Jan. 22, 1946. P. M. PAPPAS 2,393,559

TIMING DEVICE

Filed June 29, 1943

Fig. 1.

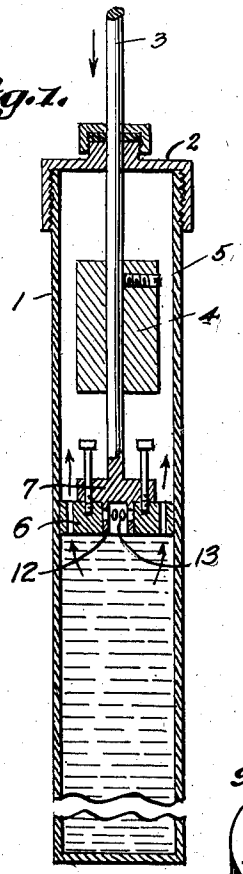


Fig. 3.

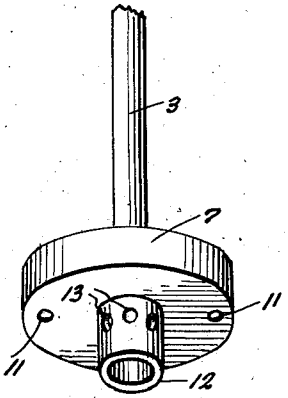


Fig. 2.

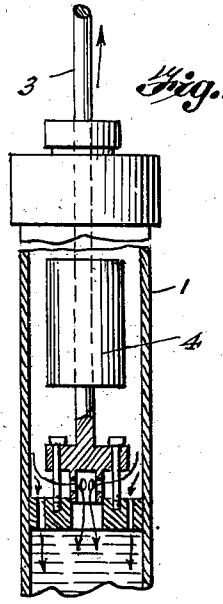


Fig. 4.

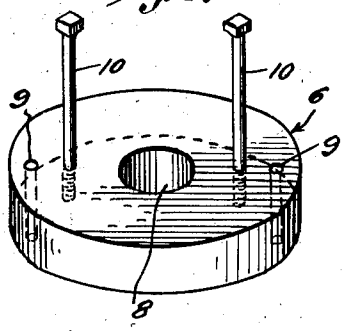


Fig. 5.

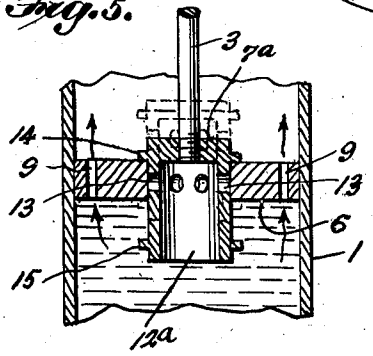
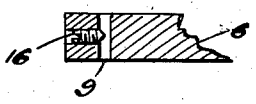


Fig. 6



Inventor,
PHILLIP M. PAPPAS.

By E. E. Urquhart & Co.,
His Attorneys

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2,393,559

UNITED STATES PATENT OFFICE

2,393,559

TIMING DEVICE

Phillip M. Pappas, Houston, Tex.

Application June 29, 1943, Serial No. 492,766

3 Claims. (Cl. 188—96)

This invention relates to a timing device.

An object of this invention is the production of a timing device which is particularly adapted for use in connection with a dish washing machine, toaster, or any other machine wherein the principle of the invention is adaptable.

Another object of the invention is the production of a simple and efficient device which will operate for controlling the time for the dishes to be washed, then will also operate further to permit rinsing of the dishes, during the washing of dishes in a dish washing machine.

A further object of the invention is the construction of a simple, novel and efficient timing device at a minimum cost, and which device will give long service, owing to its durability and simplicity.

With the foregoing and other objects in view, my invention comprises certain novel constructions, combinations and arrangements of parts as will be hereinafter fully described, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims.

In the drawing:

Figure 1 is a vertical, central, sectional view of a timing device constructed in accordance with the present invention.

Figure 2 is partly a vertical sectional view and partly a view in elevation of my timing device, showing the same as it appears when the piston rod is moving upwardly, with the auxiliary disc and its integral depending shell in an open position.

Figure 3 is an enlarged perspective view of the auxiliary disc.

Figure 4 is an enlarged perspective view of the primary disc.

Figure 5 is a fragmentary, vertical, sectional view of another embodiment of the present invention.

Figure 6 is a fragmentary sectional view of the primary disc showing another embodiment of the present invention.

Referring to the drawing, in which the preferred embodiment of this invention is illustrated in Figs. 1 to 4, 1 designates a casing and 2 is the cap or cover thereof. A piston rod 3 is slidably positioned upon the cap or cover 2, and on said rod within casing 1 is a suitable weight 4. This weight 4 may be varied in size for obtaining perfect results as the operator desires. The weight 4 is held fixedly on the piston rod 3 by preferably a set screw 5, which screw 5 may be positioned in any suitable place upon the weight for engaging said rod.

A primary disc 6 is positioned in the casing 1. I use the term "disc" in this specification in a broad sense, when referring to primary disc 6 and auxiliary disc 7, because these discs may be made of any desired size or shape within the scope of the invention. Disc 6 is provided with a comparatively large central opening 8 and preferably with two passages or ports 9. These ports 9 are for the passage of preferably hydraulic oil contained within casing 1. Outwardly-extending bolts 10 are preferably threaded into the primary disc 6 and on these bolts 10 is slidably mounted said auxiliary disc 7; disc 7 being provided with apertures 11 for receiving said bolts 10. Integral with auxiliary disc 7 and depending from the bottom or inner face thereof is a shell 12. This shell 12 is provided with apertures or ports 13.

In the embodiment shown in Figure 5 the piston rod 3 is provided on its inner end with a disc unit 7a. Integral with this disc unit 7a is a depending shell 12a. This shell 12a is provided with apertures or ports 13, the same as shell 12. On the disc unit 7a is an outwardly-extending flange 14 and an outwardly-extending flange 15. These flanges 14 and 15 limit the sliding movement of shell 12a upon the primary disc 6.

In Figure 6 the primary disc 6 is provided with a screw 16, which has its inner end adapted to extend into the port 9, whereby the amount of oil passing through port 9 may be regulated or controlled. Therefore, this screw 9 acts in the nature of a valve.

In operation, when the piston rod is drawn upwardly or outwardly, the auxiliary disc 7 is first slid outwardly upon bolts 10, causing the apertured shell 12 to move outwardly, as clearly shown in Figure 2, whereupon the oil in the upper or outer part of the casing 1 is permitted to more freely pass from the upper part through the apertures and ports into the lower part of the casing, whereby the upward movement of the piston is facilitated. Then when the piston rod 3 is moved downwardly within casing 1, the auxiliary disc 7 closes upon the primary disc, as clearly shown in Figure 1, permitting the oil in the lower part of the casing to pass up into the upper part of the casing only through the passages or ports 9. Consequently, it will be obvious that the travel of the plunger unit downwardly is much slower in the timing device than the upward movement, which upward movement is desired when the operator wishes to set the timing device.

It will be obvious that if the operator wishes

to more rapidly cause the piston rod 3 to move downwardly within the casing 1, by increasing the size of weight 4 this can be accomplished; hence, by reducing the size of the weight, the travel of the piston unit can be slowed. These minor changes may be accomplished within the spirit of the invention.

The operation of the embodiment shown in Figure 5 is similar to the preferred embodiment as shown in Figures 1 to 4.

The timing device may be used wherever adaptable, but it is admirably adapted to a dish washing machine, as fully disclosed in my copending application Serial No. 492,765, filed June 29, 1943.

While I have described the preferred embodiment of my invention and illustrated the same in the accompanying drawing, certain minor changes or alterations may appear to one skilled in the art to which this invention relates during the extensive manufacture of the same, and I, therefore, reserve the right to make such alterations or changes as shall fairly fall within the scope of the appended claims.

What I claim is:

1. In a device of the class described, the combination with a casing, of a piston rod extending into said casing, said piston rod being provided on its inner end with an auxilary disc, said auxiliary disc provided with an integral depending apertured shell, a primary apertured disc under said auxiliary disc and slidably mounted on said shell, means limiting sliding movement of said primary disc on said shell, said limiting means extending through said auxiliary disc and slidably movable upon said auxiliary disc, and said primary disc closing the apertures of said shell only on the downward movement of said piston rod.

2. In a device of the class described, the combination with a casing, of a piston rod extending into said casing, said piston rod being provided on its inner end with an integral auxiliary disc, said auxiliary disc being provided with an integral depending shell, said shell provided with apertures near said auxiliary disc, a primary apertured disc under said auxiliary disc and slidably mounted on said shell, said primary disc slidably engaging at its edges the inner wall of said casing, said primary disc having its apertures outside of the vertical edges of said auxiliary disc, means fixedly connected to said primary disc and extending through and slidably mounted upon said auxiliary disc and limiting the downward sliding movement of said primary disc upon said shell, and said primary disc closing the apertures of said shell on the downward stroke of said piston rod.

3. In a device of the class described, the combination with a vertical casing, of a vertical piston rod extending downward into said casing, said piston rod being provided within said casing and on its inner end with an integral auxiliary disc, said auxiliary disc being provided only with bolt-receivng apertures, said auxiliary disc provided with an integral depending shell at its center, said shell provided with an annular row of apertures near the bottom of said auxiliary disc, a primary disc engaging the inner wall of said casing and slidably mounted on said shell, said primary disc provided with vertical apertures outside of the edge of said auxiliary disc, bolts having heads extending through said bolt-receiving apertures of said auxiliary disc and threaded at their lower ends into said primary disc, and said primary disc being capable of sliding down on said shell during the upward stroke of said piston rod with the bolt heads engaging the top of said auxiliary disc, whereby further movement of said primary disc is prevented.

PHILLIP M. PAPPAS.