March 3, 1970 S. FRIEDBERG 3,498,587

COLLAPSIBLE PROTECTIVE ENCLOSURE

Filed Sept. 9, 1968 2 Sheets-Sheet 1

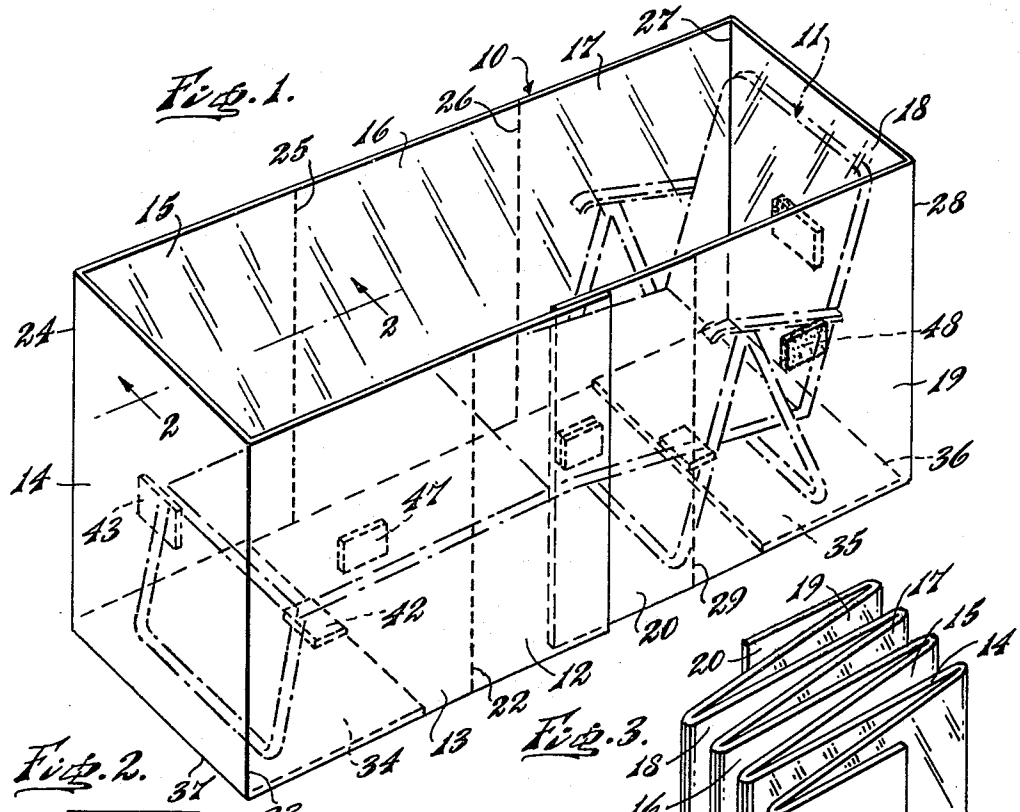
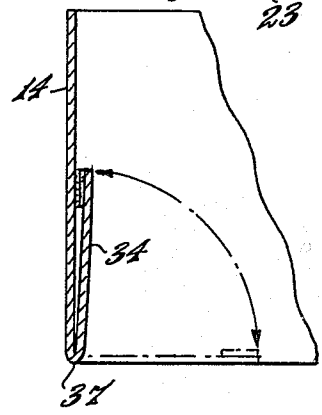
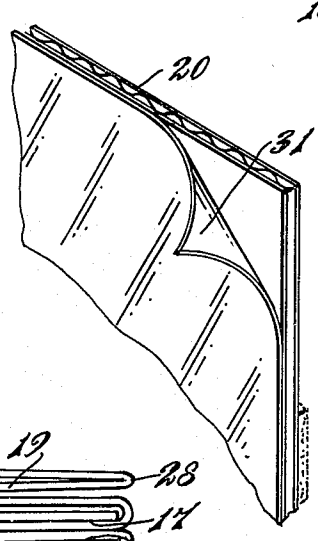


Fig. 1.

Fig. 2.

Fig. 3.





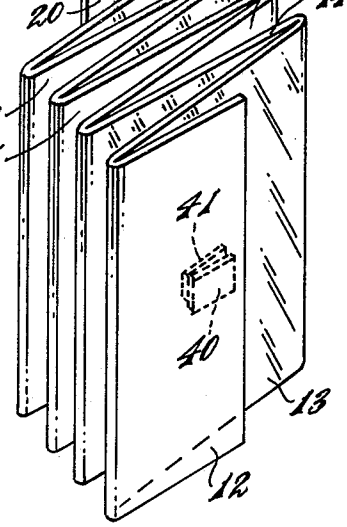


Fig. 5.

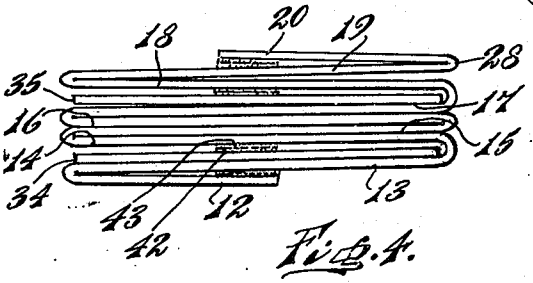


Fig. 4.

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Fig. 6.

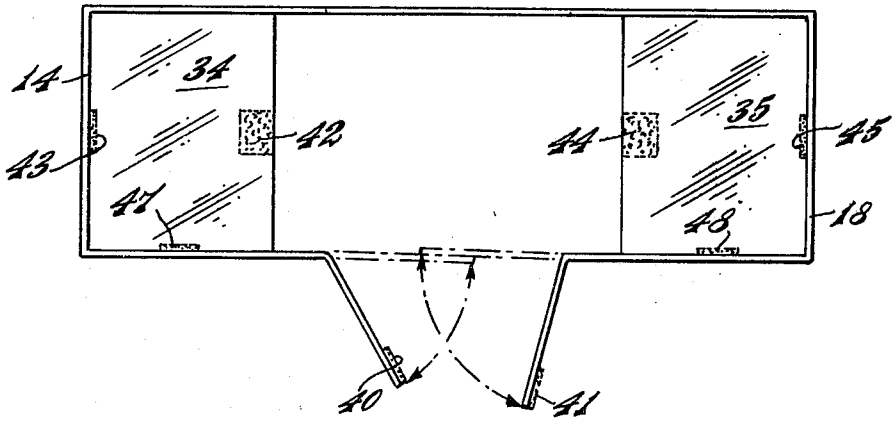
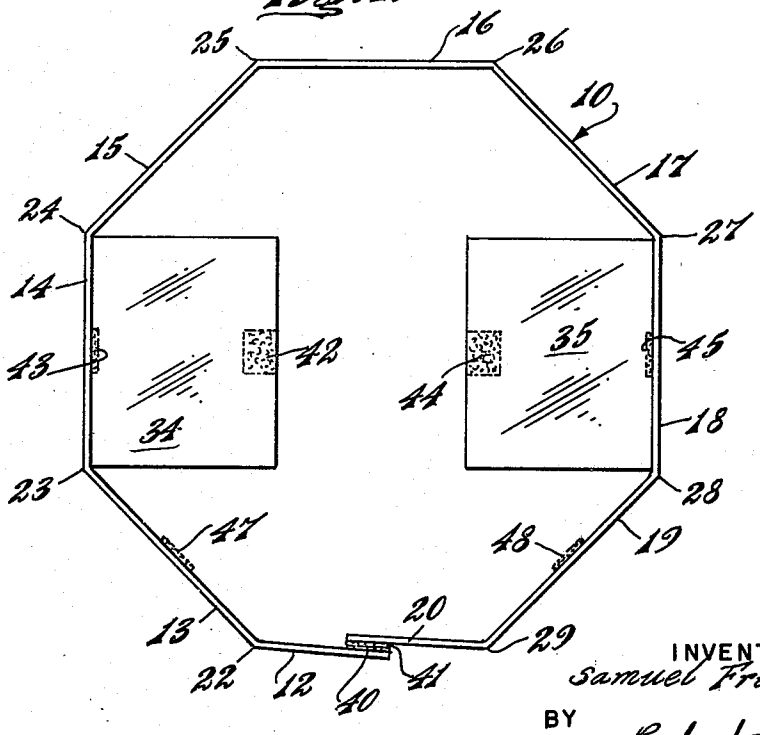


Fig. 7.



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COLLAPSIBLE PROTECTIVE ENCLOSURE

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ABSTRACT OF THE DISCLOSURE

A row of hinged panels for disposition in generally vertical position on a ground surface to define an enclosure.

Background of the invention

While there have, in the past, been provided collapsible enclosures for sun tanning, and the like, such devices have been incapable of versatility in use, say to accommodate a group or a plurality of persons, and have been relatively complex and expensive to manufacture, as well as difficult to set up and collapse.

Summary of the invention

Accordingly, it is an important object of the present invention to provide a collapsible protective enclosure which is extremely versatile in use, capable of being employed in conjunction with a beach chair, chaise longue, park bench, wheel chair, baby carriage, or the like, as an encompassing protective enclosure, affording immunity to wind and the like, while permitting entry of solar radiation for sun tanning purposes.

It is another object of the present invention to provide a protective enclosure of the type described which is extremely simple in construction, being essentially an integral or one-piece device and capable of quick and easy setup or erection and collapse, with the exercise of only minimal effort and skill.

It is still another object of the present invention to provide a protective enclosure having the advantageous characteristics mentioned in the preceding paragraph, which is adapted for use as a playpen for children, animals or the like, affording a maximum of usable interior area, while effectively conformably encompassing a conventional beach chair, park bench, or the like.

Still a further object of the present invention resides in the provision of a protective enclosure of the type described which incorporates unique anchoring means to maintain the closure in its proper configuration and location, as desired.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.

The invention accordingly conissts in the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

Brief description of the drawings

FIGURE 1 is a top perspective view showing an enclosure constructed in accordance with the teachings of the present invention in an operative condition of use, and illustrating in phantom a chaise longue or beach chair in conjunction with the enclosure.

FIGURE 2 is a partial sectional elevational view taken generally along the line 2—2 of FIGURE 1, illustrating an anchoring panel of the enclosure in a collapsed condition.

FIGURE 3 is a top perspective view illustrating the enclosure FIGURE 1 in its collapsed condition.

FIGURE 4 is a top plan view of the collapsed enclosure of FIGURE 3.

FIGURE 5 is a partial perspective view, enlarged for showing greater detail, and illustrating the panel structure of the instant enclosure.

FIGURE 6 is a top plan view of the enclosure of FIGURE 1.

FIGURE 7 is a top plan view of the enclosure of FIGURE 6, but illustrating another arrangement thereof.

Description of the preferred embodiment

Referring now more particularly to the drawings, specifically to FIGURES 1, 2 and 6 thereof, a protective enclosure of the present invention is there generally designated **10**, and illustrated in operative association with a beach chair or chaise longue, generally designated **11** and illustrated in phantom within the enclosure.

The enclosure **10** includes a plurality of generally rectangular substantially congruent panels disposed in side-by-side edge-to-edge relation. For purposes of identification, the several panels are respectively designated **12, 13, 14, 15, 16, 17, 18, 19** and **20**. Thus, the several panels **12–20** are arranged in a series or row, with each adjacent pair of panels being hingedly connected together along its adjacent edges. That is, panels **12** and **13** are hingedly connected together as at **22**, panels **13** and **14** being hingedly connected together at **23**, panels **14** and **15** being hingedly connected together at **24**, panels **15** and **16** being hingedly connected together at **25**, panels **16** and **17** being hingedly connected together at **26**, panels **17** and **18** being hingedly connected together at **27**, panels **18** and **19** being hingedly connected togeher at **28**, and panels **19** and **20** being hingedly connected together at **29**.

The panels **13, 14, 15, 16, 17, 18** and **19**, being all of the panels except the endmost panels **12** and **20**, may be of substantially congruent configuration, and in practice a panel width of about 26 inches and panel height of about 42 inches has been found satisfactory. The endmost panels **12** and **20** may be of lesser width, and of substantially equal height as the remaining panels. However, the endmost panels **12** and **20** advantageously have a combined width of greater than the width of a single panel **13–19**.

In practice, the panels **12–20** may advantageously be integrally fabricated of any suitable material, such as wood, plastic or metal. However, it has been found preferable to form the panels **12–20** of a fibrous material, such as corrugated cardboard or the like, as best seen in FIGURE 5. Further, the hinged connections **22–29** between adjacent side edges of adjacent panels may advantageously assume the form of fold lines or creases. In this manner, the several panels **12–20** may be conveniently integrally fabricated from a single sheet of corrugated cardboard. Of course, other panel and hinge materials may be employed.

On one surface of each panel **12–20** there is advantageously provided a surface layer or coating, as at **31** in FIGURE 5, of a reflective material, such as aluminum foil. The reflective coatings on the several panels **12–20** are located so as to be interiorly of the enclosure **10**.

In the condition illustrated in FIGURES 1 and 6, the

enclosure **10** conformably encompasses the beach chair **11**. In particular, the enclosure is arranged with the three intermediate panels **15**, **16** and **17** in alignment to define one side of the enclosure. The panels **14** and **18** are arranged in parallel spaced facing relation to provide opposite ends of the enclosure, and the panels **13** and **19**, and the endmost panels **12** and **20** are all in alignment with each other to provide the other elongate wall or side of the enclosure. That is, the endmost panels **12** and **20** are disposed in overlapping relation with each other to effectively close the space between panels **13** and **19**. In this manner, the endmost panels **12** and **20** may define a gate, being swingable away from each other to afford an opening for entry into and exit from the interior of the enclosure **10**.

An additional pair of generally rectangular panels **34** and **35** are respectively located adjacent to enclosure end walls or panels **14** and **18**. More specifically, the additional panel **34** may have one edge approximate to the lower edge of panel **14** and hingedly connected thereto, as by suitable hinge means **37**. In this manner, the panel **34** is swingable between the illustrated generally horizontal position of FIGURES 1 and 6, and the solid line collapsed position of FIGURE 2 in upwardly extending facing relation with the inner surface of panel **14**. The panel **35** similarly has one edge hingedly connected, as by suitable hinge means **36**, to the lower edge of enclosure end wall or panel **18**, and is thereby swingable between its illustrated horizontal position and an upwardly swung position in facing relation with the panel **18**. If desired, the additional panels **34** and **35** may also be integral with their adjacent panels **14** and **18**, the respective hinge means **37** and **36** being defined by creases or folds. However, the additional panels **34** and **35** may be separate from the panels **14** and **18**, if desired, and connected thereto by other suitable hinge means, say fabric strips, or the like.

In order to maintain the gate or endmost panels **12** and **20** in their closed relation, as illustrated in FIGURE 2, there is provided on the panels **12** and **20** suitable detachable fastener means, such as complementary fastener fabric pieces **40** and **41**. The fastener fabric pieces **40** and **41** remain in adherent secured relation when pressed together, to maintain the gate panels **12** and **20** in their closed condition of FIGURE 1, and are swingable away from each other to the solid line positions shown in FIGURE 6 upon deliberate separation of the fastener pieces **40** and **41**.

Similarly, the additional panels **34** and **35** may each be provided with suitable detachable fastener means for releasably securing the panels in facing relation with their adjacent panels **14** and **18**, respectively. That is, there may be provided a fabric fastener element **42** on panel **34**, and a complementary fabric fastener **43** on panel **14**, such that the elements **42** and **43** are secured in their facing engagement upon upward swinging movement of the panel **34**. Similarly, the panels **35** and **18** are provided with complementary fastener fabric pieces or elements **44** and **45**, respectively.

In the operative condition illustrated in FIGURE 1, it will be apparent that the additional panels **34** and **35**, extending generally horizontally inwardly from the lower edges of end walls or panels **14** and **18**, respectively, are in position beneath the legs of chair **11**. In this manner, the panels **34** and **35** afford means for anchoring the entire enclosure **10** in position about the chair. Of course, other suitable weighting means may be employed, say sand, as for use on the beach.

In the collapsed condition of FIGURE 5, the additional panels **34** and **35** have been swung upwardly into secured facing relation with their respective panels **14** and **18**, and the panels **12–20** have been folded in the manner of an accordion fold to occupy a minimum of space, as for storage and convenient portability. If desired, the panels **13** and **19** may be provided with fastener fabric pieees or

elements, as at **47** and **48**, for detachable securement to respective fastener elements **41** of the gate panels **12** and **20**. By this structure the gate panels may be releasably maintained in an open condition during use, if desired. Also, the panels **12** and **20** may, by this means, be detachably secured in facing relation with their adjacent panels **13** and **19**, respectively, in the collapsed condition.

As shown in FIGURE 7, the enclosure **10** has been arranged in an octagonal configuration, say for use as a child's playpen, an animal, or for use by a group. This arrangement of FIGURE 7 affords a maximum of internal area within the enclosure. In addition, if desired, a plurality of enclosures **10** may be arranged in end-to-end relation to effectively multiply the enclosed space. Also, the enclosed space may be reduced, if desired, by overlapping several of the panels **12–20**, if requirements dictate.

From the foregoing, it is seen that the present invention provides a protective enclosure which fully accomplishes its intended objects and is well adapted to meet practical conditions of manufacture, distribution and use.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention.

What is claimed is:

1. A self-sustaining protective enclosure for placement on the ground comprising a series of stiff generally upright panels arranged in side-by-side edge-to-edge relation, said panels being vertically coextensive with each other, hinges swingably connecting together the adjacent edges of adjacent pairs of said panels, said panels being swingable relative to each other to locate the endmost panels in adjacent relation and define an enclosure, said endmost panels combining to define a gate to said enclosure, a pair of additional stiff panels each located in edge-to-edge relation with the lower edge of a respective one of the first mentioned panels, a pair of additional hinges swingably connecting together the adjacent edges of each additional panel and its adjacent first mentioned panel, said additional panels being swingable to lie on the ground and support a weight to anchor the enclosure in position.

2. A protective enclosure according to claim **1**, said first mentioned panels being integrally fabricated of fibrous material, and said hinges comprising fold lines formed in said material.

3. A protective enclosure according to claim **2**, in combination with a reflective coating on one surface of each of said first mentioned panels, said one panel surfaces being located on the inner side of said enclosure.

4. A protective enclosure according to claim **1**, each of said first mentioned panels except the endmost thereof being substantially congruent, said first mentioned hinges being rotatable substantially 360 degrees for relative swinging of said first mentioned panels in the manner of an accordion fold to a collapsed position.

5. A protective enclosure according to claim **1**, in combination with detachable fastener means on said endmost first mentioned panels for releasably closing said gate.

6. A protective enclosure according to claim **1**, said first mentioned panels except the endmost thereof comprising seven in number, for arrangement of said enclosure with the intermediate three of said first mentioned panels along one side of said enclosure, one of said first mentioned panels at each end of said enclosure, and two of said first mentioned and endmost panels along the other side of said enclosure.

7. A protective enclosure according to claim **6**, said additional panels being adjacent and hingedly connected to respective first mentioned panels at the ends of said enclosure.

8. A protective enclosure according to claim **7**, in com-

bination with detachable fastener means on each of said additional panels and the adjacent first mentioned panel for releasably securing each of said additional panels in facing relation with respect to the adjacent first mentioned panel.

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