



(12)

EUROPEAN PATENT APPLICATION

(21) Application number : **91830577.2**

(51) Int. Cl.⁵ : **D06F 87/00**

(22) Date of filing : **20.12.91**

(30) Priority : **20.12.90 IT 2246190**

(43) Date of publication of application :
01.07.92 Bulletin 92/27

(84) Designated Contracting States :
AT CH DE ES FR GB GR LI NL

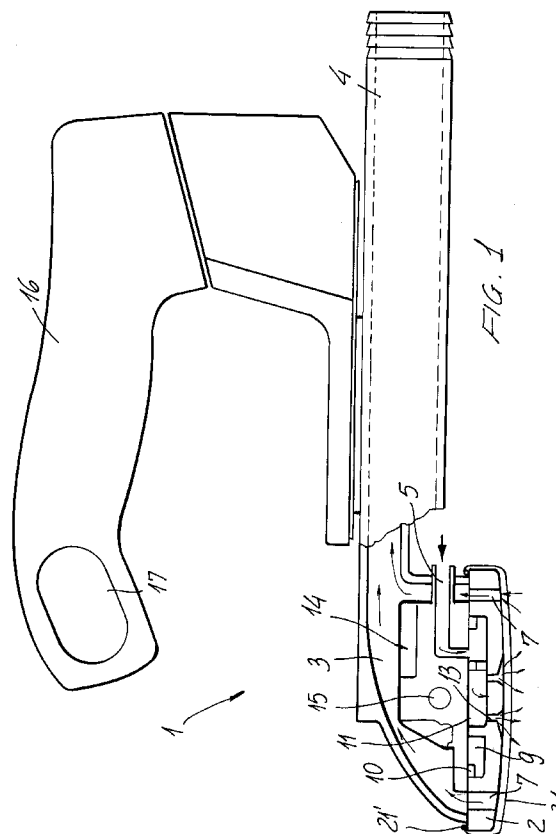
(71) Applicant : **MACPI S.p.A. PRESSING DIVISION**
Via Piantada 9/D
I-25036 Palazzolo Sull'Oglio (Brescia) (IT)

(72) Inventor : **Cartabbia, Giovanni, c/o Macpi S.p.A.**
Pressing Division, Via Piantada, 9/D
I-25036 Palazzolo Sull'Oglio (Brescia) (IT)

(74) Representative : **Cicogna, Franco**
Ufficio Internazionale Brevetti Dott.Prof.
Franco Cicogna Via Visconti di Modrone, 14/A
I-20122 Milano (IT)

(54) **Steaming and suction brush for finishing ironed cloth articles.**

(57) There is disclosed a steaming and suction brush 1 for finishing ironed cloth articles, the brush comprising a plate 2 defining a perimetrical annular suction chamber 7 and at least two pluralities of central holes 13 therethrough steam can pass, as well as a labyrinth duct 8, suitably heated, therealong the steam is caused to pass, the steam being supplied by an outer steam source 6 : the plate is extended, at one of its cross axes, by a tubular element 4 having a flattened cross-section, communicating with a suction apparatus and designed for restraining a handle 16 including a driving or control push-button. 17



BACKGROUND OF THE INVENTION

The present invention relates to a steaming and suction brush for finishing ironed cloth articles.

As is known, in the cloth article industry there are conventionally performed an ironing operation for eliminating wrinkles from the fabric and properly finishing the cloth article.

Also known is the fact that the above mentioned ironing operation can cause, on determined regions of the cloth article, gloss strips or bands, which negatively affect the good aesthetic properties of the cloth article.

In order to overcome, or at least reduce, the above mentioned drawback, there are conventionally used suitably designed steaming brushes, which are provided for spraying a water steam jet against the gloss portions of the fabric.

Conventional steaming brushes for surface finishing ironed cloth articles, however, excessively moisten the ironed portions of the fabric, thereby negatively affecting the overall aspect of the cloth articles.

Moreover, these prior steaming brushes tend to move away the cloth article, because of the force of the steam jet provided thereby and, because of this reason, the operator is compelled to constantly hold, by his free hand, the processed portion of the cloth article in contact with the steaming brush.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to overcome the above mentioned drawbacks, by providing a steaming brush for finishing ironed cloth articles, which is adapted to cause the ironed cloth article to be finished to be automatically held adhering to said cloth article, while eliminating any moisture excess.

Within the scope of the above mentioned aim, a main object of the present invention is to provide a steaming brush for finishing ironed cloth articles, which is adapted to provide a simultaneous steaming and suction action, or, if desired, either a suction action or a steaming action on the cloth article to be finished.

Another object of the present invention is to provide a brush for finishing ironed cloth articles, for the cloth article industry, which is so designed as to simultaneously combing hairy cloth articles.

According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a steaming and suction brush, for industrial use, designed for finishing ironed cloth articles, characterized in that said brush comprises a plate member defining a perimetrical annular suction chamber and at least two pluralities of central holes for allowing water steam to pass therethrough,

as well as a labyrinth heated duct, therealong said water steam is caused to flow, said water steam being supplied from an outer steam source, said plate extending, at one of the cross axes thereof, with a tubular element, having a flattened cross-section, communicating with a suction apparatus and adapted to restrain a handle, including a control push-button.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the steaming and suction brush according to the present invention will become more apparent from the following detailed disclosure of a preferred embodiment thereof, which is illustrated, by way of a merely indicative, but not limitative, example, in the figures of the accompanying drawings, where:

Figure 1 is an elevation view of the steaming and suction brush according to the present invention, the plate of said brush being vertically cross-sectioned;

Figure 2 illustrates a horizontal cross-sectional view of that same plate;

Figure 3 is a schematic view illustrating a water steam supplying system for supplying water steam to the subject steaming and suction brush; and

Figures 4 and 5 respectively show a bottom view and a vertical cross-sectioned view of an auxiliary plate element which can be applied to the mentioned plate for processing hairy cloth article

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the figures of the accompanying drawings, the steaming and suction brush according to the present invention, which has been generally indicated at the reference number 1, comprises a plate member 2, the perimetrical zone of which communicates, through a manifold 3, a duct 4 and a flexible holes, with a suction apparatus.

The central portion of the plate element, in turn, communicates through a duct 5 and a flexible hose, with a water steam source apparatus 6.

More specifically, through the perimetrical portion of the above mentioned plate member, there are formed slots 6, which extend parallel to the edge of said plate member and have suitably different widths.

On the central of the plate member, inside of the above mentioned slots, there is formed an annular labyrinth path 8, defined by the succession of a plurality of small chambers 9, which communicate through corresponding ducts 10.

The first chamber of the mentioned small chambers communicates with the above mentioned water steam conveying duct, whereas the last of said small chambers communicates with an elongated central

chamber 11 which, in turn, communicates, at the end portions thereof, with two round small chambers 12 open at the bottom thereof through a plurality of holes 13.

On the mentioned central portion of the plate member, there is applied a body 14, made of a good heat conducting material, including a heating electric resistance 15, power supplied through a thermostat and a safety thermo-fuse.

In operation, the water steam, supplied through the duct 5, is caused to flow along the labyrinth path 8, so as to eliminate possible condensate substances, and is further heated in the central chamber 11, and then is ejected through the pluralities of holes 13.

The duct 4, coupled to the suction flexible holes, in particular, has a suitably flattened cross-section, in order to restrain a contoured handle 16 bearing, at one end portion thereof, a control push button 17.

In this connection it should be pointed out that the slots 7 defined through the portion of the plate member opposite to the mentioned handle, have a width which is greater than the width of the other slots.

Owing to this provision, as the brush is displaced from the top to the bottom through the cloth article to be finished, the portion of said cloth article which has been already processed by the water steam, is subjected to stronger suction effect, adapted to remove from the fabric the excess moisture.

Of course, the water steam can be supplied from a built-in boiler, or from a centralized system, depending on the specific requirements.

In each case, the water steam will circulate through a tank 18, provided with a solenoid valve 19, opening on a super-heater 20, designed for bringing the water steam to a temperature of 140-150°C.

In operation, the operator, by actuating suitable controls, can connect the brush either to the suction apparatus, or to the steam source, or to these two apparatus, depending on the requirements of the cloth article to be finished.

Then, the operator, by operating the brush will actuate the push-button 17 in order to process the cloth article according to a set operating processing cycle (finishing or only drying and so on).

On the plate member 2, moreover, a covering sheet 21 will be arranged, which sheet will be restrained on a suitable abutment of the plate by means of a resilient cord 21' or the like.

In particular, as hairy cloth articles must be processed, it is advantageously provided to use a box-like body 22, having a configuration mating that of the plate member and adapted to be fixedly restrained thereon.

This box-like body, more specifically, is provided with a central opening 23 for allowing the water steam to pass therethrough, and with corresponding suction slots 24.

On the bottom of that same box-like body,

moreover, there are mounted a plurality of bristle bunches 25, for providing a suitable combing effect on the pile of the fabric.

From the above disclosure and the figures of the accompanying drawings, the great functionality and facility of use characterizing the steaming and suction brush according to the invention will be self evident.

While the invention has been disclosed and illustrated with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to several modifications and variations all of which will come within the spirit and scope and of the appended claims.

Claims

1. A steaming and suction brush, for industrial use, designed for finishing ironed cloth articles, characterized in that said brush comprises a plate member defining a perimetrical annular suction chamber and at least two pluralities of central holes allowing water steam to pass therethrough, as well as a labyrinth heated duct, therealong said water steam is caused to flow, said water steam being supplied from an outer steam source, said plate extending, at one of the cross axes thereof, with a tubular element, having a flattened cross-section, communicating with a suction apparatus and adapted to restrain a handle, including a control push-button.
2. A steaming and suction brush according to Claim 1, characterized in that said plate member is provided with a perimetrical region communicating, through a manifold, a duct and a flexible hose, with a suction apparatus, and a central portion communicating, through a duct and a flexible hose, with a water steam generating apparatus.
3. A steaming and suction brush according to Claims 1 and 2, characterized in that, through the perimetrical portion of said plate member, there are formed slots extending parallel to the edge of said plate member and having different widths.
4. A steaming and suction brush according to one or more of the preceding claims, characterized in that, on the central portion of said plate, there is provided an annular labyrinth path, defined by the succession of a plurality of small chambers, communicating through duct members, the first of said small chambers communicating with said steam duct, and the last of said small chambers communicating with an elongated central chamber which in turn communicates, at the end portions thereof, with two round small chambers open on the bottom thereof through a plurality of

holes.

5. A steaming and suction brush according to one or more of the preceding claims, characterized in that, on said central portion of said plate member, there is applied a body, made of a good heat conducting material, including a heating electric resistance, power supplied through a thermostat and a safety thermofuse.

5
6. A steaming and suction brush according to one or more of the preceding claims, characterized in that, on said plate member, there is arranged a covering sheet, restrained on an abutment of said plate member through a resilient cord.

10
7. A steaming and suction brush according to one or more of the preceding claims, characterized in that said brush further comprises a box-like body, having a configuration mating that of said plate member, and adapted to be fixedly engaged thereon.

15
8. A steaming and suction brush according to one or more of the preceding claims, characterized in that said box-like body is provided with a central opening for the passage of the water steam there-through and with corresponding suction slots, on the bottom of said box-like body, moreover, there being assembled a plurality of whistle bunches for combing said cloth article.

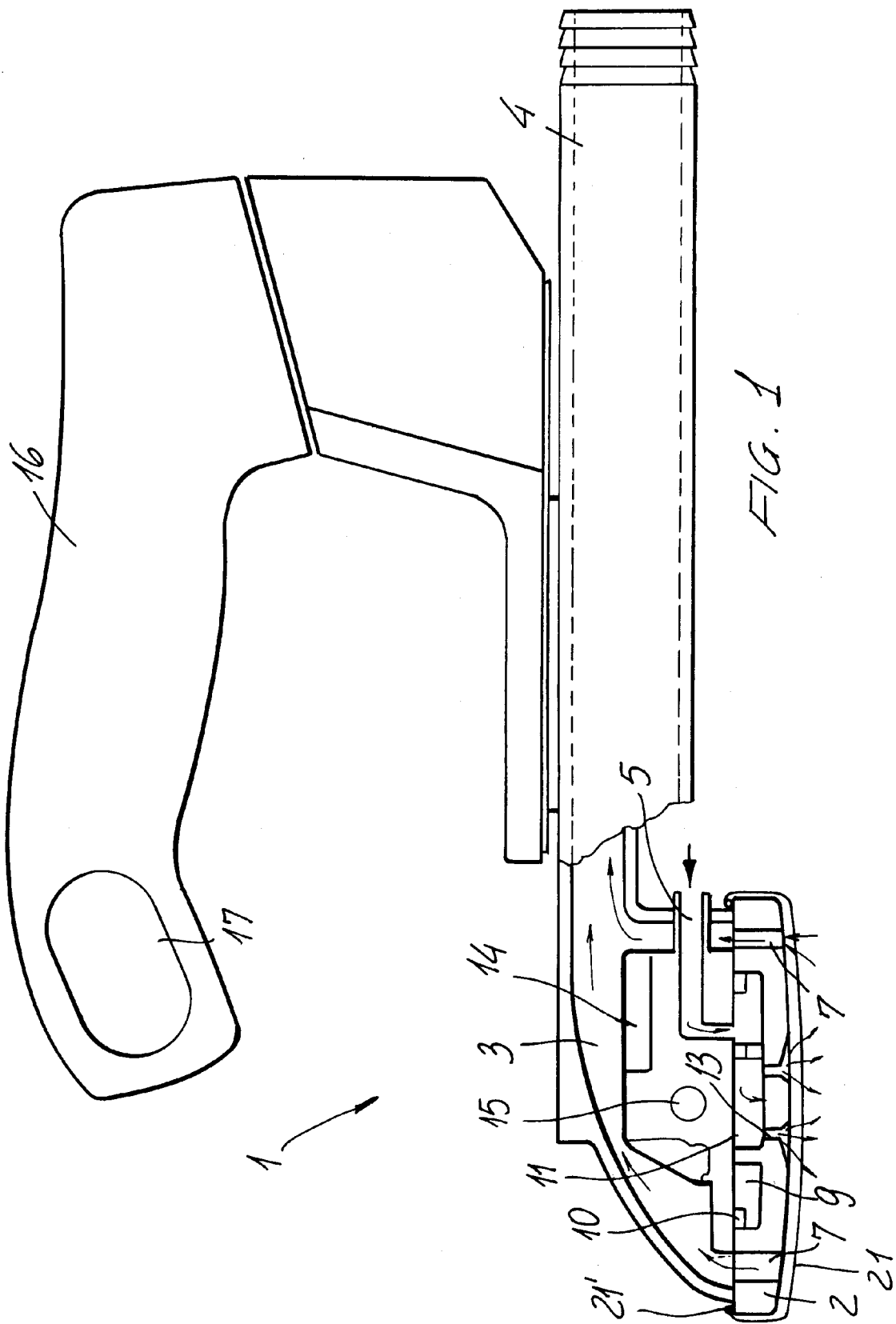
20
9. A steaming and suction brush according to one or more of the preceding claims, characterized in that said brush can be supplied with water steam by a built-in boiler or a centralized steam generating system, said water steam being circulated through a steam tank including a solenoid valve opening on a super-heater adapted to bring said water steam to a temperature of 140-150°C.

25

30

35

40



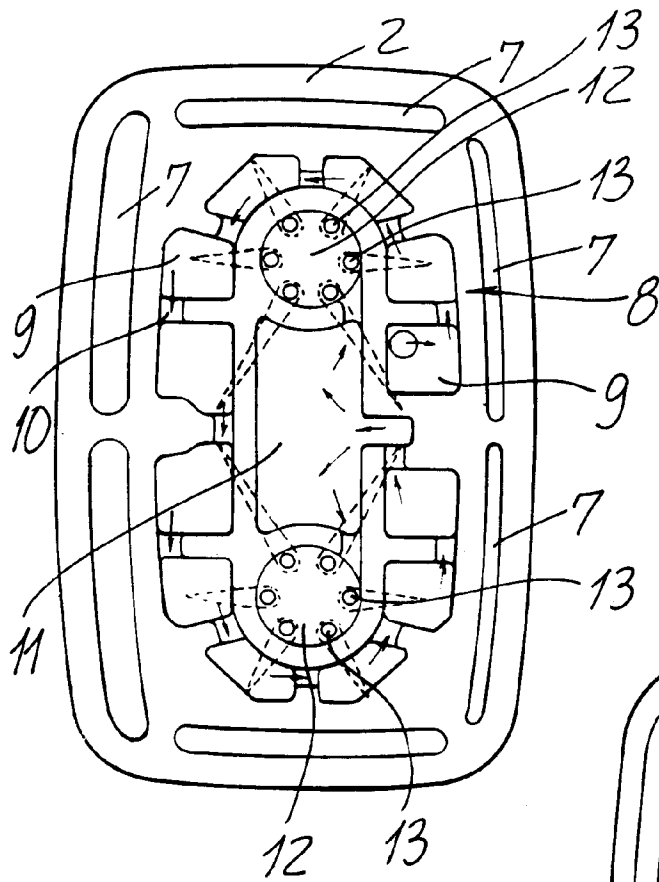


FIG. 2

FIG. 4

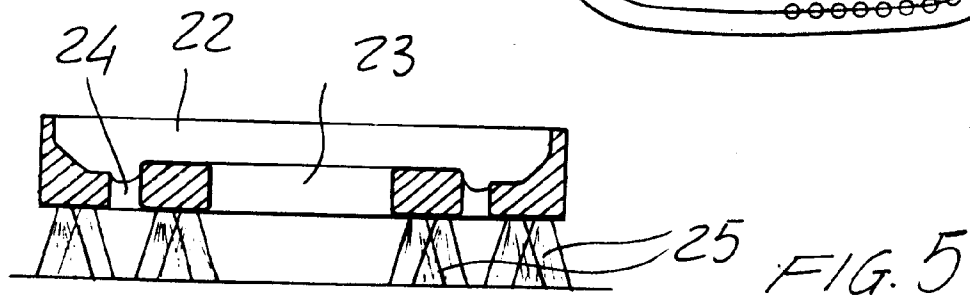
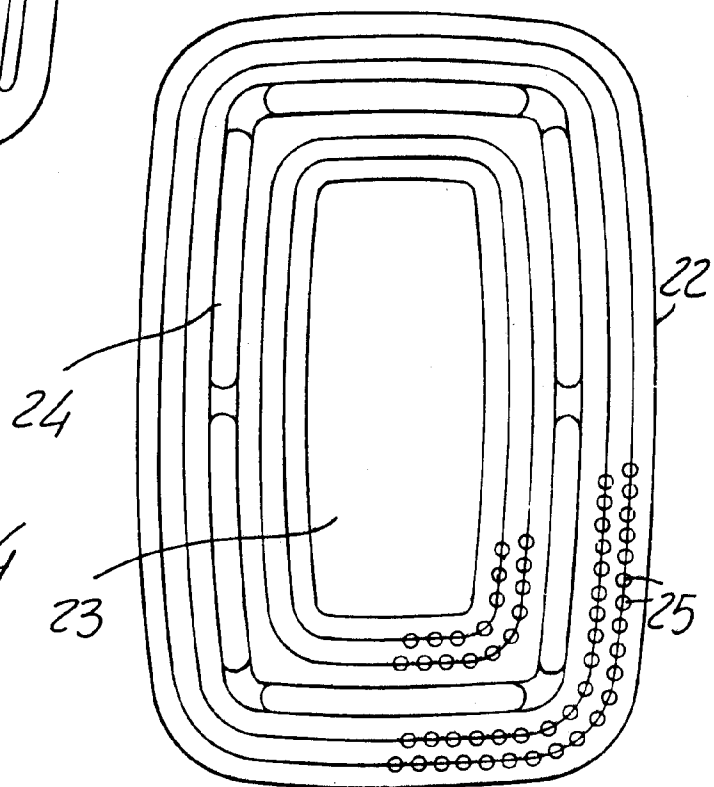
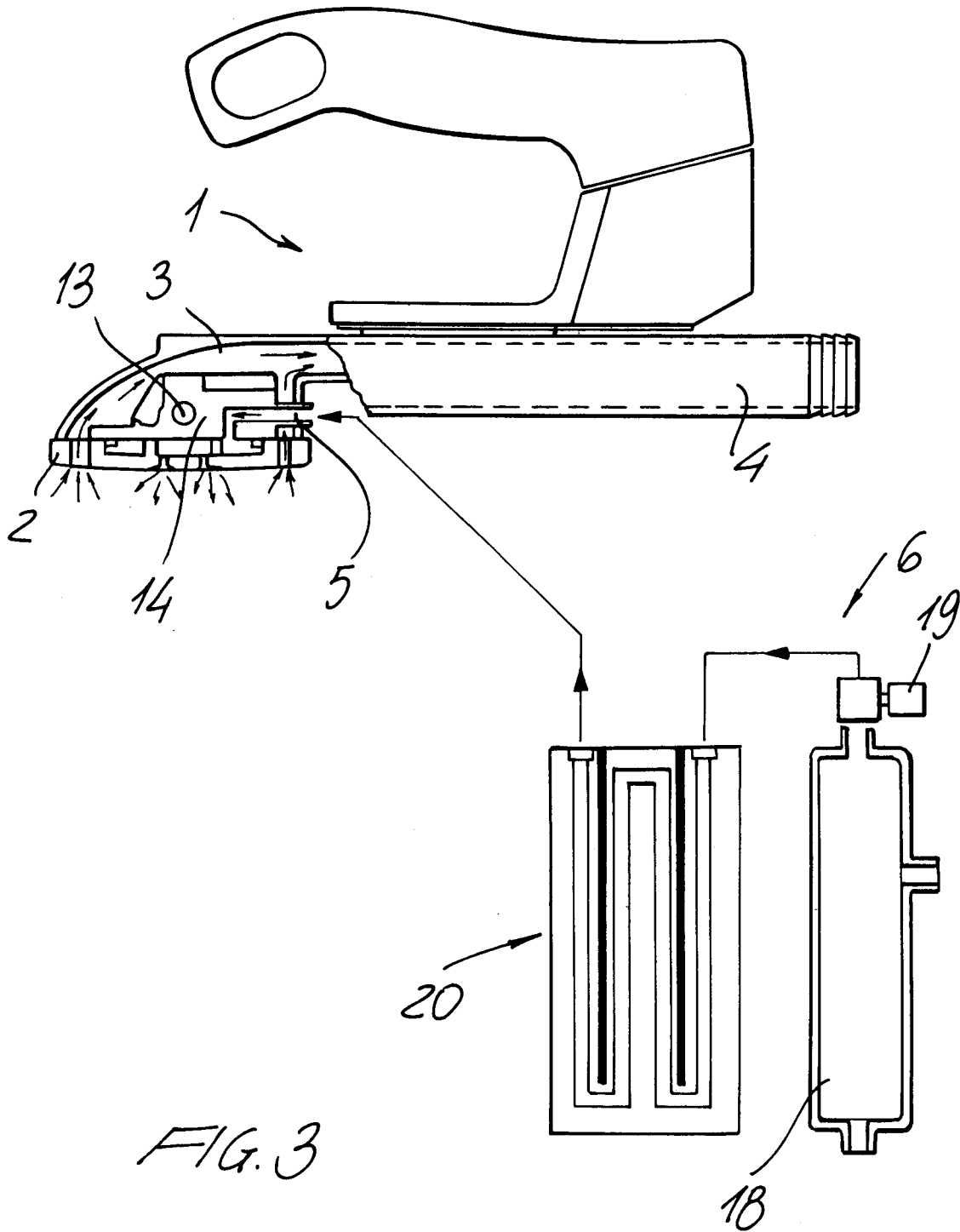


FIG. 5





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 83 0577

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-3 061 959 (S. BLUMENFELD) * the whole document * ---	1, 2, 9	D06F87/00
A	GB-A-1 287 298 (ALEXANDER IVES) * claims; figures * ---	1, 9	
A	FR-A-2 398 140 (J-L. TARDIGLIO) * claims; figures * ---	1, 9	
A	US-A-1 355 366 (J M. TERRELL) * claims; figures * -----	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			D06F
Place of search THE HAGUE		Date of completion of the search 24 MARCH 1992	Examiner COURRIER G. L. A.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.92 (P0401)