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(54) **ELECTRIC SHOCK DEVICE**

(57) **ABSTRACT**

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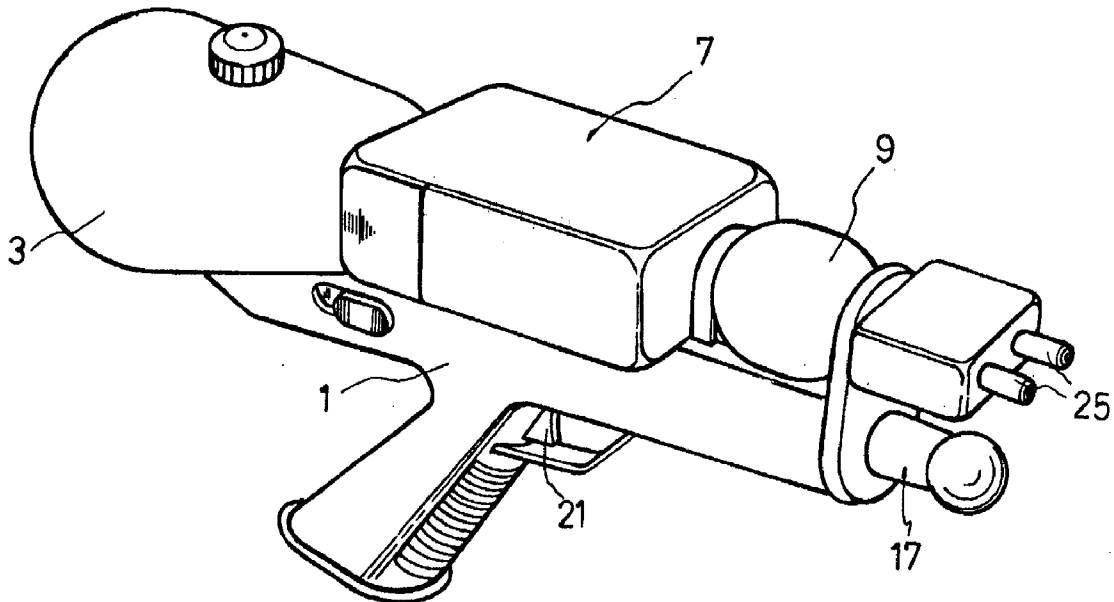
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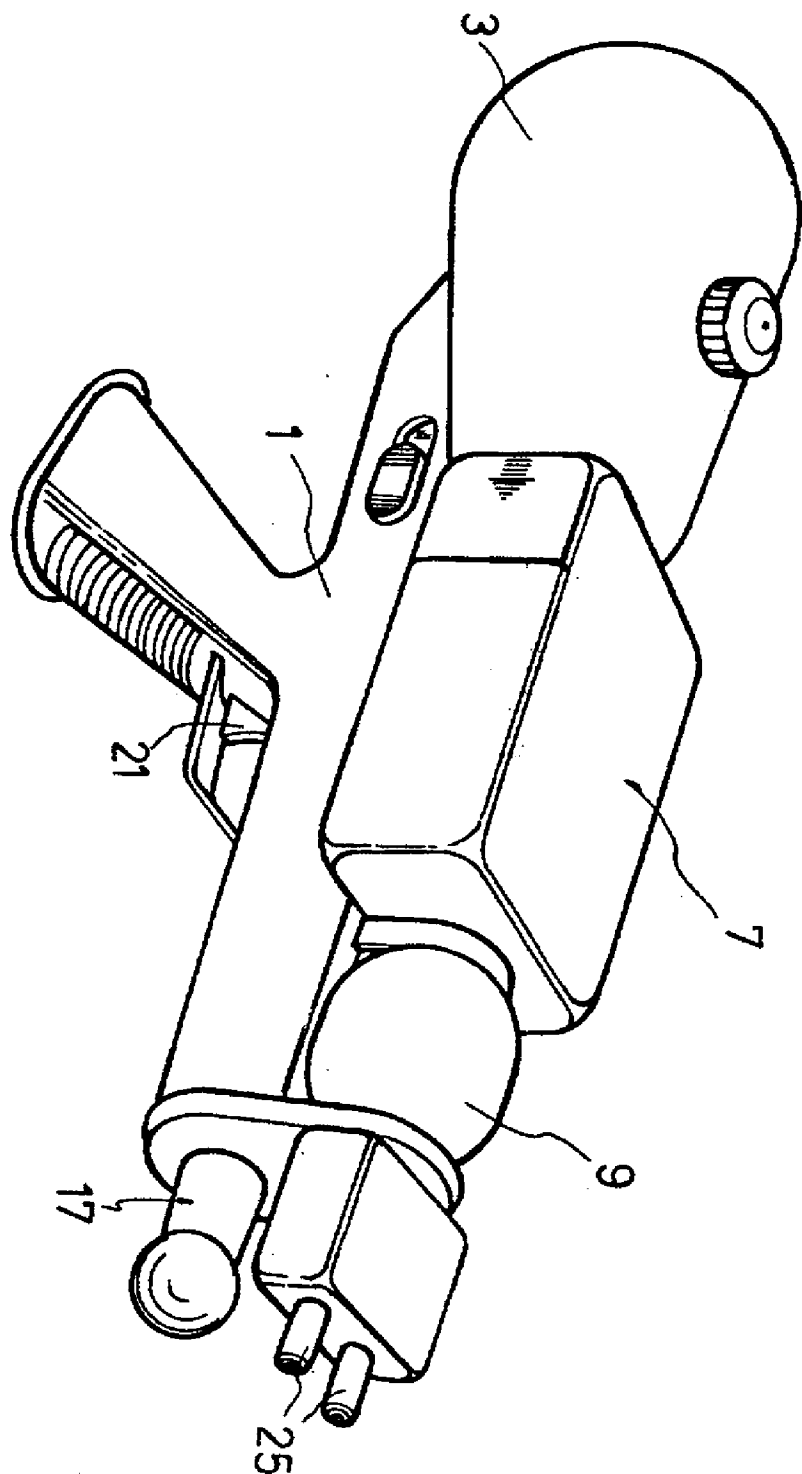
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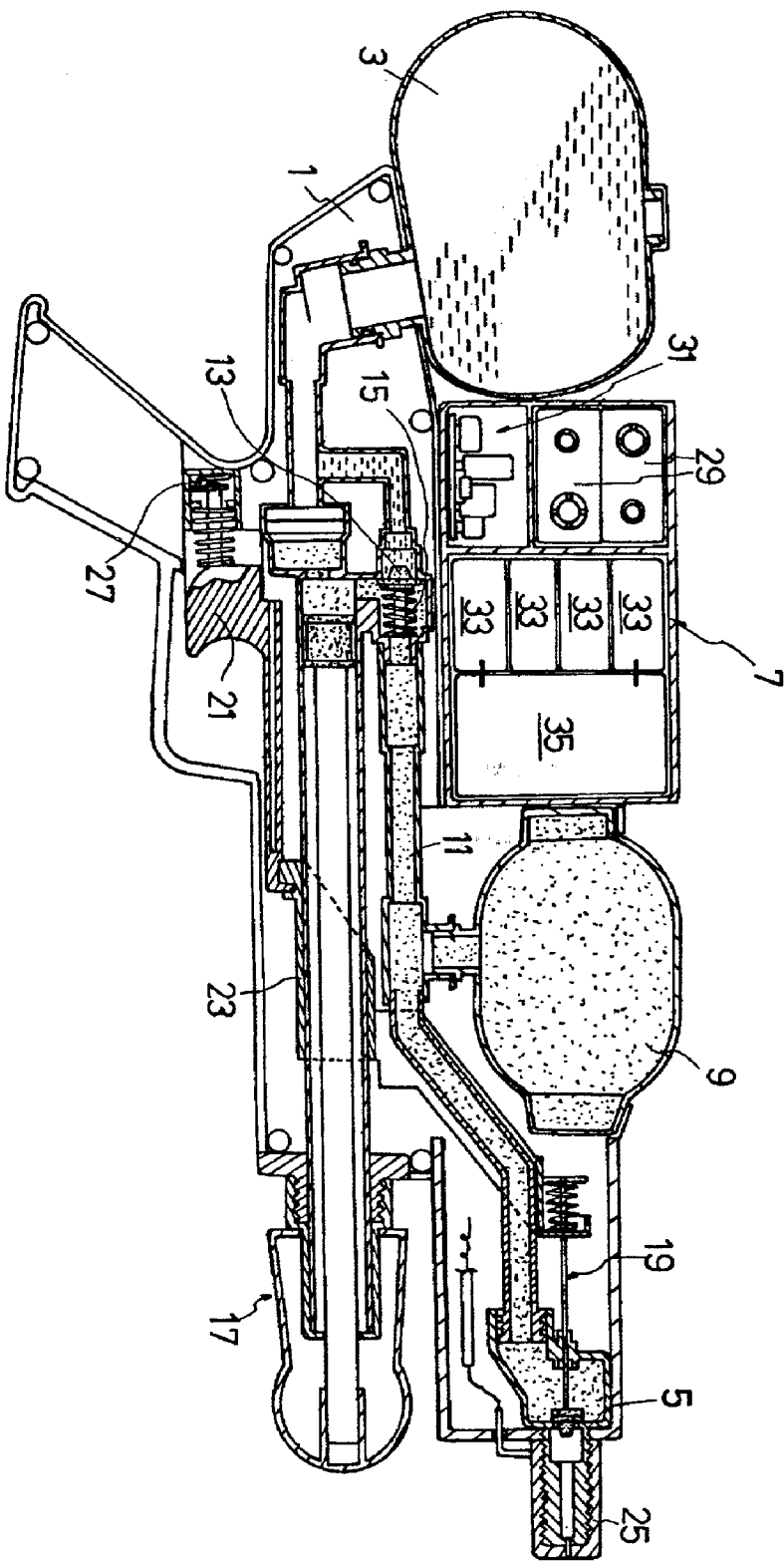
Disclosed is an electric shock device as used for protecting a user's body that applies a shock with a high voltage of power to an offender such as a burglar, a criminal, and so on. The electric shock device includes: a shock device case taking a shape of a gun or water pistol; a conductive liquid tank disposed in the rear portion of the shock device case for containing a predetermined amount of conductive liquid; a nozzle disposed on the top front portion of the shock device case for injecting the conductive liquid; an extra high voltage discharge assembling body formed adjacent to the conductive liquid tank for momentarily discharging an extra high voltage; an air tank disposed between the extra high voltage discharge assembling body and the nozzle in a way where the conductive liquid is injected to the nozzle; and a supply pipe for guiding and supplying the conductive liquid to the nozzle by virtue of the compressed air received in the air tank. Thereby, the device is able to momentarily apply an electric shock to even an offender who is at a remote distance, thus to previously prevent the act of the offender of committing a crime, whereby a user can avoid the danger or injury that he or she may encounter.



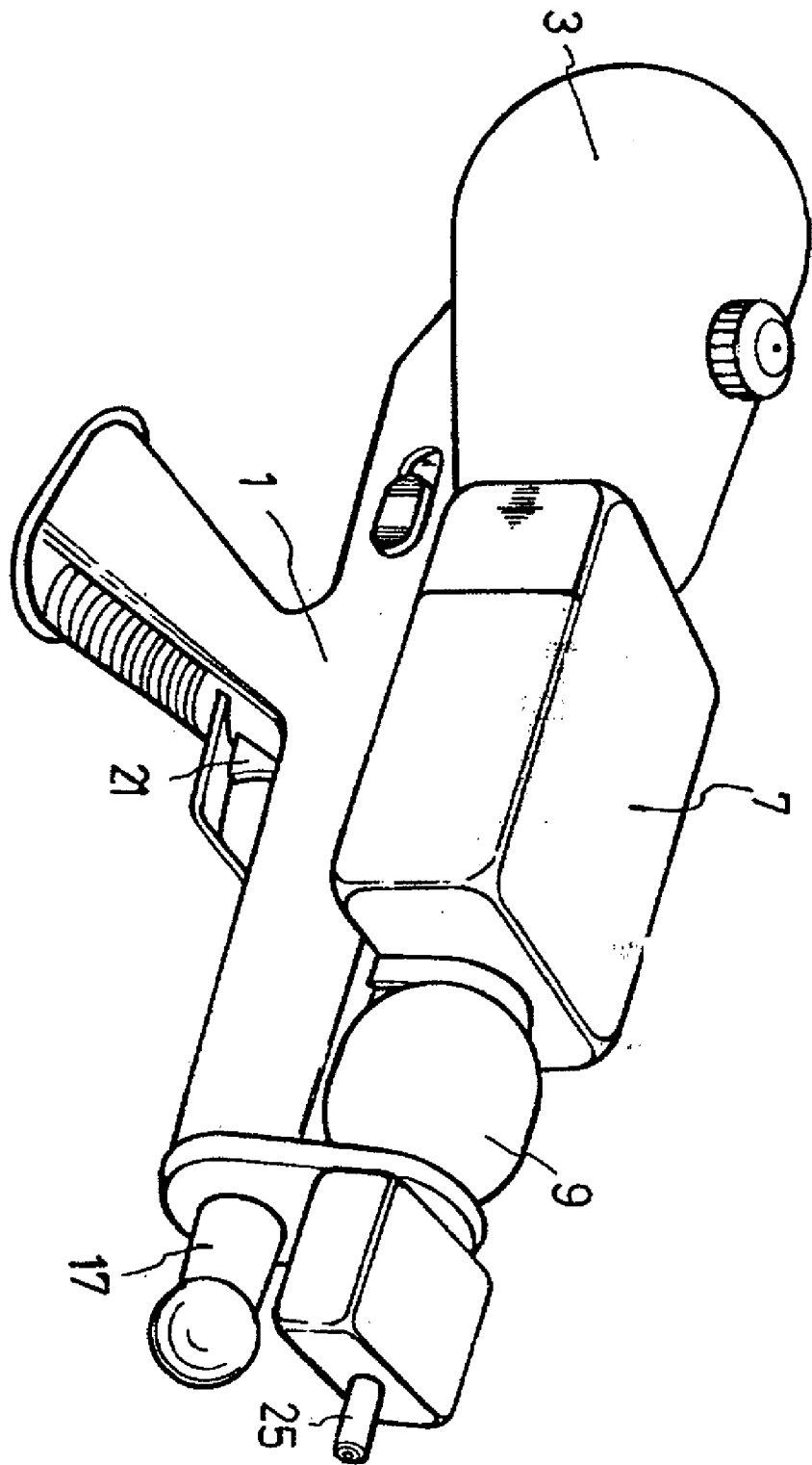
【fig 1】



【fig 2】



【fig 3】



ELECTRIC SHOCK DEVICE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an electric shock device, and more particularly, to an electric shock device as used for protecting a user's body that applies a shock with a high voltage of power to an offender such as a burglar, a criminal, and so on.

[0003] 2. Background of the Related Art

[0004] Generally, an electric shock device is a piece of equipment that is portable with which a user can protect himself or herself from an offender such as a burglar, a criminal, etc. Conventional electric shock devices as represented by U.S. Pat. Nos. 4,872,084 and 5,193,048 are configured in such a manner that a direct current voltage produced from a battery in a housing is generated to a high voltage by using a DC-DC converter and a high voltage generating circuit.

[0005] If such the electric shock device applies a low current of a high voltage that is obtained by rectifying and charging the direct current voltage through a condenser to a pair of probes as a discharge electrode that is protruded to the front end of the housing, there occurs a phenomenon where dielectric break down within the free space of the probes mounted inclinedly at a predetermined angle is allowed to thereby cause electric discharge, such that a user can threaten the counterpart or apply an electric shock to the body of the counterpart. In this case, the discharge voltage is in a range of 200,000V to 265,000V and the electric current is a relatively low current that makes the shock-applied person faint.

[0006] Since the conventionally developed electric shock device is provided with the discharge electrode fixed thereon, however, it cannot apply the electric shock to the offending counterpart who is at a relatively remote distance. If the user gets closer to the offending counterpart with a deadly weapon in order to apply the electric shock, he or she may be hurt under the control of the offending counterpart.

[0007] For example, the conventional electric shock device can be just used in order to prevent the act of the offending counterpart with no murderous weapon or on the crowded subway or bus during rush hour. Therefore, it cannot be helpful at all in suppressing or arresting a major criminal.

SUMMARY OF THE INVENTION

[0008] Accordingly, the present invention is directed to an electric shock device that substantially obviates one or more problems due to limitations and disadvantages of the related art.

[0009] An object of the present invention is to provide an electric shock device that is capable of momentarily applying an electric shock to an offending counterpart who is at a relatively remote distance, thereby previously preventing the act of the counterpart of committing a crime.

[0010] Additional advantages, objects, and features of the invention will be set forth in part in the description which follows and in part will become apparent to those having

ordinary skill in the art upon examination of the following or may be learned from practice of the invention. The objectives and other advantages of the invention may be realized and attained by the structure particularly pointed out in the written description and claims hereof as well as the appended drawings.

[0011] To achieve this object and other advantages and in accordance with the purpose of the invention, as embodied and broadly described herein, there is provided an electric shock device that includes: a shock device case taking a shape of a gun or water pistol; a conductive liquid tank disposed in the rear portion of the shock device case for containing a predetermined amount of conductive liquid; a nozzle disposed on the top front portion of the shock device case for injecting the conductive liquid; an extra high voltage discharge assembling body formed adjacent to the conductive liquid tank for momentarily discharging an extra high voltage; an air tank disposed between the extra high voltage discharge assembling body and the nozzle in a way where the conductive liquid is injected to the nozzle; and a supply pipe for guiding and supplying the conductive liquid to the nozzle by virtue of the compressed air received in the air tank.

[0012] Desirably, the electric shock device of the present invention further includes: a valve body disposed in the supply pipe for operating with the vacuum formed in the compressed air such that the conductive liquid in the conductive liquid tank flows toward the nozzle; a compressor formed to be connected with the supply pipe through which the compressed air is supplied to the air tank; an opening/closing member disposed in the nozzle for switching the compressed air of the supply pipe; a trigger for controlling the opening/closing member by an external force; a power transmission member for transmitting the external force of the trigger to the opening/closing member; a discharge cap screw-coupled to the nozzle and electrically connected to the output terminal of the extra high voltage assembling body, thereby causing electric discharge; and a discharge switch disposed on the rear end of the trigger and contacted by the external force, thus to apply the extra high voltage from the extra high voltage assembling body to the discharge cap.

[0013] In that case, to the discharge cap are preferably applied the voltages of electrodes '+' and '-', preferably, respectively and otherwise the voltage of electrode '+'.

[0014] The extra high voltage discharge assembling body is comprised of a battery supplying predetermined power, a charge circuit processing the power of the battery to charging power, a high voltage transformer for boosting the charging power of the charge circuit to the extra high voltage, and a charge condenser for charging the extra high voltage boosted by the high voltage transformer.

[0015] On the other hand, the extra high voltage discharge assembling body is connected with a conductive ribbon that is folded in a zigzag form and that is provided with a weight movable to a relatively long distance by a firing means, at the end thereof.

[0016] It is to be understood that both the foregoing general description and the following detailed description of the present invention are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this application, illustrate embodiment(s) of the invention and together with the description serve to explain the principle of the invention. In the drawings;

[0018] FIG. 1 is a perspective view of an electric shock device according to an embodiment of the present invention;

[0019] FIG. 2 is a sectional view of FIG. 1; and

[0020] FIG. 3 is a perspective view of an electric shock device according to another embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0021] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

[0022] FIG. 1 is a perspective view of an electric shock device according to an embodiment of the present invention, FIG. 2 is a sectional view of FIG. 1, and FIG. 3 is a perspective view of an electric shock device according to another embodiment of the present invention.

[0023] As shown in FIGS. 1 and 2, an electric shock device includes a shock device case 1 that takes a shape of a gun or water pistol, a conductive liquid tank 3 that is disposed in the rear portion of the shock device case 1 for containing a predetermined amount of conductive liquid, a nozzle 5 that is disposed on the top front portion of the shock device case 1 for injecting the conductive liquid, an extra high voltage discharge assembling body 7 formed adjacent to the conductive liquid tank 3 for momentarily discharging an extra high voltage, an air tank 9 disposed between the extra high voltage discharge assembling body 7 and the nozzle 5 in a way where the conductive liquid is injected to the nozzle 5, and a supply pipe 11 for guiding and supplying the conductive liquid to the nozzle 5 by virtue of the compressed air received in the air tank 9.

[0024] The supply pipe 11 is provided with a valve body 13 that is supported by the elasticity of a spring 15, for opening/closing the conductive liquid of the conductive liquid tank 3 by virtue of the vacuum formed by the compressed air such that the conductive liquid is moved toward the nozzle 5. The supply pipe 11 is connected with a compressor 17 that is adapted to compress air to provide the compressed air to the air tank 9. At that time, the compressor 17 and the supply pipe 11 are arranged in parallel relation with each other in a length direction in such a manner as to be communicated with each other.

[0025] The nozzle 5 is provided with an opening/closing member 19 for opening and closing the supply pipe 11 such that the compressed air in the supply pipe 11 is injected outside, and the shock device case 1 is provided with a trigger 21 that is slidably disposed on the handle grip thereof such that the opening/closing member 19 can be controlled by an external force.

[0026] Between the trigger 21 and the opening/closing member 19 is provided a power transmission member 23

that is adapted to transmit the external force from the trigger 21 to the opening/closing member, in a sliding direction. The nozzle 5 is provided with a discharge cap 25 that is screw-coupled thereto and that is electrically connected to the output terminal of the extra high voltage assembling body 7, thereby causing electric discharge. The trigger 21 is provided with a discharge switch 27 that is disposed on the rear end thereof and that is contacted by the external force, thus to apply the extra high voltage from the extra high voltage assembling body 7 to the discharge cap 25.

[0027] The extra high voltage discharge assembling body 7 is comprised of a battery 29 that supplies predetermined power, a charge circuit 31 that processes the power of the battery 29 to charging power, a high voltage transformer 33 that boosts the charging power of the charge circuit 31 to the extra high voltage, and a charge condenser 35 that charges the extra high voltage boosted by the high voltage transformer 35.

[0028] The electric shock device is, as shown in FIG. 1, provided with a pair of discharge caps 25 that are screw-coupled to the nozzle 5 in a way that the electric discharge is carried out horizontally therefrom, wherein the one discharge cap 25 is connected to the electrode '+' from the charge condenser 35 and the other is to the electrode '-' therefrom.

[0029] When the conductive liquid is injected, the extra high voltage charged in the charge condenser 35 is discharged to the electrodes + and - along the pair of injection streams by means of the discharge switch 27, such that the discharged extra high voltage is momentarily applied to the body of the offending person.

[0030] On the other hand, referring to an electric shock device according to another embodiment of the present invention, as shown in FIG. 3, the nozzle 5 is connected to a single discharge cap 25 through which the voltage of the electrode + is applied.

[0031] When the conductive liquid is injected, the extra high voltage charged in the charge condenser 35 is discharged to the electrode '+' along the injection stream by means of the discharge switch 27, such that the discharged extra high voltage is momentarily applied to the body of the offending person who is contacted with the ground that has the electrode '-'.

[0032] The construction of the electric shock device according to another embodiment of the present invention is similar to that in FIGS. 1 and 2, but the conductive liquid is replaced with a conductive ribbon.

[0033] The conductive ribbon is folded to such a length as to be fired to a relatively long distance, in a zigzag form and is provided with a weight having a predetermined weight at the end thereof. As soon as the weight is fired by means of a firing means toward the body of the offending counterpart, the extra high voltage from the extra high voltage discharge assembling body is supplied to the conductive ribbon, thus to momentarily apply the electric shock to the offending counterpart.

[0034] In this case, a pair of weights or single weight may be provided, and the operation thereof is the same as in FIGS. 1 and 2.

[0035] As clearly understood from the foregoing, an electric shock device according to the present invention is able to momentarily apply an electric shock to even an offender who is at a remote distance, thus to previously prevent the act of the offender of committing a crime, whereby a user can avoid the danger or injury that he or she may encounter.

[0036] The forgoing embodiments are merely exemplary and are not to be construed as limiting the present invention. The present teachings can be readily applied to other types of apparatuses. The description of the present invention is intended to be illustrative, and not to limit the scope of the claims. Many alternatives, modifications, and variations will be apparent to those skilled in the art.

What is claimed is:

1. An electric shock device comprising:
 - a shock device case taking a shape of a gun or water pistol;
 - a conductive liquid tank disposed in the rear portion of said shock device case for containing a predetermined amount of conductive liquid;
 - a nozzle disposed on the top front portion of said shock device case for injecting said conductive liquid;
 - an extra high voltage discharge assembling body formed adjacent to said conductive liquid tank for momentarily discharging an extra high voltage;
 - an air tank disposed between said extra high voltage discharge assembling body and said nozzle in a way where said conductive liquid is injected to said nozzle; and
 - a supply pipe for guiding and supplying said conductive liquid to said nozzle by virtue of the compressed air received in said air tank.
2. The electric shock device according to claim 1, further comprising:
 - a valve body disposed in said supply pipe for operating with the vacuum formed in the compressed air such that said conductive liquid in said conductive liquid tank flows toward said nozzle;

- a compressor formed to be connected with said supply pipe through which the compressed air is supplied to said air tank;

- an opening/closing member disposed in said nozzle for switching the compressed air of said supply pipe;

- a trigger for adjusting said opening/closing member by an external force;

- a power transmission member for transmitting the external force of said trigger to said opening/closing member;

- a discharge cap screw-coupled to said nozzle and electrically connected to the output terminal of said extra high voltage assembling body, thereby causing electric discharge; and

- a discharge switch disposed on the rear end of said trigger and contacted by the external force, thus to apply the extra high voltage from said extra high voltage assembling body to said discharge cap.

3. The electric shock device according to claim 2, wherein the voltages of electrodes '+' and '-' are respectively applied to said discharge cap.

4. The electric shock device according to claim 2, wherein the voltages of electrode '+' are applied to said discharge cap.

5. The electric shock device according to claim 1, wherein said extra high voltage discharge assembling body comprises a battery supplying predetermined power, a charge circuit processing the power of said battery to charging power, a high voltage transformer for boosting the charging power of said charge circuit to the extra high voltage, and a charge condenser for charging the extra high voltage boosted by said high voltage transformer.

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