat which is formed of a sheet of veneer 70 and a pair of metal straps 71 and 72. The straps 71 and 72 are similar in all respects to the straps 25 and 26 shown in Figures 1 to 3, inclusive. The sections of veneer 70 are cut into the proper lengths and run through a machine in cooperation with the straps 71 and 72 so that not only the prongs and anchoring members are formed upon the straps but the metal strips are secured to the sheet of veneer 70 by clinching over the free ends of the penetrating prongs which project laterally from the strips. In this case the anchoring members 44 are impressed into the material of the veneer 70.

It will be noted that I have shown one intermediate metal strip 24 in Figure 1, but it will be appreciated that any number of metal strips may be employed for the purpose, depending upon the length or the height of the container. Where the height of the container is such that the same wil have sufficient strength without any intermediate metal strips, the said strips may be dispensed with.

It will be noted from Figure 2 that an inner disk 20ª is applied to the under face of the top 20 and the periphery of this inner disk abuts the side wall of the container.

An inner disk 21ª is secured to the inner face of the bottom 21 and has its periphery in abutting relation with the inner face of the side wall.

I claim:

1. A container comprising a wall member, a flat metal binding strip along an end edge of the wall member, securing means projecting from said strip and penetrating the wall member for fastening the strip thereto, and non-continuous anchoring means adjacent the securing means biting into the wall member and presenting a relatively broad resistance surface directed transversely of the wall member and longitudinally of the strip, said anchoring means comprising a swaged in, unbroken edge portion of the strip, disposed in a plane substantially perpendicular to the plane of the strip and biting into the wall member.

2. A container of the wrap-around type comprising a wall member, a flat metal binding strip along an end edge of the wall member, and having an edge projecting beyond the end edge of the wall, means projecting from the strip for securing it to the wall, a closure for the open end of the container, said projecting edge of the strip being swaged over the closure, and anchoring means projecting from the band and biting into the wall to aid in conjunction with the swaged over closure holding edge of the strip in holding the strip, wall member and closure together, said anchoring means comprising a swaged in edge and unbroken portion of the band biting into the wall member in a plane generally directed longitudinally of the latter.

3. A container of the wrap-around type comprising a wall member, a flat metal binding strip along an end edge of the wall member, and having an edge projecting beyond the end edge of the wall, means projecting from the strip for securing it to the wall, a closure for the open end of the container, said projecting edge of the strip being swaged over the closure, and anchoring means projecting from the band and biting into the wall to aid in conjunction with the swaged over closure holding edge of the strip, in holding the strip, wall member and closure together, said anchoring means comprising a swaged in edge and unbroken portion of the band biting into the wall member in a plane generally directed longitudinally of the later, said swaged in anchoring means defining an arcuate plane substantially perpendicular to the plane of the strip.

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