
Candidate's Answer – Paper B (Electricity/Mechanics)**CLAIMS**

1. A steam ironing system comprising a heatable sole plate (5) with an ironing surface for contacting fabric to be ironed, a water tank (2), an evaporation chamber (12) and an supply conduit (4) for conveying water from the water tank (2) to the sole plate (5) via the evaporation chamber (12), wherein the evaporation chamber (12) is in contact with the sole plate (5) and is connected to openings (14) in the ironing surface of the sole plate (5) for allowing steam to exit, said system also comprising a pump in the supply conduit (4) and a pre-evaporation chamber (15) which is located in the supply conduit (4) between the pump (6) and the sole plate (5), characterised in that the steam ironing system further comprises a bypass conduit (16) to bypass the pre-evaporation chamber (15), said bypass conduit (16) being arranged such that it allows the steam produced in the pre-evaporation chamber (15) to be mixed with water from the water tank (2), through said bypass conduit and thus the steam to be humidified, before leaving the evaporation chamber (12) through the openings (14).
2. The steam ironing system according to claim 1, wherein the bypass conduit (16) feeds into the supply conduit (4) between the pre-evaporation chamber (15) and the evaporation chamber (12).
3. The steam ironing system according to claim 1, wherein the bypass conduit (16) feeds into the evaporation chamber (12).
4. The steam ironing system according to one or more of the preceding claims, wherein the pump (6) is located between the water tank (2) and the bypass conduit (16) and wherein a valve (18) is located in the bypass conduit (16).
5. The steam ironing system according to claim 4, wherein a further valve (18') is placed in the supply conduit (4) before the pre-evaporation chamber (15) and after the pump (6).

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6. The steam ironing system according to one or more of the claims from 1 to 5, wherein the bypass conduit (16) additionally bypasses the pump (6) and wherein a further pump (19) is located in the bypass conduit (16).
 7. The steam ironing system according to one or more of the claims from 4 to 6, comprising a control device (9) to control the valve (18) and/or said further valve (19') and/or said pump (6) and/or said additional pump (19).
 8. The steam ironing system according to one or more of the preceding claims, further comprising a steam iron (10) including a housing (1), said evaporation chamber (12) being located inside the housing (1) and said water tank (2), the pre-evaporation chamber (15), the bypass conduit (16) and the supply conduit (4) being located outside the housing (1).
 9. The steam ironing system according to one or more of the claims from 1 to 7, further comprising a steam iron (10) including a housing (1), said evaporation chamber (12), water tank (2), pre-evaporation chamber (15), bypass conduit (16) and supply conduit (4) being located inside the housing (1).
 10. The steam ironing system according to one or more of the preceding claims, wherein said evaporation chamber (12) is arranged such that the steam produced is distributed uniformly between the openings (14).

European patent application:

Applicant: S-Team Ltd.

Title:

In Response to the Examining Division's communication, we hereby file a new set of claims 1 to 10 to replace the ones currently held on file.

The applicant will be happy to bring the description into conformity once a new set of claims has been agreed upon.

- **Amendments and Art 123(2) EPC**

The precharacterising portion of claim 1 has been amended including claim 1 and 2 as filed.

The precharacterising portion of claim 1 has been amended to include the pump and the pre-evaporation chamber already known from D1. Support for this amendment are old claim 1 and 2 and can also be found on page 3 lines 5-7 (pump) and page 3 lines 23-24 (pre-evaporation chamber). The characterising portion of new claim 1 now include the content of old claim 3, i. e. the provision of the bypass conduit (16) and in addition the feature that the bypass conduit is arranged such that it allows the steam produced in the pre-evaporation chamber (15) to be mixed with water from the water tank before leaving the evaporation chamber through the openings. Support for this can be found on page 4 lines 5-9 of the application.

The skilled person would from this reference, and also lines 2-4 page 4 (preferred embodiments) that any arrangement of the bypass conduit so that this mixing is achieved before the steam leaves the iron is included and not only the possible embodiments.

The fact that the steam leaves the evaporation chamber through the opening (14) is clear from page 3, lines 13-16 of the application.

It is thus submitted that the amendments to claim 1 does not contravene Art. 123(2) EPC. Old claims 2 and 3 have been deleted.

New claim 2 has been introduced directed to an arrangement of the bypass support can be found on page 4, lines 2-4.

New claim 3 has been introduced and it is directed to a second arrangement of the bypass conduit: support can be found on page 4, lines 4-5.

New claim 4 corresponds to original claim 4.

New claim 5 has been introduced and it is directed to a provision of a further valve 18' in the conduit: support can be found on page 4, lines 15-18 and fig 2 A.

New claim 6 corresponds to original claim 5.

New claim 7 is directed to the provision of a control device: support can be found on page 4 lines 24-25.

New claim 8 is directed to the positioning of the elements of the steam ironing system: support can be found on page 4 lines 27-29.

New claim 9 is an alternative embodiment of claim 8: support can be found on page 4 lines 29-30.

New claim 10 is directed to the arrangement of the evaporation chamber (12): support on page 3 lines 14-16.

It is therefore submitted that the amendments do not extend the disclosure beyond the application as originally filed and thus do not contravene Art 123(2) EPC.

- **Comments on Art. 86(4)**

The amended claim 1 has been limited adding features already present in the dependent claims and a further additional limiting feature has been added. It is therefore submitted that the scope of amended claim 1 is within the scope of the search and thus Rule 86(4) EPC has not been contravened.

- **Comments on novelty Art. 84(1) EPC**

D1 discloses a steam ironing system comprising a heatable sole (2) with an ironing surface for contacting fabric to be ironed, a water tank (14), an evaporation chamber (18) and a supply conduit (20) for conveying water from the water tank (14) to the sole plate (2) via the evaporation chamber (18), wherein the evaporation chamber (18) is in contact with the sole plate (2) (fig. 1 of D1) and is connected to openings (22) in the ironing surface of the sole plate (2) for allowing steam to exit, the steam ironing system further comprising a pump (16) in the supply conduit (20)

and a pre-evaporation chamber (page 2 lines 1-3 of D1) which is located between the pump (16) and the sole plate (2).

However D1 does not disclose a bypass conduit and consequently D1 does not disclose also the arrangement of the bypass conduit.

D2 discloses a steam ironing system in which a single evaporation chamber is described (which can be considered as an evaporation chamber or a pre-evaporation chamber), inducted with 8. It also discloses a heatable sole (3), a water tank (14), a supply conduit (6), openings (9.9') in the sole to allow the steam to leave, a pump (17) in the supply conduit (6), a bypass conduit (20).

Therefore D2 fails to disclose another evaporation (or pre-evaporation) chamber and the described arrangement of the bypass conduit of claim 1 (which becomes also clearer from the following and will be better discussed in the inventive step part).

Claim 1 as amended is therefore submitted to be novel over each of D1 and D2 individually.

- **Comments on Inventive Step Art. 56 EPC**

D1 is considered as the closest prior art because it is structurally the closest to the invention and has the most features in common with claim 1.

As mentioned under novelty, D1 discloses the feature of the preamble of claim 1, however it differs from claim 1 in that it does not have the bypass conduit (16) to bypass the pre-evaporation chamber (15), the bypass conduit being arranged such that it allows the steam produced in the pre-evaporation chamber to be mixed with water from the water tank, and thus to be humidified, before leading the evaporation chamber (12) through the openings (14).

A technical effect of this additional feature is to improve ironing by increasing and controlling the degree humidity of the steam. Indeed, as stated in the application page 3 lines 31-33, it has been found that for good ironing result of certain types of fabric, the degree of humidity of the steam is an important parameter. Therefore the bypass conduit, mixing water and steam before the so humidified steam leaves the iron, allows to increase and control the humidity of the steam itself. The skilled

person to whom this problem is posed and considering D1 would not find any indication on how to improve ironing.

If the skilled person considering this problem of improving ironing controlling the humidity of the steam would also consider D2, he would see that a possible improvement of ironing in difficult accessible areas, as inside pockets, can be improved using a bypass conduit to pour water to the fabric through an opening 9' achieving localized humidification of the fabric. However he could see no hint or suggestion to arrange this bypass conduit on the system of D1 in such a way that the steam from the pre-evaporation chamber and the water coming from the water tank through the bypass conduit are mixed before the steam leaves the iron and also he would find any hint on how to improve the overall ironing, not only in localised areas. D2 discloses to humidify the fabric and not the steam. Indeed he would be led away from mixing the steam coming from the pre-evaporation chamber with the water exiting from the bypass conduit before the steam leaves the iron because even if to the system of D1 the bypass of D2 is applied, D2 clearly teaches to separate the steam and the water coming from the bypass conduit - indeed in D2 a valve (22) is disclosed which exclusively allows the supply of water directly to the fabric or from the same opening the supply of steam. No teaching of mixing the two is disclosed by suitably arranging the bypass conduit and therefore the improved ironing effect which is achieved by a good control of the humidification of the steam can not be obtained.

It is thus submitted that amended claim 1 is clearly inventive in view of D1 and the combination of D1 and D2 starting from D1.

If the examiner in view of the amendments disagrees with D1 being the closest prior art because D2 also considers the problem of improving ironing, the following is submitted. D2 does not disclose a second evaporation chamber (12) and the arrangement of the bypass conduit of claim 1 so that water and steam mix before leaving the iron.

An advantage provided by the 1st differentiating feature (two evaporation chambers) is to provide a larger amount of steam.

Even if the skilled person would add the second chamber to the system of D2, still the 2nd difference remains which solves the problem of providing an improved ironing effect. As said above, he would not find any hint in D1 or D2 to arrange the bypass conduit in this way.

Contrary D2 teaches away from connecting the bypass conduit to the steam
from the pre-evaporation chamber.

Even if there is written in D2 that the water coming out from opening 9' can vaporise
in the sole plate, this does not mean that the steam coming from the pre-
evaporation chamber and the water are mixed before coming out the iron so that
the humidity of the steam is controlled: in the situation in which this water vaporises
we simply obtain a localized humidified vapour, but no control on the overall steam
leaving the iron.

It is thus submitted that claim 1 is clearly inventive over the combination of D1 and
D2 starting from D2. Hence it is submitted that claim 1 is inventive over the prior art.
In view of the above, it is respectfully submitted that the newly filed claims meet the
requirements of the EPC. Purely as a precaution, oral proceedings under Article
116 EPC are requested in the event that the Examining Division be contemplating
refusing the application.

Signed

yours faithfully,

the Representative