UNITED STATES PATENT OFFICE.

ARTHUR LA MOTTE, OF WILMINGTON, DELAWARE, ASSIGNOR TO THE E. I. DU PONT DE NEMOURS POWDER COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF NEW JERSEY.

EXPLOSIVE AND PROCESS OF MAKING THE SAME.

No. 911,019. Specification of Letters Patent. Patented Jan. 26, 1909.

Continuation of application filed December 7, 1905, Serial No. 290,763. Divided and this application filed April 1, 1907. Serial No. 365,710.

To all whom it may concern:

Be it known that I, ARTHUR LA MOTTE, a citizen of the United States, residing at Wilmington, county of New Castle, and State of Delaware, have invented a new and useful Improvement in Explosives and Process of Making the Same, of which the following is a full, clear, and exact description.

This application is a continuation of an application filed by me December 7th, 1905, Serial No. 290,763.

My invention has for its object the production of a new high explosive of great and increased explosive strength and a process for making the same.

I have discovered that an explosive consisting of nitrate of ammonia, a nitro-naphthalene, other than the mono-nitro-naphthalene, and a nitro-toluene, other than the mono-nitro-toluene, is of great and increased explosive strength. Preferably, I form this high explosive of seven parts of di-nitro-naphthalene, five parts of tri-nitro-toluene and eighty-eight parts of nitrate of ammonia. To this is added two parts of pyrites.

I make this explosive in the following manner: I first melt the tri-nitro-toluene and add to that the di-nitro-naphthalene, making a homogeneous liquid. I then add this liquid to the nitrate of ammonia and allow this admixture, after thorough incorporation, to cool and harden. I then admix the pyrites with this admixture. Unless the pyrites be added, as above set forth, no beneficial result will be obtained from the addition of the pyrites.

Having now fully described my invention, what I claim and desire to protect by Letters Patent is:

1. The process of forming a high explosive, which consists in mixing with a solid inorganic oxidizing agent an organic nitro-compound or compounds, solid at ordinary temperature, in a fluid condition, and, after said mixture has hardened, adding the sulfid of a metal.

2. The process of forming a high explosive, which consists in mixing with nitrate of ammonia an organic nitro-compound or compounds, solid at ordinary temperature, in a fluid condition and, after said mixture has hardened, adding the sulfid of a metal.

3. The process of forming a high explosive, which consists in mixing with a solid inorganic oxidizing agent an organic nitro-compound or compounds, solid at ordinary temperature, in a fluid condition and, after said mixture has hardened, adding pyrites.

4. The process of forming a high explosive, which consists in mixing with nitrate of ammonia an organic nitro-compound or compounds, solid at ordinary temperature, in a fluid condition and, after said mixture has hardened, adding pyrites.

5. The process of forming the high explosive described, which consists in mixing together a nitro-naphthalene, and a nitro-toluene, both of which are solid at ordinary temperatures, in fluid condition, with nitrate of ammonia; and, after the admixture has hardened, adding the sulfid of a metal.

6. The process of forming the high explosive described, which consists in mixing together a nitro-naphthalene, and a nitro-toluene, both of which are solid at ordinary temperatures, in fluid condition, with nitrate of ammonia; and, after the admixture has hardened, adding pyrites.

7. The process of forming the high explosive described, which consists in mixing together a di-nitro-naphthalene, and a tri-nitro-toluene, both of which are solid at ordinary temperatures, in fluid condition, with nitrate of ammonia; and, after the admixture has hardened, adding the sulfid of a metal.

8. The process of forming the high explosive described, which consists in admixing a di-nitro-naphthalene and a tri-nitro-toluene, both in fluid condition, with nitrate of ammonia; and, after the admixture has hardened, adding pyrites.

9. An explosive compound, composed of a solid inorganic oxidizing agent, coated with an organic nitro compound or compounds, which are solid at ordinary temperatures and having admixed therewith the sulfid of a metal uncoated with said nitro-compounds.

10. An explosive compound, composed of nitrate of ammonia, coated with an organic nitro compound or compounds, which are solid at ordinary temperatures and having admixed therewith the sulfid of a metal, uncoated with said nitro compounds.

11. An explosive compound, composed of

a solid inorganic oxidizing agent, coated with an organic nitro compound or compounds which are solid at ordinary temperatures and having admixed therewith pyrites, uncoated with the said nitro compounds.

12. An explosive compound, composed of nitrate of ammonia, coated with an organic nitro compound or compounds, which are solid at ordinary temperatures and having admixed therewith pyrites, uncoated with said nitro compounds.

13. An explosive composed of nitrate of ammonia coated with an admixture of a nitro-naphthalene and a nitro-toluene which are solid at ordinary temperatures and having the sulfid of a metal, uncoated with the nitro compounds, mechanically mixed therewith.

14. An explosive composed of nitrate of ammonia coated with an admixture of a nitro-naphthalene and a nitro-toluene which are solid at ordinary temperatures and having pyrites, uncoated with the nitro compound, mixed therewith.

15. An explosive composed of nitrate of ammonia coated with an admixture of dinitro-naphthalene and tri-nitro-toluene and having a sulfid of a metal, uncoated with the nitro compounds, mixed therewith.

16. An explosive composed of nitrate of ammonia coated with an admixture of dinitro-naphthalene and tri-nitro-toluene and having pyrites, uncoated with the nitro compounds, mixed therewith.

In testimony of which invention, I have hereunto set my hand, at Lee, Mass., on this 28th day of March, 1907

ARTHUR LA MOTTE.

Witnesses:
J. L. KILBON,
E. L. MURPHY