

U. R. MILLER.  
 BUOYANCY DEVICE FOR CANOES, BOATS, &c.  
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1,086,390.

Patented Feb. 10, 1914.

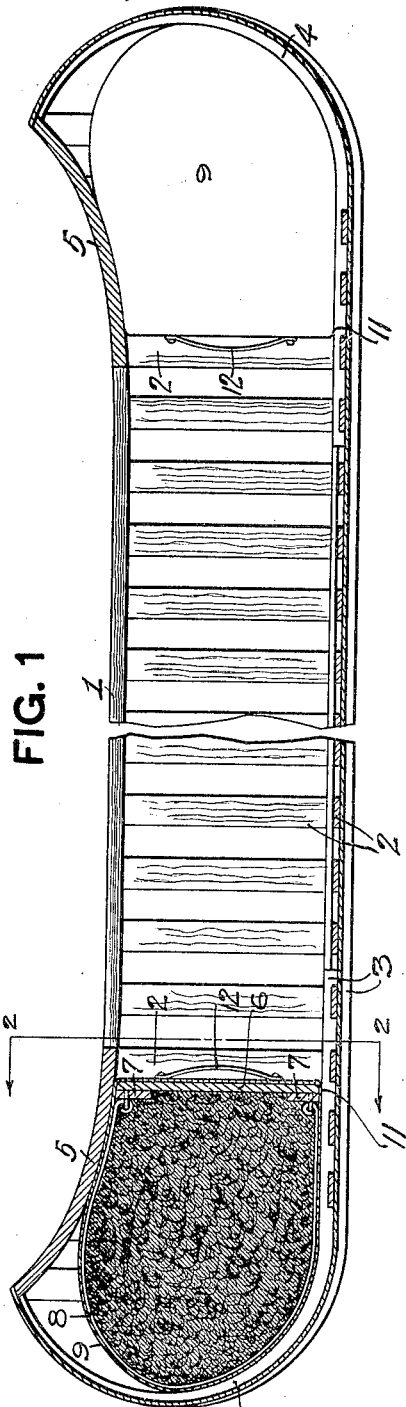


FIG. 1

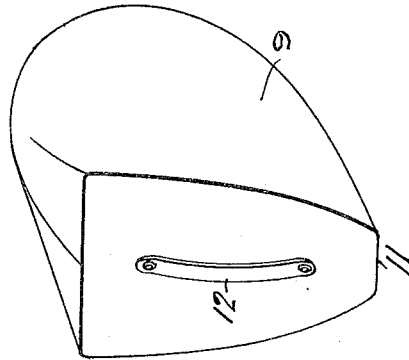


FIG. 4

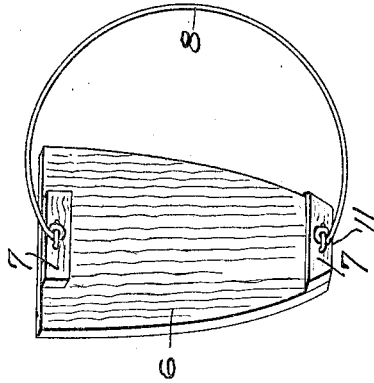


FIG. 3

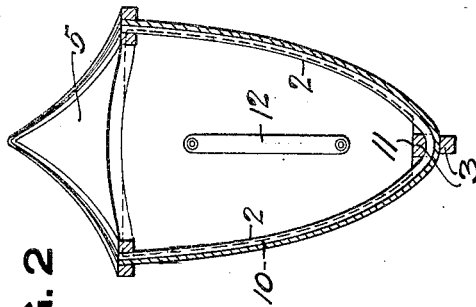


FIG. 2

WITNESSES.  
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# UNITED STATES PATENT OFFICE.

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BUOYANCY DEVICE FOR CANOES, BOATS, &c.

1,086,390.

Specification of Letters Patent.

Patented Feb. 10, 1914.

Application filed April 29, 1912. Serial No. 693,953.

*To all whom it may concern:*

Be it known that I, URIAH R. MILLER, a citizen of the United States, and resident of Salem, in the county of Columbiana and State of Ohio, have invented a new and useful Improvement in Buoyancy Devices for Canoes, Boats, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to buoyancy devices for canoes and other boats, and has for its object the provision of a device of this character which may serve to keep the boat afloat when filled or partially filled with water or overturned, and may also serve as a convenient form of life preserver for an occupant of the boat.

The invention also resides in the employment of a particular kind of material as the buoyant agency, and in the form or manner of constructing the buoyant member containing such particular buoyant material. The material here referred to is what is known to the trade as kapok, a vegetable growth extremely light in weight, practically non-absorbent and far superior to cork in that a water proof bag or sack of this material weighing but three pounds possesses sufficient buoyancy to float a canoe when filled with water and at the same time support the weight of three people clinging to the canoe.

With the objects above enumerated and others as will appear from the following specification, the invention consists in a construction and arrangement of parts one embodiment of which is illustrated in the accompanying drawing in which—

Figure 1 is a central longitudinal sectional view of a canoe showing the buoyancy pads mounted therein; Fig. 2 is a section on the line 2—2 Fig. 1; Fig. 3 is a perspective view of the frame of the buoyancy pad, the filling and cover being removed; and Fig. 4 is a perspective view of one of the buoyancy pads removed from the canoe.

In the embodiment of my invention herein selected for illustration 1 indicates a so-called Indian canoe of the usual construction, having the ribs 2, keel member 3, stem pieces 4, 4, and short deckings 5, 5, at either end. The buoyancy pads of my invention are preferably mounted in the ends of the canoe, and are therefore made of a shape to conform to said ends and have means for

holding them distended in that shape so that the filling material will be prevented from packing and so injuriously affecting the buoyant quality thereof. Each pad, as illustrated, comprises a frame of suitable shape, consisting as here shown, of a more or less thin face board 6 provided with cleats 7, 7, to which is secured a bale or frame member 8, corresponding to the shape of the boat body and preferably resilient, and which may be of resilient wire of small gage, or may be of buoyant material such as ratan, bent wood or the like. Over this frame is stretched a covering of material 9, preferably but not necessarily of water proof material. This may be khaki which is of comparatively light weight and somewhat impervious to water. The covering is preferably made in the form of a bag of the desired shape and is drawn over the frame member 8 and a portion of the edges thereof is secured to the edges of the face board 6, leaving a sufficient opening to the interior of the bag for the reception of the filling material or kapok. The face board or frame member 6 is made of a shape and size to fit snugly within the cross section of the canoe near the stem and is preferably of such size that it may be slipped just behind the nearest rib 2 as indicated on dotted line 10 of Fig. 2. The lower end of the face board is cut away at 11 in order that said board may fit snugly between the keel 3 and the decking 5. When the buoyancy pad is placed in position in the end of the canoe the resilient frame member 8 will hold the face board snugly against the inner edge of the adjacent rib and hold the pad securely in position. This face board and resilient member therefore constitute a stop member and yielding member, respectively, for holding the pad properly in position within the boat, as well as affording the necessary framing for giving the proper shape to the pad. The pad may be readily removed from its place by tilting the face board slightly to one side or the other and slipping one edge past the rib 2. A suitable handle or bale 12 of leather, for example, is secured to the face board preferably rather more toward the bottom than the top in order to facilitate the drawing out of the pad from beneath the decking 5.

It will be seen therefore that the device provides a buoyancy member or pad par-

particularly well adapted for use as a buoyant member within the canoe and one which may be readily and neatly stowed in the ends of the canoe, while at the same time it may be as readily removed from the canoe and used in the manner of a life preserver, the handle 12 affording a firm grip thereon to the user. This material, kapok, is particularly adapted for the purpose described for the reason that owing to what appears to be in the nature of an oily or greasy quality of the surface of its fibers, it has a strong tendency to repel rather than absorb water, this is shown by the fact that when a quantity of kapok is immersed in water the latter forms a thin film over the surface of the mass which prevents absorption for a long period of time. Furthermore in the mass it is extremely springy and light and does not become packed or wadded under any ordinary degree of pressure. It is in fact so springy and at the same time light in texture that it approaches in quite a remarkable degree the lightness of air as a buoyancy element when properly confined. It is found also that this material is peculiarly soft and what may be described as "slippery," so that it forms an extremely mobile filling within its casing. These peculiar qualities of the kapok which render it particularly well adapted for the purpose herein described were discovered only after an exhaustive series of experiments and tests for the purpose of determining its adaptability for this use. And it was only by such exhaustive experiment and test that its peculiar qualities were brought to light.

While I have herein described the particular embodiment of my invention it is to be understood that it may be varied in detail, and in the relative arrangement of parts, within the scope of the appended claims.

I claim—

1. A buoyancy member comprising a frame consisting of a face board and a resilient distending member, a covering for said frame and a filling of kapok within said covering.

2. A buoyancy member comprising a frame consisting of a face board, a resilient distending member secured to and extending at right angles to said face board, a water-proof covering for said frame and a filling of kapok within said water proof covering.

3. A buoyant member for a boat comprising a receptacle of covering material of substantially the form of the interior of the end of a boat, resilient means within said receptacle to hold the same within said boat and a filling of kapok within said receptacle.

4. A buoyant member for a boat comprising a face board of a shape substantially similar to the cross section of the end of a boat, a resilient frame extending at right

angles to said face board, a covering for said frame, a filling of kapok within said covering, said resilient frame member serving to hold said face board against an adjacent rib of the boat when buoyant member is in operative position.

5. A buoyant member for a boat comprising a frame member of a shape substantially similar to the cross section of the end of a boat and a resilient frame member secured to and extending at right angles to said first mentioned frame member, a covering for said frame members, and a filling of kapok within said covering, said resilient frame member serving to hold said first mentioned frame member against an adjacent frame member of the boat to position said buoyant member within the boat.

6. The combination with a boat of a buoyancy pad comprising a receptacle of covering material of substantially the form of a section of the interior of the boat, resilient means for maintaining the shape of the said receptacle, a filling of kapok in said receptacle, and a handle adapted to be used to withdraw the pad from the boat and to afford a grip on said pad when used as a life preserver.

7. A buoyancy member comprising a frame consisting of a face board and a resilient distending member, a covering for said frame and a filling of buoyancy material within said covering.

8. A buoyancy member comprising a frame consisting of a face board, a resilient distending member secured to and extending at right angles to said face board, a water-proof covering for said frame and a filling of buoyancy material within said water-proof covering.

9. A buoyant member for a boat comprising a receptacle of covering material of substantially the form of the interior of the end of a boat, resilient means within said receptacle to hold the same within said boat and a filling of buoyancy material within said receptacle.

10. A buoyant member for a boat comprising a face board of a shape substantially similar to the cross section of the end of a boat, a resilient frame extending at right angles to said face board, a covering for said frame, a filling of buoyancy material within said covering, said resilient frame member serving to hold said face board against an adjacent rib of the boat when buoyant member is in operative position.

11. A buoyant member for a boat comprising a frame member of a shape substantially similar to the cross section of the end of a boat and a resilient frame member secured to and extending at right angles to said first mentioned frame member, a covering for said frame members, and a filling of buoyancy material within said covering,

said resilient frame member serving to hold said first mentioned frame member against an adjacent frame member of the boat to position said buoyant member within the boat.

5 12. The combination with a boat of a buoyancy pad comprising a receptacle of covering material of substantially the form of a section of the interior of the boat, resilient means for maintaining the shape of  
10 the said receptacle, a filling of buoyancy ma-

terial in said receptacle, and a handle adapted to be used to withdraw the pad from the boat and to afford a grip on said pad when used as a life preserver.

In testimony whereof, I the said URIAH 15 R. MILLER have hereunto set my hand.

URIAH R. MILLER.

Witnesses:

ROBERT C. TOTTEN,  
JOHN F. WILL.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."**