

## Contents

CHAPTER	PAGE
INTRODUCTION: HISTORICAL SKETCH OF THE MOTOR CARRIAGE . . .	1
I DESIGN, CONSTRUCTION AND WORKING OF EARLY STEAM ROAD VEHICLES . . .	4
II THE INTERMEDIATE PERIOD . . . . .	28
III POWER AND FRICTIONAL LOSSES . . . . .	42
IV ROAD RESISTANCES . . . . .	49
V RESISTANCE DUE TO GRAVITY AND POWER REQUIRED . . . . .	56
VI AIR AND WIND RESISTANCE . . . . .	59
VII THE MODERN PERIOD AND MODERN MOTOR. . . . .	60
VIII RECENT HIGH SPEED LONG DISTANCE PETROL MOTOR VEHICLES . . .	137
IX RECENT HIGH SPEED LONG DISTANCE PETROL MOTOR VEHICLES (continued). . . . .	158
X MORS MOTOR CARRIAGE AND MOTOR . . . . .	169
XI THE GOBRON-BRILLIÉ MOTOR CARRIAGE . . . . .	188
XII THE CANNSTADT-DAIMLER MOTOR VEHICLES . . . . .	199
XIII THE VALLÉE, DELAHAYE, CROWDEN AND OTHER CARS . . . . .	209
XIV MODERN LIGHT PETROL MOTOR VEHICLES . . . . .	217
XV PETROL MOTOR CYCLES . . . . .	257
XVI CARBURETTORS . . . . .	320
XVII MOTOR CARS WITH PETROLEUM (HEAVY OIL) MOTORS . . . . .	327
XVIII CYLINDER COOLING AND WATER COOLERS . . . . .	338
XIX SOME MOTOR VEHICLE COMPONENTS . . . . .	344
XX ELECTRIC IGNITION AND IGNITION APPARATUS . . . . .	354
XXI PETROL MOTOR VEHICLE PERFORMANCE AND MECHANICAL EFFICIENCY. . .	379
XXII ELECTRIC MOTOR VEHICLES . . . . .	394
XXIII THE ELECTRIC VEHICLE COMPANY'S ELECTRIC CABS AND BROUGHAMS . . .	424
XXIV MODERN AND RECENT STEAM VEHICLES . . . . .	440
XXV SOME SERPOLLET STEAM VEHICLES . . . . .	444
XXVI SOME AMERICAN LIGHT STEAM CARRIAGES . . . . .	457
XXVII AMERICAN STEAM VEHICLES (continued) . . . . .	469

## CONTENTS

CHAPTER	PAGE
xxviii HEAVY MOTOR VEHICLES . . . . .	481
xxix THE LIQUID FUEL ENGINEERING COMPANY'S "LIFU" VEHICLES . . . . .	495
xxx HEAVY STEAM VEHICLES ( <i>continued</i> ) . . . . .	512
xxxi HEAVY STEAM VEHICLES ( <i>continued</i> ) . . . . .	526
xxxii HEAVY STEAM VEHICLES ( <i>continued</i> ) . . . . .	535
xxxiii ON BRAKES . . . . .	559
xxxiv CONCERNING VIBRATION, BALANCING, AND BALANCED MOTORS . . . . .	564
xxxv PIVOTED STEERING AXLES . . . . .	567
xxxvi THE POPULAR AND COMMERCIAL USES AND COST OF WORKING MOTOR VEHICLES . . . . .	573
xxxvii THE 1896 ACT AND THE LOCAL GOVERNMENT BOARD REGULATIONS . . . . .	597
xxxviii TYRES . . . . .	603
xxxix MISCELLANEOUS . . . . .	612