

# UNITED STATES PATENT OFFICE.

HENRY WASBERS, OF YORK, PENNSYLVANIA, ASSIGNOR TO ROCKDALE POWDER CO., INC., A CORPORATION OF DELAWARE.

## PROCESS OF MAKING EXPLOSIVES.

SPECIFICATION forming part of Letters Patent No. 724,764, dated April 7, 1903.

Application filed November 22, 1902. Serial No. 132,450. (No specimens.)

*To all whom it may concern:*

Be it known that I, HENRY WASBERS, of York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Processes for the Manufacture of Explosives, of which the following is a specification.

My invention relates to a process for the manufacture of a high explosive; and one of the objects of the same is to economically produce a thoroughly reliable and safe explosive which can be successfully detonated when packed in the ordinary cartridges or shells.

A further object of the invention is to provide a process particularly designed to be employed in conjunction with the manufacture of ordinary black powder for economically producing a high explosive.

Further objects of the invention will appear and the many advantages of the same be appreciated when the process is better understood.

My invention consists, primarily, in incorporating with a black-powder dope nitronaphthalene and then mixing with the resulting compound nitroglycerin.

Secondarily, the invention consists in utilizing the black-powder dust, which is formed by passing the pressed black-powder cakes through the ordinary corning-mill to granulate the same, as the dope with which nitronaphthalene is incorporated and with which nitroglycerin is afterward intermixed.

In describing my process I shall specify the proportions which are preferably employed of the several ingredients, as the same has been found to produce a very satisfactory product, which fulfils all of the essential objects of the invention; but it will be obvious to those skilled in the art that the proportions may be varied to some extent without departing from the spirit of the invention.

In manufacturing the dynamite according to my process a dope is first made by thoroughly pulverizing and intermixing charcoal, sulfur, and nitrate of soda. The ingredients forming this composition are preferably combined in the proportions of seventy-five per cent. of nitrate of soda, 12.5 per cent. of char-

coal, and 12.5 per cent. of sulfur. In incorporating the same the ingredients are preferably placed beneath chaser-wheels; but any other means may be employed for pulverizing and thoroughly intermixing the same. To the dope thus produced nitronaphthalene is added and thoroughly incorporated with the same. The proportions preferably employed in producing the latter composition are ninety per cent. of the composition which I have designated the "dope" and ten per cent. nitronaphthalene. The intermixing of the dope and nitronaphthalene is also preferably effected by subjecting the same to the action of chaser or incorporating wheels.

As a final step in my complete process from fifteen to twenty-five per cent. of nitroglycerin is mixed with the composition formed by the incorporation of the nitronaphthalene and the dope. The intermixture of said parts is preferably secured by placing the composition formed by the dope and nitronaphthalene in a suitable vessel and adding the nitroglycerin thereto.

The product resulting from the last step of the process is then in condition to be packed in the ordinary shells or cartridges. The explosive force of the composition having the specified proportions is equal to if not greater than straight forty per cent. dynamite or dynamite containing forty per cent. of nitroglycerin, and the cost of production of the former product is materially less than the cost of production of the latter.

As before premised, one of the subsidiary objects of the invention herein presented is to provide a process for economically manufacturing dynamite in conjunction with the manufacture of black powder. In manufacturing the latter, which is composed of charcoal, sulfur, and nitrate of soda in substantially the proportions specified as forming the dope hereinbefore referred to, the composition resulting from the admixture of said ingredients is pressed into hard cakes and such cakes run through a corning-mill to granulate the powder. In the latter step in the manufacture of powder a quantity of very fine dust is necessarily formed, which is separated from the granular product. Here-



tofore it has been the practice to reincorporate this dust with the material treated by the chaser or incorporating wheels and re-subject the same to the action of the press, 5 which forms the composition into cakes previous to passing the same through the granulating-machine or corning-mill. In following my process, however, in manufacturing dynamite in conjunction with the manufacture 10 of black powder the dust which accumulates in granulating the powder is utilized as the dope of the high explosive with which the nitronaphthalene is incorporated, as before specified.

15 My invention will be fully understood upon reference to the foregoing description, and it will be appreciated that the precise proportions of the ingredients specified may be changed without departing from the spirit of 20 the same.

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

The herein-described process for the manufacture of dynamite in conjunction with the 25 manufacture of black powder, which consists in incorporating with the powder-dust resulting from the granulation of the pressed powder-cakes, nitronaphthalene, and finally adding to the admixture thus obtained, nitroglyc- 30 erin, substantially as described.

In testimony whereof I have hereunto signed my name, in the presence of two at- 35 testing witnesses, at York, in the county of York and State of Pennsylvania, this 21st day of November, 1902.

HENRY WASBERS.

Witnesses:

F. W. SEEMAN,  
W. I. KOLLER.