

No. 742,298.

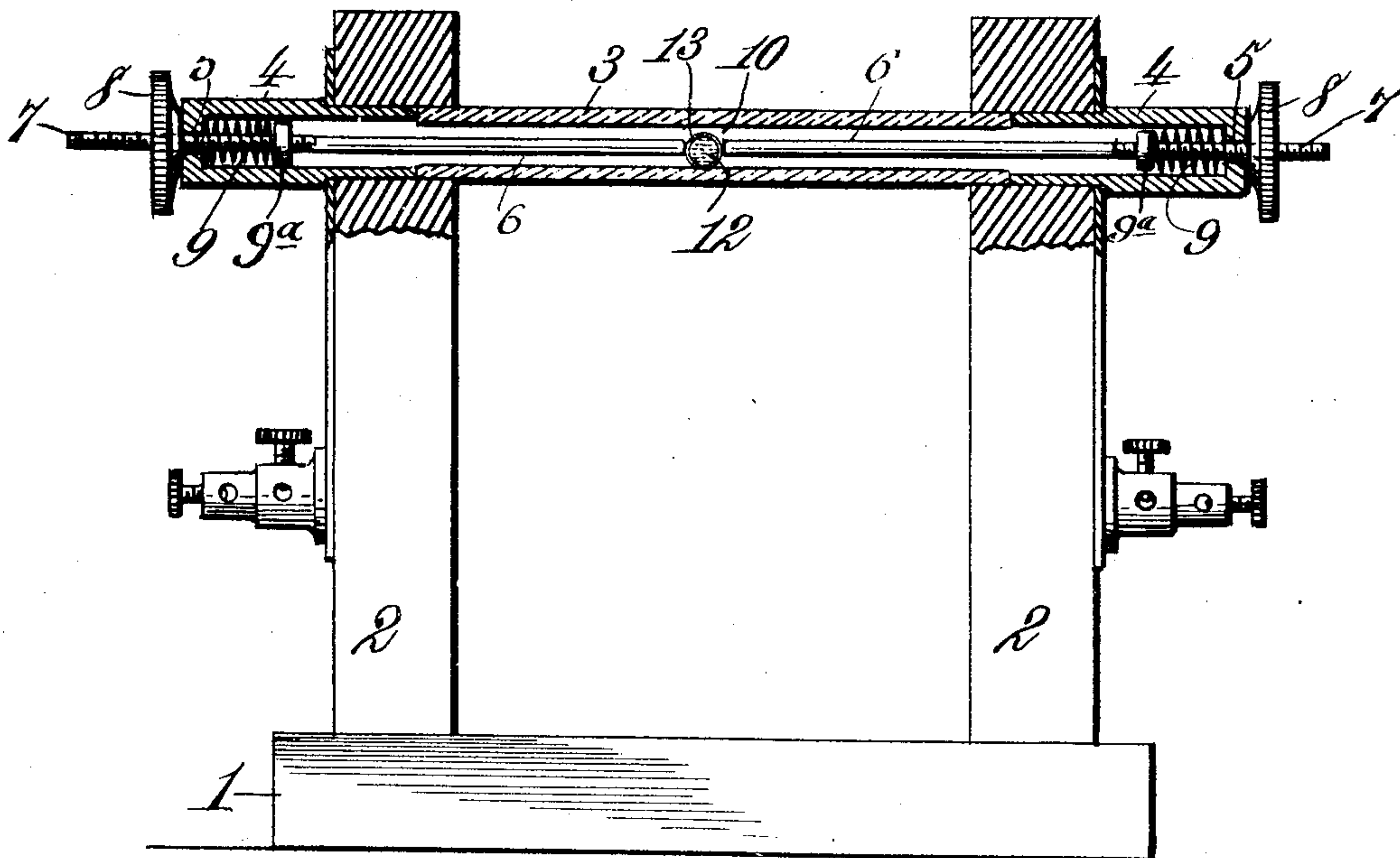
PATENTED OCT. 27, 1903.

L. DORMAN.  
COHERER FOR WIRELESS TELEGRAPHIC SYSTEMS.

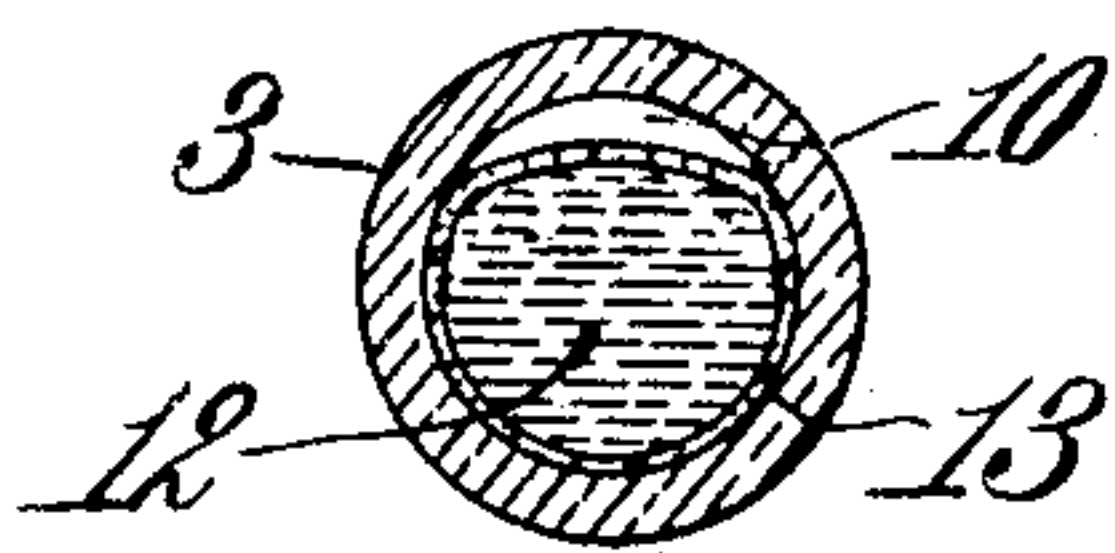
APPLICATION FILED JAN. 28, 1903.

NO. MODEL.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
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*Att'y.*

# UNITED STATES PATENT OFFICE.

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## COHERER FOR WIRELESS TELEGRAPHIC SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 742,298, dated October 27, 1903.

Application filed January 28, 1903. Serial No. 140,948. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS DORMAN, a citizen of the United States, residing at Washington, District of Columbia, have invented certain  
5 new and useful Improvements in Coherers for Wireless Telegraphic Systems, of which the following is a specification.

My invention relates to certain new and useful improvements in coherers for wireless telegraphic systems.

The principal objects of the invention are to provide a coherer which insures a longer continuity of action without deterioration, combined with a stronger and clearer production of the telegraphic signals in the receiving instrument; which is not easily rendered ineffective by atmospheric electricity or disturbances; which requires but a very slight electrical energy to make the receiver respond; which renders unnecessary the use of a shaking or tapping contrivance, such as now employed in many instances, and which is of such simple construction that it may be easily and cheaply renewed.

To these and other ends my invention comprises the features of construction and arrangement of parts hereinafter described and then more definitely pointed out in the claims following this description.

Briefly and more generally stated, the invention comprises the novel, simple, and effective wave-responsive medium comprising a globule of mercury having a coating of mineral oil and a finely-divided mineral substance, such as powdered oxid of iron, fine metal filings, emery-dust, or finely-powdered carbon.

The invention will be described in connection with the accompanying drawings, in which—

Figure 1 is an enlarged side elevation, partly in section, of a coherer and its support, said coherer being constructed according to my invention; and Fig. 2 is a transverse section taken through the tube and wave-responsive medium.

Referring now to the drawings, the reference-numeral 1 designates a base having two standards 2 rising therefrom, each of which  
50 is provided with a bore or opening into which

a glass or other tube 3 is fitted, the said tube extending from one standard to the other, as shown. Also fitted in the bore of each standard and projecting outward therefrom is a sleeve 4, the inner end of which is open and  
55 the outer end closed, except for a small opening 5. Freely movable longitudinally in each sleeve 4 and in opposite ends of the glass tube 3 are iron rods 6, each of which is provided with a threaded stem 7, that projects  
60 out through the bore or opening in the ends of the sleeves 4, and on the threaded end of each stem 7 is a thumb-nut 8. Located within each sleeve 4 between its closed end and a nut 9<sup>a</sup>, threaded on the stem 7, is a coiled  
65 spring 9, the normal tendency of which is to force its rod inward or within the tube. The tension of the springs 9 may be varied by means of the nuts 9<sup>a</sup> in an obvious manner. It will now be readily seen that by turning  
70 the thumb-nuts 8 in the proper direction the said rods 6 may be brought toward or from each other, as desired, within the tube in which is placed a globule or body of mercury 12 of such diameter that it may move freely  
75 therein.

The salient feature of my invention resides in coating the globule of mercury first with a mineral oil and then with finely divided or powdered oxid of iron, fine metal filings, emery-dust, or finely-powdered carbon, said coating being designated by the numeral 13. The application of these coatings or either of them to the mercury gives to the device the power of self-restoration, thereby doing away with  
85 the necessity for a tapper or vibrating device commonly known in wireless-telegraph systems. Its use results in a stronger and more distinct production of the signals transmitted to the receiving apparatus proper and has  
90 the effect of rendering the coherer more durable and less liable to get out of order through the effects of atmospheric electricity or from other causes. It also has the effect of requiring less electrical energy for the operation  
95 of the system, which facts were ascertained by actual tests between two distant stations where similar tests had been previously made with similar apparatus without the coating  
100 on the mercury.



Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A coherer comprising in its construction  
5 a globule of mercury having a coating of oil and a finely-divided substance of the character described.
2. A coherer comprising in its construction a globule of mercury coated throughout its  
10 entire surface with oil and finely-divided substance of the character described.
3. A coherer comprising in its construction a globule of mercury having a coating of mineral oil and a substance finely divided.
- 15 4. A coherer comprising in its construction a globule of mercury having a coating of oil and a mineral substance.

5. A coherer comprising in its construction a globule of mercury having a coating of oil and finely-divided mineral substance. 20

6. A coherer comprising in its construction a globule of mercury having a coating of mineral oil and finely-divided mineral substance.

7. A coherer consisting of a tube having rods in its opposite ends and a globule of mercury located in said tube, between the rods, said globule having a coating of oil and a mineral substance. 25

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS DORMAN.

Witnesses:

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