



Fig. 20. Sir Oliver Lodge, D.Sc., F.R.S. *Courtesy I.E.E.*



Fig. 45. Sir Josiah Eccles, President, The Institution of Electrical Engineers, 1954-55.

Fig. 36. Professor E. W. Marchant, President, The Institution of Electrical Engineers, 1932-3.



Fig. 58. Professor J. M. Meek, President, The Institution of Electrical Engineers, 1968-9.



Photo Brian Worth

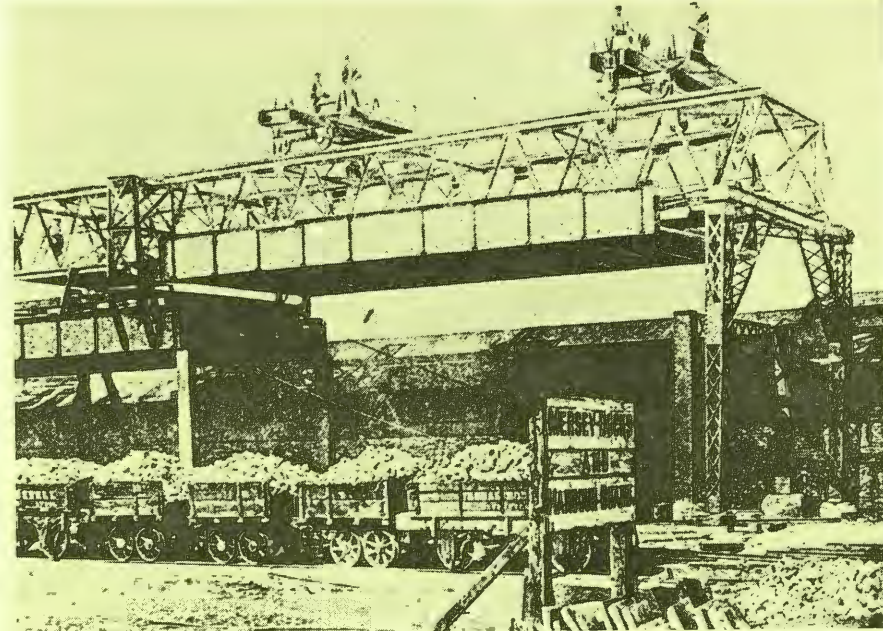


Fig. 1. Erecting span on Liverpool Overhead Railway, 1892-3.

Courtesy Central Library, Crosby

Fig. 2. Construction of Liverpool Overhead Railway, 1892-3.

Courtesy Central Library, Crosby





Fig. 4. Escalator on the Liverpool Overhead Railway (demolished 1906).

Courtesy Central Library, Crosby

Fig. 3. Liverpool Overhead Railway—interior of original Third-Class coach.

Courtesy Central Library, Crosby



Courtesy British Insulated Callender's Cables Ltd.

Fig. 5. Constructional work on London Midland rail electrification.

Fig. 6. Constructional work on London Midland rail electrification.

Courtesy British Insulated Callender's Cables Ltd.





Courtesy British Insulated Callender's Cables Ltd.

Fig. 7. London Midland rail electrification—running contact wire at Wilmslow.

Fig. 8. Electrically hauled passenger train emerging from Shugborough tunnel.

Courtesy British Insulated Callender's Cables Ltd.



Courtesy Merseyside Passenger Transport Executive

Fig. 9. Liverpool First-Class Car 1908.

Fig. 10. 1939 Streamlined 4-wheel car ('Liverpool's last tram').

Courtesy Merseyside Passenger Transport Executive



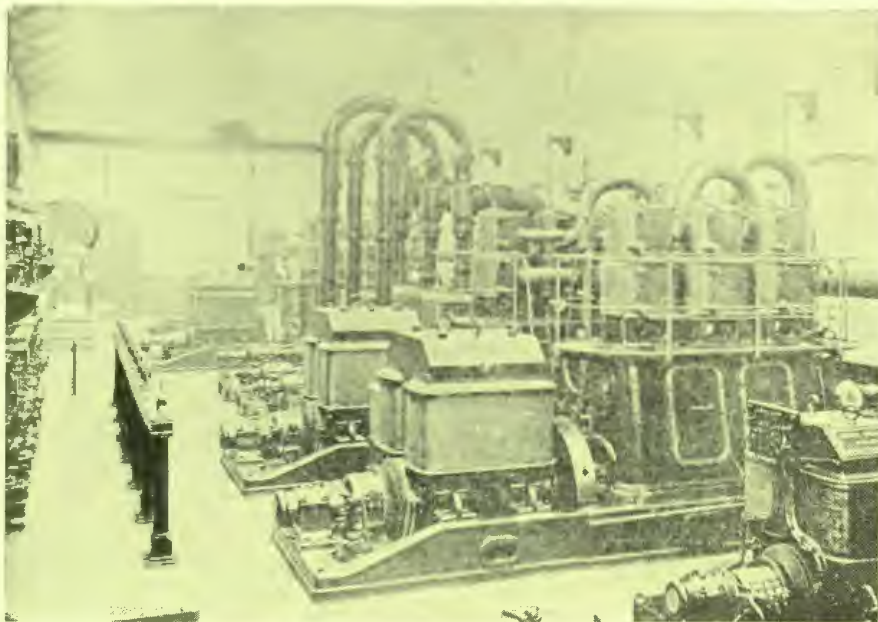


Fig. 11. Engine Room, Crane Street Works, Chester, 1895.

Fig. 12. Hydro-Electric Station, Chester, 1913.

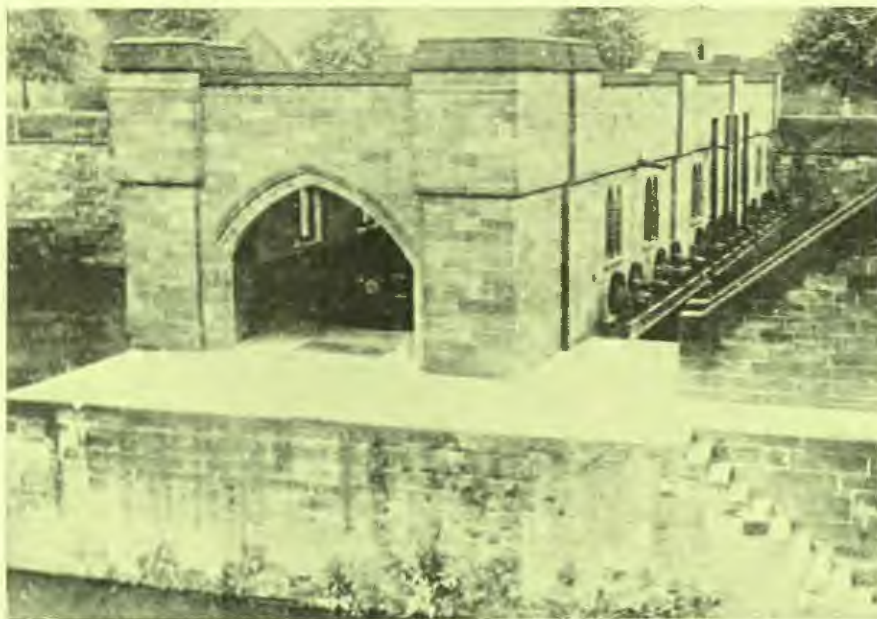


Fig. 14. Mr. S. E. Britton, City Electrical Engineer, Chester, 1904-46.

Fig. 13. Hydro Works, Chester, 1913.



Fig. 15. Ffestiniog Power Station—pumped storage scheme—with Stwlan dam 1000 feet above.



Courtesy Central Electricity Generating Board, N-W Region



Fig. 16. Reactor buildings at Trawsfynydd nuclear power station.

Courtesy Central Electricity Generating Board, N-W Region

Fig. 17. Reactor building at the Wylfa nuclear power station.



Courtesy Central Electricity Generating Board, N-W Region

Fig. 18. William Roscoe, by Sir Martin Archer Shee, P.R.A.

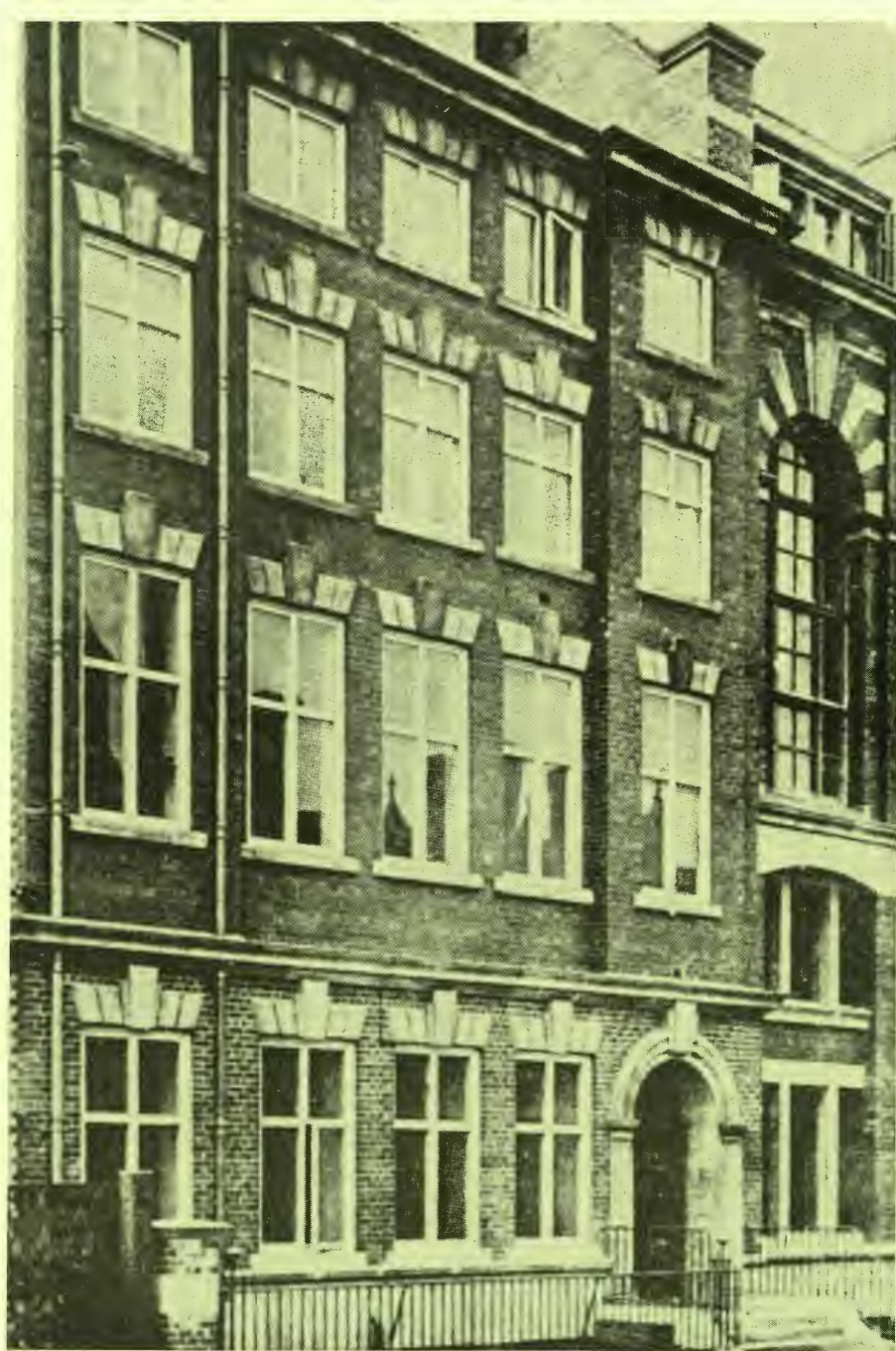
Courtesy Walker Art Gallery



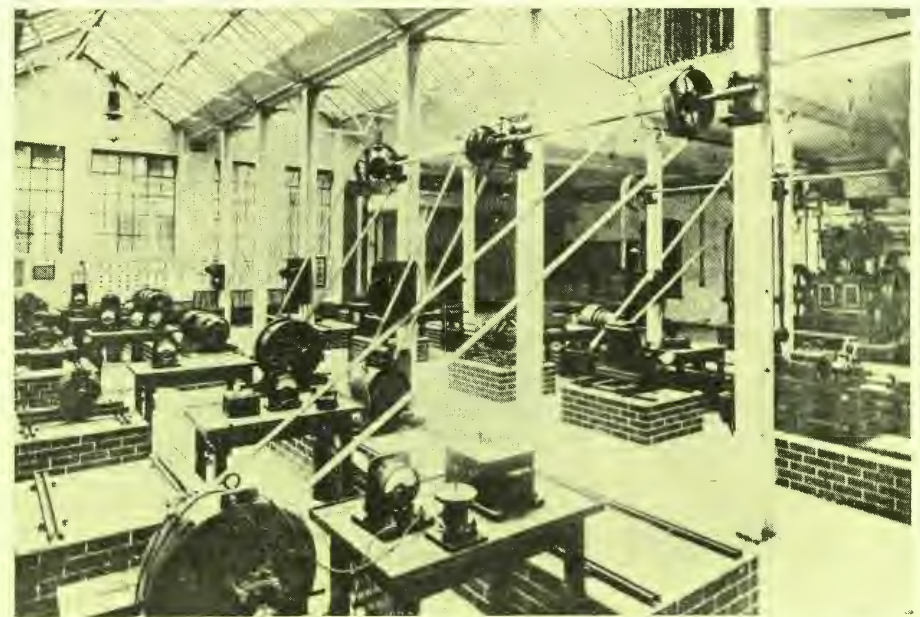
Fig. 19. Liverpool Royal Institution, Colquitt Street (an early engraving).

Drawn by G. and C. Pyne; Engraved by F. Hay





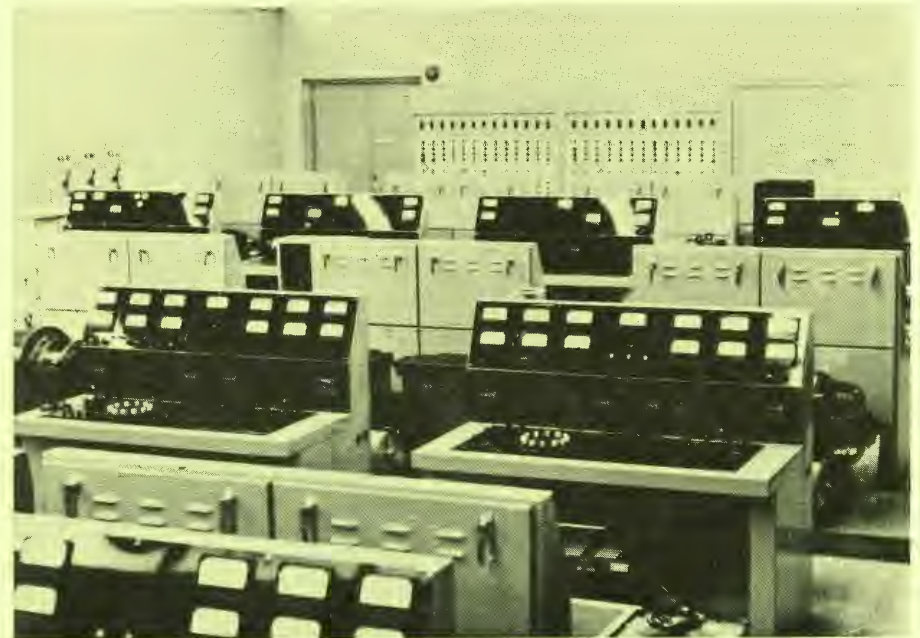
Courtesy Liverpool University Press
Fig. 21. Laboratories of Electrotechnics, University of Liverpool, opened 1905.



Courtesy Liverpool University Press
Fig. 22. Laboratories of Electrotechnics—Dynamo Room, University of Liverpool.

Fig. 23. Modern Machine Laboratory, University of Liverpool.

Courtesy W. W. Kenyon



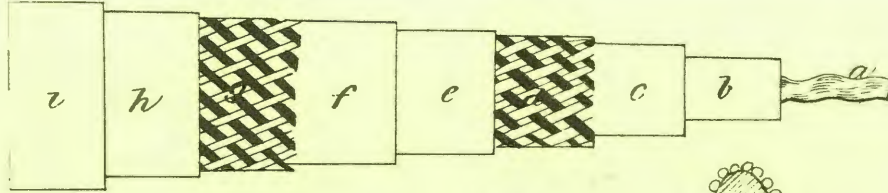


FIG. 1.

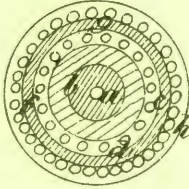


FIG. 2.

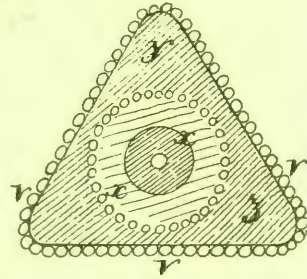


FIG. 3.

Fig. 24. De La Haye's Telegraph Cable, designed in 1867.

Reproduced from the "Journal of the Liverpool Polytechnic Society", 1867.

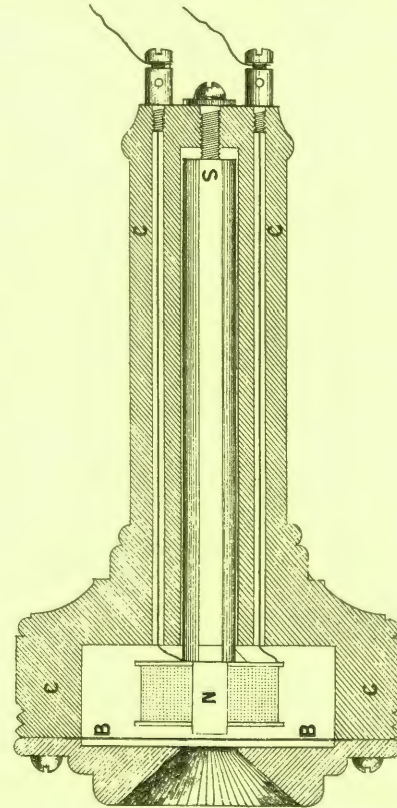
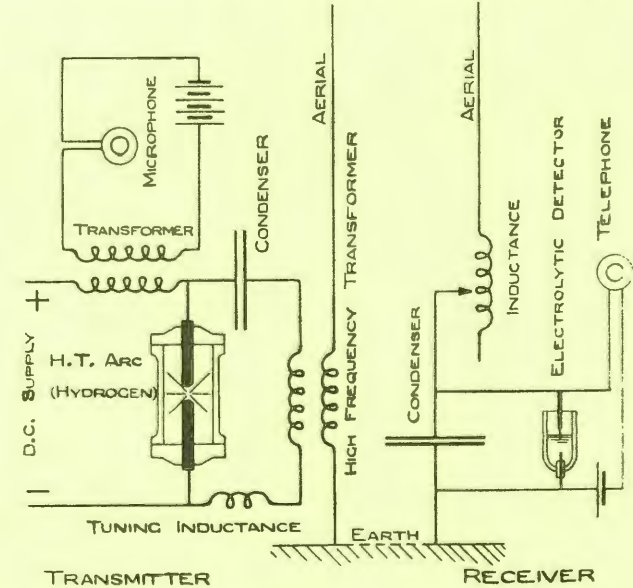
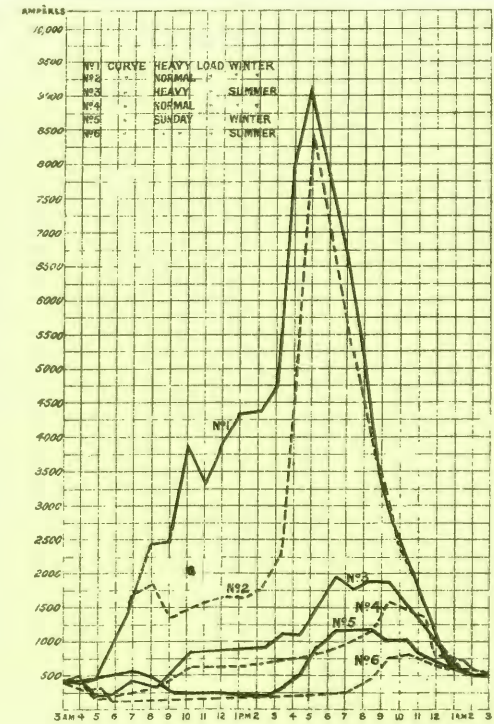


Fig. 25. Bell's Articulating Telephone.

Reproduced from the "Journal of the Liverpool Polytechnic Society", 1878.

Fig. 26. Diagram showing variations of the Liverpool Stations supplying electricity almost entirely for electric lighting in 1893.

Reproduced from the "Transactions of the Liverpool Engineering Society", 1894



Reproduced from the "Transactions of the Liverpool Engineering Society", 1909

Fig. 27. Receiver and Transmitter for Wireless Telegraphy.

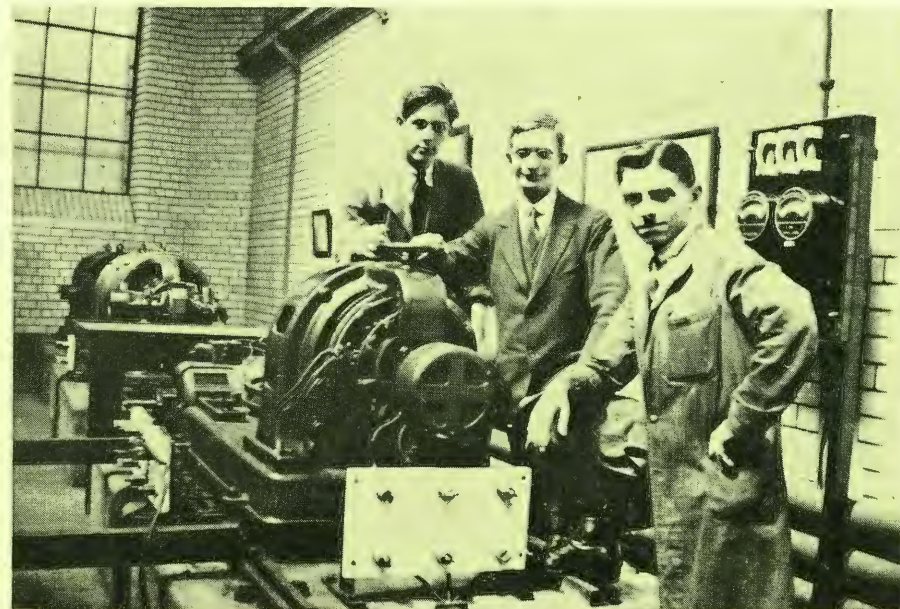
Fig. 28. Mr. G. H. Nisbett—
Deputy Chairman and Managing
Director of British Insulated
Cables Ltd. Chairman of the
Sub-Centre, 1921-22.

Courtesy British Insulated
Callender's Cables Ltd.



Fig. 29. Mr. B. Welbourn
(centre figure) Chief Engineer,
British Insulated Cables Ltd.
First Chairman of the Mersey
and North Wales (Liverpool)
Centre.

Courtesy British Insulated
Callender's Cables Ltd.

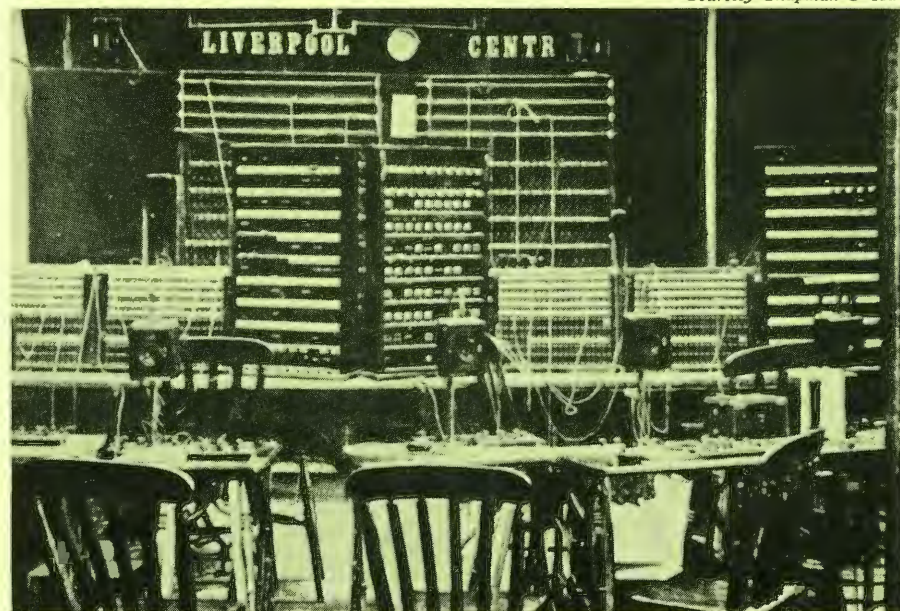


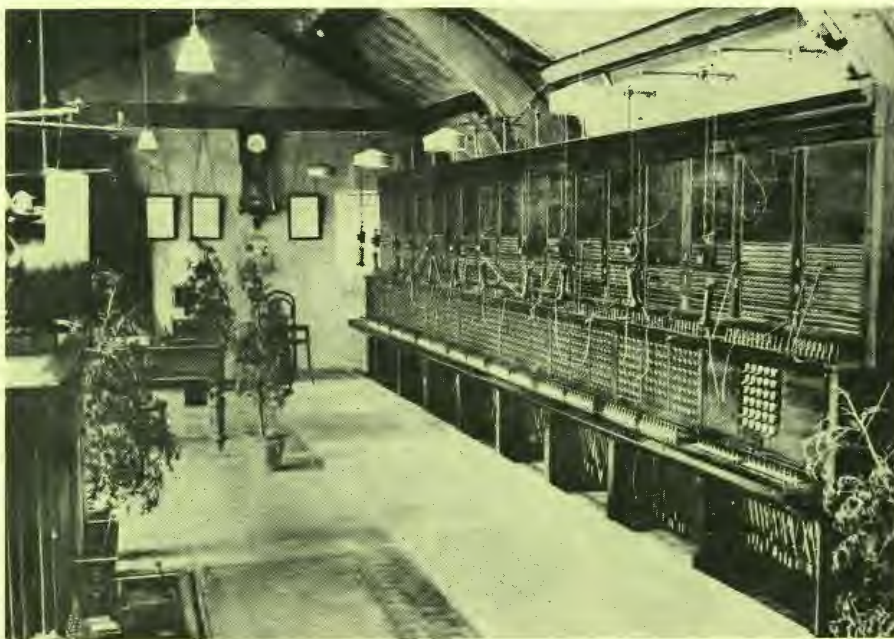
Courtesy W. W. Kenyon

Fig. 30. ASEA Commutator Motor for research (undertaken by Professor F. J. Teago).
Mr. W. W. Kenyon on left, and Dr. Turney in centre, circa 1924.

Fig. 31. Liverpool Central Telephone Exchange, 1884.

Courtesy Chapman & Hall



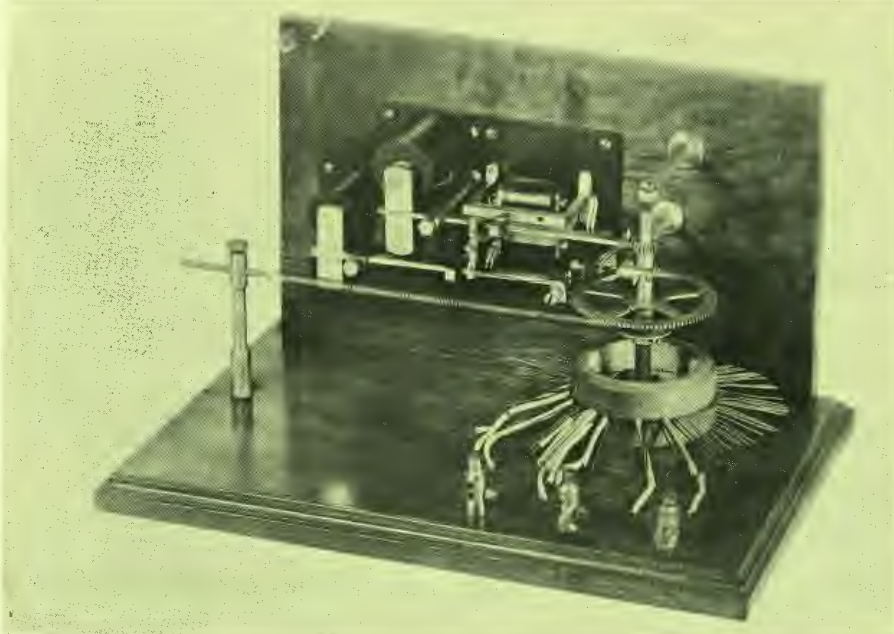


Courtesy Plessey Telecommunications Ltd.

Fig. 32. Typical early 20th century magneto exchange at Bradford.

Fig. 33. The first Strowger Switch (c. 1890).

Courtesy Plessey Telecommunications Ltd.



THE EVOLUTION OF THE STROWGER SWITCH

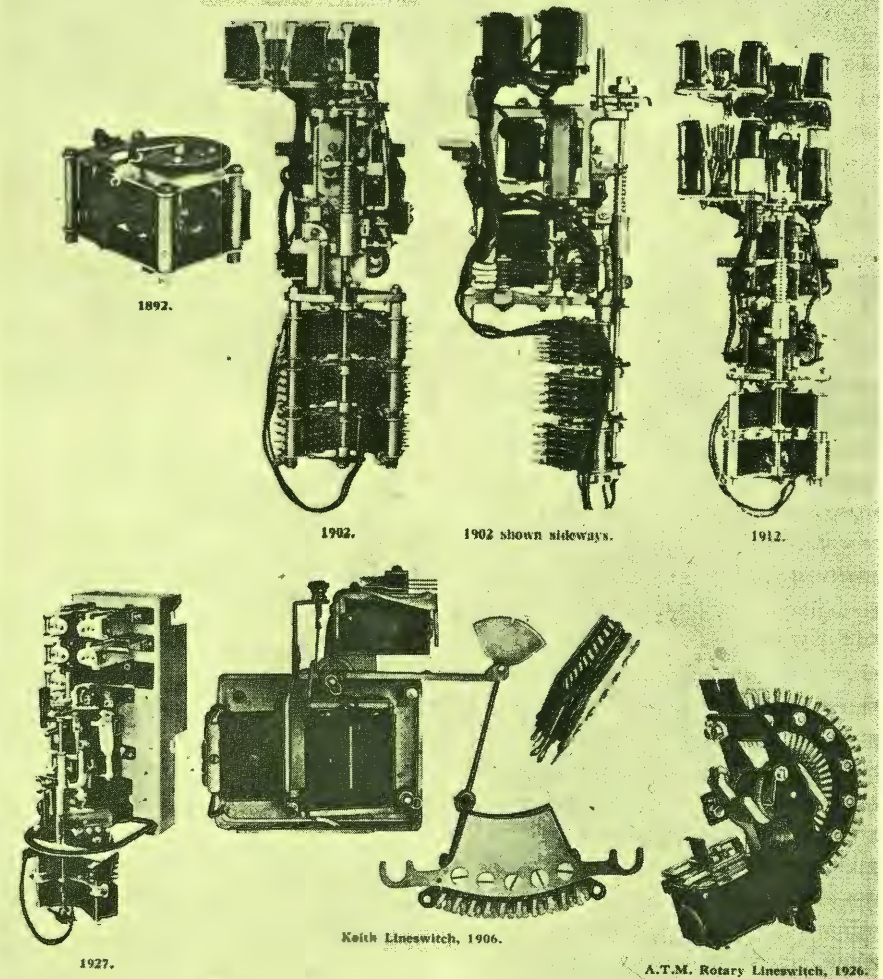


Fig. 34. The evolution of the Strowger Switch.

Courtesy Plessey Telecommunications Ltd.

ILLUSTRATING THE PROGRESS IN THE DESIGN OF
DESK AND WALL STROWGER AUTOMATIC TELEPHONES.

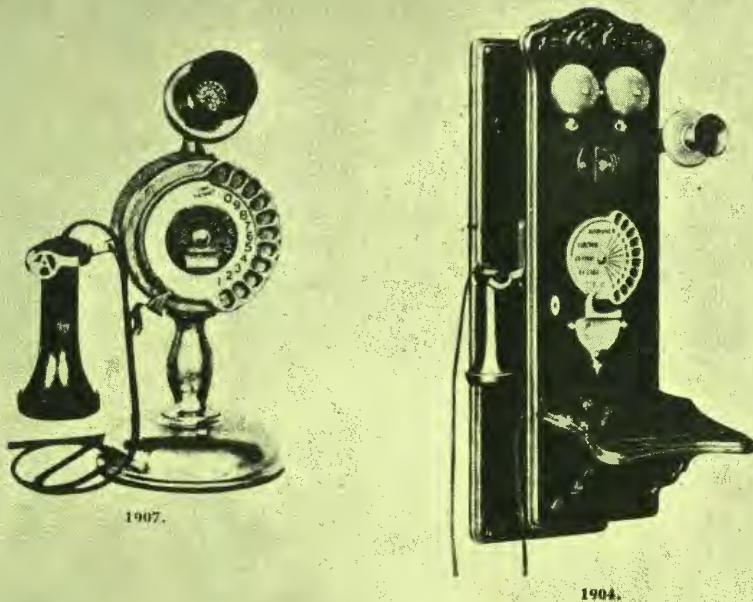
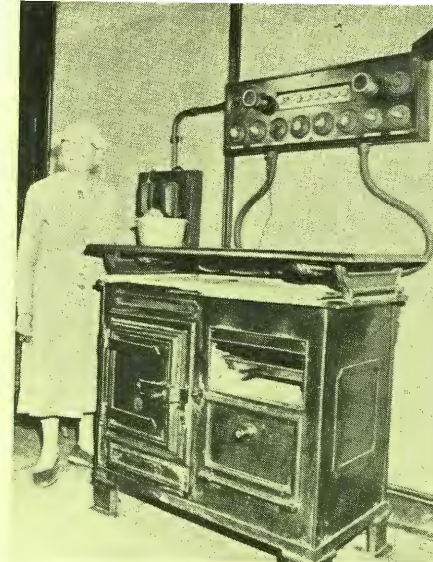


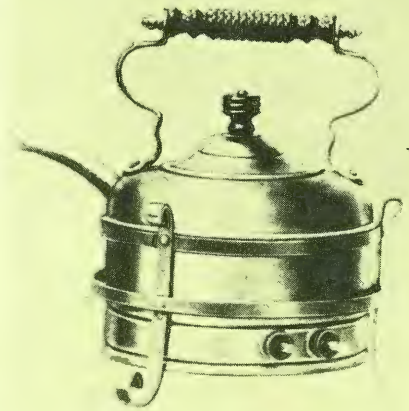
Fig. 35. Early telephone instruments.

Courtesy Plessey Telecommunications Ltd.



Courtesy The Electricity Council

Fig. 37. 10 kW 'Carron' electric cooker installed in 1900 and still in use.

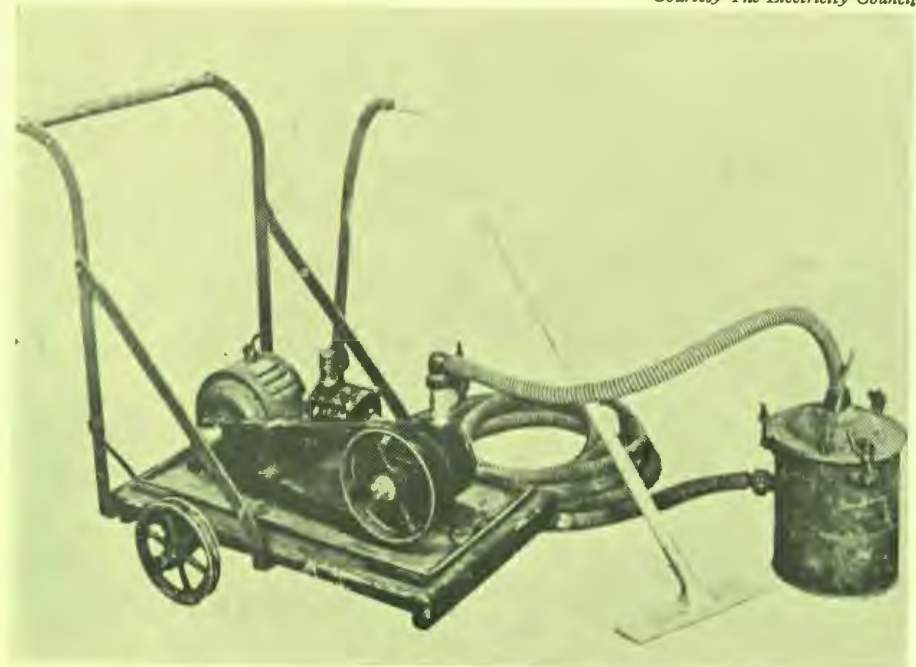


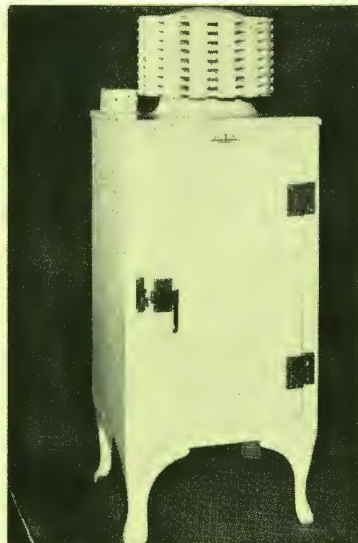
Courtesy The Electricity Council

Fig. 38. Early electric kettle, possibly beginning of century.

Fig. 39. A British vacuum cleaner (c. 1906).

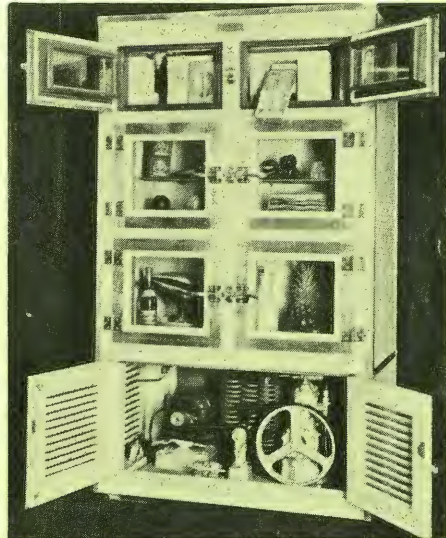
Courtesy The Electricity Council





Courtesy The Electricity Council

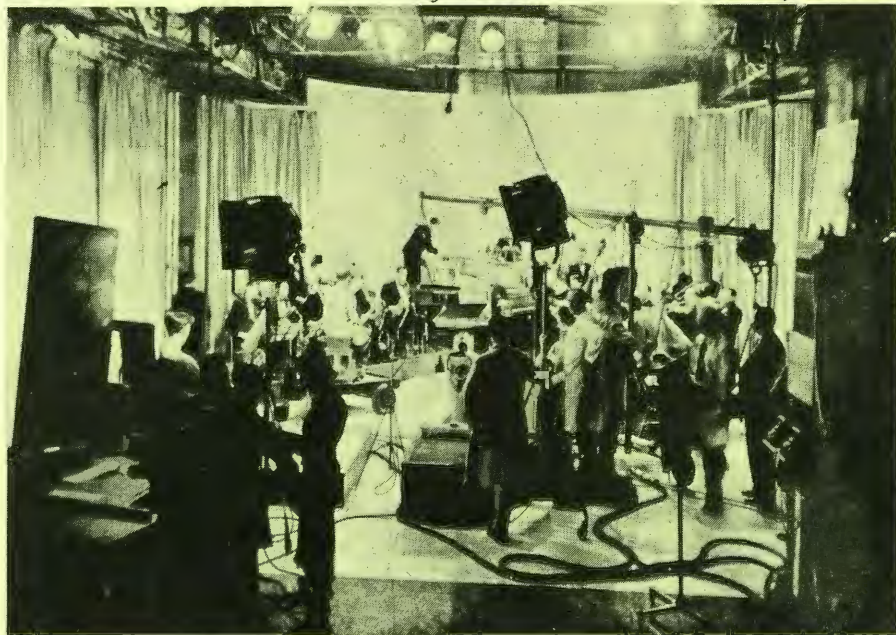
Fig. 40. 'Beehive' refrigerator, capacity 4.2 cubic feet, 1932.



Courtesy The Electricity Council

Fig. 41. Refrigerator with glass doors, showing mechanism (c. 1937).

Fig. 42. Studio scene during rehearsal.



Reproduced from "The London Television Service" by T. C. Macnamara and D. C. Birkinshaw; read in 1938.



Courtesy "Liverpool Daily Post"

Fig. 43. Unveiling of commemorative plaque at S. Z. de Ferranti's birthplace in Liverpool by Sir Vincent Z. de Ferranti in 1947.

Fig. 55. Sebastian Ziani de Ferranti aged 24 (c. 1888).



Courtesy Ferranti Ltd.



Courtesy Ferranti Ltd.

Fig. 54. Sebastian Ziani de Ferranti—a reproduction of an original sketch by his half-sister, Wanda Szczepanowska, showing Ferranti constructing his dynamo at the age of 16 (in 1862).

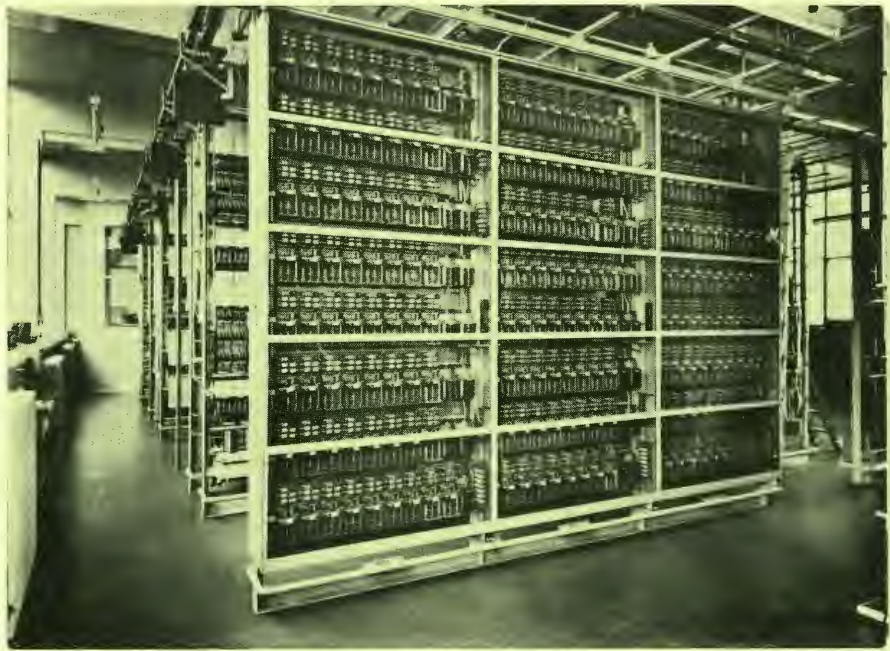


Fig. 44. The first Atlantic Telephone Cable laid in 1956.

Reproduced from "Jul. IEE", Vol. 3 (New Series) 1957, p. 329.

Fig. 47. Four core paper insulated, lead sheathed cable, for 600/1000 V three-phase, 4-wire system.

Courtesy British Insulated Callender's Cables Ltd.

Fig. 48. PVC insulated, steel wire armoured cable with solid aluminium conductors.

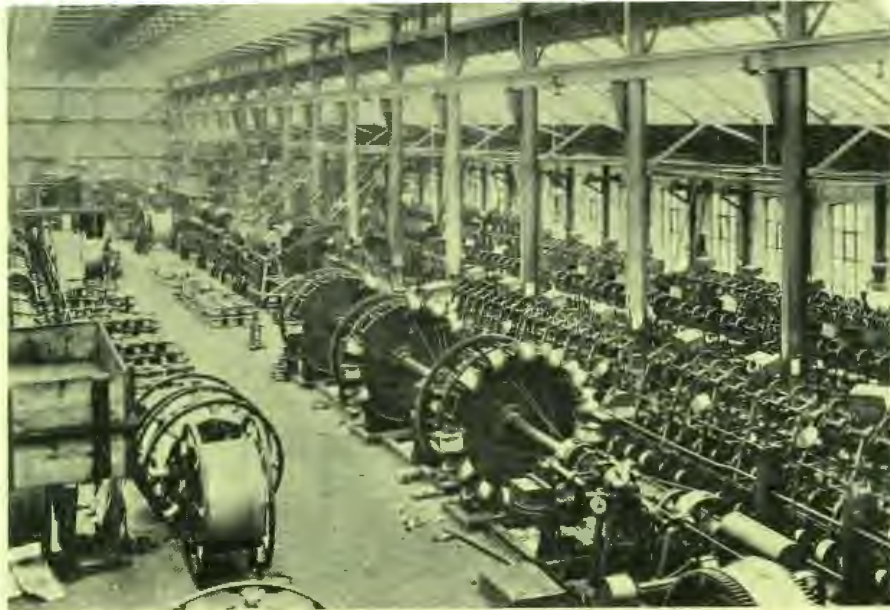
Courtesy British Insulated Callender's Cables Ltd.

Fig. 49. 'Consac' cable, using paper core insulation, extruded aluminium sheath, a thin layer of bitumen containing a corrosion inhibitor, and an extruded PVC or polythene oversheath.

Courtesy British Insulated Callender's Cables Ltd.

Fig. 50. 'Waveconal' cable, consisting of solid aluminium conductors, HEPR or XLPE core insulation, aluminium wires, rubber anti-corrosion bedding, and an extruded PVC oversheath.

Courtesy British Insulated Callender's Cables Ltd.



Courtesy British Insulated Callender's Cables Ltd.

Fig. 46. Manufacture of telephone cables at Prescott—(c. 1920).

Fig. 51. Modern Strowger automatic telephone exchange installed at Cressington Park.

Courtesy Plessey Telecommunications Ltd.

Fig. 47

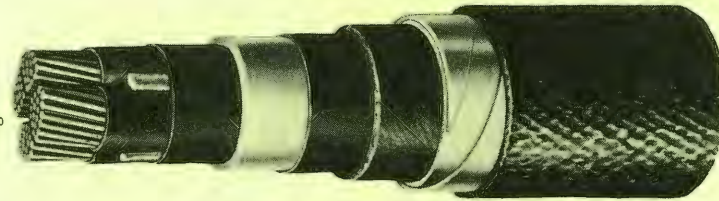


Fig. 48

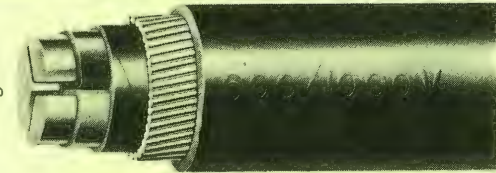


Fig. 49

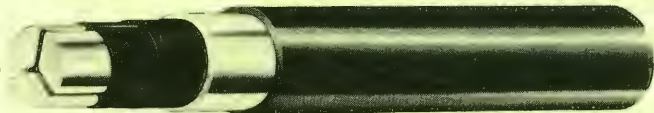


Fig. 50

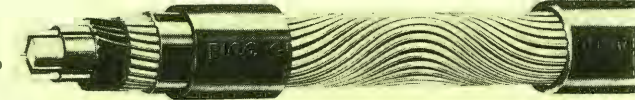
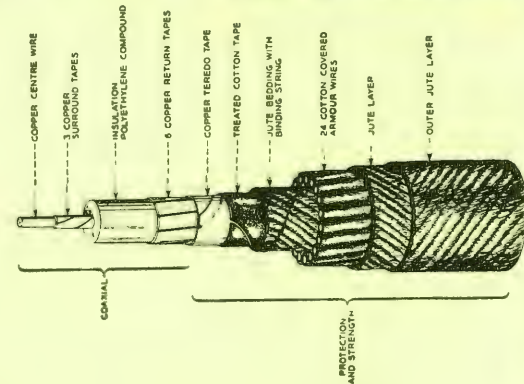


Fig. 44

2 Structural features of the deep-water type of cable



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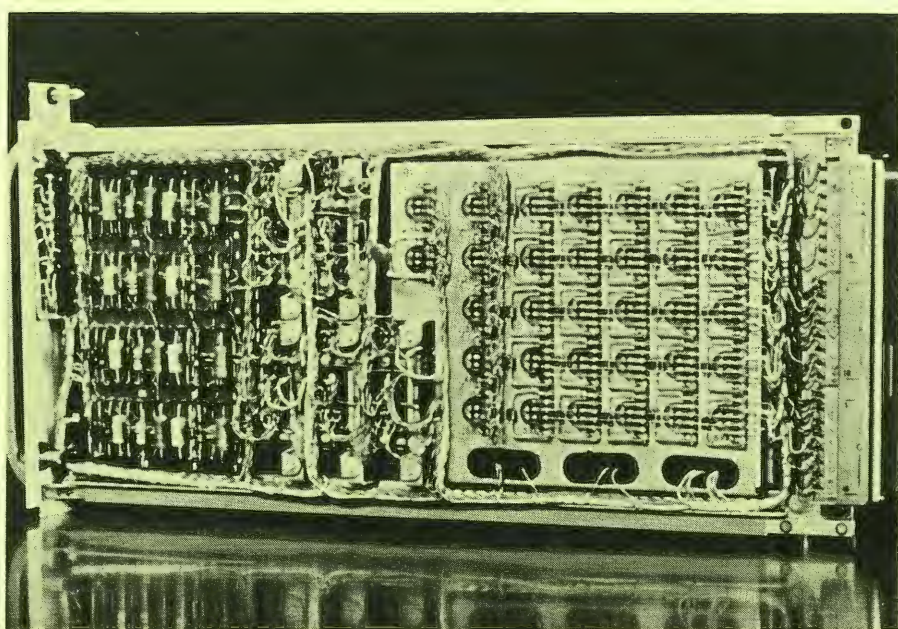


Fig. 52. Modern reed relay-switching unit.

Courtesy Plessey Telecommunications Ltd.

Fig. 53. Crossbar switch shelf.

Courtesy Plessey Telecommunications Ltd.

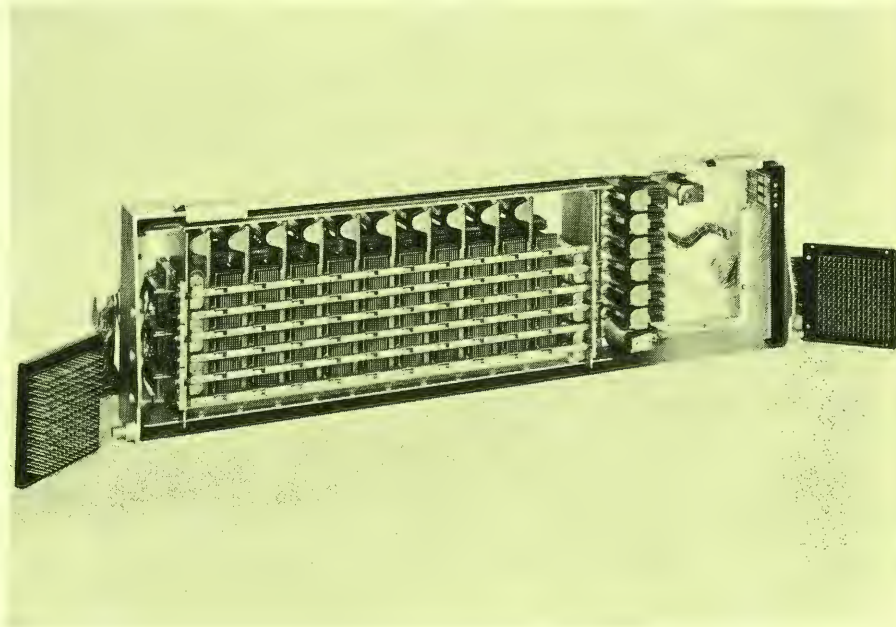


Fig. 57. Ferranti 200 kW alternator installed at Wallasey, 1899.

Courtesy Ferranti Ltd.

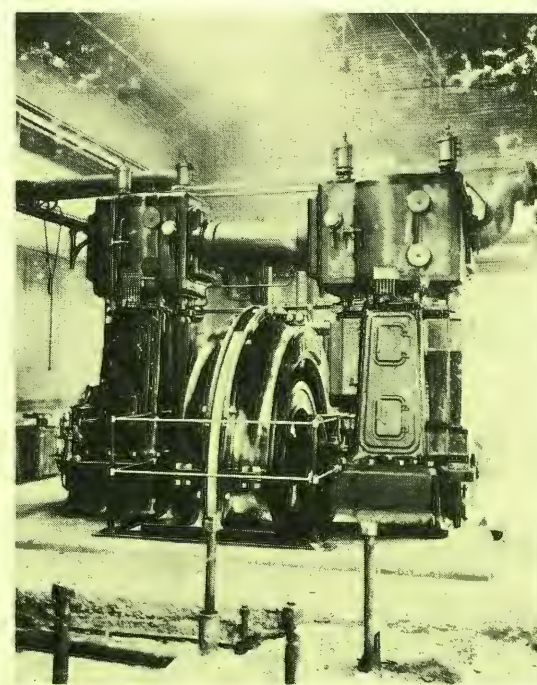


Fig. 56. 300kW Ferranti alternator (with Hick Hargreaves engine) installed at Southport, 1895.

Courtesy Ferranti Ltd.

