April 29, 1958 D. E. WINFIELD 2,832,173

BUBBLE DISSEMINATOR

Filed Aug. 1, 1956 2 Sheets-Sheet 1

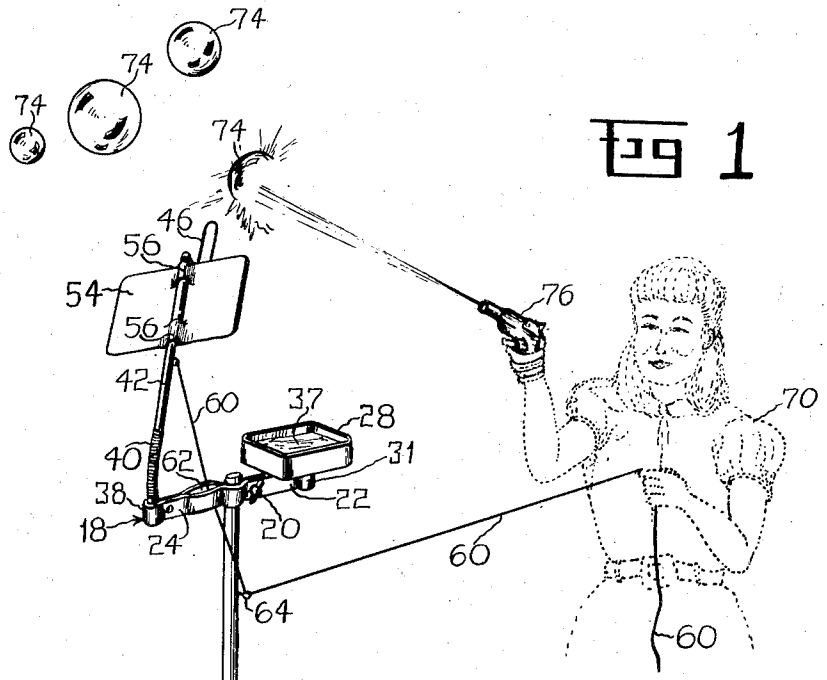


Fig 1

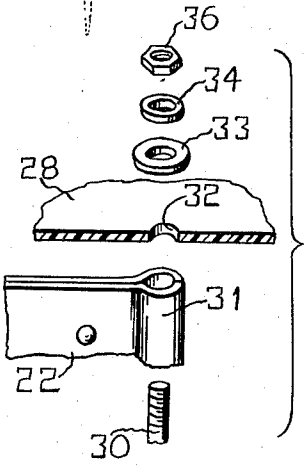


Fig 4

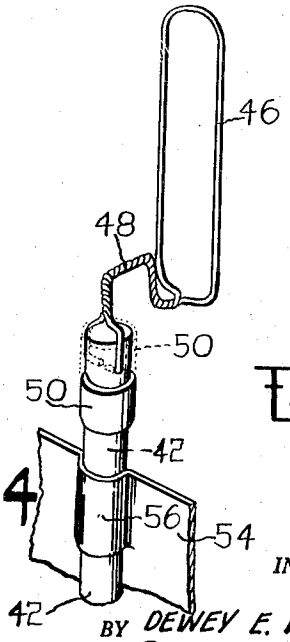


Fig 5

INVENTOR.

BY DEWEY E. WINFIELD

Dybvig and Jacox

HIS ATTORNEYS

April 29, 1958 D. E. WINFIELD 2,832,173

BUBBLE DISSEMINATOR

Filed Aug. 1, 1956 2 Sheets-Sheet 2

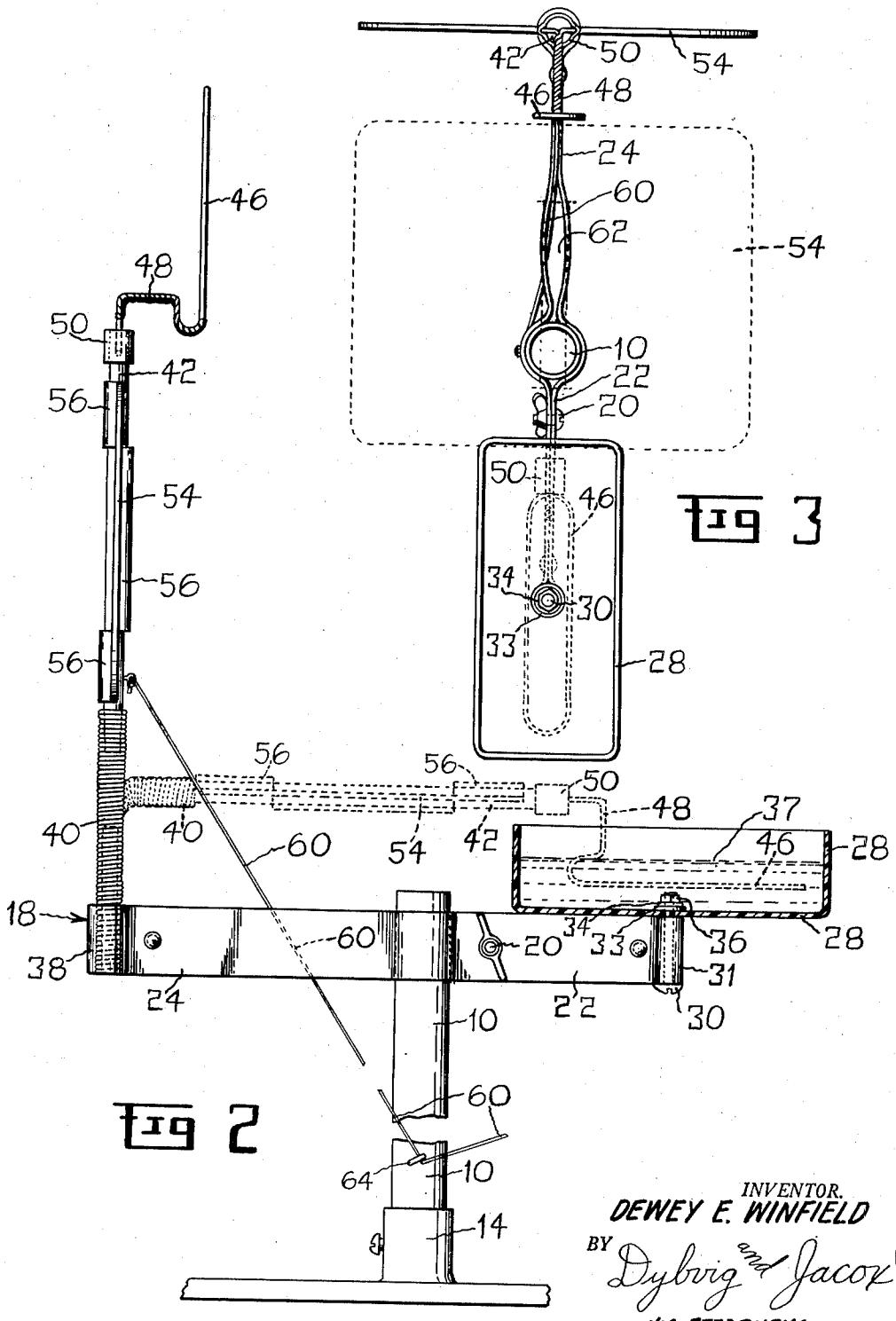


Fig 3

Fig 2

INVENTOR.
DEWEY E. WINFIELD
BY Dybvig and Jacox
HIS ATTORNEYS

United States Patent Office 2,832,173 Patented Apr. 29, 1958

2,832,173

BUBBLE DISSEMINATOR

Dewey E. Winfield, Dayton, Ohio

Application August 1, 1956, Serial No. 601,452

7 Claims. (Cl. 46—8)

This invention relates to a remotely controllable bubble producing and disseminating apparatus. The invention relates more particularly to a remotely controllable bubble producing and disseminating apparatus which is adapted for use in connection with a game or the like. However, the invention is not so limited due to the fact that this invention may have numerous types of uses.

An object of this invention is to provide a bubble producing and disseminating apparatus which is readily and easily remotely controllable.

Another object of this invention is to provide a remotely controllable bubble producing and disseminating apparatus which may be constructed at a comparatively low cost.

Another object of this invention is to provide a remotely controllable bubble producing and disseminating apparatus which may be disposed upon a floor or secured to the ground.

Another object of this invention is to provide a bubble producing and disseminating apparatus which is adapted for use in connection with a game or the like.

Other objects and advantages reside in the construction of parts, the combination thereof, the mode of operation, and the method of manufacture, as will become more apparent from the following description.

In the drawings, Figure 1 is a perspective view showing a remotely controllable bubble producing and disseminating apparatus of this invention.

Figure 2 is an enlarged side elevational view with parts shown in section of a bubble producing and disseminating apparatus of this invention.

Figure 3 is an enlarged top plan view of the invention.

Figure 4 is an enlarged fragmentary perspective exploded view showing a means for attaching a container of this invention to the support structure thereof.

Figure 5 is an enlarged fragmentary perspective view showing the loop member of this invention and a portion of the fan member of the invention.

Referring to the drawings in detail, a remotely controllable bubble producing and disseminating apparatus of this invention comprises a post member 10 which may have a pointed lower end portion 12 adapted to be driven into the ground as shown in Figure 1 or the lower end portion of the post 10 may be inserted into a base member 14 for support thereof upon any suitable surface, as shown in Figure 2. Preferably, the post 10 is disposed substantially vertical.

Attached to the post 10 adjacent the upper end thereof is a bracket member 18 which is clamped thereto by means of a bolt and nut assembly 20. The bracket 18 has an elongate portion 22 extending at one side of the post 10 and an elongate portion 24 in alignment therewith and extending from the opposite side of the post 10.

Attached to the portion 22 of the bracket 18 is a container member 28 which is secured thereto by means of a bolt member 30 which extends through a tube 31 in the end of the portion 22. The container 28 has an aperture

32 in the bottom thereof through which the bolt 30 extends. A sealing washer 33 is retained against the container 28 by means of a clamping washer 34 and a nut 36, as clearly shown in Figures 2 and 4. Any suitable liquid 37 which readily produces bubbles may be used within the container 28.

The portion 24 of the bracket 18 is provided with a sleeve 38 within which is firmly secured one end of an elongate helical spring member 40. The helical spring member 40 is adapted to be normally substantially vertically disposed.

Attached to the upper end of the spring member 40 by any suitable means such as by threading is the bottom end of a rod member 42. Attached to the rod member 42 adjacent the upper end thereof is a loop 46 which may be of any suitable material such as wire, or the like. The loop 46 is adapted to support a film of bubble producing liquid in a conventional manner. However, any other type of liquid carrier for forming bubbles may also be used. The loop of wire material 46 has a twisted stem portion 48 having the ends thereof inserted into apertures at the upper end of the rod 42, as clearly shown in Figure 5. A sleeve member 50, which may be made of any suitable material such as rubber or other elastic substance, is adapted to cover the ends of the wire material, holding the ends of the wire material within the apertures of the rod 42, as illustrated in Figures 2, 3 and 5.

The twisted stem portion 48 of the wire is formed so as to position the loop 46 laterally from the rod 42 and substantially parallel therewith, as shown in Figures 2 and 5. It has been found preferable to have the loop 46 elongate in shape in order that a large quantity of bubble producing liquid can be retained by the loop 46.

Also attached to the rod 42, parallel therewith adjacent the upper end thereof is a fan member 54 which is attached to the rod 42 by any suitable means such as by means of arcuate protuberances 56 of the fan 54 through which the rod 42 is inserted, as shown in Figures 1, 2 and 5.

Attached to the rod 42 adjacent the fan 54 and extending therefrom is a flexible cord 60. The cord 60 loosely passes through an aperture 62 of the portion 24 of the bracket 18. The cord 60 also slidably passes through an eyelet 64 which is attached to the post 10 below the bracket 18. The cord 60 then extends remotely to any suitable distance from the post 10.

When the cord 60 is pulled by a person 70 in a manner as shown in Figure 1, the rod member 42 is pulled downwardly to a position shown in dotted lines in Figures 2 and 3 against the resilient action of the elongate helical spring 40. The loop 46 thus is dipped into the liquid 37 in the container 28, as shown by dotted lines in Figures 2 and 3. Thus, the loop 46 gathers and retains a quantity of the liquid 37. When tension upon the cord 60 is released by the person 70, the spring 40 causes the rod member 42 to rapidly move toward its normal vertical postion. As the rod member 42 is rapidly returned to its normal position by means of the helical spring 40, liquid from the container 28 which is retained by the loop 46 is carried upwardly and is discharged from the loop 46 forming a bubble, such as any one of the bubbles 74, shown in Figure 1. As the bubbles 74 are produced by movement of the loop 46 from the liquid 37 and are discharged from the loop 46, the fan member 54 which also moves with the rod 42 causes a disturbance in the air causing a flow of air upwardly. This upward flow of air actuated by the fan 54 causes the bubbles 74 discharged from the loop 46 to be carried upwardly and away from the apparatus of this invention. Thus, the person 70, or any other person in the vicinity of the apparatus, may use the bubbles 74 as targets. Thus a gun, such as the gun 76 shown in Figure

1, which is capable of discharging a fluid, may be used to shoot the bubbles 74.

Thus, the apparatus of this invention provides means for remote control of bubble production and dissemination. The apparatus of this invention may thus be used in connection with the shooting of moving targets, as a game or the like. However, it is to be understood that the apparatus of this invention may be used for other purposes.

Although the preferred embodiment of the apparatus has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consist in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claims.

Having thus described my invention, I claim:

1. In a remote control assembly for disseminating bubbles, support structure, a container mounted on the support structure, the container being open at the top thereof, bubble producing liquid within the container, an elongate helical spring member having one end thereof attached to the support structure in spaced relation from the container, the spring member being normally substantially vertical, the bottom end of the spring member being attached to the support structure, a rod member having one end thereof attached to the upper end of the spring member, the spring member retaining the rod member normally substantially vertical, a rigid loop of material attached to the upper end of the rod member and extending therefrom, a fan member attached to the rod member adjacent the upper end thereof, a flexible cord attached to the rod member adjacent the fan member, an eyelet attached to the support structure below the container and having the flexible cord slidably passing therethrough, the flexible cord thus extending from the support structure, the rod member thus being pulled downwardly toward the container by tension on the flexible cord and the spring member thus being caused to resiliently bend, the loop of material being caused to engage the bubble producing liquid within the container so that upon release of the flexible cord the spring member forces the rod upwardly so that liquid is carried by the loop so that a bubble is produced, the bubble being forced away from the rod member by air flow created by movement of the fan.

2. In an apparatus for producing bubbles, support structure, a container carried by the support structure, bubble producing liquid disposed within the container, an elongate helical spring, one end of the spring being attached to the support structure in spaced relation from the container, a rod having one end attached to the other end of the spring, an elongate loop of material attached to the other end of the rod, a fan attached to the end of the rod adjacent the loop of material, control means attached to the rod and extending remotely therefrom for pulling the rod toward the container as the spring member is resiliently bent, the loop of material thus entering the bubble producing liquid, the control means also permitting the spring member to move the rod member in a direction from the container so that a portion of the bubble producing liquid is carried by the loop of material so that a bubble is formed and released from the loop of material, the fan creating a flow of air in a direction from the loop so that the bubble which is formed is carried by the flow of air away from the loop and away from the rod.

3. A mechanism for disseminating bubbles of the type provided with a container having bubble producing liquid therein, a rod supported in spaced relation from the container, a loop attached to the rod means for rapidly moving the rod in a direction from the container, the combination comprising a cord attached to the rod and extending remotely therefrom, the rod being movable by the cord toward the container so that the loop is dipped into the liquid within the container, movement of the rod in a direction from the container thus causing a portion of the liquid to be carried by the loop so that a bubble is formed by the liquid carried by the loop, the bubble being tossed from the loop as the rod rapidly moves, and broad area fan means carried by the rod for causing a flow of air in the direction of movement of the rod, the flow of air thus carrying the bubble.

4. A bubble producing and disseminating apparatus of the type provided with support structure, a container attached to the support structure, bubble producing liquid within the container, a liquid carrier pivotally attached to the support structure and movable into the container, the liquid carrier supporting a quantity of said liquid as the carrier moves from the container so that said quantity of liquid forms a bubble upon the carrier, the combination comprising means attached to the carrier swiftly moving the carrier in a direction from the container so that the bubble is tossed from the carrier during movement thereof, and broad area fan means attached to the carrier and operable by movement thereof from the container for causing an air flow away from the carrier thus forcing the bubble in a direction from the carrier.

5. A remotely controllable apparatus for producing and disseminating bubbles comprising a post member adapted to be substantially vertically disposed, an elongate bracket having the central portion thereof attached to the upper portion of the post, a container attached to the bracket adjacent one end thereof, the container being open at the upper portion thereof, bubble producing liquid within the container, an elongate helical spring member, one end of the spring member being attached to the bracket adjacent the end thereof opposite the container, the spring member being substantially vertically disposed with the spring member extending upwardly from the bracket, a rod member, one end of the rod member being attached to the upper end of the spring member with the rod member extending upwardly from the spring member, a loop of wire attached to the upper end of the rod member and extending laterally therefrom and substantially parallel thereto, a fan member attached to the rod member adjacent the loop of wire, a cord attached to the rod member adjacent the fan and extending therefrom, the spring member being bendable by tension on the cord to permit the rod member to assume a substantially horizontal position so that the loop of wire becomes disposed in the liquid in the container, release of tension on the cord permitting the spring member to move the rod member toward its upward position so that liquid carried by the loop forms a bubble in the air, the fan member moving with the rod member causing air flow to carry the bubble in a direction from the rod member.

6. In an apparatus for producing bubbles, support structure, a container carried by the support structure, bubble producing liquid disposed within the container, a loop of material movable into the liquid, means attached to the loop and carried by the support structure swiftly moving the loop from the container, a broad area fan carried by said means adjacent the loop and movable therewith, a cord attached to said means and extending remotely therefrom moving the loop toward the container when the cord is pulled, the loop of material thus entering the bubble producing liquid, the cord when slack permitting said means to swiftly move the loop in a direction from the container so that a portion of the bubble producing liquid is carried by the loop of material so that a bubble is formed upon the loop and then tossed therefrom, the fan swiftly moving with said means creating a flow of air in a direction from the loop so that the bubble is forced away from the loop and away from said means by the flow of air caused by movement of the fan.

7. An apparatus for disseminating bubbles of the type having support structure, a container carried by the sup-

port structure, bubble producing liquid disposed within the container, a loop of material movable toward and away from the container, the combination comprising resilient means for swiftly moving the loop away from the container, control means extending remotely from the loop of material and operable when actuated to move the loop toward the container and into the container, the loop of material thus entering the bubble producing liquid, the control means when deactuated permitting the resilient means to move the loop of material away from the container carrying a bubble therewith, swiftness of movement of the loop causing the bubble to be tossed

therefrom, a broad area fan secured adjacent the loop of material and movable therewith, the fan creating a flow of air in a direction from the loop so that the bubble which is formed on the loop and tossed therefrom is forced by the flow of air away from the loop as the loop and fan move the container.

References Cited in the file of this patent

UNITED STATES PATENTS

2,618,886	Wagner	Nov. 25, 1952
2,741,068	Hollis	Apr. 10, 1956

U. S. DEPARTMENT OF COMMERCE

PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 2,832,173 Dewey E. Winfield April 29, 1958

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 72, after "rod" insert a comma; column 6, line 6, after "move" insert -- from --.

Signed and sealed this 10th day of June 1958.

(SEAL)

Attest:

KARL H. AXLINE
Attesting Officer

ROBERT C. WATSON
Commissioner of Patents