May 5, 1936. J. R. WATKINS 2,039,859

CONTAINER

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Fig. 1.

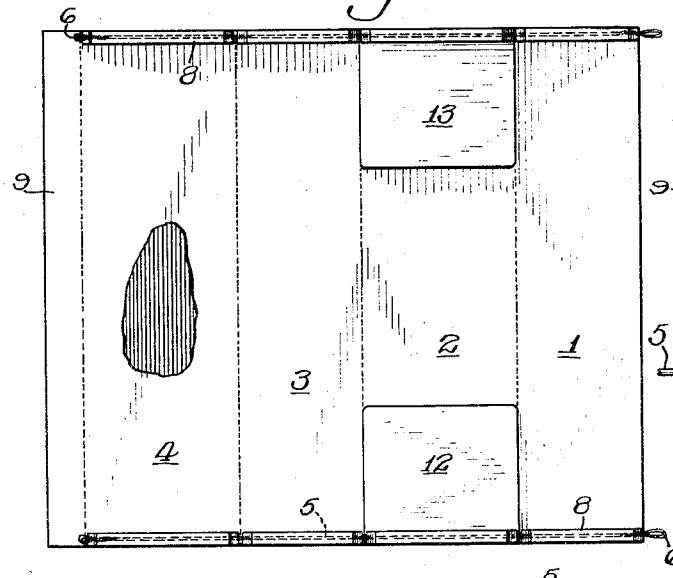


Fig. 2.

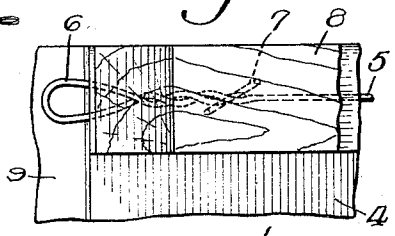


Fig. 3.

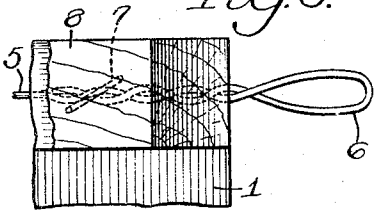


Fig. 4.

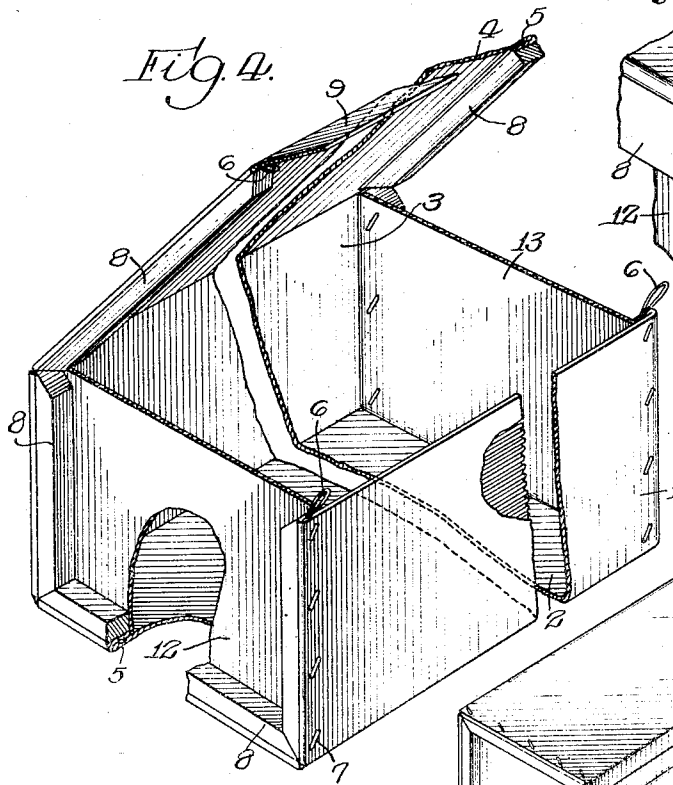


Fig. 5.

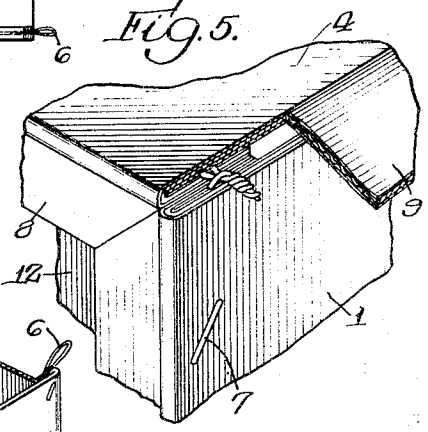
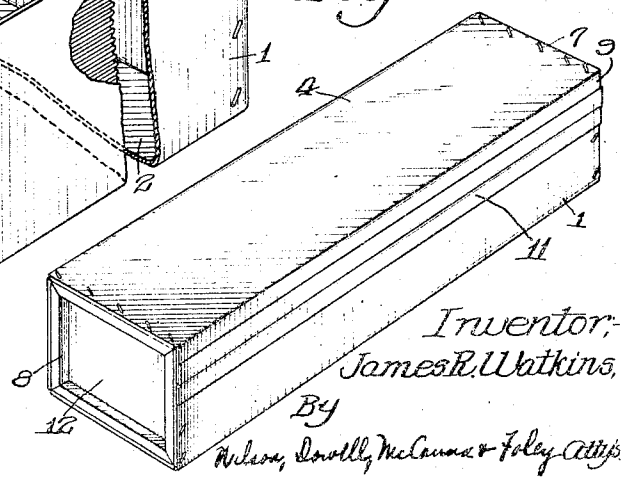


Fig. 6.



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Fig. 7.

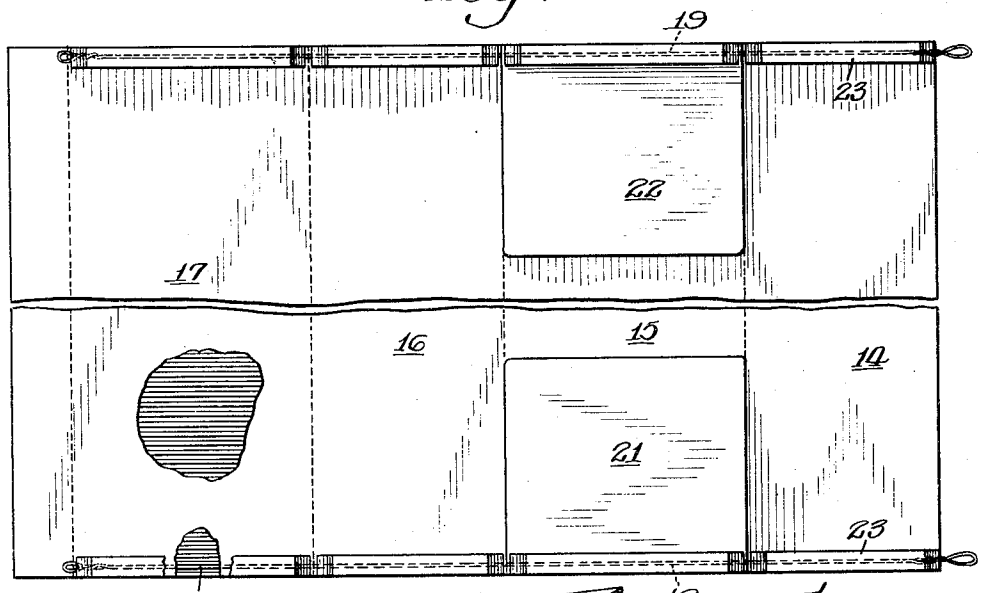


Fig. 8.

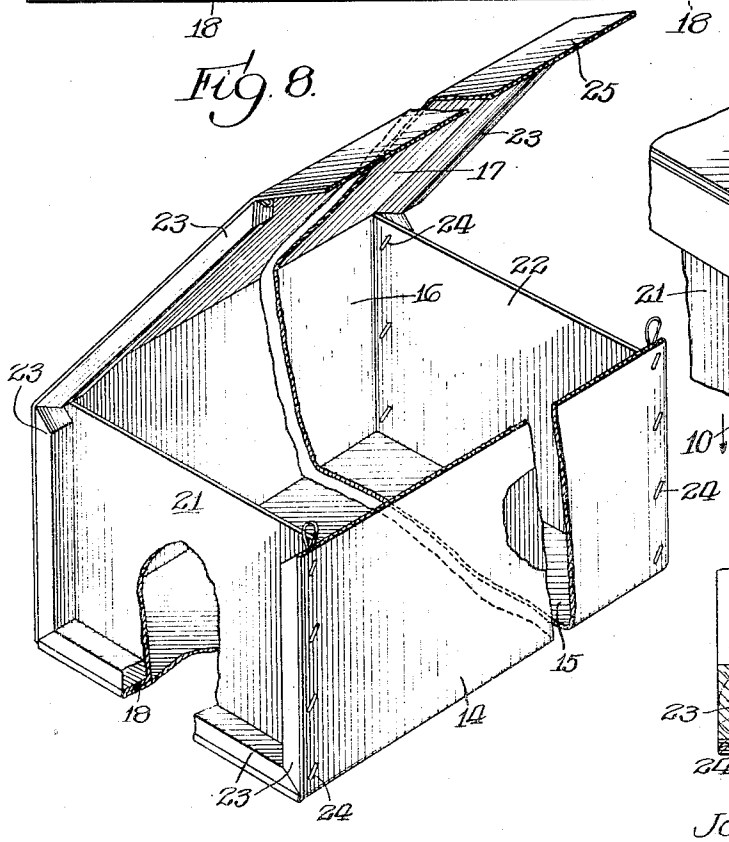


Fig. 9.

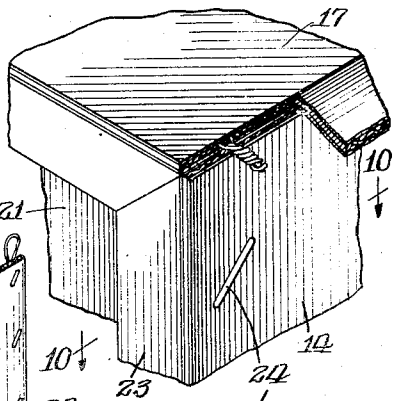
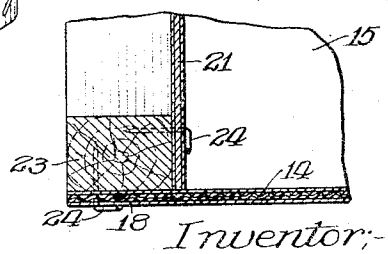


Fig. 10.



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Fig. 11.

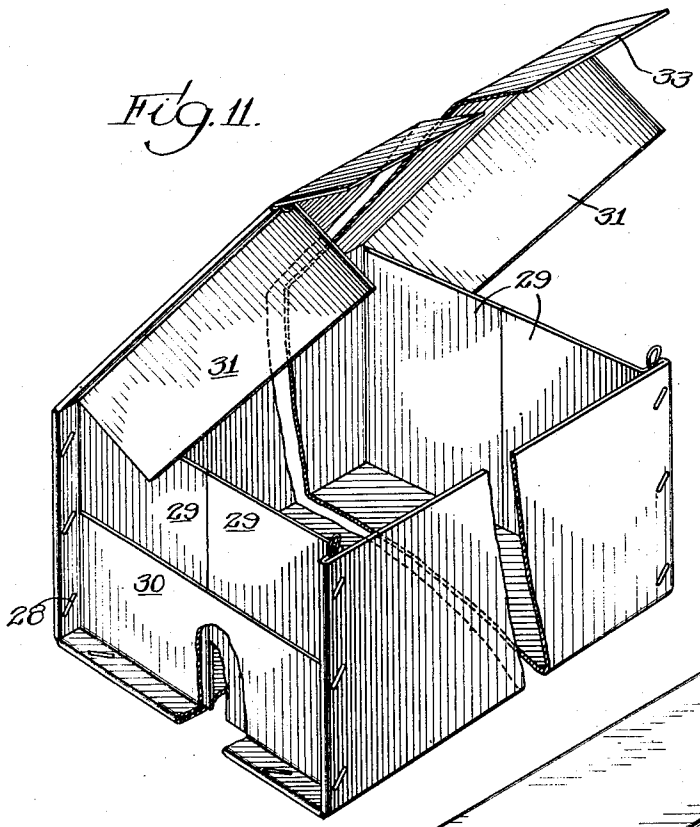


Fig. 12.

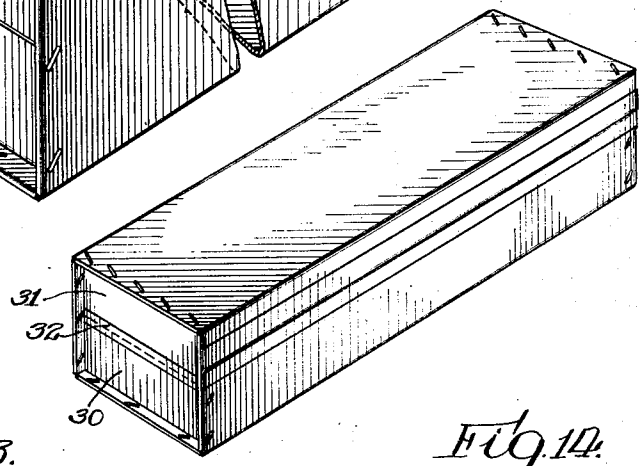


Fig. 13.

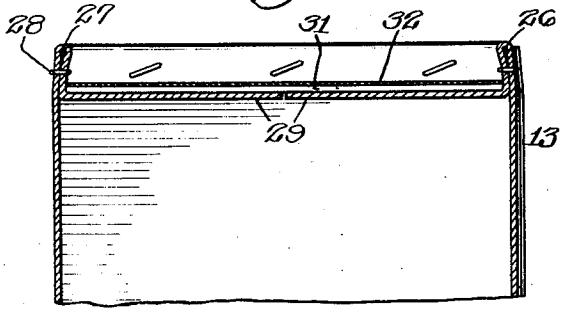
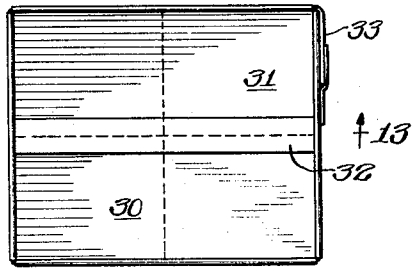


Fig. 14.



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Patented May 5, 1936 2,039,859

UNITED STATES PATENT OFFICE

2,039,859

CONTAINER

James R. Watkins, Niles Center, Ill., assignor to Brunt & Company, Chicago, Ill., a corporation of Delaware

Application February 2, 1935, Serial No. 4,610

6 Claims. (Cl. 229—6)

This invention pertains to containers provided with concealed reinforcing means in the nature of wires or the like, wherein all the advantages of wire reinforcement are retained without including the unsightly appearance of such wires and other objectionable features attendant upon exposure of such wires.

As may be determined from the disclosure, there are various ways in which these reinforcing wires may be concealed, each manner having special advantages. For example, when used with corrugated fiber board the reinforcing wires may be threaded through corrugations which run parallel to the plane of the ends of the container which are desired to be thus reinforced. Or one may fold back upon itself the end portions of the side walls which adjoin the end of a container and conceal the reinforcing wire within such folds. This may be done whether the fiber board be corrugated or plain and regardless of the direction in which the corrugations run. Various other suitable fibrous sheet materials may be used having grooves, corrugations or the like, or lacking such corrugations or grooves. The scope of the invention is not limited to any particular class of materials although certain materials which are advantageously employed in the invention are herein specified and shown, namely, plain fiber board and corrugated fiber board.

The principal and general object of the invention is to provide a construction for containers in which reinforcing wires or the like may function but will be concealed.

Another object of the invention is to facilitate not only the concealment of the main portion of these reinforcing wires, but also provide for the concealment of the ends which are tied together.

Another object of the invention is to provide the concealed reinforcing wires, if desired, in knock-down containers which may be shipped as mats and assembled by the user with reinforcing wires already in place and requiring only tying by the party who assembles each container.

Various other objects and advantages of the invention will be set forth more fully and in detail hereinafter.

In the drawings:

Fig. 1 is a plan view of an extended mat prepared for the making of one form of the container;

Fig. 2 is an enlarged detail view of the upper left-hand corner of said mat;

Fig. 3 is a detail view of the upper right-hand corner of said mat;

Fig. 4 is a perspective view showing the mat of Fig. 1 assembled and ready for the closing of the container;

Fig. 5 is an enlarged detail view of a corner of the container after being closed showing the wire loop tied before sealing down of the sealing flap;

Fig. 6 is a perspective of the completely assembled container illustrated in the foregoing five figures;

Fig. 7 is a plan view of a mat similar to the mat of Fig. 1 except that the wires are threaded through corrugations which run parallel to the length of the mat;

Fig. 8 is a perspective view showing the same mat assembled prior to closing down of the cover;

Fig. 9 is an enlarged detail view of one corner of the container of Fig. 8 showing the wires tied;

Fig. 10 is an enlarged view in cross-section of an edge portion of the container on line 10—10, Fig. 9, illustrating the position of the reinforcing wire in the corrugations;

Fig. 11 is a perspective view of a container quite similar to that of Fig. 4 excepting that the reinforcing cleats are omitted;

Fig. 12 is a perspective view of a container made in accordance with Fig. 11 completely assembled, closed and sealed;

Fig. 13 is a partial sectional view on the line 13—13 of Fig. 12, showing in greater detail the construction of the end portions of the container walls; and

Fig. 14 is an end view of the container shown in Figs. 11 and 12.

Referring now to Figs. 1 to 6, inclusive, the side wall 1, the bottom wall 2, the second side wall 3 and the cover 4, all have their end portions folded back upon themselves as is best shown in Figs. 4 and 5. This is easily done when the material is plain fiber board or corrugated board. Between the folded-back portion and the main part of each wall, that is, within the fold, is laid a tying wire at each end of the container. Such a wire 5 is shown in Figs. 2 and 3. This wire is flexible enough so that the flat mat may be folded readily to form the container without interference from the wire. The extremities of each wire are fastened into loops, such as the loops 6, to facilitate one loop being drawn through the other and the two ends of each wire then pulled tightly together.

Staples, such as the staple 7, are driven into wooden cleats 8 and will preferably straddle the wires at frequent intervals to hold them in place. If desired the wire may merely be confined between the fold and one leg of each staple, without having the staples straddling the wire.

The ends of the cleats 8 are beveled, as illustrated, so that in the completely assembled container they will abut each other and when the tying wires are drawn together tightly the cleats will resist excessive compression and will cooperate to produce rigid, snugly bound ends for the container. If desired, the cleats may be tongued and grooved or beveled or should be lapped or any other suitable means may be employed for providing a tight joint between the cleat ends.

After the container cover has been closed down, these wires are drawn together as explained above and a sealing flap 9 is folded down over the tied and twisted ends of the wires and may then be securely fastened to the side of the container by a strip 11 of any suitable material carrying adhesive. Thus a paper or cloth strip may be employed. When the container is completely closed and sealed, no part of the reinforcing wires will be exposed.

For closing the ends of the container I prefer to provide the flaps 12 and 13 which, it will be observed, are merely continuations of the bottom wall of the container. When these flaps are folded up into position, they may readily be stapled or otherwise secured against the vertical wooden cleats, in the manner shown.

Figs. 7 to 10, inclusive, show a slightly different modification of the invention. This form of the invention differs from that shown in Figs. 1 to 6 only in that the corrugated board is arranged so that its corrugations on the side wall 14, the bottom wall 15, the side wall 16 and the cover 17 run parallel to the ends of the container, making it possible to insert the tying wires 18 and 19 through the corrugations themselves rather than between folds made in the fiber board. The manner of inserting this wire is shown in the cross-sectional view of Fig. 10. None of the side, bottom walls or cover end portions needs to be folded for the purpose of retaining the tying wire but the bottom wall is nevertheless folded back upon itself to provide the flaps 21 and 22 which form the end walls of the container. If desired the end flaps 21 and 22 may be separate from the bottom wall 15. In this modification also cleats 23 will be employed on all four sides of the ends of the container and the tying wires will be secured by straddling the wires with staples 24 which are driven into the wooden cleats. Additional staples 24 may be used for securing the end flaps 21 and 22 to the same cleats. This container is closed tight and sealed just as is the container shown in Fig. 4, a sealing flap 25 being provided.

A third modification of the invention is shown in Figs. 11 to 14, inclusive. The outstanding difference between this form of the invention and the others in the absence of wooden cleats. Any suitable fibrous sheet material may be employed, whether solid or of corrugated nature, but in this instance the bottom, side walls and cover will have their end marginal portions folded back upon themselves as best demonstrated in Fig. 13, similarly to the manner of folding back the corresponding walls of the container shown in Fig. 4. However, the cover, the bottom wall and the two side walls will each be provided with flaps at each end of the container, each flap being a continuation of the folded-back portion. Tying wires 26 and 27 will be laid within the folded end portions of the walls of the container, and stitching, stapling or some other suitable form of securing means will be employed as shown at 28 to make certain that the tying wires do not slip out of the folds.

As shown in Fig. 11, the flaps 29 provided on the two side walls and the flaps such as 30 on the bottom wall will be secured together in any suitable manner by stitching, gluing, or the like, before the cover is closed down. This will provide a rigid container which may readily be filled with merchandise while the cover is open. Flaps 31 will depend from the cover and when the cover is closed down these flaps will be brought down on the outside surfaces of the container ends to abut the bottom flaps 30. The cover flaps may be stitched, glued or otherwise secured to the side wall flaps or may simply be held in place by sealing strips such as 32 at the container end. Before the sealing flap 33 of the cover is sealed the looped ends of the tying wires, of course, will be drawn tightly together and locked as by twisting, or the ends may be secured together firmly in any suitable manner to maintain the tension on the tying wires. This may ordinarily cause a slight bowing-in of the folded ends of the container walls, which will serve to improve the reinforcement of the container ends. The compression exerted by the tightening of the wires will be resisted sufficiently by the flaps which form the container ends. Hence there will not result any crushing of the container ends.

As in the other modifications, eventually the sealing flap 33 of the cover will be folded downwardly and sealed by adhesive or by sealing strips to the outside wall of the container providing a closed and wholly sealed container having reinforcing wires entirely concealed therein.

It should be understood that the advantages of this invention may be gained in various embodiments, including the structures herein shown and others which may be devised, and that the scope of the invention is not limited by the drawings but is to be determined rather by the claims appended hereto.

Having shown and described my invention, I claim:

1. A container having fiber board walls and including a hinged cover member, the walls forming said cover, the sides and bottom of the container having their ends folded back upon themselves a short distance, a flexible tying element lying within said folds at each end of the container, each constructed and arranged to be drawn into a tightened loop upon closing of the cover for securing the same and reinforcing the container, and rigid reinforcing means encircled by each element for resisting compression by said element.

2. A container having fiber board walls and including a hinged cover member, the end portions of said cover, the side walls and the bottom wall each being folded back upon itself a short distance and firmly secured, a flexible tying element at each end of the container lying within the associated folded portions and having protruding ends constructed and arranged for drawing each element into a tightened closed loop upon closure of the cover for securing the same and reinforcing the container, and rigid reinforcing means encircled by each element for resisting compression by said element.

3. A container having fiber board walls and including a hinged cover member, the end portions of the cover, the side walls and the bottom wall each being folded back upon itself a short distance, rigid reinforcing members secured to each

of said folded wall portions, and a flexible tying element lying within each fold at each end of the container constructed and arranged for being drawn into a tightened closed loop upon closure of the cover.

4. A container having fiber board walls and including a hinged cover member, the end portions of the cover, the side walls and the bottom wall each being folded back upon itself a short distance, rigid reinforcing members secured to each of said folded wall portions, and a flexible tying element lying within each fold at each end of the container constructed and arranged for being drawn into a tightened closed loop upon closure of the cover, the tightening of each loop bringing the ends of said reinforcing members into close abutting relationship for aiding the reinforcement of the container ends.

5. A container having all of its walls parallel to the end-to-end axis of the container constructed of fibrous sheet material, a flexible tying element concealed in each end portion of each of said walls adjoining the container ends, each element being constructed and arranged to be drawn tightly into a closed loop for reinforcing the container, and rigid reinforcing members at the container ends encircled by said elements for resisting said compression.

6. A container having fiber board walls and including a hinged cover member, the end portions of said cover, the side walls and the bottom wall each being folded back upon itself a short distance, a flexible tying element at each end of the container lying within the associated folded portions and having protruding ends constructed and arranged to be united for drawing each element into a tightened closed loop upon closure of the cover for securing the same and reinforcing the container, and a hinged flap for covering said united ends.

JAMES R. WATKINS.