

UNITED STATES PATENT OFFICE.

FRANK H. BRIGGS, OF PAINESVILLE, OHIO, ASSIGNOR TO THE AMERICAN DYNALITE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

EXPLOSIVE COMPOUND.

934,990.

Specification of Letters Patent. Patented Sept. 28, 1909.

No Drawing.

Application filed February 18, 1907. Serial No. 358,080.

To all whom it may concern:

Be it known that I, FRANK H. BRIGGS, a citizen of the United States, residing at Painesville, in the county of Lake and State of Ohio, have invented a certain new and useful Improvement in Explosive Compounds, of which the following is a full, clear, and exact description.

One of the most efficient explosives, especially for blasting purposes, is known as rack-a-rock. It is made of chlorate of potash and nitro-benzol, commonly known as mirbane oil. This explosive has not gone into very extensive use, because, after it is compounded, it rapidly deteriorates, owing to the volatile character of the oil, and to the fact that the chlorate is not an efficient absorbent of the oil. In order to use rack-a-rock efficiently, it is usually mixed or compounded "on the job"—so to say. That is to say, it is compounded at the place of use and immediately before it is to be used. It is only in exceptional cases where this requirement can be satisfactorily or conveniently carried out, and for this reason the use of rack-a-rock has been very limited. Of course, such a mixture might be preserved in hermetically sealed packages, but the cost of so packing the mixture adds an expense which is an important factor commercially. Moreover, when such compound is so packed and sealed, it is necessary to use the entire contents of the package when it has once been opened to avoid loss. Heretofore no means have been devised for rendering an explosive compound of chlorate of potash and mirbane oil a commercial commodity.

The present invention is a commercial compound having, as its active chemical constituents, chlorate of potash and mirbane oil, which will not only keep for a long time without material deterioration, but which, while equally efficient, is cheaper pound for pound than rack-a-rock, and has certain other advantages hereinafter mentioned.

The invention consists in a compound of chlorate of potash and mirbane oil and a pulverized, and preferably inert, absorbent of the oil. So far as I have been able to ascertain, the best absorbent for the described purpose is pulverized slate, and the best proportions in which to use the several ingredients mentioned are the following, to

wit:—112 pounds of chlorate of potash, 35 pounds mirbane oil, and 24 pounds of the pulverized slate. When these ingredients are thoroughly mixed, the oil is absorbed by the slate, and therefore evaporates so slowly that the compound does not materially deteriorate, if kept under easily arranged conditions. For example, it is thoroughly practical to preserve the explosive for a long time in packages having paraffin paper wrappers.

In the described compound there is a greater proportion of oil than has heretofore been used in making rack-a-rock, or in other explosives made up of the chlorate and oil alone. It is possible to use the greater proportion of oil because the oil is for most part absorbed by the slate. If an equal proportion of oil were used with the chlorate alone the resultant mixture would have less explosive force, and would act too slowly for the greatest efficiency. The described mixture of the chlorate and oil with the slate, or equivalent absorbent, is equally powerful, weight for weight, with the formerly used mixture of oil and chlorate alone. Since the oil is cheaper than the chlorate, and since the pulverized slate is very much cheaper than either, it follows that the described explosive compound is very much cheaper than any equally powerful explosive consisting of a mixture of the oil and chlorate alone.

Another advantage of the described compound over rack-a-rock is that it may be more conveniently used in the cold weather. A mixture of the chlorate and oil alone will become very hard in cold weather, so hard that it cannot be easily disintegrated, nor can a hole be easily made in it for the reception of the exploder. The compound herein described and claimed, however, is very friable when solidified by cold. It may be easily disintegrated, and the explosive hole may be easily made therein.

It will be understood that the absorbent is not used for the purpose of rendering the explosive less dangerous to handle; nor is it used to make it any easier to handle. The physical properties of rack-a-rock and the explosive herein described are very much alike. Each is an oily plastic mass. The absorbent is used for the primary purpose of preventing volatilization of the oil and consequent rapid deterioration of the explosive.

sive, as hereinbefore suggested. It is also used because the resultant is a cheaper explosive of equal power. It is also used for the purpose of broadening the field of usefulness of the explosive.

5 Having described my invention, I claim:

A merchantable explosive compound consisting of an intimate mixture of chlorate of

potash, mirbane oil and pulverized slate in substantially the proportions specified. 1:

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

FRANK H. BRIGGS.

Witnesses:

E. L. THURSTON,

E. B. GILCHRIST.