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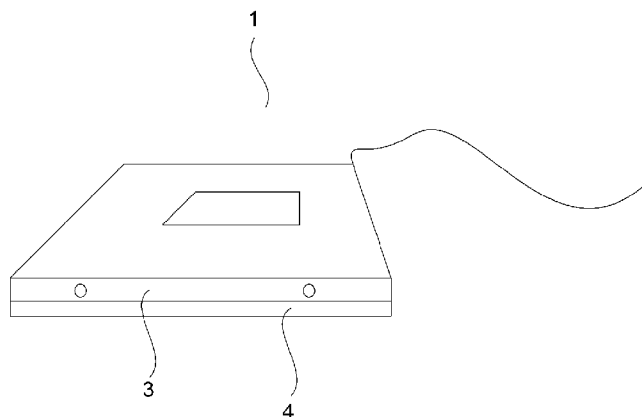
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BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
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(54) Title: A CLOTHES IRON WITH REDUCED ENERGY CONSUMPTION

Figure 1



(57) Abstract: The present invention relates to a clothes iron (1) comprising a body (2), a base (3), at least one steam chamber (4) that is disposed on the body (2) and that is filled with water, at least one steam outlet (6) that is arranged on the base (3) and that enables the discharge of the steam generated by the heating the of the water in the steam chamber (4), and a base liner (5) that covers the base (3) surface.



Description**A CLOTHES IRON WITH REDUCED ENERGY CONSUMPTION**

- [0001] The present invention relates to a clothes iron, the energy consumption is reduced.
- [0002] The clothes iron is a high energy consuming appliance due to its mass and the use of resistance-type heater. The state of the art clothes irons are kept waiting for a preheating time before the ironing process due to their high aluminum masses. The weight of the clothes iron makes the use thereof difficult and the long preheating time increases energy loss, thus adversely affecting the customer satisfaction.
- [0003] In the state of the art Japanese Patent Application No. JPH09117600, the use of graphite for thermal storage purposes in a wireless iron is disclosed.
- [0004] The aim of the present invention is the realization of a clothes iron, the energy consumption of which is reduced.
- [0005] The clothes iron realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof comprises a body, preferably an aluminum base and a base liner that isolates the base from the clothes to be ironed. The steam generated in a steam chamber disposed on the body is directed towards the clothes to be ironed through the steam outlets arranged on the base and the base liner. The clothes iron furthermore comprises a sheet comprising graphite material, that is placed between the base and the base liner so as to form a separate layer. By means of the sheet comprising graphite material and placed between the base and the base liner, the base liner heats up very quickly and thus the preheating time of the clothes iron is decreased and the energy consumption thereof is reduced. The flexible graphite is a self-heating exfoliated material. The thermal and chemical stability of the low resistant graphite is high.
- [0006] In an embodiment of the present invention, the sheet is produced by compressing the graphite material in powder form between the base and the base liner. The flexible graphite material is pressed into a plate without requiring any binding agents.

- [0007] In an embodiment of the present invention, the sheet is placed along the base liner so as to almost completely cover the base liner.
- [0008] In an embodiment of the present invention, the clothes iron comprises a sheath that encloses the sheet placed therein. The sheath is produced from a moisture-proof material so as to prevent the graphite material from being damaged due to steam.
- [0009] The oven realized in order to attain the aim of the present invention is illustrated in the attached figures, where:
- [0010] Figure 1 – is the schematic view of an iron.
- [0011] Figure 2 – is the schematic view of a clothes iron.
- [0012] Figure 3 – is the schematic view of a base liner.
- [0013] Figure 4– is the schematic view of the sheath and the sheet.
- [0014] The elements illustrated in the figures are numbered as follows:
1. Clothes iron
 2. Body
 3. Base
 4. Steam chamber
 5. Base liner
 6. Steam outlet
 7. Sheath
 8. Opening
 9. Sheet
- [0015] The clothes iron (1) comprises a body (2), a base (3), at least one steam chamber (4) that is filled with water, at least one steam outlet (6) that is arranged on the base (3) and that enables the discharge of the steam generated by the heating the of the water in the steam chamber (4), and a base liner (5) that covers the base (3) surface.
- [0016] The clothes iron (1) of the present invention comprises a sheet (9) comprising graphite material and placed between the base (3) and the base liner (5). In order to provide electricity to the sheet (9) comprising graphite material, connectors are disposed at the end portions of the material. By spreading silver paste under the copper busbars connected to the connectors disposed on the sheet (9), the graphite material acquires

electrical conductivity. When the clothes iron (1) is energized, the low resistance graphite material reaches high temperatures in a very short time. Thus, the graphite material enables the base (3) and the base liner (5) to heat up in a short time, thus decreasing the preheating time.

- [0017] In an embodiment of the present invention, the sheet (9) is produced by compressing the graphite material in powder form between the base (3) and the base liner (5).
- [0018] In an embodiment of the present invention, the sheet (9) is placed between the base (3) and the base liner (5) so as to almost completely cover the base liner (5). While heating processes performed by the conventional heating method may not provide a homogeneous heating, by means of the plate-shaped self-heating sheet (9), a homogeneous heat distribution is obtained on the base (3).
- [0019] In an embodiment of the present invention, the sheet (9) is placed between the base (3) and the base liner (5) so as to create more than one layer. By creating the graphite layers so as to be parallel to the base liner (5) one above the other, the electrical and thermal conductivity of the material is increased. Thus, the clothes iron (1) is enabled to operate more efficiently.
- [0020] In an embodiment of the present invention, the clothes iron (1) comprises a sheath (7) suitable to be placed between the base (3) and the base liner (5), wherein the sheet (9) is disposed. The sheath (7) is produced from preferably metal material so as to prevent the graphite material forming the sheet (9) from being damaged due to steam.
- [0021] In an embodiment of the present invention, the clothes iron (1) comprises more than one opening (8) arranged on the sheet (9) so that each is aligned with one steam outlet (6).
- [0022] By means of the self-heating graphite material used in the clothes iron (1) of the present invention, the preheating time of the clothes iron (1) is reduced and a more homogeneous heat distribution is obtained on the base (3). The sheet (9) comprising the graphite material eliminates the user of heaters or decreases the energy consumption by allowing the heater power to be decreased.

Claims

1. A clothes iron (1) **comprising** a body (2), a base (3), at least one steam chamber (4) that is disposed on the body (2) and that is filled with water, at least one steam outlet (6) that is arranged on the base (3) and that enables the discharge of the steam generated by the heating the of the water in the steam chamber (4), and a base liner (5) that covers the base (3) surface, **characterized by** a sheet (9) comprising graphite material, that is placed between the base (3) and the base liner (5).
2. A clothes iron (1) as in Claim 1, **characterized by** the sheet (9) that is produced by compressing the graphite material in powder form between the base (3) and the base liner (5).
3. A clothes iron (1) as in Claim 1 or Claim 2, **characterized by** the sheet (9) that is disposed so as to almost completely cover the base liner (5).
4. A clothes iron (1) as in any one of the above claims, **characterized by** the sheet (9) that is placed between the base (3) and the base liner (5) so as to create more than one layers.
5. A clothes iron (1) as in any one of the above claims, **characterized by** a sheath (7) suitable to be placed between the base (3) and the base liner (5), wherein the sheet (9) is placed.
6. A clothes iron (1) as in any one of the above claims, **characterized by** more than one opening (8) arranged on the sheet (9) so that each is aligned with one steam outlet (6).

Figure 1

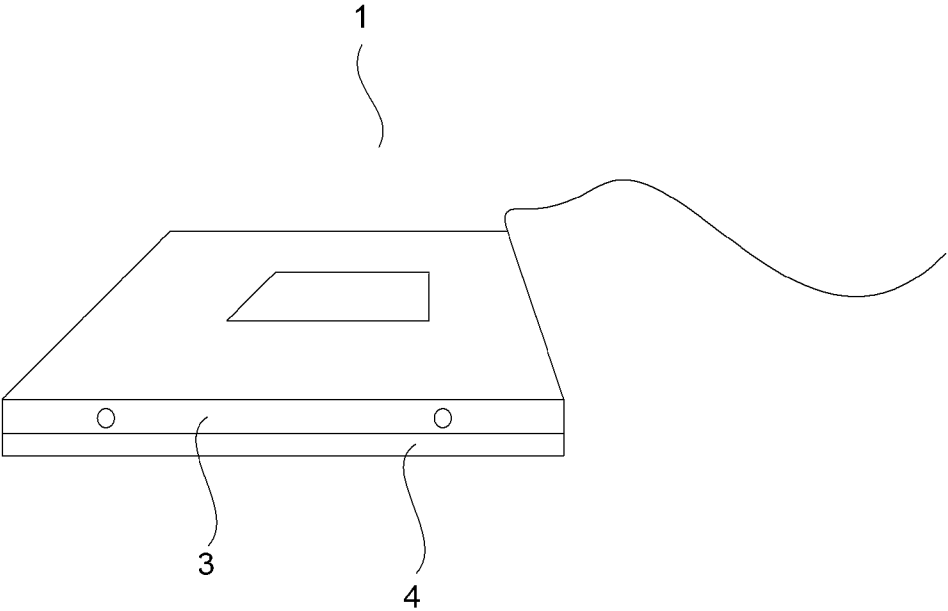


Figure 2

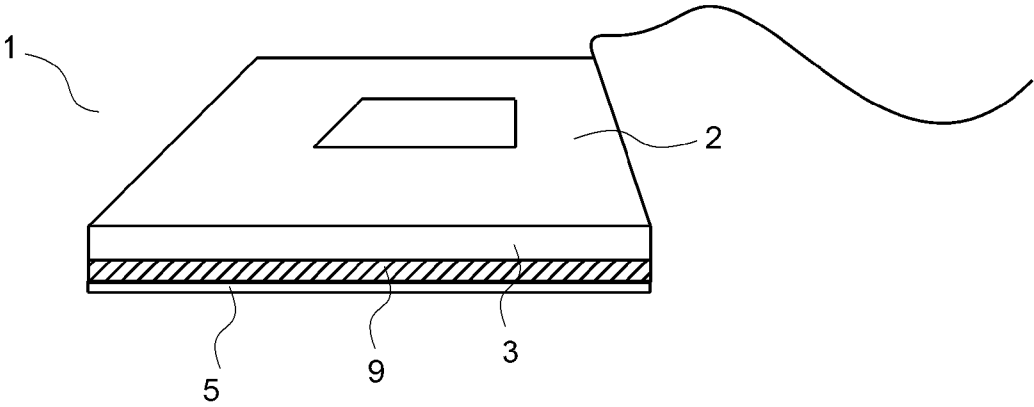


Figure 3

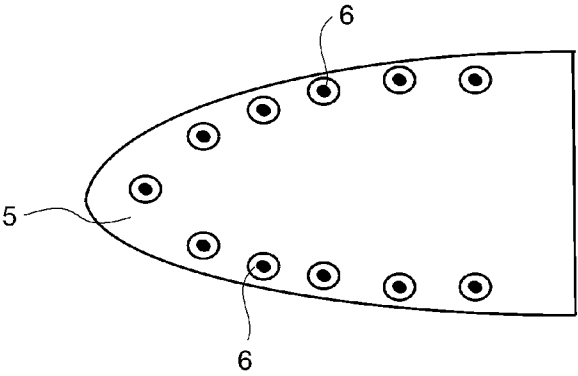
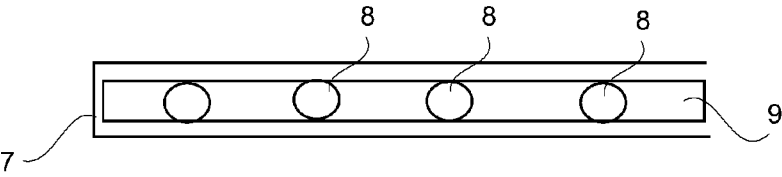


Figure 4



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/074823

A. CLASSIFICATION OF SUBJECT MATTER

INV. D06F75/10 D06F75/24 D06F75/38
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
D06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 201 813 A1 (BUCKFIELD CONTRACTING LTD [GB]) 2 May 2002 (2002-05-02)	1,3-6
Y	paragraphs [0002], [0012] - paragraph [0023]; figure 3	2
X	----- WO 96/35317 A1 (NORTON PAMPUS GMBH [DE]; PETIT DOMINIQUE [BE]; WOLKI PETER [DE]) 7 November 1996 (1996-11-07)	1-4
Y	page 3 - page 5; figure 1	2
A	-----	5,6
A	JP H09 117600 A (MATSUSHITA ELECTRIC IND CO LTD) 6 May 1997 (1997-05-06) cited in the application abstract	1-6
	----- -/-	



Further documents are listed in the continuation of Box C.



See patent family annex.

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 708 676 C (FRITZ BAYHA) 29 July 1941 (1941-07-29) page 1, line 28 - page 2, line 25 -----	1-6
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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