June 19, 1923.

E. J. LEE

1,459,678

TIMER

Filed Jan. 24, 1922

Fig. 1.

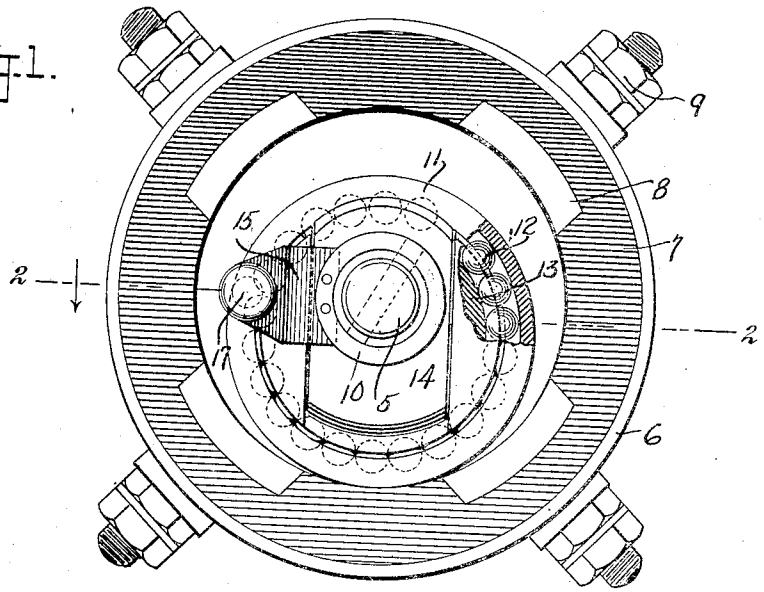


Fig. 2.

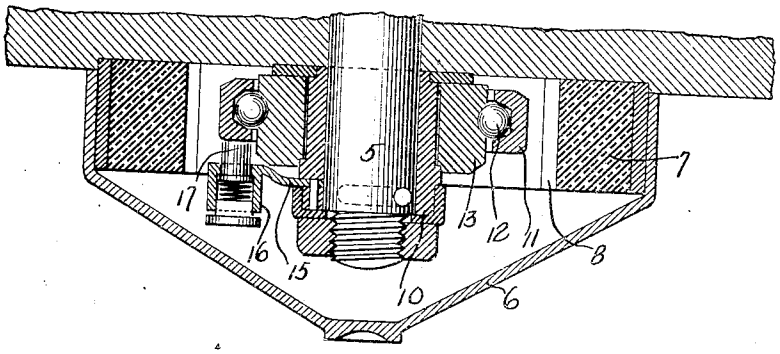
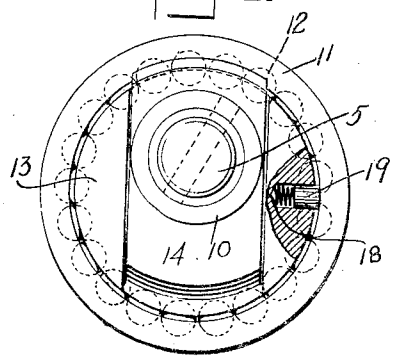


Fig. 3.



WITNESSES

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Patented June 19, 1923. 1,459,678

UNITED STATES PATENT OFFICE.

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TIMER.

Application filed January 24, 1922. Serial No. 531,415.

To all whom it may concern:

Be it known that I, ELMER J. LEE, a citizen of the United States, and resident of Bangor, in the county of Northampton and State of Pennsylvania, have invented a new and Improved Timer, of which the following is a full, clear, and exact description.

My invention relates to a timer and aims to provide a certain new and improved structure in connection with a device of this character, and more particularly with respect to the structure illustrated in my co-pending application No. 423623 filed November 12, 1920 on a timer.

It is an object of this invention to provide a timer of substantially similar construction to that shown in my co-pending application, but in which certain difficulties arising in connection with the construction above referred to will be overcome.

More particularly I have found that in certain instances, the current does not flow as freely as might be desired through the ball race, and thus this invention aims to provide a structure which will permit of the current bridging this portion of the timer so that no further difficulty will be experienced in this connection.

Further objects of my invention will become apparent in the annexed specification taken in connection with the drawings which latter illustrate practical embodiments of the same, and in which;

Figure 1 is a sectional plan view of a timer embodying my improved construction.

Figure 2 is a transverse sectional view taken along the line 2—2 and in the direction of the arrows indicated in Figure 1, and

Figure 3 shows a slightly different arrangement of the parts to accomplish the result desired.

The essential construction of the present timer remains the same as in the previous application, thus the reference numeral 5 indicates the conventional shaft which extends into the housing 6, the latter enclosing the insulating ring 7 providing contact portions 8, which latter are electrically connected to the terminals 9.

Also a collar 10 encircles the shaft 5, and an annular contact member 11 is eccentrically disposed with respect to this shaft, and this member is retained in contact with the elements 8 by preferably providing an annular series of balls 12 within the member 11 and bearing against a ring 13, which latter is in direct contact with the collar 10. However, as in my prior construction it will be noted that the upper face of the ring 13 is grooved and a slide 14 is disposed within this groove, this slide being secured to the collar 10 and having a spring (not shown) associated with it, which spring bears against the ring 13 and serves to at all times press the contact member 11 against a part of the inner periphery of the contact ring 7.

Contrary to the conventional construction, however, it will be noted, as has been illustrated in Figures 1 and 2 that I have associated a plate 15 with the collar 10 this plate extending outwardly therefrom and carries at its outer end a sleeve 16 partially housing a spring pressed pin 17, the outer end of which in turn bears directly against the contact member 11. Thus the current is free to bridge from the shaft 5 directly to the member 11 and it is not necessary for the same to pass through the collar 10, ring 13 and balls 12 to reach the contact member.

Thus the difficulty set forth in the preamble of this specification is overcome, and it will be understood that numerous structures might be provided for accomplishing this result. Thus, as has been shown in Figure 3 the ring 13 may be provided with a socket 18 which socket receives a spring pressed pin 19 the outer end of which bears directly against the inner edge of the contact member 11 again accomplishing the result desired.

Thus the objects set forth in the preamble of this specification have been accomplished, and it will be readily understood that numerous modifications of structure might readily be resorted to without in the least departing from the scope of my claims; which are;

1. A timer including a ring, a contact member encircling said ring, antifriction means interposed between said ring and member, a collar carrying said ring, a plate carried by said collar and extending outwardly therefrom, and a spring pressed pin carried on the outer end of said plate and bearing against said contact member.

2. A timer including a ring, a contact member encircling said ring, antifriction means interposed between said ring and member, a collar carrying said ring, a plate carried by said collar and extending out-

wardly therefrom, a sleeve carried by the outer end of said plate, and a spring pressed pin mounted within said sleeve, said pin bearing against said contact member.

3. A timer including a ring, a contact member, antifriction means interposed between said ring and contact member, and a spring pressed pin carried by said ring and bearing against said contact member.

4. A timer including a ring, a contact member, antifriction means interposed between said ring and contact member, said ring being formed with a socket, and a spring pressed pin partially disposed within said socket and having its outer end bearing against said contact member.

ELMER J. LEE.