

Oct. 27, 1964

C. A. HANSON

3,154,050

EMERGENCY SIGNAL APPARATUS

Filed July 6, 1962

2 Sheets-Sheet 1

Fig 1

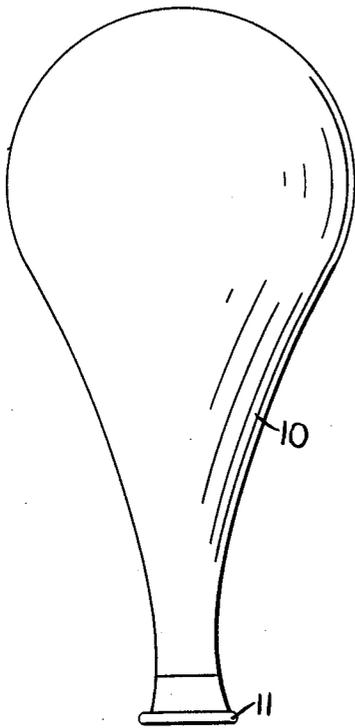


Fig 2

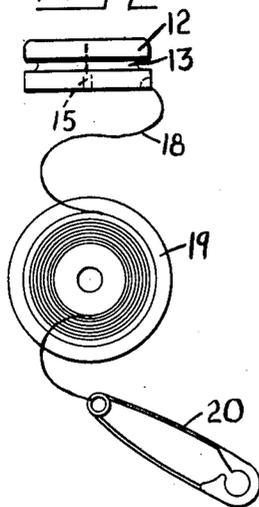
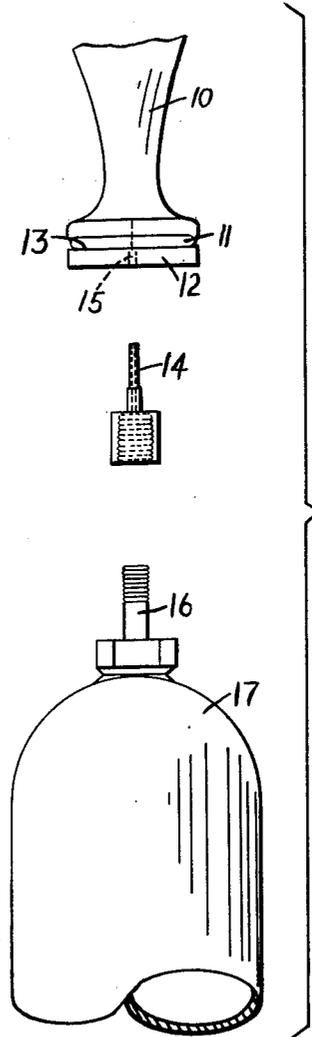


Fig 3



INVENTOR.
CHRIS A. HANSON

BY *Wells & St. John*
ATTYS.

Oct. 27, 1964

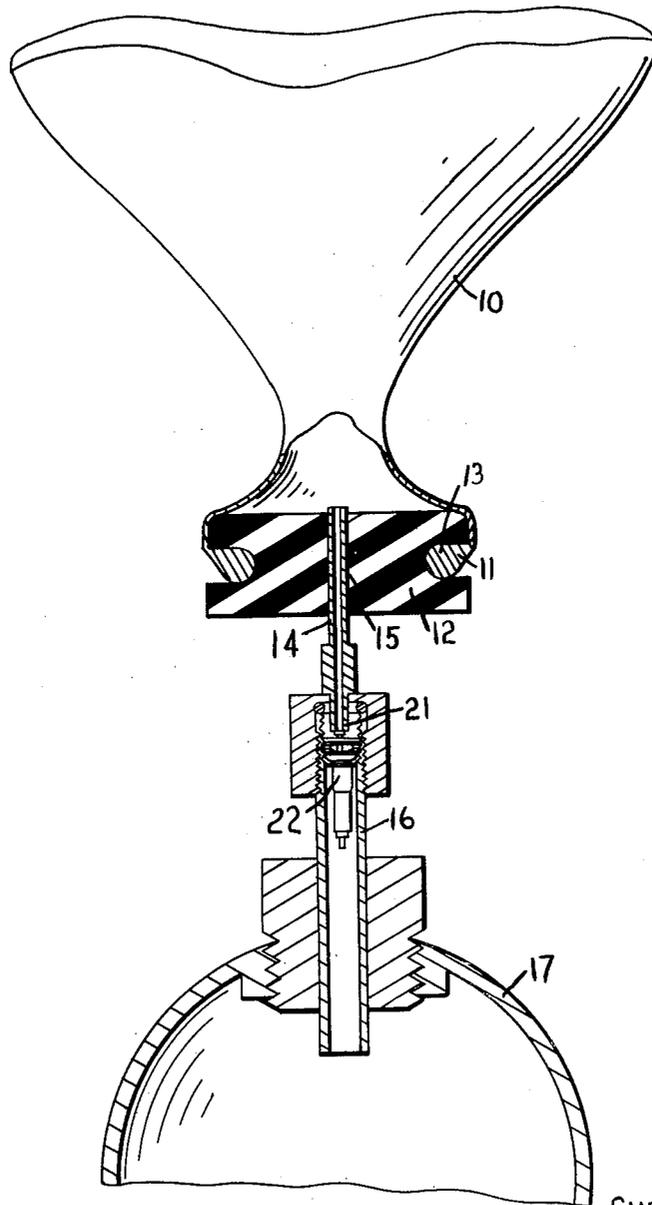
C. A. HANSON
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Fig 4



INVENTOR
CHRIS A. HANSON

BY

H. J. Wells & St. John

ATTYS

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EMERGENCY SIGNAL APPARATUS

Chris A. Hanson, 911 Poplar St., Sandpoint, Idaho

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1 Claim. (Cl. 116—124)

This invention relates to a novel emergency signal apparatus designed for individual use to indicate the position of a person in distress.

The present invention is concerned with an emergency signaling apparatus for use by persons requiring emergency aid. It very frequently occurs that a wounded or otherwise disabled person finds himself unable to signal his position to surrounding persons who may be searching for him. Often the disability of the person precludes him from building a fire or making sounds to attract the attention of searchers. The device described in the following specification provides a simple package containing a highly effective and universally usable signalling balloon which can be utilized to attract attention in an emergency condition.

It is a first object of this invention to provide such an apparatus which will be readily available to a person in distress without requiring the exertion of undue physical energy.

Another object of this invention is to provide such an apparatus utilizing a reflective balloon which is adapted to be carried aloft while anchored to a stationary object to thereby mark the person's position. The balloon is adapted to be inflated by the user when required. The inflation is accomplished by use of a pressurized container and self-sealing valves, requiring no complicated manipulation by the user.

Another object of this invention is to provide this device in a compact unit which can be carried on the person without any difficulty.

These and further objects will be evident from a study of the following disclosure taken in conjunction with the accompanying drawings which illustrate one preferred form of the invention.

In the drawings:

FIGURE 1 is an elevation view of the balloon utilized in this invention;

FIGURE 2 is an elevation view of the stopper and anchor apparatus utilized in this invention.

FIGURE 3 is an exploded elevation view of the balloon inlet and valve arrangement utilized to effect inflation; and

FIGURE 4 is an enlarged fragmentary sectional view taken through the balloon inlet and tank valve apparatus, showing the inflation of a balloon.

This invention is concerned with an emergency signaling apparatus, particularly designed for disabled persons. It is readily adaptable for use on water or on land and can be used by those who are merely lost as well as those seriously injured and unable to move themselves. The device very simply comprises a balloon 10 which is preferably coated with a reflective surface. The balloon 10 is adapted to be inflated by means of a pressurized tank 17 which is carried on the person and filled with helium or other usable light gases. The balloon 10 is sealed by a stopper 12 and is inflated by means of an insertable needle 14 mounted on the tank 17. Should one require aid and wish to signal his position and plight to

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surrounding persons, he need only inflate the balloon 10 by use of the tank 17 and send it aloft under controlled conditions so as to hover above him and indicate his position over a wide visual span.

More particularly, the balloon 10 has an inlet bounded by a resilient ring 11. The inlet of the balloon is fitted with a disk-shaped stopper 12, having an annular groove 13 within which the ring 11 is seated. The groove 13 has a diameter greater than the normal diameter of ring 11 so that the ring 11 is securely held within the groove 13, as can be seen in FIGURE 4. The stopper 12 is provided with a hole 15 partially formed therethrough. The stopper 12 should be manufactured of a soft resilient rubber material which will be self-sealing when punctured.

In order to inflate the balloon 10 a hollow needle 14 is provided for insertion through the hole 15 in communication with the interior of the balloon 10, as seen in FIGURE 4. The needle 14 is preferably mounted on a valve stem 16 on the pressurized tank 17. The valve stem 16 is identical to the valve stem commonly used on automobile tires and need not be further described herein. The needle 14 includes a projection 21 which, when tightened on the stem 16, operates the valve core 22 so as to release gas from the interior of the tank 17 through the needle 14 and into the interior of balloon 10.

Since the balloon 10 is to be inflated with helium or other lighter-than-air gas, the balloon 10 must be anchored to the user or a surrounding object above which it is to fly. The anchoring apparatus includes a monofilament line 18 of light material such as nylon and a simple reel 19 of plastic or cardboard. Such reels are commonly used to carry fishing leaders or lines. A pin 20 is provided at one end of the line 18 and may be fastened to the person's clothing or to an adjacent branch or other object. The remaining end of the line 18 is securely fastened to the stopper 12.

The operation of this signaling apparatus is extremely simple. The entire assembly may be carried within a cap mountable on the end of tank 17. When inflation is required, the needle 14, which is loosely mounted on valve stem 16, is first inserted through the hole 15 and pushed through the stopper 12. The pin 20 is then anchored where desired and the needle 14 is turned until gas is released from the tank 17. The tank 17 is preferably filled with gas under pressure sufficient to effect proper inflation of balloon 10. When such inflation has been accomplished the stopper 12 and balloon 10 are released from the needle 14 and the self sealing action of stopper 12 will prevent release of the gas. The balloon 10 is then sent aloft under the control of line 18 and, if coated with a suitable reflective material, may be seen for many miles by surrounding persons or searchers.

The foregoing assembly is extremely simple and very effective. It may be readily operated by a person almost completely disabled, since it requires no physical exertion and no mechanical aptitude. After use or damage to the balloon 10, the balloon alone may be renewed. The stopper 12 and tank 17 and all connected assemblies are reusable over and over. The tank 17 may be charged at any readily available source of helium gas.

Various modifications may be made in the practice of this invention without deviating from its basic scope as defined in the following claim. Therefore only this claim is intended to limit or restrict the scope of this invention.

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Having thus described my invention, I claim:
 An emergency signal apparatus comprising:
 a balloon having an integral restricted inlet bounded
 by a resilient self-sealing ring;
 a stopper mounted within said inlet including a resilient
 disk having an annular groove formed about its pe- 5
 riphery complementary in configuration to said ring
 and adapted to receive said ring, said stopper having
 a guide hole formed partially therethrough;
 gas tank means including a valve adapted to control 10
 exit of gas from said gas tank means through the
 valve and a hollow needle mounted on said gas tank
 means in selective communication with the interior
 thereof through said valve adapted to pierce said
 stopper through said guide hole; 15

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and anchor means fixed at one end to said stopper
 adapted to limit travel of said balloon when inflated
 relative to a reference object to which its remaining
 end is fixed.

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