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PREFACE.—The object of this book is to present to practical men a clear explanation of the operations of a slide valve under the conditions in which it is found in actual practice. The author believes that its clear and concise treatment of the subject will leave nothing to be desired, even by those who begin it in entire ignorance of the subject matter.

CONTENTS. Simplest form of valve; Lead and its effects; Diagram of simple valve action; Steam lap explained; Diagram showing effects of steam lap; The angularity of the connecting rod and its effect on the valve action; The eccentric piston and crank movements; Exhaust lap explained; Diagram showing effects of exhaust lap; Clearance explained; Effects of clearance; Valve travel considered; Effect of over travel on the position of the eccentric and port openings; Point of cut-off; The rock shaft and its effect on the position of the eccentric and on the distribution of the steam; Examples from practice; Comparison of the merits of the various examples, of port areas, of compression, of expansion, of exhaust areas, of valves of exhaust areas, of ports to their duty, of areas of wearing surface; Rules for areas of steam ports; Shapes of ports; Power required to operate valve; Conditions affecting in motion of valves; Springing of valves from pressure; Coefficient of friction; Practical experiment on friction; Size of valve as affecting friction; Lubrication of slide valves; Ascertaining with a pair of compasses the result to be obtained from a given slide valve; To ascertain point of full steam port opening, position of piston when port is full open, point at which valve begins to close, point of cut-off, amount of expansion, point of release, point at which exhaust begins, point of full exhaust opening, point where cushioning began, amount of cushioning; To set a single eccentric without moving the engine, a double eccentric without moving the engine, eccentrics when the rod is not in line with the cylinder bore.

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