

Contributors to this Issue

H. P. CHARLESWORTH, B.S., Massachusetts Institute of Technology, 1905; Engineering Department, American Telephone and Telegraph Company, 1905-19; Equipment and Transmission Engineer, Department of Operation and Engineering, 1919; Plant Engineer, 1920—. Mr. Charlesworth has had broad experience in the development of telephone equipment and with traffic conditions and the standardization of operating methods and practices.

G. A. PENNOCK, B.S., Massachusetts Institute of Technology, 1899; Secretary, Kansas City Bolt & Nut Company, 1899-1901; Chief Draftsman, Weber Gas & Gasoline Engineering Company, Kansas City, Missouri, 1901-1902; Mechanical Superintendent, Rock Island Plow Company, 1902-1906; with Western Electric Company from 1906, as Factory Engineer, European Plant Engineer and Technical Superintendent.

GEORGE CRISSON, M.E., Stevens Institute of Technology, 1906; instructor in Electrical Engineering, 1906-10. American Telephone and Telegraph Company, Engineering Department, outside plant division, 1910-14; transmission and protection division, 1914-19; Development and Research Department, transmission development division, 1919 —.

I. B. CRANDALL, A.B., Wisconsin, 1909; A. M., Princeton, 1910; Ph.D., 1916; Professor of Physics and Chemistry, Chekiang Provincial College, 1911-12; Engineering Department, Western Electric Company, 1913-24; Bell Telephone Laboratories, Inc., 1925 —. Dr. Crandall has published papers on infra-red optical properties, condenser transmitter, thermophone, etc. More recently he has been associated with studies on the nature and analysis of speech which have been in progress in the Laboratory.

C. F. SACIA, B.E.E., University of Michigan, 1916; Engineering Department of the Western Electric Company, 1916-24; Bell Telephone Laboratories, Inc., 1925—. Mr. Sacia has been engaged upon methods for recording and analysing speech.

KARL K. DARROW, S.B., University of Chicago, 1911; University of Paris, 1911-12; University of Berlin, 1912; Ph.D., in physics and

mathematics, University of Chicago, 1917; Engineering Department Western Electric Company, 1917-24; Bell Telephone Laboratories, Inc., 1925 —. Mr. Darrow has been engaged largely in preparing studies and analyses of published research in various fields of physics.

JOHN R. CARSON, B.S., Princeton, 1907; E. E., 1909; M. S., 1912; Research Department, Westinghouse Electric and Manufacturing Company, 1910-12; instructor of physics and electrical engineering, Princeton, 1912-14; American Telephone and Telegraph Company, Engineering Department, 1914-15; Patent Department, 1916-17; Engineering Department, 1918; Department of Development and Research, 1919 —. Mr. Carson's work has been along theoretical lines and he has published several papers on theory of electric circuits and electric wave propagation.