Jan. 13, 1948. M. H. RHODES 2,434,470

AUDIBLE TIME SIGNAL

Original Filed July 17, 1941

FIG. 1.

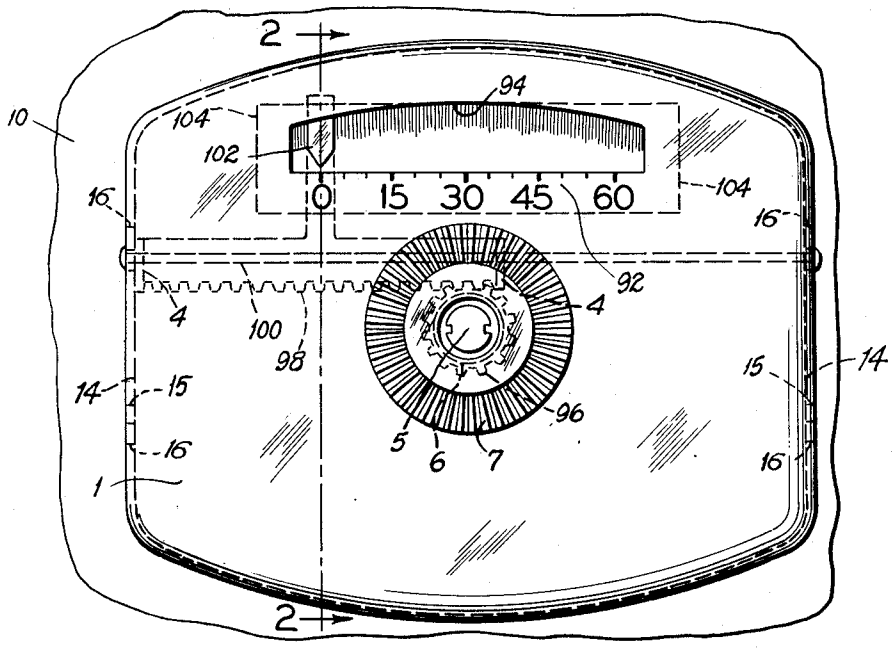
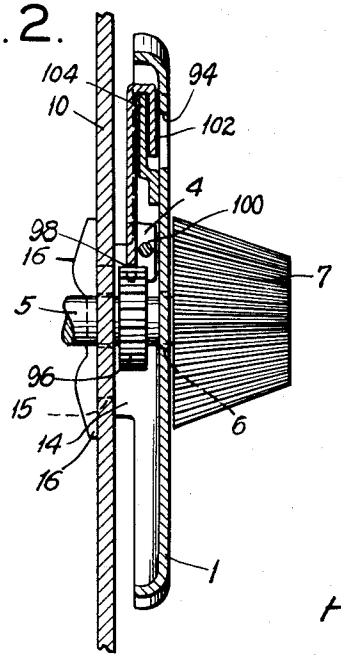


FIG. 2.



Marcus H. Rhodes,
Inventor.
Haynes and Koenig
Attorneys.

Patented Jan. 13, 1948

2,434,470

UNITED STATES PATENT OFFICE

2,434,470

AUDIBLE TIME SIGNAL

Marcus H. Rhodes, Hartford, Conn., assignor to M. H. Rhodes, Inc., Hartford, Conn., a corporation of Delaware

Original application July 17, 1941, Serial No. 402,792. Divided and this application May 4, 1944, Serial No. 534,069

3 Claims. (Cl. 161—15)

1

This invention relates to timing devices, and with regard to certain more specific features, to audible time signals. It is a division of the invention disclosed in my United States patent application Serial No. 402,792, filed July 17, 1941, for Audible time signal, now abandoned.

Among the several objects of the invention may be noted the provision of a timing device in which provision is made for converting the axial movement of the winding knob into a straight-line movement, whereby the time delay of the signal device may be read on a horizontal calibrated line; and the provision of a timing device of the class described which is relatively simple and economical in construction and operation. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structure hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which is illustrated one of various possible embodiments of the invention,

Fig. 1 is a front elevation of a timing device embodying the invention; and,

Fig. 2 is a vertical section taken on line 2—2 of Fig. 1.

Referring now more particularly to Fig. 1, numeral 1 indicates the outer face plate of an audible signalling timing device embodying the present invention. In the embodiment shown in the drawings, the invention is adapted for panel mounting, although it will be seen that by suitable, simple changes in enclosure elements, the invention may likewise be adapted for table mounting, or any other type of mounting. The panel is shown at 10 and the face plate is spacedly attached thereto in the usual way. This may be done by means of suitable ears 14. These extend to the panel 10. They are provided with suitable offset extensions 15 which pass through openings in the panel 10. On the inside they are swaged over as shown at 16. In effect the ears 14 constitute spacing pillars mounting the plate 1 spacedly in front of the panel 10. Mounted on a shaft 5, extending forwardly through a hole 6 in the center of the face plate 1, is a knob 7. The shaft 5 also passes through a suitable opening in the plate 10 to timing apparatus behind this plate (not shown). For the purpose of this divisional application it is not necessary to give a complete description of this timing apparatus since it may be any one of the various types known for the purpose of allowing the user to turn the knob 7 a suitable angular distance clockwise which has the effect of winding up a timing mechanism, the latter thereafter turning the knob 7 counterclockwise during a period of running down. Timing apparatus of this class is often called an interval timer. At the end of the time interval that it takes for the timer to run down an audible signal is given such as by means of a striker and a bell. These are also common and are not shown.

2

In prior constructions the handle such as 7 was provided with a pointer cooperating with a circular dial reading from zero to the maximum time interval for which the device was adapted. This dial was calibrated so that at the time that the audible time signal was given the pointer was directed to zero. The present invention by simple means provides a linear, instead of a circular scale and pointing means adapted to read zero when the timing means has run down to its audible signalling condition.

Referring again to the drawings, it will be noted that a horizontal calibrated scale is located adjacent to the lower edge of a slot 94 in the front plate 1. This straight-line dial, instead of a circular dial, lends itself to a better design, arrangement and ease of reading. There is provided, on the main shaft 5, a pinion gear 96 which propels a slidable rack 98 from side to side behind the face 1 whenever the winding knob 7 is rotated. The rack 98 is slidably mounted by means of perforated ears 4 on a rod 100 fastened to the inturned side edges 6 of the plate 1. The rack 98 also has extending therefrom a pointer 102 bent over a guide plate 104 attached to 1, the pointer being visible through the slot 94 to indicate the period of time for which the timing mechanism is set to operate.

When the knob 7 is rotated clockwise to wind, the pinion 96 will move the rack 98 and attached pointer 102 horizontally along the scale 92. By the selection of proper size or plurality of gears operated by the knob 7, any desired movement of the pointer 102 can be obtained. This will allow a ratio of movement between knob 7 and the pointer 102 not possible with a circular dial.

In other words, it is possible to obtain several rotations or a fractional rotation of the knob 7 in winding up the timing mechanism while the pointer 102 once traverses the scale 92. In the former circular dial apparatus only one turn of the knob for one traverse of the pointer over the scale was possible.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in carrying out the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. Indicating means for an interval timer having a timing shaft extending through a substantially flat face plate and having a knob on the shaft in front of the face plate for controllably setting the shaft, comprising a substantially straight-line horizontal scale on the plate adjacent to an opening through the plate, the scale and the opening being above the knob, a pinion on said shaft behind the plate, a straight-line guide supported on the plate, a rack member traversing said guide and cooperating with said pinion, a second straight-line guide attached to the plate below the opening and spaced therefrom behind the opening, and a pointer extending from said rack member and hooked over said second guide to present a pointer part behind said opening and adjacent to said scale.

2. Indicating means for an interval timer having a timing shaft extending through a substantially flat face plate and having a knob on the shaft in front of the face plate for controllably setting the shaft, comprising a horizontal straight-line scale on the front of the plate and the knob and adjacent to a horizontal exposed opening through the plate, a horizontal guide rod supported on the plate and spaced from its rear face, a pinion movable with the knob and located behind said plate, the rod being above the pinion, a rack guided by the rod and engaging the pinion, a second guide attached to the back of the plate below said opening and spaced rearwardly from said opening, and a pointer extending upward from the rack behind the second guide means and hooked over said second guide means where it is directed downward into position between it and said opening for presentation at the opening adjacent to said scale.

3. Indicating means for an interval timer having a timing shaft extending through a substantially flat face plate and having a knob on the shaft in front of the face plate for controllably setting the shaft, said plate being spacedly mounted from the timer and having flanged edges directed toward the timer, comprising a substantially straight-line horizontal scale on the plate adjacent to an opening through the plate, the scale and the opening being above the knob, a pinion on said timing shaft, a straight-line guide rod supported behind the plate between its flanges and above said timing shaft, an indicating member having ears traversing said guide rod and having rack teeth cooperating with said pinion, a straight-line guide plate attached to said face plate below the opening and offset behind the opening and presenting a flat background behind the opening and an upper guiding edge, and a pointer extending from said indicating member and hooked over said guiding edge to present a pointer part between the background formed by the guide plate and said opening and adjacent to said scale.

MARCUS H. RHODES.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
961,276	Welsh	June 4, 1910
2,177,102	Glover	Oct. 24, 1939
2,186,828	Forstrom	Jan. 9, 1940
2,120,136	Lyman	June 7, 1938
1,734,694	Schwartz	Nov. 5, 1939

FOREIGN PATENTS

Number	Country	Date
183,196	Great Britain	July 10, 1922
771,532	France	July 30, 1934