

No. 854,830.

PATENTED MAY 28, 1907.

R. H. MANSON.
CALL REGISTER FOR TELEPHONE SYSTEMS.
APPLICATION FILED OCT. 18, 1906.

2 SHEETS—SHEET 1.

Fig. 2.

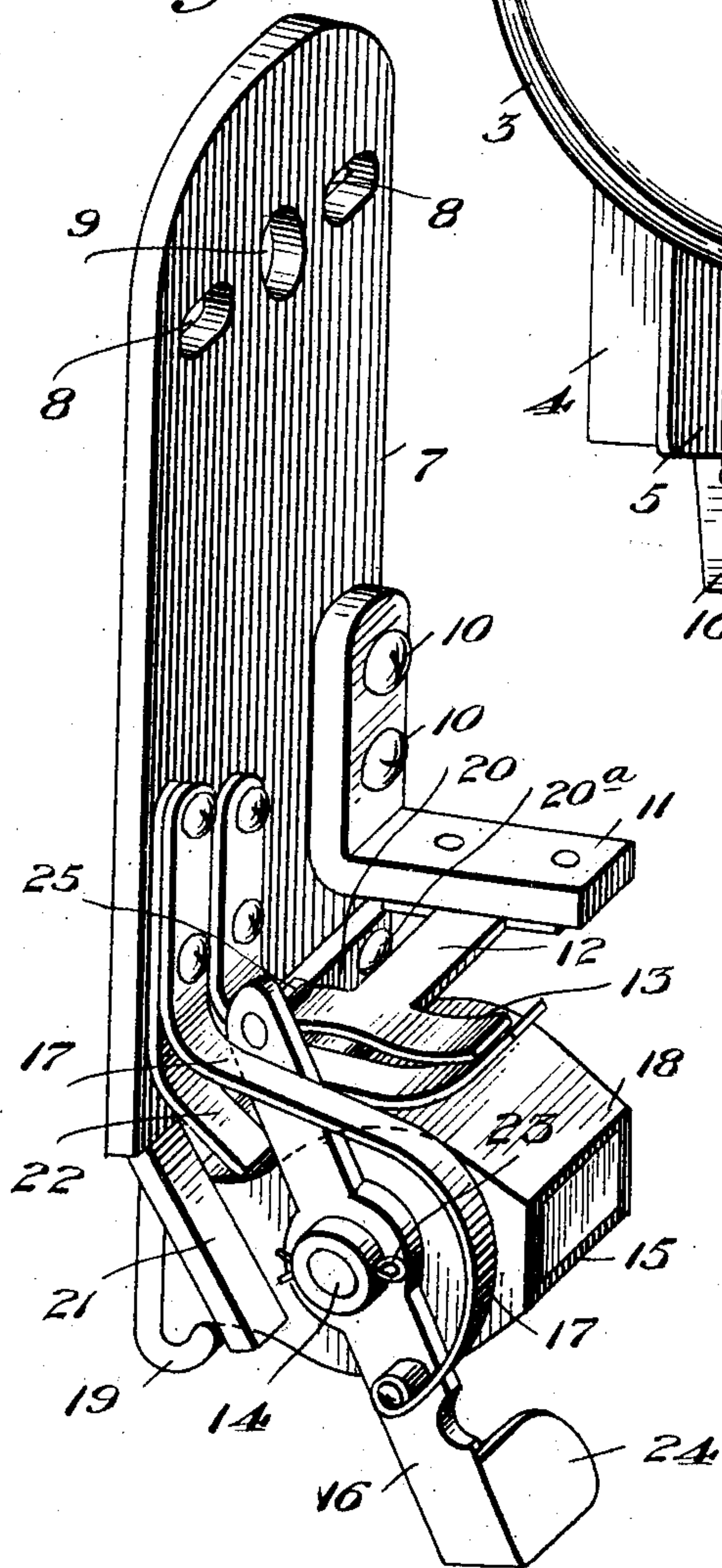


Fig. 1.

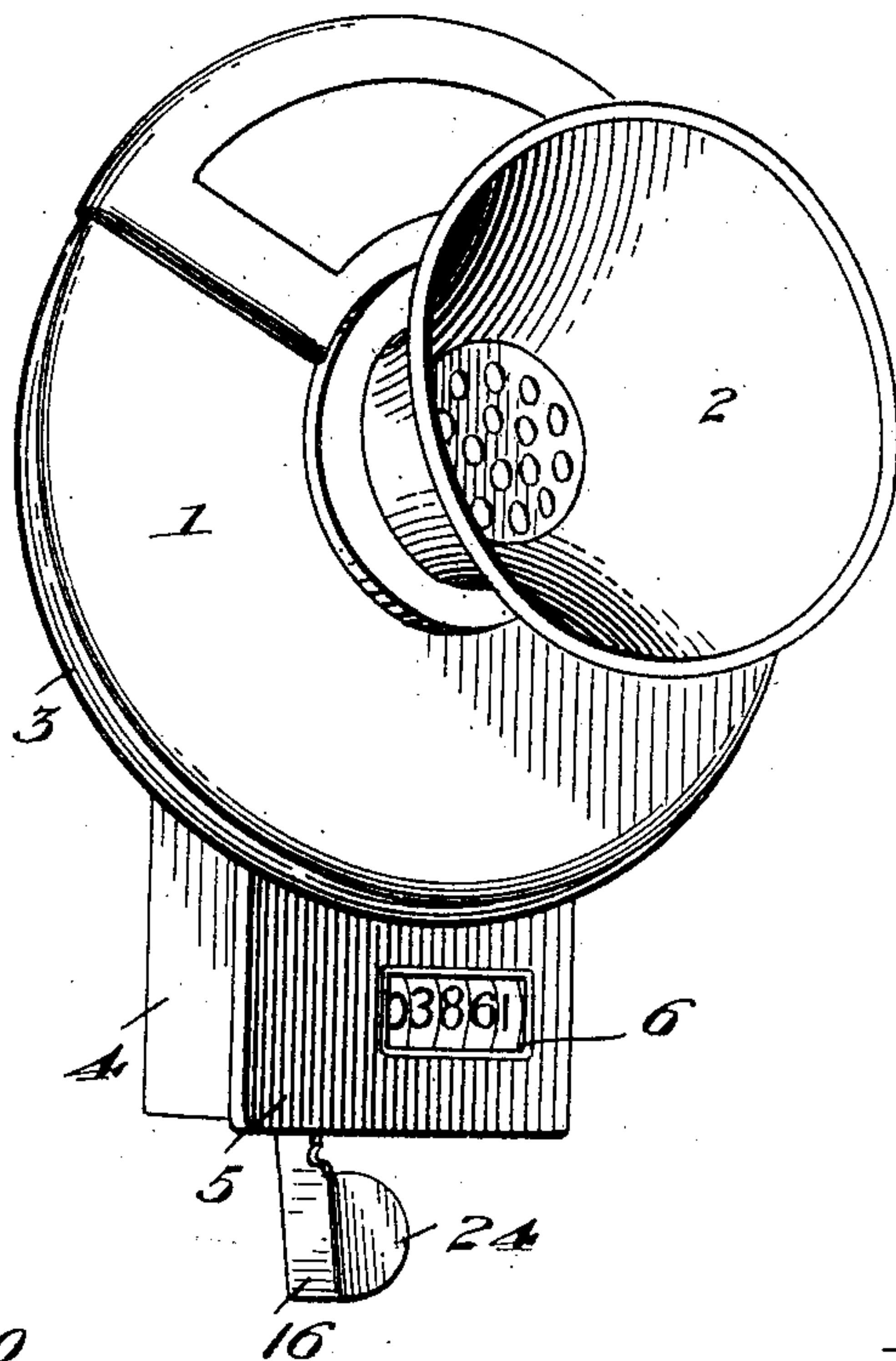


Fig. 3.

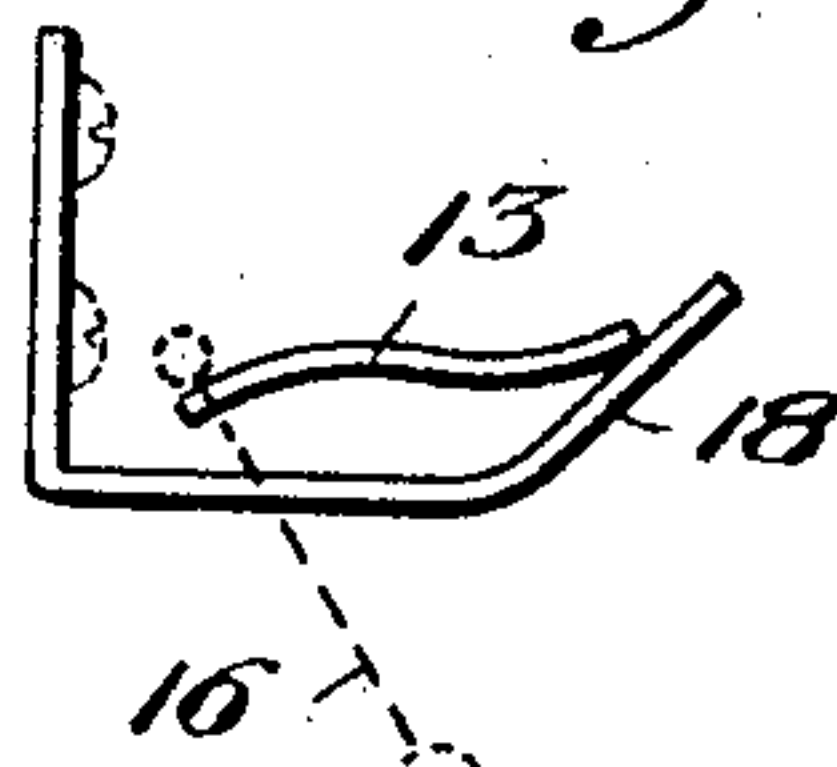
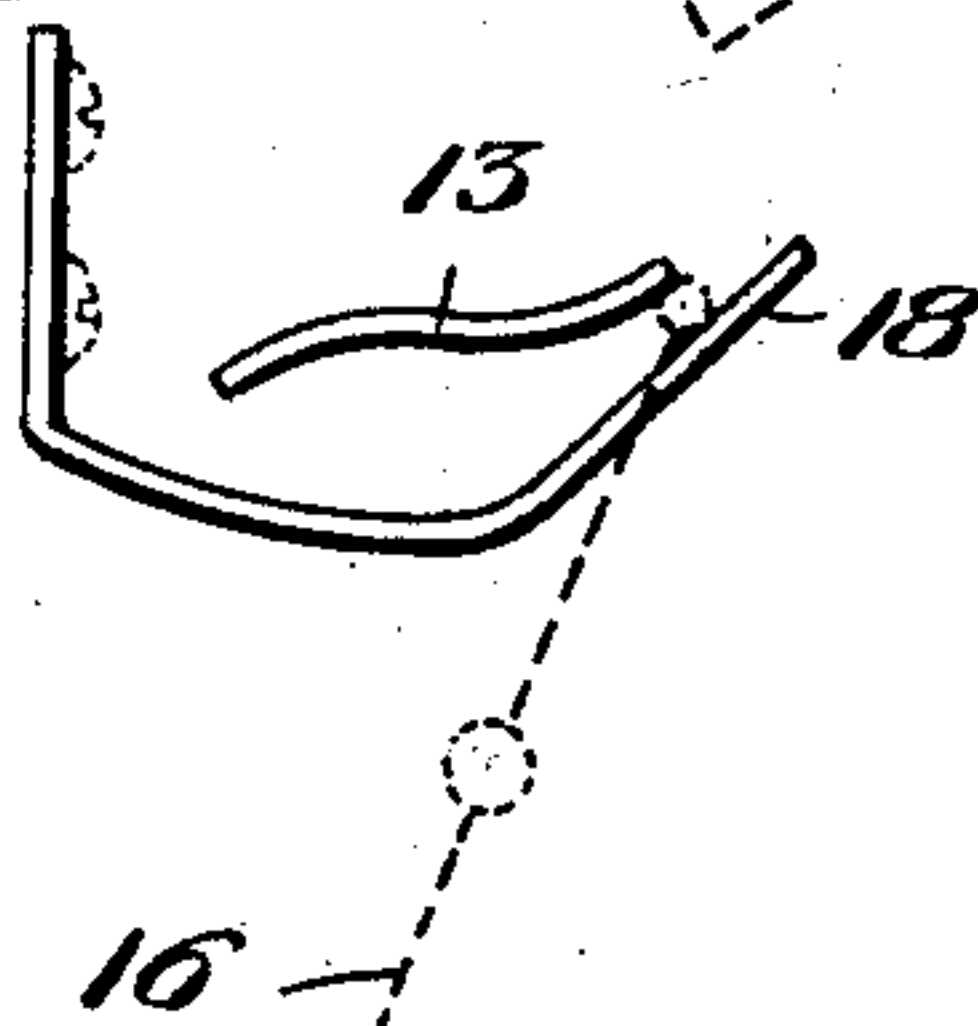


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

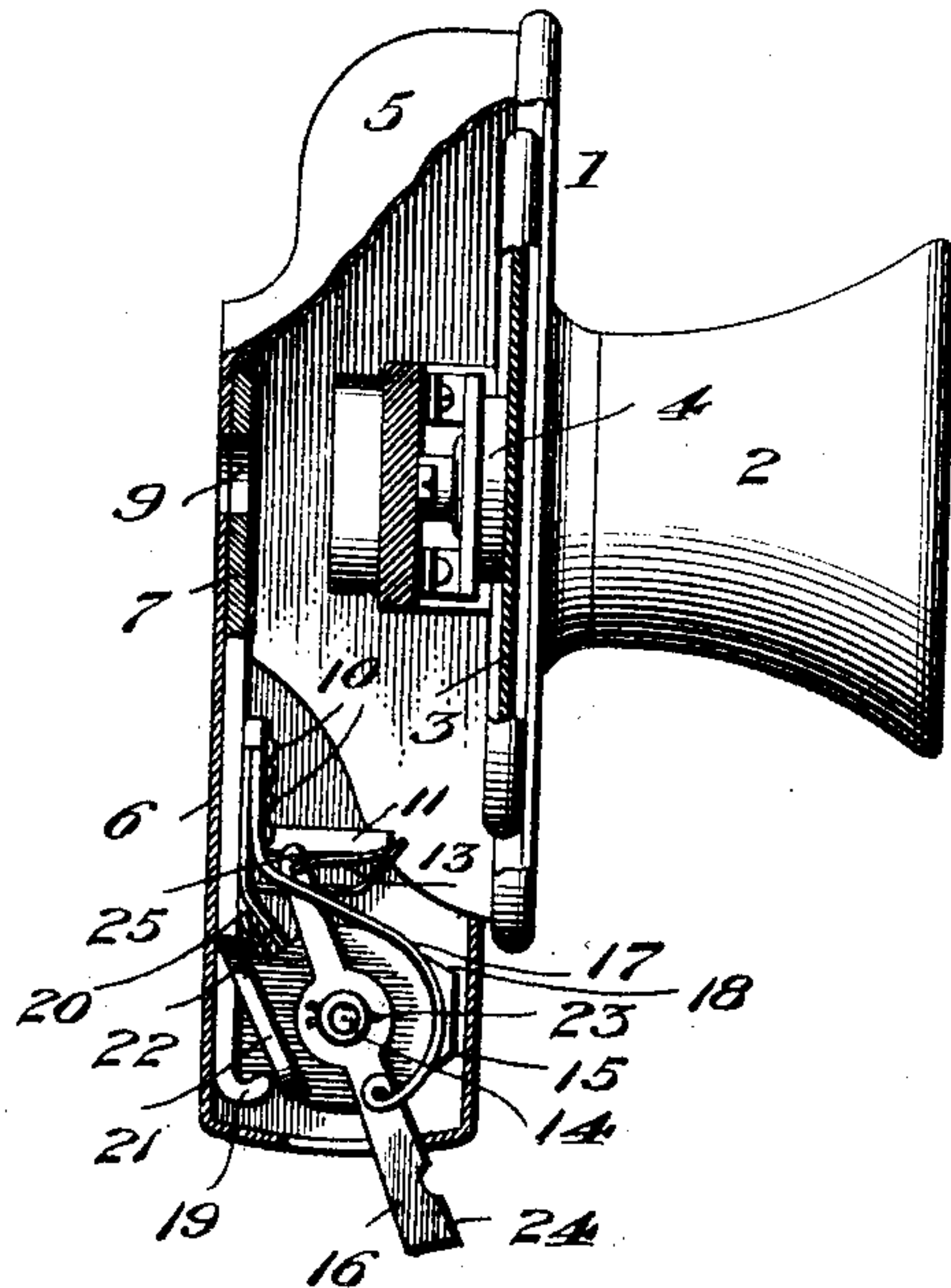
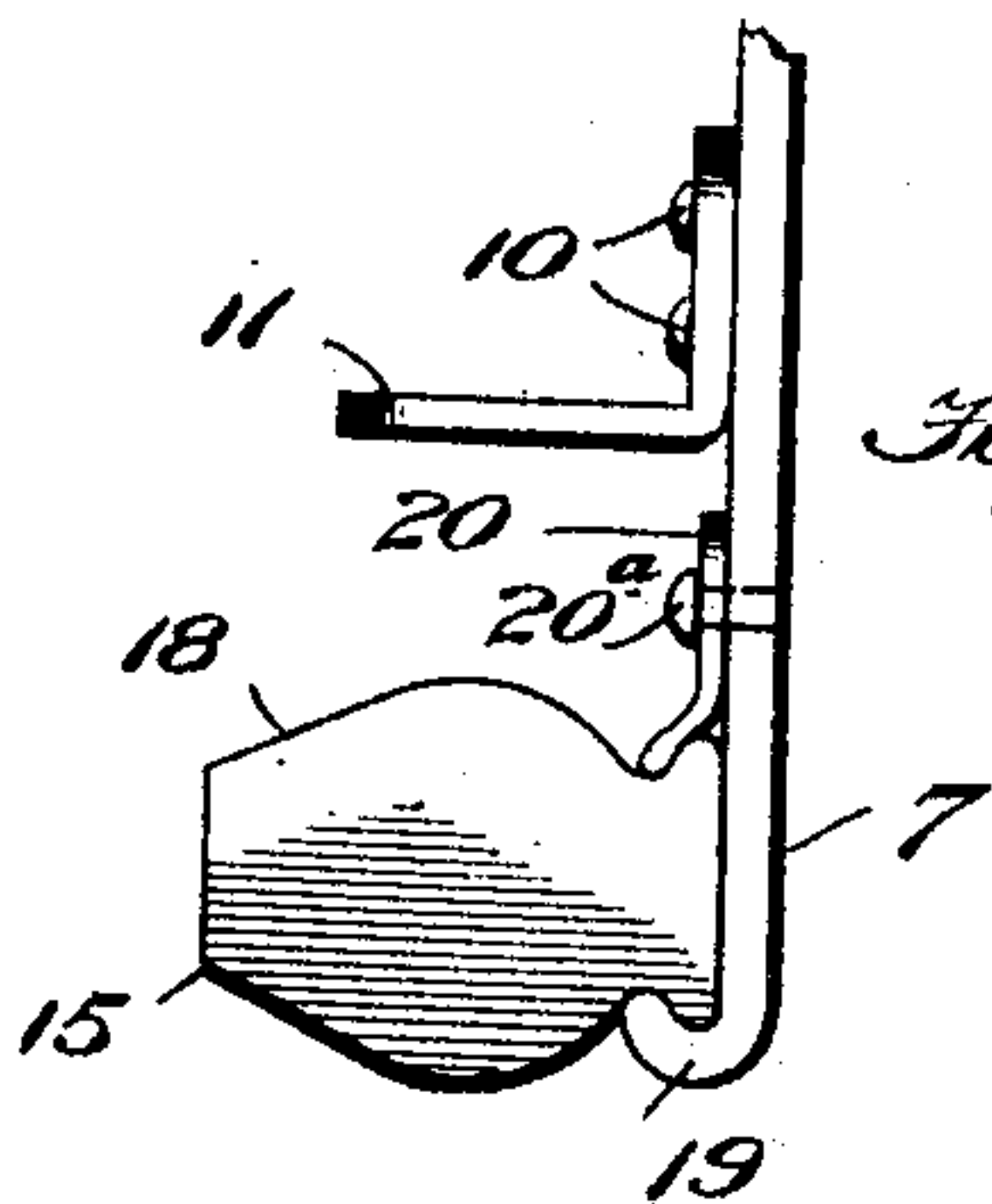


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CALL-REGISTER FOR TELEPHONE SYSTEMS.

No. 854,830.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed October 18, 1906. Serial No. 339,493.

To all whom it may concern:

Be it known that I, RAY H. MANSON, 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 subscribers' 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 a *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 apparatus, 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. Again, the sound reeds of the registers now in use have not been properly controlled and such being the case were allowed to vibrate with both operations of the lever, giving the operator at central the impression that two distinct registrations had been made.

Briefly stated my invention comprises as its characteristic and essential features a Veeder cyclometer register operated by a thumb lever, which at the same time snaps a pin back and forth over a reed. This reed is provided with a damper spring normally preventing any vibrations; and when the pin is pushed forward to register the damper is held back thereby at the same time that the reed is snapped, but on the return travel of the pin although the reed is again snapped it does not vibrate because the damper is in contact with it. The working parts are mounted on a plate or strip adapted to be inserted within the shell of an ordinary granular transmitter or if desired mounted upon any suitable portion of the support or mounting thereof. When placed within the shell of the transmitter an extension thereof serves to cover the working parts of the register; but when separately mounted an individual case or covering

must be provided. The use of a damper spring in a device of this kind I believe to be original with me. This simple device makes it impossible for the subscriber to start the reed in vibration by tapping the case of the transmitter or by slightly pressing the lever and releasing is so as to allow it to snap against the stop.

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. For example, the damper spring may be mounted on the lever itself and so arranged as to press against the reed at all times excepting when the lever is pressed down to its full extent.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a perspective view of a transmitter with my improvement mounted thereon. Fig. 2 is a perspective view of the device removed from the casing. Figs. 3 and 4 are diagrammatic illustrations showing the operation of the signal reed. Fig. 5 is a reduced fragmentary view of the transmitter casing and its support showing the manner of using the supporting plate.

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 having a front plate 5 apertured at 6.

In all transmitters of the present type, the inclosing shell 3 is provided with three openings, two for the attaching screws and one for the line wires. I have taken advantage of this fact and have provided the register supporting plate 7 with apertures 8 adapted to receive the screws 6^a which attach the transmitter to the support or arm 7^a. This plate is also provided with an aperture 9 which registers with the line wire aperture 9^a in the inclosing shell 3. It will be seen, therefore, that the means for securing the transmitter to this support, also secures the register supporting plate 7 in position within the inclosing shell.

The register, as I have stated, is of the Veeder cyclometer type and is secured to the supporting plate 7 by means of the hooked end 19 formed upon the supporting plate and a clip 20 secured to the plate by screws 20^a. This clip 20 may be and preferably is adjustably attached.

Secured to the shaft 14 of the register 15 is an operating lever 16 provided at one end with a thumb piece 24, projected from the casing 4, and at the other end with an operating stud 25 which engages in both its forward and retrograde movements the T-

shaped head 13 on the sounding reed 12 secured to the angle iron 11 attached to the supporting plate 7 by the screws 10. The shape of this T-shaped head is a compound curve, better illustrated in Figs. 3 and 4.

A damper spring 18 secured to the supporting plate 7 is held normally in engagement with the T-shaped head 13 of the reed 12, and the spring 17 is secured to the lever 16 at one end forward of its pivotal point and at the other end to the supporting plate 7 so that the lever is automatically returned to the normal position after each operation. In the lever's initial movement it abuts against the stop 21 formed by bending a tongue up from the supporting plate so as to project in the path of the lever. The retrograde movement of the lever is limited by the stop 22 secured beneath the spring 17 on the supporting plate.

The operation 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 24, thus operating the lever to carry the stud 25 over the T-shaped head 13 of the sounding reed 12. When the upper end of the T-shaped head is reached, the stud 25 slips off and engages the damper spring 18, 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 25 goes back to normal position upon the opposite side of the T-shaped head of the reed. When the stud reaches 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 25 reaches its limits. This prevents the subscriber from giving a signal without causing the counter to register.

While I have illustrated my invention in the most convenient way, it will be clearly understood that many modifications and changes might 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. A call register for telephone service having means for directing a signal to the transmitter and means for damping said signal means.

2. A call register for telephone service mounted directly upon the transmitter, signaling means, means for operating said signaling means, and means for damping said signaling means.

3. A call register for telephone systems comprising a registering device and a sounding device operated simultaneously therewith, means for operating the registering device, said means operating the sounding device in both direct and retrograde movements, and means for damping the sounding device through one movement of the operating means.

4. A call register for telephone systems, comprising a registering device and a sounding device, means for simultaneously operating said devices which operates the sounding device in both directions of its movement, and a spring for damping the sounding device through one movement of the operating means.

5. A call register for telephone systems comprising a registering device and a sounding device, means for operating both simultaneously, said sounding device being operated twice during one operation of the operating means, and means for damping said signal device during a portion of the operation.

6. In a call register for telephone systems, the combination with a transmitter, of a registering device carried thereby, a sounding device carried thereby, means for operating both of said devices simultaneously in one direction of its movement and for operating the signal device only in one of its directions of movement, and means for damping the signal device during the second movement of the operating means.

7. In a call register for telephone systems, the combination with a transmitter, of a registering device carried thereby, a sounding reed also carried thereby, a lever for operating the registering device and sounding reed simultaneously in its initial movement, means for automatically returning the lever to nor-

mal position, and means preventing the repetition of the vibration of the reed during the return movement of the lever.

8. In a call register for telephone systems, the combination with a transmitter, of a registering device within the casing of said transmitter, a sound producing reed within the casing of the transmitter, a lever for operating said registering device in its initial movement, means for returning said lever to normal position, means carried by the lever for engaging and operating the sounding reed in both movements of the lever, a damping device in normal engagement with the reed which prevents its vibration on the return movement of the lever, and stops to limit the movement of the lever in both directions.

9. In a call register for telephone systems, the combination with a transmitter, of a supporting plate secured within the shell of the transmitter, a registering device mounted upon said supporting plate, a sound producing reed carried by said supporting plate within the transmitter casing, a lever secured to the shaft of said registering device and adapted to operate it in the initial movement of the lever, means for returning the lever to normal position, an operating stud on the lever which engages and operates said sound producing reed during both movements of the lever, a damper spring normally in engagement with said reed but adapted to be pressed away therefrom to allow the vibration of the reed in one movement of the lever but to engage the reed and prevent its vibration during the opposite movement of the lever, and stops for limiting the movement of said lever in both directions.

10. In a call register for telephone systems, the combination with toll registering and signaling devices, of a base plate for supporting said devices, a transmitter, and means for securing the base plate to the transmitter, said means also securing the transmitter to its support.

11. In a call register for telephone systems, the combination with a transmitter, of toll registering and signaling devices in said transmitter casing, and means to secure said devices therein, said means also securing the transmitter to its support.

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

RAY H. MANSON.

Witnesses:

MILLARD E. TAYLOR,
W. C. STRONG.