

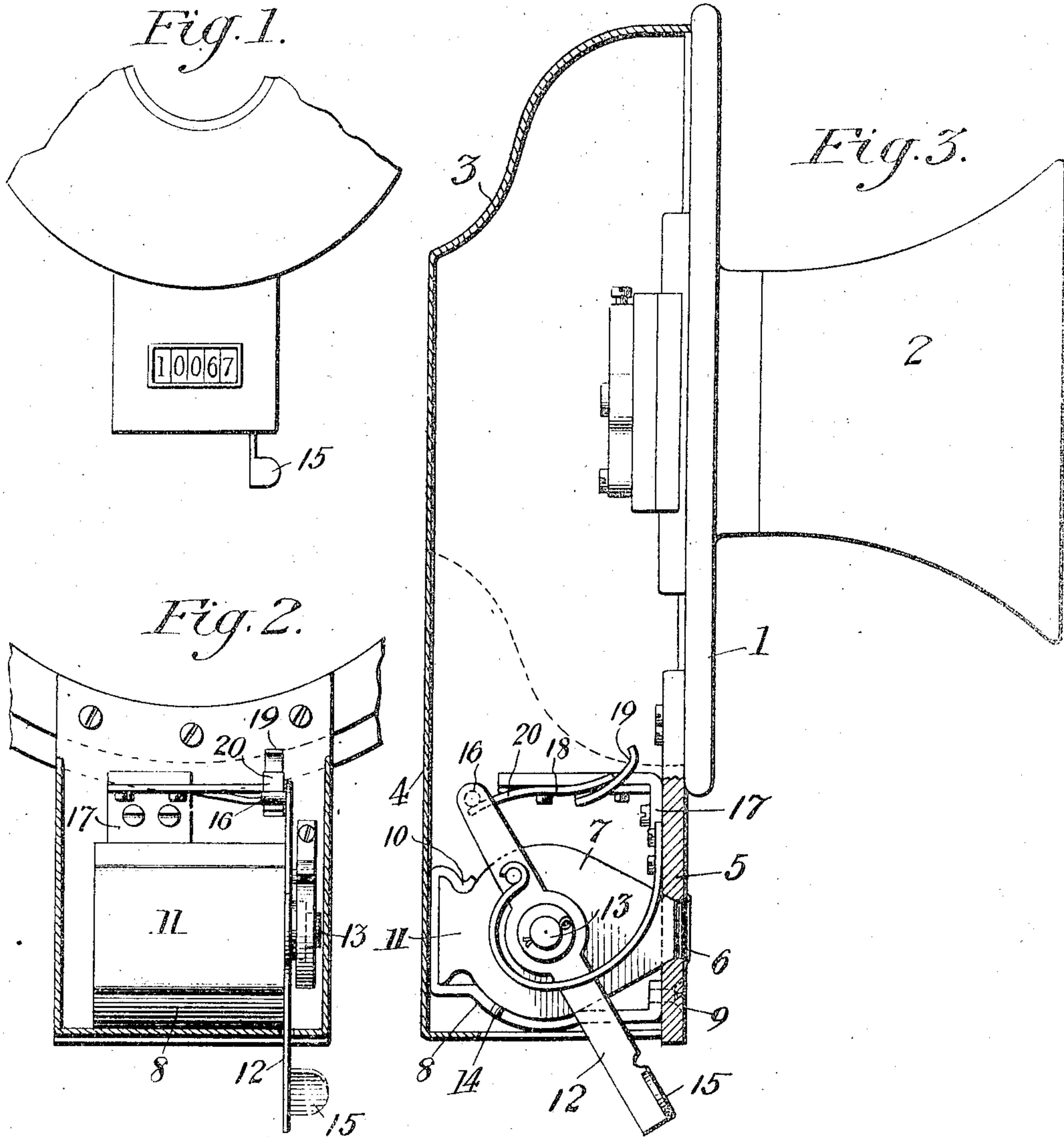
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W. W. DEAN.

CALL REGISTER FOR TELEPHONE SYSTEMS.

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CALL-REGISTER FOR TELEPHONE SYSTEMS.

No. 887,233.

Specification of Letters Patent.

Patented May 12, 1908.

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To all whom it may concern:

Be it known that I, WILLIAM W. DEAN, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Call-Registers for Telephone Systems, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to call registers for telephone systems, and has for its object the production of a form of register which shall be efficient, simple in itself, and also very simple in its mode of mounting. My register is of that type which is located at the subscriber's station, this being for many reasons the most desirable type of register to be used in systems where the charges are based upon the number of messages transmitted from any station. In such case, if the registers are located at the central office, or if the message-count is based upon tickets made out by the operators, it is not only very difficult to prevent losses, but it is more difficult to satisfy the subscribers that false charges are not made against them. By permitting the subscriber to register his own call, in such fashion that he can see and count the number of messages he has sent, at all times, three important ends are attained. The first is to satisfy the subscriber; the second is to relieve the operator of an undesirable addition to her work, and the third is to assure greater accuracy in the final records, with attendant saving of many calls which would otherwise be lost. It is true that with this system inspectors must be sent out to read the meters at stated intervals, but this has always been done in other public service systems, such as those supplying gas and electric light, and the expense of the inspectors has never been found prohibitive to my knowledge.

Several difficulties have heretofore existed in respect to subscriber's registers. They have been subject to being tampered with, they have not been susceptible of application to all types of instruments, and they have not always been "fool-proof," which is *sine qua non*. Anything placed at the subscriber's station must be capable of operating only as it is intended to perform its function. If any possible means exist for misoperating, or mishandling a piece of appa-

ratus, the subscriber or some of his family will find it. Practically the only act which the average person should be asked to perform in operating any apparatus is to push a button or lever. The intelligence of the untrained extends no further.

It has been proposed to attach registers to different portions of the telephone set, and toll boxes have been so attached, the idea being that a special sound produced in the dropping of a coin will produce sonorous vibrations in the frame or casing, thence in the transmitter, and thence by transmission over the line, in the operator's receiver. Such devices have not always worked well, for one reason because it is now common to insulate the diaphragm of the transmitter with a soft rubber band, which acts as a sound insulator as well as electrically. It has also been proposed to attach some portions of the toll apparatus or the like to the transmitter itself, but the attachment has always been unsatisfactory because being detachable of necessity, it could be taken off by other than authorized persons, and being fixed to other members than the transmitter, it necessarily limits the movement of the latter.

Briefly stated, my invention comprises as its characteristic and essential features the combined use of a Veeder cyclometer with a lever for operating it which at the same time operates the sounding reed. All of these parts according to my invention are mounted on a supporting plate secured directly to the front plate of the transmitter and are covered by an extension of or a part of the inclosing shell of the transmitter.

While I have illustrated and described a specific form of the invention, in which the reed and damper spring are in mechanical connection with or mounted on the lever. I am not limited to the specific details, because there are several changes which can be made without altering the character of the invention which resides in mounting the operating parts upon the front plate of the transmitter.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a fragmentary front elevation of a transmitter with my attachment secured thereto. Fig. 2 is a rear elevation of the register attachment with the casing in section and showing how it is attached to the trans-

mitter front plate of which only a fragment is shown. Fig. 3 is a side elevation of a transmitter with the inclosing shell in section.

Referring to the drawings, 1 represents a transmitter front, 2 the mouth-piece thereon, and 3 the inclosing casing, all of the ordinary or any desired type. Integral with the casing 3, is an extension shell 4 covered by a front plate 5 having an aperture at 6. This front plate 5 is secured to the front plate 1 of the transmitter and constitutes the supporting plate for the register mechanism, a description of which follows: The register 7, as I have stated, is of the Veeder cyclometer type and is secured to the supporting front plate 5 by means of a clip 8 fastened by screws 9 or other suitable means. This clip 8 is preferably bent into the shape shown with a foot portion 10 which engages the pedestal end 11 of the register 7 and also forms a stop for the return movement of the lever 12 journaled upon the shaft 13 of the register. A stop for the forward or operating movement of the lever is formed at 14, consisting of a small lug extending laterally from the side of the clip 8. The lever 12 projects through the casing 4 at one end where it is provided with a thumb piece 15, and at its opposite end carries an operating stud 16, the function of which will be more clearly set forth hereinafter.

Mounted on the front plate 5 is a bracket 17 which forms a support for the sounding reed 18 and for the damper spring 19, the latter of which is in normal engagement with the T-shaped head 20 of the sounding reed so as to prevent its vibration during a certain period of the operation. The T-shaped head lies in the path of the operating stud 16 so that said stud engages it in both its forward and retrograde movements.

From the foregoing it will be seen that all of the mechanism, including the register, the sounding reed, and the damper spring, is carried by the front supporting plate 5 which constitutes not only the supporting plate for the mechanism but also the front plate of the extension casing, thus dispensing with an additional cover plate. With this construction, all the elements of the device can be assembled prior to the attachment of the supporting plate to the front plate of the transmitter as is clearly shown in Figs. 2 and 3.

The operation of the device is as follows: After calling the operator at central in the usual manner and being told to register, the subscriber presses upon the thumb piece 15, thus operating the lever to carry the stud 16 over the T-shaped head 20 of the sounding reed 18. When the upper end of the T-shaped head is reached, the stud 16 slips off and engages the damper spring 19, which, if the lever is now carried to its extreme position, presses the damper spring away from the reed and allows it to vibrate, thus giving a

signal which is transmitted to the operator at central. In the return movement of the lever, the operating stud 16 goes back to normal position upon the opposite side of the T-shaped head of the reed. When the stud reached its normal position, the reed is disengaged so as to snap back into its normal position, but as the damper spring has been released by the stud and is now in engagement with the free end of the reed, the latter will not vibrate. Thus, while the reed is strained back and released, in opposite directions, twice in a complete movement of the lever (down and back), there will be only one sounding thereof and therefore only one signal given to the operator, and there will be no continued vibration to interfere with speech transmission. The T end of the reed is made sufficiently long to compel the lever to go through its complete cycle, up one side and down the other, before a number can be properly registered on the meter. This reed is also made and adjusted with respect to the register so that the ratchets on the counter will work slightly before the stud 16 reached its limits. This prevents the subscriber from giving a signal without causing the counter to register.

I have shown in dotted lines the general contour of the lower half of the transmitter, and it will be seen that by cutting away the transmitter at a point indicated by the dotted lines, the extension casing 4 may be attached to any transmitter now in service so as to contain the registering and signaling devices. It is preferable, however, to form a casing for the transmitter which comprises the shell 3 and the extension shell 4 and so construct them that they will be universal for all transmitter fronts.

While I have illustrated my invention in the most convenient way, it will be clearly understood that many modifications and changes may be resorted to in practice without departing in any way from the spirit or scope of the invention, and I wish it clearly understood that all such changes and modifications are contemplated by me and are within the purview of the appended claims.

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

1. The combination with a transmitter, of signaling and registering devices, and means for supporting said signaling and registering devices from the front plate of such transmitter inside of the chamber formed by the back of such transmitter.

2. The combination with a transmitter, of signaling and registering devices, means for operating them simultaneously and means for supporting them rigidly from the front plate of such transmitter and within the space inclosed by the shell of such transmitter.

3. The combination with a transmitter, of signaling and registering devices located within the transmitter casing, and a mounting plate therefor which is secured to and behind the front plate of the transmitter.

4. The combination with a transmitter having a front plate, of a mounting plate secured thereto, registering and signaling devices secured to said mounting plate, a common casing for the transmitter and for said registering and signaling devices, and operating means for said registering and signaling devices which projects from the casing.

5. The combination with a transmitter having a front plate, of a supporting plate secured thereto, a registering device having its numbers visible through an opening in the supporting plate, a signaling device carried by the supporting plate, means for operating the signaling device and the registering device simultaneously, and a casing for the transmitter which covers said registering and signaling devices.

6. The combination with a transmitter, of a supporting plate secured to the front plate of said transmitter, a clip secured to said supporting plate, a registering device carried by said clip operating means for the registering device, and limiting means carried by the clip to limit the movement of said operating means.

7. The combination with a transmitter, of a supporting plate secured to the front plate thereof and provided with an aperture, a clip secured to said supporting plate, a registering device secured by said clip so that its numbers will be visible through the aperture in the supporting plate, means for operating said registering device and limiting stops for the operating means carried by the clip.

8. In a call register for telephone systems, the combination with a transmitter front plate, of a supporting plate secured thereto and provided with a sight opening, a clip secured to said supporting plate, a registering device secured by the clip so that its numbers are visible through the sight opening, a signaling device carried by the supporting plate, means for operating said signaling device and said registering device simultaneously, stops for limiting the movement of said operating means, and a casing abutting the transmitter front plate and the supporting plate which covers said signaling and registering devices.

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

WILLIAM W. DEAN.

Witnesses:

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SAM B. RAWSON.