

21. TELEPHONY AND TELEGRAPHY

A. GENERAL THEORY

THE INDUSTRIAL UTILIZATION OF THE COUNTER-ELECTROMOTIVE FORCE OF SELF INDUCTION

Thomas D. Lockwood

Vol. vii—1890, pp. 226-243

Outline of discovery and development of the use of counter e. m. f. of self-inductance. Citing reference to original articles and patents covering applications of counter e. m. f. of inductance in telephone, telegraph and lighting circuits.

No discussion.

B. TELEPHONE SYSTEMS.

SOME RECENT ADVANCES IN TELEPHONY

Thomas D. Lockwood

Vol. iii—1886, pp. 74-87

Brief history of the development of telephony, with special reference to improvements that bear on long distance work. Some important dates in telephone history. Description of Lockwood parallel wire method of neutralizing inductive disturbances.

Discussion, pp. 87-93, by Messrs. Thomas D. Lockwood, Frank L. Pope, Ralph W. Pope, Sidney F. Shelbourne and F. W. Jones.

Experience with induction repeaters.

UNDERGROUND ELECTRICAL CONDUCTORS IN EUROPE AND AMERICA

G. W. Plympton

Vol. v—1888, pp. 328-335

General review of the practice in Europe and America as to type of telephone distribution system employed. Practical limit of telephone transmission distance through cables.

Discussion, pp. 335-338, by Messrs. J. A. Powers, G. W. Plympton and C. O. Mailloux.

INDUCTIVE DISTURBANCES IN TELEPHONE CIRCUITS

J. J. Carty

Vol. viii—1891, pp. 99-108

Account of experiments with telephone circuits, tending to establish the hypothesis that electro-magnetic disturbances are negligible in comparison with electrostatic disturbances originating in parallel telephone circuits. Factors which determine the frequency of transposition necessary to obtain silence.

Discussion, pp. 109-126, by Messrs. Thomas D. Lockwood, A. E. Kennelly, J. J. Carty, W. A. Anthony, Geo. B. Prescott, Jr., Louis Bell, W. M. Miner, H. Franklin Watts, Frank B. Crocker, Francis R. Upton and Ralph W. Pope.

General remarks on the causes of disturbing currents in telephone circuits.

Relative magnitude of electro-magnetic and electrostatic disturbances.

C. TELEGRAPH SYSTEMS

89

SELECTIVE OR INDIVIDUAL SIGNALS

Thomas D. Lockwood

Vol. ix—1892, pp. 527-544

Historical sketch of the development of selective signalling, followed by description of various systems as revealed by United States patents.

Discussion, pp. 544-546, by Messrs. F. B. Crocker, Thomas D. Lockwood, F. R. Upton and T. C. Martin.

THE EVOLUTION OF THE LINE SIGNAL

Arthur Vaughn Abbott

Vol. xv—1898, pp. 425-442

Description of the development of telephone switchboard line signals, leading up to a single lamp and relay developed by the author and Mr. M. A. Edson, which is described in detail. Data on the life and candle-power characteristics of low voltage lamps compared with similar characteristics obtained several years ago, thus showing the progress in the art of low voltage incandescent lamp design.

No discussion.

SOME TELEPHONE DISTURBANCES FROM ELECTRICAL GENERATORS

George D. Shepardson

Vol. xv—1898, pp. 443-460

Account of qualitative investigation of telephone disturbances caused by direct commutation in neighboring systems. Bibliography of telephone line disturbances from other circuits.

No discussion.

C. TELEGRAPH SYSTEMS

SYNCHRONISM

Edwin J. Houston

Vol. i—1884, pp. 1-7, paper No. 4

Description of Delany's synchronizer for telegraph work and account of results obtained with it.

Discussion, pp. 7-11, by Messrs. E. J. Houston, W. D. Sargent, P. B. Delany, C. O. Mailloux, C. J. Kintner and G. C. Maynard.

Further explanation of the mode of operation of the synchronizer.

THE DELANY SYNCHRONOUS MULTI-PLEX SYSTEM OF TELEGRAPHY

Edwin J. Houston

Vol. i—1884, pp. 1-19, paper No. 5

Description of the advantages, construction and mode of operation of the Delany synchronous telegraph system. Constructional drawings and circuit diagrams.

EARTH WIRES; OR, THE EARTH AS AN ELECTRIC CIRCUIT COMPLETER

Thos. D. Lockwood

Vol. i—1884, pp. 1-8, paper No. 8

Account of earliest uses of earth as return conductor and the first application of the earth as common return in telegraph systems. Brief statement of electric conductor theories of earth return. Description of methods of making various kinds of ground connections in telegraph work.

DELANY'S SYSTEM OF FACSIMILE TELEGRAPH

Edwin J. Houston

Vol. ii—1885, pp. 1-18, paper No. 6

Reference to early work in facsimile telegraphy. Detailed description with constructional drawings of the Delany apparatus.

STATIC DIFFICULTIES IN TELEGRAPH WIRES

F. W. Jones

Vol. iii—1886, pp. 111-127

Compilation of extracts from English and United States Patents on the subject of neutralizing electrostatic disturbances in telegraph transmission.

Discussion, pp. 127-128, by Messrs. Frank L. Pope and Ralph W. Pope.

RECENT IMPROVEMENTS IN APPARATUS FOR OCEAN CABLING

Charles Cuttriss

Vol. v—1888, pp. 69-83

Account of the development of the Cuttriss siphon recorder for Thomson's siphon recorder, with detailed description of both instruments. Description of the Allen & Brown relay for Morse working of cables.

Discussion, pp. 83-96, by Messrs. Jos. Wetzler, Charles Cuttriss, T. C. Martin, Captain Trott, S. S. Wheeler, Ralph W. Pope, Geo. G. Ward and F. Bennett.

General remarks on the possibilities of telephony through considerable distances of cable.

A NEW SYSTEM OF MULTIPLEX TELEGRAPHY

F. Jarvis Patten

Vol. vi—1889, pp. 111-126

Brief exposition of the underlying principles of multiplex telegraphy. Description of a motor system of synchronizing and method of determining synchronism. Circuit diagrams of multiplex system using these synchronizers.

Discussion, pp. 126-134, by Messrs. C. O. Mailloux, R. W. Pope, P. B. Delany, F. J. Patten, C. J. Kintner, B. C. Batcheller, Francis B. Crocker and E. C. Davidson.

Impulses per second required for Morse transmission. Advantage of Patten system of transmitted synchronism in eliminating time lag. Difference between synchronism and isochronism.

TELEGRAPH LINE ADJUSTMENT

P. B. Delany

Vol. vi—1889, pp. 506-513

Brief outline of conditions met in ordinary railroad telegraphy. Description of device for adjusting line in wet weather to permit normal operation in spite of heavy leakage.

Discussion, incorporated with that of paper by P. B. Delany on "Note on a New Gravity Cell."

D. WIRELESS SYSTEMS

91

THE SYNCHRONOGRAPH

Albert C. Crehore and George O. Squier

Vol. xiv—1897, pp. 93-129

Development of the principles of a method of employing alternating current in high speed telegraphy, devised by the authors. Description of the apparatus and results of an experimental investigation.

Discussion, pp. 130-154, by Messrs. F. W. Jones, A. E. Kennelly, P. B. Delany and A. C. Crehore.

Brief résumé of history of high speed telegraphy, showing why automatic systems had been a failure. Advantages and possibilities of high speed machine telegraphy.

HISTORICAL SKETCH OF THE FIRE ALARM TELEGRAPH

Adam Bosch

Vol. xiv—1897, pp. 335-350

Discussion, pp. 351-352, by Messrs. F. B. Crocker, George F. Barker and Miss Sarah J. Farmer.

AN AMERICAN PACIFIC CABLE

George O. Squier

Vol. xvi—1899, pp. 653-674

Account of the various projects that have been advanced for the construction of Pacific cables. Estimated costs of installation, maintenance and operation, and income. Information and data concerning Pacific cable projected by U. S. Coast and Geodetic Survey.

Discussion, pp. 675-687, by Messrs. H. L. Webb, T. E. Hughes, G. O. Squier, A. E. Kennelly, M. I. Pupin and J. H. Hillberg.

General remarks on methods of operation of proposed Pacific cable.

D. WIRELESS SYSTEMS

TELEGRAPHING WITHOUT WIRES—AN EXPERIMENT

S. J. M. Bear

Vol. i—1884, pp. 1-3, paper No. 9

Description of experiment in which current impulses are transmitted through water without wires.

Discussion, pp. 3-13, by Messrs. S. J. M. Baer, W. D. Sargent, Jas. Kelly, N. S. Keith, ——— Partz, ——— Bailey, G. C. Maynard and William H. Preece.

Description of similar experiment tried in 1853 in England.

WIRELESS TELEGRAPHY

Vol. xiv—1897, p. 607

Exhibition of Marconi wireless telegraph apparatus.

Discussion, pp. 608-613, by Messrs. A. E. Kennelly, Gano S. Dunn, W. J. Clarke, Edward Durant, W. H. Macgregor, Samuel Sheldon, C. P. Child and Albon Man.

THE POSSIBILITIES OF WIRELESS TELEGRAPHY

Vol. xvi—1899, pp. 607-651, 690

Topical discussion by Messrs. R. A. Fessenden, W. J. Clark, M. I. Pupin, F. V. Henshaw, C. E. Dunn, A. E. Kennelly, C. P. Steinmetz, C. O. Mailloux, A. V. Abbott, G. M. Mayer, Thomas Duncan, James Lyman, V. R. Lansingh and W. S. Franklin.

Description of instruments for measuring electric waves. Experience with Marconi plant used for reporting yacht races. Possibilities of tuning in wireless telegraphy. Evolution of wireless telegraphy and wireless telegraph apparatus.