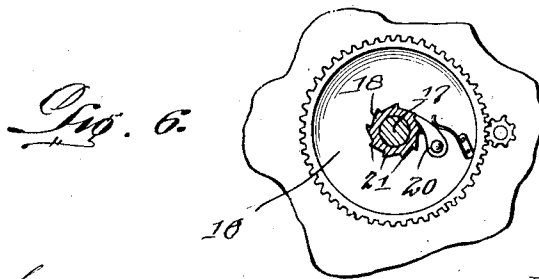
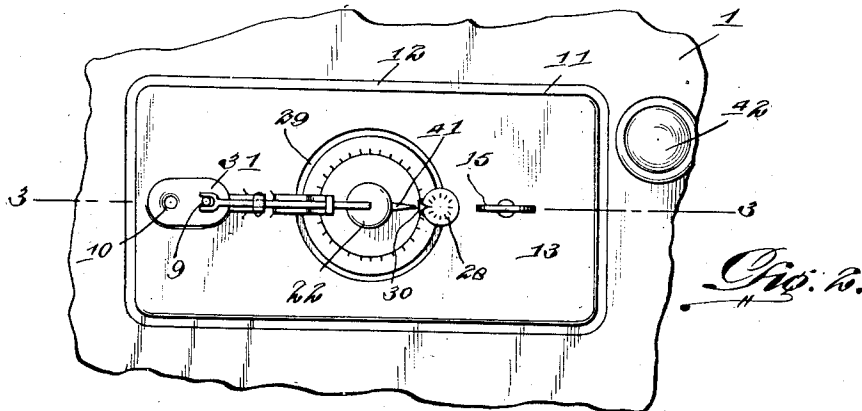
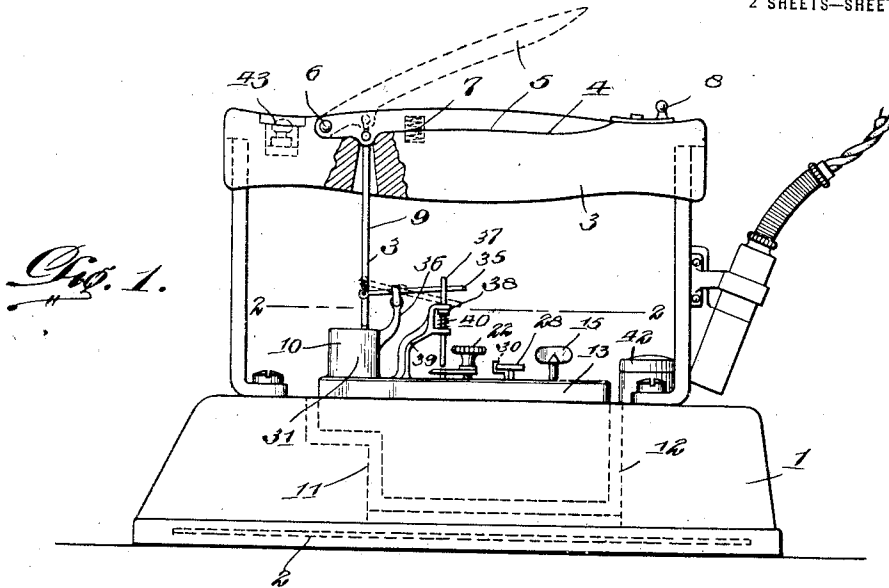


J. A. OCA-BALDA.
 ALTERNATED TIME CONTROLLED MECHANISM FOR IRONS.
 APPLICATION FILED AUG. 1, 1919.

1,350,933.

Patented Aug. 24, 1920.
 2 SHEETS—SHEET 1.



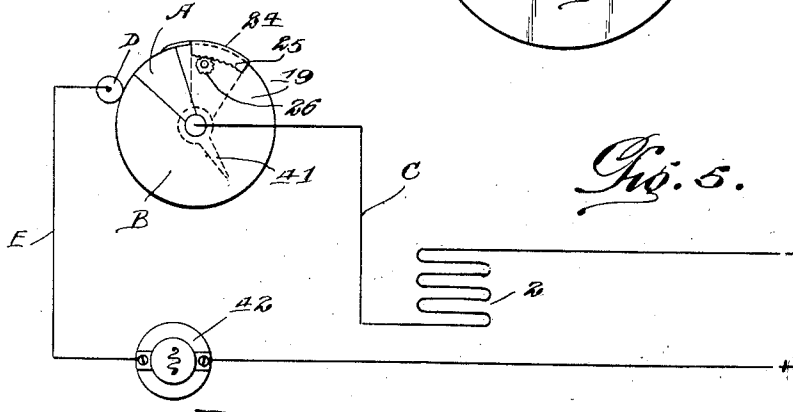
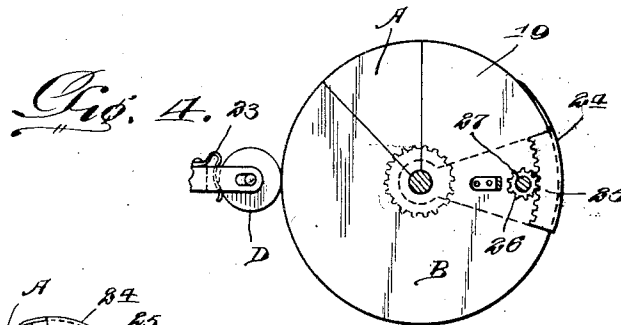
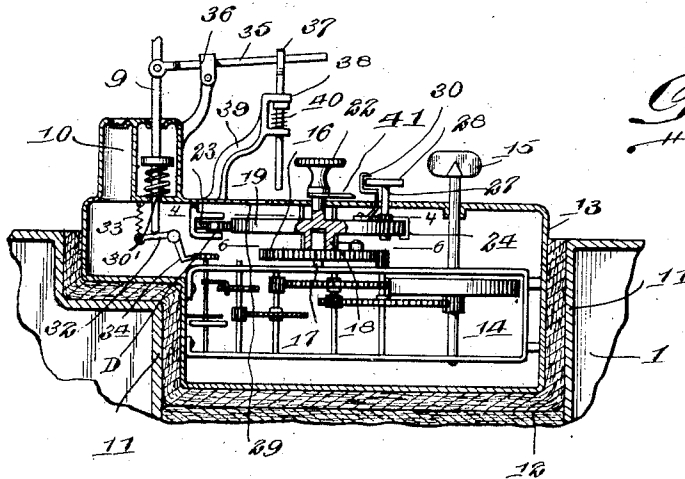
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 ATTORNEY.

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Fred L. Fox

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UNITED STATES PATENT OFFICE.

JOSÉ A. OCA-BALDA, OF NEW YORK, N. Y.

ALTERNATED TIME-CONTROLLED MECHANISM FOR IRONS.

1,350,933.

Specification of Letters Patent. Patented Aug. 24, 1920.

Application filed August 1, 1919. Serial No. 314,661.

To all whom it may concern:

Be it known that I, JOSÉ A. OCA-BALDA, a citizen of Argentina, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Alternated Time-Controlled Mechanism for Irons, of which the following is a specification.

This invention relates to improvements in electrical irons and the object of the invention is to provide time controlled mechanism for supplying current to the heating elements of the iron for a certain period of time and then breaking the circuit to said elements and holding the circuit in this condition for a certain period of time.

Experience has shown that in the ordinary circumstances an electrical iron will become heated to a sufficient degree after the current has been turned on for a certain period of time and the iron will hold this heat for a much longer period of time after the current has been broken.

The purpose of this invention, therefore, is to supply the heating elements of the iron with current for a period of time long enough to properly heat the iron. Then the current is turned off but before the iron can become cool the current is again turned on. Thus the consumption of current is reduced and there is no danger of overheating the iron.

In carrying out my invention I provide means for operating the circuit controlling device by clock mechanism with means for rendering the mechanism inactive so that the device can be used as a common iron.

Means are also provided for regulating the periods of time in which the current will flow and be cut off.

Means are also provided for indicating the condition of the circuit at all times.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is an elevation of an iron constructed in accordance with my invention.

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

Fig. 3 is a section on line 3—3 of Fig. 2.

Fig. 4 is a section on line 4—4 of Fig. 3.

Fig. 5 is a diagrammatic view of the circuit.

Fig. 6 is a section on line 6—6 of Fig. 3.

In these views 1 indicates the body of the iron which is provided with heating elements 2, and 3 indicates the handle on the iron. This handle is provided with a recess 4 with which engages the lever 5 which is pivoted to the handle at 6. This lever is normally held in raised position by the spring 7, but may be locked in the recess by the latch 8. A pusher rod 9 is connected to said lever and passes through an opening in the iron. When part of the device is not being used the end of said rod lies in a socket 10 suitably connected with the iron.

In the upper part of the body of the iron a recess 11 is formed and the walls and bottom of this recess are covered by insulating material 12 in order to avoid heating the clock mechanism. A case 13 is located in said recess 11 and this case contains the time controlled circuit regulating means now to be described.

This mechanism comprises the clock works 14 which may be of any suitable type and is simply shown in a general way in the drawings. The main spring of this clock mechanism is wound by a stem handle 15 which passes through the upper face of the case.

The clock mechanism is attached to a wheel 16 so as to rotate the same and this wheel 16 is provided with the upwardly extending lug 17 which is adapted to engage the socket member 18 carried by a wheel 19. The wheel 16 carries a dog 20 which engages the teeth 21 on the outer wall of the socket member 18. In this way the wheel 19 will be caused to rotate with the wheel 16 but said wheel 19 may be rotated manually in the same direction by the handle 22 when desired. This wheel 19 is constructed of conducting material A and insulating material B and the conducting material is connected with the heating elements 2 by the conductor C. A brush D is connected with a source of electrical energy by the conductor E. This brush is in the form of a roller which is held in engagement with the circumference of the wheel by the spring 23. In this way when the roller comes in engagement with the conducting part of the wheel the circuit to the heating elements will be completed, as shown in the diagrammatic view of the circuit.

The period of time in which the circuit is held closed may be adjusted by the slide 24 which is arranged on the circumference of

said wheel and has the part with which the brush D will contact formed of insulating material. This slide is provided with a flange 25 which has teeth on its edge and a small gear 26 engages with said teeth so that when the said gear is rotated the slide will be moved to cover more or less the conducting material A. The gear is rotated by means of the stem 27 which carries the finger engaging wheel 28. This stem passes through an annular slot 29 in the face of the casing. A marker 30 has one end connecting with the wheel 19 and also passes through the slot with its pointed end adjacent the circumference of the finger engaging wheel 28, said wheel having suitable indicia on its circumference to cooperate with the marker for setting the slide 24 in the desired position. Means are provided for rendering the circuit controlling means inactive when desired and such means consist of a spring plunger 30' located in the cylinder 31 and which is adapted to be forced downwardly by the rod 9 when the lever 5 is depressed and said rod is in active position. When the plunger is forced downwardly its end will engage the bell crank lever 32 to rock the same against the tension of the spring 33 and this lever will move the stop 34 against one of the wheels of the clock mechanism and thus stop the movement of the clock.

In order to insure the stopping of the make and break wheel 19 with the brush on the non-conducting part thereof, if the iron should be left with the current on, I provide the following arrangement:—

A rod 35 is slidably and pivotally supported by a bracket 36 connected with the cylinder 31, and one end of this rod is pivotally connected to the pusher rod 9. The free end of said rod 35 is slidably connected with a post 37 which is vertically movable in a guide 38 carried by a bracket 39 which projects upwardly from the face of the case. A spring 40 tends to hold the post in its upper position with its lower end above the face of the case and out of the path of a finger 41 connected with the handle 22 of the make and break wheel 19. It will thus be seen that when the lever 5 is depressed and the rod 9 is within the socket 10 or the cylinder 31 the post 37 is in raised position so that the finger 41 may freely rotate. However, when the lever is raised and the rod 9 is in its upper position the post 37 will be depressed so that when the finger 41 strikes the post in the rotation of the wheel 19 the said wheel will come to rest with the brush D engaging the non-conducting part of said wheel and the current will be broken to the heating elements.

I may place pilot lamps or other current indicating means on the body of the iron, as shown at 42, or on the handle of the iron, as

shown at 43, these means being connected with the circuit either in parallel or series.

It will thus be seen that when the iron is being used and the rod 9 is in inactive position in the socket 10 the clock mechanism will rotate the make and break wheel so as to alternately supply current to the heating elements and cut off the current therefrom. By adjusting the slide 24 the period of time in which the current is being supplied to the elements may be regulated. By use of any type of regulator for the clock mechanism the speed of the mechanism may be regulated to rotate the make and break wheel at any desired speed so that the periods of time in which the current is on and off may be regulated. For all practical purposes it will be sufficient to rotate the wheel at a constant speed. If the iron should be left without turning off the current the said current would be automatically cut off as the lever 5 would be raised by its spring, thus raising the rod 9 and depressing the post 37 so that when the rotation of the wheel 19 brings the finger 41 around to said post, further rotation of the wheel will be prevented and the mechanism will be stopped with the brush contacting with the insulated part of the wheel. Thus current to the heating elements will be broken.

If it is desired to use the iron in the ordinary way the wheel 19 is turned by its handle until the conducting part contacts with the brush and the rod 9 is shifted to a position over the plunger 30' and then by depressing the lever 5 said rod 9 will cause the plunger to move the stop 34 against the clock mechanism and hold the same inactive. Thus current will be supplied to the iron continuously.

If the iron gets too hot the wheel 19 may be rotated by hand to break the circuit and the circuit may be made or broken by hand by this means. In this case also if the iron is left with the circuit unbroken, said circuit will be automatically broken after a short time by the finger engaging the post.

The lever 5 may be held in its depressed position by the latch 8.

By my invention the iron may be used as an ordinary iron with the current flowing through the heating elements all the time the iron is being used but it will automatically break the circuit if the iron is left. Or the iron may be alternately supplied with current and the current broken so as to heat the iron with a minimum amount of current and the circuit maker and breaker may be adjusted so as to keep the iron at the proper degree of heat. In this case also the circuit is automatically broken if the iron is left without turning the switch. Thus the iron may be given to an inexperienced person without danger of overheating the iron or damage being done by the iron being left

with the current on. When desired the make and break may be turned by hand to properly heat the iron and by use of the pilot lamp or other indicating means the condition of the circuit may be seen at all times.

The casing containing the clock mechanism may be provided with suitable connections with the circuit of the iron so that said mechanism may be easily detached from the circuit so that it may be removed for cleansing or repairing.

While I have explained only one way of putting my invention into practice I do not care to be limited to the exact details shown and I desire it to be understood that changes and alterations in the arrangement of the several parts may be made by me. Furthermore, I do not wish to be limited to the particular location of the alternating means as they may be placed in the most suitable place. For instance, they may be placed in the body of the iron or in any position on the conductors of the same. It will of course be understood that such changes must come within the scope of the appended claims.

What I claim is:—

1. The combination with an electric iron, of means for alternately making and breaking the circuit thereof and time controlled mechanism for actuating said means.

2. The combination with an electric iron, of means for alternately making and breaking the circuit thereof, time controlled mechanism for actuating such means, and means for adjusting the said alternating means.

3. The combination with an electric iron, of means for alternately making and breaking the circuit, time controlled mechanism

for actuating such means and means for indicating the condition of the circuit.

4. The combination with an electric iron, of means for alternately making and breaking the circuit thereof and means for rendering the mechanism inactive with the circuit broken or closed as desired.

5. The combination with an electric iron, of means for alternately making and breaking the circuit thereof, time controlled mechanism for actuating such means, and means for automatically rendering the mechanism inactive with the circuit broken if the iron is left.

6. The combination with an electric iron, of means for alternately making and breaking the circuit thereof, time controlled mechanism for operating said means and means for manually operating said alternating means.

7. The combination with an electric iron, of means for alternately making and breaking the circuit thereof, time controlled mechanism for actuating said means, automatic means for rendering the alternating means inactive with the current broken when the iron is not being used, and means for manually operating the alternating means when desired.

8. An electric iron having a recess therein, a case in said recess and circuit controlling means removably mounted in said case.

9. The combination with an electric iron, of means for alternately making and breaking the circuit and means to connect or disconnect all the mechanisms from the iron for repairing and overhauling purposes.

In testimony whereof I affix my signature.

JOSÉ A. OCA-BALDA.