THE ELEMENTS OF MECHANISM: DESIGNED FOR STUDENTS OF APPLIED MECHANICS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649530700

The Elements of Mechanism: Designed for Students of Applied Mechanics by T. M. Goodeve

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd. Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

T. M. GOODEVE

THE ELEMENTS OF MECHANISM: DESIGNED FOR STUDENTS OF APPLIED MECHANICS

Trieste

ELEMENTS OF MECHANISM

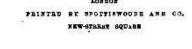
1

1

¥...

۴

.



83

TORBOR



35 12

133



THE

 ~ 10

89

.....

ELEMENTS OF MECHANISM

DESIGNED FOR STUDENTS OF APPLIED MECHANICS

÷3

B.X

T. M. GOODEVE, M.A.

PROFESSOR OF NATURAL PRILOSOPHY IN KING'S COLLEGE, LONDON

34

LONDON

LONGMAN, GREEN, LONGMAN, AND ROBERTS

1800

186. L. 10.



PREFACE.

63

88

THE present Treatise has been written with the view of providing an Elementary Text-book upon the Principles of Mechanism for the Students in the Applied Science Department of King's College.

The method of classification which has been adopted may perhaps fail to satisfy a very critical reader, and is no doubt open to objection. The Author would, however, remark that this book is simply designed to serve as an introduction to the elaborate and highly philosophical work of Professor Willis, and is not intended to stand alone as sufficient in itself.

KING'S COLLEGE, LONDON : June 1860.

2

ан — <u>В</u>

TABLE OF CONTENTS.

INTRODUCTION.

General Statement. Definitions. Spur, Crown, and Bevil Wheels. Screw Surface. Screw Thread. Pitch of a Screw. Worm Wheel. Belts or Bands. Shafting. Arbor. Driver. Follower. Gearing or Gear - Page 1

CHAPTER L

ON THE CONVERSION OF CIRCULAR INTO RECIPROCATING MOTION.

Art. 1-3. Elementary Considerations. 4. The Crank and Connecting Rod. 5. The Eccentric Gircle. 6. The Swash Plate. 7. The Eccentric. 8-10. Intermittent Motion. 11-14. Escapements. 15-29. Cams of various kinds: the Heart Wheel, the Worm Barrel, the Expansion Cam, Double Cams. 80-35. Mangle Wheels and Racks. 36-49. Circular in Reciprocating Motion by Wheelwork: Collier's Planing Machine, Whitworh's Reversing Motions, Screwing Machines. 44, 45. Crossed and Open Bands. 46-50. Reciprocating Motion with a Quick Return: Whitworth's Shaping Machine. 51. Stanhope Levers. 52, 53. Reciprocation by Linkwork - 8

CHAP. II.

ON THE CONVERSION OF RECIPROCATING INTO CIRCULAR MOTION.

Art. 54-56. General Principles. 57. Ratchet Wheels. 58. Practical Subdivision of the Teeth. 59. Detant. 60. Equivalent for a Ratchet Wheel. 61, 62. Feed in a Planing Machine. 63. Escapement. 64. Levers of Lagaronese. 65. Screw Barrel - 45

CHAP. III.

ON THE TRETH OF WHEELS.

Art. 66-68. Statement of the Problem. 69. Epicycloid and Hypocycloid. 70-72. Solution of the Problem. 73-75. Teeth with Radial Flanks. 76-78. Pin Wheels. 79, 80. Involute Teeth. 81, 82. Racks and Pinions. 83-87. General Considerations. 88. Bevil Wheels - 33.