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Feb. 22, 1927. 1,618,774

H. MONNIG

TIME RECORDING INDICATOR

Filed March 27, 1925

Fig. 1.

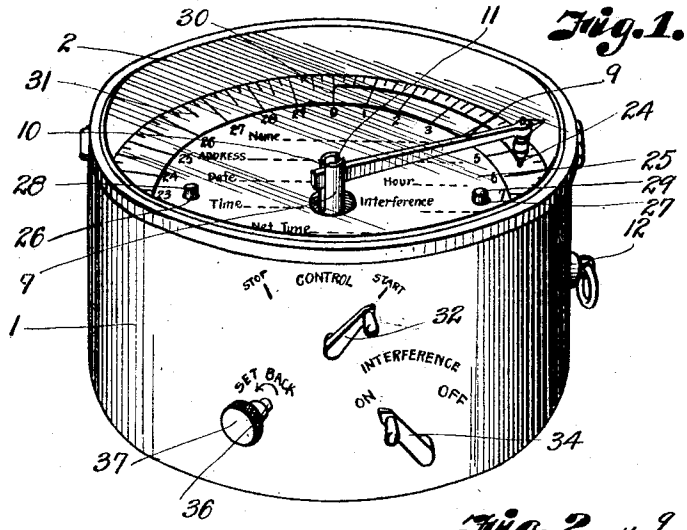


Fig. 2.

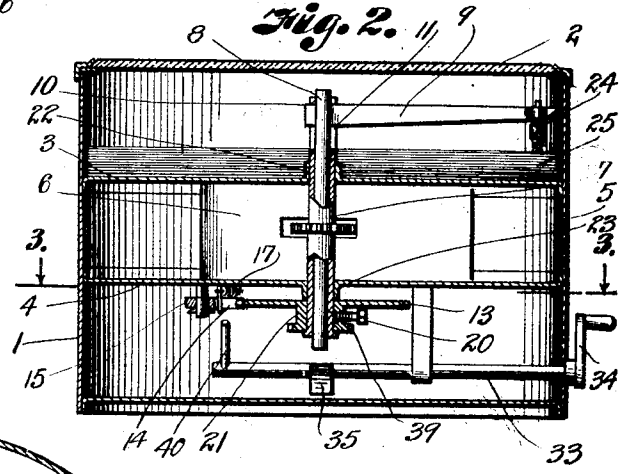


Fig. 4.

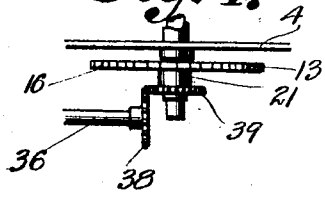


Fig. 3.

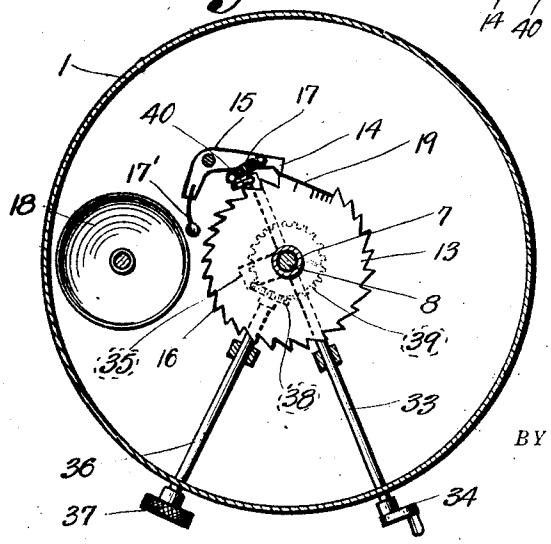
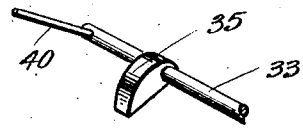


Fig. 5.



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UNITED STATES PATENT OFFICE.

HUGO MONNIG, OF JEFFERSON CITY, MISSOURI.

TIME-RECORDING INDICATOR.

Application filed March 27, 1925. Serial No. 18,813.

This invention relates to a time recorder especially designed for use by telephone users.

Statistics show that persons availing themselves of the use of "long distance" telephone service almost invariably use considerably less time than the minimum period allotted by the telephone company. The usual minimum charge is for three minutes and of course, the customer is entitled to the first three minutes but as there is ordinarily no check on time, the user, out of abundant precaution, cuts off sooner than is required and frequently although a user pays for three minutes service, he does not use over two minutes.

I have provided a device which will give a visual record of the passing of time during the conversation and which will actuate an audible signal just in advance of the time period so that the user can observe the passing of time during the conversation and will be reminded that the period is about to terminate early enough in advance to complete the conversation before another period starts.

I have also provided a chart or dial over which a stylus passes to give a graphic record of the time of conversation and to indicate if there are any interruptions or interferences, such as cut in on the line or other annoyances encountered by users of telephones.

The novelty of the invention will be clearly understood by reference to the following description in connection with the accompanying drawings, in which—

Fig. 1 is a perspective view of a complete time recorder constructed in accordance with my invention.

Fig. 2 is a vertical, longitudinal, sectional view through the same.

Fig. 3 is a cross sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a detail view of a gearing for setting back the ratchet mechanism, and

Fig. 5 is a perspective view of the stylus lift cam and the finger for lifting out the pawl from the ratchet wheel.

The mechanism is placed in a drum 1 which constitutes a case with a glass window or panel 2 at the top. Between the upper and lower ends of the case are two partitions 3 and 4 forming a motor compartment 5 in which is a spring motor 6. The spring motor drives a hollow shaft 7 in which is loosely mounted a shaft 8 carrying at its upper end a stylus arm 9 at right angles to the shafts 7 and 8 and extending across the slots 10 and 11 at the end of the shaft 7. Therefore, when the hollow shaft 7 turns, the arm 9 must turn with it. The motor 6 can be wound by a stem 12.

The shaft 7 carries a ratchet wheel 13 adapted to be engaged by the toe 14 of a spring-pressed pawl 15, the toe being urged into engagement with the teeth 16 of the ratchet by the spring 17.

On the heel of the pawl 15 is a bell tappet 17′, adapted to strike a gong or bell 18 at intervals of one minute because the teeth 16 are spaced apart to ride past the toe 14 at the rate of one a minute. At one portion of the ratchet is a spacing 19, which will represent a period of three minutes for the minimum period so that when the operator begins to talk, the gong will not ring for three minutes or shortly before three minutes and then the teeth 16 will cause the gong to ring each minute thereafter.

The time of adjustment can be made by loosening the set screw 20 passing through the hub 21 of the ratchet 13 so that the ratchet can be adjusted axially with respect to the toe 14 of the pawl 15.

As the shaft 7 rotates in the bearings 22 and 23 in partition plates 3 and 4, the arm 9 will be rotated with it. The speed of the shaft will be about one-half hour per revolution so that the stylus or pencil 24 on the end of arm 9 will make a complete revolution every thirty minutes, or it will move at the rate of one revolution every thirty minutes. It will move upon the uppermost one of a stack of charts or dials 25 which rest upon the plate 3 and which will be provided with openings 26 and 27 to receive the pins 28 and 29 on the partition 3 so that the cards, disks or charts 25 will all properly align to have the starting point 30 for the stylus always in the same relative position.

The outer edge of the chart is provided with calibrations 31 divided into minutes, halves and quarters of minutes so that as the stylus moves over the calibrated portion it will write upon the face of the disk the actual time that the arm is moved. Therefore, the user can tell from his chart just how long he has talked.

The motor, of course, will be started by a suitable starting lever 32 outside the case

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and it will continue to rotate until the starting lever is turned off.

It may be that during the conversational period there is interference. Then the operator will rock the shaft 33 through the medium of the crank 34 to cause the cam 35 to contact with the lower end of the shaft 8 and raise it sufficiently to move the stylus off the chart. The arm 9 will continue to rotate, however, so that when the interference ceases, the operator will swing the crank 34 to allow the cam 35 to move away from the shaft 8 and permit the pencil to move back on the chart to again record the actual time consumed in the conversation. There will be a gap, however, between the time that the stylus or pencil 24 was raised from the chart and the time that it contacts with the chart. This break in the line will indicate the time of the interference.

When the conversation is over, it will be necessary to reset the ratchet. This is accomplished by means of a rotatable shaft 36 having a knurled disk 37 with a pinion 38 which engages a pinion 39 on the hub 21. Before the ratchet is set back, however, the shaft 33 will be rocked to raise the shaft 8 and to cause the finger 40 on shaft 33 to contact with the pawl 15 to move it out of engagement with the ratchet teeth 16. Then by turning the shaft 36, the ratchet can be restored to its original position; that is, to starting position.

The device can be made in a comparatively small case so that it may be set upon the desk, table or other convenient support adjacent to the telephone. It can be easily manipulated and will keep an accurate visual, audible and recording indication of the actual time involved during a telephone conversation.

Of course, the particular construction of the spring motor 6 is immaterial so I have deemed it unnecessary to elaborate upon the details of construction, it being obvious that many suitable spring motors may be employed in this type of invention.

What I claim and desire to secure by Letters-Patent is:

1. In a recording indicator, clock mechanism, a stylus keyed to the clock mechanism for normal travel in a marking plane, and manually operable means for shifting the stylus from its marking plane to indicate an interruption in a service period.

2. In a recording indicator, clock mechanism comprising a shaft, a stylus keyed for longitudinal and against rotary movement on the shaft, and manually operable means for shifting the stylus longitudinally on the shaft to interrupt travel of the stylus in a marking plane.

3. In a recording indicator, a chart support, clock mechanism comprising a hollow shaft, a shaft slidable in the hollow shaft, a stylus having an arm fixed to the sliding shaft and keying the same to the hollow shaft, and means for shifting the sliding shaft to vary the plane of the stylus relative to the chart support without interrupting its movement by the hollow shaft.

4. A time recording indicator comprising a casing, a chart in the casing, a motor, a hollow shaft driven by the motor, a vertically slidable shaft in the hollow shaft, an arm carried thereby in slots in the end of the hollow shaft, so that when the hollow shaft rotates the arm will move with it, a stylus carried by the arm to normally move over the chart, and means for sliding the second mentioned shaft during the rotation of the hollow shaft to lift the stylus off the chart.

5. A time recording indicator comprising a casing, a chart in the casing, a motor, a hollow shaft driven by the motor, a vertically slidable shaft in the hollow shaft, an arm carried thereby in slots in the end of the hollow shaft, so that when the hollow shaft rotates, the arm will move with it, a stylus carried by the arm to normally move over the chart, means for sliding the second mentioned shaft during the rotation of the hollow shaft to lift the stylus off the chart, said means comprising a rock shaft, and a cam carried thereby in line with the end of the second shaft.

6. In a recording indicator, a horizontal chart support, clock mechanism comprising a vertical, hollow shaft having a slotted upper end, a shaft slidable in the hollow shaft and projecting below its lower end, an arm fixed to the slidable shaft, and slidable in the slots in the hollow shaft, a stylus on said arm movable therewith normally in a marking plane above a chart carried by said support, a manually operable, horizontal shaft and a cam on said horizontal shaft engageable with the end of the sliding shaft to shift the stylus from and to its normal marking plane.

In testimony whereof I affix my signature.

HUGO MONNIG.