

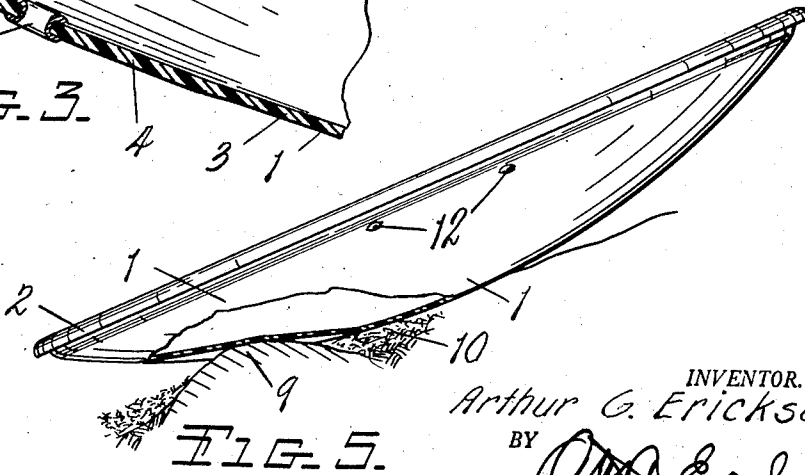
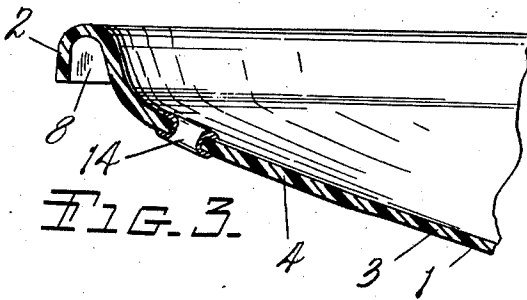
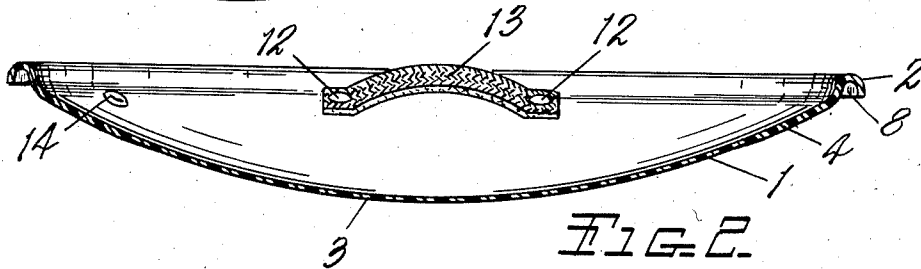
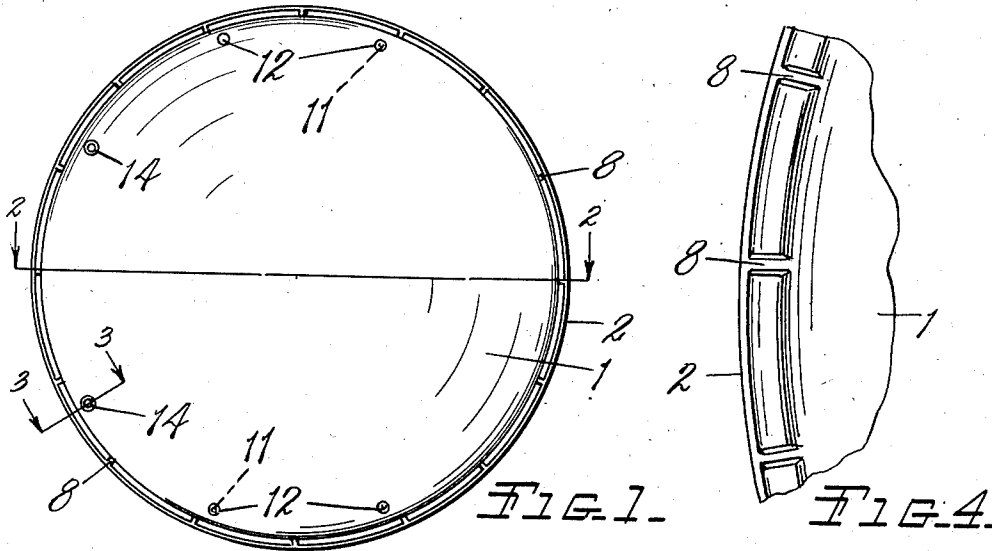
March 11, 1958

A. G. ERICKSON  
COASTING DEVICE OR SLED

2,826,424

Filed April 19, 1956

2 Sheets-Sheet 1



INVENTOR.  
Arthur G. Erickson  
BY *Olaf Carl*  
Attorney

March 11, 1958

A. G. ERICKSON

2,826,424

COASTING DEVICE OR SLED

Filed April 19, 1956

2 Sheets-Sheet 2

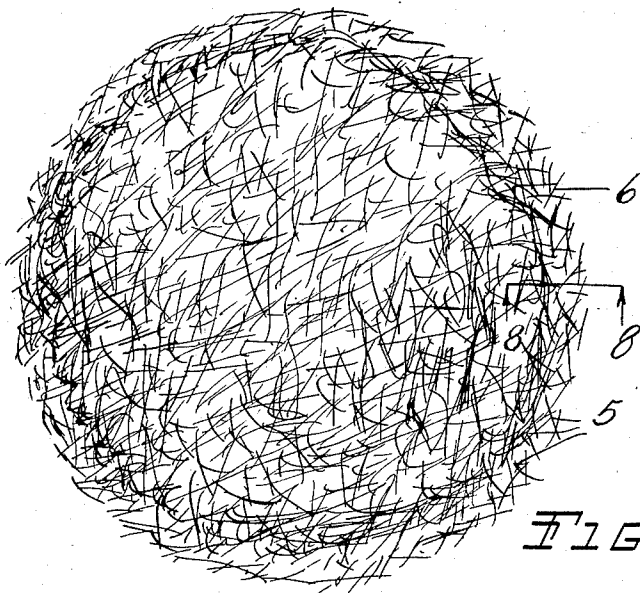


FIG. 7.

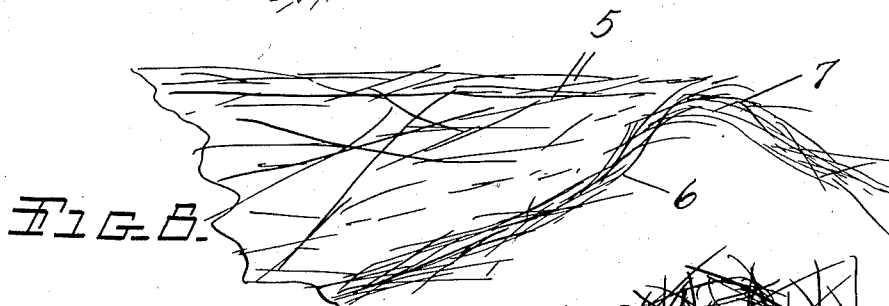


FIG. 8.

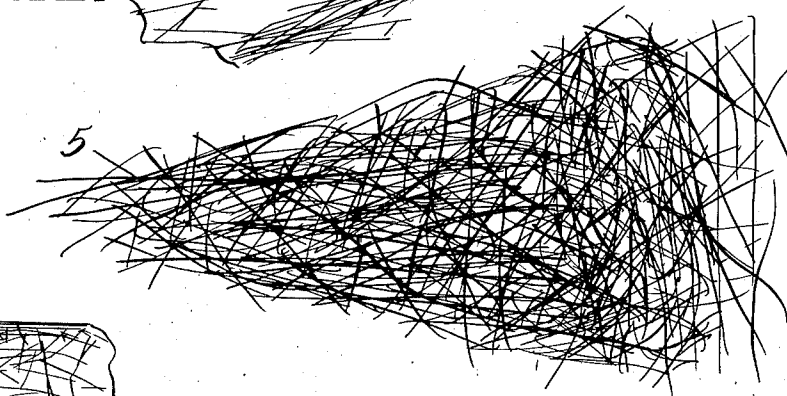


FIG. 9.

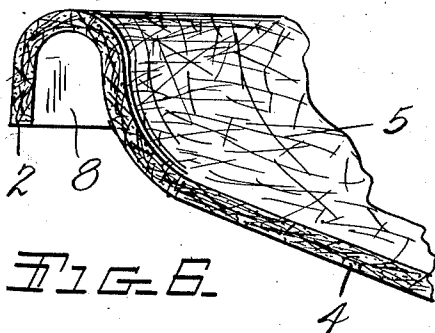


FIG. 10.

INVENTOR.  
Arthur G. Erickson  
BY  
*Arthur G. Erickson*  
Attorney.

1

2,826,424

## COASTING DEVICE OR SLED

Arthur G. Erickson, Kalamazoo, Mich., assignor to Kalamazoo Sled Company, Kalamazoo, Mich.

Application April 19, 1956, Serial No. 579,215

5 Claims. (Cl. 280—12)

This invention relates to a coasting device or sled.

The main objects of this invention are:

First, to provide a coasting device or sled which is of relatively light weight and at the same time maintains its shape while being substantially resilient when subjected to distorting stresses.

Second, to provide a structure having these advantages which is capable of withstanding impacts such as might result from the coaster striking a stone or stump or other object and also distortion stresses such as a person standing on it when it is in inverted position.

Third, to provide a structure having these advantages which may be very economically produced.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is an inverted view of the coaster or sled embodying my invention.

Fig. 2 is a vertical section on a line corresponding to line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary section on a line corresponding to line 3—3 of Fig. 1.

Fig. 4 is an enlarged fragmentary inverted view.

Fig. 5 is a side elevational view partially broken away and a section illustrating the coasting device as engaging an obstruction such as a rock projecting through snow.

Fig. 6 is an enlarged fragmentary section corresponding generally to that of Fig. 3 with the sectioning indicating plastic as in Figs. 2, 3 and 5 omitted for more clearly showing structural details.

Fig. 7 is a plan view of the reinforcing mat of helter skelter disposed glass fibers.

Fig. 8 is a fragmentary sectional view of Fig. 7.

Fig. 9 is an enlarged fragmentary plan view conventionally illustrating the reinforcing mat.

In the embodiment of my invention illustrated the body designated generally by the numeral 1 is generally of spherically curved concavo-convex shape and is provided with an outturned downwardly facing rim 2 of U-section.

In the commercial embodiment of my invention the depth of the body portion at the center is approximately three and three-fourth inches and the diameter about twenty-six inches. The major portion 3 of the body is of approximately .070 of an inch in thickness. This major portion merges into an annular portion 4 of approximately  $\frac{3}{32}$  of an inch thickness. The annular portion 4 merges into the rim which extends upwardly therefrom approximately one-half inch.

The device is molded of thermo-setting resin, polyester resin found to be satisfactory, and this is reinforced by glass fibers indicated at 5 in Figs. 6, 7, 8 and 9. These glass fibers are matted helter-skelter to provide a reinforcing mat designated generally in these figures by the numeral 6. This glass fiber mat varies in thickness as

2

does the body of the device, that is, the thickness of the mat or matted fibers generally corresponds in thickness to that of the finished device. The mat of fibers has a rim portion 7 incorporated in the rim.

In manufacture a mat of the glass fibers, such as is shown in Fig. 7, is placed in one member of a mold and thermo-setting resin sprayed or otherwise applied to completely embed the fibers and the molds closed and subjected to the proper temperature for setting the particular thermo resin employed.

The rim is provided with a plurality of angularly spaced struts or gussets 8 formed integrally therewith.

With the major portion of the body approximately the thickness specified it is substantially springable and at the same time is capable of sustaining loads and withstanding blows and distortion stresses to which it may be subjected in use.

The annular thickened portion 4 is relatively unyielding and is rendered further so by the fact that it merges into the rim. This arrangement provides a structure which yieldably or springably withstands distortions such as may result from striking an obstruction such as a rock or other object indicated at 9 in Fig. 5, snow being conventionally illustrated at 10. Further, the structure springably withstands such misuse, for example, as a person stepping or standing on the device when it is in inverted position and it is not ruptured or dented thereby as it is substantially springable. However, it has a peripheral portion of relative rigidity which provides the desired strength and maintains its shape when subjected to various distortion forces.

The body portion is desirably provided with holes 11 spaced to receive the attaching rivets 12 of the handholds 13. It is also provided with grommets 14 spaced to receive a propelling rope (not illustrated).

Coasters embodying my invention may be very economically produced and they are very strong and capable of withstanding shocks or blows and misuse such for example as I have indicated. It should be understood that the dimensions that I have given are such as I have found highly desirable in commercial use. However, I have not illustrated or described possible modifications as it is believed that the disclosure made will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described the invention, what is claimed to be new and is desired to be secured by Letters Patent is:

1. A unitary coasting device comprising a circular spherically curved concavo-convex body portion surrounded by a continuous downwardly facing outturned rim of U-section and having a plurality of integral angularly spaced gussets, the rim being of approximately one-half inch in height its inner wall being inwardly inclined and merging into the spherically curved body portion, the depth of the body portion at the center thereof being approximately three and three-fourth inches, the thickness of the body portion with the exception of an annular portion of approximately two inches in width which merges into the rim being approximately .070 of an inch in thickness, said annular thicker portion being of approximately  $\frac{3}{32}$  of an inch in thickness and merging into the portion surrounded thereby, said device consisting essentially of a mat of glass fibers of substantial length generally conformed to the shape and thickness of the body portion and extending into the rim and a thermo setting resin embedding the glass fibers and having smooth inner and outer surfaces, the portion of the body portion within said annular thickened portion being substantially springable relative to said thicker annular surrounding portion which is in turn reinforced and stiffened by the rim, the

3

rim being substantially rigid as compared to the thicker portion surrounded thereby.

2. A unitary coasting device comprising a circular spherically curved concavo-convex body portion surrounded by a continuous downwardly facing outturned rim which merges into the spherically curved body portion, the thickness of the body portion with the exception of an annular portion of approximately two inches in width which merges into the rim being approximately .070 of an inch in thickness, said annular thicker portion being of approximately  $\frac{3}{32}$  of an inch in thickness and merging into the portion surrounded thereby, said device consisting essentially of a mat of glass fibers of substantial length generally conformed to the shape and thickness of the body portion and extending into the rim and a thermo-setting resin embedding the glass fibers and constituting the outer and inner surfaces, the portion of the body portion within said annular thickened portion being substantially springable, the rim being springable but substantially rigid as compared to the adjacent portion surrounded thereby.

3. A unitary coasting device comprising a spherically curved concavo-convex body portion surrounded by a continuous downwardly facing outturned rim of U-section and having a plurality of integral angularly spaced gussets, the rim being of approximately one-half inch in height its inner wall being inwardly inclined and merging into the spherically curved body portion, the body portion with the exception of a relatively narrow annular portion which merges into the rim being of substantially uniform thickness, said annular portion being substantially thicker than the portion surrounded thereby, said device consisting essentially of a mat of glass fibers of substantial length generally conformed to the shape and thickness of the body portion and a thermo-setting resin embedding the glass fibers, the portion of the body portion within said annular thickened portion being substantially springable relative to said thicker annular surrounding portion.

4. A unitary coasting device comprising a circular spher-

4

ically curved concavo-convex body portion surrounded by a continuous outturned rim of downwardly facing U-section and having a plurality of integral angularly spaced gussets, the rim being relatively narrow vertically as compared to the depth of the spherically curved body portion, the inner wall of the rim merging into a relatively narrow annular portion of a thickness substantially exceeding that of the major portion of the body surrounded thereby which major portion is relatively springable, said device consisting essentially of matted glass fibers generally conformed to the shape and thickness of the body portion, and a thermo-setting resin embedding the glass fibers and constituting the outer surface of the device.

5. A unitary coasting device comprising a circular spherically curved concavo-convex body portion surrounded by a continuous outturned rim of downwardly facing U-section and having a plurality of integral angularly spaced gussets, the rim being relatively narrow vertically as compared to the depth of the spherically curved body portion, the inner wall of the rim merging into a relatively narrow annular portion of a thickness substantially exceeding that of the major portion of the body surrounded thereby which major portion is relatively springable, said device consisting essentially of helter skelter glass fibers, and a thermo-setting resin embedding the glass fibers and constituting the outer surface of the device.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

|           |              |               |
|-----------|--------------|---------------|
| 2,219,905 | Prickman     | Oct. 29, 1940 |
| 2,389,729 | Howland      | Nov. 27, 1945 |
| 2,464,341 | Ostlund      | Mar. 15, 1949 |
| 2,493,315 | Ruka         | Jan. 3, 1950  |
| 2,634,020 | Bartholomew  | Apr. 7, 1953  |
| 2,688,580 | Fingerhut    | Sept. 7, 1954 |
| 2,695,178 | Rheinfrank   | Nov. 23, 1954 |
| 2,735,690 | Paden et al. | Feb. 21, 1956 |

##### FOREIGN PATENTS

|         |        |              |
|---------|--------|--------------|
| 487,708 | Canada | Nov. 4, 1952 |
|---------|--------|--------------|