

UNITED STATES PATENT OFFICE.

LUTHER M. LIGGETT, OF GALION, OHIO.

SPARK AND THROTTLE CONTROL.

Application filed January 8, 1923. Serial No. 611,922.

To all whom it may concern:

Be it known that I, LUTHER M. LIGGETT, a citizen of the United States, residing at Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Spark and Throttle Controls, of which the following is a specification.

The present invention relates to a spark and throttle control and has for its object to provide a novel mounting for the throttle and spark levers, whereby a convenient, compact and protected construction is provided.

Further objects of the invention are to provide a device of this character which is comparatively simple and inexpensive in its construction, which provides for an accurate movement of the control levers, which has a compensating connection between the control levers and the respective tubes so that the control levers will still move in the same plane even though the tubes may spring or be thrown slightly out of alinement, and which completely houses and conceals the connections so that proper operation of the device will not be prevented by accumulations of moisture and dirt on the interior thereof.

With the above and other objects in view, the invention consists in certain combinations and arrangements of the parts as will more fully appear as the description proceeds, the novel features thereof being pointed out in the appended claims.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings in which,

Figure 1 is a top plan view of a control device which is constructed in accordance with the invention, the control levers being shown by dotted lines in the positions assumed when swung to opposite limits of their movement.

Figure 2 is a transverse sectional view through the device, said view being taken substantially on the line 2—2 of Figure 3.

Figure 3 is a vertical sectional view through the device, on the line 3—3 of Fig. 2.

Figure 4 is an enlarged fragmentary sectional view taken substantially on the line 4—4 of Figure 1.

Figures 5 and 6 are detail views of one of the spider elements.

Corresponding and like parts are referred

to in the following description and indicated on all of the views of the drawings by like reference characters.

Referring to the drawings, which illustrate one of many possible embodiments of the invention, the numeral 1 designates the base of the control device, said base being formed of hard black fibre, hard rubber or other suitable material, and having a depression 1^a in the bottom thereof which is of a suitable size and depth to receive the usual steering post nut when the base is assembled on the steering wheel. A recess 1^b is formed at the top of the depression 1^a and receives a metal bottom plate 2 which is swaged upon or otherwise securely fastened to the support tube 3.

The top of the base member 1 is formed with an upstanding annular rib 4, and rotatably mounted upon the base member is a ring 5 which carries the throttle lever 6. This ring is provided at the top and bottom thereof with annular grooves 7. The downwardly facing groove 7 of the ring loosely receives the rib 4 of the base 1, while the upwardly facing groove 7 receives the downwardly extending annular rib 8 of the intermediate guide plate 9, said intermediate plate being also formed with a similar upwardly projecting rib 8.

The throttle lever ring 5 is provided upon the inner periphery thereof with a pair of recesses 10 which loosely receive the arms of a spider member 11. The hub portion of the spider member is shown as having the inner periphery thereof serrated so that it can be swaged or forcibly fitted upon the upper end of the throttle tube 12. The free ends of the spider 11 loosely engage the recesses 10 of the ring so that there is in effect a loose or compensating connection between the throttle lever ring and the throttle tube. The throttle lever ring is closely confined between the base 1 and intermediate guide plate 9, and is accurately guided by engagement of the ribs 4 and 8 with the annular groove 7 thereof, so that it always turns in the same plane and has an accurately defined path of movement. This will not be disturbed even though the spider may be canted with respect to the tube or the tube may be somewhat sprung out of alinement.

Arranged above the intermediate guide plate 9 is the spark lever ring 13 which is somewhat similar in construction to the

June 24, 1924.

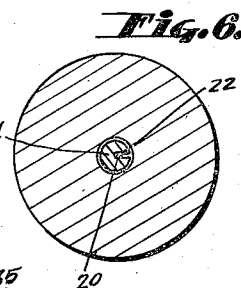
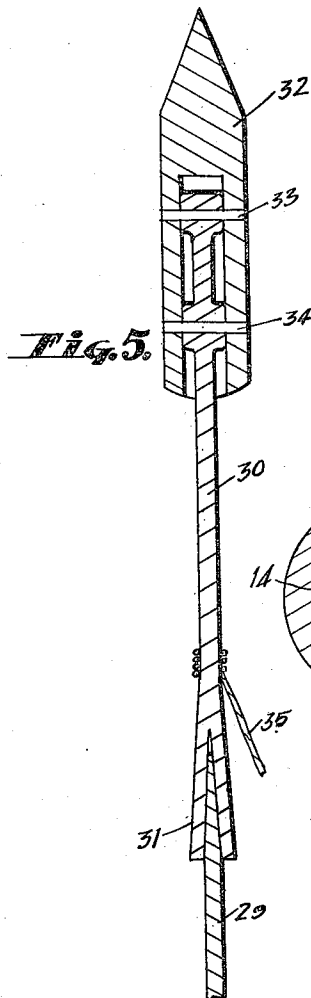
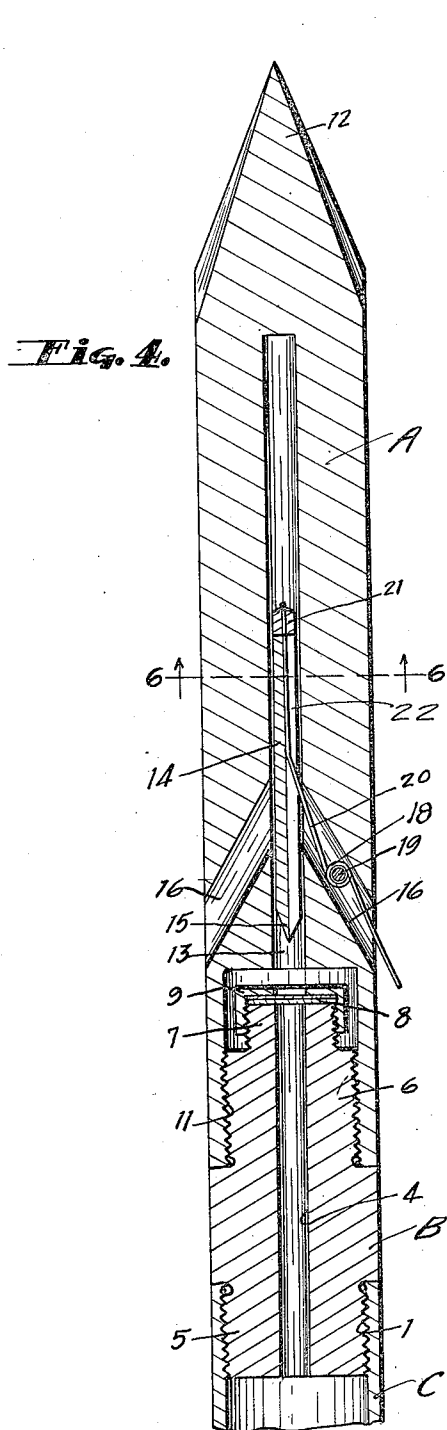
1,498,741

J. D. LOOP

WHALE-LANCE

Filed Dec. 6, 1920

2 Sheets-Sheet 2



INVENTOR
John D. Loop.
by Hazard Miller
ATTY'S

UNITED STATES PATENT OFFICE.

JOHN D. LOOP, OF LONG BEACH, CALIFORNIA.

WHALE LANCE.

Application filed December 6, 1920. Serial No. 428,710.

To all whom it may concern:

Be it known that I, JOHN D. LOOP, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Whale Lances, of which the following is a specification.

It is the object of this invention to provide a whale lance adapted to contain a suitable gas which is released when the lance has penetrated a pre-determined distance. The gas thus released will kill the whale and inflate its body, to cause the same to float and thus eliminate the danger of the whale sinking after being struck with the lance.

The invention will be readily understood from the following description of the accompanying drawings, in which:

Figure 1 is a side elevation of a lance constructed in accordance with the invention.

Figs. 2 and 3 are transverse sections on the lines 2—2 and 3—3 of Fig. 1.

Figs. 4 and 5 are detail longitudinal sections on the lines 4—4 and 5—5 of Fig. 1.

Fig. 6 is a transverse section on the line 6—6 of Fig. 4.

Figure 7 is a transverse section taken on the line 7—7 of Figure 1.

The improved lance consists essentially of a lance head A connected by a valve member B to a tube C adapted to contain the gaseous substance, which when in the tube is preferably in liquid form. A filling valve D is arranged at the rear end of the tube C.

The tube C is of the same diameter as the lance head, and may be made of any suitable length. In practice it will be found practical to provide a tube adapted to contain about 3 lbs. of liquid carbon dioxide. The forward end of the tube is provided with a threaded socket 1, and the rear end of the tube is provided with a similar threaded socket 2 adapted to receive the threaded nipple 3 of the filling valve D which may be of any usual construction employed for filling gas containers. The valve comprises substantially a tubular member E adapted to receive a filling hose, and while the container is being filled an air vent must be provided, which is shown at F. After the container has been filled, a suitable valve G is adapted to close the conduit leading from the filling member E to the container.

The valve B attached to the forward end

of the gas tube is provided with an axial bore 4 for the passage of gas from the tube C, and at its rear end terminates in a nipple 5 threaded into socket 1. The forward end of the valve comprises a screw-threaded nipple 6 arranged for threaded connection with the lance head. This nipple terminates in a threaded nipple 7 of reduced diameter, and suitable discs 8 are received over the end of nipple 7 and the end of bore 4 for preventing the escape of gas. These discs are held in position by a cap 9 threaded on to nipple 7 and having an axial opening in alignment with the bore 4. The discs 8 normally prevent the escape of the gas into the lance head, but are adapted to be perforated by a pin carried by the lance head when the lance has penetrated a whale a pre-determined distance. The perforating of the discs permits the escape of the liquid gas to the lance head from whence it is discharged into the body of the whale for killing the whale and inflating the body.

The lance head A is provided at its rear end with a threaded socket 11 received upon nipple 6, and at its forward end is provided with a usual lance point 12. The socket 11 is of sufficient depth to receive both nipples 6 and 7 with the cap 9 upon the latter nipple, and beyond said cap the lance head is provided with an axial bore 13. This bore extends part way into the lance head, and is adapted to receive a pin 14 which is provided with a point 15 for perforating discs 8 when the pin is moved rearwardly through bore 13. The pin fits loosely within bore 13, so that after discs 8 are perforated, the liquid gas will force the pin forward in its bore beyond discharge ports so that the gas may freely flow through said bore to the discharge ports. The discharge ports shown at 16 extend at a rearward inclination through the lance head to opposite sides of the same from opposite sides of bore 13, so that the liquid gas when released will escape through these ports to the body of the whale.

The means employed for actuating pin 14 consists of a suitable lanyard 20 connected to a plug 21 which is received within bore 13 against the end of pin 14. The lanyard extends along side the pin through a longitudinal groove 22 provided in the pin and then extends outwardly through one of the rearwardly inclined discharge ports 16.

The lanyard extends rearwardly along side the lance a suitable distance, and is connected to a handle 24 which is mounted upon tube C so as to project from opposite sides thereof. The lanyard handle is preferably held upon the tube by securing the lanyard 20 around the tube and handle. The lanyard handle is positioned upon tube C at such a point that when the lance has penetrated a whale the desired distance, the lanyard handle will impinge against the body of the whale. As the lance continues its forward movement the handle will slip rearwardly along tube C and thereby jerk the wire 20 so as to pull pin 14 rearwardly, and thus cause the same to perforate discs 8.

At the same time plug 21 and the lanyard will be withdrawn through the port 16, and the escaping gas will then force pin 14 back within its bore so that the gas may freely escape through bore 13 and ports 16 to the body of the whale.

The liquid gas thus released, will kill the whale and inflate the body. While I have stated that carbon dioxide is preferably employed for this purpose, it will be obvious that any other suitable gas may also be used. If 3 lbs. of carbon dioxide are employed in the lance, it will expand to approximately 25 cu. ft. when gasifying within the whale body, and this will be found sufficient to kill the whale and maintain the body floating upon the surface of the water.

Until the lanyard is actuated as thus described, pin 14 is held retracted within its bore. For this purpose the lance head is provided with a transverse bore 17 communicating with one of the ports 16, and the lanyard is provided with a loop 18 carrying a tube 18^a in alinement with bore 17.

A pin 19 shown as a wooden pin is received through opening 17 and tube 18^a for maintaining the pin 14 in retracted position, and when a whale is struck and the lanyard is actuated as previously described, the force exerted thereon will break the retaining pin 19, and thus permit actuation of the parts.

In order to prevent accidental movement of pin 14 after the lance has been charged, it will be found desirable to insert a metallic pin such as shown at 19^a in Fig. 3 through opening 17 and tube 18^a until the lance is ready to be used. This pin is of sufficient strength as to not break, and thus release pin 14 even though considerable force is exerted upon lanyard 20.

Means are preferably provided upon the lance for limiting the penetration of the same, and for preventing the lance being withdrawn from the whale. For this purpose a split clamp 27 (Fig. 7) is fixed upon tube C at a suitable distance in rear of han-

dle 24, and said clamp is provided with arms 28 radially extending from the clamp. The arms are bent forwardly at their outer ends as shown at 29.

Usual harpoons are mounted upon the arm ends 29, said harpoons being shown as comprising shanks 30 having sockets 31 at their rear ends wedged upon the arm ends 29. At the forward ends of shanks 30 barbs 32 are pivoted upon the shanks as by pins 33, and said barbs are normally held in longitudinal alinement with their shanks by means of wooden pins 34 received through the barbs and shanks. A flexible member such as a rope 35 is secured at its ends to the shanks 30, while its intermediate portion is trained about the container adjacent the clamp 27. This arrangement of the flexible member provides means for maintaining a permanent but flexible and extensible connection between the barbs 32 and the container C so that when the lance and barbs have penetrated the body of a whale, the barb shanks 30 may become disengaged from the arms 28 under movement of the whale, but a connection between the barbs and the container is still maintained to prevent displacement of the lance from the whale body.

When the lance is used it will penetrate the whale until lanyard handle 24 impinges against the whale body, whereupon the contents of tube C will be discharged in the whale body as previously described, and the continued penetration of the lance will cause the lanyard handle to slip rearwardly along tube C. When the lance has penetrated the whale until clamp 27 impinges against the whale body, the forward movement of the lance will be stopped, thereby preventing the lance penetrating the whale too far. At the same time the barbed ends of the harpoons mounted upon the clamp will have penetrated the whale, and should there be a tendency of the lance to withdraw from the body of the whale, the barbs 32 will thus hold the entire device against withdrawal, since the harpoons carrying the barbs are held to the clamp 27 and the lance by means of the ropes 35.

The lance as thus constructed will be found particularly useful for whaling from an aerial vessel, the lance being adapted to be dropped from the vessel at a sufficient height to cause penetration of the whale's body. If found necessary the lance may be additionally weighted in order to cause penetration. It will be obvious however, that the lance may be employed in other ways, such as by projecting the same from a suitable gun mounted upon either an aerial or water vessel.

Various changes may be made without departing from the spirit of the invention as claimed.

What is claimed is:

1. A lance including a container, a valve upon said container having a closure disc, a lance head carrying a pin adapted to be moved rearwardly when the lance has penetrated a distance, said pin perforating said disc to release the contents of the container.
2. A lance including a container, a lance head carrying a pin, a lanyard handle upon said lance, a lanyard connecting the handle to said pin for moving the pin when the lanyard handle impinges against the body being penetrated, said pin perforating the container to release the contents thereof.
3. A lance for whales, comprising a container adapted to penetrate a whale body, and elements also adapted to penetrate a whale body to a predetermined depth and to confine the container within the body against accidental displacement.
4. In a lance for whales, a container adapted to receive a chemical under pressure, a frangible valve sealing the container, a pin for puncturing the valve to liberate the chemical, frangible means for retaining the pin in an inactive position, and means operable by the penetration of the lance for actuating the pin to puncture the valve.
5. In a lance for whales, a container adapted to receive a chemical under pressure, a frangible valve sealing the container, a pin for puncturing the valve to liberate the chemical, frangible means for retaining the pin in an inactive position, means operable by the penetration of the device for actuating the pin to puncture the valve, and means for retaining the device within the whale body against withdrawal.
6. In a lance for whales, a container adapted to receive a chemical under pressure, a frangible valve sealing the container, a pin for puncturing the valve to liberate the chemical, frangible means for retaining the pin in an inactive position, and slidable means operable by the penetration of the device for actuating the pin to puncture the valve.
7. In a harpooning device, a lance having a longitudinally extending bore, radially extending ports communicating with the bore, a container adapted to receive a chemical under pressure and in communication with the bore, frangible disks associated with the container for confining the chemical within the container, a cap for retaining the disks in confining position, a pin slidable in the bore and normally out of contact with the disks, a plug slidable in the bore and engaging the pin, a flexible member connected to the plug and extending from the lance through one of said ports, a frangible member associated with the flexible member for normally preventing movement of said pin to puncture the disks, and means connected to said flexible member adapted to be operated when the lance penetrates a body for actuating the flexible member to rupture the frangible member and operate the plug to cause said pin to puncture said disks, whereby the chemical confined in the container will be liberated and expanded through said ports.
8. A lance for whales, comprising a container adapted to penetrate a whale body, penetrating elements, and flexible means connecting the elements to the container whereby the elements serve to maintain the container within the whale body against accidental displacement.
9. A lance for whales, comprising a container adapted to penetrate a whale body, penetrating elements removably sustained upon the container and arranged to limit the penetration of the container, and flexible means secured to the elements and trained about the container for the purpose described.
10. A lance for whales comprising a container adapted to penetrate a whale body, penetrating elements removably sustained upon the container and arranged to limit the penetration of the container.

In testimony whereof I have signed my name to this specification.

JOHN D. LOOP.