MASTERS OF SPACE: MORSE AND THE TELEGRAPH; THOMPSON AND THE CABLE; BELL AND THE TELEPHONE; MARCONI AND THE WIRELESS TELEGRAPH; CARTY AND THE WIRELESS TELEPHONE

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WALTER KELLOGG TOWERS

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Trieste

SAMUEL FINLEY BREESE MORSE

Inventor of the Telegraph

MASTERS OF SPACE

MORSE
and the Telegraph
THOMPSON
and the Cable
BELL
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MARCONI
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CARTY
and the Wireless Telephone

BY

WALTER KELLOGG TOWERS

ILLUSTRATED

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TO

MY CO-LABORER AND COMPANION

BERENICE LAURA TOWERS

WHOSE ENCOURAGEMENT AND ASSISTANCE
WERE CONSTANT IN THE GATHERING
AND PREPARATION OF MATERIAL
FOR THIS VOLUME.

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PREFACE

THIS is the story of talking at a distance, of sending messages through space. It is the story of great men—Morse, Thomson, Bell, Marconi, and others—and how, with the aid of men like Field, Vail, Carty, Pupin, the scientist, and others in both the technical and commercial fields, they succeeded in flashing both messages and speech around the world, with wires and without wires. It is the story of how the thought of the world has been linked together by those modern wonders of science and of industry—the telegraph, the submarine cable, the telephone, the wireless telegraph, and, most recently, the wireless telephone.

The story opens with the primitive methods of message-sending by fire or smoke or other signals. The life and experiments of Morse are then pictured and the dramatic story of the invention and development of the tele-

graph is set forth. The submarine cable followed with the struggles of Field, the business executive, and Thomson, the inventor and scientific expert, which finally culminated in success when the *Great Eastern* landed a practical cable on the American coast. The early life of Alexander Graham Bell was full of color, and I have told the story of his patient investigations of human speech and hearing, which finally culminated in a practical telephone. There follows the fascinating story of Marconi and the wireless telegraph. Last comes the story of the wireless telephone, that newest wonder which has come among us so recently that we can scarcely realize that it is here. An inner view of the marvelous development of the telephone is added in an appendix.

The part played by the great business leaders who have developed and extended the new inventions, placing them at the service of all, has not been forgotten. Not only have means of communication been discovered, but they have been improved and put to the widest practical use with remarkable