March 26, 1957 E. R. SWANN 2,786,287

TRAVEL STEAM IRON - REMOVABLE CUP

Filed Dec. 8, 1953 2 Sheets-Sheet 1

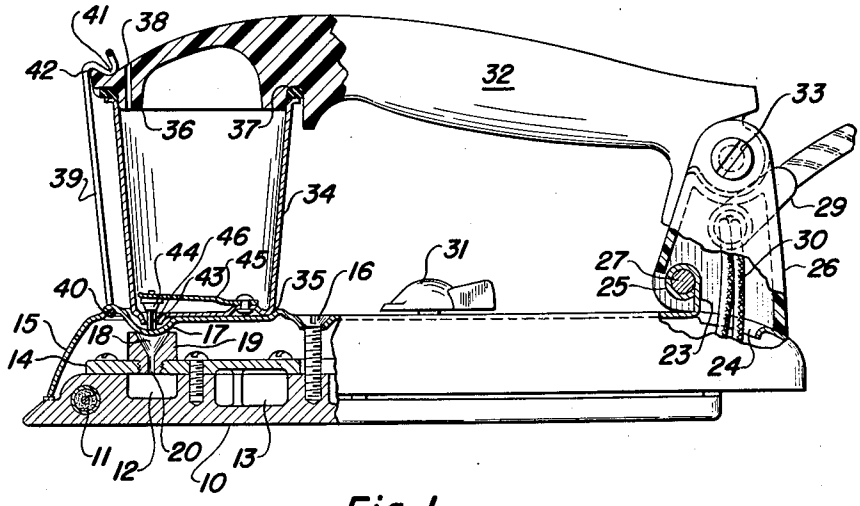


Fig. 1

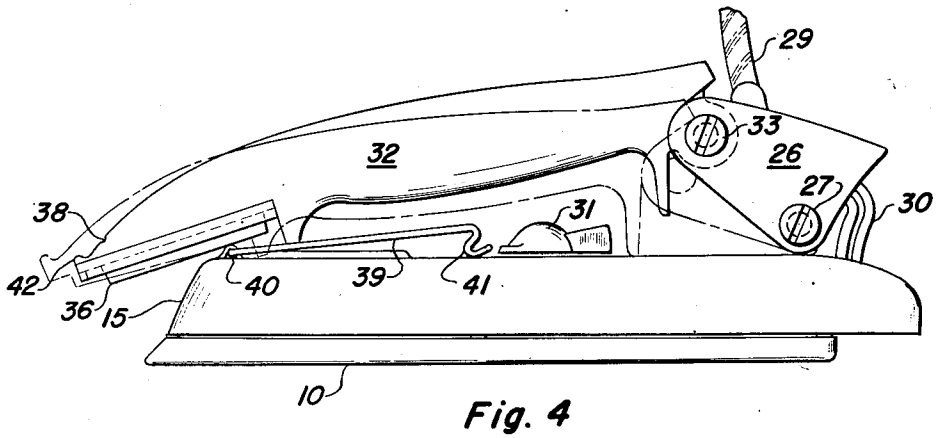


Fig. 4

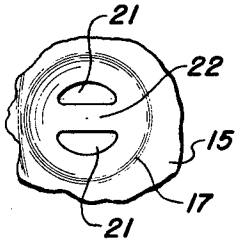


Fig. 2

March 26, 1957 E. R. SWANN 2,786,287

TRAVEL STEAM IRON - REMOVABLE CUP

Filed Dec. 8, 1953 2 Sheets-Sheet 2

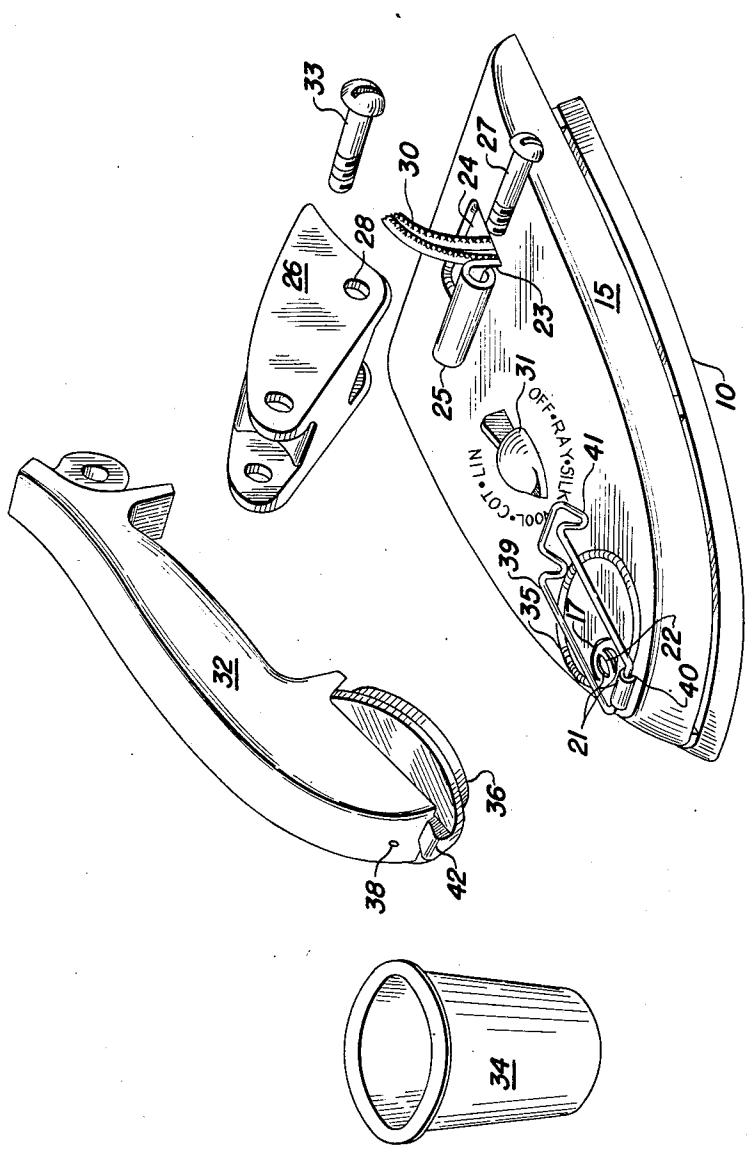


Fig. 3

United States Patent Office 2,786,287 Patented Mar. 26, 1957

2,786,287

TRAVEL STEAM IRON—REMOVABLE CUP

Edward R. Swann, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio

Application December 8, 1953, Serial No. 396,936

4 Claims. (Cl. 38—77)

The present invention relates to an electric iron which may be used either as a dry iron or as a steam iron and which is easily folded into a compact package for storage or transport purposes.

According to the present invention a water reservoir forms the front leg of the handle and is removable for filling and emptying purposes. The rear leg of the handle is pivoted at its lower end to the cover shell so that it may be folded forwardly. The hand grip portion of the handle is pivoted to the upper end of the rear handle leg so that both may be moved forward on top of the iron when the iron is to be stored. The front end of the handle proper is formed to seal with the open top of a water reservoir which forms the front leg of the handle.

In operative position the forward part of the handle seals the open top of the water reservoir, the underside of which interfits with a recess in the cover shell. A clamp arm is provided which is pivoted to the front of the cover shell and engages the front of the handle proper to hold the reservoir between the front end of the handle and the recess in the cover shell. When in its collapsed position of the iron, the clamp is folded downwardly on top of the cover shell.

A metering valve opening is formed in the bottom of the water reservoir which cooperates with openings in the cover shell recess which receives the bottom of the water reservoir. The openings in the cover shell lead to a flash boiler in the sole plate where the water is converted into steam and led through openings extending through the sole plate into contact with the material being ironed.

When the iron is to be used as a dry iron, the water reservoir is emptied and the iron used in the usual manner.

When the iron is to be transported or stored the water reservoir is removed and emptied and the latch and handle folded downwardly against the sole plate and cover shell.

Other objects and advantages of the present invention will become apparent as the description proceeds when taken in connection with the accompanying drawings in which

Figure 1 is a vertical plan view of the iron of the present invention partly in section to show the details of construction;

Figure 2 is a segmental view of the openings in the cover shell leading to the flash boiler in the sole plate;

Figure 3 is an exploded perspective view of the iron of the present invention; and

Figure 4 shows the iron of the present invention in folded position.

Referring to the drawings, the reference numeral 10 represents the sole plate proper having a metal sheath-type heating element 11, of well-known construction, embedded therein.

The upper surface of the sole plate 10 is formed with a flash boiler depression 12 and with superheating passages 13. The flash boiler 12 and the superheating passages 13 are enclosed by a cover plate 14 secured to the sole plate 10 in fluid tight relationship in any suitable manner. The sole plate 10 and cover plate 14 are formed with steam passages leading to openings in the lower face of the sole plate in the manner shown and described in an application by John E. Vance, Serial No. 295,950, filed June 27, 1952, now Patent No. 2,668,378.

A cover shell 15 is secured to the sole plate 10 in any suitable manner, such as by a screw 16. The cover shell 15 is provided with a depressed portion 17 which cooperates with a conical bore 18 in a member 19 suitably secured to the cover plate 14. An aperture or port 20 leads from the conical bore 18 to the flash boiler 12. As shown in Figure 2, the depression 17 is formed with a pair of openings 21 and a cross bar 22 for a purpose which will presently appear.

The cover shell 15 is provided with an upwardly struck portion 23, forming an opening 24 in the rear end of the cover shell 15. The upstruck portion 23 is curved at 25 to form a pivotal support for the rear leg 26 of the handle. The curved portion 25 receives a screw 27 which also extends through openings 28 in the forward portion of the rear handle leg 26.

The rear handle leg 26 is hollow and at one side is provided with an opening for receiving a conductor cord 29, which has an extension 30 extending through the opening 24 of the cover shell 15 for connection with the terminals of the heater 11. A thermostatic switch (not shown) is connected in circuit, and a control dial 31 is provided for controlling the temperature setting of the switch as is well known in the art.

The hand grip or handle proper 32 is pivoted to the upper end of the rear leg 26 by means of a pin 33 as shown.

The front leg of the handle is formed by a water reservoir 34, the lower end of which is seated in an annular depression 35 in the cover shell 15. At its upper end the reservoir 34 cooperates with an annular extension 36 formed in the front of the handle 32 and an annular gasket 37 is provided to seal the top of the reservoir 34. A vent opening 38 is provided so as to permit drainage of water from the reservoir into the flash boiler 12. The front of the handle 32 and reservoir 34 are clamped in place by a clamp arm 39, pivoted at 40 to the cover shell 15 and provided with a hook 41 engaging over a shoulder 42 on the front end of the handle 32.

The reservoir 34 is provided with an opening 43 in its bottom wall immediately above the depression 17 in the cover shell 15 when the parts are in assembled position. The opening 43 is normally closed by a valve 44 spring biased to closed position by a spring 45. The valve 44 has a cruciform extension 46, the lower end of which comes into contact with the cross bar 22 of the depression 17 when the parts are in assembled position to move the valve to open position.

Operation

When the iron is to be used as a dry iron, the parts are assembled in the position shown in Figure 1 with the reservoir 34 empty whereby the iron may be used in the usual manner as a dry iron.

If the iron is to be used as a steam iron, the latch 39 is released, the reservoir 34 removed, filled with water in any suitable manner and replaced. When the reservoir 34 is removed, the valve 44 automatically closes under the bias of spring 45, thus preventing leakage when it is being filled. When the reservoir 34 is replaced, filled with water, the stem 46 of the valve 44 will contact the cross bar 22 and open the valve 44 against the bias of spring 45, whereby water will be fed through openings 21, 18 and 20 to the flash boiler 12 where it will be con-

verted into steam and flow through the openings in the sole plate to the fabric being ironed.

When it is desired to store the iron, the latch 39 is released, the front end of the handle 32 raised, and the reservoir 34 removed, emptied and stored separately. The latch 39 is pivoted downwardly against the cover shell and the handle 32 and rear leg 26 swung forwardly to overlie the sole plate as shown in Figure 4. In that position the parts occupy a minimum of space whereby the iron may be readily stored for travel or other purposes.

From the foregoing it can be seen that the present invention provides an iron that may be used either as a dry iron or as a steam iron and which may be readily collapsed into a compact space for storage or transport.

While I have shown and described but a single embodiment of my invention it is to be understood that that embodiment is to be taken as illustrative only and not in a limiting sense. I do not wish to be limited to the particular structure shown and described but wish to include all equivalent variations thereof except as limited by the scope of the claims.

I claim:

1. An electric iron comprising, a sole plate, a heater therefor, a flash boiler formed in said sole plate, a cover shell secured to said sole plate, a handle having its rear leg secured to said cover shell and a hand-grip portion extending forwardly of and spaced above said cover shell, a seat formed in said cover shell beneath the forward end of said hand-grip portion, a water reservoir having its lower end removably seated in said seat and its upper end closed by the forward end of said hand-grip portion and forming the front leg of said handle and an opening in the lower end of said reservoir communicating with said flash boiler.

2. An electric iron according to claim 1 in which said handle is provided with sealing means for sealing the top of said reservoir when said reservoir is in assembled position.

3. An electric iron according to claim 1 in which said rear handle leg is pivoted to said sole plate so as to be pivoted forwardly thereof and said hand grip portion is pivoted to the top of said rear leg, the arrangement being such that said hand-grip portion may be folded forwardly against the top of said cover shell.

4. An electric iron according to claim 1 in which said reservoir is provided with a valve for said opening and means for opening said valve when said reservoir is placed in said seat.

References Cited in the file of this patent

UNITED STATES PATENTS

Re. 16,886	Walker	Feb. 21, 1928
2,215,959	Gough	Sept. 24, 1940
2,433,556	Hume	Dec. 30, 1947
2,542,858	Boring	Feb. 20, 1951
2,655,746	McFarland et al.	Oct. 20, 1953