United States Patent

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[54] **CYCLE HELMET COLLAPSIBLE COMPARTMENT**
6 Claims, 8 Drawing Figs.

[52] U.S. Cl. 248/309, 150/49, 220/6, 248/203, 248/293
[51] Int. Cl. B65d 7/24
[50] Field of Search 248/309, 203, 293; 220/6; 150/49; 224/33

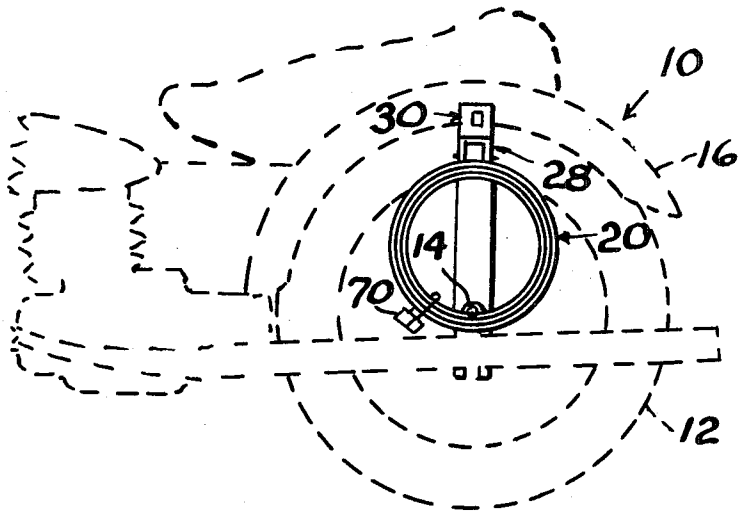
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ABSTRACT: Three concentric rings are diametrically interconnected for pivoting movement of the two inner rings and positioning the respective rings in planes perpendicular with respect to each other to form an open frame cage.



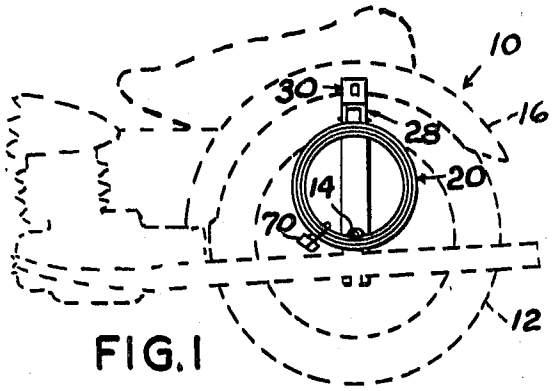


FIG. 1

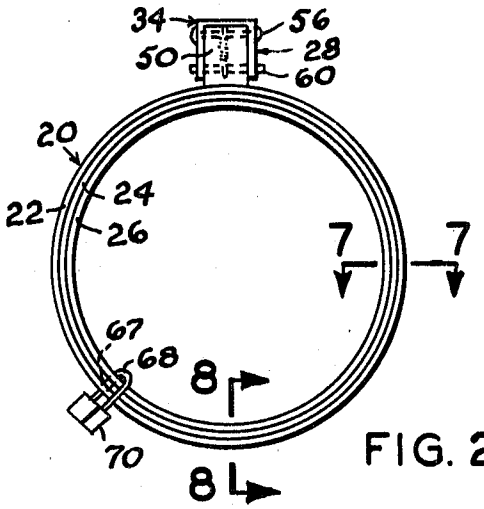


FIG. 2

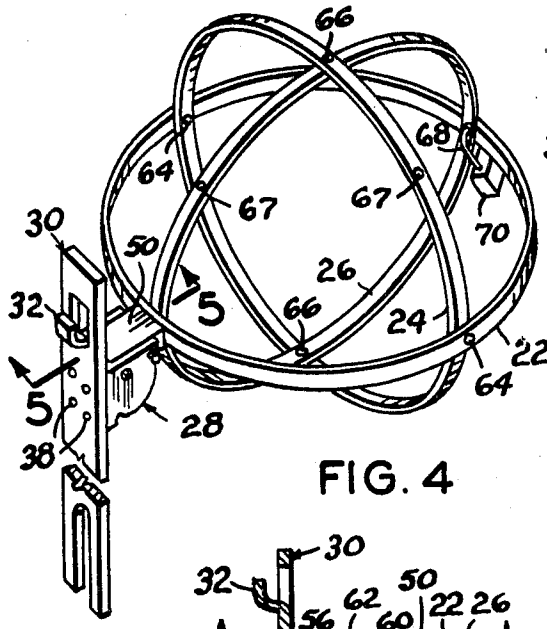


FIG. 4

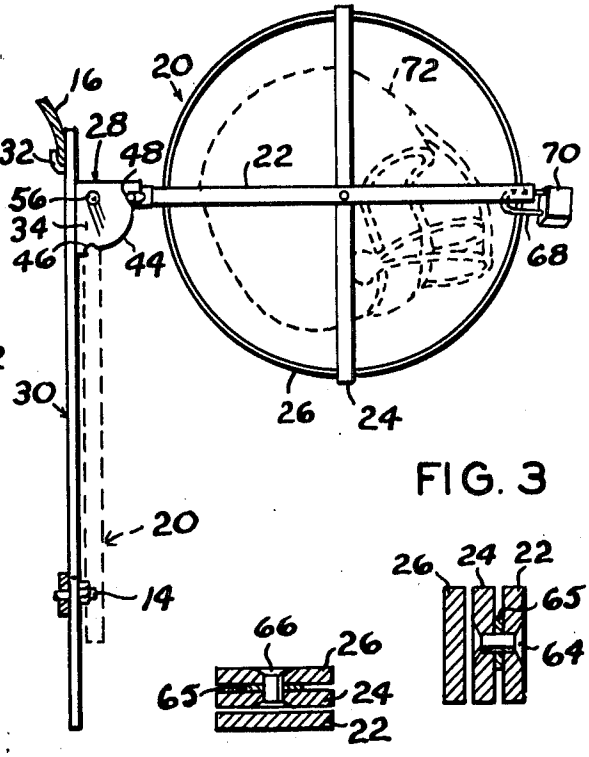


FIG. 3

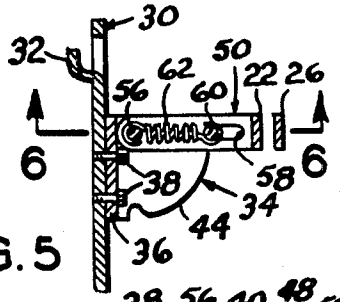


FIG. 5

FIG. 8

FIG. 7

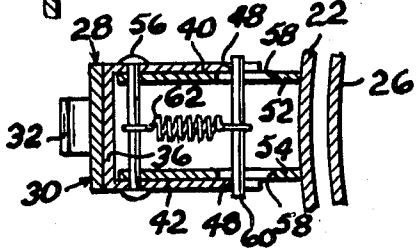


FIG. 6

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CYCLE HELMET COLLAPSIBLE COMPARTMENT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to containers and more particularly to a container for a cycle helmet when not in use.

As a safety precaution, it is necessary that the riders of powered two-wheel vehicles, such as motorcycles, or the like, wear a safety helmet when operating the vehicle. These safety helmets are formed of relatively hard material which covers a substantial portion of a user's head and includes rodlike bars forming a guard over the face area. These helmets are cumbersome and are not usually worn when the cycle is not being operated. In order to prevent loss of the helmet, by theft, the owner usually carries the helmet with him. Because of its rigid bulky configuration, carrying the helmet, when not in use, constitutes an inconvenience, such as when attending ball games or other events. It is, therefore, desirable that some means be provided for protecting the helmet from unauthorized use and whereby the helmet can be left with the cycle until it is next used.

This invention accomplishes this function by providing a cage or collapsible compartment which is permanently attached to the cycle.

2. Description of the Prior Art

I do not know of any patents disclosing a device like this invention.

SUMMARY OF THE INVENTION

Three concentric rings, diametrically greater than a cycle helmet, are diametrically interconnected for pivoting movement of the innermost rings for positioning the rings in three perpendicular planes forming a cage surrounding a cycle helmet. A peripheral portion of the outermost ring is connected with bracket means in turn connected with a standard fixed to a lateral side of the rear wheel position of a cycle. The bracket means permits vertical pivoting movement of the concentrically disposed rings toward and away from the plane of the cycle rear wheel.

The principal object of this invention is to provide a lockable collapsible cagelike compartment for holding a cycle helmet and wherein the device does not appreciably add to the width of the cycle when in collapsed position.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevational view of the device in collapsed position connected with a fragment of a cycle, illustrated by dotted lines;

FIG. **2** is a side elevational view, to a larger scale, of the device, per se;

FIG. **3** is a front elevational view of the device in helmet holding position illustrating its connection with a fragment of the cycle and illustrating, by dotted lines, its collapsed position;

FIG. **4** is a perspective view, to a slightly larger scale, of the device, per se, in helmet-holding and locked position;

FIG. **5** is a vertical cross-sectional view, to an enlarged scale, taken substantially along the line **5**—**5** of FIG. **4**;

FIG. **6** is a horizontal sectional view taken substantially along the line **6**—**6** of FIG. **5**; and,

FIGS. **7** and **8** are horizontal and vertical sectional views, respectively, to a further enlarged scale, taken, respectively, along the lines **7**—**7** and **8**—**8** of FIG. **2**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Like characters of reference designate like parts in those figures of the drawings in which they occur.

In the drawings:

The reference numeral **10** indicates a motorcycle, or the like, having a rear wheel **12** supported by an axle **14** and having a rear fender **16**.

The numeral **20** indicates the device, as a whole, which is flat circular in general configuration when mounted on the cycle **10** and in its collapsed position. The device **20** comprises three endless concentric rings **22**, **24**, and **26**. The outermost ring **22** is connected with bracket means **28** secured to a standard or support **30** in turn connected with the cycle **10** as hereinafter described.

The standard **30** comprises a straplike length of metallic material having a lip **32** struck out laterally and upward from its uppermost end portion for engaging a depending edge portion of the cycle fender **16**. The depending end portion of the standard **30** is bifurcated to form a downwardly open slot for receiving an outermost end portion of the cycle axle **14** and is held in place by the conventional axle nut.

The bracket means **28** is hingelike and comprises a U-shaped hinge leaf portion **34** having an apertured bight portion **36** flatly connected with the upper end portion of the standard **30** by bolts **38**. The U-shaped hinge leaf is provided with leg portions **40** and **42**, substantially right triangular in front elevation, each having a convex surface **44** terminating, at its respective ends, in arcuate recesses **46** and **48**. The other hinge leaf of the bracket means **28** comprises a channel-shaped member **50** which is connected at one end portion with a peripheral portion of the outer ring **22**. The opposite end portion of the hinge leaf **50** is pivotally connected by its leg members **52** and **54** between the legs **40** and **42** by a hinge pin **56**. The legs **52** and **54** of the hinge leaf **50** are transversely slotted, as at **58**, in aligned relation intermediate their ends, for slidably receiving a shaft **60** which projects beyond the planes of the respective outer side surfaces of the legs **40** and **42** of the hinge leaf **34**. Medially its ends, the shaft **60** is connected to the central portion of the hinge pin **56** by a spring **62** which tends to draw the shaft **60** toward the hinge pin. The respective opposing end portions of the shaft **60** slidably contact the convex surfaces **44** of the legs of the U-shaped hinge leaf **34** and are normally disposed within the recess **46** or **48** as hereinafter explained.

The endless rings **22**, **24** and **26** are preferably formed of strap material but obviously could be formed of material having other cross section configuration, such as circular or hexagonal. The rings are shown as circular but obviously could be formed in other configurations such as polygonal. The outermost ring **22** is secured to the intermediate ring **24** by a first pair of diametrically opposed rivets or pivot pins **64** spaced 90° with respect to the connection with the channellike hinge leaf **50** for pivoting movement of the intermediate ring about the axis of the pivot pins **64**. The inner ring **26** is similarly secured to the intermediate ring **24** by a second pair of diametrically opposed rivets or pivot pins **66** spaced 90° with respect to the first pair of pivot pins **64** so that the inner ring **26** may be pivoted about the axis of the pivot pins **66**. The spacing between the rings **22**, **24** and **26**, when concentrically disposed in a common plane, is relatively close but spaced-apart a sufficient distance by a thin washer **65**, so that the intermediate and inner rings may be pivoted about the respective axis of their pairs of pivot pins to prevent binding between the rings when pivoted out of the common plane. The three rings are lined drilled, as at **67**, when concentrically disposed for receiving the hasp **68** of a lock **70** to maintain the three rings in a collapsed position of the device.

Referring more particularly to FIGS. **3** and **4**, the device is placed in its expanded position by manually lifting the concentric rings from their dotted line position of FIG. **3**, in a vertical pivoting action, wherein the shaft **60** slides across the hinge leaf arcuate surfaces **44** to be received by the upper recess **48** which resiliently locks the device with the outermost ring **22** disposed in a horizontal plane. After removing the lock **70**, the intermediate ring **24** is pivoted about its connecting pivots pins **64** to lie in a vertical plane spaced 90° with respect to the plane of the outer ring **22**. The user's cycle helmet, indicated by the dotted lines **72**, is then positioned within the innermost ring **26** and this inner ring is pivoted about the axis of its connecting pivot pins **66** to lie in a vertical plane spaced 90° with

respect to the planes of the outer ring **22** and intermediate ring **24** thus forming an open framework cage surrounding the cycle helmet and preventing its removal while the three rings are respectively disposed in the vertical and horizontal planes. The three rings **22**, **24** and **26** are maintained in cage forming position by the lock **70** having its hasp **68** engaged with aligned apertures formed respectively in the outer and inner rings **22** and **26** opposite the bracket means **28**.

The cycle helmet is removed by removing the lock **70** and pivoting the inner ring **26** to lie in the plane of the intermediate ring **24**. The inner and intermediate rings **26** and **24** are then pivoted to lie in the plane of the outer ring **22**. The three rings are then manually forced downwardly to the dotted line position of FIG. **3** wherein the shaft **60** again slides along the arcuate surfaces **44** of the hinge leaf **34** until the end portions of the shaft **60** are received by the recess **46** which resiliently holds the concentric rings in parallel spaced relation with respect to the standard **30**.

Obviously the invention is susceptible to changes or alterations without defeating its practicability, therefore, I do not wish to be confined to the preferred embodiment shown in the drawings and described herein.

I claim:

1. An article holding collapsible compartment, comprising:

a plurality of concentric ring members comprising an inner ring member, an outer ring member and an intermediate ring member;

a first pair of pivot pins pivotally interconnecting said outer and intermediate ring members at diametrically opposite positions;

a second pair of pivot pins pivotally interconnecting said intermediate and inner ring members at diametrically opposite positions in 90° spaced relation with respect to said first pair of pins,

said ring members lying in a common plane when said compartment is in collapsed position,

said ring members lying in separate planes disposed in right angular relation with respect to each other when said intermediate and said inner ring members are respectively pivoted about the axes of said first and second pairs of pivot pins to an article holding position; and,

means maintaining said ring members in compartment collapsed and article holding position, respectively.

2. Structure as specified in claim **1** in which said means comprises:

a support; and,

bracket means extending between and connected with said support and an outer surface portion of said outer ring member, respectively.

3. Structure as specified in claim **1** in which said means comprises:

lock means removably engaging at least two of said ring members.

4. Structure as specified in claim **2** in which said bracket means is hingelike having a hinge pin joining a U-shaped hinge leaf portion with a channel-shaped hinge leaf portion,

said U-shaped hinge leaf having legs,

said legs each having cooperatingly aligned convex surfaces each terminating in a recess at its respective ends; and,

means on said channel-shaped hinge leaf frictionally engaging said arcuate surfaces.

5. Structure as specified in claim **4** in which the last mentioned means includes: a detent slidably supported by said channel-shaped hinge leaf.

6. Structure as specified in claim **5** said channel-shaped hinge leaf having legs,

said legs having transversely aligned slots formed therein,

said detent comprising a shaft extending through the channel leg slots; and, spring means normally urging said shaft toward said hinge pin.