July 24, 1956 N. G. HERMAN 2,755,575

ELECTRIC FLATIRON ASSEMBLY

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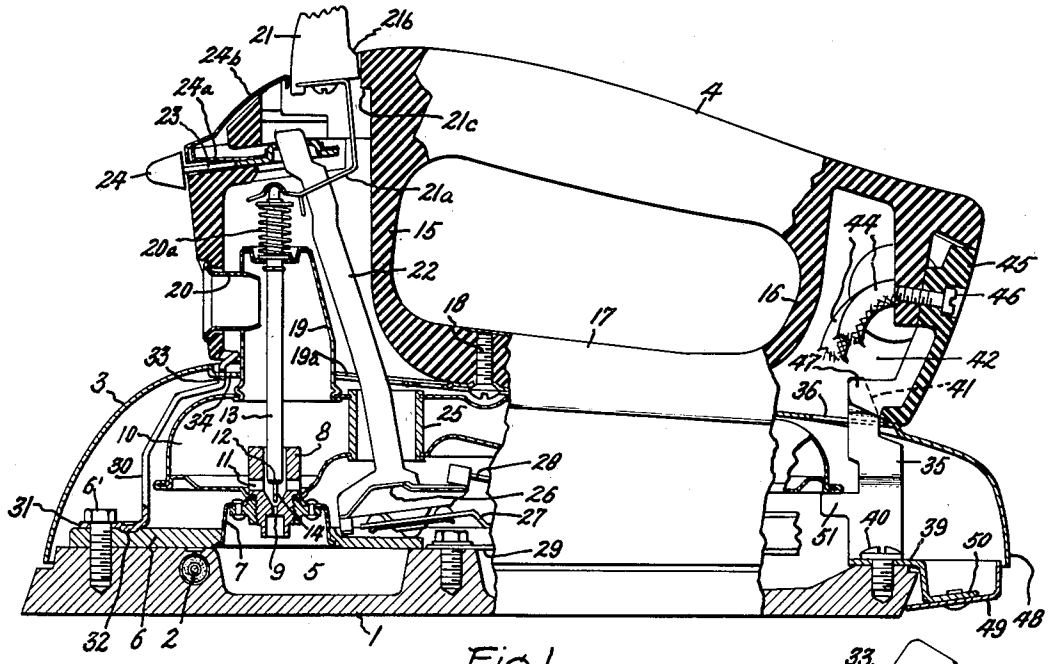


Fig. 1.

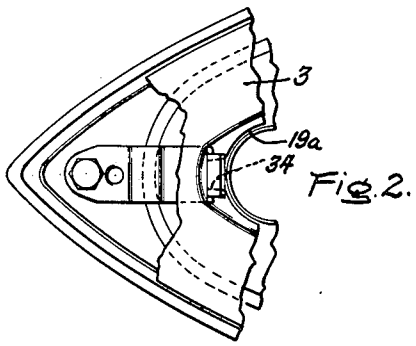


Fig. 2.

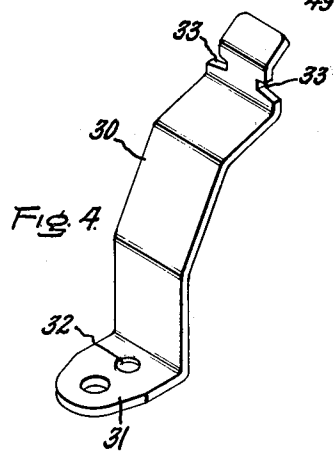


Fig. 4.

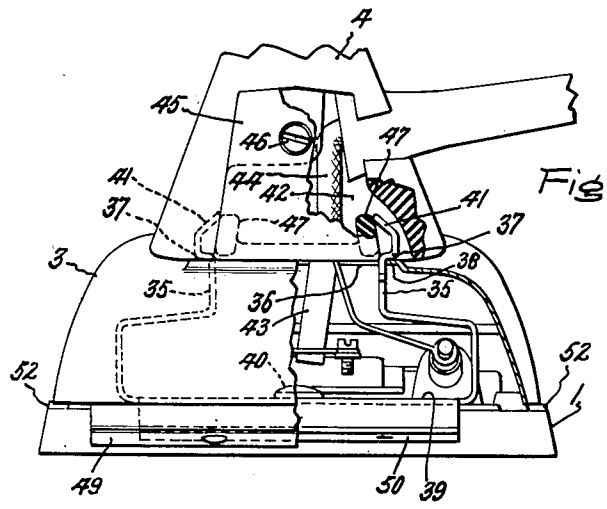


Fig. 3.

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ELECTRIC FLATIRON ASSEMBLY

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5 Claims. (Cl. 38—91)

The present invention relates to electric flatirons and particularly to the structure whereby the soleplate, the cover and the handle are attached to each other.

The object of the invention is to provide an improved construction and arrangement for fastening together the soleplate, the cover and the handle of a flatiron which is simple in structure and gives firm connection between the cover and the soleplate; and one wherein the cover is attached to the soleplate by relative movement of the cover with respect to the soleplate whereby the cover may be quickly and easily attached to and removed from the soleplate.

The invention is well adapted for use in steam flatirons and has advantages from an assembling standpoint when used in such flatirons. For this reason the invention is specifically illustrated and described as embodied in a steam flatiron. However, it is to be understood that the invention is not limited to use in steam flatirons but may be used in other types.

According to the invention the handle and the cover are connected together to form a unit and the unit is attached to the soleplate through the intermediary of front and rear brackets on the soleplate, the cover having means which interlocks with the front bracket by rearward movement of the cover with respect to the soleplate and the cover having means which interlocks with the rear bracket by downward movement of the cover with respect to the rear end of the soleplate.

In the drawing,

Fig. 1 is a side elevation, partly in section, of a steam flatiron embodying the invention.

Fig. 2 is a detailed top plan view of the front end of the flatiron, the cover being in part broken away to show parts beneath it.

Fig. 3 is an elevation of the rear end of the flatiron with parts broken away to illustrate structure inside the cover.

Fig. 4 is a perspective view of a front bracket used in attaching the front end of the cover to the soleplate.

Referring to the drawing, 1 indicates the soleplate, 2 the heating unit embedded therein, 3 the cover, and 4 the handle of the flatiron. At the forward end of the soleplate are walls which define a steam generating chamber 5 over which is fastened by a cover plate 6 by a plurality of spaced studs, one of which is shown at 6' in Fig. 1. Fixed in an opening in cover plate 6 is a steam dome 7. Fixed in the top wall of dome 7 is a valve body 8 having an orifice 9 through which water is supplied to chamber 5 from a water reservoir 10 through openings 11 in the valve body. Flow of water from reservoir 10 through orifice 9 to steam generating chamber 5 is controlled by a valve head 12 on the lower end of a valve stem 13 which seats against a valve seat at the inlet side of orifice 9. On the lower end of stem 13 is a pin 14 which slides through orifice 9 to keep the orifice clean and open.

Handle 4 is supported on cover 3 by front and rear hollow posts 15 and 16, the lower ends of the posts having integral therewith a base bar 17 which is seated on the top wall of cover 3 and is attached to it by a plurality of spaced screws, one of which is shown at 18 in Fig. 1. Connected to the top wall of water reservoir 10 is a filling tube 19 which projects up through an opening 19a in the top wall of cover 3 into post 15. Filling tube 19 is closed at its upper end and is provided with a front side opening with which is connected a filling sleeve 20 which extends through the front wall of post 15. Suitable spring means is provided for biasing valve stem 13 toward open position, it comprising a spring 20a positioned between the top wall of tube 19 and a collar on stem 13 as shown clearly in Fig. 1. The stem is moved by a knob 21 at the upper end of post 15 provided with an arm 21a the inner end of which rests on top of stem 13. In Fig. 1, the valve is shown in open position, it being held open by spring 20a. It may be closed by pressing down on knob 21; and held closed by moving knob 21 backward somewhat to bring a shoulder 21b on the knob under a ledge 21c at the rear side of opening through post 15. Also located in post 15 is a thermostat adjusting control shaft 22 to the upper end of which is connected a control lever 23 by means of a slot in the control lever through which the upper end of control shaft 22 extends with a loose fit. Control lever 23 extends out through a slot in the upper forward wall of post 15 and has an operating knob 24 on its outer end. In the slot is a spring plate 24a which serves to hold control lever 23 in place in frictional engagement with the bottom wall of the slot through which it passes. At 24b is a dial plate which snaps over the forward upper end of post 15 and has suitable indicia thereon for indicating the setting of control lever 23. The lower end of control shaft 22 extends through a duct across reservoir 10 formed by a tube 25 to a position between the bottom wall of the reservoir and the top surface of the soleplate and at its lower end is suitably connected to a thermostat adjusting cam disk 26 pivotally mounted on a thermostat frame or bracket 27. Engaging the top cam surface of disk 26 is a thermostat adjusting arm 28. At 29 is the bimetal of the thermostat.

The specific structure of water control valve and the means for operating it and the thermostat structure and the means for adjusting it form no part of the present invention. The constructions indicated are similar to those disclosed in my application Serial No. 452,911, filed August 30, 1954, assigned to the same assignee as the instant application. My invention has to do with the structure and arrangement for attaching the cover-handle assembly to the soleplate of the flatiron.

For attaching the front end of the cover handle assembly to the soleplate there is provided a bracket 30 having an ear 31 at its lower end which is attached to the soleplate in the present instance by the one stud 6' which serves also for fastening in place the cover plate 6. In ear 31 is a depression which forms a bead 32 which is positioned in a depression in plate 6 and serves to hold the bracket from turning on stud 6' as a pivot. Bracket 30 extends up through a space between the front wall of cover 3 and the adjacent wall of reservoir 10 to a position where its end extends through and beyond opening 19a; and means are provided for interengagement between the upper end of the bracket and the wall of cover 3 at the forward edge of the opening of a character such that the cover may be interengaged with the upper end of the bracket by a rearward sliding movement of the cover with respect thereto. In the present instance the interengaging parts comprise notches 33 on opposite sides of bracket 30 into which fit the side walls of a recess 34 in the front edge of opening 19a.

For attaching the rear end of the cover-handle as-

sembly to the soleplate there is provided holding means with which the cover may be engaged by a downward movement of the cover with respect to the soleplate. The holding means illustrated comprises a pair of spaced spring arms **35** which are attached to the soleplate at its rear end, project upwardly through an opening **36** at the rear of the top wall of the cover and are provided with walls which define shoulders **37** which engage over the top wall of the cover at opposite sides of opening **36** as shown clearly at **38** in Fig. 3, the arms being biased to such positions by their inherent resiliency. The spring arms are attached to the soleplate through the intermediary of a cross bar **39** with the edge of which the arms are integral, the cross bar being fastened to the soleplate by a screw **40**. In substance the arms and cross bar form a U-shaped bracket the base of which is fastened to the soleplate. Above shoulders **37**, arms **35** are bent inwardly to provide sloping ends **41** down which the side edges of opening **36** may ride to spring the arms inwardly toward each other so that the edges may be brought to a position below shoulders **37** and the arms may spring out to bring the shoulders over the walls at the edges of the opening.

The rear wall of post **16** is provided with an opening **42** to give access to flatiron terminals, one of which is shown at **43** in Fig. 3, which project up through opening **36** and have attached to them the wires **44** of the flatiron cord set, the opening being closed by a cover **45** fastened in position by a screw **46**. Cover plate **45** is utilized for locking the cover-handle assembly in place on the soleplate. To this end cover plate **45** is provided with inwardly projecting abutments or stops **47** which stand against the inner sides of arms **35** to hold shoulders **37** in cover locking position. In this connection it will be noted that arms **35** are biased toward the side edges of opening **36**, i. e., transversely with respect to the heel of the flatiron. With this arrangement they may be locked over the side edges of opening **36** by simple inwardly projecting parts on cover plate **45**.

At the rear or heel end of the flatiron, cover **3** projects beyond the rear edge of the soleplate to provide a heel rest **48** which in cooperation with the top rear portion of post **16** forms a rest upon which the flatiron may be supported in an upended position. The space between the rear end of soleplate **1** and the heel rest **48** is closed by a plate **49** fastened to a flange **50** on the edge of the cross bar **39**.

At its rear end water reservoir **10** is supported on ledges **51** on arms **35**; at its forward end it is supported on the soleplate through intermediary of the dome **7**.

The rear end of cover **3** is supported in spaced relation to the soleplate by lugs **52** on the soleplate at its rear end.

In assembling the flatiron, the bracket **30**, the spring arms **35**, the water reservoir **10**, the thermostat structure, valve stem **13** and control lever **22** are assembled on the soleplate; cover **3** and handle **4** are connected together by screws **18** and with the cover-handle assembly inverted, knob **21** and arm **21***a* are put in place. The knob **21** can then be held in place with the fingers while the control lever **23** and the spring plate **24***a* are put into the handle slot. The cover-handle assembly is then put down over the soleplate assembly, the upper end of control shaft **22** being guided by suitable means into the slot in the inner end of lever **23**. Now with the cover-handle assembly tilted up somewhat at the rear, the side walls of recess **34** may be brought into notches **33** by a rearward movement of the cover-handle assembly with respect to the soleplate after which the rear end of the cover-handle assembly may be pushed down on to the soleplate, the side edges of opening **36** sliding down sloping ends **41** to force the spring arms **35** toward each other, to a position beyond shoulders **37** whereupon the arms will spring outwardly to bring the shoulders over the side walls of the opening. Following this cover plate **45** may be fastened in place by screw **46**, the abutments or stops **47** serving to lock the spring arms in fastening position; filling sleeve **20** may be now put in place, and dial plate **24***b* snapped on.

With the described construction wherein the cover and handle are attached together to form a cover-handle assembly and the cover-handle assembly in turn is fastened directly to the soleplate by means of the front bracket and the rear spring arms, there is provided a structure wherein the cover, the handle and the soleplate are firmly united and one which enables the cover-handle assembly to be easily and quickly attached to the soleplate when the flatiron is being assembled; and likewise the cover-handle assembly can be quickly and easily removed from the soleplate by removing cover plate **45** and squeezing together the spring arms **35**.

The cover-handle assembly and its connection to the soleplate is entirely independent of the internal parts of the flatiron such as the water reservoir and the filling tube so such internal parts may be made without regard to their having to perform any function having to do with holding the flatiron assembled. As a result, they may be made of lighter weight material than would be the case otherwise.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In an electric flatiron, a soleplate, an assembled unit comprising a handle and a cover connected together, and means for attaching the unit to the soleplate comprising an upwardly projecting bracket on the front end of the soleplate, an upwardly projecting spring arm having a locking shoulder on the rear end of the soleplate, means forming a locking part on the front end of the cover which engages the bracket at the front end of the soleplate upon movement of the unit rearwardly with respect to the soleplate to attach the front end of the unit to the soleplate, a locking part on the rear end of the cover which is brought into engagement with said shoulder solely by downward movement of the unit with respect to the soleplate, and detachable means fastened to the rear end of the handle which when attached to the handle holds the spring arm in locking position.

2. In an electric flatiron, a soleplate, an assembled unit comprising a handle and a cover connected together, said handle having an opening at its rear end and a detachable handle cover for the opening, and means for attaching the unit to the soleplate comprising an upwardly projecting bracket on the front end of the soleplate, upwardly projecting spring arms having locking shoulders on the rear end of the soleplate, means forming a locking part on the front end of the cover which engages the bracket at the front end of the soleplate upon rearward movement of the unit with respect to the soleplate to attach the front end of the unit to the soleplate, means forming locking parts on the rear end of the cover which are brought into engagement with said locking shoulders upon downward movement of the unit with respect to the soleplate to attach the rear end of the unit to the soleplate, and means forming a part of said handle cover which when the handle cover is attached to the handle holds the spring arms in locking position.

3. In an electric flatiron, a soleplate, an assembled unit comprising a handle and a cover connected together, said cover having in its top wall a front opening and a rear opening, and means for attaching the unit to the soleplate comprising a bracket on the front end of the soleplate the upper end of which projects through said top wall front opening and has a shoulder with which an edge of said front opening is engaged by a rearward movement of the unit with respect to the soleplate, a spring arm on the rear end of the soleplate the upper end of which projects through said top wall rear opening and has a locking shoulder which is engaged over the cover top wall at edge of said rear opening, the engagement being effected solely by a downward movement of said unit with respect to the soleplate, and means forming a removable abutment at-

tached to the rear end of the handle for holding the spring arm in unit locking position.

4. In an electric flatiron, a soleplate, an assembled unit comprising a handle and a cover connected together, said cover having in its top wall a front opening and a rear opening, and means for attaching the unit to the soleplate comprising a bracket on the front end of the soleplate the upper end of which projects through said top wall front opening and has a shoulder with which an edge of said front opening is engaged by a rearward movement of the unit with respect to the soleplate, and a pair of spring arms on opposite sides of the rear end of the soleplate the upper ends of which project through said top wall rear opening and have locking shoulders which are engaged over the side edges of said rear opening, the engagement being effected by a downward movement of said unit with respect to the soleplate.

5. The combination defined by claim 4 wherein the rear end of the handle is tubular and has an opening covered by a detachable plate which has projecting means thereon for holding said spring arms in locking positions.

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