N° 9219 A.D. 1905

(*Under International Convention.*)

Date claimed for Patent under Patents Act, 1901, being date of first Foreign Application (in Italy), 8th May, 1904

Date of Application (in the United Kingdom), 2nd May, 1905

Accepted, 10th Aug., 1905

COMPLETE SPECIFICATION.

"Improvements in Coherers".

I, GIUSEPPE MAGINI, of 26 Via Ginori, Florence, Italy, Electrician, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has specially for its object to produce a coherer the operation of which is not irregular, as happens with ordinary coherers on account of: 1. the oxidation of the metallic parts of which they are composed; 2. the irregular and violent displacements of the powders, grains *etc.*, which occur owing to the shocks which it is necessary to impart for producing the decoherisation; 3. the difficulty there is in regulating the mutual pressure between the metallic parts. For preventing the oxidation we propose to immerse all parts of which the coherer is composed, that is to say: powder, grains, spheres, small screws (particularly these latter which, in practice, have proved the best adapted both for maintaining the coherer constant, as well as for sensitiveness, while taking into account the large quantity of imperfect contacts which the threads of the screws themselves present) *etc.*, and the electrodes, in any suitable liquid, such as mineral or vegetable oil, benzine. This liquid prevents the oxidation and maintains the imperfect contact between the metallic parts under regular conditions. Further, the greater or less viscosity of the liquid employed, renders the movement of the metallic parts which are immersed therein more difficult. Owing to the shocks produced by the decoherising apparatus, these parts, if they are not immersed in the liquid, may accumulate irregularly more on one side than the other, and sometimes cause either excessive or insufficient mutual pressures, therefore rendering the operation and the sensitiveness of the coherer irregular. In order to regulate these pressures at the point of contact with the electrodes more effectively, we have also thought of specially arranging these latter, as will be hereinafter described, by means of which a constant pressure between the electrodes and the metallic particles is obtained, the pressure being by this system exclusively due to the weight of these metallic parts. By the approachment or the separation of the electrodes to or from each other, and by varying, if it is necessary, the quantity of the metallic particles, one can obtain (according to the arrangement which we will hereinafter describe) an adjustment of the sensitiveness of the coherer without varying the pressure of the particles on the electrodes; a variation which, even though small, has a great influence on the sensitiveness of the coherer itself. The arrangement above mentioned, and which is intended to prevent the approachment or the separation of the two electrodes of the coherer modifying the mutual or relative pressure that the powders or the other metallic particles constituting the coherer

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itself exert upon each other, is represented in Fig. 1 of the accompanying drawing. In this figure A represents the small basin or box, or any receptacle, or a tube which contains the above mentioned powders or the particles. B and C represent the electrodes, D represents the powder. Up to the present it has generally been the practice to make these electrodes of T form, as will be seen in Fig. 2; the result was that in approaching or separating these electrodes R S, the powders or particles U which were situated between them, although the displacements were very small, were subjected to a different pressure, which considerably modified the sensitiveness of the coherer. In fact, if two electrodes of this form are approached towards each other, they press between them the mass of powder or the particles, and they not only increase the cohesion but also the height of the layer, which produces an augmentation of weight, and consequently a further augmentation of pressure and of cohesion in the lower part of the coherer, and the conductive sensitiveness correspondingly. If, on the contrary, the two electrodes B and C are made of L form, as represented in said Fig. 1, so that the powders may be situated on the horizontal parts E and F of the electrodes themselves, and do not approach too near to the vertical parts G and H, and that, therefore, they only make contact by reason of their weight, it follows that the separation or the approachment of these electrodes only gives rise to a very small modification of pressure in the powders. This small modification may be completely neutralised for the reason that, with our system, the powders being immersed in the liquid, and which prevents the oxidation thereof, it is not necessary that they should be contained in a vacuum, and by this means one may add or remove a certain quantity of the powders or particles for always rendering the mutual pressure more uniform, and thus obtain a uniform sensitiveness. So that the powder in the place in which the coherer is situated, by accumulating on the surface of the liquid, may not alter the conditions of the latter, the coherer, being of basin or other form, may be enclosed in the box represented at M in Fig. 1, through which only the two metallic conductors which lead to the circuit of the battery pass. This type of coherer may be utilized as well for telegraphy, with or without wires, or for no matter what application, in which it is useful to employ a coherer, by actuating it by means of electric waves of inverse or of continuous currents.

I am aware that it has already been proposed to surround or mix the filings of coherers with oil, but not to immerse the whole of the coherer therein and so prevent oxidation of any of its parts.

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. The arrangement and special or L-form of the electrodes of coherers substantially as hereinbefore described and shown in the accompanying drawings, so as to prevent their approachment or their separation from producing perturbations of pressure of the powders or metallic particles of which same are composed capable of interfering with the sensitiveness of such coherer, substantially as specified.

2. The immersion of the whole of the parts constituting the coherer constructed as hereinbefore described and set forth in the preceding claim, in a liquid which will prevent oxidation and efficiently regulate the disorganization of the mass of powders or particles or spheres or small screws by decoherizing shocks to which same are subjected, substantially as specified.

Dated this 2nd. day of May, 1905.

ALLISON BROS.,
Agents for the Applicant.

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MAGINI'S COMPLETE SPECIFICATION.

(1 SHEET)

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

Fig. 1.

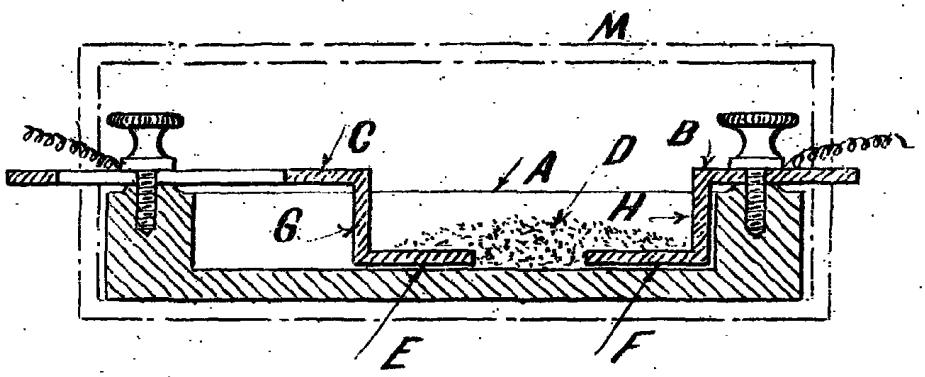
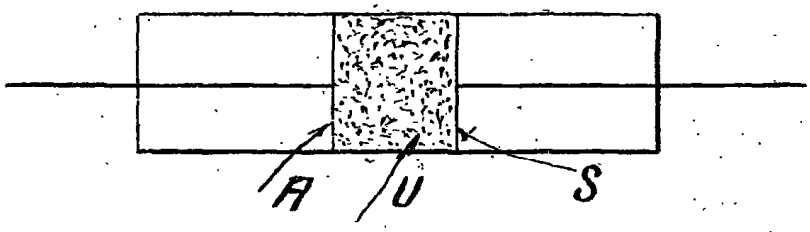


Fig. 2.



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