June 16, 1953 P. J. KIRCHER 2,642,027

INDICATOR FOR FLATIRON CONTROL MEANS

Filed March 13, 1951

Fig. 1

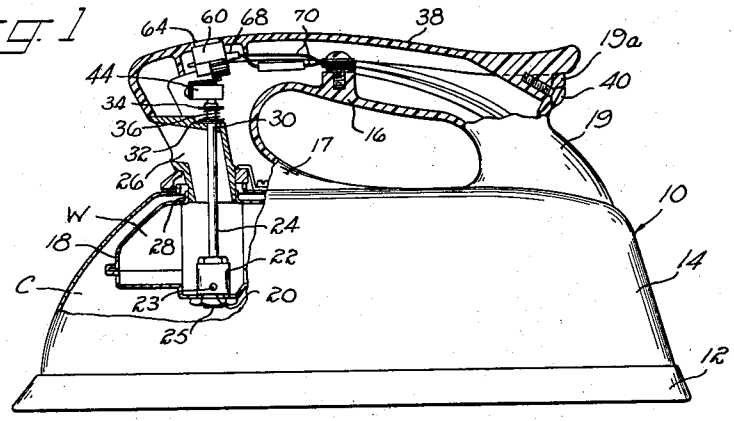


Fig. 2

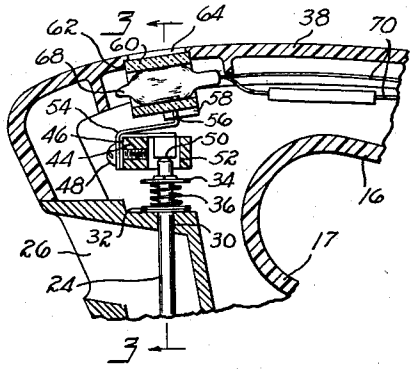


Fig. 3

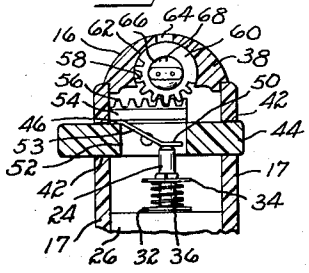
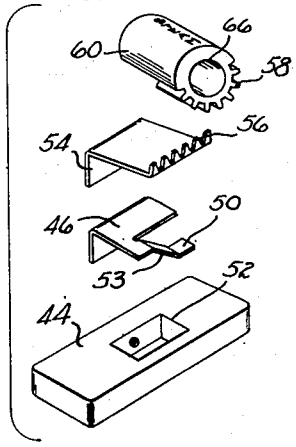


Fig. 4



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INDICATOR FOR FLATIRON CONTROL MEANS

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10 Claims. (Cl. 116—124)

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This invention relates to a flatiron of the type which can be used either as a dry or a steam iron and relates especially to mechanism for controlling the mode of operation of the iron.

Irons which are capable of either steam or dry operation are provided with a water chamber disposed above the soleplate and are provided with valve means for either permitting or checking the flow of water to the region adjacent the soleplate. Switching from one mode of operation to the other is accomplished by opening or closing the valve.

It is an aim of the present invention to provide a duo-operating flatiron with improved control mechanism which is characterized by its simplicity and compact arrangement so that it can be readily assembled within the other components of the iron without increasing the bulk thereof.

Another object of the invention is to provide valve control mechanism which may be economically manufactured and which can be so arranged on the iron as to enable the operator to switch from one mode of operation to the other without ceasing the ironing efforts and by merely manipulating actuating means which is intimately associated with the handle of the iron.

It is a further object of the present invention to provide a duo-operating flatiron with control mechanism incorporating readily visible illuminated indicating means for showing the disposition of the valve.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the drawings—

Fig. 1 is a side elevational view of a flatiron which can be operated as either a dry or steam iron with parts shown in vertical cross section to more readily illustrate the control mechanism;

Fig. 2 is a vertical cross-sectional view on enlarged scale of a portion of Figure 1 showing with particularity the parts which comprise the valve control mechanism.

Fig. 3 is a transverse sectional view taken substantially as indicated by line 3—3 of Fig. 2; and

Fig. 4 is a perspective exploded view of the elements which make up the control mechanism.

As shown in detail in the drawings, the numeral 10 indicates generally a flatiron which is constructed for either dry or steam operation having a conventional soleplate 12, a body shell 14, and a handle 16. The handle 16 is of hollow shell-like construction having front and rear legs 17 and 19, respectively, secured to the body shell 14.

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The body shell 14 is mounted adjacent and above the soleplate 12 and receives the electric lines (not shown) which are connected to the heating elements (also not shown) associated with the soleplate 12 in the usual manner. The body shell defines a chamber C in which there is disposed a shell-like housing 18 which in turn defines a water chamber W. The shell 18 has a conventional inlet for receiving a water supply and is provided with an aperture 20 in its bottom wall which is closed by a valve 22. The valve 22 will afford communication between the water chamber W and the chamber C in that it has a horizontal inlet 23 disposed within the chamber W and a vertical outlet 25 within the chamber C. The water which is discharged from chamber W into chamber C will be heated by the elements which heat the soleplate 12 and will then flow to the under surface of the soleplate 12 through apertures arranged therein in the conventional manner.

The construction of the iron and the valve are not a part of the present invention and may be constructed in any suitable manner. The drawing of the particular flatiron is merely for illustration to show the cooperation of the control mechanism and indicator which are constructed in accordance with the present invention.

An elongated valve control rod 24 is provided and is vertically arranged with its lower end associated with the valve 22 so that the valve discharge opening 25 can be closed thereby. The upper end of the control rod 24 projects through the shell or casing 18 into the front leg 17 of the handle 16. The rod 24 is supported and guided for vertical movements by a tubular L-shaped metallic member 26. The vertical leg of the member 26 is inserted within a neck 28 in the upper portion of the shell 18 through which the rod 24 projects and the horizontal leg of the member 26 projects forwardly to the front face of the handle leg 17. The member 26 has an aperture 30 adjacent the elbow thereof which receives rod 24 in sliding relation and a thrust plate or washer 32 is disposed about the rod 24 on the top surface of the member 26. Adjacent the upper end of the rod 24 a similar thrust plate or washer 34 is carried for movement therewith and thrusts against a coil spring 36 disposed between the disks 32 and 34. Thus, the coil spring urges

the rod 24 upwardly to normally maintain the valve 22 in open position for steam operation of the iron 10.

The handle 16 is provided with a longitudinal strip 38 which acts as a cover for the otherwise open shell of the handle and is clamped by an appendage 19a on the rear leg 19 and secured thereto as by a screw 40. The front end of the handle portion 38 rests atop the forwardly projecting free end of the member 26. Thus, it will be seen that the strip 38 cooperates with the other elements of the handle 16 to provide a continuous tubular member affording a hand grip between the legs 17 and 19.

The front leg 17 of the handle 16 is provided with a pair of opposed generally rectangular slots 42 which accommodate a control or switch actuating bar 44. The bar 44 is mounted by the handle for translatory movements relative thereto within the slots 42 and the bar 44 carries a generally L-shaped plate 46 secured with its short leg abutting the forward face of the bar 44 as by a screw 48. The long leg of the plate 46 abuts the top of the bar 44 and has a depending cam appendage 50 which projects into a generally rectangular aperture 52 centrally disposed within the bar 44. The appendage 50 has a portion 53 which slopes downwardly from left to right as viewed in Fig. 3 to engage the top end of the control rod 24 and cam the same downwardly to effect closing of the valve 22. Thus, the valve is closed by shifting the bar from right to left as shown in Fig. 3 which views that section of the iron in the forward facing direction. The valve can be opened by pressing the bar 44 to the right and either movement of the bar can be accomplished with finger-tip pressure without disrupting the ironing operation.

A second generally L-shaped plate 54 is secured to the bar 44 by the screw 48 passing through the shorter leg thereof, but the longer spring leg of the plate 54 rests at an acute angle to the top of the bar 44 and the longer leg of the first mentioned L-shaped plate 46. A plurality of ratchet teeth 56 are formed at the free end of the longer leg of the member 54 to provide a rack projecting upwardly to engagement with a plurality of teeth 58 circumferentially arranged on the lower side of a generally cylindrical indicator 60. The indicator 60 is disposed within an arcuate cavity 62 in the handle strip 38 and secured thereby against axial movement. The indicator is biased upwardly into the cavity 62 by means of the spring action of the L-shaped member 54. The member 54 also provides driving means for rotating the indicator 60 in that as the actuating bar 44 is shifted from one position to another to open or close the valve the ratchet teeth 56 will drive the cylindrical indicator through a portion of a revolution.

Suitable indicia may be provided on the outer upper periphery of the indicator 60 so as to be visible through an aperture 64 in the strip 38 adjacent and above the cavity 62. Since the actuating bar is shifted to one of two positions, the indicator need bear only the legends "dry" and "steam" or just one of the foregoing legends to indicate the disposition of the valve for operating the iron.

The indicator 60 as previously mentioned is cylindrical and is composed of light-penetrable material such as plastic and has a central longitudinal bore 66 which receives lamp 68 connected as by wires 70 to the electric circuit supplying energy to the sole-plate heating elements. The lamp 68 is secured in the bore 66 without fittings or adapters and the light therefrom will illuminate the indicia appearing on the indicator 60 through the aperture or window 64.

From the foregoing it will be understood that there is provided a switch or control mechanism for controlling the disposition of the valve 22 which determines the mode of operation of the iron 10. The elements which go to make up the control mechanism are characterized by their simplified construction and by their compact arrangement and cooperation so that the mechanism may be assembled within the standard components of the iron without adding to the bulk thereof. The control mechanism can be expeditiously operated by an operator without removing the hand from the handle of the iron or disrupting the ironing operation in any manner.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, 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.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

1. In a flatiron, an indicator member comprising a hollow cylinder formed of light-penetrable material provided with indicia on a peripheral portion thereof and with integral gear teeth on the peripheral portion opposite from said indicia, means forming an apertured recess for journaling the cylinder with the indicia facing the recess, actuating means for rotating the cylinder disposed on the side of the cylinder opposite from the recess and engaging said gear teeth, and a light source within the cylinder.

2. In a flatiron, the combination of a handle having a downwardly facing arcuate seat therein, hollow cylindrical indicating means formed of light-penetrable material journaled for rotation in said seat, said seat being provided with an aperture to permit the adjacent surface of the cylinder to be viewed, a light source disposed within the hollow cylinder, control means associated with the iron, and a driving connection between the control means and the cylinder whereby the rotated portion of the cylinder is determined by the position of the control means.

3. In a flatiron of the type having a water chamber and a valve for opening and closing the chamber to effect changes in operation of the iron between steam and dry processes, the combination comprising hollow cylindrical indicating means journaled by the handle of the iron and having a central bore, a valve actuating bar movably supported by the handle for movement transverse to said indicating means, means on said actuating bar engageable with the valve to open and close the same during movements of said bar, drive means between said actuating bar and said indicating means whereby said indicating means is rotated by movement of said actuating bar, and a lamp disposed in said bore to illuminate said indicating means.

4. In a flatiron of the type having a water chamber and a valve for opening and closing the

chamber to effect changes in operation of the iron between steam and dry processes, the combination comprising a hollow light-penetrable indicating cylinder rotatably mounted by the handle of the iron, a valve actuating bar transversely supported by the handle in proximate tangential relation to said indicating cylinder, means on said actuating bar engageable with the valve to open and close the same during movements of said bar, drive means carried by said bar engaging said cylinder whereby said indicating cylinder is rotated by movement of said actuating bar, and a lamp disposed in said cylinder to illuminate the same.

5. In a flatiron of the type having a water chamber and a valve for opening and closing the chamber to effect changes in operation of the iron between steam and dry processes, the combination comprising an indicating cylinder disposed in an arcuate cavity in the handle of the iron, a valve actuating bar transversely supported by the handle in proximate tangential relation to said cylinder, means on said actuating bar engageable with the valve to open and close the same during movements of said bar, means on said cylinder defining a plurality of gear teeth on the outer periphery thereof, and drive means including a rack between said bar and said cylinder thrusting said cylinder into the handle cavity and rotating said cylinder in response to transverse movements of said bar.

6. In a flatiron of the type having a water chamber and a valve for opening and closing the chamber to effect changes in operation of the iron between steam and dry processes, the combination comprising a hollow light-penetrable indicating cylinder rotatably disposed in an arcuate cavity in the handle of the iron, a light source disposed within the hollow cylinder, said handle being provided with an aperture to permit the adjacent surface of the cylinder to be viewed, a valve actuating bar transversely supported by the handle in proximate tangential relation to said cylinder, means on said actuating bar engageable with the valve to open and close the same during movements of said bar, means on said cylinder defining a plurality of gear teeth on the outer periphery thereof, and drive means including a rack between said bar and said cylinder thrusting said cylinder into the handle cavity and rotating said cylinder in response to transverse movements of said bar, and a lamp disposed in said cylinder to illuminate the same.

7. In a flatiron of the type having a water chamber and a valve for opening and closing the chamber to effect changes in operation of the iron between steam and dry processes, control means comprising a valve control member shiftably supported by the iron for movement between two positions, one to close the valve and the other to open the valve, means biasing said control member to one of said positions, an actuating bar supported by the handle of the iron for translatory movement relative thereto, means on said actuating bar engageable with said control member during movement of said actuating bar in one direction to shift said control member to the other position, a light-penetrable indicator journaled by the handle and movable to two positions to indicate dry or steam operations, said handle being provided with an aperture to permit the adjacent surface of the indicator to be viewed, driving means carried by said actuating bar and engaged with said indicator in driving relation whereby said indicator is shifted in response to movements of said actuating bar, and an illumination source disposed in said indicator to illuminate the same in each position thereof.

8. In a flatiron of the type having a water chamber and a valve for opening and closing the chamber to effect changes in operation of the iron between steam and dry processes, control means comprising a vertically arranged valve control rod shiftably supported by the iron for movement between two positions, one to close the valve and the other to open the valve, means biasing said control rod to one of said positions, an actuating bar supported by the handle of the iron for translatory movement relative thereto, means carried by said actuating bar engageable with said control rod during movement of said actuating bar in one direction to shift said control rod to the other position, a light-penetrable indicator journaled by the handle of the iron and movable between two positions to indicate dry or steam operation, said handle being provided with an aperture to permit the adjacent surface of said indicator to be viewed, driving means carried by said actuating bar and engaged with said indicator in driving relation whereby said indicator is shifted in response to movement of said actuating bar, and a light source carried by said indicator to illuminate the same in each position thereof.

9. In a flatiron, the combination of a handle having a downwardly facing arcuate cavity therein, an open-ended tubular indicator formed of light penetrable material seated in said cavity, said handle being provided with an aperture communicating with the top of the cavity to permit the indicator to be viewed therethrough, a stationary light bulb seated within the tubular indicator, control means associated with the iron including a push bar mounted transversely of the handle beneath said cavity for reciprocal sliding movement, and means interconnecting the bar and indicator whereby the indicator is held in said cavity by the bar and is rotated in response to sliding movement of the bar.

10. In a flatiron, the combination of a cylindrical indicator provided with indicia on a peripheral portion thereof and with gear teeth on the peripheral portion opposite from said indicia, a handle having a recess for journaling the cylindrical indicator, control means associated with the iron including a fingerpiece mounted for reciprocal sliding movement transversely of the recess, and a rack on the fingerpiece meshing with the gear teeth of the indicator whereby the indicator is held in the recess by the rack and is rotated in response to sliding movement of the fingerpiece.

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