THE PRACTICAL GAS ENGINEER: A MANUAL OF PRACTICAL GAS AND GASOLINE KNOWLEDGE

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The Practical Gas Engineer: A Manual of Practical Gas and Gasoline Knowledge by E. W. Longanecker

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E. W. LONGANECKER

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Trieste

The Practical Gas Engineer

A Manual of Practical Gas and Gasoline Engine Knowledge

For the Gas and Gasoline Engine Owner, Engineer or any one wishing Plain and Practical Information on this style motor

Covering Errors to be avoided in the Construction of, and How to Erect, Operate and care for Gas and Gasoline Engines and Motors of Every Type.

Ninth Edition
Revised and Enlarged

BY

E. W. LONGNECKER, M. D.

PREFACE

Having many times in the past felt the need of some book that could be placed into the hands of the busy gas and gasoline engineer for the purpose of aiding him quickly to overcome the apparently mysterious troubles that often arise with these engines or motors, the author has for a number of years, during his extensive travels as an expert for one of the oldest and leading gas engine concerns in America, collected such data in reference to CONSTRUCTION, EQUIPMENT and GAS ENGINE TROUBLES as are of special interest to the PROSPECTIVE PURCHASER, the ATTENDANT, or any one wishing to post himself thoroughly on the management, care, operation and selection of a gas or gasoline engine or motor.

The data thus gathered and compiled in this book covers practically all the questions that arise from the purchaser's, owner's and engineer's standpoint.

It is the author's intention that it shall be a ready reference most valuable to all persons interested in modern gas and gasoline engines, and especially to the busy engineer, in cases of emergency where his engine refuses to operate successfully and the cause of the trouble is difficult to locate.

In handling the various subjects the author has endeavored to studiously avoid the theoretical, and adhere strictly, in as brief a manner as possible, to the practical questions concerning the purchase and handling of gas and gasoline engines.

I have reason to believe that this book will save many a gas engine owner, not only much time and money that without it would be expended on repairs, but that it will also save him much mental worry and make him and his engine closer friends.

If it does either it will have attained its purpose.

THE AUTHOR.

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PART I.

DESCRIPTIVE AND HISTORICAL

1. THE GAS ENGINE may be defined as a Motor or Prime Mover which derives its power from the Combustion, within its cylinder, of a mixture of gas and air in the proper proportion to form an explosive.
2. The COMBUSTION or burning of this charge of gas and air is occasioned under a close or heavy compression, a result of the inward movement of the piston after the charge is admitted and all valves closed. The result of igniting this mixture under the heavy compression is what is commonly called an explosion, which is nothing more than a quick burning or rapid combustion of the mixture.
3. This explosion causes suddenly a high degree of heat within the cylinder, behind the piston, which heat results in a great EXPANSIVE FORCE, creating an initial pressure against the piston of something near 300 pounds to the square inch. This drives the piston rapidly and forcibly on its outward movement, which, connected to the fly wheels by means of pitman and crank shaft, imparts to them their revolving motion and consequent power.