N° 18,105 A.D. 1901

Date of Application, 10th Sept., 1901

Complete Specification Left, 10th July, 1902—Accepted, 10th Oct., 1902

PROVISIONAL SPECIFICATION.

Communicated by The Marchese Luigi Solari of Loreto, Marches, Italy Lieutenant Italian Royal Navy.

"Improvements in Coherers or Detectors for Electrical Waves."

I, Guglielmo Marconi, of 18 Finch Lane, in the City of London, Electrician, do hereby declare the nature of this invention to be as follows;—

Coherers made according to this invention consist of a drop of conducting liquid lying between two conductors.

I employ a glass tube having in it two plugs whose distance apart can be adjusted with the liquid between them. Preferably one plug is of steel and the other of carbon, whilst the liquid is mercury.

Dated this 9th day of September 1901.

G. MARCONI.

COMPLETE SPECIFICATION.

"Improvements in Coherers or Detectors for Electrical Waves."

I, Guglielmo Marconi, of 18 Finch Lane, in the City of London, Electrician, do hereby declare the nature of this invention (which has been communicated to me from abroad by the Marquis Luigi Solari of Italy) and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

Coherers made according to this invention consist of a drop of conducting liquid lying between two conductors.

I employ a glass tube having in it two plugs whose distance apart can be adjusted with the liquid between them. Preferably one plug is of iron or steel and the other of carbon, whilst the liquid is mercury.

The drawing shows such a detector with its connections. *a* is a glass tube, say 4.5 centimetres long with an external diameter of 6 millimetres and internal diameter of 4 millimetres supported on an insulating block *b*, fixed to a base *c*. Fitting the tube closely at one end is the cylindrical plug *d* of microphone carbon provided with a binding screw or similar arrangement *e* and at the other end is inserted a plug *f* of iron, secured to a metal rod *g*, on which is cut a fine thread working through a metal standard, *h*, so that the position of the plug *f*, can be adjusted by turning the milled head *j*. Between the faces of the carbon and iron plugs but not filling the space between them is a globule of mercury *k*, say about 1 millimetre in diameter, the plug *f* fitting the tube so tightly as to prevent the escape of the mercury.

To the carbon plug *d* is connected one pole of a battery *l*, the other pole of which is connected through a telephone *m* to the metal standard *h*. To obtain signals from a distant station the aerial wire A at the receiving station is connected to one pole of the coherer the other pole of which is connected to earth E. The plug *f* is then adjusted until the mercury globule lightly touches both plugs

[*Price* 8*d*.]

simultaneously, the best position being that in which a very faint but continuous hissing sound is heard in the telephone *m*. When the distant station is transmitting, the signals are heard in the telephone as crackling sounds of long or short duration according as long or short signals are sent.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A coherer or detector for electrical waves consisting of a drop of conducting liquid between two conductors substantially as described.

2. The combination of a glass tube, a carbon plug, a metal plug, a drop of mercury between the plugs and means for adjusting the distance between the plugs.

3. Coherers or detectors for electrical waves substantially as described.

Dated this 10th day of July 1902.

CARPMAEL & Co.,
Agents for the Applicant.

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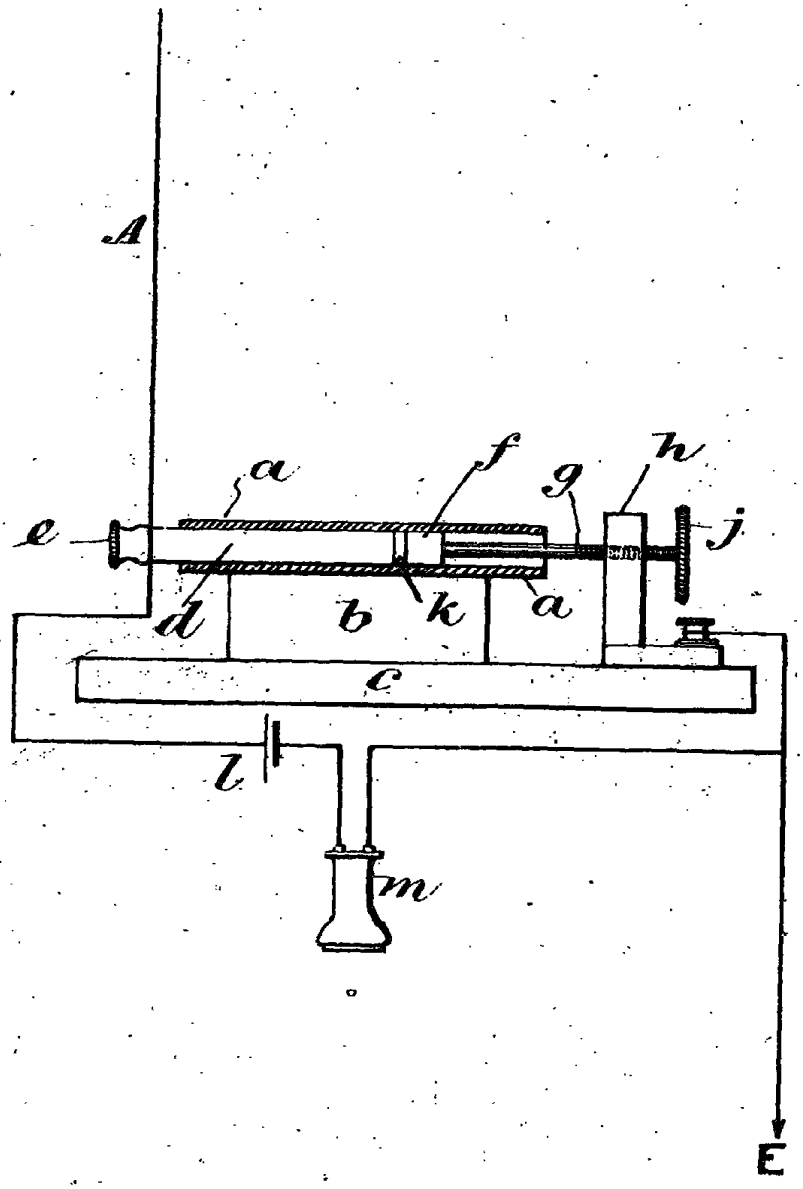
A.D. 1901. Sep. 10. N°. 18,105.

MARCONI'S Complete Specification. *(1 SHEET)*



[This Drawing is a full-size reproduction of the Original.]

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