

Cambridge University Press

978-1-107-63767-2 - Experimental Physics: A Text-Book of Mechanics, Heat, Sound and Light

Harold A. Wilson

Index

[More information](#)

## INDEX

- Aberration, spherical 334
- Absolute expansion of mercury 147
- Absolute scale of temperature 212
- Absorption spectra 345
- Acceleration 13
  - “ of gravity 33
- Achromatic lenses 351
  - “ prisms 348
- Adiabatic change 202
- Air pumps 161
- Angular momentum 94
- Apertures, flow of liquid from 125
- Atwood's machine 25
- Balance 87
  - “ wheel 141
- Balancing rotating bodies 89
- Barometer 122
- Beats 258
- Bi-prism, Fresnel's 373
- Blackburn's pendulum 270
- Boyle's law 151
- Bubbles, soap 128
- Calorie 164
- Calorimeter 166
- Camera, photographic 356
- Candle, standard 298
- Carnot's heat engine 206
- Cavendish's experiment 100
- Centre of mass 68
- Change, of state 171
  - “ adiabatic 202
  - “ isothermal 202
- Circle, motion in a 15
  - “ force on a body moving in a 44
- Coefficient of cubical expansion 144
  - “ of linear expansion 138
  - “ of restitution 32
- Colour 353
- Compensated pendulum 141
- Complementary colours 355
- Composition of forces 38
  - “ of two perpendicular vibrations 266
- Compound pendulum 80
- Conduction of heat 191
- Convection of heat 190
- Couples 67
  - “ power of 92
- Critical temperature 186
- Crucial experiment 4
- Density of the earth 104
  - “ of gases 158
  - “ of water 149
- Derived units 8
- Diagram, indicator 53, 202
- Diffraction 380
  - “ gratings 386
- Diffusion 131
- Dilatometer 145
- Dimensions 9
- Direct vision prisms 348
- Dispersion 335
- Dispersive power 348
- Displacement 10
- Distribution of energy in spectrum 400
- Double refraction 391
- Dynamical unit of force 27
- Dyne 27
- Elasticity 105
- Energy 54
  - “ distribution of, in spectrum 400
  - “ of light 397
  - “ of rotating bodies 91
- Engine, Carnot's heat 206
  - “ heat, efficiency of 216
- Equivalent, of heat, mechanical 194

Cambridge University Press

978-1-107-63767-2 - Experimental Physics: A Text-Book of Mechanics, Heat, Sound and Light

Harold A. Wilson

Index

[More information](#)

## INDEX

403

- |                                      |                                |
|--------------------------------------|--------------------------------|
| Erg 51                               | Heat 133                       |
| Evaporation, latent heat of 182      | , conduction of 191            |
| Expansion of mercury, absolute 147   | , convection of 190            |
| ", coefficient of cubical 144        | , engine, Carnot's 206         |
| ", coefficient of linear 138         | , engines, efficiency of 216   |
| ", of liquids with rise of tem-      | , latent, of evaporation 182   |
| perature 145                         | , latent, of fusion 172        |
| Experiment, Cavendish's 100          | , mechanical equivalent of 194 |
| Eye 357                              | , specific 165                 |
| First law of motion 21               | , specific, of gases 198       |
| Floating bodies 119                  | Huygens' principle 376         |
| Flow of liquids from apertures 125   | Hydraulic press 112            |
| Focal lines 320                      | Iceland spar 391               |
| Foot-pound 52                        | Impulse 31                     |
| Force, dynamical unit of 27          | Inclined plane 43              |
| ", moment of a 63                    | Indicator diagram 53           |
| ", on a body moving in a circle 44   | Inertia 27                     |
| ", on a body moving with a simple    | ", moment of 74                |
| harmonic motion 47                   | Infra-red radiation 399        |
| ", on a body immersed in a liquid    | Interference of light 372      |
| 116                                  | ", of sound 257                |
| Forces, composition of 38            | Isothermal change 202          |
| parallel 65                          | J, Mayer's calculation of 200  |
| Fresnel's bi-prism 373               | Kater's pendulum 85            |
| ", zones 382                         | Kilogram 7                     |
| Fundamental units 7                  | Kinetic theory of gases 218    |
| Fusion, latent heat of 172           | Kundt's tube 263               |
| Gas, pressure of, at constant volume | Lantern, magic 364             |
| 155                                  | Latent heat of evaporation 182 |
| ", thermometers 159                  | ", of fusion 172               |
| ", volume of, at constant pressure   | Laws of motion, first 21       |
| 156                                  | ", ", second 28                |
| Gases 151                            | ", ", third 28                 |
| ", density of 158                    | Lenses 325                     |
| ", kinetic theory of 218             | ", achromatic 351              |
| ", liquefaction of 188               | Levers 58                      |
| ", specific heat of 198              | Light, energy of 397           |
| Glass 347                            | ", interference of 372         |
| ", magnifying 359                    | ", nature of 296               |
| ", thermometer, mercury in 133       | ", polarization of 395         |
| Gratings, diffraction 386            | ", rays of 296                 |
| Gravitation 99                       | ", reflexion of 302            |
| Gravity, acceleration of 33          | ", refraction of 306           |
| Gyroscope 94                         | ", sources of 294              |
| Harmonic motion, simple 16           | ", spectrum of white 336       |
| ", " force on a                      | ", ultra-violet 399            |
| body moving with a 47                |                                |

Cambridge University Press

978-1-107-63767-2 - Experimental Physics: A Text-Book of Mechanics, Heat, Sound and Light

Harold A. Wilson

Index

[More information](#)

404

INDEX

- Light, velocity of 366  
 Lines, focal 320  
 Line spectra 339  
 Liquefaction of gases 188  
 Liquids, expansion of 145  
     ,, flow of, from apertures 125  
     ,, force on a body immersed in 116  
     ,, pressure in 109
- Machine, Atwood's 25  
 Machines 57  
 Magic-lantern 364  
 Magnifying glass 359  
 Manometer 121  
 Mass, centre of 68  
 Maxim, of physical science, general 2  
 Mayer's calculation of  $J$  200  
 Mechanical equivalent of heat 194  
 Melde's experiment 286  
 Melting point 172  
 Mercury, absolute expansion of 147  
     ,, in-glass thermometer 133  
 Metre 6  
 Microscope 361  
     ,, vibration 287  
 Mirrors, spherical 315  
 Moment of a force 63  
 Momentum 28  
     ,, angular 94  
 Monochord 285  
 Motion in a circle 15  
     ,, first law of 21  
     ,, second law of 28  
     ,, third law of 28  
     ,, simple harmonic 16  
     ,, of a violin string 288  
     ,, wave 226  
 Musical notes 245  
     ,, scale 251
- Nature of light 296  
 Nicol's prism 393
- Organ pipes 290
- Parallel forces 65  
 Pascal's principle 111  
 Pelton's wheel 126  
 Pendulum, Blackburn's 270  
     ,, compensated 141
- Pendulum, compound 80  
     ,, Kater's 85  
     ,, simple 48  
 Phonic wheel 250  
 Photographic camera 356  
 Photometers 299  
 Physical science, general maxim of 2  
 Pipes, organ 290  
 Plane, inclined 43  
 Polarization of light 395  
 Pound 7  
     ,, foot 52  
 Poundal 35  
 Power 56  
     ,, of couples 92  
     ,, dispersive 348  
 Press, hydraulic 112  
 Pressure 107  
     ,, of gas at constant volume 155  
     ,, in liquids 109  
     ,, in sound waves 242  
     ,, of vapours 178  
 Principle, Huygens' 376  
     ,, Pascal's 111  
 Prism, achromatic 348  
     ,, direct vision 348  
     ,, Fresnel's bi- 373  
     ,, Nicol's 393  
     ,, refraction by a 311
- Pulleys 59  
 Pumps, air 161
- Radiation, infra-red 399  
 Rays of light 296  
 Reflexion of light 302  
     ,, of sound 254  
 Refraction, double 391  
     ,, of light 306  
     ,, by prisms 311  
     ,, of sound 256  
     ,, at a spherical surface 324
- Resonance 273  
 Restitution, coefficient of 32  
 Rigid body, rotation of 73  
 Rotating bodies, balancing 89  
     ,, " energy of 91  
 Rotation of a rigid body 73
- Saturated vapour 179  
 Scalars 10

Cambridge University Press

978-1-107-63767-2 - Experimental Physics: A Text-Book of Mechanics, Heat, Sound and Light

Harold A. Wilson

Index

[More information](#)

## INDEX

405

- Scale, musical 251  
 Screw 61  
 Second law of motion 28  
 Second law of thermodynamics 210  
 Shadows 295  
 Simple harmonic motion 16  
     ,, „ „ „ force on a body moving with a 47  
 Simple pendulum 48  
 Soap bubbles 128  
 Solar spectrum 346  
 Solidification, velocity of 175  
 Sound, interference of 257  
     ,, reflexion of 254  
     ,, refraction of 256  
     ,, shadows 266  
     ,, velocity of 223  
     ,, waves, pressure in 242  
 Sources of light 294  
 Spar, Iceland 391  
 Specific heat 165  
     ,, „ „ „ of gases 198  
 Spectacles 358  
 Spectra, absorption 345  
     ,, line 339  
 Spectrometer 339  
 Spectrum, distribution of energy in 400  
     ,, solar 346  
     ,, of white light 336  
 Spherical aberration 334  
     ,, mirrors 315  
     ,, surface, refraction at 324  
 Standard candle 298  
 State, change of 171  
 Stationary vibrations 260  
 Strain 105  
 Stress 107  
 Strings, motion of violin 288  
     ,, vibration of 280  
 Surface tension 127  
 Telescopes 363  
 Temperature 133  
     ,, absolute scale of 212  
     ,, critical 186  
     ,, expansion of liquids with rise of 145  
 Theories 3  
 Thermodynamics, second law of 210  
 Thermometer, gas 159  
     ,, mercury in glass 133  
 Thermopile 397  
 Ultra-violet light 399  
 Unit of force, dynamical 27  
 Units, derived 8  
     ,, fundamental 7  
 Vapour pressure 178  
     ,, saturated 179  
 Vectors 10  
 Velocity 11  
     ,, of light 366  
     ,, of solidification 175  
     ,, of sound 223  
 Vibration microscope 287  
     ,, stationary 260  
     ,, of strings 280  
 Vibrations, composition of two perpendicular 266  
 Violin string, motion of 288  
 Viscosity 123  
 Volume, pressure of gas at constant 155  
 Wave motion 226  
     ,, trains 237  
 Weight 32  
 Wheel, balance 141  
     ,, phonic 250  
 Work 51