United States Patent [19]

Fox

[11] **3,927,764**

[45] **Dec. 23, 1975**

[54] **STACKING COLLAR FOR WAREHOUSING AND TRANSPORTING SHEET MATERIAL**

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[22] Filed: **July 30, 1974**

[21] Appl. No.: **493,175**

[52] **U.S. Cl.** ..... **206/451;** 206/386; 206/454; 206/511; 214/10.5 R

[51] **Int. Cl.**[2] **B65D 19/26;** B65D 21/02; B65D 85/48

[58] **Field of Search** ..... 105/466, 469, 471–472; 206/448–452, 454, 386; 211/41, 49 R; 214/10.5 R; 248/119 R

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Attorney, Agent, or Firm—Charles R. Fay

[57] **ABSTRACT**

A stacking collar for receiving, holding, and transporting sheet material such as e.g., glass. In addition to being stackable the collars are collapsed or taken apart forming flat arrangements for stacking one on top of another with the parts locked in place for shipping back to the supplier, using a minimum amount of space. In one form of the invention the stacking collars are adjustable for different sizes of sheets.

2 Claims, 7 Drawing Figures

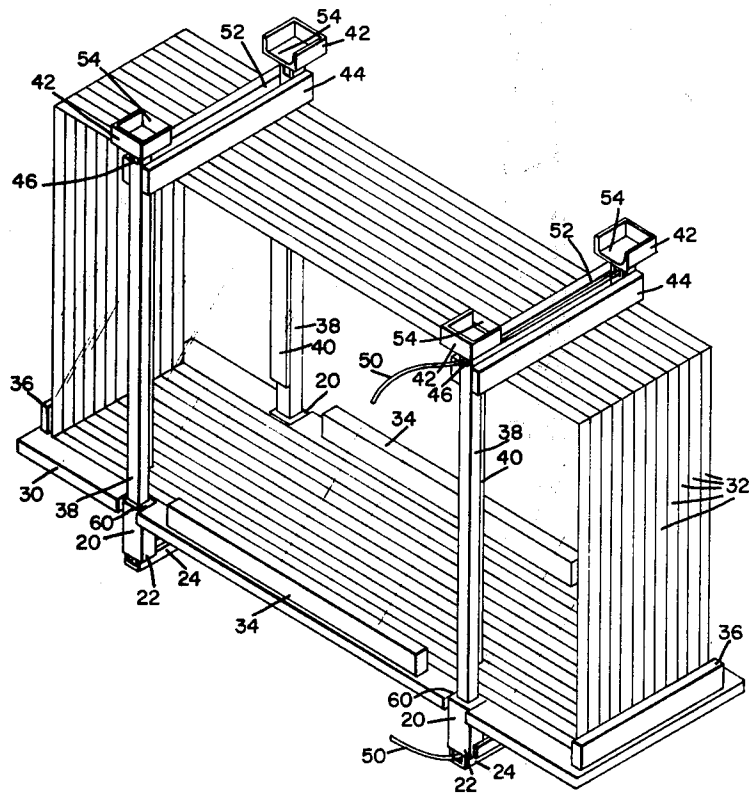


FIG. 1

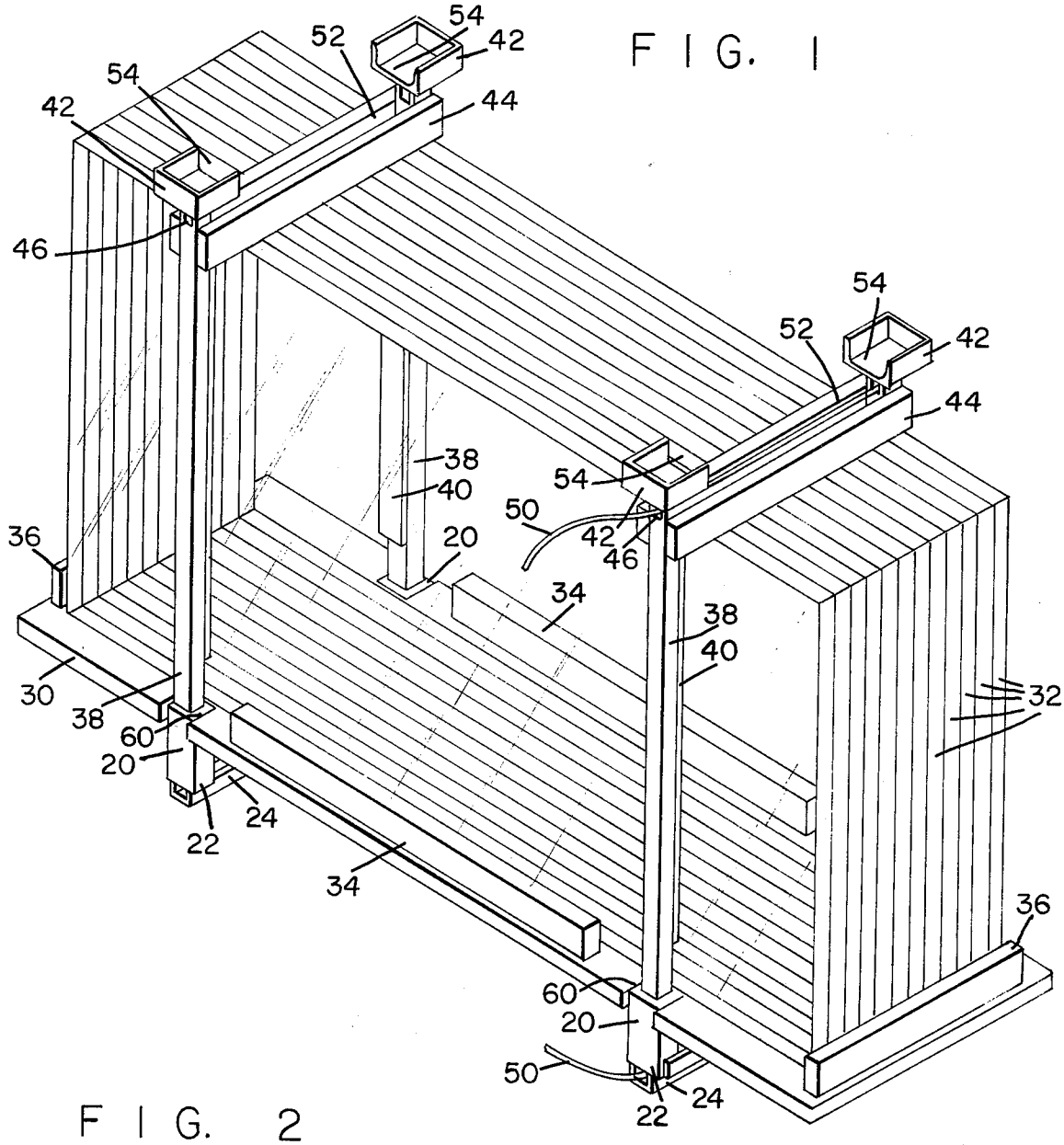

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FIG. 2

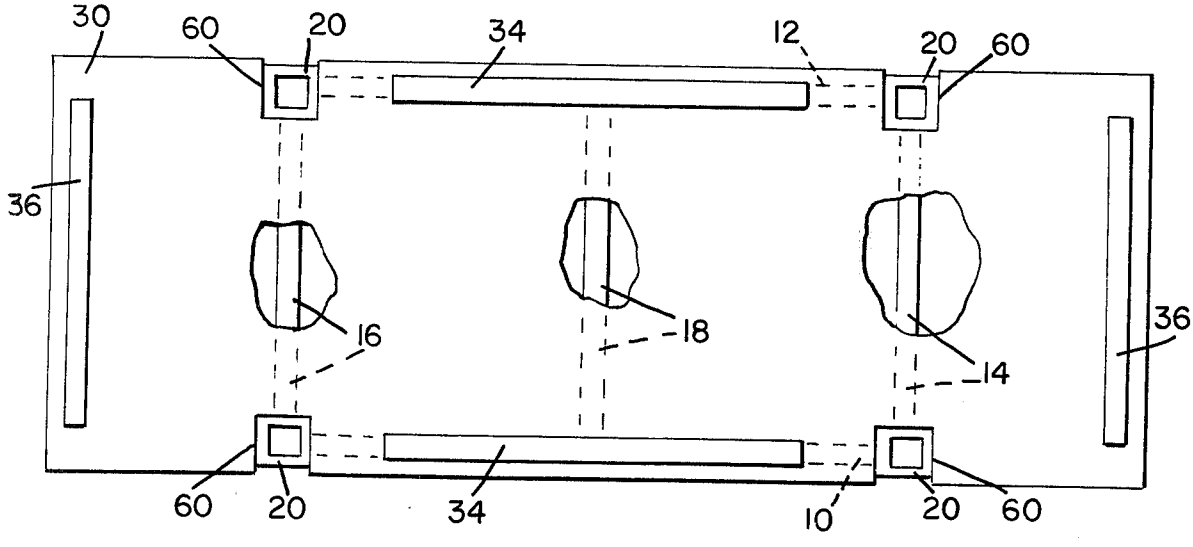

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FIG. 3

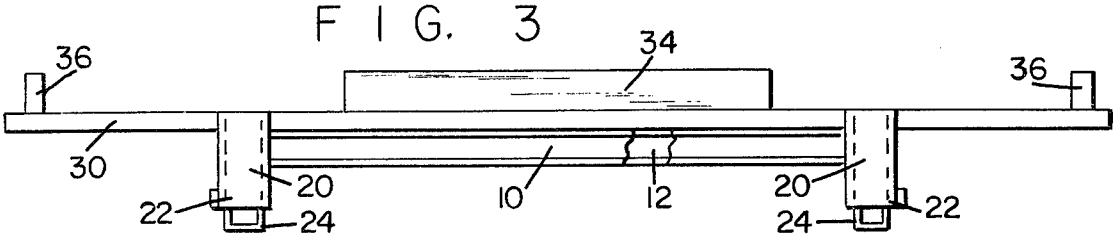

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FIG. 4

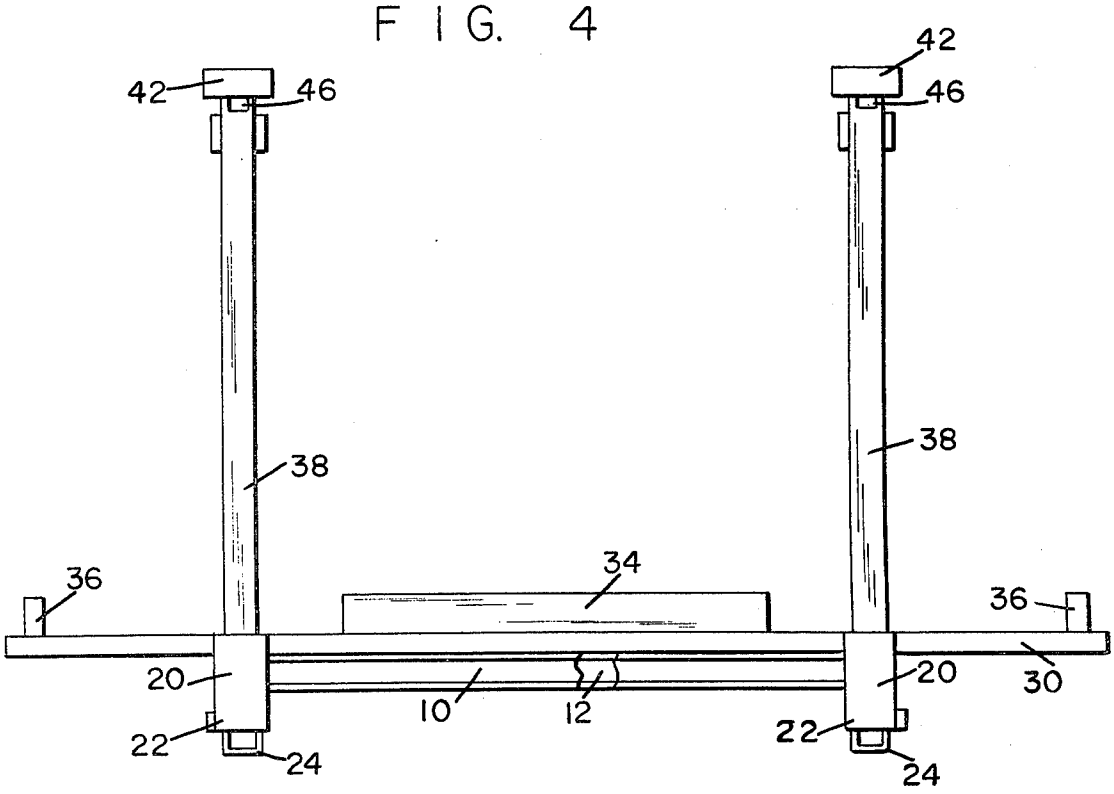

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FIG. 5

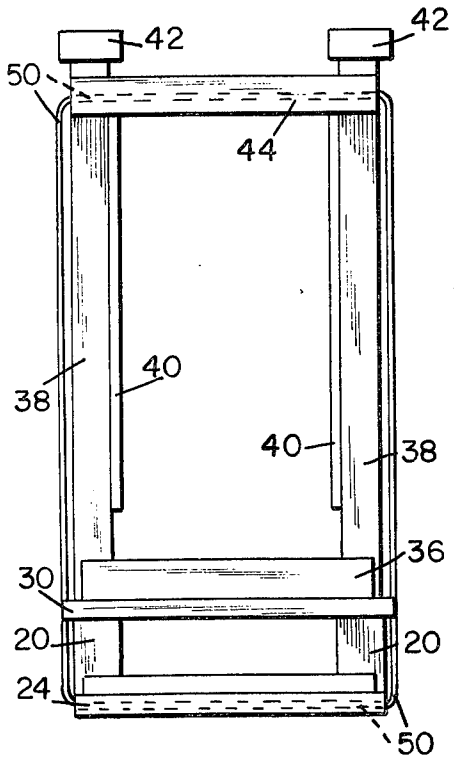


FIG. 7

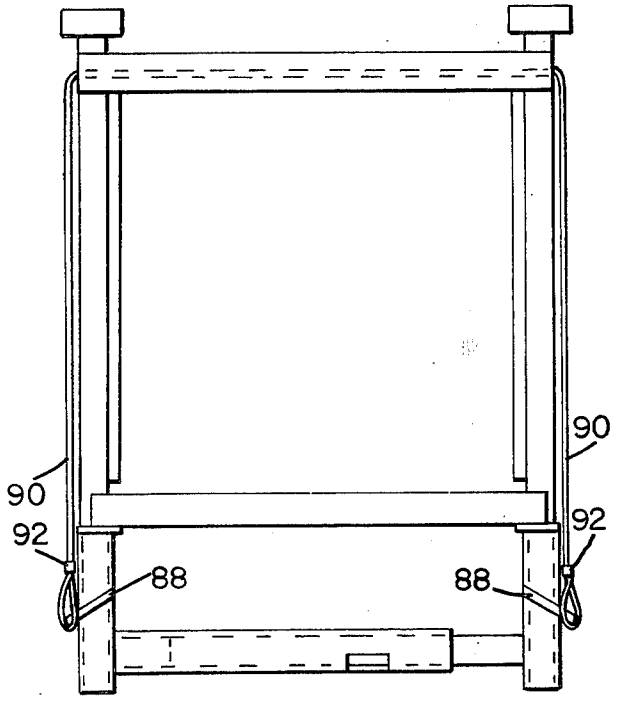
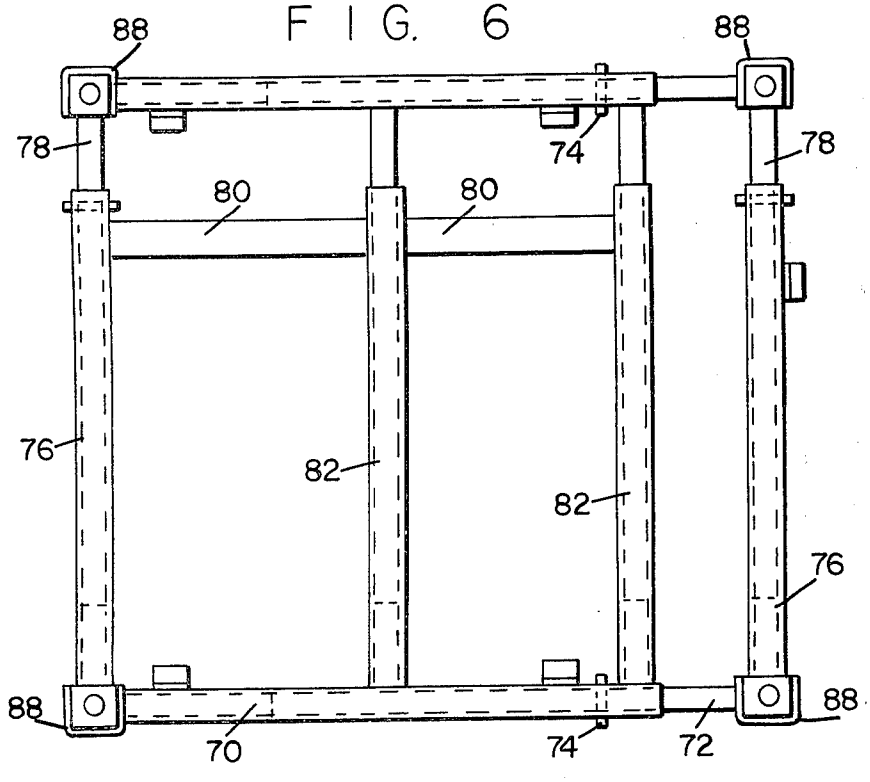


FIG. 6



STACKING COLLAR FOR WAREHOUSING AND TRANSPORTING SHEET MATERIAL

BACKGROUND OF THE INVENTION

There have been many suggestions for shipping and storing containers for sheet material such as glass panels but there still exists a problem of minimum collapsed arrangements for the collars for returning them to the supplier in order to facilitate the return operation with a minimum amount of space in the conveyance. Many devices for shipping sheets are cumbersome and difficult to handle.

SUMMARY OF THE INVENTION

A base unit is provided for receiving the sheets on edge, the base unit including sockets for the reception of detachable uprights which appear at each side of the stack of sheets.

Once the sheets of material are in position between the uprights and mounted as stated on the base they are then strapped in position by strapping which goes all around the sheets of material, the uprights, and the base. The uprights are also provided with sockets for the reception of another base, uprights, etc., thereon for stacking in the warehouse. The base being substantially flat except for the sockets, etc., receive thereon the uprights which are removed from the empty collars, another base being placed thereon etc. The parts are utilized for stacking the units in place and in this way a minimum of space and also of labor is needed for returning the empty collars to the supplier where they may then be again erected for further shipment or warehousing.

In one form of the invention the bases may be made of tubular telescoping material so as to be adjustable in respect to both length and width so that sheets of different sizes i.e., lengths and widths may be accommodated thereby. The uprights also may be telescopically arranged so as to adjust for the widths of the sheets which are stacked on edge on the adjustable base. In this way any reasonable number of sheets of any length and width can be accommodated in the way above described.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view illustrating one of the collapsible collars loaded with a series of sheets;

FIG. **2** is a plan view of an individual base;

FIG. **3** is an edge view thereof;

FIG. **4** is a side view of one of the collars i.e., as shown in FIG. **1**;

FIG. **5** is an end view thereof;

FIG. **6** is a plan view of an adjustable base; and

FIG. **7** is a view illustrating an adjustable standard.

PREFERRED EMBODIMENT OF THE INVENTION

Referring first to FIG. **2**, there is here shown an open rectangular frame comprising a pair of spaced elongated structural members **10** and **12**. These may be generally of any form but channel irons provide a degree of rigidity which is desirable. At the ends of elongated members **10** and **12** there are similar end members as at **14** and **16** welded thereto and an intermediate brace **18** as required for strength purposes.

At the corner of the frame there are provided upright sockets **20** preferably square or rectangular and the members forming these sockets are provided with depending foot members as at **22, 22**. The latter are transversely formed by upwardly open channels **24** at the under sides thereof.

There is provided a convenient floor indicated at **30** which may be of wood and which is mounted on the frame **10, 12, 14, 16** above described. This frame provides the floor for the upright sheets of material which are indicated in general at **32, 32** being shown in phantom in FIG. **1** in order to better explain the invention. Floor **30** may be provided with side pieces **34, 34** and end pieces **36, 36** which can be nailed in place and serve to locate the sheets of material **32**. The floor is bolted to the frame **10, 12**, and this forms a unit.

Columnar uprights **38** are mounted in sockets **20**. These may be of rectangular or square tubular material with pressure pads **40** or the like if desired to engage the sides of the sheet material **32**. The uprights **38** are held upright by the sockets and themselves are provided with sockets as at **42, 42** at their upper ends. They may be connected across the top of the assembled sheets **32** by means of braces or the like **44** overlapping the ends of the uprights **38** as clearly shown in FIG. **1** and being connected together in one piece forming integral fixed members engaging and holding the top edges of the sheet material parts **32**.

The uprights **38** preferably are provided with apertures **46** for receiving the strapping **50** passing along the top of each member **44** or in a longitudinal depression **52** therein holding the strapping laterally, the strapping passing through the apertures **46** around the outside aspects of the uprights **38** and into the channel members **24** which are open.

The strapping holds the entire arrangement together in a very safe and easily handled collar. It will be seen that the sockets **42** being open ended facing each other as at **54** the members **24** of another collar may be set in the sockets **42** and the assembled sheet material collar device as described may be stacked as high as desired for warehousing or they can be shipped that way, whereas at the same time there is room between platform **30** and the floor upon which the members **24** are set to provide for fork lift for moving the same from a packaging station or warehousing to a truck, etc.

When the sheet material and collar have reached their destination the strapping is undone and the braces **44** are removed so as to remove the sheet material for use etc. The standards **38** are then removed from sockets **20** and are laid down upon the platform **30** between the side supports **34** and can again easily be strapped in multiples for easy and minimum volume return to the factory or the supplier. The platform is conveniently notched out as for instance at **60** to accommodate sockets **20** aiding and holding the same against motion in two directions and the collars may be used many times since they are simple, easily handled, and very rugged.

Very little effort is required to erect and to collapse the collars which are the subject matter of the invention and the labor, etc., is thereby reduced in both assembling and disassembling the sheets of material where desired.

Referring now to FIGS. **6** and **7**, it is shown how the base may be made adjustable in length and width and the uprights in length so as to accommodate different sizes of sheet material and different thicknesses and amounts of sheets thereof.

In FIG. **6** for instance, a tubular member **70** and a corresponding telescoping member **72** may be used to

form the longitudinal side members of the base frame and any convenient means may be utilized to lock them together such as locking pins **74** which are thrust through a convenient line of openings in the two members.

Likewise the end members may be made of tubular members **76** and telescoping member **78** in the same manner so that the base frame as shown in FIG. **6** is now seen to be adjustable in length and width. In this respect another brace member **80** is welded to the cross braces **82** and one of the end members **76.** In this way the frame can be easily adjusted lengthwise as well as with respect to the width thereof.

A similar construction can be utilized for the uprights, FIG. **7,** which can also be made of a telescopic member **84** and a tubular member **86** receiving the same and otherwise the construction would be more or less as described above.

With reference to FIG. **7** it will be noted that there are a pair of straps or the like **88** which are applied to the uprights in such a way as to provide for the reception of straps **90** which can be turned upon themselves and clipped or crimped as at **92** so that therefore it will be seen that the strapping does not extend under the bottom deck of the collar as is indicated in dotted lines, see **50** in FIG. **5.** However the strapping **90** does however, see FIG. **7,** extend over the top of the collar and down the other side to a similar situation where the strapping is again reversed and crimped or clipped.

I claim:

1. A collapsible collar of the class described comprising a generally flat base, means forming pairs of sockets at certain edges thereof, a stack of sheet material positioned on said base, a pair of separable standards inserted into each said pair of sockets means at the tops of said standards securing the same together including strapping extending completely around said stack of sheet material on the base, under the base, and down along the standards at opposite sides of the base,

braces extending between each pair of standards, means in the braces receiving said strapping,

channel members under the base, each channel being connected at its ends to one of said pair of standards,

and sockets at the tops of the standards adapted to receive the channels of a similar collar stacked thereabove.

2. A collapsible collar of the class described comprising a generally flat base, means forming pairs of sockets at certain edges thereof, a stack of sheet materials positioned in said base, a pair of separable standards inserted into each said pair of sockets at right angles with respect to the base, means at the tops of said standards securing the same together including strapping extending completely around said stack of sheet material on the base, under the base, down along the standards at opposite sides of the base, said base and through apertures at the upper ends of each said pair of standards, comprising tubular members and corresponding telescoping members for adjusting the size of the base, said telescoping members extending laterally and longitudinally of the base, said standards including tubular telescoping members, a cross member connecting the lower ends of each said pair of standards and having a channel therethrough receiving said strapping, and a pair of open-facing sockets on the upper ends of each pair of standards adapted to receive the cross member of a similar collar stacked thereabove.

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