

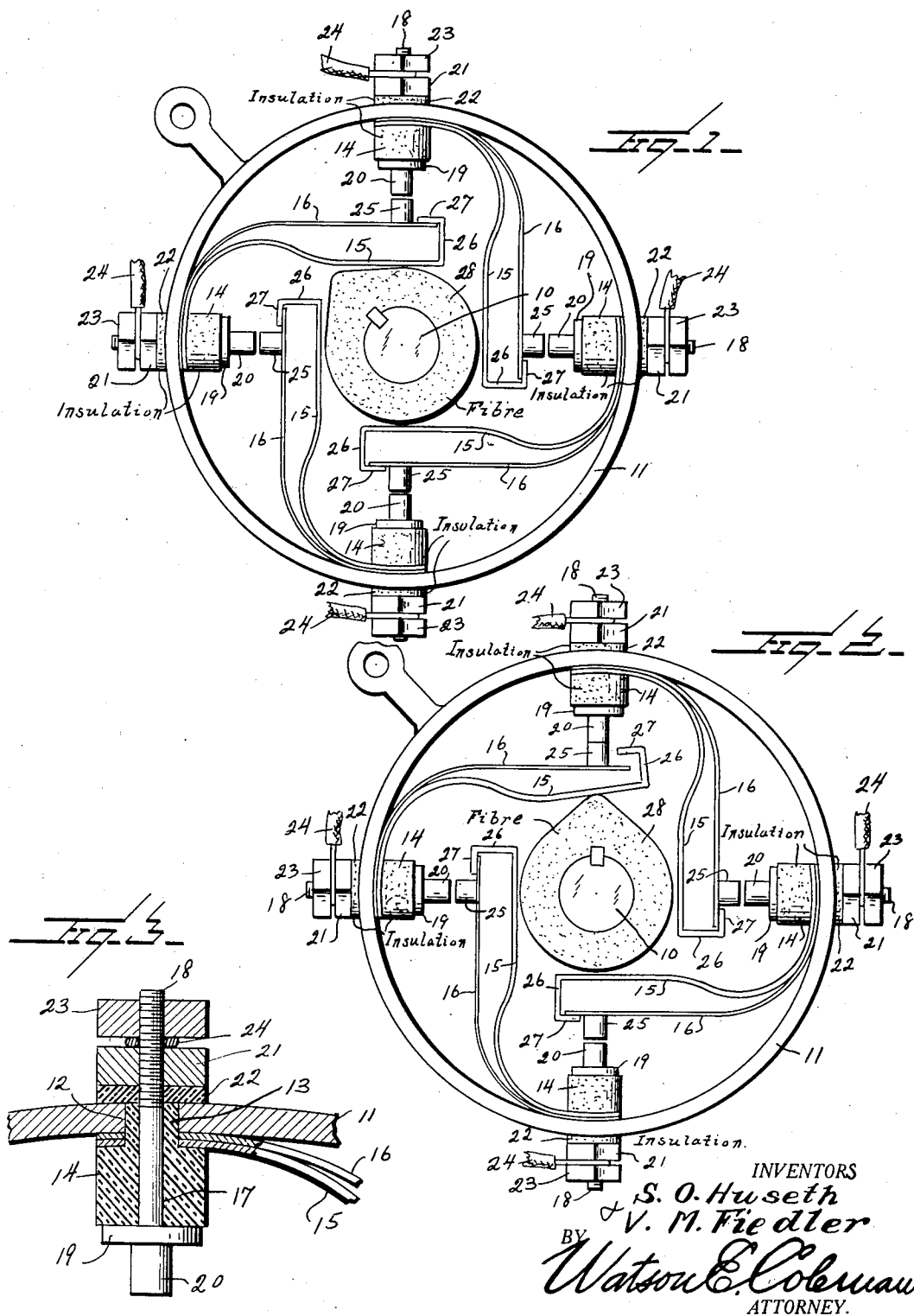
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TIMER

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TIMER.

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To all whom it may concern:

Be it known that we, SEVER O. HUSETH and VALENTINE M. FIEDLER, citizens of the United States, residing at Great Falls, in the county of Cascade and State of Montana, have invented certain new and useful Improvements in Timers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in timers and has for an important object thereof the provision of a device of this character which may be cheaply produced and which will insure a proper contact between the contact points thereof.

A further object of the invention is to provide a device of this character in which the use of rollers or similar devices is eliminated and in which the construction is such that wear upon the contact making device is to a great extent eliminated.

A further object of the invention is to provide means whereby the engagement of the contact maker proper by the actuating mechanism is eliminated.

These and other objects we attain by the construction shown in the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of our invention and wherein:—

Figure 1 is a bottom plan view of a timer constructed in accordance with our invention;

Figure 2 is a similar view, one of the contacts being shown in engaged relation; and

Figure 3 is an enlarged sectional view showing the assembly of the various parts of the device upon the timer.

Referring now more particularly to the drawings, the numeral 10 indicates a timer or commutator shaft which is rotatable, and the numeral 11 a shell formed of conducting material which is relatively stationary, being permitted only that adjusted movement ordinarily applied to such shells. The shell 11 has formed therein at regularly spaced intervals openings 12 into which extend the reduced shanks 13 of insulating members 14. The shanks of the insulating members 12 and 13 are extended through openings formed in the ends of two springs 15 and 16, the springs being interposed between the shell 11 and the insulator 14. Directed through an opening 17 formed

axially of the insulator 14 and its extension 13 is a conducting member 18, the inner end of which is formed to provide a head 19 abutting the inner end of the insulator and a contact point 20. The outer end of the conductor 18 is screw-threaded and is engaged by a nut 21, an insulating washer 22 being disposed between the nut 21 and the shell 11. Upon the conductor a second or binding nut 23 is likewise mounted and serves as a means for securing a lead wire 24 thereto. It will be noted that the conducting member 18 is insulated from the shell 11 and that it serves as a means for binding the insulator 14 against the springs 15 and 16 to bring these springs into firm and mechanical engagement with the shell.

The spring 16 of each unit extends over the contact 20 of the next adjacent unit and is provided with a contact 25 which tends to engage with the contact 20 by reason of the fact that the spring 16 tends to flex toward this contact. The spring 15 tends to flex away from this contact and is of greater strength than the spring 16 and has its outer or free end portion bowed outwardly in spaced relation to the spring 16. At its extremity the spring 15 is provided with an outwardly directed angular portion 26 having an angular extension 27 which extends inwardly beyond the end of the spring 16 and engages against the face thereof next adjacent the contact 20. Since the spring 15 is of greater strength than the spring 16 and tends to flex away from the contact 20, it follows that this spring 15 by the engagement of the angular extension 27 against the end of the spring 16 will withdraw the spring 16 from the contact 20 and cause separation of the contacts 20 and 25. The shaft 10 is provided with any suitable form of striker element, indicated at 28, as a fibre cam. This cam by its engagement against the spring 15 forces the spring 15 inwardly and permits the spring 16 to move under its own flexal tension over the contact 25 into engagement with the contact 20. Since the outer end portion of the spring 15 is bowed away from the spring 16, the amount of movement which is imparted to the spring 15 may be a great deal more than is necessary to permit the spring 16 to move to bring the contacts 20 and 25 into engagement and, accordingly, a con-

siderable amount of wear upon the fibre cam 28 may occur before its replacement would be necessary.

It will be obvious that a device constructed in accordance with the foregoing may be very readily and cheaply produced and requires a minimum number of securing elements to position the various parts employed. It will furthermore be obvious that the structure as hereinbefore set forth is capable of some change and modification without in any manner departing from the spirit of our invention and we accordingly do not limit ourselves to such specific structure except as hereinafter claimed.

We claim:—

1. In a timer, a conducting shell, contacts carried by and insulated from said shell, spring contacts secured in mechanical and electrical engagement with said shell by the first named contacts and insulated from the first named contacts, each of said spring contacts being provided with a contact for engaging the next adjacent shell carried contact, means normally maintaining said spring contacts out of engagement with their associated contacts, and rotating means for releasing the last named means.

2. In a timer, a conducting shell, contacts carried by and insulated from said shell, spring contacts secured in mechanical and electrical engagement with said shell by the first named contacts and insulated from the first named contacts, each of said spring contacts being provided with a contact for engaging the next adjacent shell carried

contact, means normally maintaining said spring contacts out of engagement with their associated contacts, and rotating means for releasing the last named means, said springs normally tending to engage the contacts carried thereby with the associated shell carried contacts, said means comprising springs having a flexure opposite to the first named springs and of greater strength than the first named springs.

3. In a timer, a conducting shell, contacts carried by and insulated from said shell, spring contacts secured in mechanical and electrical engagement with said shell by the first named contacts and insulated from the first named contacts, each of said spring contacts being provided with a contact for engaging the next adjacent shell carried contact, means normally maintaining said spring contacts out of engagement with their associated contacts, and rotating means for releasing the last named means, said springs normally tending to engage the contacts carried thereby with the associated shell carried contacts, said means comprising springs having a flexure opposite to the first named springs and of greater strength than the first named springs and having angular portions extending about and engaging the face of the first named springs next adjacent the shell carried contacts.

In testimony whereof we hereunto affix our signatures.

SEVER O. HUSETH.
VALENTINE M. FIEDLER.