

(No Model.)

E. H. AMET.
TALKING MACHINE APPARATUS.

No. 573,071.

Patented Dec. 15, 1896.

FIG. 1.

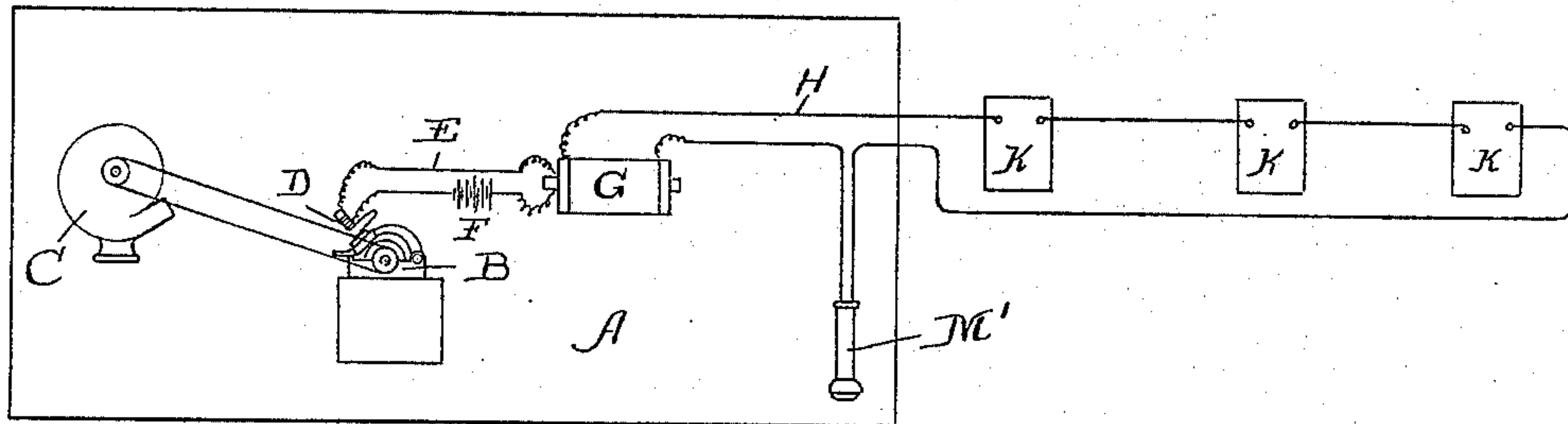


FIG. 2.

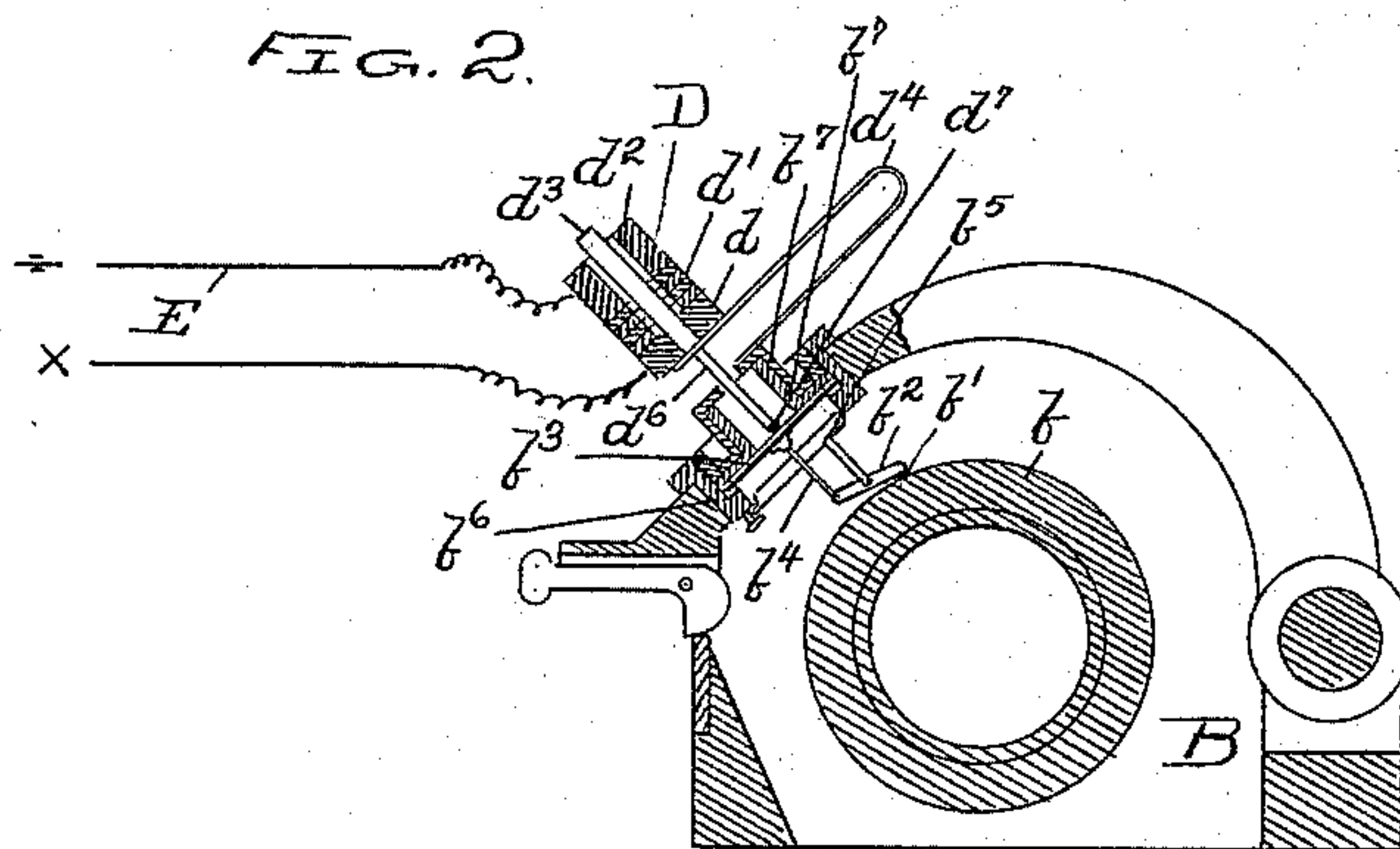


FIG. 3.

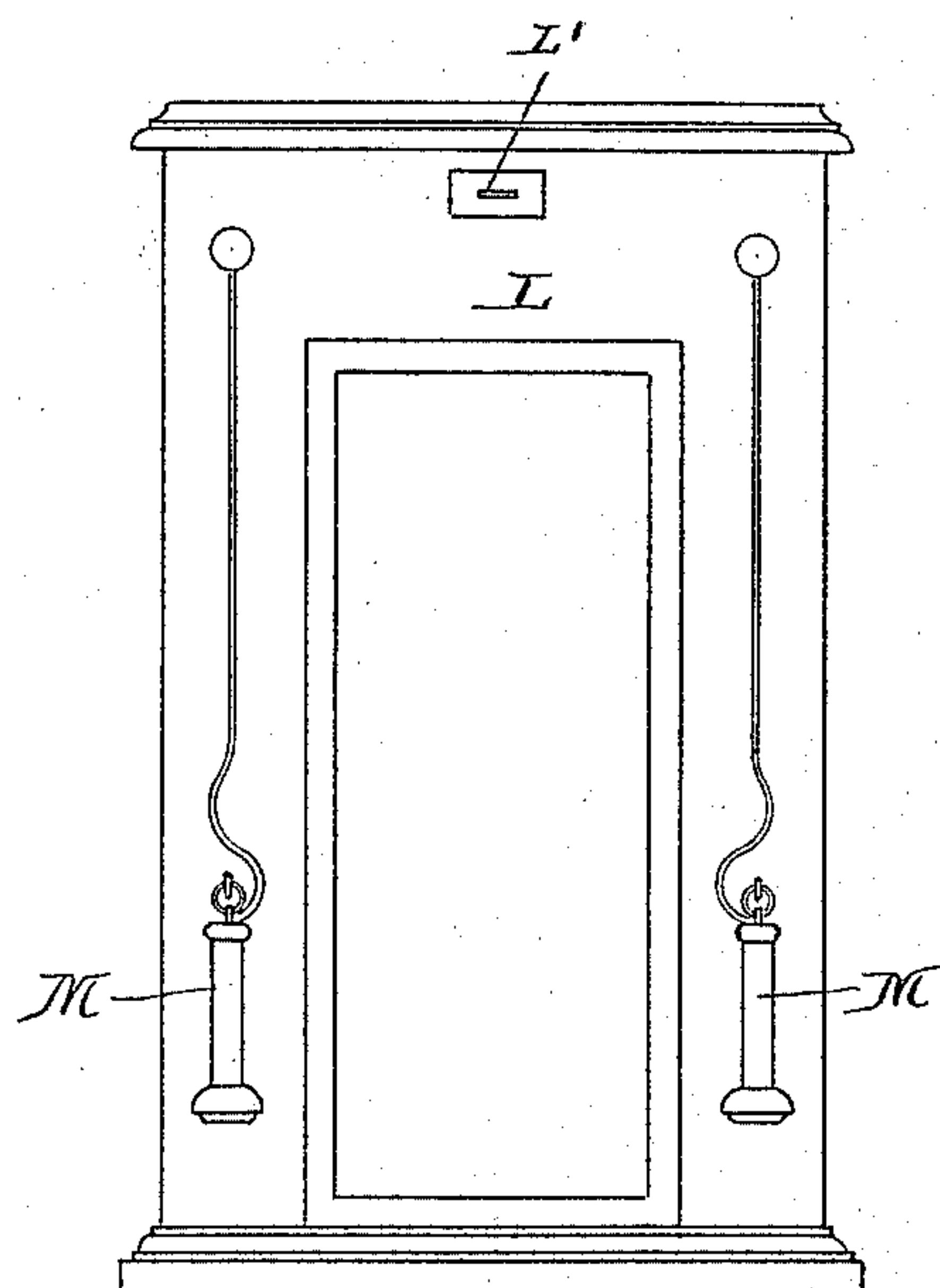
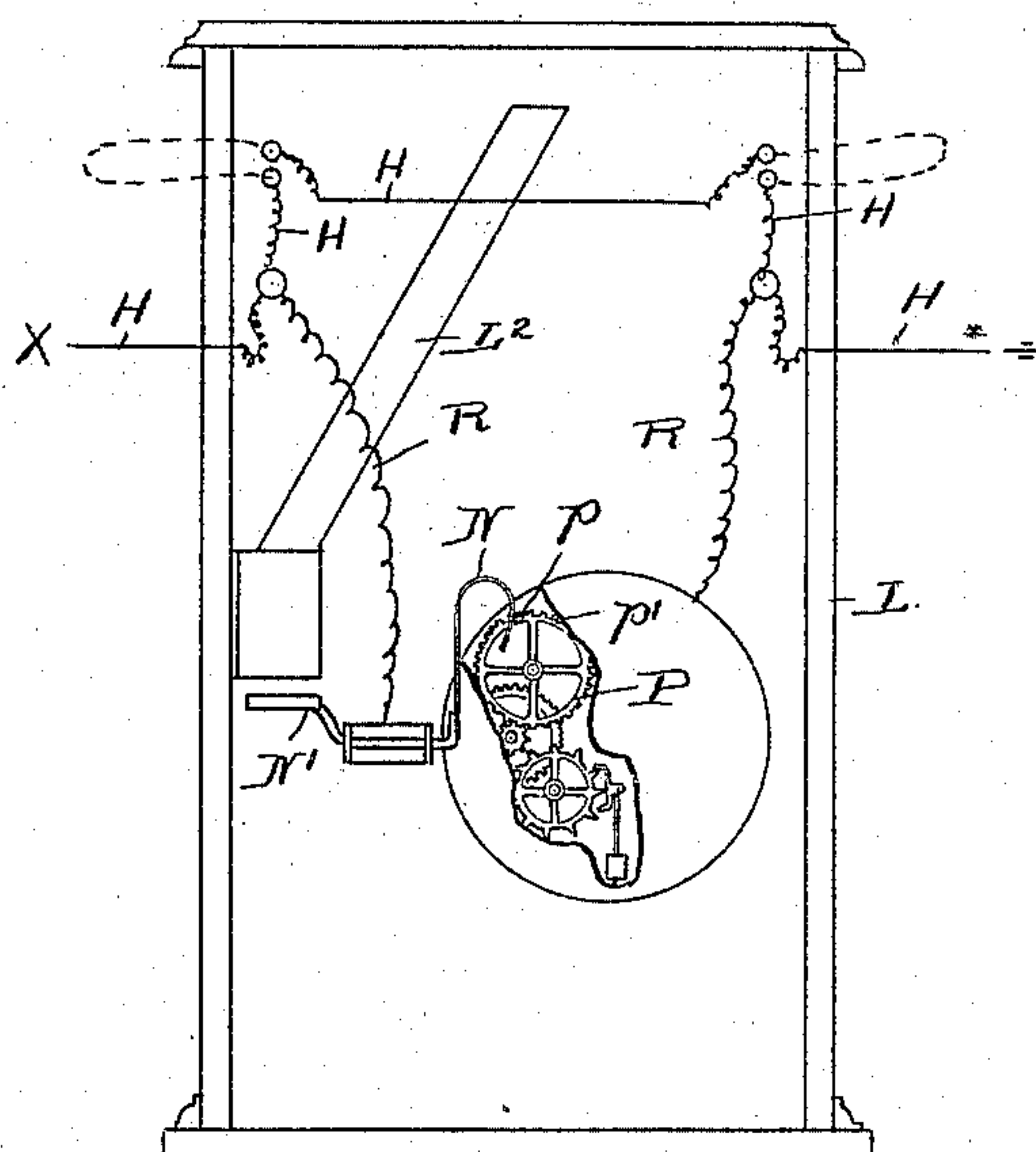


FIG. 4.



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UNITED STATES PATENT OFFICE.

EDWARD H. AMET, OF WAUKEGAN, ILLINOIS.

TALKING-MACHINE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 573,071, dated December 15, 1896.

Application filed September 21, 1894. Renewed June 13, 1896. Serial No. 595,497. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. AMET, a citizen of the United States, residing in Waukegan, in the county of Lake and State of Illinois, have invented a new and useful Improvement in Talking-Machine Apparatus, of which the following is a specification.

My invention relates to improvements in talking-machine apparatus.

Heretofore in the ordinary slot-machine or coin-controlled talking-machine apparatus it has been customary to employ at each station a complete graphophone and motor for running it in connection with a coin-controlling mechanism. The first cost of this complete machine for each station is therefore considerable, and it is a matter of continual expense to keep it in repair, as the machine is frequently manipulated by careless and inexperienced persons.

The object of my improvement is to provide a talking-machine apparatus wherein a large number of stations may be supplied or operated by a single talking-machine or graphophone at a central station, thus saving the expense of the large number of graphophones necessarily employed heretofore, (one for each station,) and whereby, also, at the same time the words, songs, or music reproduced at the several stations may be freed from the disagreeable harsh and scratchy noise due to the movement of the graphophone-needle over the wax cylinder, while at the same time the use of the apparatus at each and every station may be controlled by coin or token through a slot-machine mechanism located at each station.

To this end my invention consists, in connection with a graphophone or other talking-machine located at a central station, of a variable-resistance pile supported upon and connected with the needle of the talking-machine, this variable-resistance pile being included in the primary circuit of an induction-coil the secondary circuit of which leads to the several stations, each of which stations has a telephone adapted to be included in this secondary or telephone circuit by a circuit-breaker operated by the coin or token and controlled by a time-train or clock mechanism located at each station, so that through

the action of the variable-resistance pile all the vibrations of the talking-machine needle will be reproduced in each and all of the telephones that may be in circuit.

My improvement also consists in the novel features and combinations herein shown and described, and particularly specified in the claims.

In the accompanying drawings, which form a part of this specification, I have shown at Figure 1 a diagram of a system or apparatus embodying my invention. Fig. 2 is a vertical transverse section taken through the needle of the talking-machine. Fig. 3 is a front view of the box or case located at each station furnished with the slot for receiving the coin or token and containing the circuit-breaker and time-train or clock mechanism for regulating the time the telephone remains connected with the circuit. Fig. 4 is a view similar to Fig. 3, with the front of the case broken away to disclose the clock mechanism and circuit-breaker.

In the drawings the same part is indicated by the same reference-letter in all the different figures.

In the drawings, A represents the central station, at which is located the talking-machine B, the motor C for running it, the variable-resistance pile D, the primary circuit E, battery F, and the induction-coil G.

The talking-machine B may be of any known or suitable construction, and its parts need no detailed description, *b* being the wax cylinder; *b'*, the needle; *b²*, the lever carrying the needle; *b³*, the diaphragm; *b⁴*, the connection between the diaphragm and needle-lever; *b⁵*, the pivoted lever supporting the needle-lever; *b⁶*, the ring or pin to which the diaphragm is secured, and *b⁷* the thimble upon which the ear-tube is ordinarily secured.

The variable-resistance pile D consists, preferably, of a terminal carbon disk *d*, a series of loose carbon disks *d'*, and the other terminal carbon disk, *d²*. The lower carbon disk *d* has fixed to it a core or pin of wood fiber or other insulating material *d³*, upon which the loose carbon disks *d'* and *d²* are supported. The variable-resistance pile D is supported upon a light spring *d⁴*, preferably of a U shape, one limb of which is fixed to the thimble *b⁷* and the other

limb of which is fixed to the terminal disk d , and the carbon pile is connected with the diaphragm b^3 of the talking-machine by a pin d^6 , which is preferably furnished with a rubber cushion d^7 on the end bearing against the diaphragm. The loose terminal carbon disk d^2 is made thicker and heavier than the intermediate disk d' , so that its gravity will serve to maintain the requisite pressure or contact between the several carbon disks of the pile. By reason of the connection between the variable-resistance or variable-contact pile D and the needle of the talking-machine the vibrations of the needle produce corresponding pulsations in the electric current on the circuit E, (one terminal of which is connected to the fixed terminal d and the other to the loose terminal d^2), owing to the variation in contact and pressure between the several carbon disks of the pile produced by the vibrations of the needle communicated to the pile, and the pulsations or variations in the primary current E are of course reproduced in the induced current on the telephone-circuit H, leading to the several stations K, at which are located the boxes L, containing the telephones M, circuit-breaker N, and time-train or clock mechanism P.

The box or case L may be of any ordinary form or construction, and is furnished with a slot or opening L' for receiving the coin or token and a chute or conductor L^2 for conveying the coin or token to the pivotal arm or lever N' , which moves or operates the circuit-breaker spring or contact-piece N. The other contact-piece, which engages the contact-piece N, consists of a pin or projection p on one of the wheels p' of the time-train or clock mechanism P, so that the secondary or telephone circuit H, which remains normally closed through the contact-pieces N and p and the clock mechanism, may be broken during the interval that the wheel p' makes one revolution, so that during this interval the telephone M will thus be included in the circuit and ready for use, as clearly illustrated in Fig. 4. The time required for one revolution of the wheel p' of the clock-train is sufficient to complete the song, piece of music, or other composition on the wax cylinder of the talking-machine B.

The spring-contact or circuit-breaker N is preferably made of the form indicated in the drawings, and the strength of the spring should be comparatively slight, so that when the contact-pin p strikes against the spring and the clock-train is thus stopped the spring will be slightly compressed and thus cause the spring to come on the opposite side of the pin p , when the spring is again momentarily swung out of the path of the pin p and returned to position. But for this compression of the spring-contact N there would be danger of its again striking on the wrong side of the pin p , as the clock-train naturally starts somewhat slowly, and the wheel p' , having a very slow movement, and as the coin dropping

against the lever N' only momentarily moves the circuit-breaker N out of the path of the pin p on the wheel p' .

I preferably provide two telephones M M at each station, so that the user may hold one to each ear, as this adds somewhat to the ease of hearing and serves in some measure to exclude outside noises or sounds.

The operation is as follows: By the motor C the talking-machine B is kept continuously running at the central station, so that whenever a coin or token may be dropped into the slot L' of the box L at any one or more of the working or sub stations K the short circuit R, through the clock mechanism P and contacts N p , will be broken by action of the coin against the circuit-breaker lever N' for the time or interval required for the wheel p' to make one complete revolution, thus putting the telephones M M in the circuit H ready for use. When the wheel p' completes its revolution, the short circuit R, through the clock mechanism, will be again automatically closed by the pin striking against the contact N, thus cutting out the telephones. As the circuit H is a closed circuit at each and all the stations K, either through the clock mechanism or through the telephone, one or more or all the telephones may be used at one and the same time, thus reproducing at one or more or all the substations the composition on the cylinder of the talking-machine. Ordinarily I arrange the clock mechanism so that the time required for one complete revolution of the wheel p' is sufficient to repeat twice the song or other composition on the cylinder of the talking-machine, so that any user may hear the same from its beginning to its end once at whatever point the operation may happen to begin, owing to the fact that the cylinder of the talking-machine is revolving continuously. At the central station A, I preferably also include in the secondary or telephone circuit H a telephone M', so that the operator at the central station may at all times be able to tell whether the talking-machine is operating properly.

By combining the variable-resistance or variable-contact pile D directly with the needle of the talking-machine the sound vibrations or pulsations are produced with great distinctness and clearness on the telephone-circuit and in the telephones.

I have illustrated in the drawings what I believe to be the simplest and best means for connecting the carbon pile D with the needle of the talking-machine; but my invention is not limited to the particular mechanism employed for this purpose, as any suitable mechanism may be used which will serve to transmit the vibrations of the needle to the pile of carbon disks, as will be obvious to those skilled in the art.

I claim—

1. The combination with a talking-machine located at a central station, of a motor running the same continuously, a variable-re-

sistance pile connected with and operated by the needle of the talking-machine, a primary circuit in which said pile is included, a secondary or telephone circuit leading to a series of substations, each of which is furnished with a time-train, a coin or token controlled circuit-breaker and a telephone adapted to be included in the telephone-circuit when said telephone-circuit is broken through the time-train by operation of the coin or token, substantially as specified.

2. The combination with a talking-machine located at a central station, of a variable resistance connected with and operated by the needle of the talking-machine, a primary circuit in which said variable resistance is included, a telephone-circuit, and a series of telephones therein located at a series of sub-

stations, and a series of slot-machine or coin-controlled mechanisms at said substations for putting said telephones in and out of circuit, substantially as specified.

3. The combination with a telephone-circuit, of a series of telephones located at a series of substations and adapted to be included in said circuit, a series of slot-machines or coin-controlled mechanisms at said substations for putting said telephones in and out of circuit, a talking-machine at a central station and means for transmitting its sound-vibrations to said telephone-circuit, substantially as specified.

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Witnesses:

H. M. MUNDAY,
EDMUND ADCOCK.