

UNITED STATES PATENT OFFICE.

FRITZ ULLMANN, OF FUERTH, GERMANY, ASSIGNOR TO ARON LANDS-
BERGER, OF BERLIN, GERMANY.

PROCESS OF PURIFYING ACETYLENE GAS.

SPECIFICATION forming part of Letters Patent No. 625,479, dated May 23, 1899.

Application filed October 17, 1898. Serial No. 693,778. (No specimens.)

To all whom it may concern:

Be it known that I, FRITZ ULLMANN, chem-
ist, a subject of the Emperor of Germany, and
a resident of No. 42 Marktstrasse, Fuerth,
5 Bavaria, in the Empire of Germany, have in-
vented a certain new and useful Improved
Process of Purifying Acetylene Gas, of which
the following is an exact, full, and clear de-
scription.

10 This invention relates to a process of puri-
fying acetylene gas. According to the state-
ments of literature chromic acid oxidizes
acetylene gas to acetic acid; but according to
my experiments an aqueous or acetic solution
15 of chromic acid which was obtained from
chromic acid itself or from acidified chromates
or bichromates acts upon the impure acety-
lene gas as the same is, for instance, ob-
tained from carbide in such a manner that
20 only the impurities—as, for instance, sulfide
of hydrogen and phosphoreted hydrogen—are
oxidized. Since the action takes effect in an
acidic solution, the impure acetylene gas is
also deprived of the alkaline components—as,
25 for instance, ammonia and basic polymerized
compounds. According to the present inven-
tion this property of the chromic-acid solu-
tion is utilized for purifying acetylene gas in
a simple and cheap manner.

30 The invention is carried out in such a man-
ner that the acetylene gas to be purified is
passed or conducted through suitable wash-
ing apparatus in which is present the oxida-
tion liquid either as such or absorbed by
35 pumice-stone or any other suitable material.

The degree of concentration of the chromic-
acid solution may vary within wide limits.
Good results have been obtained from the fol-
lowing solutions: first, a solution contain-
ing twenty-five parts sodium bichromate and 40
one hundred parts ten-per-cent. sulfuric acid;
second, a solution containing thirty parts
chromic acid, ninety-five parts water, and
five parts sulfuric acid; third, a solution con-
taining fifty parts chromic acid, fifty parts 45
water, and one hundred parts glacial or crys-
tallizable acetic acid. Such solutions are
utilized in suitable cleansing or washing ap-
paratus. The degree of concentration as
against the above statements may be varied 50
at pleasure without the result undergoing any
change of moment.

Having now particularly described and as-
certained the nature of the said invention, I
declare that what I claim, and wish to secure 55
by Letters Patent, is—

The herein-described process of purifying
acetylene gas consisting in treating impure
acetylene gas with oxidizing chromic com-
pounds in which the chrome is present as an 60
acidifier, for instance, with chromic acid or
aqueous or acidified chromic-acid solution or
acidified bichromate solution for the purpose
of oxidizing the impurities of the acetylene.

In witness whereof I have hereunto set my 65
hand in presence of two witnesses.

FRITZ ULLMANN.

Witnesses:

BENJ. H. RIDGELY,
E. F. BARRY.