United States Patent [19]

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[54] **STEAM IRON SHOE**

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[52] **U.S. Cl.** **38/97**

[51] **Int. Cl.²** **D06F 75/38**

[58] **Field of Search** 38/97, 93

[56] **References Cited**

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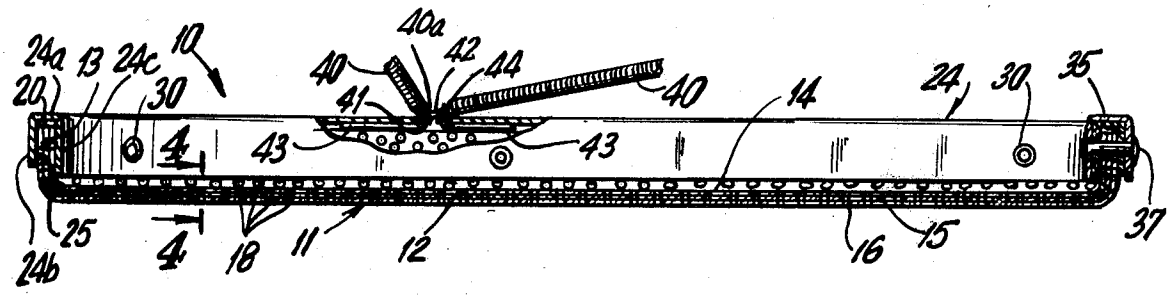
[57] **ABSTRACT**

With this steam iron shoe, drier pressing can be obtained because the steam from the steam iron, passing through perforations in the shoe body, is drier. This shoe applies more heat to the moisture in the steam from the steam iron, to make the steam drier. This is accomplished by making the body of the shoe of a laminated top layer of non-ferrous metal, intermediate layer of cloth treated with high heat resisting material and a bottom layer of TFE Teflon, all similarly perforated. Also the metal layer is increased in thickness to hold more heat for drying the steam.

21 Claims, 4 Drawing Figures



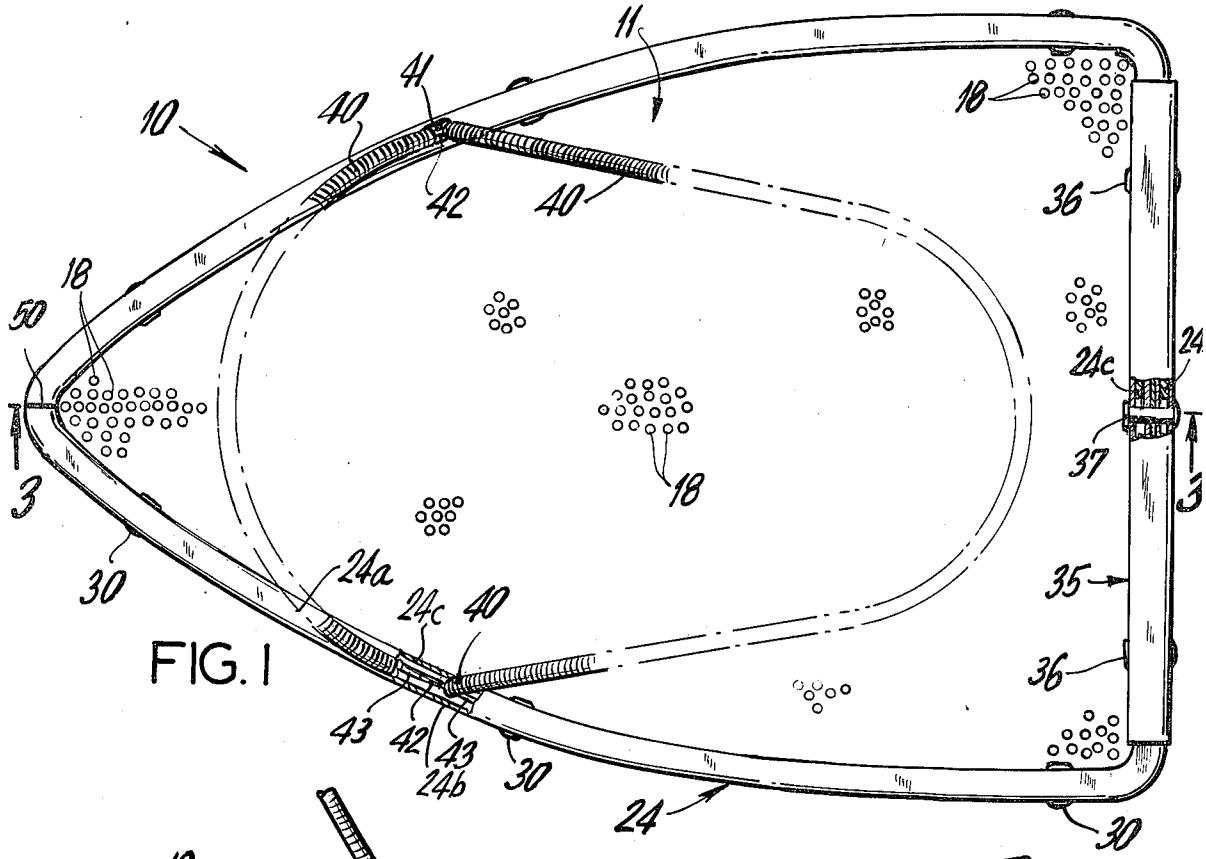


FIG. 1

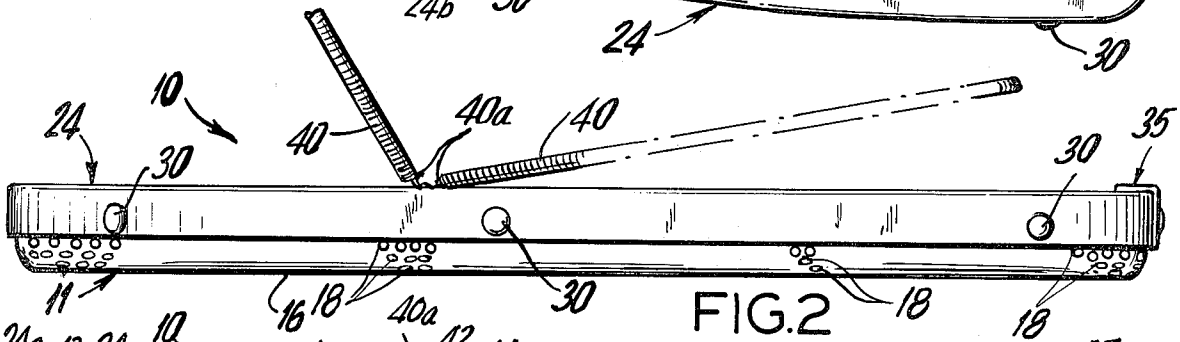


FIG. 2

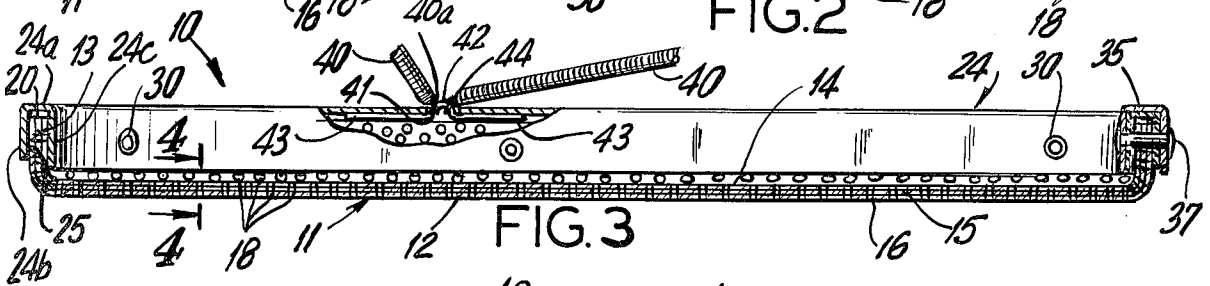


FIG. 3

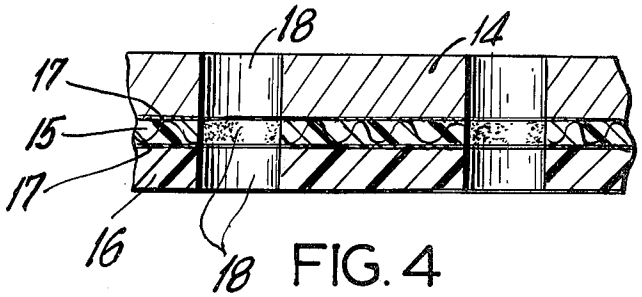


FIG. 4

STEAM IRON SHOE

This invention relates to steam iron shoes. One object of this invention is to provide a steam iron shoe of the character described comprising a shoe bottom comprising a top layer of non-ferrous metal, an intermediate layer of cloth treated with high heat resisting material, and a bottom layer of high heat resisting material.

Another object of this invention is to provide a highly improved steam iron shoe of the character described in which the top layer is aluminum, copper, brass or other non-ferrous metal, the intermediate layer is Nomex (nylon) cloth impregnated with FEP Teflon (fluorinated ethylene polymer) and in which the bottom layer comprises TFE Teflon (tetrafluoroethylene).

Still another object of this invention is to provide a steam iron shoe of the character described in which adjacent layers are bonded with layers of FEP Teflon.

Yet another object of this invention is to provide a steam iron shoe of the character described in which the aluminum top layer is of substantially increased thickness to hold more heat for making the steam from the steam iron and passing through perforations in said layers, drier.

A further object of this invention is to provide a steam iron shoe of the character described in which three layers of the body are formed with registering or aligned perforations throughout the body.

A still further object of this invention is to provide a steam iron shoe of the character described comprising a body having a bottom flat wall shaped like the underside of a steam iron, on which the steam iron rests, upwardly extending flanges projecting up from all around the bottom wall, a frame of inverted U cross-section receiving the upper edges of the flanges and fixed thereto, and a plurality of coil tension springs the ends of which are anchored to opposite sides of the shoe, to be passed around the steam iron to resiliently hold the shoe to the iron.

Yet a further object of this invention is to provide a steam iron shoe of the character described in which the ends of the springs on each side of the shoe are anchored to the frame.

It is also an object of this invention to provide a strong, smooth and durable steam iron shoe of the character described which shall be relatively inexpensive to manufacture, easy to manipulate, light in weight, which shall produce drier steam for ironing wrinkle-less garments, which shall comprise a high tenacity composite body, which shall be easy to put on and take off the steam iron and which shall yet be practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described and of which the scope of invention will be indicated in the following claims.

IN THE DRAWINGS

FIG. 1 is a top plan view of a steam iron shoe embodying the invention;

FIG. 2 is a side elevational view thereof;

FIG. 3 is a cross-sectional view taken on line 3—3 of FIG. 1; and

FIG. 4 is an enlarged view taken on line 4—4 of FIG. 3.

Referring now in detail to the drawing, **10** designates a steam iron shoe embodying the invention. Said shoe **10** comprises a body **11** made of composite high tenacity sheeting. Said body **11** has a flat bottom wall **12** from which flanges **13** extend upwardly all around the bottom wall to an equal height. This body is made by laminating a top layer **14** of aluminum, copper, brass or other non-ferrous metal, an intermediate layer **15** of Nomex (nylon) cloth impregnated with FEP Teflon (fluorinated ethylene polymer) or other high heat resisting material, and a bottom layer **16** of TFE Teflon (tetrafluoroethylene). The lamination is accomplished by layers **17** of FEP Teflon of substantially **0.002** inch to **0.010** inch in thickness. The FEP Teflon melts at about **500°F.** The TFE Teflon melts at about **750°F.** The bonding is accomplished at about **700°F.** The three layers of aluminum, FEP treated Nomex, and TFE Teflon are bonded together at one time in flat sheets which are formed with perforations **18** by punching the multilayered sheet. Then the sheet is cut to desired shape and the flanges are then upturned by a proper die or other suitable apparatus.

The flange **13** has an upper edge **20** at the same level all around. The bottom wall **12** of the shoe has the shape of the bottom surface of the steam iron, being transversely straight at the back and convergingly curbed at the sides merging in substantially a front apex.

If desired, the body may have slits where the rear flange meets the rear ends of the forwardly converging curved side flanges, and at the apex of the body, to facilitate shaping of the flanges. The aluminum or other non-ferrous layer **14** is preferably about **0.040** inch in thickness. It may be from **0.025** inch to **0.060** inch in thickness. This is an increased thickness of aluminum. The thicker the aluminum the more heat it holds and hence the more heat it holds the greater the increase in the temperature of the steam and that is accompanied by lessening of moisture in the steam, thus, resulting in drier steam.

The TFE Teflon bottom sheet is preferably about **0.030** inch in thickness.

Heretofore steam iron shoes were made with a flat wall of metal of only **0.020** inch in thickness which is not satisfactory to produce drier steam.

The perforations **18** are closely spaced and arranged in transverse, closely spaced rows. Said perforations are about **1/16** inch in diameter.

The flanges are about ½ inch in height. Mounted on the upper ends of the flanges is a frame **24** of transverse inverted U-shape forming a downwardly opening channel **25** into which the upper end portions of the flanges **13** project. The frame may be made from a single channel-shaped piece of metal bent to the shape of the flanges **13** by split at the middle of the back. The frame has a web **24*a***, an outer flange **24*b*** and an inner flange **24*c***. Said frame is fixed to the flanges **13** by spaced rivets **30.**

The portions of the frame **24** at opposite sides of the split at the rear, are held together by a transverse downwardly opening straight channel-shaped member **35** fitted over the end portions of the frame **24** located at the back of the shoe and straddling the split or space between the ends of frame **24,** and is riveted thereto by

a pair of side rivets **36** and a central rivet **37** which is located between the adjacent ends of the frame **24.**

Means is provided to anchor a pair of coil tension springs **40** to the shoe. To this end, portions of the web **24a** at opposite sides of the frame **24,** somewhat closer to the front end of the frame than to the rear end of the frame, are cut away to form holes **41.** Inserted into each side of the frame is an anchor **42** of metal wire stock having longitudinal oppositely extending arms **43** located beneath the web **24a** and above the upper edge **20** of the flange **13,** the inner ends of said arms being interconnected by an upwardly extending loop **44** projecting up through hole **42.** At the adjacent ends of the springs **40** are loops **40a** engaging the loops **44.**

These springs can be pulled around parts of the steam iron in any suitable manner to resiliently press the steam iron down on the flat wall portion of the shoe and to hold the steam iron within the confines of the frame **24.**

Pointer means is provided to guide the steam iron and shoe forwardly. To this end a line **50** may be applied to the web **24a** at the apex of the frame and running in a direction along the axis of the shoe. This line may be applied by silk-screening or in any other suitable manner, such as by a wire welded to the frame or by a wire inserted into the frame and projecting above the frame.

It would thus be seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative.

I claim:

1. A steam iron shoe comprising a body having a flat horizontal bottom wall portion, said portion comprising a top layer of non-ferrous metal, an intermediate layer of cloth treated with a high heat resisting material of at least **400°F** melting point, and a bottom layer of high heat resisting material having a melting point of about **500°F.,** all of said layers having registering, spaced perforations throughout.

2. The combination of claim **1,** in which the top layer comprises aluminum.

3. The combination of claim **2,** said aluminum layer being between **0.025** inch and **0.060** inch in thickness.

4. The combination of claim **1,** said top layer comprising aluminum of about **0.40** inch in thickness.

5. The combination of claim **1,** said intermediate layer comprising nylon treated with FEP Teflon (flourinated ethylene polymer).

6. The combination of claim **1,** said bottom layer comprising a sheet of TFE Teflon (tetrafluoroethylene).

7. The combination of claim **1,** said layers being bonded by layers of bonding material between the top layer and the intermediate layer, and between the intermediate layer and said bottom layer.

8. The combination of claim **7,** said layers of bonding material comprising FEP Teflon (flourinated ethylene polymer).

9. The combination of claim **1,** in which the top layer comprises aluminum, said intermediate layer comprising nylon cloth treated with FEP Teflon (flourinated ethylene polymer).

10. The combination of claim **9,** said bottom layer comprising a sheet of TFE Teflon (tetrafluoroethylene).

11. The combination of claim **10,** said layers being bonded by layers of bonding material between the top layer and the intermediate layer, and between the intermediate layer and said bottom layer.

12. The combination of claim **11,** said layers of bonding material comprising FEP Teflon (flourinated ethylene polymer).

13. The combination of claim **1,** said body comprising flanges projecting up from said flat horizontal portion, a frame of transverse inverted U-shape having a downwardly opening channel receiving upper end portion of said flanges, and means to fix said frame to said flanges.

14. The combination of claim **13,** said means to fix said frame to said flanges comprising rivets passing through said frame and said flanges.

15. The combination of claim **1,** said body comprising flanges projecting up from said flat horizontal portion, a frame of transverse inverted U-shape having a downwardly opening channel receiving upper end poriton of said flanges, and means to fix said frame to said flanges, a pair of anchors at opposite sides of said frame, and a pair of coil tension springs, adjacent ends of said springs being anchored to said anchors.

16. The combination of claim **1,** said body comprising flanges projecting up from said flat horizontal portion, a frame ot transverse inverted U-shape having a downwardly opening channel receiving upper end portion of said flanges, and means to fix said frame to said flanges, said frame having a front apex portion and guide means at said apex portion of said frame and extending axially of said shoe.

17. The combination of claim **1,** said top layer being thicker than said bottom layer.

18. The combination of claim **1,** said body comprising flanges projecting up from said flat horizontal portion, a frame of transverse inverted U-shape having a downwardly opening channel receiving upper end portion of said flanges, and means to fix said frame to said flanges, said frame having aligned straight end portions at the back of the shoe, and an inverted U-shaped, straight channel member, receiving said aligned ends of said frame, and means to fix said straight channel member to said aligned ends of said frame.

19. The combination of claim **1,** said registering perforations being similar.

20. The combination of claim **19,** all of said layers being of similar shape and in registration.

21. The combination of claim **20,** in which the top layer comprises aluminum, said intermediate layer comprising nylon cloth treated with FEP Teflon (flourinated ethylene polymer), said bottom layer comprising a sheet of TFE Teflon (tetrafluoroethylene), said layers being bonded by layers of bonding material between the top layer and the intermediate layer, and between the intermediate layer and said bottom layer, said layers of bonding material comprising FEP Teflon (flourinated ethylene polymer).

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