

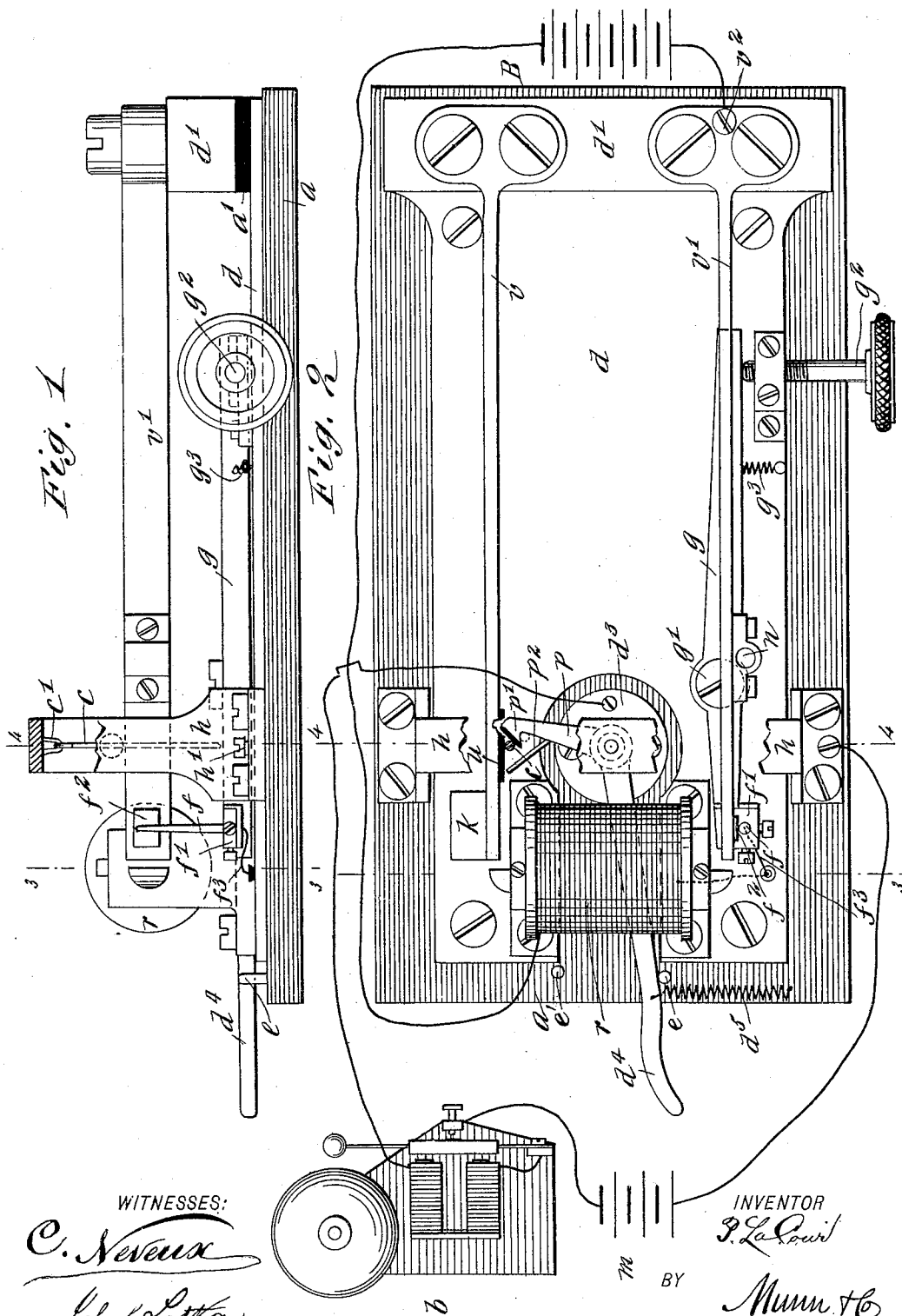
(No Model.)

2 Sheets—Sheet 1.

P. LA COUR.
TELEGRAPHIC VIBRATOR.

No. 546,892.

Patented Sept. 24, 1895.



WITNESSES:

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John Lott

INVENTOR

P. La Cour

BY

Munn & Co

ATTORNEYS.

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Fig. 4

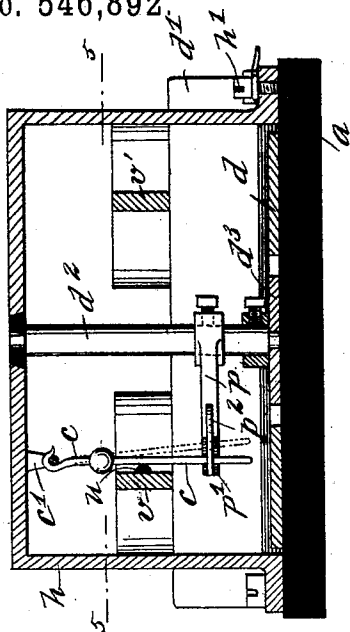


Fig. 3

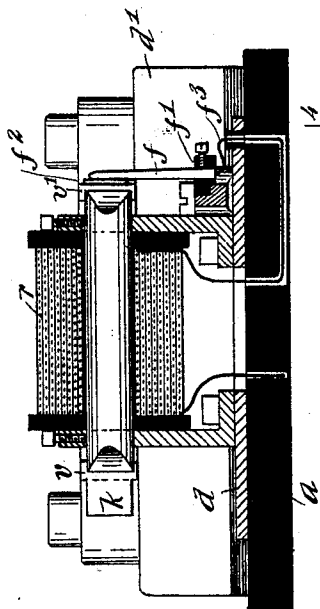


Fig. 6

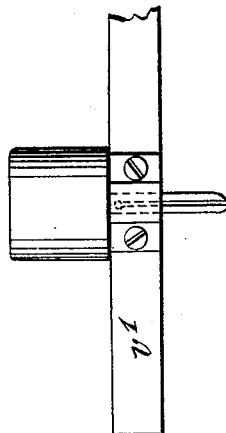
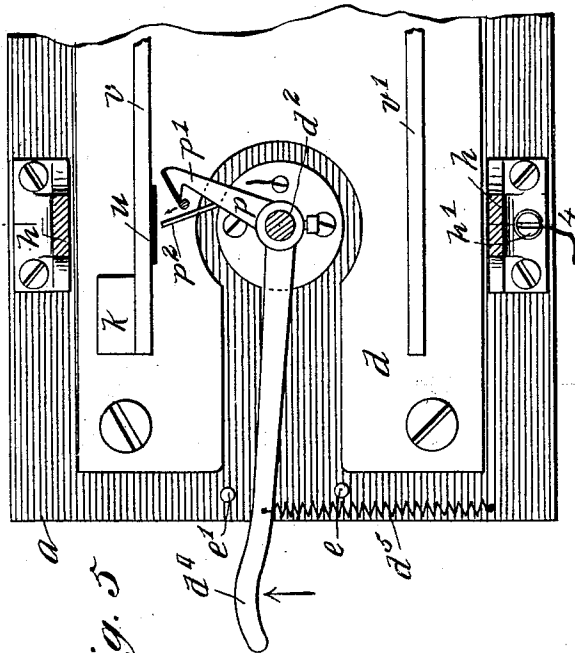


Fig. 5



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UNITED STATES PATENT OFFICE.

PAUL LA COUR, OF ASKOVSHUS, DENMARK, ASSIGNOR TO KARSTEN VIBORG TUXEN, OF BROOKLYN, AND PETER HOYKENDORF, OF NEW YORK, N. Y.

TELEGRAPHIC VIBRATOR.

SPECIFICATION forming part of Letters Patent No. 546,892, dated September 24, 1895.

Application filed May 7, 1895. Serial No. 548,416. (No model.) Patented in England August 4, 1893, No. 14,997.

To all whom it may concern:

Be it known that I, PAUL LA COUR, a subject of the King of Denmark, residing at Askovshus, Denmark, have invented certain new and useful Improvements in Electric Contacts for Telegraphic Vibrators, (for which I have obtained Letters Patent in England, dated August 4, 1893, No. 14,997,) of which the following is a full, clear, and exact description.

This invention relates to telegraphic vibrators—that is, elastic bodies, such as tuning forks and tongues—which it has been proposed to employ for the production of different electric signals by generating, through the medium of the said vibrators, intermittent electric currents acting upon distant vibrators having the same speed of vibration only, and upon no others. Upon such a system I have obtained Letters Patent in England, dated September 2, 1874, No. 2,999. As a signal of the kind described becomes manifest at the receiving-point only by the vibrations of corresponding tuning forks or tongues, the touch which is communicated to the fork or tongue by an ordinary “contact” is intermittent, and the electric current resulting therefrom is also intermittent. Such a current acts but feebly on the alarm apparatus, and is further weakened on account of the electromagnetic induction resistance, and the numerous sparks, when the currents are broken, have an injurious effect upon the contacts, and the alarm lasts only as long as the vibrations, whether they are noticed or not. All these disadvantages are obviated by the improved contacts which form the subject of the present invention.

In the accompanying drawings, which are in illustration of the invention, Figure 1 shows a side view of a complete vibrating apparatus with parts broken away; Fig. 2, a broken plan view of the same. Figs. 3 and 4 are sectional elevations on lines 3 3 and 4 4, respectively, of Figs. 1, 2, and 5. Fig. 5 is a partial sectional plan on line 5 5 of Fig. 4, and Fig. 6 is a detail view of a weight attachment for varying the speed of vibration.

a is an ebonite plate; d , a brass plate; d' , a brass block fixed upon d , but insulated from it by a washer a' . On the block d' two mag-

netized-steel rods v and v' are fixed as vibrators, one with its north pole and the other with its south pole opposite the pole of the electromagnet r , the ends of the insulated wire from which pass through the bottom plate. A lever g is arranged so that it can turn upon its center g' , which is screwed into the base-plate, the position of the lever being adjusted by means of a fine-threaded screw g^2 , against which the lever is pressed by the spring g^3 . The lever carries an insulated block f' , which in turn carries the platinum spring f , and the latter, by means of the screw g^2 , can be adjusted in such a position that it just touches a small platinum plate f^2 , which is fixed to the vibrator v' .

From f an insulated wire f^3 passes through the base-plate. This wire is connected with one end of the wire round the electromagnet r , and the other end is connected with one pole of a battery B , the other pole of which communicates with the vibrator v' by means of the screw v^2 , so that the vibrator v' is attracted by the electromagnet r , and the vibrator is set into active vibration in consequence of the automatic making and breaking of the contact, so that the electric current is intermittent.

The number of the vibrations, and consequently the number of the currents, per second may be altered by placing different weights, such as shown in Fig. 6, in a hole n in a small brass block fixed upon the vibrator v' . The other vibrator v is provided with a fixed block k , which by its weight determines the number of vibrations.

On the ebonite plate a a conducting-bracket h is fixed, which carries a platinum eye or hook c' , on which a pendulum c is suspended. The latter may be made wholly or partly of platinum, or, as illustrated in Fig. 4, of a platinum wire and a brass ball. When in a vertical position, the pendulum touches an insulated part of the vibrator—for instance, a small projection u , fixed upon the vibrator. In addition the pendulum is limited in its movement by a catch $p\ p' p^2$, the shape of which is shown best in Figs. 2 and 5. It consists of a hook p' , the oblique edge of which, turning toward the vibrator, is insulated, so that it does not cause any electric connection

with the pendulum c when vertical, while the edge of the hook, which is of platinum and is turned from the vibrator, is a conductor. The catch is also provided with an arm of the angular shape shown at $p p^2$. When the vibrator is working, it pushes against the pendulum, which moves in the space between the projection u and the parts $p' p^2$ and is caught at once by the hook p' . (See dotted lines in Figs. 2 and 5.) The catch is fixed upon a vertical axle d^2 , the upper end of which turns in an insulated support in the bracket h , while its lower end is carried in a brass plate d^3 upon the ebonite plate a . On the axle d^2 a handle d^4 is also fixed and is held by means of a spring d^5 against a stop e . If, however, the handle is turned against the stop e' , the axle d^2 is turned, together with the catch, in such a way that the hook is removed from the pendulum, which then resumes its normal position. (See Figs. 5 and 1.) Accordingly there is electric communication from the binding-screw h' , through the pendulum c , the axle d^2 , and the bottom plate d^3 only when the pendulum c is caught by the hook p' and as long as the pendulum remains in this position—that is, until the handle d^4 is turned to disengage the pendulum. The connection established thereby closes a local current and is used for signaling, ringing, or the like, as desired.

In Fig. 2, m indicates a battery, and b a bell in circuit therewith, the circuit being completed through the binding-screw h' and the bottom plate d^3 , as shown.

The arrangement of the details may be modified in various ways without essentially altering the principle of the invention, in which the contact-piece is projected or thrown over into an active position when the apparatus commences to operate. For instance, the pendulum and the catch may be differently shaped, and the pendulum may be brought back from the position in which it is held by the catch to its normal position in other ways instead of by the handle. An electromagnet, for instance, may be used for the purpose. Further, the method of insulation and of conducting may be differently arranged, in such a way, for instance, that the pendulum would allow a current to pass in its normal position, while the current would be interrupted when the pendulum is held back by the catch. Any electrician will readily see different ways of effecting this.

The essential point of the invention is the use of a movable body, such as a pendulum, which, in its normal position, is in contact

with a vibrator, while, when the latter is set in motion, the movable body is pushed forward and held by a catch, a different electrical condition being thereby established, causing a signal to be transmitted, which continues until the movable body is returned to its normal position.

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

1. The combination, with a vibrator, of a loose circuit-controlling body movable relatively to the vibrator and arranged to be actuated by the movement thereof, and a catch for automatically holding back the said circuit-controlling body after it has been actuated by the movement of the vibrator, substantially as described.

2. The combination, with a vibrator, of a separately mounted movable circuit-controlling body normally in contact with the vibrator, and a catch for holding the said circuit-controlling body back from the vibrator after the said body has been actuated by the vibrator, substantially as described.

3. The combination, with an independently movable vibrator, of a circuit-controlling pendulum suspended adjacent thereto so as to be actuated by the movement of the vibrator, and a catch for holding the pendulum back after it has been actuated, substantially as described.

4. The combination, with the vibrator, the separately mounted movable circuit-controlling body arranged to be actuated by the movement of the vibrator, the catch constructed to engage the said body, and means for releasing the said body from the catch, substantially as described.

5. The combination, with the vibrator, the separately mounted movable circuit-controlling body arranged to be actuated by the movement of the vibrator, the movable catch constructed to engage the said body, and means for operating the catch to release the body, substantially as described.

6. The combination, with the vibrator, the separately mounted movable circuit-controlling body arranged to be actuated by the movement of the vibrator, and the catch having an insulated portion normally facing the said movable body, and a conducting portion engaging the movable body after the same has been actuated, substantially as described.

PAUL LA COUR.

Witnesses:

ROBT. J. KIRK,
CHARLES BUDE.