

[54] SAFETY BATHING-SUIT

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[57] ABSTRACT

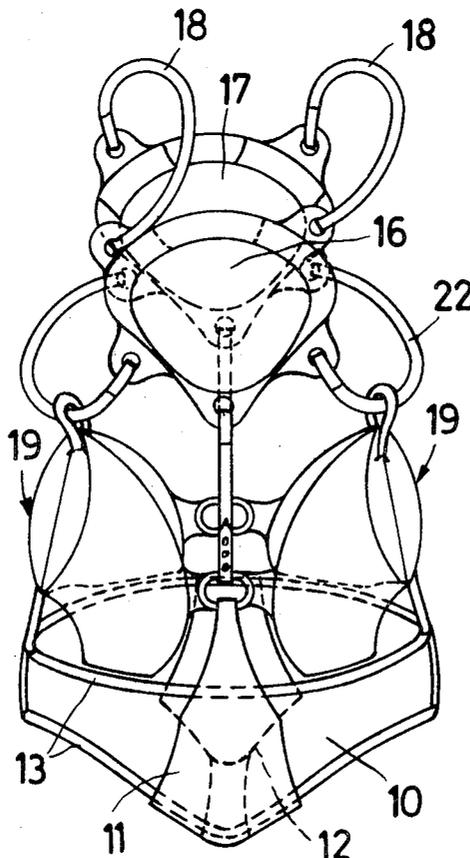
A safety bathing-suit comprising bathing-trunks to which three pairs of floats are connected. Two pairs of floats are on the sides and the other pair being on the breast and the back to provide a truly safe, not bulky and practical bathing-suit which does not hinder movements when swimming.

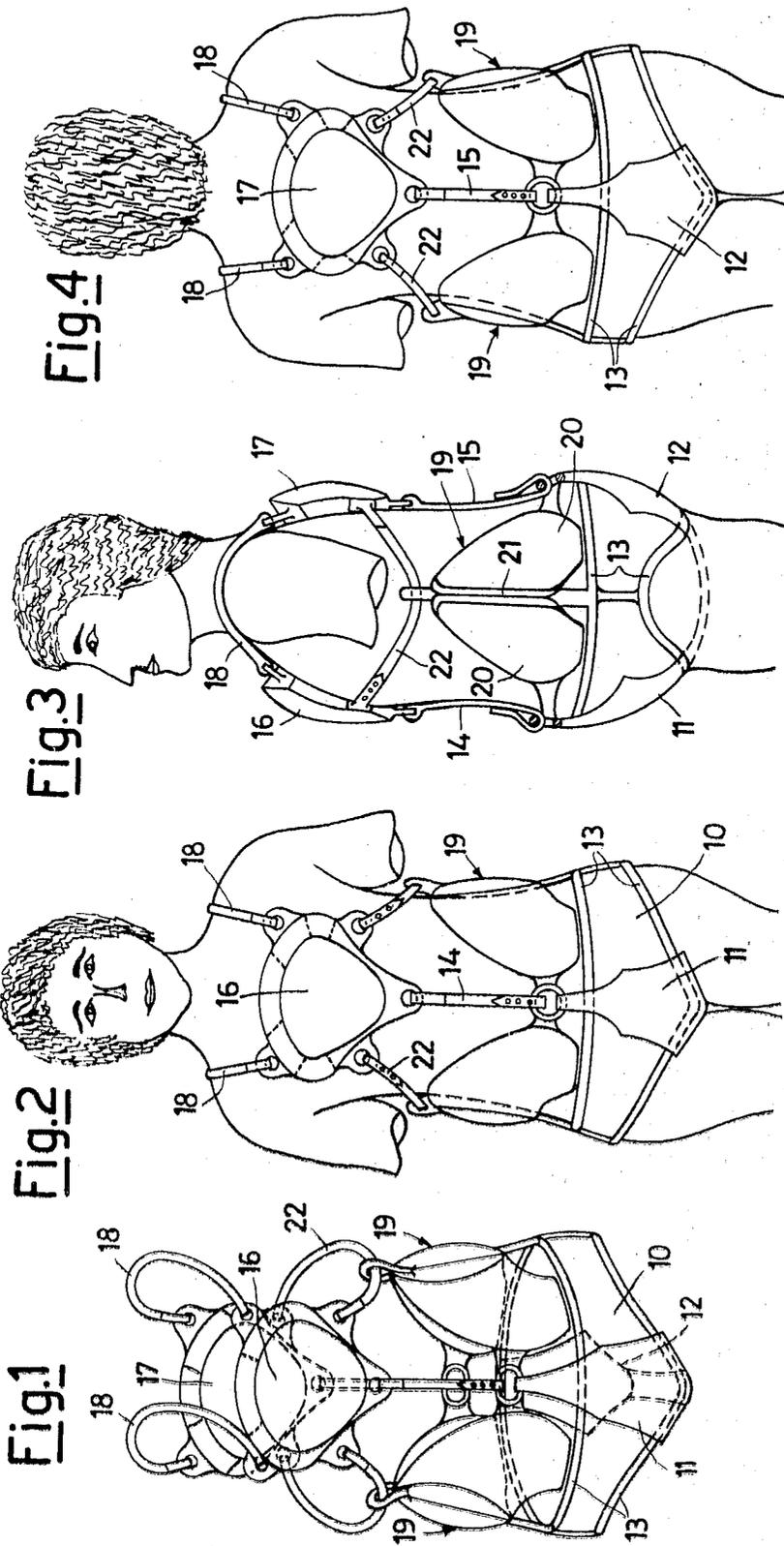
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5 Claims, 4 Drawing Figures





SAFETY BATHING-SUIT

This invention relates to safety bathing-suits and, more particularly, to bathing trunks to which floating members are secured.

A safety bathing-suit is disclosed, which essentially comprises a bathing-trunks member to which three pairs of floaters are connected by means of ties or belts. Of the floaters, two pairs are placed on the wearer's sides and each floater provides one eighth of the total additional buoyancy required, the other pair of floaters being placed on the breast and the back of the wearer. Each floater of this latter pair provides the remaining half of the buoyancy thrust. It has been ascertained that a safe floating requires a buoyancy thrust (in addition to that provided by the wearer's body volume) of about 10 to 20 percent of the wearer's weight. Thus, a truly safe, not bulky and practical bathing-suit is provided which ensures buoyancy to the wearer without hindering his movements when swimming.

This invention relates to a safety bathing-suit which is particularly useful to those who desire to learn swimming and also to those who, being an even skilled swimmer, desires to swim under conditions of absolute safety.

An object of the invention is to provide a safety bathing-suit which is adapted to ensure, in addition to preventing the bather from sinking, the most desirable equilibrium conditions in order that the bather may easily take the exact positions which are necessary for practising any kind of styles of swimming strokes, or may idly float on his back for a rest period.

The problem of providing buoyancy to a swimmer, as is well known, has been faced and solved in the past by means of the so-called life-buoys, of the most varied kinds and shapes. However, all of these approaches have a number of defects among which, mainly, that of hindering the swimmer's movements, of offering a considerable resistance to motion and of impeding the learning of a correct swimming style.

This invention substantially does away with the problems and defects as enumerated above by means of a safety bathing-suit which is characterized by a particular symmetry of mass-arrangement which are adapted to impress a buoyancy thrust to the swimmer's body, without hindering his movements in the slightest and assuring, as the swimmer is in a vertical posture in water, that both the head and the shoulders may assuredly stay above the water level.

More particularly, the safety bathing-suit according to the present invention, of the kind comprising a bathing-trunks member, members for hooking the suit to the body, and parts which impress a buoyancy thrust to the wearer's body, is characterized in that the parts which impress a buoyancy thrust comprise two floaters, equal to one another, and placed on the breast and the back, respectively, and four floaters, equal to each other and symmetrically arranged, pairwise, with respect to the wearer's sides, said floating component parts being connected to the bathing-trunks member by properly adjustable ties.

In the preferred embodiment of the bathing-suit according to the present invention, one half of the buoyancy thrust which is required, is given by the pair of back and breast floaters, respectively, whereas the remaining half is evenly apportioned among the four floaters placed at the waist's height.

The foregoing and other features, objects and advantages of the present invention will become more clearly apparent from a scrutiny of the ensuing exemplary description, given with reference to the accompanying drawings, wherein:

FIG. 1 is a front perspective view showing the safety bathing-suit according to the invention,

FIG. 2 is a diagrammatical front view showing a wearer of the bathing-suit of FIG. 1, and

FIGS. 3 and 4 are a side view and a rear view, respectively, showing the same wearer of FIG. 2.

Having now particular reference to the drawings, the safety bathing-suit in question comprises a bathing-trunks member 10, made of any suitable textile material having an appropriate elasticity, said bathing-trunks having two reinforced gores 11, 12, front and back, respectively, and reinforced edges 13.

To said reinforced gores 11, 12, there is fastened the respective end of two belts or ties 14, 15, whose other ends are fastened to two floaters 16, 17, for the breast and the back, respectively, the floaters being connected together by means of belts or ties 18 and 22 which are passed over the shoulders and somewhat under the armpits of the swimmer.

Side floaters are generally shown at 19, each of which comprises two halves 20, hingably connected at 21 (FIG. 3) so as snugly to adhere to the sides and the waist of the wearer.

The floaters 19 are fastened, in such a way as to permit that their positions may be adjusted, to the edge of the bathing trunks 10 at the bottom, to the belts or ties 22 at the top, and to the belts or ties 14, 15, laterally.

All the floaters should be made of an appropriate material and their size will be calculated as a function of the different weights of the wearers, in the manner to be specified hereinafter.

In addition, the belts or ties will have an adjustable length or they will be made of a resiliently yielding material to adapt the bathing-suit to any human body size.

It is now appropriate to specify that, for the calculation of the dimensions of the floaters, once the material of which they consist has been selected, and which is preferably expanded polyurethane, it has been found that the overall buoyancy thrust due to the floaters should be about 10-20 percent of the wearer's body weight, said percentage being increased as the wearer's age decreases. The reason therefor is that the influence of the weight and size of the head as compared with the remaining parts of the body decreases as the wearer's age grows, starting from a maximum value as experienced in the first years of human life.

In this connection, a few examples of practical embodiments will now be indicated, in which reference is had to the use of expanded polystyrene and wherein:

a. H, L and S indicate, with reference to the bathing-suit as worn by a standing wearer, the height (that is, the overall vertical dimension), the width (that is, the maximum horizontal dimension) and the thickness of the back and breast floaters, respectively, whereas F indicates the buoyancy thrust due to each of the back and breast floaters.

b. h, l, s and f are the corresponding sizes and dimensions for the waist floaters.

EXAMPLE 1

For children having from 15 to 25 kgs. body weight, it has been found that an overall buoyancy thrust of 3 kgs. is required, to be distributed as follows:

F = 0.750 kgs.	S = 5.5 cms.
f = 0.375 kgs.	h = 15 cms.
H = cms.	l = 9 cms.
L = 18.6 cms.	s = from 4 to 4.5 cms.

EXAMPLE 2

For boys having from 25 to 45 kgs. body weight, it has been found that an overall buoyancy thrust of about 3.4 kgs. is required, to be distributed as follows:

F = 0.850 kgs.	S = 4.5 cms.
f = 0.425 kgs.	h = 16.2 cms.
H = 19.4 cms.	l = 10 cms.
L = 19.2 cms.	s = 4.5 cms.

EXAMPLE 3

For grown-ups having a weight of 45 to 85 kgs. an overall buoyancy thrust of about 3.6 kgs. has been found necessary, to be distributed as follows:

F = 0.900 kgs.	f = 0.450 kgs.
H = 19.4 cms.	h = 16.2 cms.
L = 19.2 cms.	l = 10 cms.
S = 5 cms.	s = 5.5 cms.

EXAMPLE 4

For grown-ups weighing from 85 to 120 kgs. a buoyancy thrust of about 4.200 kgs. has been found necessary, to be distributed as follows:

F = 1.050 kgs.	f = 0.525 kgs.
H = 20.5 cms.	h = 18 cms.
L = 20.5 cms.	l = 10 cms.
S = 5.5 cms.	s = 5.5 cms.

It is appropriate to specify that the component parts of the safety bathing-suit in question can be connected

to each other in many different manners, without impairing the scope of the invention.

What is claimed is:

1. A safety bathing-suit comprising a bathing trunks portion, members which impact a buoyancy thrust to the wearer of the bathing-suit connected to said bathing trunks portion, said members including
 - a first floater substantially symmetrically proportioned for covering the center portion of the chest of the wearer without extending to the area of the body of the arms of the wearer,
 - a second floater of substantially the same size and buoyancy as said first floater located at substantially the same height and centered on the back of the wearer,
 - and four additional floaters substantially equal in buoyancy to each other and positioned in pairs symmetrically positioned at the sides of the wearer, and adjustable ties connecting said members to each other and said bathing-trunks portion, said first and second floaters constituting a first floater system, said pairs of floaters positioned at the sides constituting a second floater system and a third floater system, said first system being connected to said second system and said third system, and also tied to said bathing trunks portion at a place vertically below the first system.
2. A bathing suit according to claim 1, characterized in that said back and breast floaters originate, each, one fourth of the overall buoyancy thrust and said four floaters symmetrically positioned with respect to the wearer's sides originate, each, one eighth of the overall buoyancy thrust.
3. A bathing-suit according to claim 1, characterized in that the bathing-trunks portion has reinforced areas on the front and the back, respectively, corresponding to the point of connection of said bathing-trunks portion with said ties.
4. A bathing-suit according to claim 1, characterized in that the bathing-trunks portion has reinforced edge portions.
5. A bathing-suit according to claim 1, characterized in that said ties are elastically stretchable.

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