

- 1 Add. Ms. b. 196
- Dynamics; Quantum Theory. Volume I (Princeton 1929)
- p. 1 Part I. General Dynamics
- [2] (Osquod's account (from his "Mechanics", Macmillan, New York, 1937)) [Added 1943]
- 3 Lagrange's Equations
- [4] Simple cases discussed as special cases of Lagrange's equations. Case 1) Let a bead slide on a smooth wire
- [8] Case 2) Particle on a fixed or moving surface
- [10] Example. Theorem
- [12] Proof
- 13 (2. System in a conservative field of force. Kinetic Potential)
- [14] Lagrange's Equations in the General Case. Lemma
- 15 (2-1. Lagrange's Variational equation)
- 17 3. The Explicit Form of Lagrange's Equations
- [18] Lagrange's Equations in the General Case
- 19 Interlude
- [20] Discussion of the Equations. Holonomic and non-holonomic
- 23 4. The Energy Equation
- [24] Example: Euler's equation deduced from Lagrange's equations
- 25 5. Vibrations; Normal Coordinates
- [26] Solution of Lagrange's Equation. Lagrange's Multiplier
- [30] Theorem
- [36] Remark
- 39 6. Least Action + Least Curvature
- 41 Hamilton's Principle
- [44] (§ Lagrange's variational equation (p. 15 eq. 2.4 above))
[Added May 1966]
- 49 6.1 Least action for non-conservative systems

p. 51	7. Representation as motion along a geodesic
55	The curvature in terms of generalised coordinates
59	8. Appell's Equations
[62]	Chapter VI. Hamilton's canonical Equations. 1. The problem
63	Hamiltonians. 9. Hamilton's form of the equations of motion
[66]	2. A general theorem
67	10. The Transformation Theory of Dynamics
[70]	Theorem I
[76]	Theorem II
? 77	11. Contact transformations in n -dimensions
81	Lagrange's bracket expressions
83	Poisson's bracket-expressions
85	Contact transformations in terms of the bracket-expressions
87	12. Infinitesimal Contact Transformations
89	The new view of dynamics
91	13. Integral Invariants
97	14. Hamiltonian Systems and Integral Invariants
103	15. Transformation of one dynamical system into another
107	Part I (ctd): Preliminaries to Wave Mechanics and the Quantum Theory (Robertson, Princeton 1929)
	1. General Dynamics (continued)
[110]	§ Proof that the general contact transformation is of the form (1.1)
113	2. Reduction of the order of a Hamiltonian system with an energy integral
115	3. Hamilton's Partial Differential Equation
119	4. A solution - Hamilton's integral
[123]	5. Action and angle variables
127	6. Case of libration
128	§ Examples

2 Add. Ms. b. 196

- p. [134] (Alternative definition of curl (equivalent to that on
RHS)
- 135 (Appendix to Part I) 7. Résumé of Electromagnetic
Theory (classical) in Vector Notation. Preliminary
- 139 line, Surface and Space Integrals. Gauss's theorem,
etc.
- 141 Potential theory
- [142] § Lorentz's Equations (general form)
- 143 Maxwell's Equations. The Electromagnetic Potentials
- [148] § Another way of introducing Poynting's vector
- ? 149 The Radiant Vector (Poynting vector) §
- 153 (Part II) 8. Development of the Quantum Theory
- 171 Index to Volume I

annotations in another hand: pp. [4], [6], 7, 9, 11, [12], 13, 15, 17,
19, 23, 25, 27, 29, [38], 39, 41, 43, [44], 45, [46], 49, 51, [52], 53,
55, 59, 63, [64], 65, [66], 67, 71, [72], [74], 75, [78], [80], 81, [82],
87, [88], 93, 97, 105, 107, [108], 117, 121, [124], [126], 127, 129, [134],
135, 145, [160], 161, [162]

Add. Ms. b. 197

Dynamics; Quantum Theory. Volume II (Princeton 1929)

Quantum Theory. Robertson, etd.

p. 13	9. Differential Equations; the Sturm-Liouville Theory and its relation to Quantum Mechanics. Lemma 9.2
15	The Harmonic Oscillator
21	Hermite's Polynomials
31	The Rotating Electron
41	The Legendre Polynomials and Spherical Harmonics I. The equations
47	II. Alternative development
53	Return to the Physical Problem
61	10. Physical interpretations; operators and matrices
85	Selection Rules for the Hydrogen atom
99	11. General formulation of the theory
103	Angular Momentum
127	The Uncertainty Principle
[130]	§ Note on the product of two Hermitian operators
137	12. The Zeeman Effect
149	13. Perturbation Theory
159	14. The Stark Effect
165	Laguerre's polynomials
179	Index to Volume II

annotations in another hand: pp. [6], 95, [120], 179

Add. Ms. b. 198

Dynamics; Quantum Theory. Volume III (Princeton 1930)

- p. 1 Quantum Theory. Robertson, etd.
- 3 (Part II (ctd)) The Epstein Formula for the Stark Effect
- 9 15. Collisions and non-periodic phenomena
- 15, 17, 19 Electron in a Uniform Field
- 21 Electron hitting a barrier
- 27 Electron and a finite "potential barrier"
- 31 Electrons drawn from a metal plate by an external field
- 35 Radioactive Phenomena
- 39 Part III. Quantum Theory. Von Neumann. Princeton, 1930
- 41 Von Neumann on Quantum Theory
- 65 Statistical Mechanics; Mathematical Expectations.
Postulates
- [108] Remarks
- [118] (ad p188) Reducibility of Hypermaximal Operators
- [126] Background
- 127 General Eigentheory of Hermitian Operators. J. v. Neumann, M. A. 102, (1930) 49-131. (Excerpts.)
Introductory; Operators + Matrices
- 133 The Spectral Representation of a Bounded Linear Operator. (Adapted from Appendix II of v. Neumann) Preliminary Theorem 12. Proof
- 137 F. Riesz's Theorem. Proof
- [138] Hermitian and Unitary operators. The Cayley Transformation
- [140] Theorem 23. Proof
- 141 Definition. Theorem 1
- [142] Theorem 24. Proof
- 143 Proof
- [144] Theorem 25
- 145 Theorem 2. Proof. Theorem 3. Proof: By Theorem 2

p. 147	Theorem 4. Proof. Theorem 5. Proof. Theorem 6. Proof
149	Definition
151	Theorem 7. Proof
153	Theorem 8. Proof. Theorem 9. Proof
157	Auxiliary Theorem 20
159	Theorem 10. Proof
[160]	(Ad 184, 185) Note on the continuations of a particular set of H.O.
163	Theorem 11. Proof
175	Theorem 12
[176]	[from P175] Proof
177	Note on the relation between Matrix-mechanics (Heisenberg) and Operator-mechanics (Schrödinger)
[178]	Theorem 13. Proof
[180]	Theorem 14. Proof
[182]	Concluding Theorem on Unitary operators. (Theorem 15)
	1. Definition. Proof
184	Spectral representation of Hermitian operators. Theorem 9-16. Proof. Theorem 10-17. Proof
185	Df. Df. Theorem 11-18. Proof
186	Df. Df. Theorem 15-19. Proof
187	Theorem 36. 20. Proof
188	Theorem 48
189	Index to Volume III

annotations in another hand: pp. 35, 43, 51, 53, 55, 59, [66], [68], [70], 71, [80], 83, 97, 113, 119, 189,