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FLOATING SWIMMING POOL HOSE

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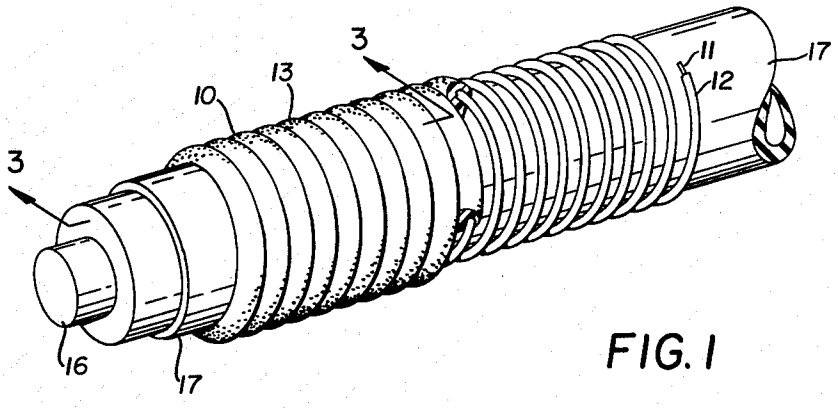


FIG. 1

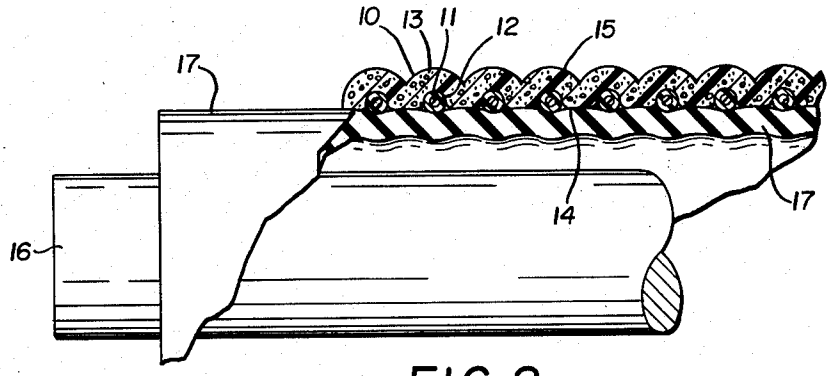


FIG. 2

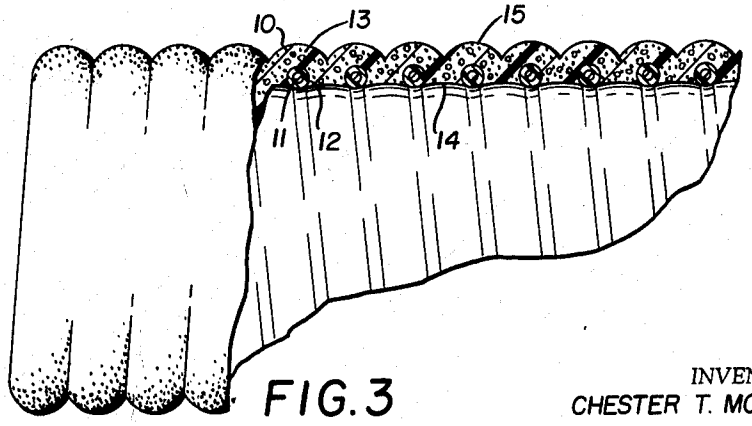


FIG. 3

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FLOATING SWIMMING POOL HOSE

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This invention relates to a swimming pool hose in general and more particularly to a swimming pool hose having the ability to float on the surface of the water.

The principal object of the invention is the provision of a floating swimming pool hose.

A further object of the invention is the provision of a swimming pool hose of the spiral wire reinforced type having an expanded plastic cover of sufficient buoyancy to float said hose.

A further object of the invention is the provision of a floating swimming pool hose having an expanded polyvinyl chloride cover having the characteristics of cushioning the hose and contributing to the long life thereof.

A still further object of the invention is the provision of a floating swimming pool hose that may be inexpensively formed and thereby capable of being sold at low cost and which hose does not require additional floats or other means for floating the same.

The floating swimming pool hose disclosed herein comprises an improvement in the art of spiral wire reinforced vacuum hose such as used in swimming pools for cleaning the same as will be understood by those skilled in the art. Such hose as has heretofore been available for this purpose has comprised non-floating vacuum hose usually of the spiral wire reinforced type having a plastic cover and requiring the use of float members attached thereto at intervals therealong in order that the same could be partially supported on the surface of the water. The present invention relates to a floating swimming pool hose in which the plastic covering is formed as an expanded bubble filled member having an unbroken inner surface and a substantially unbroken outer surface and characterized by possessing sufficient buoyancy to float the hose and water therein.

With the foreging and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

The invention is illustrated in the accompanying drawing; wherein:

FIGURE 1 is a perspective view of a portion of the floating swimming pool hose with parts broken away and parts in cross section and illustrating the same in position on a mandrel used in forming the hose.

FIGURE 2 is a side elevation of a portion of the floating swimming pool hose on a portion of a mandrel on which it is formed and taken on line 2—2 of FIGURE 1.

FIGURE 3 is a side elevation with parts broken away and parts in cross section showing the floating swimming pool hose.

By referring to the drawings and FIGURE 3 in particular, it will be seen that a floating swimming pool hose is disclosed which comprises a relatively thick bubble filled resilient flexible tubular plastic cover **10** having embedded therein a spiral light-weight metal wire **11** which in turn has a plastic cover **12** thereon. The spiral wire reinforced hose thus formed is capable of resisting crushing and inward collapse as would otherwise occur when the hose is connected to the inlet of a pump and water pumped therethrough. The plastic cover **10** has a majority of its

cross sectional area filled with a plurality of minute air bubbles **13, 13** lending sufficient buoyancy to the water filled hose to enable it to float on the surface of a swimming pool. The inner surface **14** of the hose takes the form of an unbroken continuous skin or membrane which is smooth and which extends uniformly between the spaced sections of the plastic covered reinforcing wire **11**. The outer surface **15** of the cover **10** is slightly roughened and unbroken and provides an attractive textured non-slip surface which is particularly suitable for resisting abrasion and wear to the resiliency thereof resulting from the relatively large proportion thereof represented by the air bubbles **13, 13** therein.

The light-weight metal wire **11** is preferably aluminum and the plastic cover **10** thereon is preferably polyvinyl chloride, to which azo dicarbon amide is added in the ratio of 2 oz. of azo dicarbon amide to 100 lbs. of polyvinyl chloride at a temperature of approximately 350° F. The azo dicarbon amide is commercially known as "Kemprore R–125" and "Cellogen A–Z."

In forming the floating swimming pool hose disclosed herein a mandrel **16** having an elongate tubular inflatable member **17** thereon as seen in FIGURES 1 and 2 is employed and the spiral reinforcing wire **11** with its polyvinyl chloride coating **12** thereon is positioned thereon as shown in FIGURE 1 of the drawings with the convolutions thereof in uniformly spaced relation to one another. The mandrel **16** is provided with an opening (not shown) by means of which air is introduced into the area between the mandrel and the elongate tubular member **17** so that the same may be expanded to hold the spiral reinforcing wire **11** in desired position thereon as shown in FIGURE 1.

The mandrel **16** with the plastic coated wire **11** thereon is then passed through a cross head extruder by which the polyvinyl chloride-azo dicarbon amide foamed material is extruded uniformly over the mandrel and the reinforcing wire so as to form the cover **10**. The material is characterized by its almost instantaneous setting as it leaves the extruder forming the bubble filled cover **10** as hereinbefore described. The inner unbroken skin or membrane surface **14** heretofore described is formed by reason of the uniform deposit of the cover material by the extruder on the mandrel and over the reinforcing wire **11**. The plastic cover material in its heated extruded condition bonds securely and uniformly with the plastic coating **12** on the reinforcing wire **11**. The exterior surface **15** of the cover **10** is characterized by its roughened appearance which results from the multitude of bubbles immediately beneath its surface.

It will occur to those skilled in the art that several materials may be used to form the cover **10** and which materials possess the buoyant properties desirable together with resilience, flexibility and resistance to wear. In forming the cover material specified herein with polyvinyl chloride or one of the similar polyvinyl compounds, the addition of the foaming material results in the liberation of carbon dioxide which is entrapped in the material and forms the cellular structure thereof which when set forms a tough highly flexible and resilient plastic foam having excellent buoyant properties and the physical characteristics desired in a floating swimming pool hose as set forth herein.

It will thus be seen that a floating swimming pool hose has been disclosed which meets the several objects of my invention, and having thus described my invention, what I claim is:

1. A floating swimming pool hose comprising an elongate section of plastic coated spiral reinforcing wire having an integral cover bonded thereto, said cover comprising a single layer of bubble filled resilient plastic material having an unbroken smooth inner surface extending

between and partially around each of the convolutions of said plastic coated spiral reinforcing wire so as to completely fill the areas between said convolutions.

2. The floating swimming pool hose set forth in claim 1 and wherein said cover has a thickness at least double the diameter of the plastic coated reinforcing wire.

3. The floating swimming pool hose set forth in claim 1 and wherein the plastic covering on the reinforcing wire comprises polyvinyl chloride and the cover comprises bubble filled polyvinyl chloride and wherein the cover is bonded to the plastic coating on the reinforcing wire.

4. The swimming pool hose set forth in claim 1 and wherein said cover comprises polyvinyl chloride in an expanded cellular form.

5. A floating swimming pool hose comprising an elongated section of tubular cellular material having an unbroken smooth inner wall surface with an elongated section of spiral reinforcing wire embedded therein in spaced relation to the inner and outer wall surfaces thereof.

6. The floating swimming pool hose set forth in claim 5

and wherein the spiral reinforcing wire embedded therein is coated.

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