June 17, 1947. W. H. TANGEMAN ET AL 2,422,505

FLATIRON HAVING A RETRACTABLE SUPPORT

Filed Sept. 19, 1944

Fig. 1.

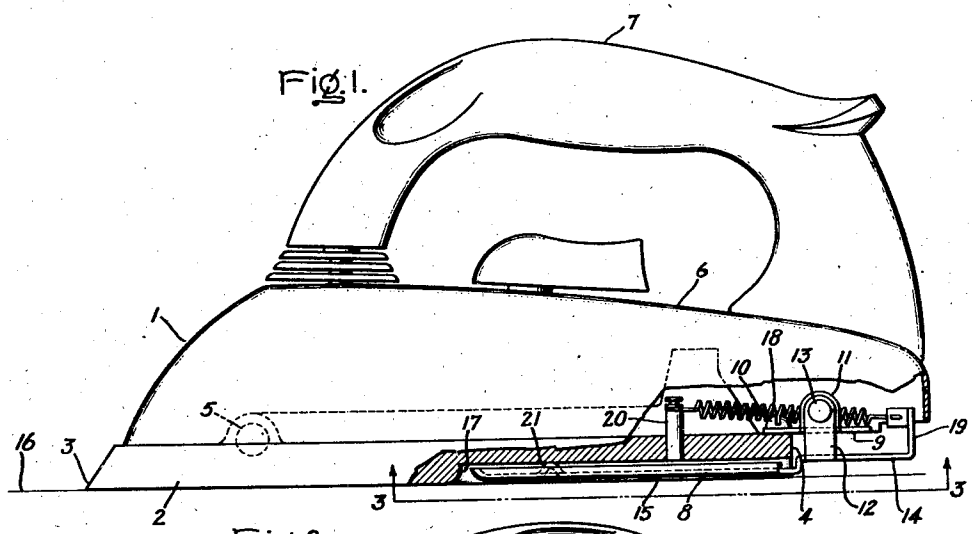


Fig. 2.

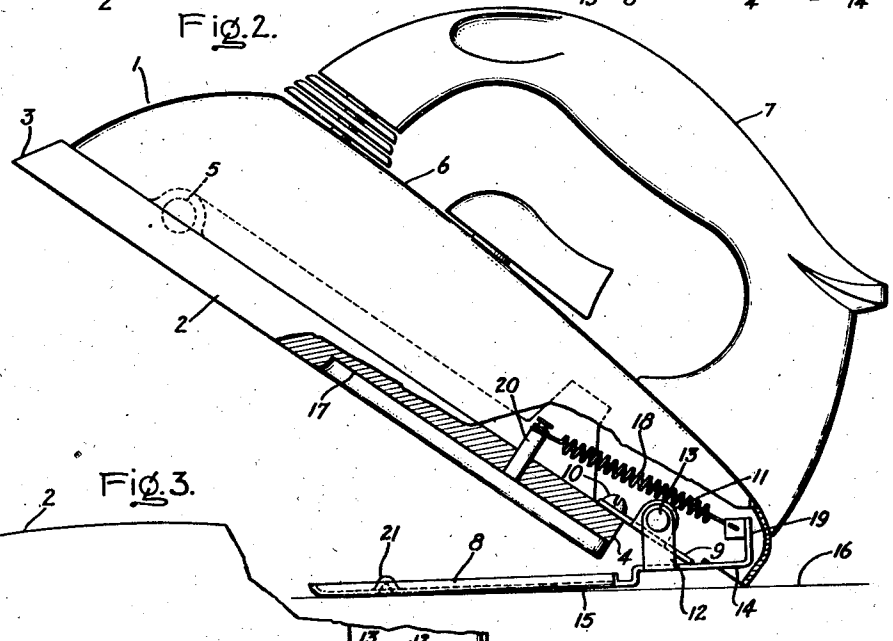
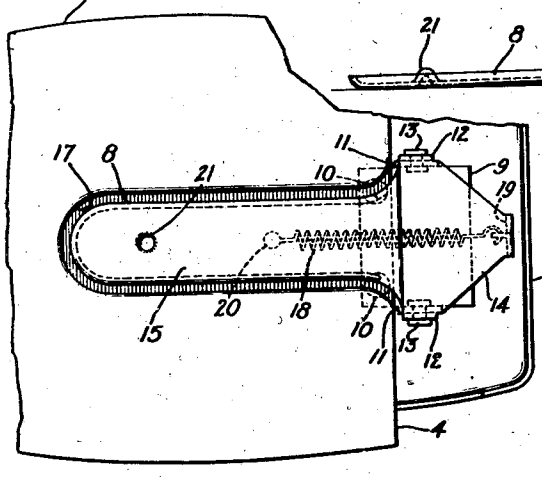


Fig. 3.



Inventors:
William H. Tangeman,
James R. Campbell,

by Harry E. Dunham
Their Attorney.

Patented June 17, 1947

2,422,505

UNITED STATES PATENT OFFICE

2,422,505

FLATIRON HAVING A RETRACTABLE SUPPORT

William H. Tangeman and James R. Campbell, Ontario, Calif., assignors to General Electric Company, a corporation of New York

Application September 19, 1944, Serial No. 554,736

5 Claims. (Cl. 38—96)

1

This invention relates to flatirons, and it has for its object the provision of a flatiron having improved means for supporting the iron body in an elevated rest position above a work surface, such as the surface of an ironing board.

In accordance with this invention, a support for the iron is provided. This support is movable from a retracted position, which it occupies during normal ironing operations, to an extended position wherein it supports the iron above the work surface. Means are provided for actuating the support to its extended position in which it supports the iron body above the work surface. This means is rendered operative responsively to a manual upward tilting of the forward end of the iron through a predetermined degree of movement, after which the means functions to hold the iron body in its elevated position.

In accordance with one specific embodiment of this invention, the support is connected to the iron body through the medium of an over-center spring and a trigger. The spring holds the iron support in its retracted position for normal ironing operations. And the trigger is so arranged that when the forward end of the iron is tilted up manually through the aforementioned degree of movement it engages the work surface to prevent further upward movement of the support along with the iron body, and to cause the over-center spring to move over its center of operation from one side of its neutral position to the other; when this occurs, the spring is rendered operative to move the support to its extended position, and thereafter to hold the iron body in its elevated position. When it is desired to iron again, it is merely necessary to manually depress the iron, which operation will move the support toward its retracted position, and eventually will carry the spring to its original over-center position wherein it again holds the support in its retracted position.

For a more complete understanding of this invention, reference should be had to the accompanying drawing in which Fig. 1 is a side elevation of a flatiron provided with support means arranged in accordance with this invention, parts of the iron being shown in section and other parts being broken away so as to illustrate certain details of construction, and the iron in this figure being illustrated in its normal working position with reference to a work surface; Fig. 2 is a view similar to Fig. 1, but illustrating the iron body supported by its supporting means in an elevated position above the work surface; and

2

Fig. 3 is a fragmentary bottom plan view of the flatiron shown in Figs. 1 and 2.

Referring to the drawing, this invention has been shown in one form as applied to an electrically heated flatiron provided with a body 1. This body comprises a metal soleplate 2 which, as usual, is provided with a forward pointed end 3 and with a straight or curved rear or heel end 4. The soleplate 2 is heated by an electrical heating element 5 which preferably will be of the sheathed type, and which preferably will be cast integrally with the soleplate. The body further comprises a cover or shell 6 for the soleplate, and a handle 7 secured to the upper wall of the shell, as shown. As also shown, the shell 6 overhangs the heel end 4 of the soleplate 2 by a substantial amount.

The lifting means arranged in accordance with this invention comprises a support 8 which is pivoted to the rear end of the soleplate 2 through the medium of a bracket 9. This bracket at its forward end is rigidly secured to the rear end of the soleplate 2 in any suitable way as by means of screws 10, and as shown, it projects rearwardly from the soleplate in cantilever fashion. The bracket is provided at its sides with a pair of upright ears 11 to which upright ears 12 formed on the support 8 are pivoted in any suitable way as by means of pins 13. The upright ears 12 are directly attached to a trigger 14 which extends rearwardly from the support 8. It will be observed in view of the foregoing that the support 8 is pivotally interconnected with the body 1 at the rear of the body and on an axis extending transversely thereof. Also, it will be observed that the support extends forwardly from this axis along the longitudinal axis of the soleplate, and that the trigger 14 extends longitudinally from the transverse axis toward the rear.

The support 8 may have any suitable shape, but preferably it will be formed generally in the shape of a relatively narrow finger, as shown more clearly in Fig. 3.

During normal ironing operations, the support 8 is received in a recess 17 provided for it in the bottom ironing surface of the soleplate 2, this recess being slightly larger than the support and having in general the same shape as the support, all as shown in Fig. 3.

The support 8 is held in its retracted position shown in Fig. 1 by means of an over-center helical tension spring 18. This spring 18 has one end anchored to an upright extension 19 formed on the rear end of the trigger 14, as clearly shown in Figs. 1 and 2; and has its other end anchored

to a pin 20 which is located forwardly of the transverse axis of movement between the support 8 and the iron body 1. The anchorage for the two ends of the spring 18 is such that the longitudinal axis of the spring is located below the transverse axis when the support 8 is in its non-supporting retracted position shown in Fig. 1. In other words, in this position of the support, there is a component of spring force which biases the support 8 clockwise, as viewed in Fig. 1, in order to hold it up in its recess 17. The support 8 preferably will be provided with a stop 21, which is in the form of a bead formed upwardly from the bottom wall of the support, and which is intended to engage the bottom wall of the recess 17, as shown in Fig. 1, to determine the retracted position of the support.

It is further contemplated that the spring 18 will be used to support the iron body 1 in its elevated non-ironing position shown in Fig. 2. The iron is moved to this position by manually tilting the pointed end 3 of the iron upwardly by means of the handle 7. This operation first causes the rear end of the trigger 14 to engage the work surface 16. When this happens, the upward movement of the support 8, effected during the upward manual tilting of the body 1 and due to the interaction of the spring 18 between the support and body, is stopped, and the iron body 1 moves upwardly independently of the support so as to elevate the longitudinal axis of the spring 18 above the transverse axis of movement of the support 8. After this has happened, the spring 18 contracts as the iron body reaches its elevated position, and thereafter functions to hold the body in this position. The elevated position of the body is determined by the engagement of the rear end of the bracket 9 with the trigger 14, as shown in Fig. 2.

The iron body is supported in the elevated position by the front end of the support 8 and the rear edge of the shell 6, both of which engage the surface 16, as shown in Fig. 2.

The iron body 1 will be held stable in its elevated position shown in Fig. 2 until it is desired to iron again, whereupon the handle 7 is grasped and the iron 1 moved downwardly. When the ironing surface of the soleplate 2 has substantially reached the work surface 16, the longitudinal axis of spring 18 will be moved below the transverse axis of movement of the support 8, and the support 8 will be snapped to its retracted non-supporting position shown in Fig. 1. The iron 1 may then be manipulated in the usual way to perform the desired ironing operations.

As shown, the overhanging rear end of the shell 6 overlies the trigger 14, its upward extension 19, and the rear end of the spring 18.

While we have shown a particular embodiment of our invention, it will be understood, of course, that we do not wish to be limited thereto since many modifications may be made, and we therefore contemplate by the appended claims to cover any such modifications as fall within the true spirit and scope of our invention.

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

1. A flatiron comprising an ironing body, a support attached to said body for movement from a retracted position to an extended position in order to support said body in an elevated position with reference to the ironing work surface, power means connected to said support for biasing it to said extended position, said power means normally being ineffective to bias said support to said extended position when the iron is in its ironing position on the work surface and the support is in said retracted position, and an element controlling said power means to render it effective to bias said support to said extended position operating responsively to the engagement of said element with said work surface as said iron body is tilted upwardly with reference to said work surface about a predetermined axis.

2. A flatiron comprising an ironing body, a support pivoted to said body for angular movement on a predetermined axis from a retracted position to an extended position in order to support said body in an elevated position with reference to the ironing work surface, a spring connected to said support for operating it to said extended position, said spring connected thereto so that when said support is in said retracted position said spring is positioned so that its force is nullified to operate said support to said extended position, and means movable to shift said spring angularly to a position wherein its force becomes effective to bias said support to said extended position, said last-named means being moved to cause said angular shift of said spring by the engagement of said means with said work surface when said body is manually tilted upwardly about said predetermined axis.

3. A flatiron comprising a body, a support connected to said body for motion with reference thereto from a retracted position to an extended position in order to support said body in an elevated position with reference to the ironing work surface, power operating means interconnecting said body and support biasing said support to said retracted position or to said extended position depending upon the relative position of said support with reference to said body on one side or the other of a critical position, and means connected with said support engageable with said work surface when said body is inclined upwardly from said work surface to hold said support and prevent upward movement thereof along with said body as said body continues to incline upwardly and thereby cause said support and body to move with relation to each other from said one side of said critical position to said other side thereof, whereupon said power means becomes effective to bias said support to said extended position.

4. A flatiron comprising a body, a support for said body for holding it in a raised position above the work surface, said support being pivoted to said body on a transverse axis at the rear and extending forwardly therefrom, and said support also being movable from a retracted position with reference to said body to an extended body-supporting position wherein said body is held in a raised position above the ironing work surface, an over-center spring connected to said body and support operating when the spring is on one side of a critical position to hold the support in said retracted position for normal ironing operations and operating to hold said support in said extended position and hold said body in said raised position when the spring is on the other side of said critical position, and a trigger extending rearwardly from said support for engagement with said work surface when the forward end of said body is tilted upwardly manually through a predetermined degree of movement and for throwing said spring over center from said one side to said other side of said critical position, whereupon said spring is rendered effective to support said body in said raised position above said work surface.

5. A flatiron comprising a body, a support for said body for holding it in a raised position above the work surface, the support being pivoted to said body on a transverse axis at the rear and extending forwardly therefrom, said support movable from a retracted position with reference to said body to an extended body-supporting position wherein said body is held in a raised position above the ironing work surface, a trigger attached to said support and extending rearwardly from said transverse axis, an elongated helical over-center spring having one end anchored to said trigger, an anchor on said body for the other end of said spring located forwardly of said transverse axis, the longitudinal axis of said spring lying below said transverse axis when said support is retracted so as to hold said support in its retracted position, and said trigger engaging said work surface when the forward end of said body is tilted up manually through a predetermined arc of movement whereby upon further upward manual tilting movement of said forward end said longitudinal axis of said spring is elevated above said transverse axis, whereupon the spring is rendered effective to hold said body in said raised position above said work surface.

WILLIAM H. TANGEMAN.
JAMES R. CAMPBELL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,296,913	Fagan	Sept. 29, 1942
2,302,365	Bircks	Nov. 17, 1942
2,243,937	Almond	June 3, 1941