SCIENCE

FRIDAY, MAY 7, 1920

CONTENTS

MSS. intended for publication and books, etc., intended for review should be sent to The Editor of Science, Garrison-on-Hudson, N. Y.

MULTIPLEX TELEPHONY AND TELEGRAPHY OVER OPEN-CIRCUIT BARE WIRES LAID IN THE EARTH OR SEA[1]

INTRODUCTION

THE "key problem" in the procurement of essential Signal Corps supplies in the United States during the World War, curiously enough turned out to be the production of the necessary braiding machines for finishing insulated wire. The bare wire itself could be obtained, the rubber insulation could be obtained, even the cotton thread with which the braiding was made could be obtained, but the necessary machinery for braiding the thread, which finally led us into the intricacies of the procurement of steel, was never anything like adequate for the enormous demands required in the field.

The braiding capacity of the entire United States, as of September 1, 1918, was about 8,000 miles of twisted pair insulated wire per month, while the requirements for the American forces alone at that date were about 40,000 miles a month. On October 1, 1918, the Allied Council reached the decision that beginning March 1, 1919, it would be necessary for the United States to furnish all of this type of wire used by the Allied armies in the field, and the estimated minimum requirements for this purpose were equivalent to four times around the earth a month. To supply this amount of insulated wire would have required cargo space for overseas

[1] Abstract of paper presented to the National Academy of Sciences at the session held at the National Museum, April 27, 1920.