Aug. 16, 1949. A. G. SWENSON 2,479,429

LOCK FOR HINGED HANDLES OF TRAVEL IRONS

Filed Oct. 2, 1947

Fig. 1.

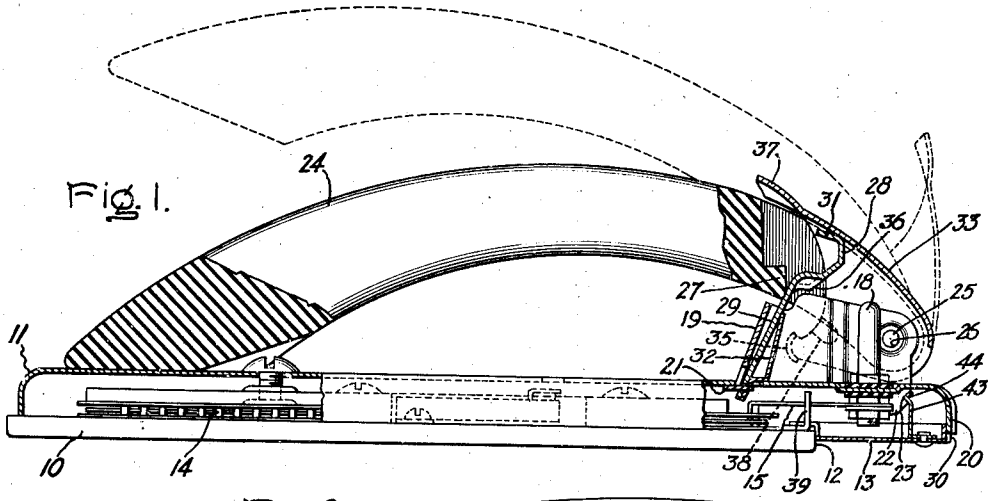


Fig. 2.

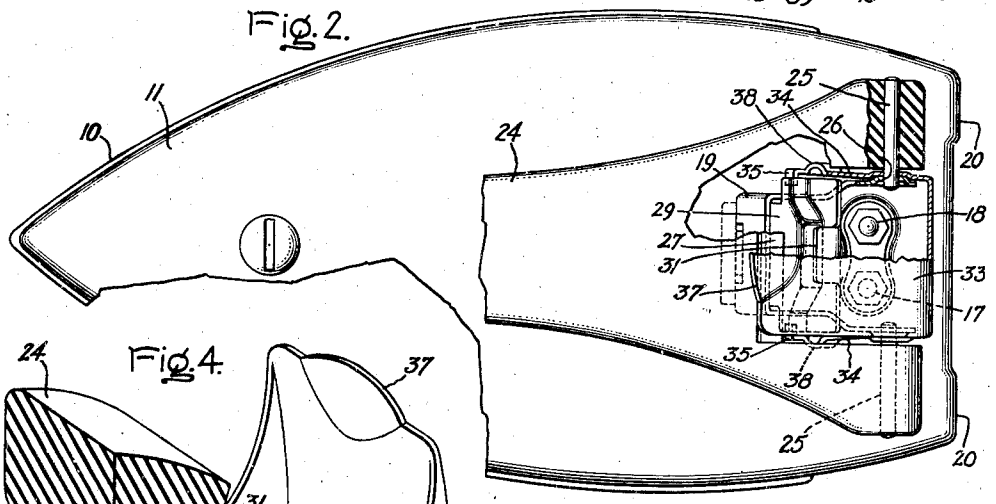


Fig. 4.

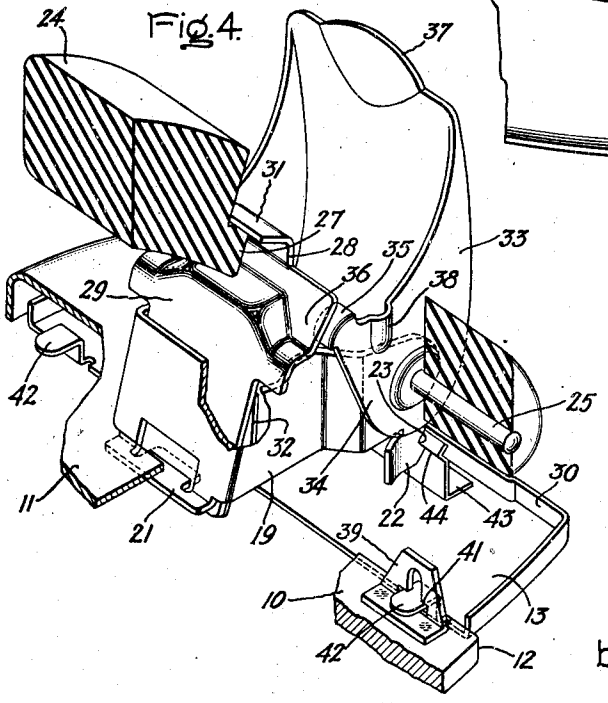
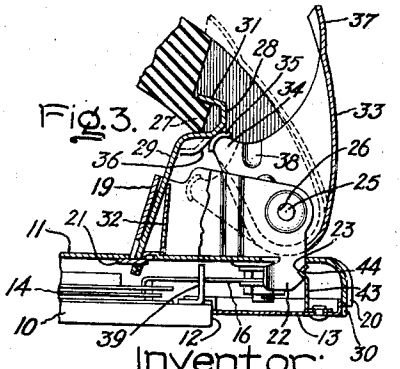


Fig. 3.



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LOCK FOR HINGED HANDLES OF TRAVEL IRONS

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This invention relates to a handle support and assembly construction, and more particularly folding handles for flatirons. Handles for such devices must be designed not only for small area when folded, but also for rigidity or positive locking in their opened or unfolded position. Other objects include simplicity of design, few parts, inexpensiveness and general ruggedness.

These objects and others are obtained in my invention through the combination of parts and constructions described in the following specification. For a more complete understanding of this invention, reference should be had to the accompanying drawing in which Fig. 1 is a side view and partial section of a flatiron and handle according to my invention, showing in full lines the handle and handle lock in collapsed position, and in dotted lines the handle and part of the lock in opened position; Fig. 2 is a plan view of the device of Fig. 1 with certain parts broken away; Fig. 3 is a side sectional view of the handle and handle lock pivot with the parts in their opened and locked positions, the unlocked position of the lock being indicated in dotted lines, and Fig. 4 is a broken perspective view of the handle and locking parts showing their manner of mounting and the opened and locked position.

In the form shown in the drawings, which is used as an example, the body of the iron consists of the customary soleplate 10, to which is fastened a usual top cover plate 11 which overhangs the heel 12 of the soleplate. A bottom cover plate 13 covers the overhanging portion and is stepped up slightly from the plane of the soleplate.

Within or above the soleplate a heating element 14 is provided, having the usual leads 15 and 16 which are connected to plug terminals 17 and 18, supported by but insulated from the top cover plate.

The constructions described above are more or less conventional in character and form no part of the present invention. However, the folding handle, its manner of mounting and locking and the manner of mounting the bottom cover plate are considered to be novel and a part of my invention. The handle, the parts for locking the handle, and structure for mounting the bottom cover plate are all held in place by a single element which is shown in the drawings as a U-shaped bracket 19. This bracket has three ears, one in the bight of the U, toward the front of the iron, and one in each side of the U, toward the rear of the iron. I have called these ears 21 and 22—22. These ears all pass through holes or slots in the top cover plate. In assembly, the front ear

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21 is bent and then hooked through a slot in the top cover plate. The bracket is then brought down at the back until the back ears 22—22 pass through their slots in the cover plate. The back ears are then twisted to hold the bracket securely in place. The two back ears 22—22 are each provided with a notch 23 for a purpose to be later described.

The handle 24 is shown as a bifurcated member which straddles and is pivoted to the bracket 19 by means of pins 25—25 which are driven through the legs of the handle into bearing holes 26—26 of the bracket. In its collapsed or folded position the handle lies close to the top cover of the iron as shown in full lines in Fig. 1. When in use, the handle is lifted to the position shown in dotted lines. In order to hold the handle in its operating position, a latching formation, shown as a projection or latching shelf 27, is provided in the crotch of the bifurcation, and this projection is engaged by a complementary latching formation or offset portion 28 on a latch piece 29 which is hinged or pivoted in the front ear 21 of bracket 19. A lip 31 at the top of this latch piece engages with the projection 27 on the handle to prevent the handle from rising higher than its operating position. The latch piece is normally urged forward toward a position where it may engage the handle by a Z-shaped spring 32, one end of which is also held by the bracket ear 21. The center leg of this spring lies along the top cover plate, and its free end presses against the back of the latch piece to urge it in the proper direction.

It will therefore be seen that by raising the handle, it will become latched in its upward or operating position because of the action of the spring 32 and the latch piece 29. However, a light pressure on the handle will permit it to be lowered to its folded position. In order to prevent this, a handle locking lever 33 is provided. This lever is of generally U shape, and is pivoted to the bracket 19 on the same pins 25—25 which pivotally support the handle. The locking action is obtained by arms 34—34 which extend forwardly on either side and are provided with inturned cam surfaces 35—35 which bear against pressure areas 36—36 on the latching piece. For manipulating this locking lever a depression 37 is formed in its edge, so that this lever can be moved easily forward and backward. In its forward position the lever disengages from the latch piece so that the handle may be depressed. In this position also, the locking lever serves as a cover or guard for the plug terminals.

In its fully open position the locking lever will lock the handle and latch piece rigidly together when the handle also is in its opened position. In this position the locking lever can act as a heel stand for the iron in cooperation with the back edge of the iron by virtue of dimples or deformations 38—38 on the sides of arms 34—34. These deformations frictionally engage the inside of the legs of the handle. Of course, friction between the cam surfaces 35—35 and the areas 36—36 on the latch piece will also tend to hold the locking lever in its opened position.

It is to be understood that when the locking lever 33 is fully opened it also functions as a plug socket for receiving the usual electrical supply plug (not shown) that engages the terminals 17 and 18.

Also as shown in the drawings, when the locking lever is in its fully opened position, its back surface is adjacent and substantially perpendicular to the heel end of the top cover so that the iron may be tilted backward for resting. Because of friction of the parts, this is possible whether the attachment plug is inserted on the terminals or not. This feature is important in folding irons of the type described, because usually they are not provided with automatic temperature controls, and the plug must be pulled occasionally to keep the iron from getting too hot.

The same bracket which holds the handle and handle locking parts in place is used to secure the bottom cover plate 13 in place. This is accomplished by using upstanding ears 39—39 which are welded or otherwise fastened to the back edge of the soleplate, and provided with slots 41—41. Lips 42—42 on the front edge of the bottom cover plate engage in these slots, and hold this edge from lateral or vertical displacement. The rear edge of the bottom cover plate is held in place by a spring clip 43 which may be riveted to the plate and have an angular portion 44 near its free end. This angular portion snaps into the notches 23—23 of the ears 22—22 on the U-shaped bracket, and finally holds the entire assembly together. Interfitting flanges 20 on the top cover plate and 30 on the bottom cover plate prevent relative shifting of these parts after they are snapped together.

While I have shown and described a particular embodiment of my invention, it will occur to those skilled in the art that various changes and modifications may be made without departing from my invention, and I therefore aim in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of my invention.

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

1. In an electric flatiron having a soleplate with a heel portion, a top cover secured to said soleplate and in part overhanging the heel of said soleplate, a U-shaped bracket on the top cover, a bifurcated handle straddling and pivoted to the sides of said bracket and movable between a raised position and a lowered position with respect to the top cover, a handle latch hinged to the bight of the bracket, a spring on the top cover engaging and resiliently urging said latch toward engagement with said handle to hold it in its raised position, a U-shaped lever with its sides pivoted to the sides of the bracket and movable between an upper and a lower position with respect to said latch, arms on said lever engageable with said latch when said lever is in its upper position and holding said latch in engagement

position with the handle when said handle is in raised position, a bottom cover for the overhanging part of the top cover of the iron and means securing said bracket to said top cover and said bottom cover to said top cover, said means including a single element extending through the top cover from said bracket.

2. In an electric flatiron having a soleplate with a heel portion, a top cover secured to and in part overhanging the heel of said soleplate, a bottom cover for the overhanging portion, and a handle for the iron, that improvement which includes a single piece bracket, angularly extending ears on the bracket extending through the top cover and fastening said bracket to said cover, a catch on one of said ears, a spring catch on said bottom cover engaging said first catch and thereby fastening the bottom cover in place under the overhanging portion, and means supporting said handle from said bracket.

3. In an electric flatiron having a handle pivoted at one end thereto and movable at its other end between a raised position and a lowered position with respect to the iron body, that improvement which includes a latch member pivoted at one end to the iron near the handle pivot, a latch formation at the free end of the latch member, a cooperating latch formation on said handle, one of said formations being a hook, the other formation being a ledge fitting inside the hook when the handle is in its raised position, a spring on the iron urging said latch member and its latch formation toward resilient engagement with said handle and its cooperating latch formation when the handle is raised, and a locking lever pivoted on the iron alongside the handle movable between two positions, in one of which it is free of the latch member and in the other of which it engages said member and holds it in locked engagement with the handle when the handle is raised, and a portion of said lever extending into frictional contact with a portion of said handle when said handle is raised and said lever is in its latch locking position, whereby said lever is frictionally held in its locking position.

4. An electric flatiron including a body with a heel end, a handle pivoted thereto near said end and movable between a raised and a lowered position, a latch on the body for holding said handle in its raised position, a spring on said body engaging the latch and resiliently urging it toward its handle holding position, a locking lever on said body mounted alongside the handle movable between a position in which it engages said latch and locks the latch in its handle holding position and another position in which said lever is disengaged from said latch, an arm on said lever extending adjacent and substantially perpendicular to the heel end of the body when the lever is in its latch locking position, and a portion of said lever extending into frictional contact with said handle when said handle is raised and said lever arm is perpendicular to the heel end, whereby the arm of the lever and the heel end of the iron may serve as a heel stand for the iron.

5. An electric flatiron having a soleplate with a heel portion, a top cover secured to and in part overhanging the heel of the soleplate, a bottom cover for the overhanging portion, a bracket, angular ears on the bracket extending through the top cover and fastening said bracket to said cover, a catch on one of said ears, a spring catch on said bottom cover engaging said first catch and thereby fastening the bottom cover in place, a handle pivoted at one end to said bracket and

movable between a raised and a lowered position, a latch on said bracket engageable with the handle to hold it in raised position, a spring resiliently urging said latch toward engagement with the handle, and a lever pivoted to said bracket and movable between a position where it engages the latch and holds the latch in engagement with the handle when the handle is raised and a position where it is disengaged from the latch, whereby said handle may be locked in raised position by the engagement of said lever with said latch.

6. In an electric flatiron having a body, a bifurcated handle pivoted thereto and movable between a folded position where it lies close to the body and an open position where it is raised from the body, a latch member pivoted to the body near the handle pivot, an offset near the free end of the latch having a recess facing the crotch of the handle, a latching shelf in the crotch of the bifurcated handle, and a spring on the body engaging and pressing said latch toward the handle, whereby said offset will seat on said shelf to latch the handle when it is raised to its open position, and a locking member movably mounted on the body near the latch, movable between a position where it engages the latch and locks it in handle latching position when the handle is in open position, and another position where the locking member disengages from the latch and said handle is resiliently held in open position by said latch.

7. An electric iron having a body, a handle pivoted at one end to the body, movable to an operating position raised from the body and to a folded position close to the body, a latch on the body engaging the handle when in its operating position to hold it in this position, a locking lever pivoted on the body coaxially with the handle and movable between a locking position and an unlocking position, arms extending from said lever toward said latch, cam surfaces on said arms, and bearing surfaces on said latch engaging with said cam surfaces when said lever is moved to locking

position to hold said latch in engagement with the handle when said handle is in operating position, whereby said locking lever may be moved to hold the latch and handle in operating position.

8. In an electric flatiron including a body with a heel end, a bifurcated handle with two legs pivoted to the body near the heel end and movable between a raised position and a lowered position with respect to the body, a latch on the body engaging the handle and holding it in its raised position, a locking lever pivoted on the body near the handle movable between a position where it engages and locks the latch in its handle holding position and a position where it is disengaged from the latch, and a dimple on the lever extending into frictional engagement with a leg on the handle when the handle is in raised position for frictionally holding said lever in the latch locking position.

9. An electric flatiron having a body, a handle pivoted thereto and movable between a folded position where it lies close to said body and an open position where it is raised from the body, a movable latch arm on the body having a latch movable to a handle engaging position, a catch on said handle engageable by said latch when the handle is in its open position, and a lever pivoted to said body and movable between a locking position where it engages said latch arm to force said latch and catch into interlocking engagement when said handle is in the open position and an unlocking position where it is disengaged from said latch arm.

ALFRED G. SWENSON.

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

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