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(54) **Method for producing pressing plates for irons, and plates obtained using this method.**

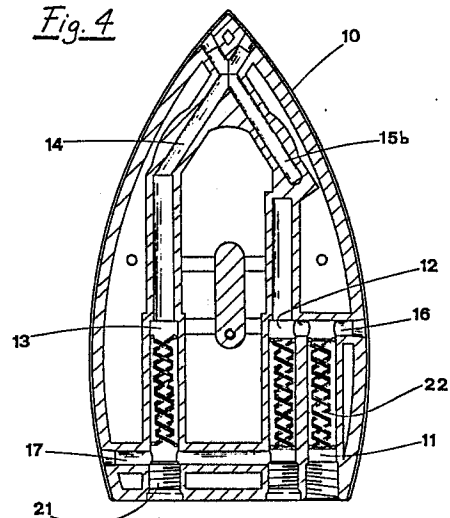
(57) The method involves the production by die-casting of steam iron plates (10), each featuring three internal ducts (11, 12, 13), respectively first, second and third, that run side by side, and are connected so that they follow on from one another by means of two ducts (16, 17), sixth and seventh respectively, as well as two further ducts (14, 15), fourth and fifth respectively, that are connected so that they follow on from one another, of which the fourth (14) is connected to the inside end of the third duct (13).

The first (11), second (12), third (13), fourth (14) and fifth (15) ducts are produced during casting by means of cores, whilst the remaining ducts (16, 17) as well as an extended portion (15b) of the fifth duct (15) are produced by drilling after the casting is over.

The base of the plate (10) features equidistant holes (20), that are produced so that they correspond with the fourth (14) duct and the extended portion (15b).

The holes along the edge of the plate (10), corresponding to the second (12), third (13), fourth (14), fifth (15), sixth (16) and seventh (17) ducts are closed off, leaving the hole of the first duct (11) to be connected to the steam supply pipe.

Fig. 4



Description

"METHOD FOR PRODUCING PRESSING PLATES FOR IRONS, AND PLATES OBTAINED USING THIS METHOD."

It is known that industrial-type steam irons are fed with steam supplied from an external source by means of a pipe to the pressing plate.

The plate is so shaped internally as to prevent water droplets, which inevitably form as the result of part of the steam condensing in the pipe leading from the supply to the plate, from reaching the fabric and interfering with perfect ironing.

The steam is thus made to flow through a succession of adjacent vertical traps inside the plate, into which the water droplets present in the steam fall and are caught, later returning to a gaseous state as a result of the heat given off by the pressing plate.

The steam is finally conveyed to a chamber inside the plate, featuring holes in its bottom surface that are arrayed in a "V" shape, with the point directed towards the apex of the latter, and through which the steam flows out, moistening the fabric.

Plates of this type are produced using a process known as chill casting, and the spaces inside the plate, namely the traps and chamber, are obtained using suitably shaped cores held in place by supports.

These cores are made of a material which can, once the plate has hardened, easily be smashed and pulverised using known processes, (for example, by subsequently reheating them), and then removed from within the plate through the holes left along the border of the latter by the supports.

Production of the plate as described above involves certain problems.

In the first place, chill casting gives the plate a porous surface which must therefore undergo finishing in subsequent stages of the process.

Furthermore, the production of a high number of traps, as is necessary for optimum plate operation, requires the use of a high number of cores and, consequently, of supports.

Since the supports inevitably leave holes that bring the internal ducts into communication with the outside environment, these must later be closed off, this subsequently involving long operations, the results of which are not always satisfactory, above all as a result of the materials normally used in the production of the plates.

The zones occupied by those holes remain easily visible, however, detracting from the aesthetic appeal of the product.

It should finally be emphasised that the chill casting process gives rise to a high number of imperfect products, that must thus be scrapped later on, and is furthermore characterised by notably complex operations, such as, for example, the preparation of the chills, which can only be used for a limited number of castings. The above-mentioned drawbacks have a negative effect on the overall cost of the article.

The use of "die-casting" for the production of plates shaped as described above, has also shown itself to be difficult and unsuitable, producing

unsatisfactory results regarding both the traps and chamber.

In particular, it is necessary to make a long slit along the edges of the apex in order to extract the core from the plate, this detracting from the aesthetic appeal of the product, and also resulting in poor chamber sealing. The object of the present invention is to propose a method for producing pressing plates that is a quicker and less complex process than the method that is the subject of the present invention.

A further object of the invention is to propose a method enabling pressing plates to be produced with increased productivity, in terms of the number of plates per unit of time, than has until now been effected, giving rise to a lower number of scrap pieces, and, in addition, obtaining qualitatively superior results.

The aforesaid objects are achieved by means of a method for producing steam iron pressing plates, designed to be supplied with steam fed from an external source, with each plate featuring an internal pathway for conveying the steam itself to a plurality of outlet holes produced in the base of the said plate; the said method being characterised by the fact that it includes: the production by die-casting of a plate featuring a plurality of blind ducts, respectively first, second and third, that run alongside one another, originating in the rear edge of the said plate, as well as further ducts, respectively fourth and fifth, each originating in one side of the apex of the plate itself, the fourth joining the inside end of the said third duct, and the fifth being incident to the fourth and joining it at an intermediate point; the production, by drilling, of further ducts, respectively sixth and seventh, for connecting, respectively, the first and second, and second and third of the said ducts; the extension, by drilling, of the said fifth duct, for a predetermined portion, extending beyond the said fourth duct; the production of a plurality of holes in the base of the said plate, corresponding with the said fourth duct and aforementioned extended portion; the closure of the outside ends, along the edges of the said plate, corresponding to the said second, third, fourth, fifth, sixth and seventh ducts.

The characteristics of the invention, that do not emerge from that described above, are emphasised hereinafter with specific reference to the accompanying drawings, in which:

- figures 1 and 2 illustrate a completed plate, produced as in the method that is the subject of the present invention, as seen from above and from behind respectively;

- figures 3 and 4 illustrate the same plate as seen, respectively, in cross section at lines I-I and II-II in figures 1 and 2.

- figure 5 illustrates a plate in an intermediate stage of the process as seen in cross section at line II-II in fig. 2.

With reference to the aforesaid figures, 10 shows a pressing plate for a steam iron designed to be

supplied with steam fed from an external source.

The plate is made by die-casting as in the method that is the subject of the present invention.

The tubular ducts are produced during this process by means of suitably placed metal cores.

As shown in fig. 5, three ducts 11, 12 and 13, respectively first, second and third, running side by side and originating in the rear edge of the plate, extend a predetermined length within the plate, and are closed at the ends opposite the rear edge of the plate. Two further ducts, 14 and 15, respectively fourth and fifth, originate at the two side edges of the apex of the plate, close to its tip.

The fourth duct 14 joins the inside end of the third duct 13, whilst the fifth duct 15, incident to the fourth, joins it laterally at an intermediate point.

An electric heating element 19, for heating the plate, is placed above the second and third ducts, and above part of the the fourth duct, during the process, and held in place by means of suitable supports, not illustrated, remaining enclosed within a corresponding channel 18, as shown in fig. 1.

Two further ducts 16 and 17, sixth and seventh respectively, perpendicular to ducts 11, 12 and 13, are subsequently produced by drilling.

The sixth duct 16, originating at the side edge of the plate nearest to the first duct 11, and corresponding with its inside end, serves to connect the latter with the inside end of the second duct 12.

The seventh duct 17, originating at the opposite side edge of the plate, corresponding with the outer end of the third duct 13, serves to connect the latter to the outer end of the second duct 12.

The fifth duct 15 is extended by drilling a portion 15b, extending beyond the fourth duct 14, below a part of channel 18.

A pathway is thus created, consisting of, in order, the first duct 11, the sixth duct 16, the second duct 12, the seventh duct 17, the third duct 13, the fourth duct 14 and the extended portion 15b.

Equidistant holes 20 are made corresponding with the latter two ducts, forming a "V" shape with the point directed towards the apex of the plate.

The holes located along the edges of the plate, corresponding to ducts 14, 15, 16 and 17, in other words the fourth, fifth, sixth and seventh ducts, are closed off using known processes, and the initial portions of the three ducts 11, 12 and 13 are threaded.

The plate then undergoes subsequent finishing processes. During assembly of the steam iron, three filter elements 22, made of heat-resistant material, are inserted in the three ducts 11, 12 and 13, serving to collect the water droplets suspended in the steam, which are then returned to a gaseous state as a result of the heat given off by the plate.

The second and third ducts are then closed by means of screw-in plugs 21, whilst the first duct is connected to the steam supply pipe.

The method that is the subject of the present invention for producing pressing plates has obvious advantages. In the first place, the use of die-casting instead of "chill casting" enables higher quality plates to be produced more quickly, with a lower number of scrapped products, without necessitating

additional operations for removing the cores.

The use of this process is made possible by the special design of the ducts, which is in turn made practicable by the use of filter elements, replacing the traps in the version referred to in the introduction.

The replacement of the chamber, present in the models produced as described in the introduction, with duct 14 and extended portion 15b, forming a "V" shape, is a further decisive factor in achieving the goal of being able to produce the plate using die-casting.

Furthermore, the increase in quality obtained using this process, reduces the finishing processes subsequently undergone by the plate.

The possibility of enclosing the plate heating element during the casting stage represents a considerable advantage in terms of time saving during the steam iron assembly stage.

Finally, the layout of the ducts within the plate makes it easy for the drilling stages to be automated, with the obvious consequent advantages.

It is understood that the description supplied herein is solely an unlimited example, such that possible variations in the construction details of the production form described above will not affect the protective framework afforded to the invention as claimed hereinafter.

Claims

1) Method for producing steam iron pressing plates, designed to be supplied with steam fed from an external source, with each plate (1) featuring an internal pathway for conveying the steam itself to a plurality of outlet holes (20) produced in the base of the said plate; the said method being characterised by the fact that it includes: the production by die-casting of a plate (1) featuring a plurality of blind ducts (11, 12, 13), respectively first, second and third, that run alongside one another, originating in the rear edge of the said plate, as well as further ducts (14, 15), respectively fourth and fifth, each originating in one side of the apex of the plate (1) itself, the fourth joining the inside end of the said third duct (13), and the fifth being incident to the fourth and joining it at an intermediate point; the production, by drilling, of further ducts (16, 17), respectively sixth and seventh, for connecting, respectively, the first (11) and second (12), and second (12) and third (13) of the said ducts; the extension, by drilling, of the said fifth duct, for a predetermined portion (15b), extending beyond the said fourth duct (14); the production of a plurality of holes in the base of the said plate, corresponding with the said fourth duct (14) and aforementioned extended portion (15b); the closure of the outside ends, along the edges of the said plate, corresponding to the said second (12), third (13), fourth (14), fifth (15), sixth (16) and seventh (17) ducts.

2) Method, as in claim 1, for producing steam iron pressing plates, each plate being fitted with an electric heating element (19), characterised by the fact that the stage in which the said plate (1) is produced by die-casting includes the production of a channel (18) located above the said first (11), second (12), third (13) and fourth (14) ducts, and above the aforementioned extended portion (15b), within which the above-mentioned electric heating element (19) is enclosed at the same time.

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3) Method as in claim 1, characterised by the fact that it includes the threading of the initial portion of the said first duct (11).

4) Method as in claim 1, characterised by the fact that it includes the insertion of filter elements, serving to collect water droplets suspended in the steam, in the said first (11), second (12) and third (13) ducts, before the above-mentioned closure of the ducts.

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5) A pressing plate for steam irons which are designed to be supplied with steam fed from an external source, the plate (1) of which features an internal pathway for conveying the steam itself to a plurality of outlet holes (20) produced in the base of the said plate; the said plate (1) being characterised by the fact that it features a plurality of internal ducts (11, 12, 13), respectively first, second and third, that run alongside one another, originating at the at the rear edge of the said plate (1), as well as further ducts (14, 15), respectively fourth and fifth, each originating at one side of the apex of the plate itself, the fourth of which is joined to the inside end of the aforementioned third duct (13), and the fifth, incident to the fourth, is extended beyond the latter for a predetermined portion (15b), with the said first, second and third ducts being connected so that they follow on from one another, by means of two ducts (16, 17), sixth and seventh respectively, which run transversely to the above-mentioned first, second and third ducts, and are produced so that they correspond, respectively, with the inside ends of the said first and second ducts, and the outer ends of the said second and third ducts; the said ducts (11, 12, 13, 14, 16, 17) and extended portion (15b) thus forming a pathway inside the aforementioned plate, through which the steam is designed to flow, starting from the aforesaid first duct (11); the said plate (1), furthermore, featuring a plurality of equidistant holes (20) that correspond with the said fourth and fifth ducts.

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6) A plate as in claim 5, characterised by the fact that three filter elements (22), serving to collect any water droplets suspended in the steam, are inserted in the said first (11), second (12) and third (13) ducts.

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7) A plate as in claim 5, fitted with an electric heating element (19), characterised by the fact that a channel (18) is produced above the said ducts, within which the above-mentioned electric heating element (19) is enclosed.

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Fig. 2

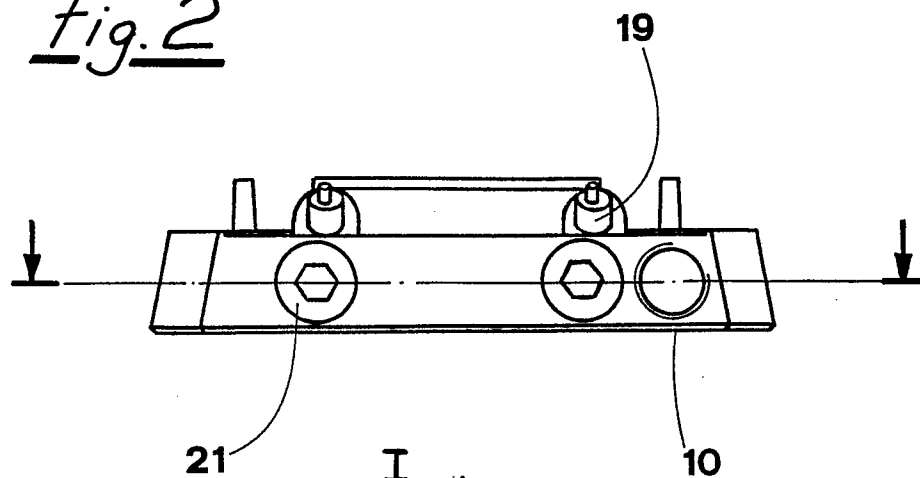
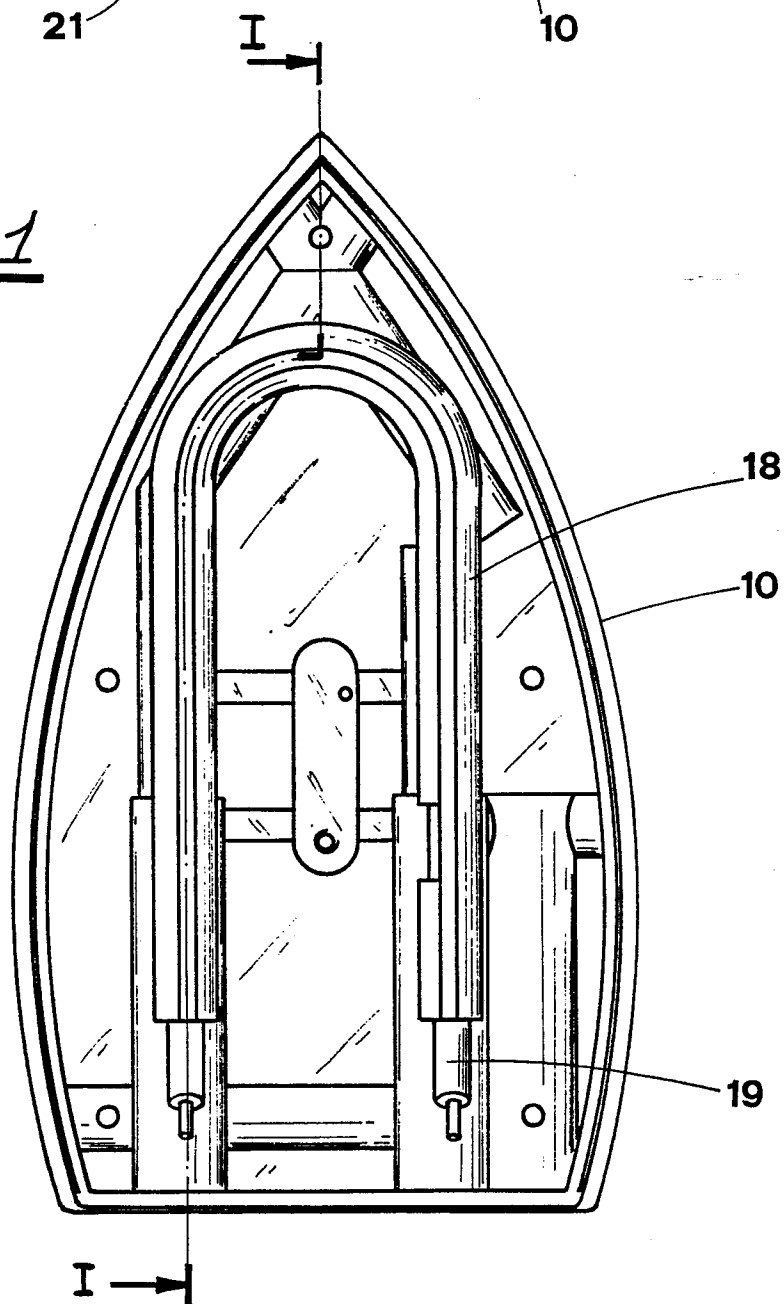


Fig. 1



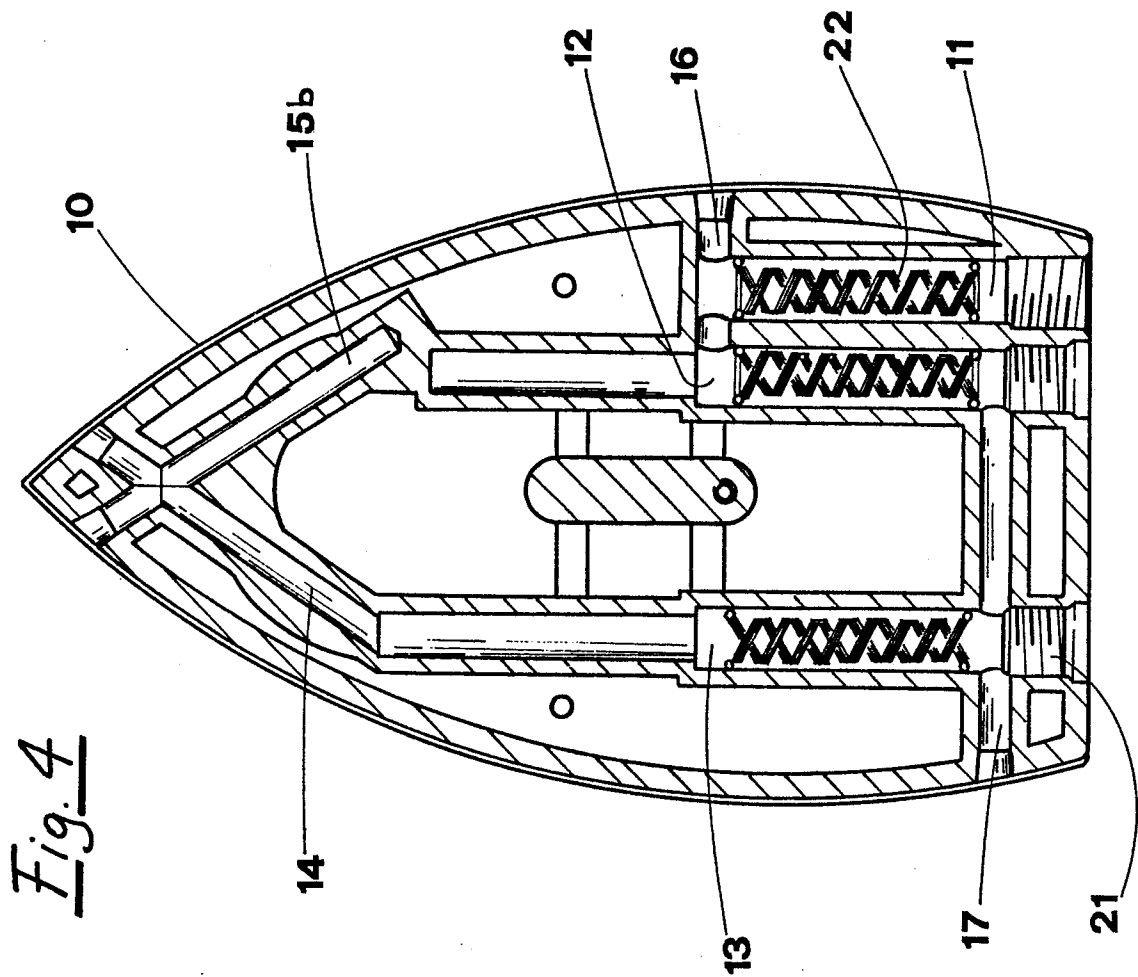
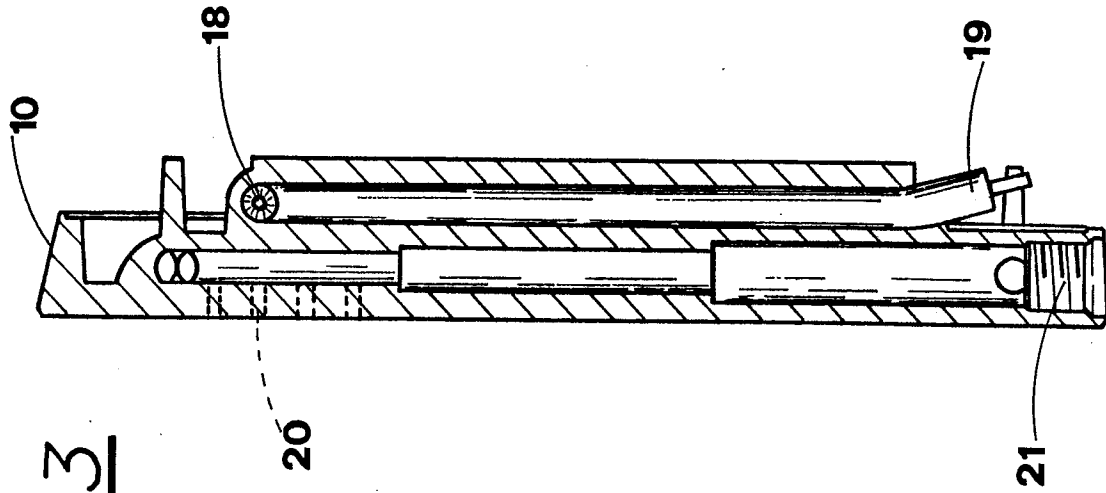
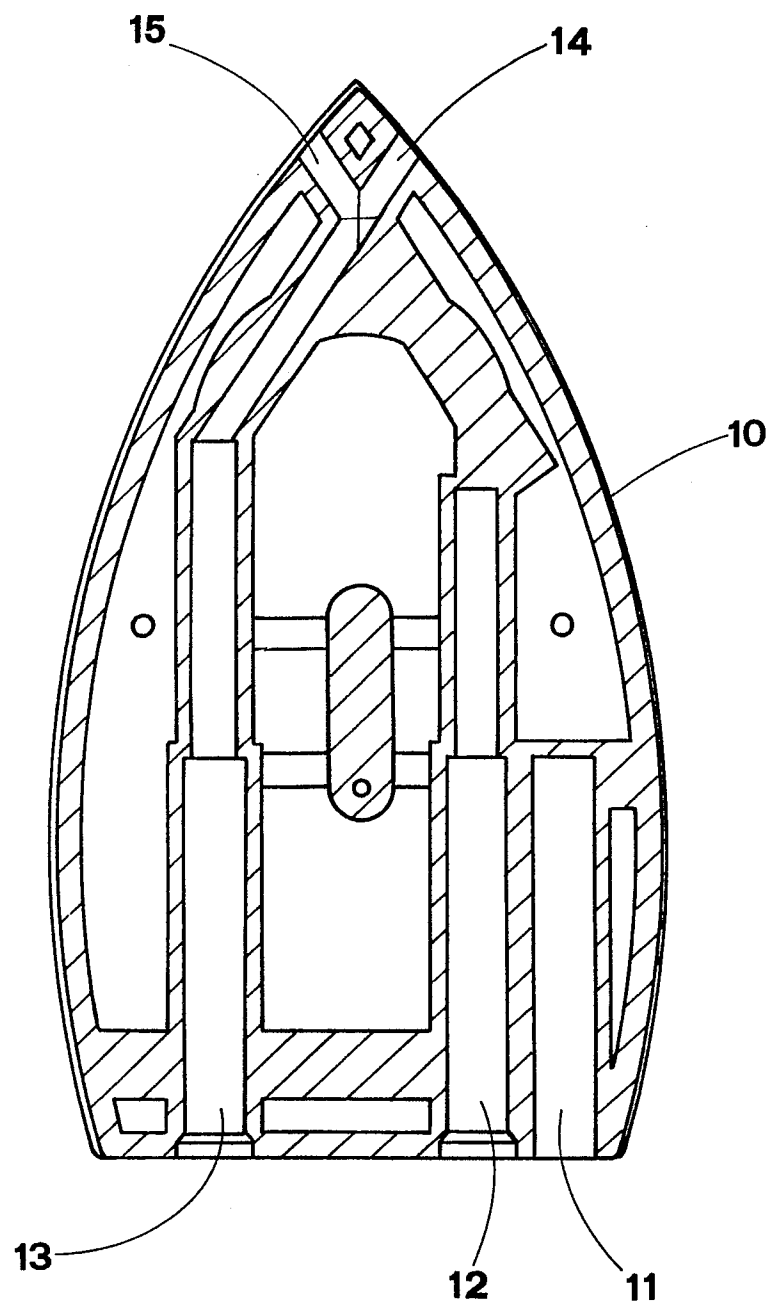


Fig. 5



European Patent
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EUROPEAN SEARCH REPORT

Application Number

EP 87 83 0244

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.4)
A	FR-A-1 124 036 (CASTANY FERRE) * Page 2, right-hand column, paragraph 7 - page 3, left-hand column, paragraph 3; figures 1-4 *	1-7	D 06 F 75/12
A	DE-A-3 402 868 (VEIT) * Page 8, last paragraph; page 9; page 11; page 12, paragraph 1; figures *	1-7	
A	US-A-2 021 606 (MITZMAN) * Page 1, right-hand column, lines 4-8; figure 2 *	1	
A	US-A-2 489 673 (RICHTER KESSING)		
A	US-A-2 495 397 (WEBER)		
A	US-A-2 431 545 (DYKES)		
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			D 06 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 03-12-1987	Examiner BOURSEAU A.M.
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