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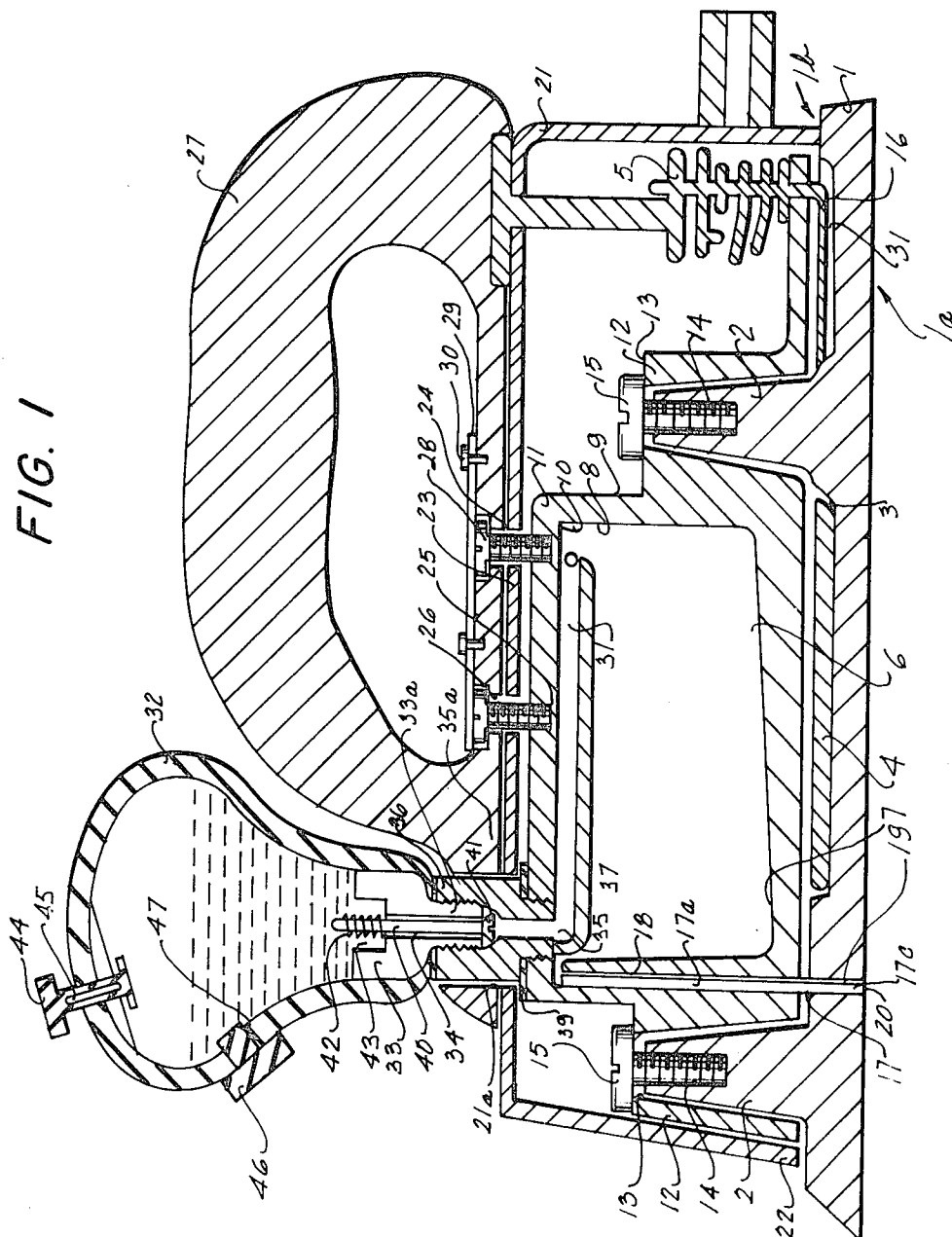
C. S. ABRAHAM

3,609,890

ELECTRIC STEAM IRON

Filed Dec. 12, 1969

3 Sheets-Sheet 1



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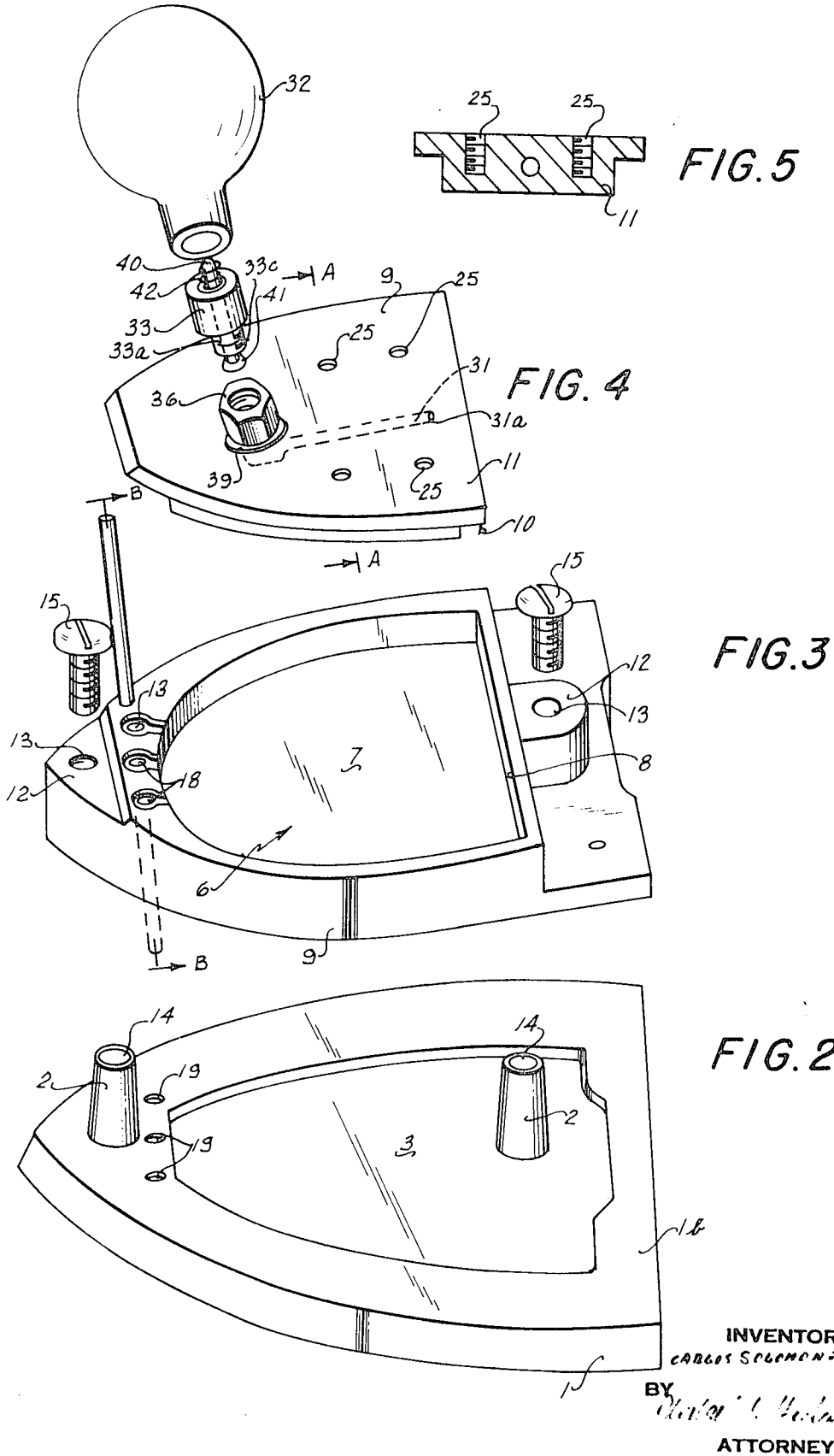
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3 Sheets-Sheet 2



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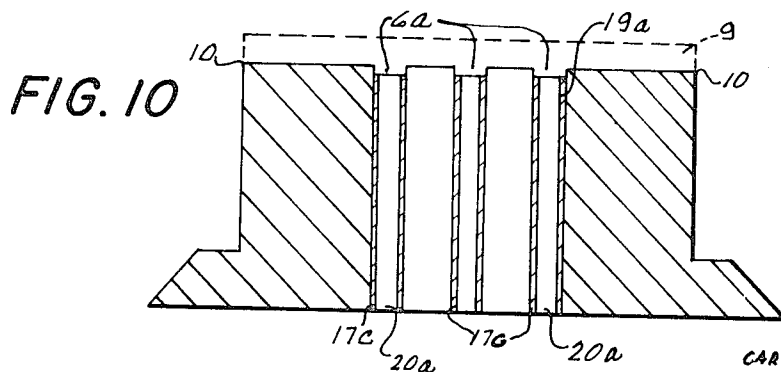
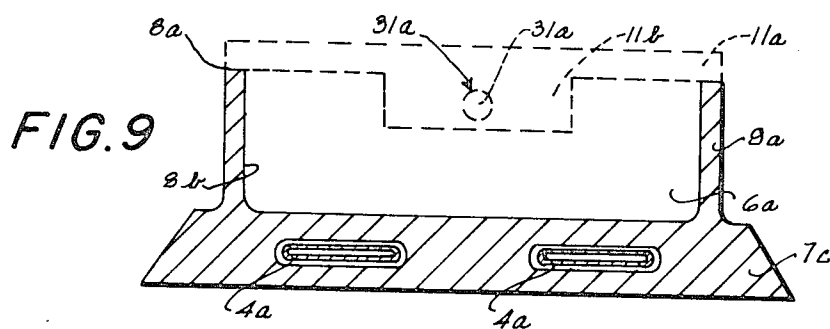
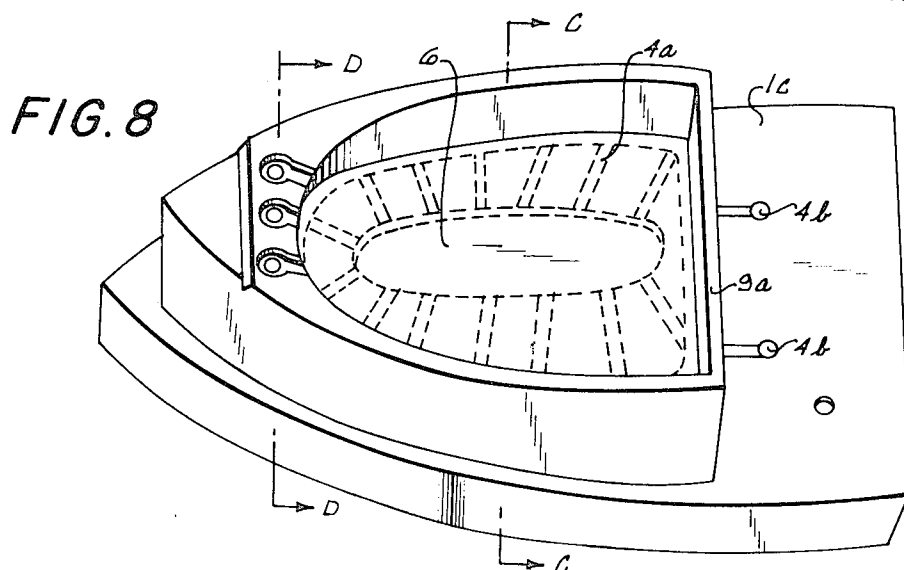
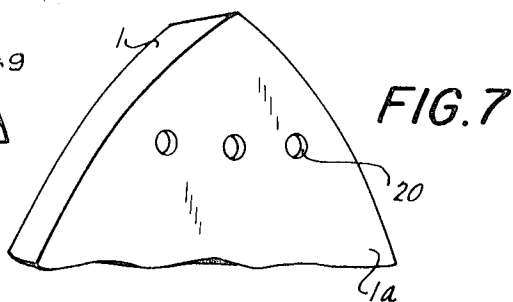
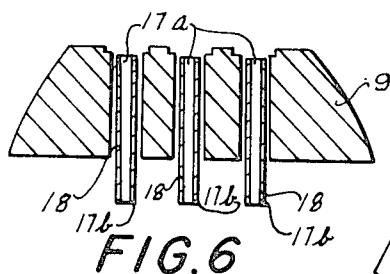
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3 Sheets-Sheet 3



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ELECTRIC STEAM IRON

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U.S. Cl. 38-77.83

24 Claims

ABSTRACT OF THE DISCLOSURE

A vaporizing chamber for the production of steam communicates, on the one hand, with the ironing surface of a metallic slab and, on the other hand, with a water-containing flexible reservoir operative to supply a predetermined amount of water to the vaporizing chamber in response to exterior pressure exerted on the reservoir. The reservoir comprises interacting first and second valves with the first valve movable between an open and a closed position for establishing and interrupting communication between the interior of the reservoir and the ambient temperature, and with the second valve operative to normally close the passage between the reservoir and the vaporizing chamber but permitting seepage of water when the first valve is open, and operative to fully open the passage between the reservoir and the vaporizing chamber in response to compression of the former with the first valve in closed position. A removable plug on the reservoir permits easy refilling of the same.

BACKGROUND OF THE INVENTION

The present invention relates to an electric steam iron and, more particularly, to an iron incorporating improved means for the injection of water to be vaporized and to control the amount of steam to be produced.

Electric steam irons of the type incorporating a manually compressible liquid containing reservoir through which water to be vaporized is injected into the vaporizing chamber, are known and one such iron has been described in U.S. Pat. No. 3,274,714.

Such steam irons have the inherent disadvantage that steam produced within the interior of the evaporation chamber frequently uncontrollably enters into the liquid containing reservoir causing the latter and its contents to overheat which negatively influences the injection pattern and, in addition, causes a build-up of pressure in the reservoir due to which some of the liquid contained therein is forced out of the reservoir and the chamber and, hence, the steam production of such irons cannot be controlled with an exact degree of precision.

Furthermore, filling or refilling of the reservoirs of conventional steam irons is time-consuming and difficult due to the particular construction of these reservoirs and in order to overcome the latter disadvantage, such steam irons quite often come equipped with two reservoirs so as to replenish one while the other is in service which, of course, is uneconomical and, at the same time, increases the prime cost of such irons.

A further disadvantage encountered with these art devices is that the arrangement and/or pattern of the steam vents on the ironing surface frequently renders the iron inefficient for the pressing of certain fabrics.

A still further disadvantage of these irons is the complicated construction of the different individual sections which constitute the vaporizing chamber, and the respective connections which, at the one hand, interconnect the vaporizing chamber and the reservoir and, at the other hand, interconnect the vaporizing chamber and the steam vents.

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SUMMARY OF THE INVENTION

If therefore is an object of the present invention to overcome the above disadvantages and to provide an electric steam iron which is simple but effective and which can be easily filled and can be readily emptied, and which incorporates improved but simple conduit members for interconnecting the compressible reservoir and the vaporizing chamber, on the one hand, and the vaporizing chamber and the steam vents, on the other hand.

A further object of the present invention is to provide an electric steam iron in which steam is produced in an amount and at such times as desired and which prevents the steam produced in the vaporizing chamber from entering the compressible reservoir.

A still further object of the invention is to provide an electric steam iron in which the steam vents are arranged in such a pattern as to allow the pressing of any type of special fabric.

The electric steam iron according to the invention essentially comprises a metallic slab having a lower ironing surface with a plurality of steam vents transversely aligned relative to the elongation of the iron and an upper surface on which a vaporizing chamber and a casing enclosing the chamber are removably mounted. Disposed on top of the casing are a handle and an upstanding liquid containing manually compressible flexible reservoir frontwards of the handle and operative to supply a predetermined amount of liquid to the vaporizing chamber in response to exterior pressure exerted on the reservoir. Respectively interconnecting the reservoir and the steam vents with the vaporizing chamber is a first and a second conduit member with a first valve member of the reservoir interposed between the same and the first conduit member. The reservoir further comprises a second valve member movable between an open and a closed position for alternately establishing and interrupting communication between the interior of the reservoir and the ambient temperature while the first valve member of the reservoir is operative to normally close the first conduit member between the reservoir and the vaporizing chamber but which permits seepage of liquid into the latter when the second valve is in open position and which is operative to fully open the first conduit member in response to compression of the reservoir when the second valve member is in closed position. The reservoir still further comprises a removable plug which permits easy refilling of the same, an electric heating element removably arranged in a recess formed in the metallic slab underneath the vaporizing chamber to heat the ironing surface of the slab and the chamber to water vaporizing temperature, and a thermostatic control arrangement energizing and de-energizing the heating element.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a longitudinal cross-sectional view of a preferred embodiment of an electric steam iron according to the present invention;

FIGS. 2, 3 and 4 are exploded views of the individual components or parts of the steam iron of FIG. 1;

FIG. 5 is a transverse cross-sectional view taken on line A—A of FIG. 4;

FIG. 6 is a cross-sectional view taken on line B—B of FIG. 3;

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FIG. 7 is a partial elevational view of the slab bottom of the iron of FIG. 1;

FIG. 8 shows a further construction embodiment of the slab and the vaporizing chamber incorporated in the steam iron of FIG. 1;

FIG. 9 is a cross-sectional view taken on line C—C of FIG. 8; and

FIG. 10 is a cross-sectional view taken on line D—D of FIG. 8.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings in which like reference numerals index like parts, the electric steam iron according to the present invention and embodied as shown in FIG. 1, is seen to comprise a thick metal slab 1 having a lower ironing surface 1a, an upper support surface 1b including two upstanding projections 2 axially spaced relative to each other in direction of the longitudinal axis of symmetry of the slab 1, and a recess 3 defined in the upper surface 1b substantially intermediate the projections 2 for removably receiving a thermal unit in the form of electric heating element 4.

The removable heating elements 4 which may be of any conventional form such as resistance heating elements and which may be connected to a source of electrical energy, not shown, via conventional thermostatic means 5 which are coupled to the heating elements 4 and are included in the electric circuit to automatically de-energize the heating elements 4 when the metal slab 1 or the vaporizing chamber 5 of the iron reaches a predetermined temperature.

The vaporizing chamber 6, as clearly shown in FIGS. 3 and 4, is seen to be constituted by an endwise downwardly sloping bottom wall 7 and an upstanding surrounding wall 8 of a substantially hollow main body 9, and an upper wall 10 defined by the lower surface of a cover member 11 which closes the open upper end of the main body 9.

In the assembled condition of the iron as shown in FIG. 1, the cover member 11 and the main body 9 form a unitary assembly with the lower surface of the cover member 11 welded to the upper edge bounding the open upper end of the main body 9, and this assembly, in turn, is threadably connected to the slab 1, FIG. 2. To this end, the main body 9 is formed with unitary projecting connecting portions 12 which are spaced apart relative to each other in direction of the longitudinal axis of symmetry of the main body 9 frontwards and rearwards of the vaporizing chamber 6 and which entirely overlap and accommodate the projections 2 on the slab 1. The connecting portions 12 each define a through-bore 13 axially aligned with a dead-end bore 14 which extend axially in the projections 2. A screw member 15, finally, is threadably received in each of the dead end bores to rigidly connect and retain the vaporizing chamber assembly onto the slab 1.

An extension or rear end portion 3' of the recess 3 in the upper surface 1b of the slab 1 permits an electric connection 16 to be established between the electric heating elements 4 and the source of electrical energy, not shown, via the thermostatic means 5.

Interconnecting the lower ironing surface 1a of the slab 1 and the vaporizing chamber 6 are, in the present embodiment, three tubular members 17, FIGS. 1, 3 and 6, each having upper major portions 17a received in mating bores 18 which extend axially through the main body 9 and lower minor portions 17b received in mating bores 19 which extend axially through the slab 1, and with the bores 18 and 19 in axial alignment with each other. The uppermost ends of the major portions 17a and of the bores 18, at substantially the same level, open into the forward portion of the vaporizing chamber 6, at the most upward left-hand region of the same while the lowermost ends of the minor portions 17b and of the bores 19, at substantially the same level, open at the ironing surface

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1a of the slab 1 and constitute the steam vents 20 of the iron. In this manner the ironing surface is interconnected with the vaporizing chamber 6.

As shown in FIG. 7, the steam vents 20, thus constituted by the lowermost ends of the tubular members 17 and the bores 19, are advantageously arranged in a pattern substantially transverse to the longitudinal axis of symmetry of the slab 1 and substantially frontwards of the same. It has been experimentally found that this pattern enables the ironing of practically any type material, in particular fine fabrics.

It should be noted that the tubular members 17, preferably, are press-fitted into the respective bores of the slab 1 and main body 9 such as to ensure that the steam produced in the vaporizing chamber 6 will pass from the latter to the steam vents 20 only via the tubular members 17, thus avoiding any bypass of the steam.

Also, during construction and assembly of the tubular members and the vaporizing chamber, it should be kept in mind that the distance between the uppermost ends of the tubular members 17 and the upper edge bounding the open upper end of the chamber wall 8 should be arranged and kept such that no obstruction of these ends of the tubular members takes place during welding of the cover member 11 to the main body 9.

Enclosing the vaporizing chamber assembly, is a casing 21 which with its lower peripheral edge 22 is supported on the slab 1, within the peripheral confines of the same. At its top 23, the casing 21 is provided with a plurality of through-bores 24 which, at the one hand, are axially aligned with a corresponding number of dead-end bores 25 in the cover 11 and, at the other hand, are axially aligned with a corresponding number of through-bores 26 formed in the lower portion of a handle 27. Extending through the bores 26 and 24 and threadably received in the dead-end bores 25, are a corresponding number of screw members 28 which serve to connect both the handle 27 and the cover 21 to the top of the vaporizing chamber assembly, as shown in FIG. 1. Illustratively shown in FIGS. 4 and 5, are the dead-end bores 25 in the cover member 11 and which are operative to threadably receive the screw members 28.

For aesthetic purposes and covering that region of the lower portion of the handle 27 in which the heads of the screw members 28 are seated, is a cover plate 29 removably connected to that handle portion by means of screw members 30.

Disposed frontwards of the handle 27 and communicating with the interior of the vaporizing chamber 6 through a recess 21a in the top of the casing 21 and via a duct 31, is a flexible, usually water containing reservoir 32 which is manually compressible and serves to supply a predetermined amount of water to the vaporizing chamber. The compressible reservoir 32 is seen to essentially comprise a hollow flexible substantially pear-shaped main body made of a suitable compressible plastic material and which, upon compression, automatically expands again to resume its condition, shown in FIG. 1. Clampingly connected by and within the confines of the lower open end portion of the pear-shaped main body, is a first fitting member 33 having an axially extending passage 34 which, with its one end, communicates with and opens into the hollow interior of the reservoir 32 and, with its other end, communicates with and opens into a second passage 35 of a second fitting member 36 threadably received in the top of the vaporizing assembly. The fitting member 33 is threadably received in the fitting member 36 and is sealably connected thereto by means of a sealing gasket 37 interposed between the respective adjoining end faces of the two fitting members. As shown, the fitting member 36 is threadably received in a recess 38 extending through the cover member 11 and permits communication of its passage 35 with the duct member 31. A sealing gasket 39, interposed between the adjoining portions of the second fitting member 36 and the cover 11, serves to sealably

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connect the former to the latter. As shown, the duct 31 extends interiorly of the vaporizing chamber 6 in substantial parallelism with the top or cover member 11 thereof and is integrally formed therein. One end of the duct 31 communicates with the passages 35 while its other end 31a opens into the upper region of the chamber 6 in the most rearward section thereof, substantially axially opposite from the uppermost ends of the tubular members 17. The upper end of the passage 35 of the second fitting member 36 defines a mouth portion 35a adapted to threadably receive the lower stem portion 33a of the first fitting member 33 and it will be understood that the respective passages of the first and second fitting members 33 and 36, together form a continuous fluid path between the flexible reservoir 32 and the vaporizing chamber 6.

A first valve member 40 extends coaxially within the passage 34 of the fitting member 33 and is reciprocable relative thereto. The valve member 40 has upper and lower portions thereof respectively extending into the reservoir 32 and into mouth portion 35a of the fitting member 36 with the lower portion having an integrally formed bead 41 which forms a shoulder portion of the valve member 40 and which normally but not hermetically sealably abuts against the adjoining inner periphery of the lower edge of the stem 33a of the fitting member 33. The upper portion of the valve member 40 which extends into the flexible reservoir 32 is provided with a spring member 42 which is fixedly connected to this upper portion and abuts against and is retained in a mouth portion 43 formed in the upper part of the first fitting member 33. The spring member 42 is operative to normally bias the valve stem in upward direction so that the shoulder or bead 41 of the valve member 40 firmly but not sealably abuts against the inner periphery of the lower edge of the stem 33a of the first fitting member 33.

A second manually operable valve member 44 of the push-pull-type is provided in the upper region of the pear-shaped reservoir as shown in FIGS. 1, 4 and 5. The valve member 44 comprises an axially extending or elongated gate in the form of opening 45 and is movable between a first pulled-out or open position as shown in FIG. 1, in which the gate 45 communicates the ambient atmosphere with the interior of the reservoir 32 so as to create atmospheric pressure in the water contained in the reservoir, and a second pushed-on or closed position, not shown, in which the gate 45 is closed.

The respective fitting members 33, 36 are made of metal as is the valve member 40 and the upwardly directed pressure on the valve member 40 by the spring member 42 is dimensioned such that water is permitted to seep past the contact between the bead 41 and the peripheral edge of the stem 33a when the second valve member 44 is in open position, i.e. when gate 45 communicates the ambient atmosphere with the interior of the reservoir 42 which, as hereinbefore explained, permits atmospheric pressure on the water in the reservoir 32. Such seepage of water from the reservoir to the vaporizing chamber will automatically be discontinued upon closing of the second valve member 44, i.e. when the gate 45 is in closed position and no longer communicates the ambient atmosphere with the interior of the reservoir 32.

Operation of the flexible reservoir 32 essentially is such that with valve member 44 closed and with compression on the side walls of the reservoir, pressure is exerted upon the water contained therein and also upon the valve member 14 which now, and against the bias exerted by spring member 42, is forced downwards whereby the contact between the bead 41 and the inner peripheral edge of the stem 33a is broken and the passage 34 is fully opened to permit injection in measured amounts, depending on the pressure or compression on the wall of the reservoir 32, from the latter into the vaporizing chamber 6.

Of course, without compression of the flexible reservoir 32 but with the valve member 44 in open position, seepage of water occurs to a degree sufficiently high for a suit-

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able production of steam. This degree of seepage is determined by the dimensions of the valve, its bead, the passage 34, its lower peripheral edge, and the water level in the reservoir. The water which splashes or drips onto the slanting surface 7, rearwards in the vaporizing chamber 6, is automatically forced to follow the forward downwardly slanting road defined by this surface. With the surface 7 heated to water vaporizing temperature by means of the electric heating elements 4 the water received thereon will be converted into steam which is forced upwardly towards the upwardly positioned open ends of the tubular members 17. The latter subsequently convey the thus produced steam to the steam vents 20 in the lower ironing surface 1a of the slab 1.

The arrangement with the duct 31 traversing substantially the entire elongation of the relatively large-sized vaporizing chamber 6 and the location of its open end 31a remote from the upper ends of the tubular members 17, has the advantage that liquid-sprinkles cannot reach the exterior of the iron which would be the case if the steam vents 20, as in conventional irons, would directly communicate with the bottom of the vaporizing chamber 6.

In addition, the sloping surface 7 of the chamber 6 has the advantage that drops or splashes of water emanating from the open end 31a of the duct 31, will fall onto the heated surface 7 and if not immediately vaporized, the same will slide along this surface to be subsequently rapidly vaporized.

A plastic plug member 46 is removably seated in an opening 47 in the reservoir 32 and permits, upon its removal from the opening, easy and rapid filling of the flexible reservoir simply by tilting the latter and pouring water therein via the opening 47. This arrangement avoids the necessity of having to disconnect the entire reservoir assembly from the iron. However, in case the reservoir is removed from the iron, an optional manner of filling the reservoir is provided in the form of a plurality of peripheral openings 33b in the stem 33a which, upon insertion of this portion into the water and accompanied with compression and subsequent expansion of the reservoir 32, will rapidly and smoothly fill the same as a result of suction.

As shown in FIG. 1, the electric iron is further seen to comprise two laterally outwardly extending projections 48 (only one shown), made from a heat-proof material, such as Bakelite, and which are fixedly mounted to the rear end of the iron. The projections 48 serve as stands for the iron when the latter is rested in a vertical or non-active position.

FIGS. 8, 9 and 10 illustrate a further embodiment in which the electric heating elements 4a are embedded in the slab 1c of the iron and in which the main body 9a of the vaporizing chamber assembly is mounted on and integrally formed with the slab 1c.

In this embodiment, the electric unit is not detachable and, hence, not replaceable.

The heating elements 4a, in this instance, are interconnectable with a source of electric energy, not shown, by means of the terminals 4b, located rearwards of the vaporizing chamber 6a.

Like in the embodiment shown in FIGS. 1-7, three tubular members 17c interconnect the uppermost left-hand section of the vaporizing chamber 6a with the steam vents 20a, however, in this instance, via bores 19a which extend axially through the entire one-piece assembly consisting of the main body 9a and the slab 1c.

The vaporizing chamber 6a is closed by a closure member 11a welded to the upper edge 8a bounding the upstanding surrounding wall 8b of the chamber.

An inner elongated projection 11b extends along the longitudinal axis of symmetry of the closure member 11a and which comprises the duct 31a which, at its one end, not shown, communicates with the flexible reservoir, not shown, and with its other end 31a communicates with the interior of the vaporizing chamber 6a.

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Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims:

1. An iron comprising, in combination, a casing having a top and bottom; a metallic member disposed at said bottom and having an upper and lower surface and said lower surface adapted for ironing; means defining a vaporizing chamber intermediate said top of said casing and said upper surface of said metallic member; means for connecting said casing to said vaporizing chamber; first conduit means extending upwardly from said metallic member into said vaporizing chamber, said first conduit means having portions extending through said metallic member and opening at said lower surface thereof; compressible reservoir means adapted to contain a quantity of water; means mounting said reservoir means externally of said casing; second conduit means communicating with said reservoir means and said vaporizing chamber, said reservoir means adapted to supply a predetermined amount of water to said vaporizing chamber in response to pressure exerted on said reservoir means; first valve means in said reservoir means and movable between a first and a second position in which it respectively establishes and interrupts communication between the interior of said reservoir means and the ambient atmosphere; second valve means intermediate said reservoir means and said second conduit means, said second valve means being constructed and arranged for normally closing said second conduit means but for permitting seepage of water from said reservoir means into said second conduit means when said first valve means is in said first position thereof, and said second valve means being operative for opening said second conduit means in response to compression of said reservoir means when said first valve means is in said second position thereof; and heating means intermediate said vaporizing chamber and said upper surface of said metallic member to heat said metallic member and said vaporizing chamber to a water vaporizing temperature.

2. An iron as defined in claim 1, wherein said vaporizing chamber comprises top and bottom portions and wherein said second conduit means comprises portions extending interiorly and exteriorly of said chamber, said interiorly extending portion opening in said top portion of said chamber.

3. An iron as defined in claim 2, wherein said interiorly extending portion extends substantially parallel with said top portion of said chamber and wherein said exteriorly extending portion extends angularly relative to said first mentioned portion.

4. An iron as defined in claim 3, wherein said interiorly extending portion is a duct integrally formed in said top portion of said vaporizing chamber and having an inlet and an outlet substantially axially spaced at opposite ends of said top portion, said exteriorly extending portion communicating with said inlet of said duct, and said outlet communicating with said vaporizing chamber.

5. An iron as defined in claim 4, wherein said exteriorly extending portion is a fitting member having an upper end and a lower end with a passage axially extending between said upper and said lower end, said lower end being detachably mounted in said inlet of said duct.

6. An iron as defined in claim 5, wherein said upper end of said fitting member is connected to said compressible reservoir means, and wherein said passage freely accommodates said second valve means, said second valve means being elongated and axially reciprocally mounted

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in said passage and comprising an upper portion extending in said reservoir means above said upper end of said fitting member and a lower portion extending in said duct beneath said lower end of said fitting member and having a diameter larger than that of said passage and forming a shoulder normally abutting with clearance against peripheral portions of said lower end of said fitting member, and said upper portion comprising a spring member abutting against said upper end of said fitting member and normally upwardly biasing said second valve means such that said shoulder portion engages said peripheral portions of said lower end of said fitting member, said shoulder portion permitting seepage of water from said passage to said vaporizing chamber when said first valve means is open, and said shoulder portion disengaging said peripheral portions in response to pressure exerted on said compressible reservoir means.

7. An iron as defined in claim 6, wherein said reservoir means is substantially pear-shaped and made of a plastic material and having a lower portion clampingly enclosing said upper end of said fitting member.

8. An iron as defined in claim 6, wherein said reservoir means is a flexible substantially pear-shaped member having an upper substantially arcuately curved portion with an opening extending therethrough and a lower neck portion having an opening clampingly enclosing said upper end of said fitting member, and wherein said first valve means is arranged in said opening in said arcuately curved portion above the level of water contained in said reservoir means and comprises a valve stem axially movable in said opening between a first and a second end position and having an extended hole axially extending therein, said hole communicating the ambient atmosphere with the interior of said reservoir means in said first end position of said valve stem so as to permit atmospheric pressure to be exerted on the water in said reservoir means thereby effect said seepage of water past said shoulder, and said hole being closed by said reservoir means in said second end position of said valve stem.

9. An iron as defined in claim 8, wherein said first valve means is of the push-pull type and comprises a flange portion at axially opposite ends of said valve stem, with one of said flange portions sealingly abutting against an outer peripheral portion of said compressible reservoir in said second end position of said valve stem and with the other of said flange portions sealingly abutting against an inner peripheral portion of said compressible reservoir.

10. An iron as claimed in claim 1, and comprising removable plug means detachably mounted in said reservoir means and operative to permit filling of the same upon removal of said plug means from said reservoir.

11. An iron as claimed in claim 1, wherein said plug means comprises a substantially tapering stem portion, and wherein said compressible reservoir comprises an opening fluid-tightly accommodating said tapering stem portion of said plug means.

12. An iron as defined in claim 1, wherein said vaporizing chamber comprises top and bottom portions and wherein said first conduit means extending upwardly from said metallic member into said vaporizing chamber comprises a plurality of ducts opening in the region of said top portion of said chamber at one end thereof, and wherein said second conduit means extends into said chamber and has a portion opening in said top portion of said chamber at the opposite end thereof.

13. An iron as defined in claim 12, wherein said ducts are discrete tubular members and wherein said metallic member comprises bores defined therethrough for receiving said tubular members.

14. An iron as defined in claim 12, wherein said bottom portion of said chamber includes an inner surface which extends angularly relative to said metallic member.

15. An iron as defined in claim 1, wherein said heating means is an electric heating element accommodated in a recess defined in said upper surface of said metallic

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member, and comprising thermostatic means for energizing and deenergizing said heating element.

16. An iron as defined in claim 15, wherein said heating means are removably mounted in said recess.

17. An iron as defined in claim 15, wherein said heating means are fixedly mounted in said recess.

18. An iron as defined in claim 1 and comprising means connecting said vaporizing chamber to said upper surface of said metallic member, said means comprising male and female members, said male members directed upwardly from said upper surface of said metallic member in spaced apart relationship frontwards and rearwards of said vaporizing chamber, said female members forming exterior portions of said chamber and overlapping said male members, said male and female members having aligned bores, and screw members threadably received in said bores.

19. An iron as defined in claim 1, wherein said vaporizing chamber comprises a top and a bottom integrally formed with said metallic member.

20. An iron as defined in claim 1, wherein said vaporizing chamber has top and bottom portions, and wherein said means for connecting said casing to said vaporizing chamber comprises screw members threadably connecting said top of said casing to said top portion of said chamber, and comprising handgrip means secured to said top of said casing.

21. An iron as defined in claim 1, and comprising heat-insulated stand means supporting said iron in its upright or rest position.

22. An iron comprising, in combination, a metallic member having an upper and lower surface, said lower surface adapted for ironing and said upper surface having open-topped upright members spaced apart relative to one another; means defining a vaporizing chamber intermediate said spaced upright members with exterior portions of said chamber overlapping said upright members frontwards and rearwards of said chamber, said overlapping portions having bores defined therethrough in the region of the open tops of said upright members and axially aligned therewith; screw members threadably received in said bores and open tops for securing said vaporizing chamber to said upper surface of said metallic member; a casing having a top and bottom and resting with its bottom on said upper surface of said metallic member and said bottom having a circumference smaller than the circumference of said metallic member, said casing top having bores defined therethrough in the region of said chamber, said chamber having top and bottom portions and said top portion having bores defined therein and axially aligned with said bores in said casing top; a handle disposed on said casing top and having portions with bores defined therethrough in the region of said bores in said casing top and axially aligned therewith; screw members received in said axially aligned bores of said handle, and

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said casing top and said top portion of said chamber for threadably securing said handle and said casing to said chamber; compressible reservoir means adapted to contain a quantity of water; means mounting said reservoir means externally of said casing frontwards of said handle; a conduit member communicating between said reservoir means and said vaporizing chamber, said reservoir means adapted to supply a predetermined amount of water to said chamber in response to pressure exerted on said reservoir means; a first and a second valve member associated with said reservoir means for regulating the supply of water from said reservoir means to said chamber; a plurality of duct members extending upwardly from said metallic member into said chamber and having portions extending through said metallic member and opening at said lower surface thereof; electric heating elements intermediate said bottom portion of said vaporizing chamber and said upper surface of said metallic member to heat said metallic member and said chamber to a water vaporizing temperature; and thermostatic means energizing and deenergizing said electric heating element.

23. An iron as defined in claim 22, wherein said upper surface of said metallic member is provided with a recess, and said electric heating elements are removably received in said recess.

24. An iron as defined in claim 22, wherein said means for mounting said reservoir is a fitting member threadably connecting said reservoir means to said upper portion of said chamber, said fitting member defining a passage therethrough communicating with said conduit member and said first valve member being formed on said reservoir means and said second valve member being operatively connected in said fitting member, and wherein said first valve member is movable on said reservoir means between a first and a second position in which it respectively establishes and interrupts communication between the interior of said reservoir means and the ambient atmosphere, and said second valve member being constructed and arranged for normally closing said conduit member but for permitting seepage of water from said reservoir means into said conduit member when said first valve member is in said first position thereof, and said second valve member being operative for opening said conduit member in response to compression of said reservoir means when said first valve member is in said second position thereof.

References Cited

UNITED STATES PATENTS

2,700,236	1/1955	Marvin et al.	38—77.83
3,114,983	12/1963	Larcher	38—77.83
3,274,714	9/1966	Abraham	38—77.83

PATRICK D. LAWSON, Primary Examiner