

PREFACE



The need for an illustrated and condensed work of reference for the inventor, the mechanical student, the artisan, and the workman with the ambition of an inquiring mind, has become not only apparent to teachers of mechanics, but a real want among all who are interested in mechanical thought and work.

It is an interest the growth of which has been greatly encouraged by the rapid development of the inventive and mechanical arts during the past half century.

The increasing inquiries from inventors and mechanics, in regard to the principles and facts in constructive and operative mechanics have induced the author to gather such illustrations as have been found available on the subject of mechanical motions, devices, and appliances, and to place them in a form for ready reference with only sufficient text to explain the general principles of construction and operation, and as a partial exhibit of the mechanical forms in general use, with a view to place the largest amount of illustrated information within the limited means of the humblest seeker after mechanical knowledge.

The field of illustrated mechanics seems almost unlimited, and with the present effort the author has endeavored partially to fill a void and thus to help the inquirer in ideal and practical mechanics, in the true line of research.

Mechanical details can best be presented to the mind by diagrams or illustrated forms, and this has been generally acknowledged to be the quickest and most satisfactory method of conveying the exact conditions of mechanical action and construction.

Pictures convey to the inquiring mind by instantaneous comparison what detailed description by its successive presentation of ideas and relational facts fail to do; hence a work that appeals directly to the eye with illustrations and short attached descriptions, it is hoped, will become the means of an acceptable form of

mechanical education that appeals to modern wants for the encouragement of inventive thought, through the study of illustrations and descriptions of the leading known principles and facts in constructive art.

The designing of the details of mechanical motion, devices, and appliances for specific purposes is an endless theme in the constructive mind, and if we may be allowed to judge from the vast number of applications for patents, of which there have been over a million in the United States alone, and of which over six hundred thousand have been granted in consideration of their novelty and utility, the run of mechanical thought seems to have become a vast river in the progress of modern civilization.

To bring into illustrated detail all the known forms and elements of construction is not within the limit of a human life; but to explore the borders of inventive design through the works that have passed into record has been the principal aim of the author of this book.

GARDNER D. HISCOX.

PREFACE TO SIXTEENTH EDITION

The success of the previous editions of this work warrants the issue of this edition in enlarged and improved form. More than one hundred and sixty up-to-date mechanical movements and devices have been added, including many Straight Line Movements, thus making it a most useful book of reference for those engaged in mechanical studies and pursuits, notably inventors and designers of machinery, in fact, for all who are interested in mechanics and its devices.