



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
16.11.2011 Bulletin 2011/46

(51) Int Cl.:
A43B 23/14 (2006.01) A43B 23/16 (2006.01)

(21) Application number: **11165387.9**

(22) Date of filing: **10.05.2011**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA ME

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(30) Priority: **11.05.2010 JP 2010108918**

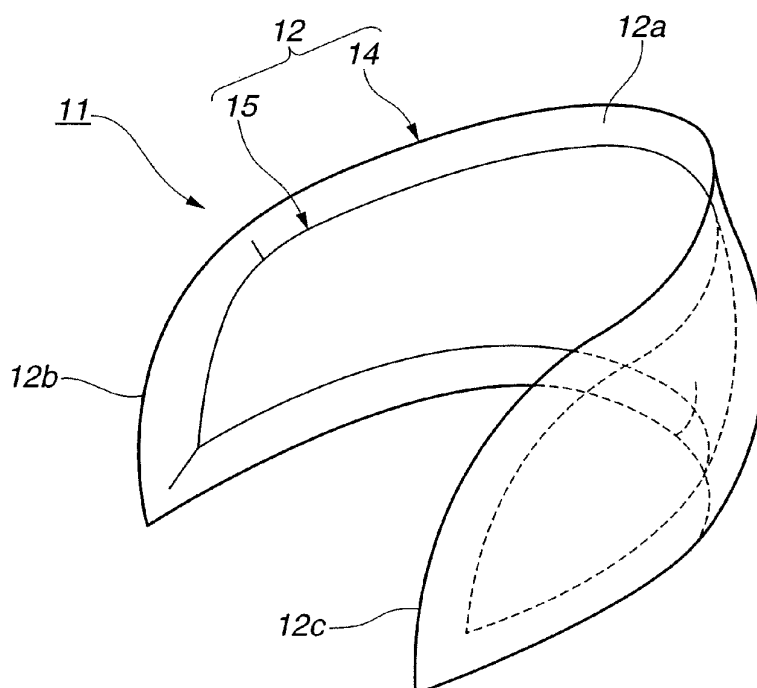
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(54) **Counter and manufacturing method of shoe by using counter**

(57) A counter includes a counter body including; a tanned leather, and an impregnated paper formed by impregnating a base paper made from a wood pulp with a resin, and affixed to the tanned paper by an adhesion,

and a thermoplastic adhesive applied to a front surface and a back surface of the counter body, the coating of the thermoplastic adhesive including air holes exposing the counter body to an outside so that water penetrates the counter body through the air holes.

FIG.2



Description

BACKGROUND OF THE INVENTION

[0001] This invention relates to a counter disposed between a front leather and a back leather at a rear portion of a leather shoe, and a manufacturing method of a shoe by using this counter.

[0002] Recently, a workability of a manufacturing operation of a shoe is improved by using a counter described in a patent document 1 (Japanese Examined Patent Application Publication No. 06-77524).

[0003] That is, this counter is formed by applying an adhesive of thermoplastic resin to a front surface and a back surface of a member formed by affixing, by an adhesion, an impregnated paper formed by impregnating, with resin, a base paper made from a wood pulp, and a tanned leather, and then by drying this member. This counter is directly inserted between a front leather and a back leather of an upper (shoe upper) in a shoe manufacturing process. With this, the counter can be adhered at the same time as a molding of a portion around a heel by heating and pressurizing a portion of the upper around the heel into which the counter was inserted. Accordingly, it is possible to save troublesome work, and to improve the productivity of the shoe.

SUMMARY OF THE INVENTION

[0004] However, the conventional counter is identical to a normal counter, except for the application of the adhesive. Accordingly, it is necessary to hold the shoe during half a day (10-15 hours) after the above-mentioned molding of the portion around the heel for fixing the shape of the shoe, in a state in which the shoe is mounted to a last. Therefore, it is difficult to improve the productivity of the shoe.

[0005] It is, therefore, an object of the present invention to provide a counter devised to solve the above-mentioned problem, and to improve a productivity of a shoe, and to provide a manufacturing method of a shoe by using the counter.

[0006] According to one aspect of the present invention, counter comprises: a counter body including; a tanned leather, and an impregnated paper formed by impregnating a base paper made from a wood pulp with a resin, and affixed to the tanned paper by an adhesion, and a thermoplastic adhesive applied to a front surface and a back surface of the counter body, the coating of the thermoplastic adhesive including air holes exposing the counter body to an outside so that water penetrates the counter body through the air holes.

[0007] According to another aspect of the invention, a counter comprises: a counter body including; a recycled leather paper containing a tannin tanned leather shaving fiber which is a dry-milled tannin tanned leather shaving, and an impregnated paper formed by impregnating a base paper made from a wood pulp with a resin, and

affixed to the recycled leather paper, and a thermoplastic adhesive applied to a front surface and a back surface of the counter body, the coating of the thermoplastic adhesive including air holes exposing the counter body to an outside so that water penetrates the counter body through the air holes.

[0008] According to still another aspect of the invention, a manufacturing method of a shoe by using the counter claimed in one of claims 1-3, the manufacturing method comprises: a first step of immersing the counter in the water to impregnate the counter body with the water; a second step of inserting the counter immersed with the water at the first step, between a front leather and a back leather of an upper; and a third step of heating and pressurizing a portion of the shoe around a heel into which the counter is inserted, to mold the portion of the shoe around the heel, and to bond the counter on the front leather and the back leather.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a perspective view showing a state in which a counter according to a first embodiment of the present invention is mounted to a shoe.

[0010] FIG. 2 is a perspective view showing the counter of FIG. 1.

[0011] FIG. 3 is a sectional view showing the counter of FIG. 2.

[0012] FIG. 4 is an enlarged view showing a coating film of the adhesive of FIG. 3.

[0013] FIG. 5 is a table of a composition and a combination of the adhesive of FIG. 4.

[0014] FIG. 6 is a table of an experimental result showing a relationship between impregnation amount of the counter, a moldability around a heel of the shoe, and an adhesion properties of the counter.

[0015] FIG. 7 is a perspective view showing a state in which a counter according to a second embodiment of the present invention is mounted to a shoe.

[0016] FIG. 8 is a perspective view showing the counter of FIG. 7.

[0017] FIG. 9 is a sectional view showing the counter of FIG. 8.

DETAILED DESCRIPTION OF THE INVENTION

[0018] Hereinafter, counters according to embodiments of the present invention, and a manufacturing method of a shoe by using the counter are illustrated in detail. In the embodiments, the present invention is applied to a leather shoe for men.

[0019] FIGS. 1-6 show a counter according to a first embodiment of the present invention, and a manufacturing method of a shoe by using this counter. First, the counter according to the first embodiment of the present invention is illustrated below. As shown in FIG. 1, a counter (heel counter) 11 is disposed between a front leather 2 and a back leather 3 to surround side portions of a heel

1a of the shoe 1. The entire of the counter 11 is formed into a curved shape extending along the side portions of the heel 1a, as shown in FIG. 2. A counter body 12 is formed by affixing, by adhesive, a leather 14 which is formed from a tannin tanned leather (vegetable tanned leather) and so on, and an impregnated paper 15 which is formed by impregnating, with a resin, a base paper made from a wood pulp. As shown in FIG. 3, the counter 11 is formed by applying thermoplastic adhesive 13 to an entire front surface and an entire back surface of the counter body 12, and then by drying this counter body 12. In this embodiment, as shown in FIG. 2, the impregnated paper 15 is affixed to an inner side surface of the leather 14. However, the present invention is not limited to this embodiment (this affixing method), the impregnated paper 15 may be affixed to an outer side surface of the leather 14.

[0020] This counter body 12 has a thickness of substantially 2.2 mm. The counter body 12 is formed by affixing the leather 14 and the impregnated paper 15 each of which has a thickness of 1.1mm. As shown in FIGS. 2 and 3, this counter body 12 includes a peripheral portion 12a which is thinned out to have a tapered section. As shown in FIG. 3, the impregnated paper 15 has an area smaller than an area of the leather 14. This counter body 12 has a shape substantially symmetrical with respect to the curved portion. This counter body 12 includes a first end portion 12b and a second end portion 12c which extend in a longitudinal direction, and which have a substantially identical length.

[0021] The impregnated paper 15 is formed by immersing (dipping), in a resin agent formed by mixing SBR synthetic latex or acrylic resin, a base paper made from the wood pulp, or a base paper formed by mixing the wood pulp and the leather shaving, or a base paper formed by mixing the wood pulp, the leather shaving, and a synthetic fiber so as to impregnate the base paper with the resin, and then by drying this. As a percentage of the components of the impregnated paper 15, the wood pulp is 85%-60%, and the resin is 15%-40%.

[0022] In this case, the leather shaving is a shaving which is discarded as unnecessary material in field such as a bag and shoes in which the leather material is used as the material. This leather shaving is crushed by a crusher to be disintegrated to fibrous form (that is, collagen fiber). This mixing percentage of the leather shaving to the wood pulp may be any percentage as long as the percentage of the leather shaving to the wood pulp is 10%-90%. It is preferable that the percentage of the leather shaving to the wood pulp is 50%.

[0023] Moreover, in the synthetic fiber, the material which is discarded as unnecessary material is broken to be disintegrated to the fibrous form is used. A mixing percentage of the synthetic fiber to the wood pulp and the leather shaving is equal to or smaller than the 15%. It is preferable that the percentage of the synthetic fiber to the wood pulp and the leather shaving is 5-8%.

[0024] As shown in the component table of FIG. 5, this

adhesive 13 is an ethylene vinyl acetate modified emulsion constituted mainly by an ethylene vinyl acetate and the water. A percentage of the composition of the ethylene vinyl acetate is 43-48 wt% (weight percent). A percentage of the composition of the water is 52-57 wt% (weight percent). This percentage of the composition of the ethylene vinyl acetate is smaller than that of the conventional composition by 5%. This percentage of the composition of the water is greater than that of the conventional composition by 5%. In this way, the water is increased relative to the conventional composition, and the concentration of the ethylene vinyl acetate is decreased relative to the conventional composition. With this, in the adhesive state of the counter body 12, the adhesive firm includes a plurality of minute air holes 13a. Accordingly, the water (moisture) penetrates (impregnates) the counter body 12 from the outside.

[0025] In addition to the main component, di-n-butyl phthalate of a percentage of 1%-11% to the main component is added, as a plasticizer, to the adhesive 13. Moreover, according to circumstances, ethylene glycol of a percentage below 10% to the main component is added to the adhesive 13.

[0026] FIG. 6 is a table of a penetration rate of the water through the air holes 13a of the adhesive 13, that is, the immersion (dipping) time T and water content Wt. In this experiment, the entire of the counter 11 was immersed (dipped) in the water. Then, the counter 11 was pulled out from the water after a predetermined time period T, and a weight W2 (after containing the water) was measured. The water content Wt was determined by subtracting, from the weight W2, a dry weight (a weight before immersing in the water) W1 of the counter 11 which is previously measured.

[0027] By this experiment, the water content Wt was 0.05g at 1-2 seconds of the immersion time T. That is, the counter contains little the water. The water content Wt was 0.10-0.20g at 3-20 seconds of the immersion time T. That is, the water content Wt generally increased. The water content Wt was 0.60-1.05g at 25-300 seconds of the immersion time T. The water content Wt considerably increased relative to the case in which the immersion time T was equal to or smaller than 20 seconds. Moreover, the water content Wt was 1.60-2.85g at 600-1800 seconds of the immersion time T. The water content Wt further increased relative to the case in which the immersion time T was 25-300 seconds.

[0028] Hereinafter, a manufacturing method of the shoe by using the counter 11 according to the first embodiment of the present invention is illustrated. Manufacturing processes from the manufacture of a last (shoe last) to the manufacture of an upper 4, and manufacturing process from the lasting (pulling-over) to the finishing are identical to well-known processes. Therefore, the illustration of these processes are omitted. Hereinafter, characteristic processes of the present invention, that is, processes relating to the counter 11 are illustrated.

[0029] At a process before the lasting process, the

counter 11 is inserted in a container storing the water immediately before inserting the counter into the upper 4, and the entire of the container 11 is immersed (dipped) in the water during 3-20 seconds (a first step). With this, the water mainly penetrates the leather 14 of the counter body 12, through the plurality of the air holes 13a formed in the adhesive 13.

[0030] Next, the counter 11 immersed in the water is inserted and disposed from the bottom side between the front leather 2 and the back leather 3 of the heel portion of the upper 4 (a second step). On the other hand, a box toe (not shown) is inserted and disposed between the front leather 2 and the back leather 3 at a toe portion of the upper 4, before the mounting of the counter 11 or after the insertion of the counter 11, like the counter 11.

[0031] Next, the upper 4 mounted with counter 11 and the box toe is set on a hot press (hot pressing) (not shown) serving as a heel molding (shaping) machine. The front leather 2 and the back leather 3 of the upper 4 and the counter 11 are adhered (bonded) to each other while the portion around the heel 1a of the upper 4 is molded (shaped) by the hot press (a third step). That is, the counter 11 is set to a die (upper and lower die) which is heated to 110-120 °C by the hot press. This counter 11 is sandwiched by the die. The counter 11 is pressurized during substantially 10 seconds by 6kPa of the lower die and 2-3 kPa of the upper die. With this, the counter 11 is pressurized and tightened between the front leather 2 and the back leather 3, so that the portion around the heel 1a is molded (shaped).

[0032] In this case, the water immersed in the counter body 11 (mainly, leather 14) at the first step is evaporated by the heat of the die. With this, the portion around the heel 1a of the upper 4 is steamed. That is, by this steam (water vapor) function, the counter 11, the front leather 2 and the back leather 3 of the portion around the heel 1a are softened. With this, the entire portion around the heel 1a of the upper 4 including the front leather 2 and the back leather 3 is fit in (attached firmly to) the die. Consequently, the shape of the portion around the heel 1a is molded to a desired shape substantially identical to the last.

[0033] Next, the upper 4 after finishing the molding operation by the hot press is overlaid on a last (not shown) which has a shape substantially identical to the die, and to which an inner sole is temporarily mounted. After the known lasting process and the bottom mounting process (bottom making process), a shoe sole 5 is mounted to the upper 4. Then, immediately before a finishing step (described later), the shoe is put on a pounding apparatus. This pounding apparatus scratches (scrapes) or pounds the portion of the shoe 1 (the portion corresponding to the upper 4) around the heel 1a to perform the final finishing for the shape of the portion of the heel 1a (a fourth step). With this, the shoe 1 is attached further firmly to (is in close contact with) the last. With this, it is possible to detach the shoe 1 from the shoe tree in the early stage after the processing.

[0034] The shoe 1 after finishing the finishing processing is held during a predetermined time period Tx (four to five hours) in a state in which the last is inserted into, so that the shape of the shoe 1 is fixed. After the predetermined time period Tx, the shoe fitting is detached from the shoe 1. The manufacturing method proceeds to a final finishing process. At the final finishing process, a sock lining is mounted, and crimple is removed, so that the shoe 1 is finished (accomplished).

[0035] In this way, in the first embodiment, the shoe is manufactured by using the counter body 12 impregnated with the water. With this, it is possible to improve the moldability of the portion around the heel 1a of the upper 4 by the above-described steam function. Moreover, it was confirmed that the moldability of the counter body 12 was varied in accordance with the water content Wt of the counter 12 by the experiment. Hereinafter, the effect (influence) of the water content Wt of the counter 11 is illustrated with reference to the table shown in FIG. 6.

[0036] In this experiment, the moldability of the portion around the heel 1a of the upper 4, and a strength of the adhesive and drying characteristics after the molding which are characteristic problems generated by immersing the counter 11 into the water are assessed. In this case, a symbol O represents good, a symbol × represents no good, and a symbol Δ represents a middle which does not correspond to the good and the no good. In this way, the experimental result is assessed by three-stages.

[0037] That is, by this experiment, the strength of the adhesive did not relate to the immersion time T, that is, the water content Wt of the counter body 12. That is, the strength of the adhesive was good, like the conventional case using the counter 11 which is not impregnated with the water. That is, the manufacturing method according to the embodiment had a sufficient strength of the adhesive.

[0038] Moreover, as to the moldability, the rigidity of the counter 11 was high when the immersion time T was equal to or smaller than 2 seconds, that is, when the water content Wt of the counter body 12 was equal to or smaller than 0.05g. Accordingly, the moldability was inferior. On the other hand, when the immersion time T was equal to or greater than 3 seconds, that is, when the water content Wt of the counter body 12 was equal to or greater than 0.10g, the counter 11 was sufficiently softened. With this, the good moldability was obtained. From this result, it was confirmed that the water content Wt equal to or greater than the predetermined amount was needed for obtaining the counter 11 whose the moldability is improved, and that appropriate water content Wt to improve the moldability was preferable to be equal to or greater than 0.10g.

[0039] As to the drying characteristics, when the immersion time T was equal to or smaller than 20 seconds, that is, when the water content Wt of the counter body 12 was equal to or smaller than 0.20g, the good drying characteristics were obtained to finish the dry immediately after the molding since the water content Wt was

relatively small. When the immersion time T was 25-300 seconds, that is, when the water content Wt of the counter body 12 was 0.60-1.05g, the drying characteristics were slightly deteriorated although the productivity of the shoe was not largely affected. Moreover, when the immersion time T was equal to or greater than 600 seconds, that is, when the water content Wt of the counter body 12 was equal to or greater than 1.60g, the drying characteristics were remarkably deteriorated so as not to sufficiently improve the productivity of the shoe. From this experimental result, it was confirmed that it was necessary that the water content Wt was suppressed to a value equal to or smaller than the predetermined amount for obtaining the sufficient drying characteristics after the molding, and it was desirable that the appropriate water content Wt is equal to or smaller than 0.20g for ensuring the sufficient drying characteristics after the molding.

[0040] Accordingly, in a case in which these evaluations of the adhesive strength, the moldability, and the drying characteristics after the molding are considered, it is possible to obtain the effect by the present invention when the water content Wt of the counter body 12 is 0.05-1.05g. However, for ensuring the high productivity of the shoe by the above-described steam function, it is desirable that the water content Wt is 0.10-0.20g (the immersion time T is 3-20 seconds) in the above-described range.

[0041] As mentioned above, in the first embodiment, in the shoe manufacturing process, the counter 11 is immersed in the water before the counter 11 is inserted in the upper 4, so as to impregnate the counter body 12 (particularly, the leather 14) with the water. With this, when the portion around the heel 1a of the upper 4 is molded (shaped) by the hot press, the water impregnated (contained) in the counter body 12 is evaporated by the heat of the die, so that the above-described steam function can be obtained. With this, it is possible to improve adhesiveness of the portion around the heel 1a of the upper 4 with respect to the die, thereby to detach from the shoe 1 from the last in the early stage in the later process, and to improve the productivity of the shoe 1 (particularly, to obtain the productivity more than twice the conventional productivity). Moreover, it is possible to ensure the substantially desired shape of the shoe 1 which is substantially identical to the last, and to improve the quality of the shoe 1.

[0042] In this case, it is possible to impregnate the counter body 12 with the water of the appropriate amount by setting the water content Wt of the counter body 12 to 0.10-0.20g by setting the immersion time T of the counter 11 into the water, to 3-20 seconds. With this, it is possible to obtain the effect (the improvement of the moldability of the portion around the heel 1a of the upper 4) by immersing the counter 11 in the water immediately before the molding of the portion around the heel 1a of the upper 4. Moreover, it is possible to suppress the disadvantage (degradation of the drying characteristics of the counter 11 after the molding) caused by impregnating

with the counter 11 with the water. In particular, when the water content Wt of the counter body 12 is set to 0.10g by setting the immersion time T of the counter 11 in the water to 3 seconds, it is possible to maximally improve the productivity of the shoe.

[0043] Moreover, it is possible to soften the counter 11 whose the rigidity increased due to the apply of the adhesive 13, by impregnating the counter body 12 with the water by immersing the counter 11 in the water before the mounting to the upper 4. With this, it is possible to ensure the sufficient softness of the counter 11. Moreover, it is possible to suppress the stickiness caused by the adhesive 13 applied to the surface of the counter body 12, by adhering the water to the surface of the counter 11 (the coating of the adhesive 13) by immersing the entire counter 11 in the water before the mounting of the upper 4. With this, it is possible to improve the mounting operation of the counter 11 to the upper 4, and to improve the productivity of the shoe.

[0044] FIGS. 7-9 show a counter according to a second embodiment of the present invention. A structure of a counter 21 according to the second embodiment is varied from the structure of the counter body 12 according to the first embodiment. The basic structure according to the second embodiment is identical to that of the first embodiment in most aspects as shown by the use of the same reference numerals. Hereinafter, points different from the first embodiment are illustrated.

[0045] That is, in the counter 21 according to the second embodiment, the leather 14 of the first embodiment is replaced by a recycled leather paper 24 composed mostly of the tannin tanned leather shaving fiber (vegetable tanned leather shaving fiber). The counter 21 is formed by applying the adhesive 13 to front and back surfaces of a counter body 22 which is formed by affixing the recycled leather paper 24 and the impregnated paper 15.

[0046] The recycled leather paper 24 is formed by adding 10-50 wt% (weight percent) of aqueous emulsion resin to a material formed by mixing the leather shaving fiber of 95-55 wt% (weight percent) which is formed by breaking the leather shaving generated at the processing of the tannin tanned leather into the fibrous form, a natural pulp of 5-40 wt% (weight percent), and the synthetic fabric of 5-20 wt%. In this embodiment, the recycled leather paper 24 is formed by mixing the predetermined percentages of the leather shaving fiber, the natural pulp, and the synthetic fabric. However, the recycled leather paper 24 is not limited to this composition including the synthetic resin. The recycled leather paper 24 may be formed only by the leather shaving fiber and the natural pulp. In this case, the recycled leather paper 24 is formed by adding the aqueous emulsion to the material formed by mixing the leather shaving fiber of 95-50 wt% and the natural pulp of 5-50 wt%.

[0047] In this case, the leather shaving fiber is a shaving which is discarded in a field such as a bag and shoes in which the leather material is processed (worked) as

the material. This leather shaving fiber is a collagen fiber which is obtained by crushing this shaving by the crusher be disintegrated into the fibrous form. The leather that is a source of this leather shaving is not limited to a kind and a region of the animal. The leather may be a leather of any animal, and may be a leather of any region of the animal.

[0048] In general, the wood pulp is used as the natural pulp. According to the circumstances, good-quality recycled waste-paper (waste paper) may be used.

[0049] The synthetic fiber may be any fiber such as vinylon fiber, a polyester fiber, a PET (polyethylene terephthalate) fiber, a PP (polypropylene) fiber, and a rayon fiber, and so on which are processed for paper-making. Moreover, the number of the use of the fibers may be one. Moreover, the number of the use of the fibers may be two or more for adjusting the properties of the recycled leather paper 24.

[0050] The aqueous emulsion resin may be SBR (styrene-butadiene rubber), an acrylic, styrene acrylic, NBR (acrylonitrilebutadiene rubber), vinyl acetate, ethylene vinyl acetate, or vinyl chloride series which have glass-transition temperature of -50°C - +50°C. In addition, cationic high-molecular compound such as cationic polyacrylamide, melamine resin (in colloidal state), and so on may be added as an agent for strengthening paper. Furthermore, it is optional to color by adding inorganic pigment, organic pigment, ferric oxide, and so on as stain.

[0051] The thus-formed recycled leather paper 24 can obtain a property substantially identical to that of the leather 14 made from the natural leather. Accordingly, in the counter 21 according to this embodiment, it is also possible to obtain the effect substantially identical to that of the counter 11 according to the first embodiment, by using the adhesive 13 formed by the composition identical to that of the counter 11 according to the first embodiment.

[0052] Moreover, in the counter 21 according to the second embodiment, it is possible to suppress the increase of the amount of the emission of the waste (waste product) by reuse of the effluent by using the recycled paper 24 in place of the leather 14 made from the natural leather, and to contribute to conservation of natural environment (nature).

[0053] The present invention is not limited to the above-described embodiments. The counters 11 and 21 according to the present invention are applicable to shoes other than the leather shoes for men which are exemplified in the embodiments.

[0054] Furthermore, in the present invention, the adhesive 13 is constituted by the composition identical to that of the conventional counter, and each of the counter bodies 12 and 22 may have a region to which the adhesive is not applied to by masking to the region of one surface or both surfaces of the counter body 12 or 22 so that the water penetrates from the outside. In this case, it is possible to obtain the effect identical to that of the embodiments of the present invention.

[0055] A counter according to the present invention includes: a counter body including; a tanned leather, and an impregnated paper formed by impregnating a base paper made from a wood pulp with a resin, and affixed to the tanned paper by an adhesion, and a thermoplastic adhesive applied to a front surface and a back surface of the counter body, the coating of the thermoplastic adhesive including air holes exposing the counter body to an outside so that water penetrates the counter body through the air holes.

[0056] Accordingly, in the shoe manufacturing process, the counter body is impregnated with the water by immersing (dipping) the counter in the water, immediately before inserting into the upper 4. With this, it is possible to improve adhesiveness (contact) of the portion around the heel to the die by the steam function to evaporate the water impregnated in the counter body by the heating. Therefore, it is possible to improve the moldability of the portion around the heel.

[0057] Moreover, the counter is softened by absorbing the water to the counter body. With this, it is possible to ensure the flexibility of the counter, and to suppress the stickiness by the adhesive applied to the surface of the counter. Therefore, it is possible to improve the workability of inserting the counter into the upper.

[0058] Accordingly, the moldability of the portion of the upper around the heel is improved. With this, it is possible to detach the last at early timing in the later steps, and to improve the productivity of the shoe. Moreover, it is possible to ensure the desired shape of the shoe which corresponds to the last, and to improve the quality of the shoe.

[0059] Moreover, it is possible to improve the productivity of the shoe by the improvement of the workability of mounting the counter into the upper.

[0060] A counter according to the present invention includes: a counter body including; a recycled leather paper containing a tannin tanned leather shaving fiber which is a dry-milled tannin tanned leather shaving, and an impregnated paper formed by impregnating a base paper made from a wood pulp with a resin, and affixed to the recycled leather paper, and a thermoplastic adhesive applied to a front surface and a back surface of the counter body, the coating of the thermoplastic adhesive including air holes exposing the counter body to an outside so that water penetrates the counter body through the air holes.

[0061] Accordingly, in the shoe manufacturing step, the water is impregnated in the counter body by immersing (dipping) the counter in the water, immediately before inserting into the upper 4. With this, it is possible to improve the adhesiveness (contact) of the portion around the heel to the die by the steam function to evaporate the water impregnated in the counter body by the heating. Therefore, it is possible to improve the moldability of the portion around the heel.

[0062] Moreover, the counter is softened by absorbing the water to the counter body. With this, it is possible to

ensure the flexibility of the counter, and to suppress the adhesiveness by the adhesive applied to the surface of the counter. Therefore, it is possible to improve the workability of inserting the counter into the upper.

[0063] Accordingly, the moldability of the portion of the upper around the heel is improved. With this, it is possible to detach the last at early timing at the later steps, and to improve the productivity of the shoe. Moreover, it is possible to ensure the desired shape of the shoe which corresponds to the last, and to improve the quality of the shoe.

[0064] Moreover, it is possible to improve the productivity of the shoe by the improvement of the workability of mounting the counter into the upper.

[0065] In the counter according to the present invention, a main component of the adhesive is an ethylene vinyl acetate and a water; and the composition ratio of the water is 52-57 wt% so that the film of the adhesive automatically includes the air holes.

[0066] Accordingly, the concentration of the ethylene vinyl acetate is diluted by the mixture percentage, relative to the conventional counter. Consequently, the air holes are automatically generated in the coating (film) of the adhesive. With this, the water can penetrate the counter body covered with the coating of the adhesive intrinsically intercepts the water, from the outside through the air holes.

[0067] A manufacturing method of a shoe by using the counter according to the present invention, the manufacturing method includes: a first step of immersing the counter body in the water to impregnate the counter with the water; a second step of inserting the counter immersed with the water at the first step, between a front leather and a back leather of an upper; and a third step of heating and pressurizing a portion of the shoe around a heel into which the counter is inserted, to mold the portion of the shoe around the heel, and to bond the counter on the front leather and the back leather.

[0068] In this manufacturing method, the water is impregnated in the counter body before the molding. Then, the counter is inserted into the upper in the state in which the water is impregnated in the counter. The portion around the heel is molded by using the hot press. With this, it is possible to improve the adhesiveness of the portion around the heel to the die by the steam function to evaporate the water impregnated in the counter body by the heat. Therefore, it is possible to improve the moldability of the portion around the heel.

[0069] Moreover, the counter is immersed in the water immediately before inserting into the upper. With this, the water is impregnated in the counter body. Accordingly, it is possible to ensure the flexibility of the counter. Moreover, it is possible to suppress the stickiness of the adhesive applied to the surface. With this, it is possible to readily perform the mounting operation of the counter into the upper 4.

[0070] In this manufacturing method, it is possible to improve the moldability of the portion of the upper around

the heel at the third step, and thereby to detach the last at early timing in the later steps, and to improve the productivity of the shoe. Moreover, it is possible to ensure the desired shape of the shoe which corresponds to the last.

[0071] Moreover, it is possible to improve the productivity of the shoe by the improvement of the workability of mounting the counter into the upper at the second step.

[0072] In the manufacturing method according to the present invention, the manufacturing method further comprises a fourth step of finishing a shape around the heel by scratching or pounding, from the outside, the portion of the shoe around the heel molded at the third step.

[0073] Accordingly, at the step after the molding of the upper, the portion of the shoe around the heel is scratched and pounded from the outside by using the pounding apparatus. With this, it is possible to early finish the portion around the heel into the shape corresponding to the last.

[0074] Moreover, it is possible to detach the last at early timing in the later process, and to further improve the productivity of the shoe.

[0075] In the manufacturing method according to the present invention, the counter is immersed in the water during 3-20 seconds at the first step.

[0076] In this manufacturing method, the counter is immersed in the water during the predetermined time period. With this, it is possible to obtain the appropriate water amount for the counter body, that is, the sufficient steam function, and to impregnate the counter body with the appropriate water amount for the good drying characteristics after the molding.

[0077] Accordingly, it is possible to obtain the effect (the improvement of the moldability of the portion of the upper around the heel) caused by immersing the counter in the water immediately before the molding of the portion of the upper around the heel, and to suppress the disadvantage (the deterioration of the drying characteristics of the counter after the molding) caused by impregnating the counter with the water.

[0078] In the manufacturing method according to the present invention, the counter body is impregnated with the water of 0.10-0.20 g at the first step.

[0079] Accordingly, it is possible to obtain the appropriate water amount for the counter body, that is, the sufficient steam function, and impregnate the counter body with the appropriate water amount for the good drying characteristics after the molding.

[0080] Accordingly, it is possible to obtain the effect (the improvement of the moldability of the portion of the upper around the heel) caused by immersing the counter in the water immediately before the molding of the portion of the upper around the heel, and to suppress the disadvantage (the deterioration of the drying characteristics of the counter after the molding) caused by impregnating the counter with the water.

[0081] The entire contents of Japanese Patent Application No. 2010-108918 filed May 11, 2010 are incorpo-

rated herein by reference.

[0082] Although the invention has been described above by reference to certain embodiments of the invention, the invention is not limited to the embodiments described above. Modifications and variations of the embodiments described above will occur to those skilled in the art in light of the above teachings. The scope of the invention is defined with reference to the following claims.

Claims

1. A counter comprising:

a counter body including;
a tanned leather, and
an impregnated paper formed by impregnating a base paper made from a wood pulp with a resin, and affixed to the tanned paper by an adhesion, and
a thermoplastic adhesive applied to a front surface and a back surface of the counter body, the coating of the thermoplastic adhesive including air holes exposing the counter body to an outside so that water penetrates the counter body through the air holes.

2. A counter comprising:

a counter body including;
a recycled leather paper containing a tannin tanned leather shaving fiber which is a dry-milled tannin tanned leather shaving, and
an impregnated paper formed by impregnating a base paper made from a wood pulp with a resin, and affixed to the recycled leather paper, and
a thermoplastic adhesive applied to a front surface and a back surface of the counter body, the coating of the thermoplastic adhesive including air holes exposing the counter body to an outside so that water penetrates the counter body through the air holes.

3. The counter as claimed in claim 1 or 2, wherein a main component of the adhesive is an ethylene vinyl acetate and a water; and the composition ratio of the water is 52-57 wt% so that the film of the adhesive automatically includes the air holes.

4. A manufacturing method of a shoe by using the counter claimed in one of claims 1-3, the manufacturing method comprising:

a first step of immersing the counter in the water to impregnate the counter body with the water;
a second step of inserting the counter immersed with the water at the first step, between a front

leather and a back leather of an upper; and
a third step of heating and pressurizing a portion of the shoe around a heel into which the counter is inserted, to mold the portion of the shoe around the heel, and to bond the counter on the front leather and the back leather.

5. The manufacturing method as claimed in claim 4, wherein the manufacturing method further comprises a fourth step of finishing a shape around the heel by scratching or pounding, from the outside, the portion of the shoe around the heel molded at the third step.

6. The manufacturing method as claimed in claim 4, wherein the counter is immersed in the water during 3-20 seconds at the first step.

7. The manufacturing method as claimed in claim 4, wherein the counter body is impregnated with the water of 0.10-0.20 g at the first step.

FIG.1

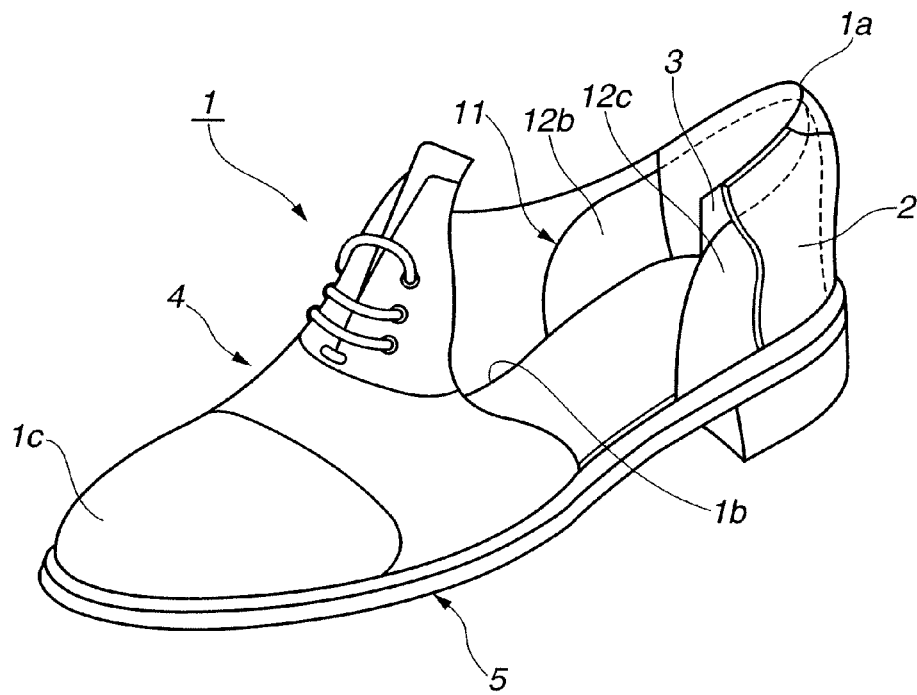


FIG.2

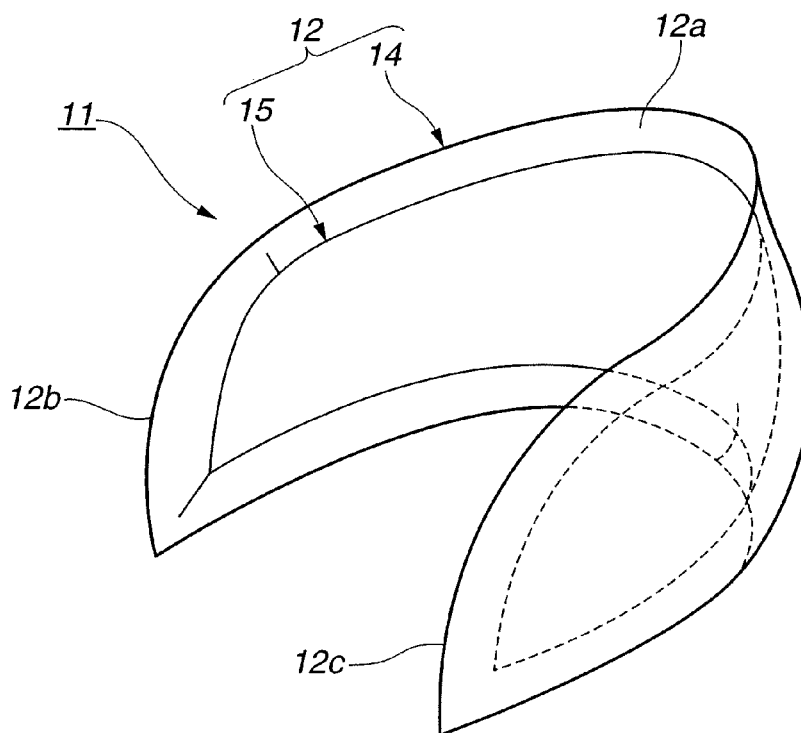


FIG.3

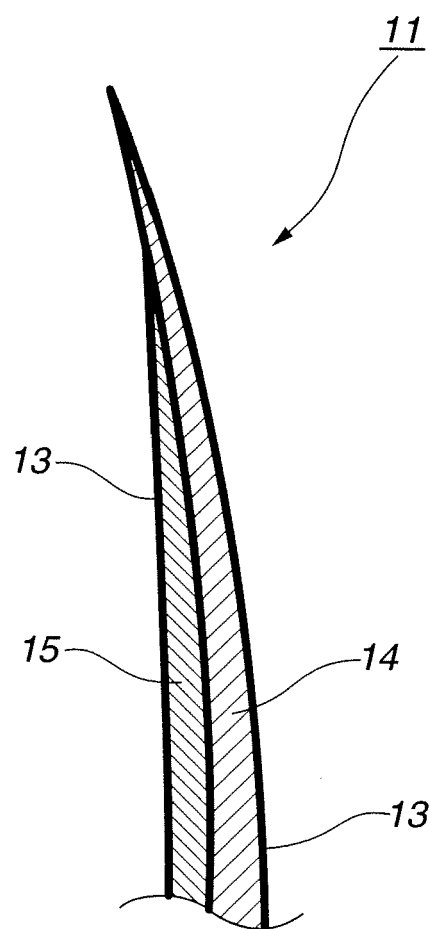


FIG.4

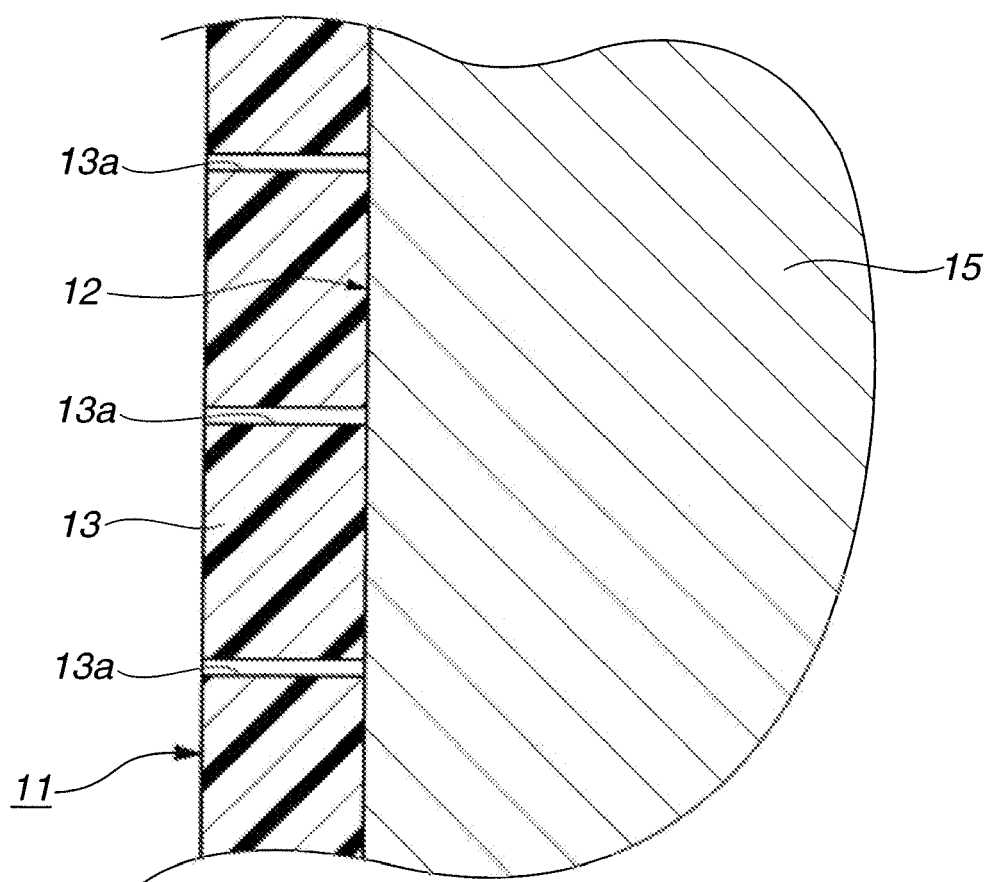


FIG.5

CONVENTIONAL ART		PRESENT INVENTION	
COMPONENT	CONTENT	COMPONENT	CONTENT
ETHYLENE VINYL ACETATE	48 ~ 53	ETHYLENE VINYL ACETATE	43 ~ 48
WATER	47 ~ 52	WATER	52 ~ 57
DI-N-BUTYL PHTHALATE	1 ~ 11	DI-N-BUTYL PHTHALATE	1 ~ 11
ETHYLENE GLYCOL	0 ~ 10	ETHYLENE GLYCOL	0 ~ 10

FIG.6

IMMERSION TIME T [sec]	1	2	3	4	5	6	7	8	9	10	15	20	25	30	40	50	60	120	180	300	600	1200	1800
DRY WEIGHT W1 [g]	18.5	18.5	18.5	19	18.6	18.4	18.7	19	18.7	19	18.9	18.7	18.4	18.1	18	18.2	18.6	18.1	18	18.2	18.2	18.1	18.2
WEIGHT W2 [g] AFTER IMMERSION	18.6	18.6	18.6	19.1	18.7	18.5	18.9	19.2	18.8	19.2	19	18.9	19	18.9	18.6	18.9	19.3	18.7	18.8	19.3	19.8	20	21
WATER CONTENT Wt [g]	0.05	0.05	0.1	0.1	0.15	0.1	0.2	0.15	0.1	0.2	0.15	0.2	0.6	0.85	0.6	0.7	0.7	0.65	0.75	1.05	1.6	1.9	2.85
EVALUATION OF ADHESIVE STRENGTH	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
EVALUATION OF MOLDABILITY	△	△	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
EVALUATION OF DRYING CHARACTERISTICS AFTER MOLDING	○	○	○	○	○	○	○	○	○	○	○	○	△	△	△	△	△	△	△	△	×	×	×

FIG.7

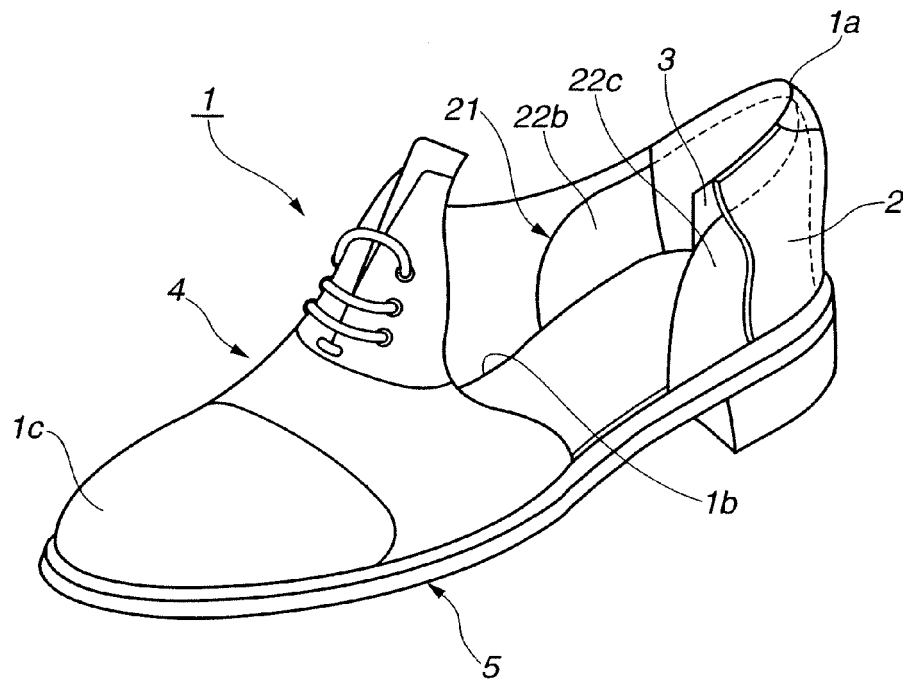


FIG.8

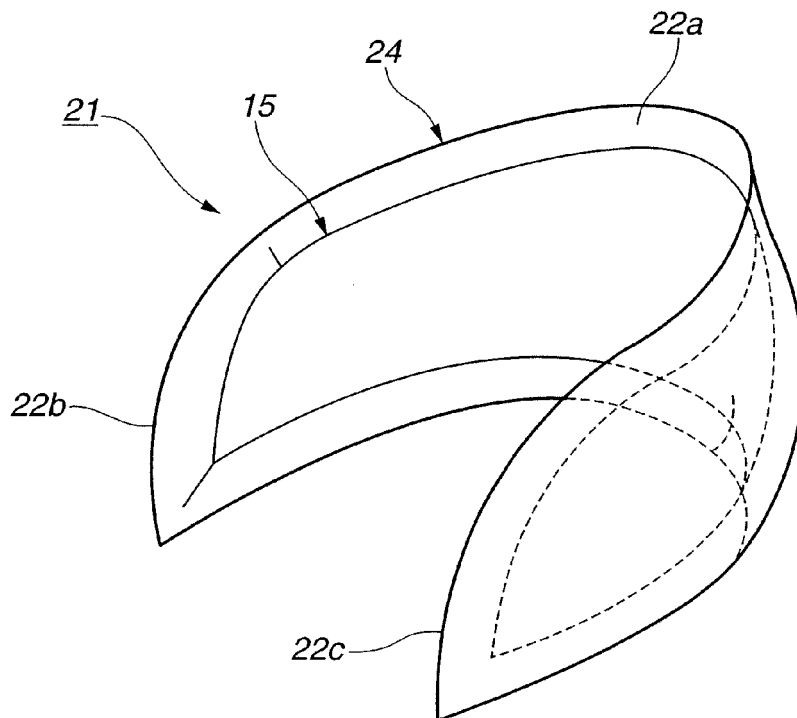
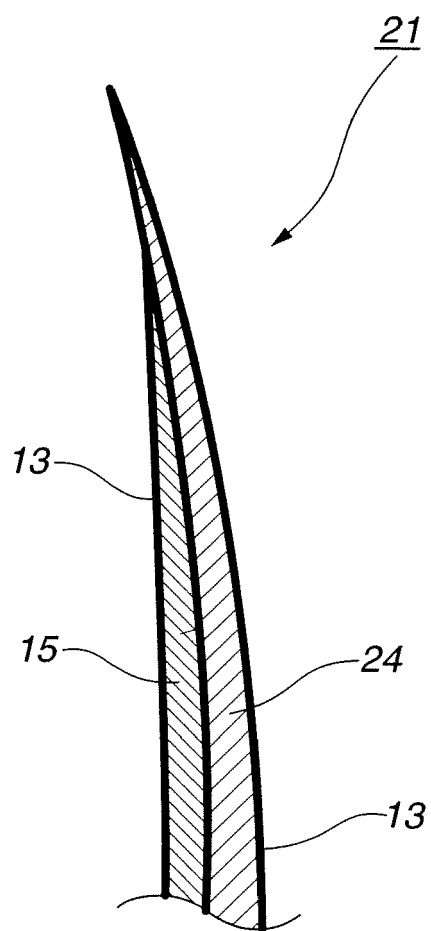


FIG.9



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 6077524 A [0002]
- JP 2010108918 A [0081]