

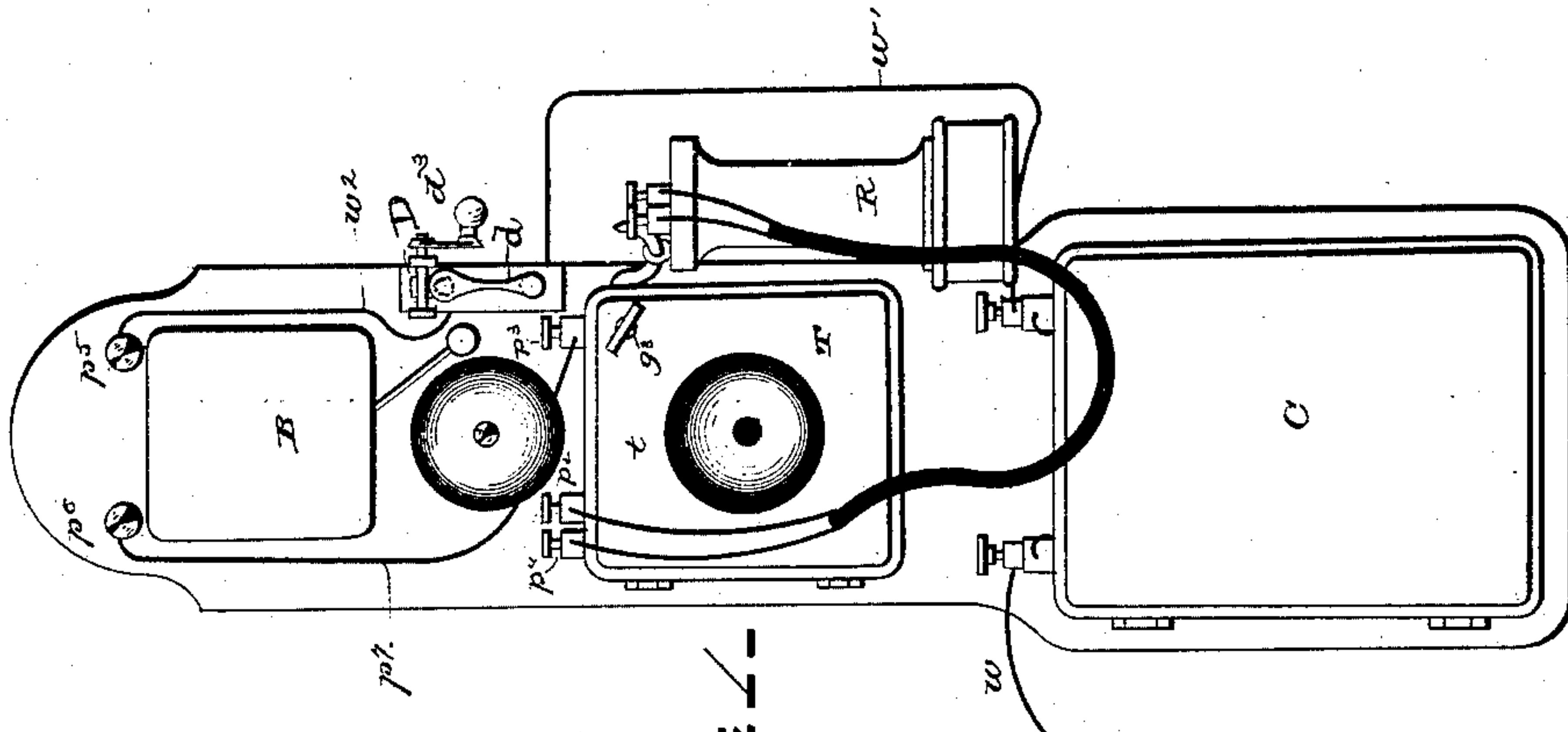
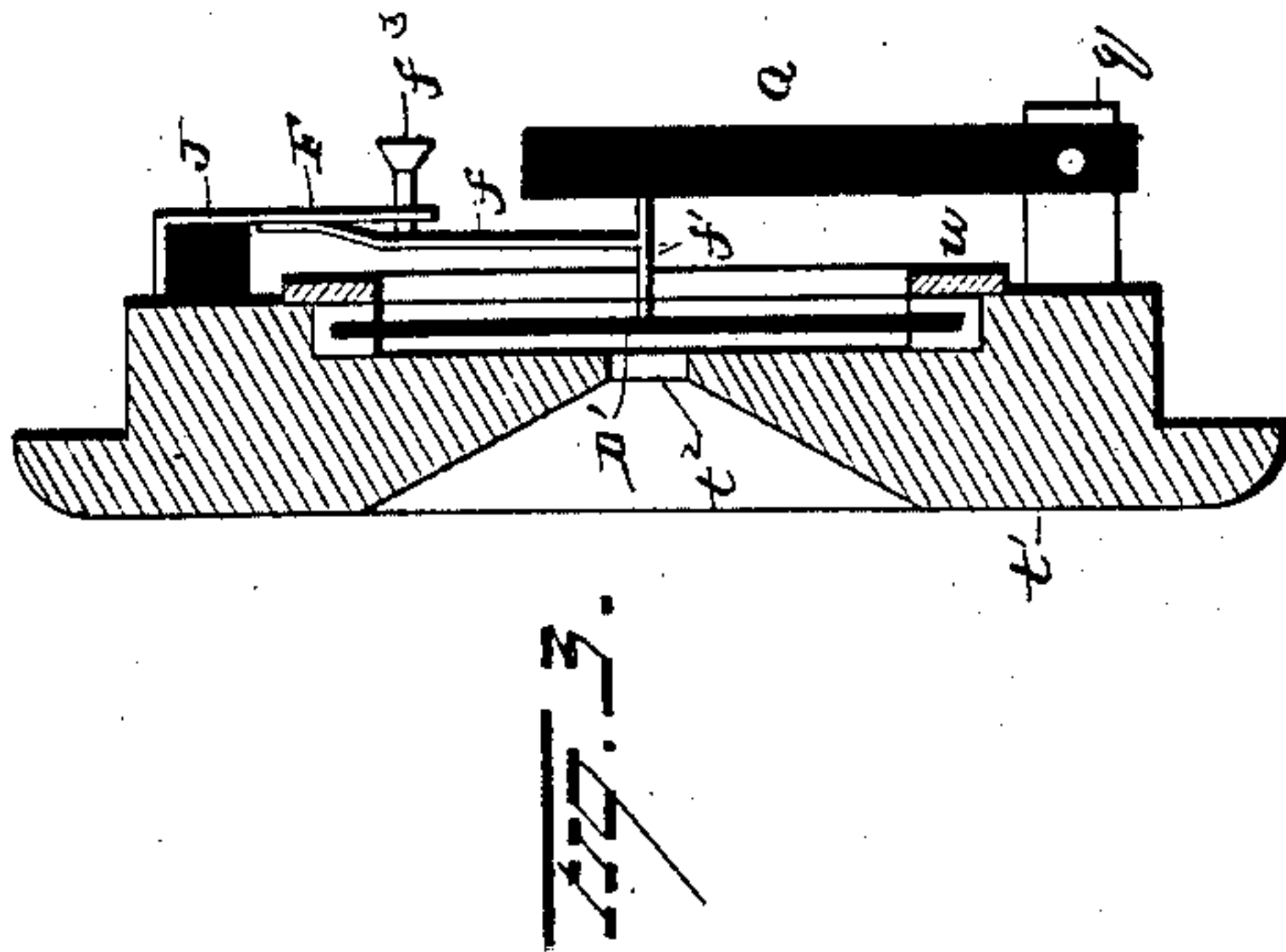
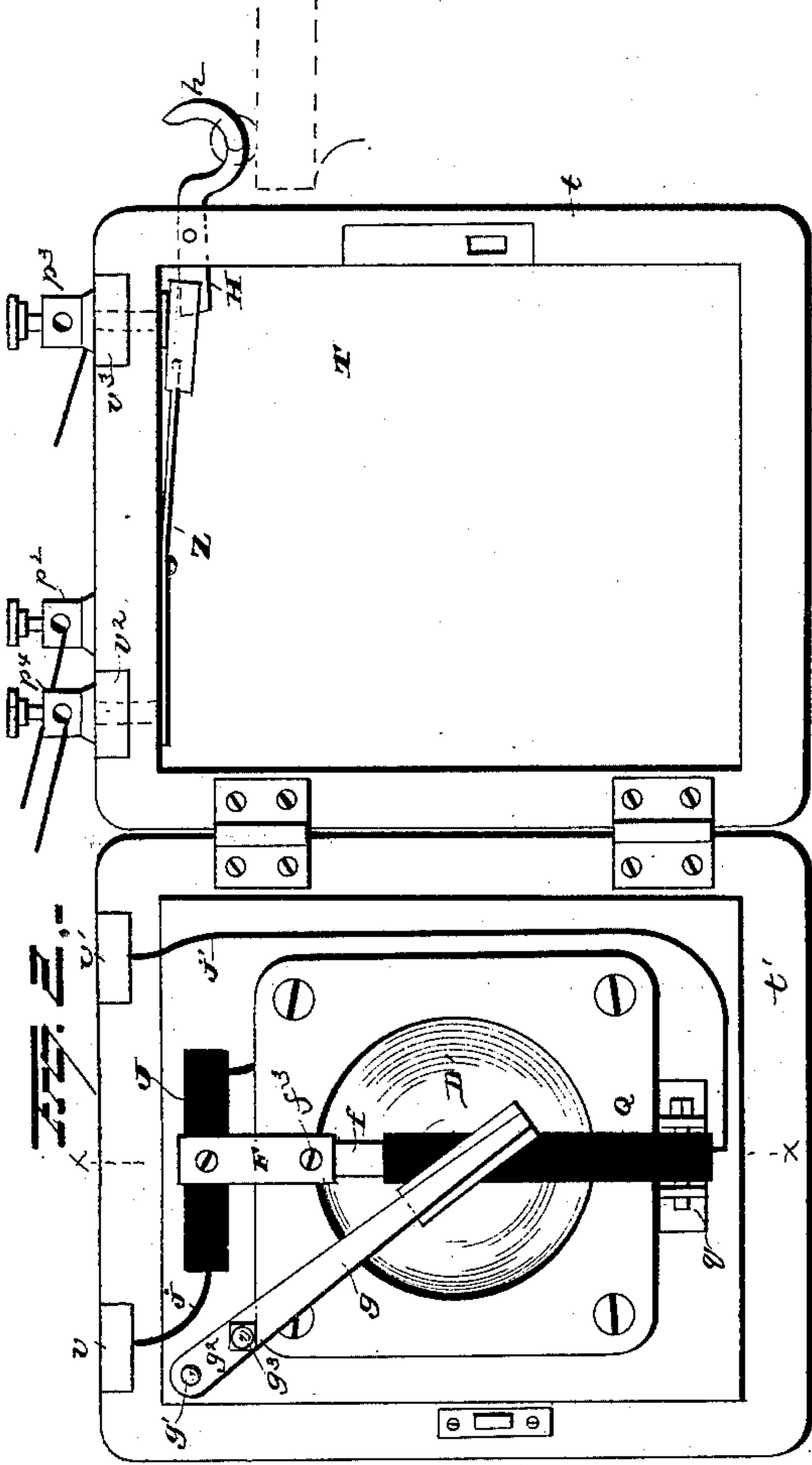
(No Model.)

J. T. GUTHRIE.

TELEPHONIC TRANSMITTING APPARATUS.

No. 338,263.

Patented Mar. 23, 1886.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JAMES T. GUTHRIE, OF LEESBURG, OHIO.

## TELEPHONIC TRANSMITTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 338,263, dated March 23, 1886.

Application filed November 10, 1885. Serial No. 182,327. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES T. GUTHRIE, of Leesburg, in the county of Highland and State of Ohio, have invented certain new and useful  
5 Improvements in Telephonic Transmitting, Calling, and Switching Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to  
10 which it appertains to make and use the same.

My invention relates to improved telephonic transmitting apparatus having in view the following objects: First, to secure currents of high inductive power for the operation of  
15 telephonic receiving-instruments, it being well known that the induced currents now ordinarily used, while having high tension, have very low magnetizing capacity; secondly, to reduce the cost of telephonic transmitters.

20 In the accomplishment of these objects my invention consists in certain novel constructions and combinations of devices, which will be fully understood from the following particular description in connection with the accompanying drawings, in which—

Figure 1 is a front view of a telephone subscriber's station apparatus comprising my improvements. Fig. 2 is a view of the transmitter with its door open. Fig. 3 is a vertical  
30 section on the line  $x x$  of Fig. 2.

The casing  $t$  of my improved transmitter  $T$  is provided with a hinged door,  $t'$ , at the center of which is formed a concave depression having at its center an opening at  $t^2$ , about one-  
35 half inch in diameter. Behind this opening is the center of the transmitter-diaphragm  $D$ , which is a disk of thin sheet metal (preferably ferrotype-plate) about two and a half-inches in diameter. The margin of this diaphragm is  
40 covered on both sides with india-rubber, and it is laid flatwise against the back of the door, and there secured by a ring,  $u$ , of metal attached to the door by screws. Above the diaphragm and its securing-ring a small bar,  
45  $J$ , of carbon is screwed firmly to the non-conducting door, and attached to and depending from this carbon bar is a short metallic arm,  $F$ , from an intermediate point of which, on the side next to the diaphragm, a thin strip-  
50 spring,  $f$ , of metal extends downward to the center of the diaphragm, and is provided with a cross-arm,  $f'$ , one end of which bears lightly

against the diaphragm at its center, and the other projects outward and comes in contact with a block,  $Q$ , of plumbago, which has its lower  
55 end hinged to the door below the diaphragm, and is held upright by a light spring-arm,  $g$ , on a post,  $g'$ , and having a stiff short arm,  $g^2$ , the end of which is swiveled to the tip of a thumb-screw,  $g^3$ , passing through the door and  
60 accessible from without for adjusting the pressure of the block of plumbago against the cross-arm  $f'$ . A small screw,  $f^3$ , in arm  $F$  serves to adjust the spring  $f$ . The block  $Q$  of plumbago and the cross-arm  $f'$  are the  
65 electrodes, the varying pressure between which regulates the character of the electrical impulses which flow upon the line, the variation of such pressure resulting from movements of the diaphragm in response to sound-undula-  
70 tions projected against it. One end of the carbon bar  $J$  is connected by a short wire,  $j$ , with a metal plate,  $v$ , let into the rear upper margin of the door, and a similar plate,  $v'$ , is  
75 connected by a wire,  $j'$ , with the metal bracket  $g$ , in which the plumbago block  $Q$  is hinged. These two plates  $v v'$  are arranged to press against two strip-springs,  $v^2 v^3$ , which project from the binding-posts  $p^2 p^3$  on the top of the casing  $t$ , so that when the door is closed elec-  
80 trical connection from the two electrodes will be made to said binding-posts, and at the same time the door may be freely opened. Upon the top of the casing is also another binding-post,  $p^4$ , the use of which will presently ap-  
85 pear.

In the battery-casing  $C$  is to be located a battery, preferably of the class known as "bichromate-of-potassium batteries." From one pole of this battery a wire,  $w$ , leads to earth, or  
90 connects with the line leading to another station, and from the other pole a wire,  $w'$ , leads to the circuit-breaker  $D$  and connects with a metal finger-spring,  $d$ , the opposite end portion of which bears upon the top of a metal  
95 post,  $d'$ . Transversely under the spring-finger  $d$  is mounted a small revolving shaft,  $d^2$ , provided at one end with a crank,  $d^3$ , intermediately and under the tip of the spring-finger  $d$ . It has two wings,  $d^4 d^4$ , extended so far  
100 radially that when the shaft is revolved these wings will successively strike the tip of the spring and raise it out of contact with post  $d'$ . From this post  $d'$  a wire,  $w^2$ , leads to a bind-



ing-post,  $p^5$ , which is connected with one terminal of the bell-magnet, (not shown,) the other terminal of which is connected to a post,  $p^6$ , from which a wire,  $p^7$ , leads to the binding-  
 5 post  $p^3$  on the transmitter-case. From this post the spring  $v^3$  makes connection to plate  $v'$ , from whence the circuit through the electrodes and to post  $p^2$  has been already explained. From post  $p^2$  the current leads through the re-  
 10 ceiving-telephone R to post  $p^4$ , and thence off over the line-wire L, leading toward the central station, or through an intermediate station.

I do not confine myself to the precise construction and arrangement of parts as heretofore described, and as shown in my drawings, but reserve to myself the right to vary the same in any manner for the better carrying out of my invention without departing from the true spirit and scope thereof.

20 The calling and switching devices herein described and shown are not claimed, as they will form the subject-matter of a separate application.

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

1. In a transmitting-telephone, the combination, with the diaphragm, of the carbon bar, the metal arm and spring metallic electrode supported thereby, and the plumbago electrode 30 bearing against said metallic electrode, essentially as set forth.

2. In a transmitting-telephone, the combination of a diaphragm, a vibrating metallic electrode in contact with said diaphragm, and 35 a hinged plumbago electrode, Q, resting against the outer end of the metallic electrode, substantially as shown and described.

3. The combination, with the diaphragm, the metallic electrode, and the hinged plumbago electrode, of the adjustable spring-arm arranged to press the plumbago electrode against the metallic electrode, substantially as described. 40

In testimony whereof I have signed this 45 specification in the presence of two subscribing witnesses.

JAMES T. GUTHRIE.

Witnesses:

W. T. GOVAN,  
 L. L. SECRIST.