

No. 859,948.

PATENTED JULY 16, 1907.

I. KITSEE.
TELEGRAPHY.

APPLICATION FILED JAN. 16, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

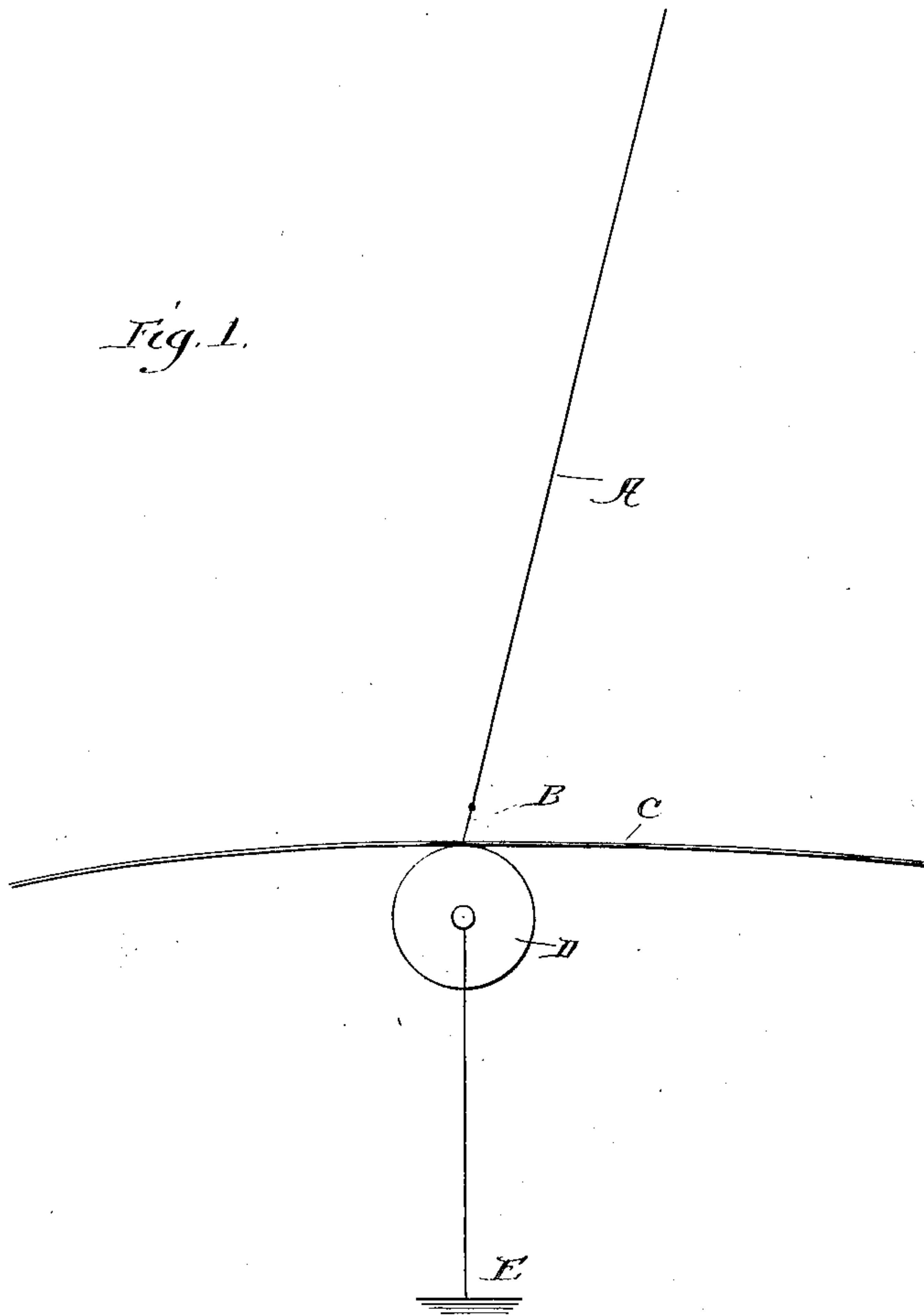
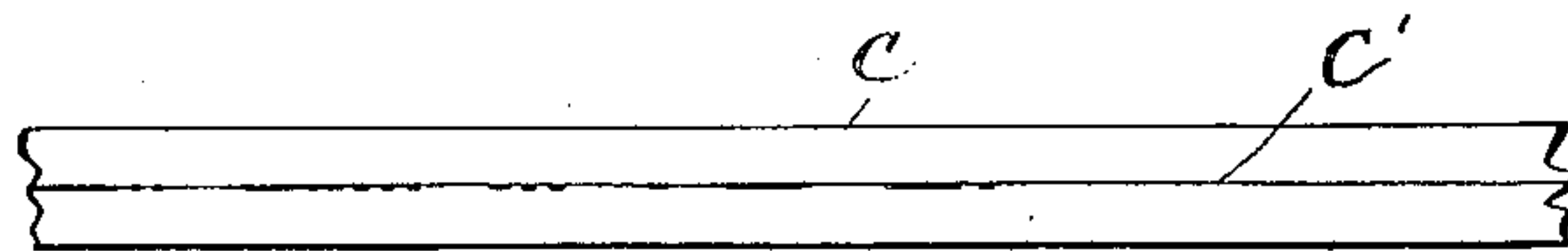


Fig. 2.



Witnesses:

Mary C. Smith
Abraham Rittenhouse

Inventor.

I. Kitsee

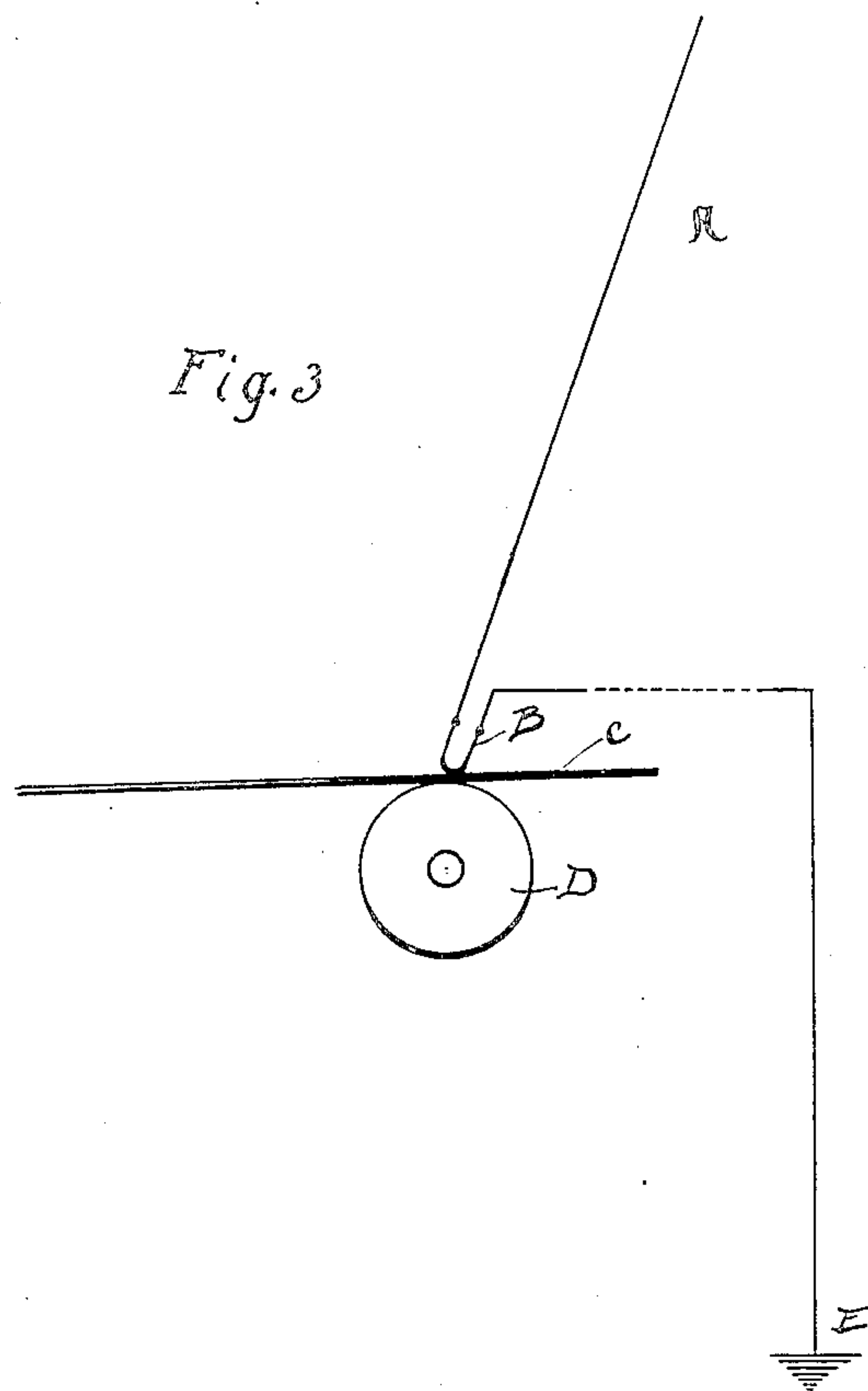
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I. Kitsee

UNITED STATES PATENT OFFICE.

ISIDOR KITSEE, OF PHILADELPHIA, PENNSYLVANIA.

TELEGRAPHY.

No. 859,948.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ISIDOR KITSEE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Telegraphy, of which the following is a specification.

My invention relates to an improvement in telegraphy and has more special reference to the receiving of telegraphic impulses.

The device can be adapted for telegraphing with a metallic line and also in telegraphing with the aid of the natural medium. It is well known, that if the receiving wire terminates in a point of high resistance, a large current on a conducting line, or the electric waves received through the natural medium, will heat this terminal to a greater or lesser degree, according to the waves received and also in accordance with the greater or lesser length of said terminal. So far, this so-called hot-wire receiver was utilized for the purpose of changing the resistance in a circuit wherein a telephonic receiver forms part.

In my experiments, with the recording of received impulses with the aid of chemically prepared paper, I have found that if the temperature of the terminal is raised above the normal, in some instances the recording is different from the record made by a terminal, the temperature of which is at the normal point. More specially is this the case where the terminal, or as it is technically called the writing pen, is made of iron and where the chemical solution with which the paper is prepared contains a cyanid such for instance as red prussiate of potash. It is a fact that a solution, containing red prussiate of potash and also containing a chlorid of ammonia, attacks iron in accordance with the strength of the solution. An iron, therefore, used as the writing pen for telegraphic purposes, will produce a mark or line on the paper, no matter if a current is passing or not, but if the solution is greatly diluted and contains about one dram of the prussiate to a pint of water, this line will be very faint. But when through any source whatsoever the temperature of the pen is raised, the line becomes more distinct, the heaviness of the line being about proportional to the raising of the temperature of the pen.

In practice, as the iron pen is to be of very small diameter, the wearing away of the pen may become a source of annoyance and I, therefore, made experiments, having in view, to substitute for the fine iron pen, a pen of fine platinum wire and substituting for the second or grounded pole an iron loop or wheel, and I found that as soon as the temperature of the platinum pen is raised to a comparative high degree, the marking became near as heavy and distinct as in the former case, that is, in the case where the pen consisted of iron.

I have here given an example of how the marking of a chemically prepared paper can be made stronger through the raising of the temperature of one or the other of the poles separated by such paper; but it is obvious that other chemicals and other metals may be employed and my invention resides, broadly speaking, therein, that through the heating of at least one element of a chemical recorder, the pen is made to record heavier marks than when the elements are all at the normal temperature.

Referring to the drawing in which Figures 1 and 3 illustrate in diagrammatic view my invention and in which Fig. 2 is a plan view of a recorded tape, A is the receiving conductor; the same may represent part of a metallic line, if such is employed, or it may represent part of a conductor projecting vertically up as in wireless telegraphy; B is the writing pen consisting of a material adapted to be heated by the received impulses; this material may be all metallic or it may consist of one of the metallic combinations adapted to be heated through the passage of an electric impulse.

C is the paper adapted to have recorded thereon the characters of the message.

In Fig. 1, D is the second pole of the receiving device grounded at E. In Fig. 3, B represents that part which is adapted to be heated; one terminal of this part is connected as in Fig. 1, with the conductor A; but the second terminal is directly grounded at E.

The difference between the arrangement and working of the devices illustrated in Fig. 1, and the devices illustrated in Fig. 3, is as follows: In Fig. 1, B is the part to be heated, but it also performs the function of one pole of the chemical writer and the impulses are supposed to travel from B, through C to D, thereby making out of B and D a two-pole device, separated by the moist strip of paper. In Fig. 3, the device B performs only the function of a heated medium, the impulses supposed to flow directly from that device to the ground E. Whereas, therefore, in Fig. 1 the electric impulse or energy will heat the part B and will also heat in its passage the part C, and whereas in this device the heating as well as the electrolytic action of the electric energy, is made to produce the desired mark, in Fig. 3, it is only the heating alone, which is relied upon to produce the required mark. In Fig. 1, the wheel or similar contrivance D has to be of conducting material; in Fig. 3, the wheel or similar contrivance D may consist of any material whatsoever, conducting or non-conducting, but when the part B is of a material not capable to produce, solely through heat a chemical action with the solution in which the paper is dipped, then the device D should consist of such material, and if the solution as aforesaid is used, then D even in Fig. 3 should consist of iron, if B is made of platinum or similar metal.

In Fig. 2, C is the paper, C' is the faint line produced by the pen, if such is of iron. This paper has also recorded thereon in heavy lines dots and dashes, symbolizing the characters sent.

5 Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The method of receiving electric energy, which consists in causing through the heating of at least one element of a chemical writer, to be recorded on a chemically prepared paper marks, in accordance with the impulses transmitted, the heated element of a nature, so that part of same shall undergo a chemical change with the chemically prepared paper.

10 2. As an improvement in the art of receiving electric energy, the method which consists in heating through said energy, at least one element of a chemical writer, the paper of said chemical writer adapted to produce a chemical combination between one of the poles and the solution, with which said paper is impregnated.

20 3. As an improvement in the art of receiving electric energy, the method which consists in causing through said received energy, the temperature of one pole of a chemical writer to be raised, and causing through said rise in

temperature, a mark to be produced on the paper of said writer, the element to be raised to a high temperature connected in series with the aerial conductor and the ground. 25

4. In the art of receiving electric energy, the method which consists in causing normally, when no impulses are arriving a comparatively faint mark or line to be recorded on the paper of a chemical writer, and causing said mark or line to be made more distinct and clear through the heating of at least one of the elements, due to the passage of said energy. 30

5. As an improvement in the art of recording messages, sent in accordance with the Morse alphabet, the method which consists in causing the transmitted energy to heat at least one element of a chemical writer, causing through said rise in temperature, a chemical action to occur between the heated element and the solution with which the paper of said chemical writer is impregnated, and causing thereby to be recorded the dots or dashes of said Morse alphabet. 35 40

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

ISIDOR KITSEE.

Witnesses:

MARY C. SMITH,
ALVAH RITTENHOUSE.