Sept. 27, 1932. E. W. SUNKENBERG ET AL 1,879,641

TIME REGISTER AND RECORDING DEVICE

Filed June 13, 1929

Fig. 1.

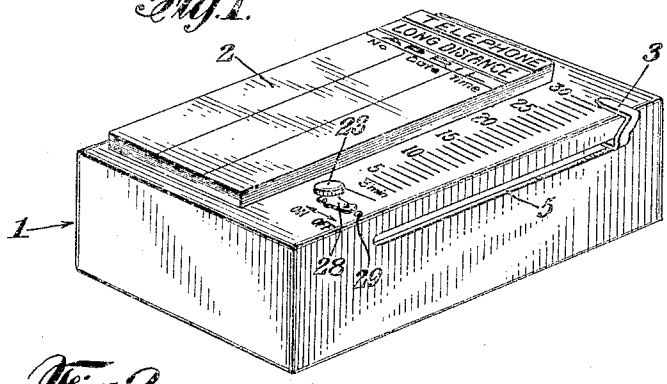


Fig. 2.

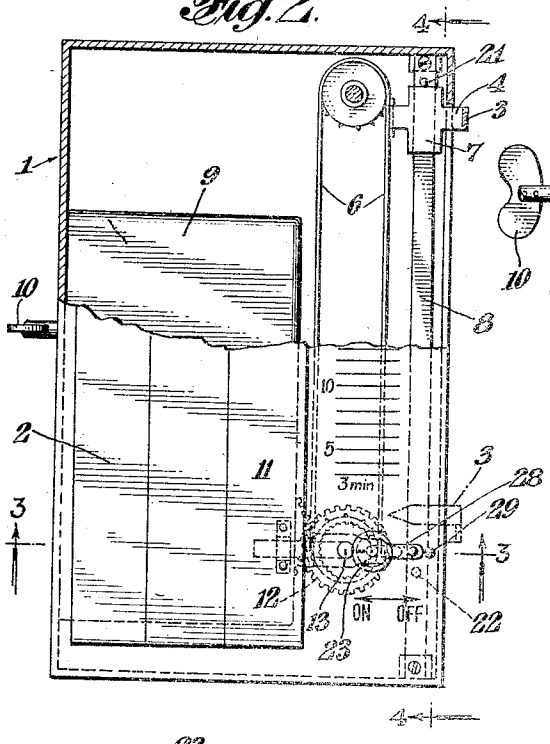


Fig. 3.

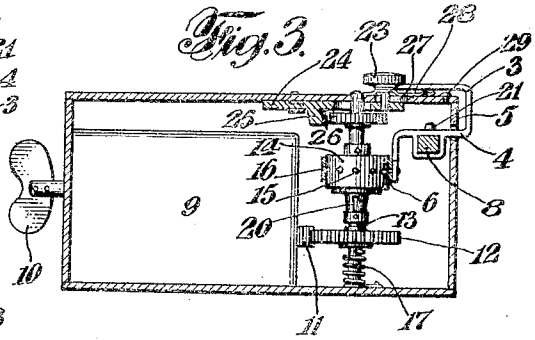


Fig. 5.

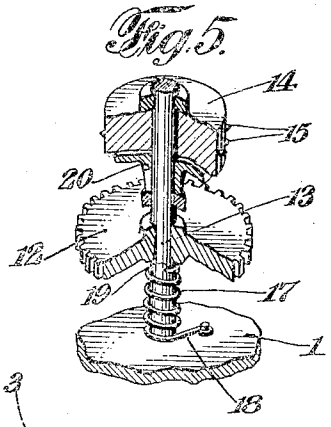
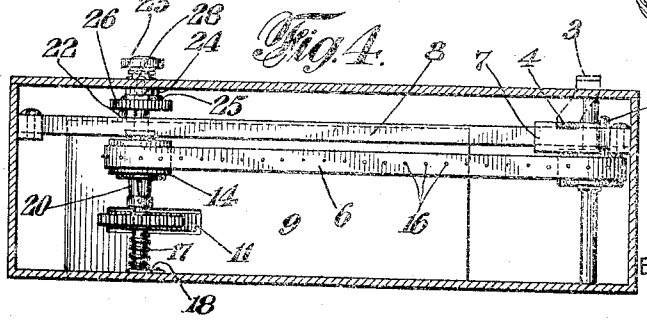


Fig. 4.



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UNITED STATES PATENT OFFICE

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TIME REGISTER AND RECORDING DEVICE

Application filed June 13, 1929. Serial No. 370,564.

This invention relates to a time register and recording device for use particularly in indicating lapsed time in telephone conversations.

One of the objects of the invention is to provide a device of this character which shall consist of a few parts, not apt to get out of order, which shall be ready for use at short notice and which may be constructed at small cost.

Further and more specific objects, features and advantages will clearly appear from the detailed description given below, taken in connection with the accompanying drawing which forms a part of this specification.

In the drawing;

Fig. 1 represents a perspective view of a device embodying the invention.

Fig. 2 represents a plan view thereof partially broken away.

Fig. 3 represents a transverse section along the line 3—3 of Fig. 2.

Fig. 4 represents a longitudinal section along line 4—4 of Fig. 2.

Fig. 5 represents an enlarged detailed view of a part of the mechanism for transmitting motion from the clock mechanism to the registering mechanism.

Referring now more particularly to the drawing, 1 represents a substantially rectangular oblong metal casing on top of which is mounted a telephone record pad 2. This pad is adapted, as here shown, for use with the telephone for long distance calls, and has printed thereon the name of the month, the place called, the date and the lapsed time. This pad occupies the top of the casing, except for a space along the edge which is graduated in time intervals beginning at zero, then three minutes and thereafter for each minute up to thirty minutes.

In order to register the time so that the indicated registration can be recorded on the pad, a pointer 3 formed as a handle is provided. This pointer is intended to be grasped by hand and moved to the zero point on the time interval scale, when the telephone conversation is started. The lower limb 4 of the pointer passes through a slot 5 in the side of the casing 1, which slot is slightly longer than the time interval scale mentioned. The lower leg 4 has its extremity bent downwards and attached by a rivet to a band 6. This lower limb 4 is also provided with a guide-way 7, through which projects a guide rod 8 suitably supported at either end of the casing 1.

The band 6 is driven by clock mechanism 9 and adapted to be wound by key 10, furnishing motion to drive the band through a gear 11. The gear 11 meshes with a gear 12, mounted on a spindle 13, suitably supported at the top and bottom, respectively, of the casing 1. Mounted above the gear 12 is a pinion 14 provided with teeth 15 adapted to engage in corresponding holes 16 in the band 6. Below the gear 12 is a coil spring 17, having one end 18 attached to the floor of the casing 1, the other end 19 being free.

The pulley 14 is provided with a slip-clutch 20. When the pointer 3 is in the position shown by broken lines in Fig. 2, and is being driven through the clock mechanism towards the end of the time scale marked 30 minutes, the spring 17, wrapped around the spindle 13, allows the gear 12 and the pinion 14 to move freely in the desired direction, that is, counter clock-wise. When the pointer has reached the upper limit of its travel, which is provided by a pin 21 on the guide bar 8, it is necessary for it to be returned to zero, in order to start registration again. In order to permit this, the gear 12 must be held against motion, while the pinion 14 must be allowed to move so that the band may move over it and carry the pointer back to the desired position. This is accomplished by the action of the spring 17, which holds the spindle 13 against rotation in a clockwise direction, and also holds the gear 12 which is attached to it against such rotation. The slip-clutch 20 on the pinion 14, however, allows this pinion to rotate on the spindle 13 and so the band can travel back with the pointer to the starting point. A stop 22 at the zero end of the bar serves to stop the pointer at the starting position.

After the telephone conversation is started, in case a disconnection or other interference occurs and it is desired to stop the time registration, the pointer may be stopped at

any instant in its travel by moving a button 23, located on top of the casing and having a stud projecting through the casing and connected to a sliding arm 24 provided with a downwardly projecting lug 25 having a surface for braking. This surface contacts with a corresponding braking surface on a wheel 26 mounted above the pinion 14. A slot 27 in the casing allows the stud 23, and with it the arm 24, to move back and forth into and out of braking position. When moved to braking position, a spring arm 28, bent to form a recess, snaps over a pin 29 to hold it in that position.

When it is desired to operate the device, the telephone connection is requested, the pointer is grasped by the telephone user and moved down to zero position, the brake having been released, if on, and the clock mechanism having, of course, been previously wound while waiting the connection, the button 23 may be moved to hold the pointer at the starting point. When the connection is made, the brake is released and registration of the lapsed time proceeds, the pointer being carried along by the band 6 over the time interval scale accurately indicating the lapsed time. If there is a disconnection or other interference with the communication, the button 23 may be immediately pushed to stop the movement of the pointer, and when connection is again reestablished, the button may be moved back to proceed. At the end of the conversation, the time registration is noted, and the telephone user records on the pad the city called, with the date and time. This pad then forms a record which may be used for a large number of calls, say, for one month, and at the end of that month the calls reported by the telephone company may be checked up to determine their accuracy. The use of a pointer for registering the time in this way, and a pad which may be used for a considerable period without changing the sheet, insures that a proper record can be kept and seen at a glance, while at the same time it is not necessary to insert a new sheet each time it is desired to make a record of a call where a time recording instrument is employed, as we are aware has been proposed. Accordingly our device is ready for instant use at any time.

Our device is a simple one with few parts to manufacture, and not apt to get out of order, and can be inexpensively produced.

While we have described our improvement in great detail and with respect to a preferred embodiment thereof, we do not desire to be limited to such details or forms since many changes and modifications may be made and the invention embodied in widely different forms without departing from the spirit and scope thereof in its broader aspects. Hence we desire to cover all forms coming within the language or scope of any one or more of the appended claims.

What we claim as new and desire to secure by Letters Patent, is:

1. The combination of a slotted casing adapted to support a memorandum pad, timing mechanism within the casing, a guide bar within the casing near the slot thereof, a collar slidable on said guide bar and operatively connected with said timing mechanism, and a pointer carried by the collar and extending through the slot, the casing being provided with a graduated scale adjacent the path of movement of the pointer, for cooperation with the pointer.

2. The combination of a casing capable of supporting a memorandum pad, clockwork timing mechanism carried therein, an endless belt driven by the timing mechanism, a guide bar adjacent one stretch of said endless belt, the casing having a slot adjacent said guide bar, a collar slidable on said guide bar and secured to said endless belt and carrying a pointer which extends through the slot, and graduated markings on the casing cooperating with said pointer.

3. The combination of a casing provided with a slot, clockwork timing mechanism carried by the casing, an endless belt driven by the timing mechanism, one-way clutch means associated with the drive for the endless belt for permitting reverse movement thereof, a guide bar adjacent the slot and one stretch of the endless belt, a graduated scale on the casing, and a pointer provided with a guide slidable on said guide bar, the pointer extending out through the slot into cooperative relation with the graduated scale.

In testimony whereof we have signed our names to this specification.

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BENJAMIN KAHN.