

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

13 June 2013

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Item 2 (b) of the provisional agenda

Explosives and related matters:

Review of test series 6

Amendment of firing ammunition in UN 6(a), 6(b) and (d) tests

Transmitted by the expert from Germany*

Introduction

1. In accordance with no. 16.4.1.3.3 (a) of the Manual of Tests and Criteria (ST/SG7AC.10/11/Rev.5), in UN Test 6 (a) the functioning of an article is stimulated near the centre of the package by the article's own means of initiation or ignition. The same applies to Test 6 (b) and Test 6 (d) in accordance with nos. 16.5.1.5 (a) and 16.7.1.3.2 (a), respectively.

2. In the case of ammunition, own means of ignition means a primer cap for centrefire cartridges or the rim of the cartridge base for rimfire cartridges. In accordance with the provisions, both cartridges are actuated by impact by means of an appropriate firing pin.

3. The previously used actuation mechanisms simulated the firing pin only inaccurately (higher input of energy) or were difficult to integrate into the packaging. Other procedures used heating instead of impact, which is a clear deviation from the usual manner of ignition. Also, within the framework of tests, mechanically actuated primer caps were replaced by articles with electric primers, which is a deviation from the test conditions mentioned under no. 1.

Proposal

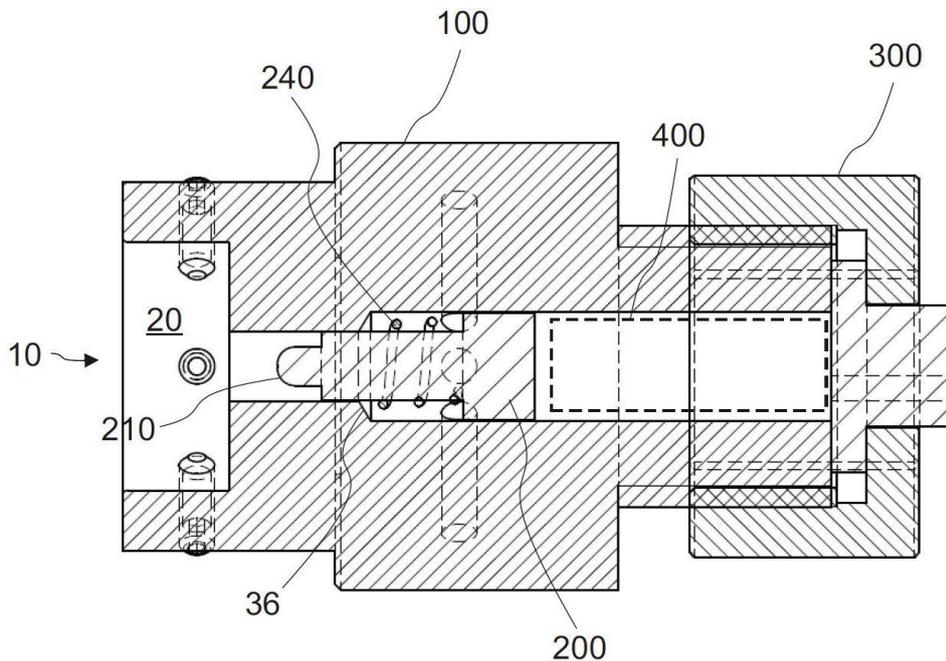
4. The following all-purpose remote actuator†, for which a patent application has been filed, offers the possibility of actuating both centrefire and rimfire cartridges of all normal calibres safely and in accordance with the provisions.

* In accordance with the programme of work of the Sub-Committee for 2013-2014 approved by the Committee at its sixth session (refer to ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

† Universalfernauslöser zum Prüfen von Versandverpackungen für Munition mit mechanischer Anzündung, Deutsches Patent- und Markenamt DE-AKZ 10 2012 104 134 (All-purpose actuator for testing packagings for mechanically actuated ammunition, German Patent and Trade Mark Office DE-AKZ 10 2012 104 134)

5 Functioning: By means of a pyrotechnic electric match 400, the all-purpose remote actuator 100 pushes a firing pin 200 against the primer cap in the base of the cartridge to be tested that is located in the cartridge chamber 10.

6 Handling: The shorted wires of the electric match or of the ignition pill fitted with a sealing adapter are led through the plug 300. Thereafter, the plug is manually screwed onto the all-purpose remote actuator. Then, the cartridge to be actuated is introduced base first into the cartridge chamber and centred and secured by means of the bolts in the case. Cartridges with an oversized base are secured with adhesive tape, and an extended firing pin is used. Rimfire ammunition is secured in the cartridge holder by means of an eccentric sheave. Now, the actuator together with the cartridge can be installed at the centre of the package. The actuation of the electric match or of the ignition pill is effected by a commercial exploder from behind substantial cover.



Justification

7 The use of the all-purpose remote actuator described above would contribute to guaranteeing that within the framework of tests of series 6 ammunition is ignited in a uniform manner worldwide. In this way, comparable test results are achieved and discussions as to whether the manner of ignition has affected the results in a certain way are reduced.