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NOVELTY DEVICE

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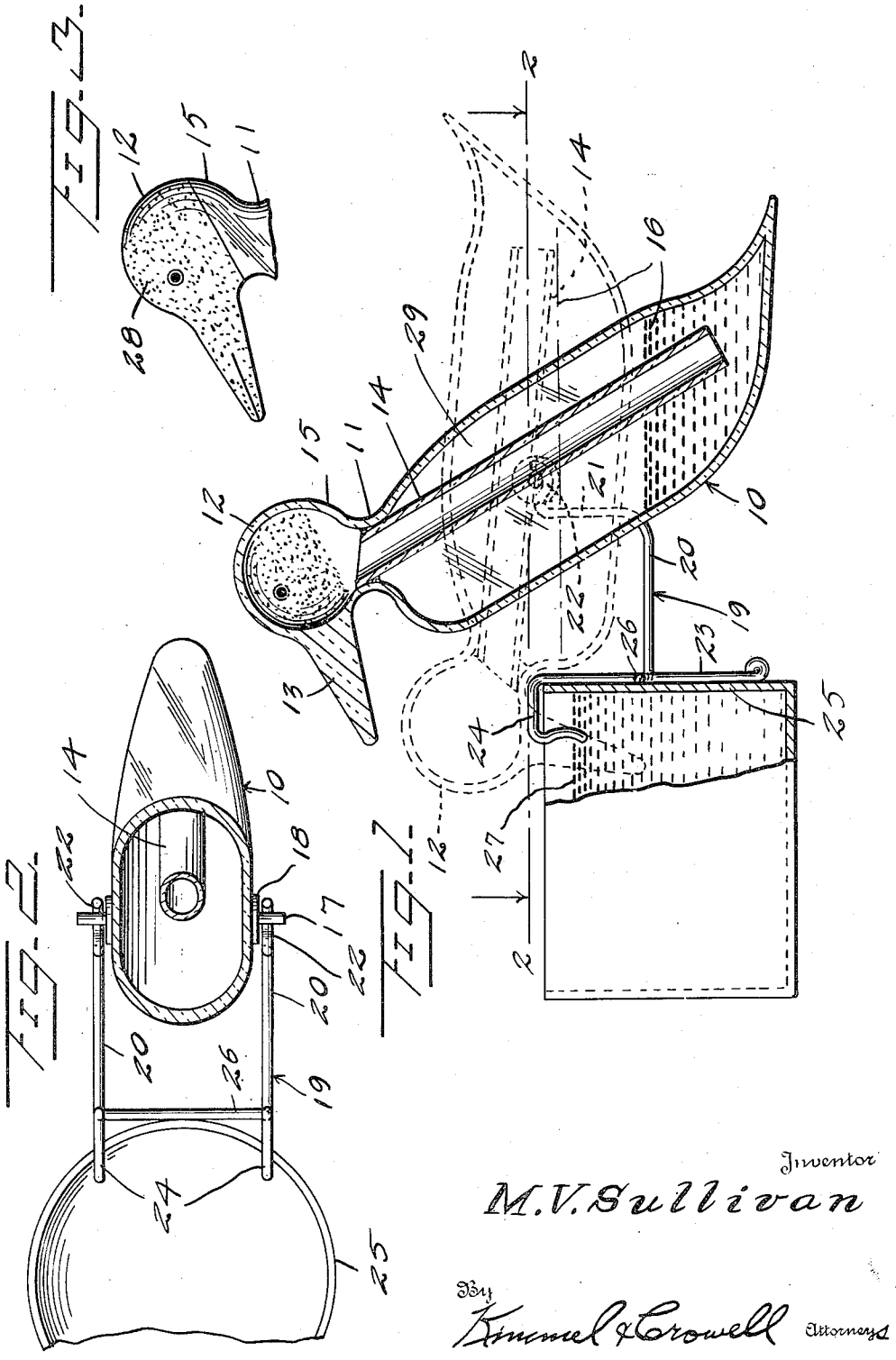

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NOVELTY DEVICE

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6 Claims. (Cl. 46—124)

1

This invention relates to a power device useful in actuating amusement and advertising devices and the like.

Power devices usually require considerable attention or expenditure of fuel or electricity for their operation whereas this invention appears to the casual observer to be an example of perpetual motion. Actually, this device requires no attention and requires no fuel in the ordinary sense, as its operation may be effected by atmospheric phenomena associated with ambient air. The power, therefore, is created by the inherent characteristics of this invention, and the principle may be utilized for supplying power to various articles or devices where movement of the whole device or parts thereof is desired.

Specifically this device is shown as adapted to a bird form that rotates about a support and dips in and out of a container of water, which operation is effected by evaporative cooling in common ambient air, arranged in such manner as to maintain a temperature differential of the parts.

The entire hollow structure is shaped into a bird form with two divided spaces arranged so that the head and body may be maintained as cool and warm portions respectively. An elongated hollow member, in the form of a tube, extends from the boundary of the head at the point of juncture with the body to an appropriate distance into the interior of the body. A beak, attached to the head, is maintained in a wetted state by constant dipping into a dish of water with each oscillation of the device. This beak may be formed of separate wicking material that extends over the head or it may be formed as a part of the head structure and surfaced with an absorbent medium, or the surface of the beak and head may be granulated so as to serve as a wick and thus maintain the head in a wetted state.

Evaporative cooling will then maintain the head at a temperature lower than that of the ambient air depending on the relative humidity. The body of the bird, being not subject to evaporative cooling but having a relatively large area exposed to the ambient air will be maintained approximately at the temperature of the ambient air. Thus a temperature differential will be maintained between the two parts and the device will operate as described.

With the above and such other objects in view, as may hereinafter more fully appear, the invention consists of the novel construction, combination and arrangement of parts, as will be hereinafter more fully described, and illustrated in

2

the accompanying drawing, wherein are shown embodiments of this invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention, as claimed.

In the drawing:

Figure 1 is a vertical sectional view of a device constructed according to an embodiment of this invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a fragmentary side elevation of the head or beak of the device.

Referring to the drawing the numeral 10 designates generally a hollow body which, in the present instance, is formed in the configuration of the body of a bird, which includes a neck portion 11, having a hollow head 12 extending therefrom and a beak 13. The body 10 has extending lengthwise therein a tube 14 which terminates at its rear or lower end at a point within the body 10, and suitably spaced from the rear end thereof so as to be positioned below the level of a pool of liquid 16 at the beginning of each cycle of operation. The tube 14 terminates at its upper or forward end at the entrance to the head 12 and is firmly sealed, as at 15 as shown in Figure 1, in the neck 11 in such manner as to provide the only means by which the interior of the head 12 may communicate with the body 10.

The interior of the body 10 and the head 12 is initially substantially evacuated of air and is charged with a quantity of vaporizing medium in excess of the amount necessary to maintain vapor saturation at normal room temperatures. The vaporizing medium may be any suitable fluid which will readily vaporize and condense at ordinary room temperatures and within reasonable working pressures, such as ether, alcohol, carbon tetrachloride or chloroform.

The body 10 is also charged with a pool of liquid 16 of a kind that does not materially affect the vapor pressure of the vaporizing medium and in sufficient quantity to effect a seal at the bottom of the tube 14 between the head and the body during the initial cycle of operation and to effect the desired change of balance of the device throughout the operating cycle.

The head being the cool end of the device will have a lower vapor pressure than the body 10, so that this pressure differential effects movement of the liquid 16 from the body 10 to the head 12.

The body 10 is rockably supported on a pair of laterally extending trunnions 17 carried by plates

18 which are fixed to the outer side of the body 10, in any suitable manner such as by adhesive or the like, and the trunnions 17 are so positioned relative to the length of the body and head that the liquid forced upwardly into the head 12 by the vapor pressure in body 10 will over-balance the body and cause the same to rock downwardly to substantially the dotted line position shown in Figure 1.

The body 10 is rockably supported on a pair of bracket arms 19 including a pair of horizontal arms 20 having vertical arms 21 extending from the outer ends thereof and the vertical arms 21 are formed at their upper ends with arcuate saddles 22 within which the trunnions 17 are adapted to rockably engage.

The arms 20 have secured to the inner ends thereof vertical supporting bars 23 which are formed at their upper ends with hooks 24 for engagement over the upper end or rim of a liquid receptacle 25.

The vertical bars 24 are also connected together by a horizontal connecting bar 26. The receptacle 25 is adapted to have a cooling medium in the form of liquid, such as water or the like, disposed therein which is at a level, as indicated at 27, so that when the bird rocks downwardly the beak 13 will dip into the water or liquid. At the time the beak 13 is immersed at least partially in the liquid in the receptacle 25 the tube 14 is at an angle slightly above the horizontal, as shown in dotted lines in Figure 1, so that the seal between the tube 14 at the bottom thereof and the liquid in body 10 will be broken and the liquid in the head 12 can readily flow downwardly through the tube 14 back into the body 10 of the bird.

In order to assist in providing a relatively cool head and beak, the outer surface of the head and the beak may be coated with granular particles, as indicated at 28, so that the beak will retain a substantial amount of the cooling medium after the beak is raised to its uppermost or full line position, shown in Figure 1.

It will be understood that, if desired, the beak and head may be coated with a fabric which will serve as a wick in order to retain sufficient moisture to provide for forming a temperature differential between the head and the body of the device.

Normally the rear end of the body is maintained at substantial room temperature and the head and the beak, which constitute the cool end of the device, are maintained at a slightly lower temperature than the room temperature so that when the liquid is entirely disposed within the body 10, the higher vapor pressure in the vapor chamber 29 which is above the liquid 16 in body 10 will cause the liquid to flow upwardly into the head 12 and thus repeat the operating cycle.

As the device is normally disposed at an angle to the vertical, a small amount of liquid in the head 12 will cause the device to rock downwardly until the lower side of the neck 11 contacts the rim of the receptacle 25, at which time the beak 13 is immersed in the water and the liquid seal at the lower end of tube 14 is broken.

The device may be made as an article of amusement or a power device, and the device will operate through its condensing, vaporizing and pressure differential cycles, the time between each cycle being dependent on the temperature differential between the warm and cool ends of the device.

What I claim is:

1. A power unit comprising a hollow elongated body, a hollow member at one end of said body, a tube within said body and communicating at one end with said member, a volatile liquid in said body, vaporization of said liquid in said body producing a pressure whereby a portion of said liquid will be forced into said member, means rockably supporting said body whereby the latter will rock downwardly to position said tube at the opposite end thereof at least partially out of the liquid in said body whereby the liquid in said member will gravitatingly flow through said tube and back to said body, and means carried by said member for effecting a temperature differential between said member and the opposite end of said body.

2. A power unit, as set forth in claim 1, wherein said last named means comprises moisture retaining means on the exterior of said member.

3. A power unit, as set forth in claim 1, wherein said last named means comprises a fibrous element carried by said member.

4. A power unit as set forth in claim 1, wherein said last named means comprises granular means fixedly carried by said member.

5. A self-contained rocking toy comprising a water receptacle, water in said receptacle, a bird simulating member, and means rockably mounting said member on said receptacle, said member comprising a hollow elongated, substantially evacuated body, a hollow condensing member at one end of said body, a tube within said body extending lengthwise thereof and communicating at one end with said condensing member, and means carried by said condensing member adapted to periodically contact the water in said receptacle whereby to produce a temperature differential between said condensing member and said body.

6. A novelty device comprising a pair of hollow members, a tube extending between, and communicating with, said members, said tube at one end thereof extending into one of said members and having a free end therein, means rockably supporting said members, a weight carried by the other member, means carried by said weight for effecting a temperature differential between said members, and a volatile liquid normally disposed in said one member, the free end of said tube being normally immersed in said liquid, vaporization of some of said liquid in said one member producing a pressure on the remainder of the liquid whereby a portion of said liquid will be forced into the other member to thereby effect downward rocking movement of said other member to a degree whereby the free end of said tube will be at least partly out of the liquid in said one member, and said tube will be inclined to the horizontal to thereby provide for the gravity flow of liquid from said other member to said one member.

MILES V. SULLIVAN.