ACETYLENE GAS, ITS NATURE, PROPERTIES AND USES; ALSO CALCIUM CARBIDE, ITS COMPOSITION, PROPERTIES AND METHOD OF MANUFACTURE

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649022830

Acetylene Gas, Its Nature, Properties and Uses; Also Calcium Carbide, Its Composition, Properties and Method of Manufacture by G. F. Thompson

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

G. F. THOMPSON

ACETYLENE GAS, ITS NATURE, PROPERTIES AND USES; ALSO CALCIUM CARBIDE, ITS COMPOSITION, PROPERTIES AND METHOD OF MANUFACTURE

Trieste

ACETYLENE GAS

AND

CALCIUM CARBIDE.

ACETYLENE GAS,

ITS

NATURE, PROPERTIES

AND USES; ALSO

CALCIUM CARBIDE,

ITS

COMPOSITION, PROPERTIES

AND

METHOD OF MANUFACTURE.

BY

G. F. THOMPSON,

CONSULTING ENGINEER.

LIVERPOOL.

PUBLISHED BY THE AUTHOR,

LOMBARD CHAMBERS, BIXTETH STREET,

1898.

PREFACE.

The present work originated in a lecture delivered by the Author before the Liverpool Polytechnic Society, the primary object of which being to make known the properties of Acetylene, and by pointing out its many and distinct advantages in contradistinction to its supposed dangerous character, remove the suspicion attaching to it, and allay the unfounded and somewhat undefined fears which have been aroused by the occurrence of a few accidents through its agency.

Acetylene, owing to its high value as an illuminant and other valuable properties, is intensely interesting from both scientific and commercial standpoints, but owing to the fact that its real properties are but little known, and that a few accidents have occurred in consequence thereof, reports have been freely circulated as to its being a highly dangerous compound, the result being that it is regarded by the general public with a considerable amount of suspicion.

It was with a view to dissipating the erroneous impressions prevalent that the Author was prompted to bring the subject before his Society, and by giving some particulars of the nature and properties of Acetylene and its base, Calcium Carbide, extend the knowledge of this simple yet valuable gas.

That a large number are interested in the subject was proved by the receipt of numerous enquiries respecting Acetylene and applications for copies of the lecture. The receipt of these communications impressed the Author with the evident necessity for an authoritive work on the subject.

and he has therefore been prompted to prepare such a work, which he now submits and dedicates to all those who may in any way be interested in artificial lighting generally, or in Acetylene in particular, as an illuminant or as applied to other purposes.

Coal gas as an illuminant having now been in use nearly a century, it would appear reasonable to suppose that public knowledge of the subject would be fairly accurate and general, yet there are few things in common use involving scientific principles or chemical reactions in regard to which more ignorance or erroneous ideas are displayed. That such is unfortunately the case is proved by the fact that fatalities through its agency are of frequent occurrence, cases of poisoning and explosion being common, the latter occurring occasionally even at Gas Works, where it might be expected a good knowledge of the nature of Gas prevailed and the greatest care would be exercised in connection therewith.

These accidents are reported by the press almost as every-day and common-place events, are read by the general public, commented upon and soon forgotten, but when an accident occurs in connection with any new innovation, be it trifling or serious, sensational accounts of same are immediately published, greatly to the detriment of the innovation, however valuable or important it may be, and the pessimistic tendency of the average mind usually prompts a condemnation of the whole thing without any consideration as to its possible advantages.

Acetylene regarded as an innovation has suffered from this cause, but in that respect it is not alone; all innovations of a scientific origin have in more or less degree suffered in like manner.

Coal gas during the early days of its introduction was regarded with considerable distrust owing to a few mishaps which occurred, but which were almost invariably traceable to ignorance or carelessness, or both.

The adoption of the electric light was also much retarded in its early stages by similar causes, unfounded fears being aroused regarding the danger and subtlety of electricity.

Acetylene being the latest scientific production and a *terra incognita* to the majority, public apprehension is aroused by the slightest mishap, and accounts of accidents have been distorted and exaggerated, but the introduction of a compound of this description, with comparatively unknown properties, must for a time be impeded by accident through improper usage.

Acetylene as an illuminant compared with ordinary coal gas involves much less risk in its use, its distinct and pungent odour making its presence known long before any dangerous quantity might be present, and in comparison with water gas the risk is still less owing to the fact that the latter is practically inodorous and its presence is not detected until symptoms of poisoning are developed.

These facts, therefore, shew that a great deal of unfounded and unnecessary fear has been aroused in regard to Acetylene which is not only unjust to it, but absurd in view of the general enlightenment of the present age.

The Author was early convinced of the importance of the discovery by which the synthetic production of Acetylene became a commercial possibility, and he has taken an active interest in the subject from the time when Calcium Carbide first became a commercial article.

The present work has been prepared with a view to its being a complete *resumè* of the subject and is in every respect a record of the state of knowledge at the present time in regard to Acetylene, and no pains have been spared to render it worthy of being accepted as a standard work on the subject.

The design of the work is to expound the general principles governing the subject and the various conditions involved; no description of specific apparatus is therefore attempted, owing to the variety of forms adopted by the several manufacturers, each one possessing features and advantages peculiar to itself.

The Author, while not assuming to be an authority in regard to the chemical aspect of the subject, yet claims to have acquired some knowledge of the nature and properties of Acetylene, and to have ascertained the best conditions under which it may be generated and utilized.

The Author desires to acknowledge the courtesy of Professor Vivian B. Lewes in permitting him to quote the results of some of his experiments in regard to the properties of Acetylene. He also wishes to acknowledge information derived from articles in "*The Journal of Gas Lighting*," "*The Engineer*," "*Engineering*," and other periodicals, and communications to learned societies by Professor Lewes, M. Moissan, Dr. Pictet, M. Ravel, Dr. Bunte, and other eminent scientific authorities who have given special attention to the subject.

G. F. T.

LIVERPOOL, *April, 1898.*