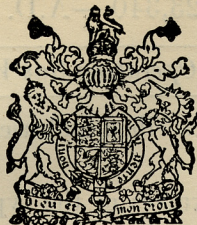




N<sup>o</sup> 23,340



A.D. 1913

Date of Application, 15th Oct., 1913

Complete Specification Left, 15th Apr., 1914—Accepted, 15 h Oct., 1914

### PROVISIONAL SPECIFICATION.

#### Improved Means for Operating Gas Valves from a Distance.

We, MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED, and CYRIL PERCY RYAN, Commander R.N., all of Marconi House, Strand, London, W.C., do hereby declare the nature of this invention to be as follows:—

This invention relates to improved means for operating gas valves from a distance, and is particularly adapted for actuating by means of wireless telegraphy the valves which control the supply of gas, to acetylene lights or fog guns.

According to our invention we carry a needle valve on a stem, on which can slide for a small distance the heavy armature of an electromagnet, and we provide a catch which is adapted to be thrust by a spring beneath a shoulder on the stem when the latter is raised and to hold it in the raised position, but can be withdrawn from engagement with the shoulder by a second electromagnet. When the first magnet is energized its armature is raised, and being free to slide on the stem acquires sufficient momentum to lift the valve from its seat upon which the catch engages the shoulder and holds the valve open, even though the supply of current to the first magnet be cut off, until the second magnet is energized.

The valve, its stem and the two armatures are all contained in a gas tight casing into which the pole pieces of the two magnets project, so that the windings of the magnets are protected from the gas.

The magnets may conveniently be energized by means of instruments such as that described in our Specification No. 11,106 of 1913.

Dated this 13th day of October, 1913.

MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED,

The common seal of Marconi's Wireless Telegraph Company, Limited, was hereto affixed in the presence of:—

HENRY S. SAUNDERS,  
ALFONSO MARCONI,  
Directors.

HENRY W. ALLEN,  
Secretary.

CYRIL PERCY RYAN.

### COMPLETE SPECIFICATION.

#### Improved Means for Operating Gas Valves from a Distance.

We, MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED, and CYRIL PERCY RYAN, Commander R.N., all of Marconi House, Strand, London, W.C., do hereby declare the nature of this invention and in what manner the same is to be

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*Improved Means for Operating Gas Valves from a Distance.*

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performed, to be particularly described and ascertained in and by the following statement:—

The invention relates to gas valves of the type in which a valve is opened by an electromagnet, is retained by a stop or catch in the open position and is closed 5 by gravity when the stop or catch is removed by means of a second electromagnet.

According to our invention the valve, its stem and the two armatures are all contained in a gas tight casing into which the pole pieces of the two magnets project, so that the windings of the magnets are protected from the gas.

Our invention is illustrated in the accompanying drawing, Figure 1 of which is a longitudinal section, and Figure 2 a transverse section. *a* is a gas tight 10 chamber having inlet and outlet pipes *a*<sup>1</sup> *a*<sup>2</sup>, the latter controlled by a needle valve *b* free to slide on an axial pin *b*<sup>1</sup>. Through the walls of the chamber project the pole pieces of two electromagnets *c* *d*, the first of which has an armature *c*<sup>1</sup> pivoted at *c*<sup>2</sup> and carrying an arm *c*<sup>3</sup>, adapted, when the armature owing to the attraction of the magnet has acquired sufficient momentum, to come 15 against a shoulder *b*<sup>2</sup> on the stem of the valve and lift the latter off its seat so as to allow gas to pass to the outlet pipe *a*<sup>2</sup>. A catch *d*<sup>2</sup> carried by the armature *d*<sup>1</sup> of the magnet *d* is thereupon forced by a spring *d*<sup>3</sup> beneath a shoulder *b*<sup>3</sup> on the valve stem so that even though the magnet *c* is de-energized and its armature returned to the position shown in the drawing the valve is held open until the 20 magnet *d* is energized and withdraws the catch from engagement with the shoulder *b*<sup>3</sup>, upon which the valve will fall and stop the flow of gas. The magnets and chamber are enclosed in a watertight casing *e* through which the leads are brought to the magnets.

This arrangement is especially applicable for actuating by means of wireless 25 telegraphy the valves which control the supply of gas for instance to acetylene lights.

The magnets may be energized by any convenient means, for instance, by relays in which pendulums or balance wheels are actuated by a series of impulses at intervals equal to their periods of oscillation. 30

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

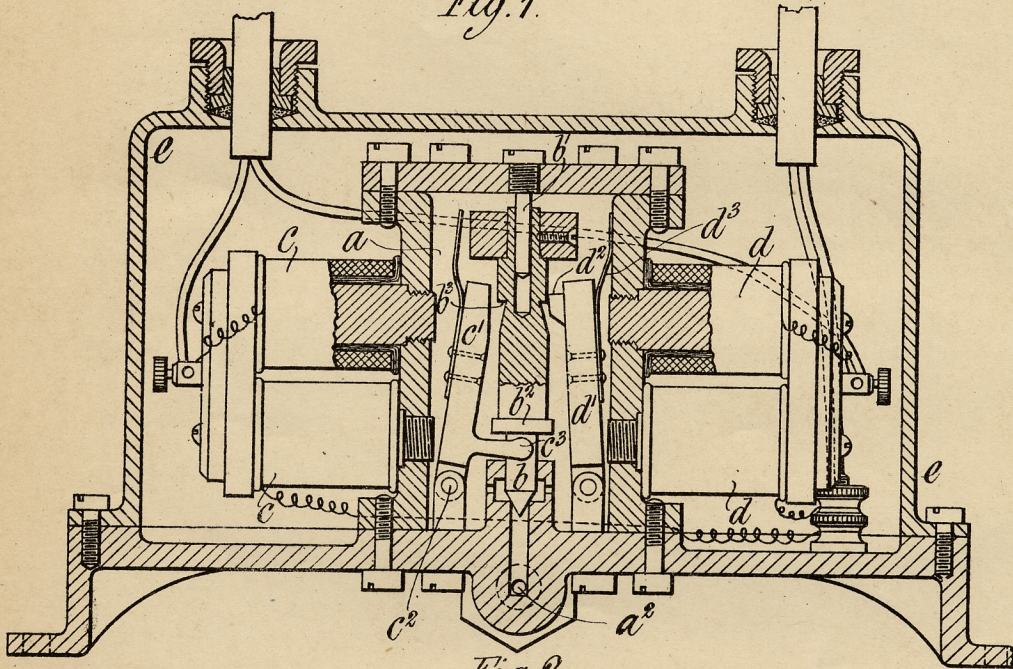
Means of the type described for operating gas valves from a distance characterized in that the valve, its stem and the armatures of the magnets are all 35 contained in a gas tight casing into which the pole pieces of the magnets project substantially as described.

Dated this 15th day of April, 1914.

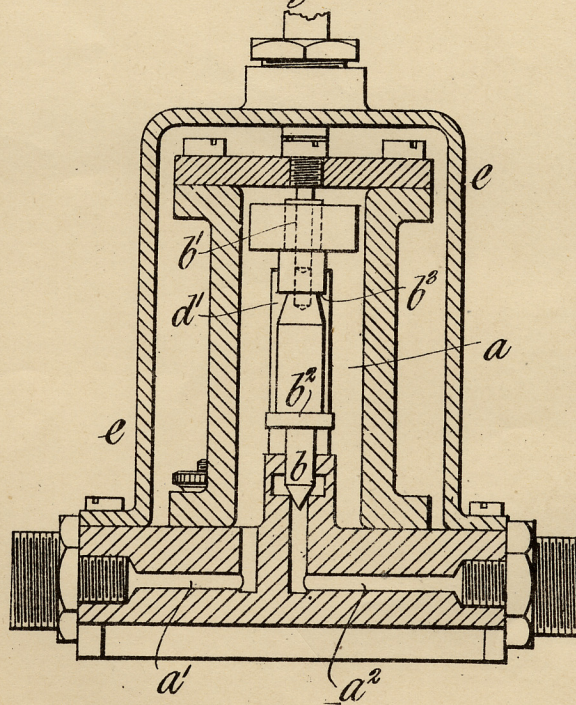
CARPMAEL & Co.,  
Agents for Applicants, 40  
24, Southampton Buildings, London, W.C.



*Fig. 1.*



*Fig. 2.*



[This Drawing is a reproduction of the Original on a reduced scale.]