No. 875,105. PATENTED DEC. 31, 1907.

F. C. PICKETT.

ELECTROLYTIC RECEIVER.

APPLICATION FILED MAR. 12, 1907.

Fig. 1.

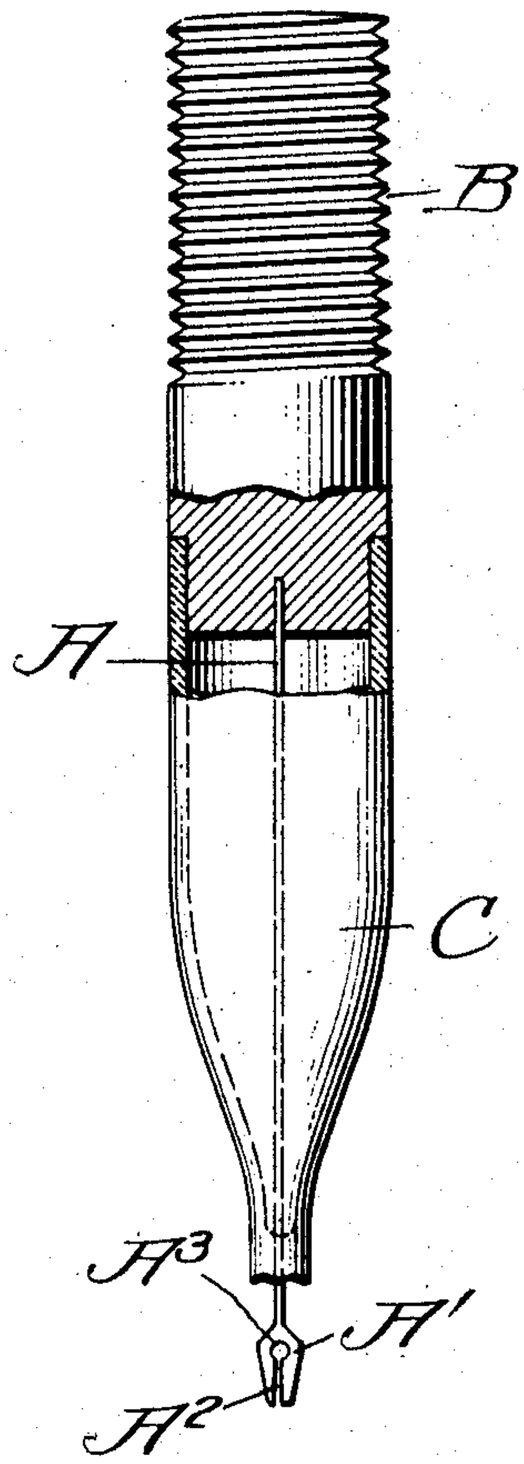
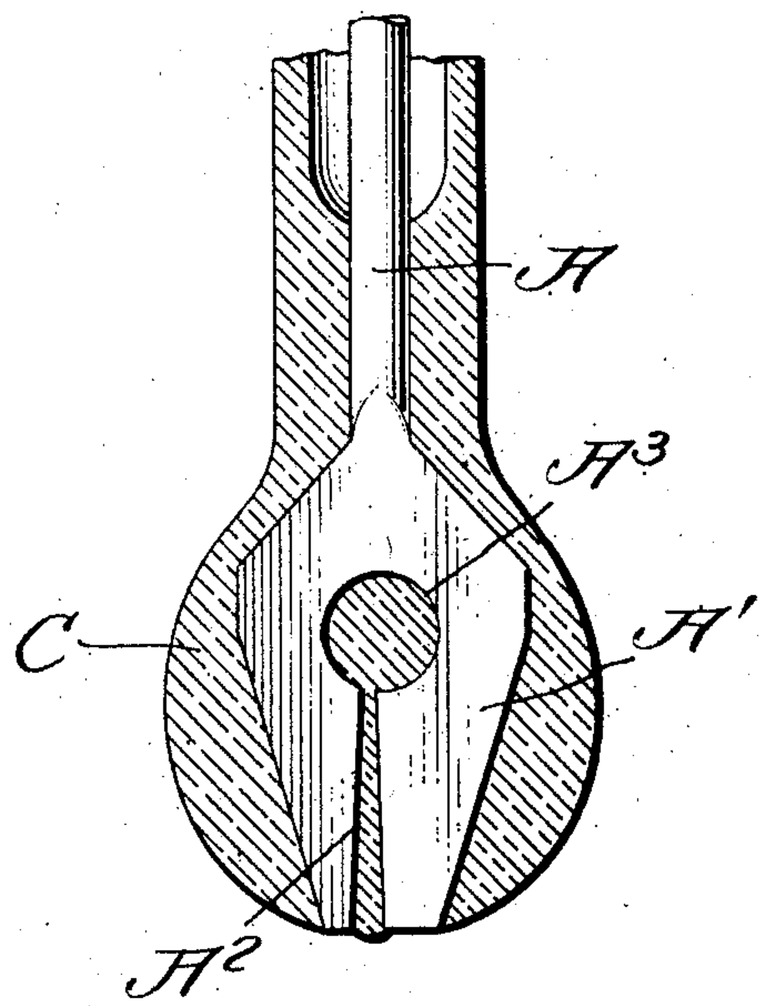


Fig. 2.



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ELECTROLYTIC RECEIVER.

No. 875,105. Specification of Letters Patent. Patented Dec. 31, 1907.

Application filed March 12, 1907. Serial No. 362,060.

To all whom it may concern:

Be it known that I, FRED CLARKSON PICKETT, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a new and useful Improvement in Electrolytic Receivers, of which the following is a specification.

This invention relates to a receiver for electro-magnetic waves and belongs to that art commonly known as wireless telegraphy.

The particular invention hereinafter described relates especially to improvements in current-actuated wave responsive devices generally utilized in space telegraphy for collecting electro-radiant energy and transforming it into audible signals.

In the drawings forming a part of this specification:—Figure 1 is a longitudinal sectional view through my improved receiving point, a portion of the conductor carrying the point being shown in elevation. Fig. 2 is a greatly enlarged vertical elevation of the point.

In constructing my point I employ any insoluble metal which also possesses the properties of malleability, and ductility, and which also possesses approximately the same temperature co-efficiency of expansion as glass. Platinum and gold are examples of such a metal. In my receiver this metal takes the form of a wire A, one end of which is firmly embedded and fixed into the end portion of a suitable electrical conductor B, to which it may be soldered or cemented. This wire is flattened at its other end as shown at A′ and is inclosed by an envelop or sleeve C of any suitable viscid material, usually glass. I have found, however, by experiments that this envelop C may be formed of a number of substances which will answer the purpose equally as well as glass as, for example, a combination of bees-wax and rosin, sealing-wax and many other gums. In selecting the material for such an envelop it is necessary that material be selected which is tough and not too brittle. In forming the point A′ I prefer to flatten the end of the wire A as this presents a thinner area of conducting surface to the electrolyte, but when the point is simply flattened it becomes necessary to form the envelop C into a very weak feathered edge along the edge of the flattened end portion of the wire. A microscopic examination of such a flattened point after it had been used a short time, shows that a minute ragged edge had been formed both along the feathered edge of the envelop and also upon the flattened portion of the wire, showing that the gas evolution had been sufficient to seriously affect the sensitiveness of the point. To strengthen these flattened edges, both of the point and the envelop, I split the point A′ longitudinally as shown at A^2 and also cut the point away centrally as shown at A^3 the split A^2 extending from the end of the point to the said cut-out portion and I then permit the material of which the envelop is formed to flow, in forming, into said cut-out portion and between the two points formed by splitting the original single flattened point. This results in the formation of a duplex point and the envelop filling the space between the two points thus formed from the original single flattened point forms a bridge or bond and by strengthening both the point and the feathered edge of the envelop overcomes the objection or disadvantages above noted. This bridge therefore, greatly increases the life of the point while the splitting of the point greatly increases the sensitiveness of the receiving point.

It will be especially noted from the enlarged view in Fig. 2 that the point is not divided upon its longitudinal center line but on the other hand is split into two points one of which is of less width than the other, thereby providing upon the one receiver a fine and a comparatively coarse point. It will be well understood that in order to pick up or receive a feeble wave, a very small point is required. But this at the same time produces comparatively only a very faint sound in the receiver and is also liable at any time to be affected by static disturbances to such an extent that it will be impossible to decipher any signals received from it.

Upon experiments I have found that a comparatively coarse point could many times be made operative by having a buzzer arranged close at hand to start the original vibrations and a weak or feeble wave would be received for a few seconds and then die out. I also found that by arranging a very small thin point adjacent to the larger one that the feeble wave would be able to record itself, on the fine point and thus start or set up vibrations in a larger point thereby producing a far more audible signal than could be obtained from the fine point alone and which could not be obtained with the same

strength of wave by the larger point alone. Therefore, in constructing my point, I split the flattened end A′ of the wire so as to form a smaller and a larger point. A point of this description has not only the advantages of being much more durable than a single flattened point for reasons already above given, but also has the further advantage of having two unequally exposed surfaces of conducting material, each surface of which is embedded in a separate point, and which if produced in a single point, could not result the same as the two combined. It also possesses the property of being constantly receptive in the true sense of the word, being able to receive and transmit in the form of an audible signal both weak and strong wave vibrations. This duplex point also possesses distinct advantages for the following reasons:—

I find upon experiments that a single point is often reached by a wave at such a time during an interval in the evolution of a gas bubble that the point is practically inoperative. The points shown and described by me are formed of unequal areas and therefore gently evolves gas bubbles at different periods, that is, while the condition of one point may be ready for producing its maximum effect for indication in receiver, the other point is developing this condition. This will make it obvious why the duplex point is at all times in a receptive condition.

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

1. A receiving point of the kind described having a flattened end portion, said flattened portion being split and an envelop of viscid material inclosing said point and forming a bridge by extending into the split portion.

2. A duplex point of the kind described consisting of a piece of wire having an end flattened and split longitudinally thus forming two points, and an envleop inclosing said point and extending into the split portion and forming a bond between the two points.

3. A receiver of the kind described consisting of a wire having a flattened end portion, said flattened end portion being split into two points of unequal surface area and an envelop inclosing said points and extending into the split portion.

4. A device of the kind described comprising a piece of wire having an end portion flattened into a thin sheet, and split longitudinally upon one side of its longitudinal center forming a smaller and larger point, and an envelop of viscid material inclosing both of the points so formed.

5. A device of the kind described consisting of a wire having flattened thin portion, said portion being centrally cut-out, and the said flattened portions being split longitudinally into two points of unequal surface area, the split extending from edge of the points to the cut-out portion, and an envelop inclosing said flattened portion, and extending into the cut-out portion and into the space between the two points, formed by splitting the flattened portion, as and for the purpose set forth.

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Witnesses:
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