

UNITED STATES PATENT OFFICE

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METHOD OF LOADING EXPLOSIVES

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The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to us of any royalty thereon.

5 This invention relates to a method of loading explosives containing ammonium nitrate, and more particularly to a method of casting such explosives either in the projectile itself or in a suitable mould.

10 The method heretofore used in loading ammonium nitrate consists in first adding it to a molten explosive, such as trinitrotoluene, in the melting kettle and then pouring the resulting mixture into the projectile or mould.

15 In this old method the physical condition of the ammonium nitrate has a great influence on the condition of the mixture. In order to secure a mixture which will pour well at a given temperature, it is necessary to very closely control the crystal size and the percentage of moisture. This uniform physical condition is especially difficult to achieve with ammonium nitrate due to the fact that it is hygroscopic and has a tendency to set

25 into a hard mass when in storage. According to the method of loading herein proposed, advantage is taken of the tendency of ammonium nitrate to set. The material which has been in storage or has been received directly from the manufacturer in the fused condition is broken into lumps or pellets of a size larger than 10 mesh. Molten explosive, preferably in a predetermined amount, is poured into the container and the pellets of ammonium nitrate are then added until the liquid is just sufficient to cover them. The unheated pellets absorb the heat of the molten explosive and thereby cause the mixture to set in a short period of time.

40 By this method the ammonium nitrate does not require the careful preparation demanded by the former method and, furthermore, it is unnecessary to heat the ammonium nitrate to the temperature of the molten explosive.

45 We claim:

1. The method of loading explosives into a container which consists in pouring a predetermined amount of a molten explosive into the container and then adding pellets

of ammonium nitrate of a size larger than 10 mesh until the liquid and the pellets reach the same level.

2. The method of loading explosives into a container which consists in pouring a molten explosive into the container and then adding pellets of ammonium nitrate until the liquid and the pellets reach the same level.

3. The method of loading explosives into a container which consists in pouring a molten explosive into the container and then adding pellets of ammonium nitrate.

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