

UNITED STATES PATENT OFFICE.

OTTO FREIHERR VON SCHROETTER, OF KRUPPAMÜHLE, GERMANY.

EXPLOSIVE.

934,020.

Specification of Letters Patent. Patented Sept. 14, 1909.

No Drawing.

Application filed May 9, 1907. Serial No. 372,687.

To all whom it may concern:

Be it known that I, OTTO FREIHERR VON SCHROETTER, a subject of the King of Prussia, residing at Kruppamühle, Upper Silesia, German Empire, have invented new and useful Improvements in Explosives, of which the following is a specification.

Hexanitrodiphenylamin, also called dipara-
pierylamin, is known in trade in the form of
its ammonium salt as a dyestuff under the
name aurantia; it is a dyestuff for wool, silk,
leather and the like, and yields a passable
orange. This dyestuff has been gradually
displaced by the much more beautiful azo
dyestuffs, so that at the present time it finds
hardly any, or a very limited, application.

My researches on the use of polynitro de-
rivatives of the aromatic series for the manu-
facture of explosives have shown that this
hexanitrodiphenylamin may be very advan-
tageously used in practice as a high explo-
sive, best in compressed condition. The
present invention relates to the application
of this discovery. The nitro compound can
be detonated with mercuric fulminate as in
the case of picric acid and the high explo-
sives now in use. The hexanitrodiphenyl-
amin has the advantage over picric acid,
that it contains a larger proportion of nitro-
gen and its explosive force exceeds consid-
erably that of the trinitrophenol or trinitro-
toluol. Hexanitrodiphenylamin is quite sta-

ble when stored and free from danger in
handling and in application, as indeed might
be deduced from its use in dyeing. Its be-
havior toward shock and percussion is very
much the same as that of the known high
explosives of the aromatic series. Its melt-
ing point may be lowered and its sensitive-
ness and explosive action adjusted in known
manner by a suitable admixture, such as a
nitrohydrocarbon of low melting point. For
this purpose I prefer to use explosive ni-
trated hydrocarbons, such as trinitrotoluol,
dinitrotoluol, etc. Instead of using hexa-
nitrodiphenylamin, its salts may be em-
ployed.

Example: About 80 parts of hexanitro-
diphenylamin are intimately mixed with
about 20 parts of trinitrotoluol, and the re-
sultant mixture is subjected to hydraulic
pressure, so that explosive bodies of a specific
gravity of about 1.6 to 1.7 are obtained.

I claim:

An explosive consisting of hexanitro-
diphenylamin and a nitrohydrocarbon of a
low melting point, substantially as specified.

In witness whereof, I have hereunto
signed my name in the presence of two sub-
scribing witnesses.

OTTO FREIHERR VON SCHROETTER.

Witnesses:

ERNST KATZ,
ERNST BLEISCH.