TURNING LATHES: A MANUAL FOR TECHNICAL SCHOOLS AND APPRENTICES. A GUIDE TO TURNING, SCREW-CUTTING, METAL-SPINNING &C., &C. WITH 194 ILLUSTRATIONS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649725953

Turning Lathes: A Manual for Technical Schools and Apprentices. A Guide to Turning, Screw-Cutting, Metal-Spinning &c., &c. With 194 Illustrations by James Lukin

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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JAMES LUKIN

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EDITED BY JAMES LUKIN, B.A.

LONDON:
E. & F. N. SPON, 125, STRAND, W.C.
NEW YORK: 35, MURRAY STREET.

1888.

LONDON:
PRINTED AT THE BAZAAR PRESS, 170, STRAND, W.C.

PREFACE.

NOT unnaturally might the question be asked, "Of what use is it to multiply books on the Art of Turning? Holtzapffel and Evans have covered the entire ground, and taught all that it is possible to teach upon the subject; and, for such as cannot afford to purchase the above costly volumes, there are several smaller treatises of a more elementary and less expensive character." All this is true, yet there may exist a demand for more. Just as a new shop is frequently opened in the midst of other old-established ones, and may, and very often does, obtain at least its fair share of patronage, so is our little, unpretending volume presented to the public, and asks very humbly a little of the patronage which the world of Amateur Turners is able to bestow. If it tells a tale already told by others, it may possibly tell it in a different way. If it gives a lesson upon the principles and practice of Turning, it is quite possible that such lesson is more simply and intelligibly conveyed than it has been by previous teachers. This has, indeed, been the special intention and aim of the writer—to meet the frequent complaint that there is no work sufficiently elementary for a tyro who as yet knows nothing at all about a Lathe, and to whom such terms as Mandrel, Headstock, or Chuck, convey no meaning whatever. In the present volume no knowledge of Lathes or tools is pre-supposed, and therefore everything is explained in detail, with the necessary illustrations. The book will suffice to set any tyro to work, and actual practice must do the rest. We give the Alphabet of the Turner's Art, and the work of the reader must be to make the necessary combinations of letters to illustrate the very beautiful language of which it is capable. But it must not be

forgotten that you may put a pen into the hand of a child, and the result may be a blotted and unsightly page; and to show a learner how to hold a brush will not make him an artist. And however carefully we may explain the method of working, we cannot give to the beginner the skill that will make him a Turner—all we can do is to give him a fair start, and guard him against error; and this we have in the following pages endeavoured faithfully to do.

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TURNING LATHES.

CHAPTER I.

DESCRIPTION OF THE LATHE.

THE novice who has never examined a Lathe, but, having seen others using it, thinks he should also like to try his hand at the work, naturally wants to know its construction. He hears of chucks, and mandrels, and poppets, but the terms convey to his mind nothing but mystery. We shall, therefore, at once enlighten him. Beginning at the stand, he will see two cast-iron uprights, supporting between them parallel bars, nicely planed. These are called the standards, and are sometimes, but not very generally, made of wood. The parallel bars are called the bed, sometimes gantry, which appears to be an American coinage, not very expressive, and decidedly ugly. Half-way between the bed and the floor, the crank axle is suspended, generally upon centres or pointed steel screws; but sometimes this axle runs in brasses, called bearings or bushes, and sometimes it rests upon small turned wheels, called friction wheels, which are supposed to give it an easier motion. At the lowest part is hung a treadle for the foot, and this is connected to the crank by an iron hook, or by crank chain passing over a roller in the treadle bar. This gives a smooth rolling motion. Sometimes the crank hook is called the pitman.