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HIGH VOLTAGE INSULATOR MANUFACTURE.

By WALTER M. GODDARD.

(Read before the Electrical Section, December 19, 1907.)

PORCELAIN INSULATORS.

The transmission of power by means of electric currents of greater or less voltage began with the introduction of the electric telegraph, and almost the first problem encountered was line insulation. It is of interest in this discussion to note that the first insulators successfully used were of porcelain. From that time to the present the progress has been rapid, the voltage having risen from two or three volts of the telegraph, to a present prospective line voltage of 150,000, and from the lowest to the highest it has always been recognized that best construction involved the use of porcelain insulators.

Fig. 6 shows sectional drawing of a high tension insulator made of several shells nested together and arranged to be fastened together by means of thin joints of Portland cement. This is the conventional design and is used for all voltages, though the size, number of shells, and shape may vary with the voltage. In general, American high voltage insulators are now made of several shells nested together, while European manufacturers still persist in turning complicated shapes from solid masses of dry clay.

The manufacture of porcelain is one of the oldest arts, but only recently has it in any sense been placed upon a scientific basis; in fact, potteries for the production of electrical porcelain exclusively, have not been in existence for more than ten years, and during that