GAS ASSISTED GAME CALL

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ABSTRACT

A method and apparatus for imitating the natural sounds of animals using a compressed gas is described. Embodiments include a forced air animal or game call coupled to a supply of a compressed gas. In one embodiment, the apparatus includes a gas delivery system coupled to one or more sources of compressed gas, a housing coupled to the compressed gas or gases, and an adapter coupled to one or more forced air calls.
GAS ASSISTED GAME CALL

BACKGROUND OF THE INVENTION

[0001] Field of the Invention

[0002] Embodiments of the invention generally relate to manually operated animal calls used to imitate the natural sounds of animals. More particularly, the invention relates to an apparatus and method for using manually operated animal calls.

[0003] Description of the Related Art

[0004] Many devices for imitating the natural sounds of animals have been manufactured over the years and generally take two forms. One of these forms is an electronic medium that is typically a recording of natural animal sounds and/or a recording of a human imitating the natural sounds. Another form is a device that may be termed a manually operated game call as the device requires some physical action by the user. Manually operated game calls include, handheld devices operated by friction and air powered calls, which require forced air to be passed over a vibrating member to produce a sound or sounds.

[0005] Conventional manually operated game calls using forced air may be operated by a pump-like apparatus, a bellows device, or by a user’s lungs. The latter device is sometimes referred to as a mouth call as the apparatus has a portion designed to be placed in or near a user’s mouth to put it in fluid communication with the user’s lungs, which serves as the source of forced air.

[0006] While manually operated game calls using forced air are capable of producing good results in calling game animals, much of the results depend on the physical condition and skill of the user. For example, mouth calls may require extensive education to use as the modulation of calling sounds are produced, at least in part, by a variation in exhalation of air from the lungs, and users having a limited lung capacity due to some physical detriment may be disadvantaged relative to a healthy user. Further, exhalation of air from a user’s lungs through the call in a cold environment may produce a visible condensate that forms near the user, and this visible condensate may alert the game animals to the presence of the user, which may cause the game animals the user is attempting to call to take flight.

[0007] Therefore, there is a need for an improved forced air animal call that minimizes or eliminates some of the problems discussed above.

SUMMARY OF THE INVENTION

[0008] Embodiments of the invention describe an apparatus and method of using a manually operated or forced air animal call adapted to be powered by a compressed gas. The forced air animal call may be commercially available animal call, or any other device configured to call game animals by sound that is adapted to be manually operated.

[0009] In one embodiment, an apparatus for imitating wild game sounds is described. The apparatus includes a forced air animal call and a supply of compressed gas for use in operating the forced air animal call.

[0010] In another embodiment, a gas assisted game call is described. The apparatus includes a housing, a supply of compressed gas, and a gas delivery system coupled to the housing and adapted couple to the housing and to provide a fluid path from the supply of compressed gas to an adapter, wherein the adapter is fluidly coupled to the gas delivery system at one end and configured to receive a forced air animal call at another end.

[0011] In another embodiment, an apparatus for imitating the natural sounds of animals is described. The apparatus includes a housing having an attachment member adapted to releasably couple to at least one compressed gas tank, and a gas delivery system fluidly coupled to an adapter coupled to an upper surface of the housing, wherein the adapter is configured to receive one or more forced air calls at one end and fluidly couple to the at least one compressed gas tank at another end.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] So that the manner in which the above recited features of the present invention can be understood in detail, a more particular description of the invention, briefly summarized above, may be had by reference to embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate only typical embodiments of this invention and are therefore not to be considered limiting of its scope, for the invention may admit to other equally effective embodiments.

[0013] FIG. 1 is a plan view of one embodiment of a gas assisted game call.

[0014] FIG. 2 is schematic view of another embodiment of a gas assisted game call.

[0015] FIG. 3 is a schematic view of another embodiment of a gas assisted game call.

[0016] To facilitate understanding, identical reference numerals have been used, where possible, to designate identical elements that are common to the figures. It is contemplated that elements disclosed in one embodiment may be beneficially utilized on other embodiments without specific recitation.

DETAILED DESCRIPTION

[0017] FIG. 1 is an exploded schematic plan view of one embodiment of a gas assisted game call 100 including a forced air call 110 that is in fluid communication with a source or supply of compressed gas 120. The forced air call 110 may be any forced air apparatus commonly used by hunters to imitate the natural sounds of animals and call game, such as mouth calls, and pump or bellows type calls. Examples of the forced air call 110 may be a reed-type call, a diaphragm-type call, or any manually operated game call operated by a forced fluid such as air. Generally, the forced air call 110 comprises a mouthpiece 104 and a horn 102. The mouthpiece may be coupled by any suitable means to the horn 102. In one embodiment, the supply of compressed gas 120 is coupled to the mouthpiece 104 and/or the horn 102 to be in fluid communication with the supply of compressed gas 120. In another embodiment, the fluid communication between the forced air call 110 and the compressed gas 120 is facilitated by an optional adapter 130 coupled between the forced air call 110 and the compressed gas 120.

[0018] The adapter 130 may be any device configured to provide a fluid path between the compressed gas 120 and the
forced air call 110 and, in one embodiment, is configured to allow ready replacement of a variety of forced air calls 110. In one embodiment, the adapter 130 is a tubular conduit adapted to couple to and provide a seal between the forced air call 110. The adapter 130 has a first end 132 adapted to couple to the forced air call 110 and a second end 134 adapted to couple to the compressed gas. The first end 132 is configured to couple to one or both of the mouthpiece 104 and the horn 102. For example, a reed-type call may comprise the mouthpiece 104 and the horn 102 that are detachable from one another. The horn 102 may comprise the reed elements and the mouthpiece 104 allows a user interface adapted to couple a user’s mouth to the horn 102. In one embodiment, the mouthpiece 104 is detachable and the first end 132 is coupled to the horn 102. In another embodiment, the horn 104 and the mouthpiece 102 are not detachable and the first end 132 is coupled to the mouthpiece 102. Other embodiments for coupling the mouthpiece 104 and horn 102 where the parts are integral are also contemplated.

[0019] In one embodiment, the adapter 130 is a tubular conduit made of a polymeric material. The polymeric material may be a plastic, or hard or soft rubber configured to provide a substantial fluid seal between the compressed gas 120 and the forced air call 110. In another embodiment, the adapter 130 is a hard plastic, a metallic material, a wooden material, or combinations thereof, having sealing elements (not shown) on the first and second ends 132, 134, such as O-rings, rubber, or other suitable sealing material. The adapter 130 may be any suitable shape and size to couple to the compressed gas 120 and the forced air call 110. In one embodiment, the first end 132 is adapted to couple to a longitudinally cylindrical shaped call, which may be typical of a reed-type call, such as duck and goose calls. In another embodiment, the first end 132 is adapted to couple to a circular shaped call, or a U-shaped call, which may be typical of a diaphragm-type call, such as a predator call. The second end 134 is adapted to couple to any suitable manner to the compressed gas 120 in order to form a fluid-tight seal therebetween.

[0020] The compressed gas 120 may be any readily available compressed gas or gases. The compressed gas 120 may be air, oxygen, nitrogen, helium, argon, carbon dioxide, nitrous oxide, hydrogen, fluorocarbons, combinations thereof or derivatives thereof. The compressed gas 120 may be contained in a tank 122 such as an aerosol container, a spray can, a pressure vessel, such as a commercially available cylinder or tank, or any volume adapted to contain a gas or gases under pressure. The tank 122 generally includes an outlet 124 for passage of the gas or gases therefrom. The outlet 124 may be fluidly coupled to a valve 126, which may be configured to provide flow control at user defined levels. Examples of the valve 126 may be a ball valve, a flex/tilt valve, a push-type valve, a diaphragm or pinch-type valve, a butterfly valve, a gate valve, a needle valve, or combinations thereof. A pressure regulator (not shown) may be coupled to the outlet 124 and/or the valve 126 to provide control of the pressure delivered to the forced air call 110.

In one embodiment, the outlet 124 is coupled to flex/tilt valve or a push-type valve commonly used in balloon filing operations. In another embodiment, the valve 126 is a push-type valve commonly supplied on spray cans or aerosol containers.

[0021] FIG. 2 is another embodiment of a gas assisted game call 200 having a supply of compressed gas 120 coupled to a forced air call 110. In this embodiment, the compressed gas 120 is coupled to an adapter 130 by a gas delivery system 235. The gas delivery system 235 comprises at least a gas conduit 250 coupled between the compressed gas 120 and one of the adapter 130 and the forced air call 110. The gas conduit may be a rigid or flexible tubular conduit, such as a hose. In other embodiments, the gas delivery system 235 includes a flow chamber 240 configured to facilitate delivery of the compressed gas 120 from the tank 122. The volume of the flow chamber 240 may be varied to change flow characteristics of the compressed gas 120. For example, the flow chamber 240 may have a larger volume to facilitate decompression of the compressed gas 120 and provide a flow modification, such as lower pressure relative to the internal pressure of the compressed gas 120 in the tank 122. Flow characteristics such as velocity may also be varied by the volume of the flow chamber 240.

[0022] The tank 122 is coupled to a game call housing 245 by a holding member 216. The holding member 216 may be removably attached to any portion of the tank 122 to provide a static coupling between the game call housing 245 and the tank 122. One or both of the forced air call 110 and the adapter 130 may be coupled to the game call housing 245 by one or more mounts 214 therebetween. The game call housing 245 may be adapted to actuate the tank 122 to enable flow of the compressed gas 120 by a trigger mechanism 222 coupled to an actuation means 218. The actuation means 218 may be a mechanical actuator, such as a mechanical lever coupled to the trigger mechanism 222. An example of a game call housing 245 that may be used is commercially available under the trade name CAN HANDLER™ from Deslar Industries, Inc. of Santa Anna, Calif. In other embodiments, one or both of the actuation means 218 and trigger mechanism 222 may be electronically actuated to facilitate manual actuation by a user and/or remote actuation by the user.

[0023] In this embodiment, the tank 122 is a spray can commonly available for cleaning computer equipment and the like, sometimes known as a duster. Generally, a commercially available duster is purchased with a valve disposed thereon coupled to a nozzle (not shown). The valve is typically coupled to tubular member 208 in communication with the compressed gas 120 in the interior volume of the tank 122 and when the valve and/or nozzle is actuated, the tubular member 208 is pressed towards the interior volume of the tank, thereby allowing the compressed gas to flow. In this embodiment, the valve and/or nozzle (as purchased) is removed from the tubular member 208, and a flow diverter 260 is coupled to the tubular member 208.

[0024] The flow diverter 260 may be any device capable of substantially containing and facilitating flow of the compressed gas 120. The flow diverter 260 may be a tubular apparatus having an inlet with an inside diameter that sealingly engages the tubular member 208 of the spray can and an outlet sealingly engaged with the gas conduit 250. The flow diverter 260 may also vary the flow path angle of the compressed gas 120 as the gas flows from the tubular member 208 when the tubular member is depressed. Examples of the flow diverter 260 may be an elbow commonly used in piping fluids.
In one mode of operation, the trigger mechanism 222 is moved in the direction of arrow 224A which causes the actuation means 218 to move the flow diverter 260 in the direction of arrow 224B. The flow diverter 260, fluidly coupled to the tubular member 208, causes the compressed gas 122 to flow from the tank 122 to the gas conduit 250. In this manner, the compressed gas 120 is released from the tank 122 and is in fluid communication with the forced air call 110 by the gas delivery system 235. Conversely, when the trigger mechanism 222 is released, the compressed gas 120 ceases to flow from the tank 122. In one embodiment, a locking means (not shown) to lock the trigger mechanism 222 in a depressed or free state is disposed on the housing 245. In other embodiments, a variable trigger mechanism 222 is contemplated, wherein the movement in the direction of arrow 224A may be adjusted to stop at a specific position to control the volume of the compressed gas 120 released from the tank 122.

FIG. 3 is another embodiment of a gas assisted game call 300. In this embodiment, the forced air call 110 is a diaphragm type call and is coupled to one or more sources of compressed gas 120. One or more tanks 122A-122C are coupled to a manifold 325 that is in fluid communication with the forced air call 110 by a gas delivery system 335 as described above. The manifold 325 and the forced air call are coupled to a housing 305 that includes a trigger mechanism 342 coupled to a valve 344 at an inlet 346 of the flow chamber 240.

In one embodiment, the valve 344 is mechanical as described above, but in other embodiments, the valve 344 is an electronically actuated valve. In this embodiment, the gas assisted game call may be hand held or remotely operated. In other embodiments a valve having one or more passages is used wherein the compressed gas 120 in the one or more tanks 122A-122C may be isolated from each other and in fluid communication with the forced air call. In other embodiments, the flow chamber 240 is optional and the gas conduit 250 is coupled directly to the manifold 325. In another embodiment, a valve may be coupled to an outlet 348 of the flow chamber, or any other portion of the gas delivery system 335. The manifold 325 may also include one or more flow regulation valves (not shown) to control gas pressure and volume.

In this embodiment, the compressed gas 120 is contained in three tanks 122A, 122B, and 122C. The compressed gas 120 may be the same gas or be three different gases in communication with the forced air call 110 by a three way valve (not shown). For example, the tank 122A may contain air, the tank 122B may contain argon, and the tank 122C may contain helium. When the forced air call 110 is actuated and in communication with the air in tank 122A, the forced air call 110 may emit one call sound, and emit another call sound when in communication with tanks 122B and 122C. Due to the density of argon and helium relative to air, the call pitch may be lower and higher, respectively. In this manner, call sound modulation is achieved without varying flow properties such as pressure and velocity. In other embodiments, flow properties are controllable and may be implemented alone or in combination with the one or more sources of compressed gas 120.

Although not shown, other embodiments are contemplated wherein the housing 305 is adapted to couple to more than one forced air call 110. Additionally, the one or more forced air calls may be coupled to the one or more sources of compressed gas 120 separately, or in combination. Other embodiments are contemplated wherein the gas assisted game call is adapted to operate remotely. In this embodiment, the gas assisted game call may be placed at a location remote from the user. In one embodiment, at least a portion of the gas assisted game call may be disposed within a plurality of hunting devices to facilitate concealment of the device. For example, a decoy, such as a goose or duck decoy, may be modified to house at least a portion of the gas assisted game call. Thus, the decoy may be put into operation facilitating luring of game animals through sight and sound.

While the foregoing is directed to embodiments of the present invention, other and further embodiments of the invention may be devised without departing from the basic scope thereof, and the scope thereof is determined by the claims that follow.

1. An apparatus for imitating wild game sounds, comprising:
   a forced air animal call and a supply of compressed gas for use in operating the forced air animal call.
   2. The apparatus of claim 1, further comprising:
      an adapter providing a fluid path between the forced air animal call and the supply of compressed gas.
   3. The apparatus of claim 2, further comprising:
      a gas conduit; and
      a flow chamber.
   4. The apparatus of claim 1, wherein the compressed gas is at least one of argon, helium, fluorocarbons, carbon dioxide, or combinations thereof.
   5. The apparatus of claim 1, wherein the forced air call is a reed-type call or a diaphragm type call.
   6. The apparatus of claim 1, further comprising:
      a housing coupled to one or both of the forced air animal call and the supply of compressed gas, wherein the housing provides a static coupling for the forced air animal call and the supply of compressed gas.
   7. A gas assisted game call, comprising:
      a housing;
      a supply of compressed gas; and
      a gas delivery system coupled to the housing and adapted to couple the housing to the gas conduit to provide a fluid path from the supply of compressed gas to an adapter, wherein the adapter is fluidly coupled to the gas delivery system at one end and configured to receive a forced air animal call at another end.
   8. The apparatus of claim 7, wherein the gas delivery system comprises:
      a gas conduit; and
      a flow chamber.
   9. The apparatus of claim 7, wherein the forced air call is a reed-type call, a diaphragm type call, or combinations thereof.
   10. The apparatus of claim 7, wherein the compressed gas is at least one of argon, helium, fluorocarbons, carbon dioxide, or combinations thereof.
11. The apparatus of claim 7, further comprising:
   a flow diverter fluidly coupled between the supply of 
   compressed gas and the gas delivery system.

12. An apparatus for imitating the natural sounds of 
   animals, comprising:

   a housing having an attachment member adapted to 
   releasably couple to at least one compressed gas tank;
   and

   a gas delivery system fluidly coupled to an adapter 
   coupled to an upper surface of the housing, wherein the 
   adapter is configured to receive one or more forced air 
   calls at one end and fluidly couple to the at least one 
   compressed gas tank at another end.

13. The apparatus of claim 12, wherein the gas delivery 
   system includes a gas conduit and a flow chamber.

14. The apparatus of claim 12, wherein the gas delivery 
   system includes a flow diverter coupled to a gas conduit.

15. The apparatus of claim 12, wherein the housing 
   comprises a trigger mechanism coupled to a lever.

16. The apparatus of claim 12, wherein the adapter is 
   a soft plastic or rubber material.

17. The apparatus of claim 12, wherein the adapter is 
   coupled to the housing by one or more mounts.

18. The apparatus of claim 12, wherein each of the one 
   or more forced air calls produces a first sound from a first 
   compressed gas and a second sound from a second compressed 
   gas.

19. The apparatus of claim 12, wherein the housing 
   comprises an actuation means that is at least one of mechanically 
   operated or electronically operated.

20. The apparatus of claim 12, wherein the at least one 
   compressed gas tank includes a spray can, an aerosol con-
   tainer, a pressure vessel, or combinations thereof.

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