

UNITED STATES PATENT OFFICE.

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EXPLOSIVE.

SPECIFICATION forming part of Letters Patent No. 770,046, dated September 13, 1904.

Application filed March 7, 1904. Serial No. 197,054. (No specimens.)

To all whom it may concern:

Be it known that I, HANS VON DAHMEN, a subject of the Emperor of Austria-Hungary, and a resident of Vienna, in the Empire of Austria-Hungary, have invented new and useful Improvements in Explosives, of which the following is a specification.

My invention relates to improvements in explosives of the nature described in Letters Patent No. 689,577. Subsequent experiments have shown that the disruptive power of the explosives therein described can be considerably increased by employing besides ammonium nitrate and aluminium the higher substitution products of benzene, toluene, phenol, cresol, and naphthalene with or without the addition of carbon.

I find that di and tri nitrotoluene in particular are especially suitable for my purpose. The addition of a small amount of carbon greatly diminishes the hygroscopicity. I may, for example, use ammonium nitrate, sixty-five per cent.; carbon, two per cent.; dinitrotoluene, ten per cent.; aluminium, twenty-three per cent.; total, one hundred per cent.; or ammonium nitrate, sixty-one per cent.; carbon, two per cent.; trinitrotoluene, fifteen per cent.; aluminium, twenty-two per cent.; total, one hundred per cent. The ingredients of these mixtures I mingle exceedingly intimately. The aluminium I prefer to employ in the form of grains as obtained with a sieve of forty meshes to the square centimeter.

The above mixtures tested in a Trautzel cylinder exhibit a much greater force than the explosives disclosed in the Letters Patent already referred to. They thus possess a much greater power than any other explosive and such as is not reached even by picric acid or any of its salts. Numerous experiments, more particularly the compression test as employed in Austria for the determination of the disruptive power, have shown that the lead-testing cylinder was crushed at least three millimeters more by the new mixtures than by picric acid.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An explosive consisting of ammonium nitrate, aluminium, and a nitrohydrocarbon of the nature specified.

2. An explosive consisting of ammonium nitrate, aluminium in grains, carbon and a nitrohydrocarbon of the nature specified.

3. An explosive consisting of ammonium nitrate, aluminium and a nitrotoluene of the nature specified.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HANS VON DAHMEN.

Witnesses:

ALVESTO S. HOGUE,
AUGUST TUGGER.