

PERCUSSION MECHANISM OF AUTOMOBILE TORPEDOES.
APPLICATION FILED MAR. 2, 1911.

Patented Oct. 3, 1911.

2 SHEETS—SHEET 1.

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Fig. 3

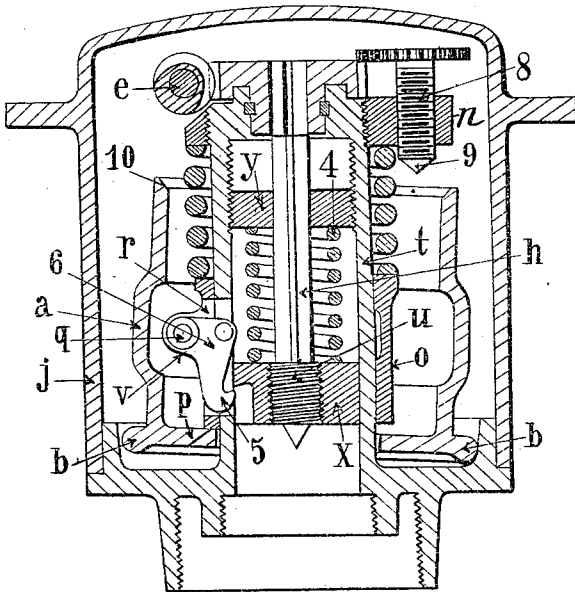


Fig. 5

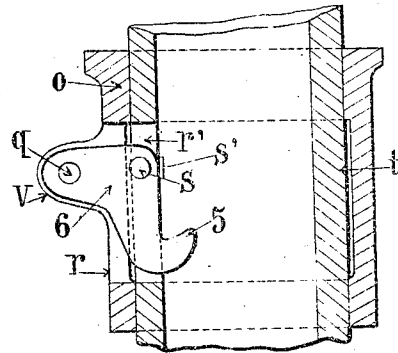


Fig. 6

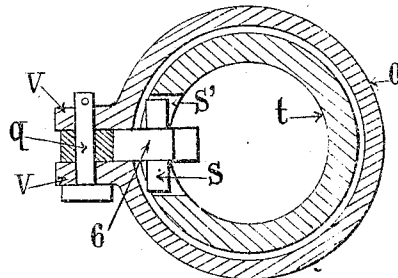


Fig. 4

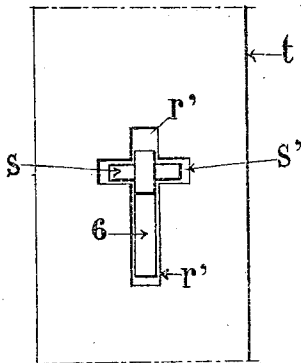


Fig. 7

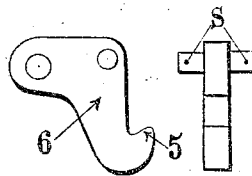
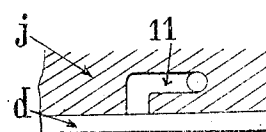


Fig. 8



WITNESSES

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UNITED STATES PATENT OFFICE.

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PERCUSSION MECHANISM OF AUTOMOBILE TORPEDOES.

1,005,042.

Specification of Letters Patent.

Patented Oct. 3, 1911.

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To all whom it may concern:

Be it known that I, ALBERT EDWARD JONES, of 2 Via Volosca, Fiume, Austria-Hungary, have invented certain new and useful Improvements in and Relating to Percussion Mechanism of Automobile Torpedoes, of which the following is a specification.

This invention has for its object an improvement in the percussion mechanism of automobile torpedoes in which the striker is maintained in the cocked position by a lever connected with a releasing member acting by inertia; and it has particularly in view to improve the conditions under which the mechanism operates and the certainty of its operation.

In the accompanying drawing: Figure 1 is a vertical cross section of the percussion mechanism. Fig. 2 is a plan view thereof. Fig. 3 is a view corresponding to Fig. 1 showing the mechanism in the operative condition. Figs. 4 to 8 illustrate details.

The invention consists particularly in the fact that the member which owing to its inertia produces the release of the striker is formed (Figs. 1 and 2) by a cup *a* surrounding the striker and which rests by its base *b* (which presents a beaded form) upon the bottom *d* of the box *j* of the mechanism.

The bottom *d* is preferably cup-shaped and presents at its periphery a circular rounded portion *i* the curvature of which is substantially the same as that of the beading *b* on the cup *a*. This latter is held against the bottom *d* by a spring *k* which may be termed the "moderator spring" which bears on the one hand on a plate *m* with lugs *n* fixed to the upper part of the cylinder *t* and on the other hand upon a movable sleeve *o* surrounding the cylinder *t* and resting upon the bottom *p* of the cup *a*.

The sleeve *o* which is represented in detail in Figs. 5 and 6 is formed with an aperture *r* and the cylinder *t* also comprises a cross-shaped aperture *r'* (Figs. 4 and 5) through which there passes a lever 6 (Fig. 7) provided with two trunnions *s* fitted into the small arms *s'* of the cross-shaped aperture *r'*; this lever 6 is also pivoted by means of a pin *q* to lugs *v* projecting from the exterior of the sleeve *o* on both sides of the aperture *r*.

The nose 5 of the lever 6 supports the piston *x* (Fig. 1) into which the screw threaded head *u* of the striker *h* is screwed; this

striker carries the nut *y* which is adapted to compress the spring 4 for cocking the striker which passes through the gear wheel *g* controlled by the worm *f* on the shaft *e*. The gear *g* also meshes with the toothed disks 7 carried by screws 8 passing through the lugs *n* of the plate *m* their points 9 resting upon the upper chamfered flange 10 of the cup *a*. The box *j* of the apparatus is connected with its bottom *d* by a certain number of bayonet joints such as 11 (Fig. 8).

The operation is as follows: Normally the various parts occupy the position shown in Fig. 1 in which the cup *a* is held against the bottom *d* of the box *j* by the combined action of the spring *k* and of the screw 8. The striker spring 4 is not compressed and the piston *x* is supported by the nose 5 of the lever 6 which projects inside the cylinder *t*. In these conditions a shock whatever its intensity and its direction would be unable to displace the cup *a* in any way. When the torpedo is traveling the gear *g* controlled by the shaft *e* and the endless screw *f* cocks the striker *h* and simultaneously by the intermediary of the toothed disks 7 it unscrews the screws 8, the points 9 of which move away from the edge 10 of the cup *a*. Now if the torpedo experiences lateral shock the cup *a* will effect a reversing movement as shown in Fig. 3 around the beading *b* as a pivot. During this movement its bottom *p* lifts the sleeve as the lever 6 fixed to this sleeve by its pivot *q* rocks around its trunnions *s* held in the aperture *r*—*s'* of the fixed cylinder *t* and this movement causes the nose 5 of the said lever 6 to be released from the piston *x* which is then driven forward with the striker by the spring 4.

It will be noted that the torpedo will be fired no matter in what direction the shock experienced by it is given, that is to say whether this shock takes place in the direction of travel or laterally or axially of the striker. In this latter case the cup will rise above the bottom *d* owing to its inertia. The moderator spring *k* is proportioned in such a manner that the inversion or the displacement of the cup *a* cannot take place below a certain velocity of the torpedo; in other words the apparatus remains insensitive to shocks produced at a velocity below this limit velocity with the object of increasing the safety of the apparatus.

In assembling the nut *y* is screwed home

in the cylinder *t* and the screws 8 are also screwed home onto the edge 10 of the cup *a*. In these conditions the propeller on the shaft *o* might be unable to place the cocking mechanism in movement. In order to obviate this defect a very simple device is provided for releasing the nut *y* and the screws 8 this device consisting in assembling the box *j* containing the mechanism and its bottom *d* by means of bayonet joints (Fig. 8). The box *j* is rigidly connected with the shaft *o* and before it is finally placed in position the worm *f* should mesh with the gear wheel *g*. The bayonet joint 11 necessitates a slight rotation being given to the box before it is finally placed in position and this is transmitted by the worm *f* to the gear *g* and to the toothed disks 7 which is sufficient for releasing the nut *y* and the screws 8 and consequently preventing the propeller from being inoperative.

The advantages of the invention reside particularly in the fact that the apparatus is simple and compact in construction and that it is composed of a relatively small number of parts and also in the fact that it affords the necessary conditions for efficient operation combined with great security.

It is obvious that without departing from the spirit of the invention the forms of the various parts might be modified to meet different requirements; in particular the cup *a* might present a different profile and need not be arranged concentrically with the striker.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a percussion mechanism for automobile torpedoes, a casing, a striker, a lever for holding the striker in cocked position, a rockable cup surrounding the striker and resting upon the bottom of the casing and adapted when tilted to operate the lever to release the striker, and a spring for holding the cup against the bottom of the said casing, whereby the apparatus is rendered less sensitive to shocks and the safety of the apparatus increased.

2. In a percussion mechanism for automobile torpedoes, a casing, a cylinder in the casing, a striker in the cylinder, a lever for holding the striker cocked, a cup surrounding the cylinder and resting upon the bottom of the casing, a spring surrounding the cylinder, and a sleeve carrying the said lever and movable on the cylinder between the spring and bottom of the cup and resting upon said bottom, whereby any displacement

of the cup will cause the sleeve to rise and the lever rocked to release the striker.

3. In a percussion mechanism for automobile torpedoes, a casing having a curved bottom, a striker within the casing, means for holding the striker cocked and a spring pressed cup surrounding the striker and having at its bottom a peripheral beading resting upon the curved bottom of the casing, whereby the cup will rock about the beading as a pivot under the influence of a shock from any direction to release the striker holding means.

4. In a percussion mechanism for automobile torpedoes, a casing, a striker, a cup mounted to rock in the casing to release the striker holding means, a gear wheel for cocking the striker, means for holding the striker cocked, screws for holding the cup from rocking, and means for operating the screws from the gear wheel, whereby the cup will be released simultaneously with the cocking of the striker.

5. In a percussion mechanism for automobile torpedoes, a striker, means for holding the striker cocked, a rockable member, means for operating the means for holding the striker cocked from the rockable member, means for holding the rockable member stationary, and means for simultaneously cocking the striker and releasing the rockable member.

6. In a percussion mechanism for automobile torpedoes, a casing, a striker, means for holding the striker cocked, a member rockable on the bottom of the casing, and means for operating the striker holding means from the rockable member to release the striker.

7. In a percussion mechanism for automobile torpedoes, a casing, a cylinder in the casing, a striker in the cylinder, means for cocking the striker, a lever for holding the striker cocked, a cup surrounding the cylinder and mounted to rock in the casing, a spring surrounding the cylinder, a sleeve carrying the said lever and movable on the cylinder between the spring and the bottom of the cup and resting on the said bottom, means for holding the cup stationary, and means for operating the means which holds the cup stationary from the cocking means to release the said cup simultaneously with the cocking of the striker.

In testimony whereof I have hereunto placed my hand at Fiume (Hungary) this ninth day of February 1911.

ALBERT EDWARD JONES.

In the presence of two witnesses:

ANDREW CHEMNITZ,
JOSEF AUPROCLING.