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IGNITION CUTOFF DEVICE

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3 Claims. (Cl. 200—52)

This invention relates to an ignition cut off device and has for an object to provide a device of this character particularly adapted to cut off the ignition and prevent an airplane from being set on fire after a crash.

Another object is to provide a warning signal associated with the device to indicate when the device is in open circuit position.

A further object is to provide a device of this character which may be reset without taking apart any of the parts of the device.

A further object is to provide a device of this character so constructed that landing jolts will not operate the device whereas a crash landing jolt will operate the device.

A further object is to provide a device of this character which will be formed of a few strong, simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming a part of this specification:

Figure 1 is a longitudinal section of an ignition cut off device constructed in accordance with the invention.

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

Figure 3 is a bottom plan view of the device.

Figure 4 is a fragmentary cross sectional view showing the warning signal and resetting parts of the device.

Figure 5 is a perspective view of a modified form of the invention suitable for a dual magneto ignition system, with the parts separated.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, the cut off device comprises an upright substantially cylindrical casing 10 having a horizontal partition 11 secured below the center of the casing. A tubular guide 12 extends upwardly from the center of the partition and opens through the bottom face of the partition. A rod 13 is slidably mounted in the guide and has its lower end extended through the partition. The rod is provided at its upper end with a dished disk 14. A helical spring 15 is sleeved on the guide and on the rod and is confined under compression between the partition 11 and the disk 14. The spring normally holds a ball 16 mounted on the disk, in contact with the top 17 of the casing.

A spring clip 18 is secured to, and insulated from, the lower side of the partition, and a conductor wire 19 extends from the clip to the ignition mechanism. The spring clip is located at one side of the center of the partition. An angular bracket 20 is secured to the casing and to the lower side of the partition at the opposite side of the center of the partition from the clip 18.

An arm 21 of non-conducting material is hinged at one end to the bracket as shown at 22 and extends from the bracket in the direction of the spring clip 18. A contact bolt 23 is secured to the free end of the arm and extends above and below the free end of the arm. A conductor wire 24 extends from the battery to the contact bolt. The upper end of the contact bolt is globular and is frictionally received between the jaws of the spring clip 18 whereby to normally close the ignition circuit.

Any sudden thrust imparted to the ball 16, such as would occur in the event of a crash landing would cause the ball to move the rod 13 downwardly and the downward movement of the rod would move the arm 21 downwardly in a direction to carry the contact bolt 23 out of engagement with the spring clip 18 and break the ignition circuit. Landing jars or other inconsequential jars would have no effect on the ball 16.

A helical spring 25 is connected to the arm 21 and to the casing 10 below the partition by respective eye rivets 26, and holds the arm in ignition interrupting position when the ball has once moved the arm to this position, until the arm is manually reset as will be presently described.

For manually resetting the arm 21 after each actuation, a crank 27 is disposed on the end of a hollow shaft 28, as best shown in Figure 4, the hollow shaft being rotatably mounted in a threaded bushing 29 which is engaged through one wall of the casing 10 and through the instrument board 30 of the airplane and is secured thereto by the head 31 of the bushing and a nut 32 screwed on to the threaded portion of the bushing.

The hollow shaft terminates in a disk 33 having a threaded annulus 34 which receives a hollow knob 35 which forms a housing for a telltale or warning lamp bulb 36. The hollow knob

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SURGICAL EMERGENCY SIGNAL

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Fig. 1.

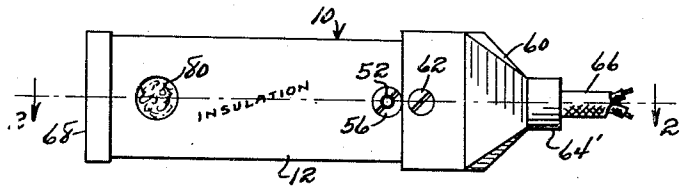


Fig. 2.

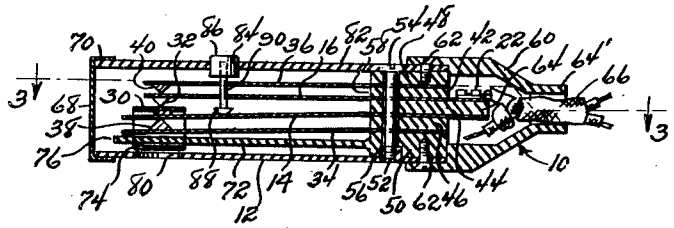


Fig. 3.

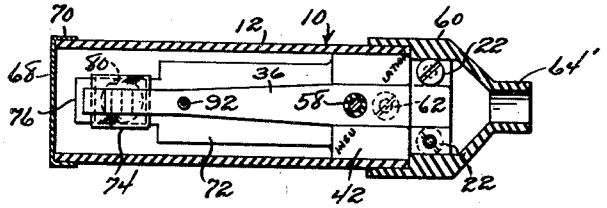
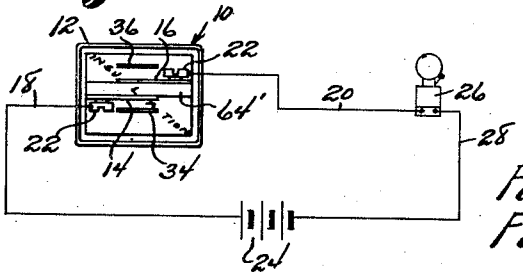


Fig. 4.



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WITNESS