

DESCRIPTION

Title of Invention

ADHESIVE PATCH

Technical Field

5 [0001] The present invention relates to an adhesive patch such as a poultice or a plaster, and in particular, to an adhesive patch which can be easily applied to the skin.

Background Art

10 [0002] An adhesive patch usually includes a support made of a woven fabric, a nonwoven fabric, a pressure-sensitive adhesive agent layer provided on one surface of the support, and a release sheet which is releasably attached to the pressure-sensitive adhesive agent layer. Further, a percutaneously absorbable drug and the like are contained in the pressure-sensitive adhesive agent forming the pressure-sensitive
15 adhesive agent layer.

[0003] With respect to such an adhesive patch, ease in applying to the skin has been always required. Therefore, conventionally, adhesive patches as described, for example, in the following Patent Literatures 1 to 5 have been proposed. In Patent Literature 1, both a method of
20 manufacturing an adhesive surface protective layer and a product in the form of an adhesive surface protective layer are described in detail, the latter including gripping tabs. According to Patent Literature 1, at least one strip of material is applied to the protective layer by means of an elongate join wherewith a weakening line is produced in each elongate
25 join.

[0004] The adhesive patches described in Patent Literatures 2 and 3 include a support having stretching properties and a release sheet releasably attached to a pressure-sensitive adhesive agent layer on the support, and a perforated line is formed in the central portion of the release sheet. At the time of using this adhesive patch, first, the adhesive patch is pulled to the right and left to rip the perforated line apart, to expose the pressure-sensitive adhesive agent layer. Then, the exposed portion is applied to the skin, and thereafter, the release sheet is removed.

[0005] Further, the adhesive patch described in Patent Literature 4 is an adhesive patch in which two release sheets are placed on a pressure-sensitive adhesive agent layer, and an inner end of one of the release sheets is folded, and an inner end of the other release sheet is superposed on the folded portion. In such an adhesive patch, because it is possible to pinch the folded portion or the end superposed thereon, it is possible to easily remove the release sheets from the pressure-sensitive adhesive agent layer, thereby easily applying to the skin.

[0006] Moreover, the adhesive patch described in Patent Literature 5 is an adhesive patch in which two release sheets are placed on a pressure-sensitive adhesive agent layer in a state in which the two release sheets are respectively folded so as to butt against each other with their folded lines. In this adhesive patch as well, in the same way as the adhesive patch described in Patent Literature 4, it is possible to pinch the folded portion to easily release the release sheets from the pressure-sensitive adhesive agent layer.

[0007] Further, the adhesive patch described in Patent Literature 6 is a wound dressing, that is a so-called adhesive plaster, which is different from an adhesive patch, and this is an adhesive patch which is designed for easily releasing of the release sheet. That is, this wound dressing is formed, in the same way as the adhesive patch described in Patent Literature 5, such that two release sheets are placed on a pressure-sensitive adhesive agent layer in a state in which the ends of the two release sheets butt against each other. Then, pull-tabs for pulling the release sheets to release the release sheets are adhered to the ends on the butting sides of the respective release sheets. In this wound dressing configured in this way as well, in the same way as the ones described in Patent Literatures 4 and 5, it is possible to pinch the pull-tabs to easily release the release sheets from the pressure-sensitive adhesive agent layer.

Citation List

Patent Literature

[0008] Patent Literature 1: PCT Patent Application Laid-Open No. WO 00/33776

Patent Literature 2: Japanese Patent Application Laid-Open No. Hei-8-112305

Patent Literature 3: Japanese Published Unexamined Utility Model Application No. Sho-50-133797

Patent Literature 4: Japanese Patent Application Laid-Open No.

2000-219622

Patent Literature 5: Japanese Patent Application Laid-Open No.
2009-131583

5 Patent Literature 6: Japanese Patent Application Laid-Open No.
Sho-59-149141

Summary of Invention

Technical Problem

10 [0009] The above-described conventional adhesive patches and wound
dressing are respectively improved in ease of application.

[0010] However, in the adhesive patches described in Patent Literatures
2 and 3, when the exposed portion of the pressure-sensitive adhesive
agent layer is applied to the skin after dividing the release sheet along
the perforated line, it may be difficult to release the release sheet in
15 some cases.

[0011] On the other hand, with respect to the adhesive patches
described in Patent Literatures 4 and 5 and the wound dressing
described in Patent Literature 6, there is the advantage that it is easy to
release the release sheets from the pressure-sensitive adhesive agent
20 layer because there are portions to be pinched. However, there is a
problem that medicinal properties in the pressure-sensitive adhesive
agent layer leak out of the superposed portion or the butting portion of
the two release sheets.

25 [0012] Further, with respect to the adhesive patch described in Patent
Literature 4, because the folded portion in the one of the release sheets
and the end of the other release sheet superposed thereon are directed in

the same direction, it is configured to be able to pinch the release sheet only from one side, which is inconvenient. Moreover, a special sheet folding device is required in order to fold the release sheets, which also brings about the problem of an increase in the cost of manufacturing the adhesive patch.

[0013] Also, with respect to the adhesive patch described in Patent Literature 5, a process of folding the release sheets during the manufacture thereof is necessary, and moreover, it is necessary to accurately butt the folding lines of the two release sheets in order to suppress leakage of the medicinal properties as low as possible, which makes it extremely difficult to manufacture the adhesive patch.

[0014] Further, with respect to the configuration described in Patent Literature 6, in the same way as the adhesive patch described in Patent Literature 5, it is necessary to accurately butt the release sheets and the pull-tabs. Further, even when the sheet material and the tab material are cut after the pull-tabs (tab material) before cutting are adhered to the release sheets (sheet material) before cutting, there is a problem that the portion with high strength at which both are adhered to one another is to be cut, and therefore, it is difficult to cut it.

[0015] Further, with respect to the wound dressing described in Patent Literature 6, because release sheets are separated with little resistance at the time of pulling the pull-tabs to release the release sheets, anti-releasing means for preventing releasing of the release sheets are provided at the edges of the wound dressing. Meanwhile, the manufacturing process increases one process or more by providing the anti-releasing means, which brings about the problem of requiring time

and cost for manufacture. Further, as the anti-releasing means, there is a folding type (refer to Fig. 5 in Patent Literature 6) or a clip type (refer to Fig. 6 in Patent Literature 6). However, with these types, projecting portions are formed on the surface of the wound dressing, which may hinder applying it to an affected area. Therefore, such projecting portions are unsuitable for a large-size wound dressing such as a poultice or a plaster.

[0016] Furthermore, with respect to the configurations described in Patent Literatures 5 to 6, because the two release sheets are not combined, both may have a position gap, or may be turned up, and the medicinal properties easily leak out in such a case, which leads to the problem in view of stability in drug formulation. Further, a position gap between the release sheets deforms the support at the time of pulling the folded portions or the pull-tabs, which may bring about a problem of wrinkling at the time of application. Such a harmful effect due to a position gap becomes apparent in particular in the configurations described in Patent Literatures 5 and 6 in which the ends are merely brought to butt against each other.

[0017] The present invention has been achieved in consideration of such circumstances, and an object of the present invention is to provide an adhesive patch, which is easily applied to the skin and its manufacture is also easy.

Solution to Problem

[0018] In order to achieve the above-described object, an adhesive patch according to the present invention includes a support, a pressure-sensitive adhesive agent layer provided on one surface of the

support, a release sheet which is releasably attached to the pressure-sensitive adhesive agent layer, and a weakened part which is formed in the release sheet, the weakened part being for easily dividing the release sheet into two parts, and further in the adhesive patch, a pinching piece forming sheet is fixed on the release sheet such that the pinching piece forming sheet covers the weakened part, and portions of the pinching piece forming sheet which are other than the at least one fixed portion function as pinching pieces, and in the pinching piece forming sheet, a weakened part for easily dividing the release sheet is formed at a position corresponding to the weakened parts of the release sheet.

[0019] In particular, the support preferably has stretching properties. This is because it is possible to divide the release sheet and the pinching piece forming sheet along the weakened parts by pulling the support.

[0020] In such an adhesive patch, pinching pieces are respectively formed in the divided respective release sheets by dividing the release sheet and the pinching piece forming sheet along the weakened parts. Therefore, it is possible for a user to easily release the release sheet from the pressure-sensitive adhesive agent layer by use of the pinching pieces, and further, the pieces may be utilized such as for positioning the adhesive patch.

[0021] Further, the release sheet is configured as one sheet before use, and therefore, the problems of leakage of medicinal properties and wrinkling of the adhesive patch due to a position gap in the release sheet as release sheets in the conventional configurations described in Patent Literatures 4 to 6 do not occur.

[0022] In addition, the two fixed portions between the release sheet and the pinching piece forming sheet may be formed so as to be spaced from the weakened parts on the right and left of the weakened parts, or the one fixed portion may be formed on the weakened parts.

5 [0023] Further, it is preferable to manufacture the adhesive patch according to the present invention by a method as follows. That is, a method including a first step of forming a pressure-sensitive adhesive agent layer on a support, a second step of fixing a pinching piece forming sheet on a release sheet, a third step of forming weakened parts
10 in the release sheet and the pinching piece forming sheet, and a fourth step of releasably adhering the release sheet on which the pinching piece forming sheet is fixed that has been obtained in the third step, to the pressure-sensitive adhesive agent layer on the support that has been obtained in the first step.

15 [0024] In the adhesive patch according to the present invention, there is no member for which folding processing is necessary. Therefore, in the manufacturing method as well, a special folding device is not necessary, and its manufacture is easy.

[0025] In addition, as a place in which the weakened parts are formed,
20 in the case where there is one fixed portion, the weakened parts may be on the fixed portion. However, in the case where fixed portions are provided at two places, the weakened parts are preferably formed between the two fixed portions. This is because the stiffness or the strength of the fixed portion is higher than that of the place other than
25 the fixed portion, which makes it possible to easily form the weakened parts between the two fixed portions.

[0026] Further, in the case where the release sheet and the pinching piece forming sheet are fixed by heat-sealing, the release sheet and/or the pinching piece forming sheet is possibly shrunk. However, in the case where the fixed portion is narrower, it is possible to suppress such shrinkage. Based on this standpoint, it is extremely effective to form fixed portions at two places, which decreases the widths of the fixed portions.

Advantageous Effects of Invention

[0027] In accordance with the present invention, because the pinching pieces are formed, work for application of the adhesive patch is easy.

[0028] Further, because the pinching pieces are respectively formed on both sides of the weakened parts which is the dividing place, it is easy to pinch both pinching pieces, and it is possible to simultaneously use both pinching pieces, which is convenient for a user.

[0029] Further, because the release sheet is formed of one sheet, it is possible to significantly suppress or completely prevent leakage of the medicinal properties in the pressure-sensitive adhesive agent layer via the release sheet as compared with an adhesive patch of a type in which its pressure-sensitive adhesive agent layer is covered with two sheets.

[0030] Moreover, because there is no need to fold the release sheet, and additional anti-releasing means as described in Patent Literature 6 as well is not necessary, its manufacture is easy, which makes it possible to suppress an increase in the cost of manufacturing.

Brief Description of Drawings

[0031] Fig. 1 is a perspective view schematically showing an embodiment of an adhesive patch according to the present invention.

Fig. 2 is a plan view showing the adhesive patch of Fig. 1.

Fig. 3 is a side view showing the adhesive patch of Fig. 1.

Fig. 4 is a cross-sectional view schematically showing a pinching piece forming sheet of a two-layered structure.

5 Fig. 5 is a partial cross-sectional view of the adhesive patch showing a modified example of a weakened part.

Fig. 6 is an explanatory diagram showing a basic method for manufacturing the adhesive patch according to the present invention.

10 Fig. 7 is an explanatory diagram showing a method for manufacturing in the case where the adhesive patch according to the present invention is continuously manufactured.

Figs. 8 are explanatory diagrams showing a procedure for applying the adhesive patch.

15 Fig. 9 is a plan view showing a modified embodiment of an adhesive patch according to the present invention.

Fig. 10 is a side view showing the adhesive patch of Fig. 9 that is a diagram showing an example of a mode of use after dividing a release sheet and a pinching piece forming sheet.

20 Fig. 11 is a plan view showing another modified embodiment of the adhesive patch according to the present invention.

Fig. 12 is a plan view showing yet another modified embodiment of the adhesive patch according to the present invention.

Fig. 13 is a plan view showing yet another modified embodiment of the adhesive patch according to the present invention.

25 Figs. 14(a) to 14(g) are respectively plan views showing various modified embodiments of the adhesive patches according to the present

invention.

Description of Embodiments

[0032] Hereinafter, preferred embodiments of the present invention will be described in detail with reference to the drawings.

5 [0033] Fig. 1 is a perspective view showing an embodiment of an adhesive patch according to the present invention, Fig. 2 is a plan view thereof, and Fig. 3 is a side view thereof. As shown in the drawing, an adhesive patch 10 according to the present embodiment is used as a poultice, or a plaster, and is composed of a support 12 having stretching
10 properties, a pressure-sensitive adhesive agent layer 14 containing a drug, which is formed on substantially the entire surface of one surface of the support 12, a release sheet 16 which is releasably attached to the surface of the pressure-sensitive adhesive agent layer 14, and a pinching piece forming sheet 18 fixed to the release sheet 16.

15 [0034] The pinching piece forming sheet 18 is not fixed to the release sheet 16 with its entire surface, and both right and left edge portions are in a state of being non-fixed to the release sheet 16.

[0035] Moreover, weakened parts 20 such as perforated lines for easily dividing the release sheet 16 and the pinching piece forming sheet 18
20 are formed from one long side to the other long side of the adhesive patch 10 in substantially the central portion of the release sheet 16 and the pinching piece forming sheet 18 (which is substantially the central portion in the longitudinal direction of the adhesive patch 10, hereinafter a case of referring “substantially the central portion” is the
25 same).

[0036] Hereinafter, respective components will be described.

[0037] With respect to the support 12, an appropriate sheet-like member such as a woven fabric, a knit fabric, a nonwoven fabric, a nonwoven paper, or a film may be used as long as it has stretching properties, and the support 12 is selected in consideration of the physical properties such as its thickness, stretch, tensile strength, and workability for application, and the feeling of application, the occluding characteristic for skin, the transition of medicinal properties to the support 12. In addition, the stretching properties of the support 12 are preferably 50% in a lengthwise or machine feeding direction and/or a crosswise or transverse direction, and its modulus is preferably 0.5 to 10N/50 mm.

[0038] As a specific material of the support 12, bast fiber such as paper, cotton, hemp, or jute, cellulose fiber such as veins of a leaf fiber of Manila hemp, animal fiber such as sheep wool, natural fiber such as protein fiber of silk fiber or feather fiber, regenerated cellulose fiber such as rayon or cuprammonium, regenerated fiber such as regenerated protein fiber, semisynthetic fiber such as cellulose acetate fiber or promix, nylon/aramid fiber, polyethylene terephthalate fiber, polyester fiber, acrylic fiber, polyolefine fiber such as polyethylene or polypropylene, polyvinyl alcohol fiber, polyvinyl chloride fiber, polyvinylidene chloride fiber, polyvinyl chloride-based fiber, polyurethane fiber, polyoxymethylene fiber, polytetrafluoroethylene fiber, poly-para-phenylenebenzobisthiazole (PBT) fiber, or polyimide fiber may be utilized. In particular, a nonwoven fabric formed of polyester-based polyethylene terephthalate fiber which has little interaction with the ingredient contained in the pressure-sensitive

adhesive agent layer 14 is preferable.

[0039] The pressure-sensitive adhesive agent layer 14 is for effectively utilizing the adhesive patch 10 such as a poultice or a plaster by containing or attaching a drug in or to an adhesive base. In the case where the adhesive patch 10 is used as a poultice, the pressure-sensitive adhesive agent layer 14 preferably satisfies the conditions that the pressure-sensitive adhesive agent layer 14 has high skin adhesion, enhances the absorption of active ingredients through skin, contains as much moisture as practicable as possible, draws heat from the skin when the moisture in the pressure-sensitive adhesive agent layer 14 vaporizes, but gives a sensation of coolness due to this amount of heat generation, and the horny layer is hydrated by water molecules vaporizing from the inside, to accelerate the absorption of the drug, and the pressure-sensitive adhesive agent layer 14 does not go slack at normal temperature or around normal temperature, does not hurt and does not leave the skin sticky when releasing it, and is gumless. For this reason, a water-soluble polymer is preferably used for the pressure-sensitive adhesive agent layer 14, which contains a thickening agent of 5 to 20% by weight, and preferably of 10 to 15% by weight, a wetting agent of 5 to 40% by weight, a filler of 20% or less by weight, water of 10 to 80% by weight, a solubilizing agent of 0 to 8% by weight, a drug of 5% or less by weight, and preferably of 0.1 to 5% by weight.

[0040] As the aforementioned water-soluble polymer, gelatin, agar, alginic acid, mannan, carboxymethylcellulose or salt thereof, hydroxypropylcellulose or salt thereof, polyvinyl alcohol, polyacrylic

acid or salt thereof, or one in which at least one of those is cross-linked by an organic or an inorganic cross-linking agent is preferably used.

[0041] In addition to the above-described adhesive base, a thickening agent, or a wetting agent may be appropriately added to the pressure-sensitive adhesive agent layer 14.

[0042] For example, as a thickening agent, it is desirable to stably retain moisture of 10% to 80%, and desirable to have water retention capability. As a specific example of the thickening agent, water-soluble polymers of natural polymers such as plant polymers of guar gum, locust bean gum, carrageenan, alginic acid, alginic acid sodium salt, agar, gum arabic, tragacanth gum, karaya gum, pectin, starch, and gum acacia, microbial polymers of xanthan gum, and animal polymers of gelatin, collagen, semisynthetic polymers such as cellulose polymers of methylcellulose, ethylcellulose, hydroxyethyl cellulose, and carboxymethylcellulose sodium, starch-derived polymers of amylogen, carboxymethyl starch, dialdehyde starch, synthetic polymers such as vinyl polymers of polyvinyl alcohol, polyvinylpyrrolidone, and poly(vinyl methacrylate), acrylic-type polymers of polyacrylic acid or sodium polyacrylate, and further, of polyethylene oxide, or a methyl vinyl ether/maleic anhydride copolymer, may be preferably used. In particular, sodium polyacrylate is preferable. This is because it has high gel strength, and is excellent in water retention capability. Moreover, sodium polyacrylate with an average degree of polymerization of 20000 to 70000 is preferable. As the average degree of polymerization decreases to be lower than 20000, there is a tendency that the thickening effect weakens, which makes it impossible to obtain

a sufficient gel strength, and as the average degree of polymerization increases to be higher than 70000, there is a tendency that the thickening effect strengthens, which reduces the workability. Further, by using in combination two types or more of the water-soluble polymers, for example, a polymer complex is formed with the strong ion polymer of sodium polyacrylate, thereby it is possible to obtain an elastic gel with stronger gel strength.

[0043] As a wetting agent, polyhydric alcohol such as glycerin, propylene glycol, or sorbitol may be added, and as a filler, kaolin, talc, titanium, bentonite, aluminum silicate, titanium oxide, zinc oxide, aluminum metasilicate, calcium sulfate, or calcium phosphate may be added. Further, as a solubilizing agent or an absorption promoter, propylene carbonate, crotamiton, l-menthol, mint oil, limonene, or diisopropyl adipate may be added. As a medicinal adjuvant agent, methyl salicylate, glycol salicylate, l-menthol, thymol, mint oil, nonyllic acid vanillylamide, or capsicum extract may be added.

[0044] Moreover, a stabilization agent, an antioxidant agent, or an emulsifying agent may be added as needed. In addition, a cross-linking agent, or polymerization agent may be added as needed.

Those capable of consolidating the pressure-sensitive adhesive agent layer 14, and providing the water retention capability thereto may be added. These cross-linking agent and polymerization agent are appropriately selected according to a type of the thickening agent. For example, in the case where polyacrylic acid or polyacrylate is applied to the thickening agent, a compound having at least two epoxy groups in its molecule, inorganic acid salt such as hydrochloride salt of Ca, Mg, or

Al, sulfate salt, phosphoric salt or carbonate, organic acid salt such as citric salt, tartrate, gluconate or stearate, oxide such as zinc oxide or silicic anhydride, and a polyvalent metal compound of hydroxide such as aluminum hydroxide or magnesium hydroxide is preferably used.

5 Further, in the case where polyvinyl alcohol is applied to the thickening agent, a complex compound such as adipic acid, thioglycollic acid, an epoxy compound (epichlorohydrin), aldehydes, an N-methylol compound, a complex compound of Al, Ti, Zr, Sn, V, Cu, B, or Cr, is preferably used. Further, in the case where polyvinyl pyrrolidone is

10 applied to the thickening agent, a methyl vinyl ether/maleic anhydride copolymer, a polyacid compound, or alkali metal salt thereof (polyacrylic acid or tannic acid, and a derivative thereof) is preferably used. Further, in the case where polyethylene oxide is applied to the thickening agent, peroxide, or polysulfone azide is preferably used.

15 Further, in the case where a methyl vinyl ether/maleic anhydride copolymer is applied to the thickening agent, a multifunctional hydroxy compound, polyamine, iodine, gelatin, polyvinyl pyrrolidone, iron, hydrargyrum, or lead salt is preferably used. Further, in the case where gelatin is applied to the thickening agent, aldehydes such as

20 formaldehyde, glutaraldehyde, and dialdehyde starch, diepoxides such as glyoxal or butadiene oxide, diketones such as divinyl ketone, or diisocyanates is preferably used. Further, in the case where sodium polyacrylate is applied to the thickening agent, as a cross-linking agent, lithium hydroxide, multivalent metal salt such as zinc hydroxide,

25 aluminum hydroxide or sodium borate is preferably added. In particular, zinc salt and aluminum salt is preferable. A concentration

of multivalent metal salt to be added as a cross-linking agent is preferably 0.5 to 1.5 equivalents with respect to one equivalent of a thickening agent (or water-soluble polymer). As the concentration of multivalent metal salt decreases to be lower than 0.5 equivalents, there is a tendency that the reaction is too slow, to reduce the gel strength, and as the concentration of multivalent metal salt increases to be higher than 1.5 equivalents, there is a tendency that the reaction is too fast, to be not uniform in gelatinization, and reduce the workability.

[0045] On the other hand, in a case of a plaster, as an adhesive base, rubber-based adhesive ingredients, acrylic-based adhesive ingredients, or silicone-based adhesive ingredients are preferably used.

[0046] As rubber-based adhesive ingredients, both of natural rubber and synthetic rubber may be used, and as synthetic rubber, for example, a styrenic block copolymer or polyisobutylene may be cited. Moreover, as a styrenic block copolymer, a styrene-butylene-styrene block copolymer (SBS), a styrene-isoprene-styrene block copolymer (SIS), a styrene-ethylene/butylene-styrene block copolymer (SEBS), or a styrene-ethylene/propylene-styrene block copolymer (SEPS) may be cited. As a specific example of a styrenic block copolymer, a linear triblock copolymer such as KRATON D-1112, D-1111, and D-1107 (trade names, manufactured by Kraton Polymers Japan Ltd.), JSR5000 or JSR5002 (trade names, manufactured by JSR Corporation), Quintac 3530, 3421, or 3570C (trade names, manufactured by ZEON CORPORATION), KRATON D-KX401CS or D-1107CU (trade names, manufactured by Kraton Polymers Japan Ltd.), or a star-branched block copolymer, such as KRATON D-1124 (trade name, manufactured by

Kraton Polymers Japan Ltd.), or SOLPRENE 418 (trade name, manufactured by Phillips Petroleum Co.) may be cited.

[0047] As polyisobutylene, for example, macromolecular to low molecular polyisobutylene is used. For example, Oppanol B10, B12, B12SF, B15, B15SF, B30SF, B50, B50SF, B80, B100, B120, B150, or B200 (trade names, manufactured by BASF Japan Ltd.), Vistanex LM-MS, LM-MH, LM-H, MM L-80, MM L-100, MM L-120, or MM L-150 (trade names, manufactured by Exxon Mobil Corporation) may be cited.

[0048] Further, as an acrylic-type polymer, a polymer or a copolymer, which contains at least one (metha)acrylic acid ester which is represented by as a monomer unit, for example, 2-ethylhexyl acrylate, methyl acrylate, butyl acrylate, hydroxyethyl acrylate, or 2-ethylhexyl methacrylate is used. For example, a pressure-sensitive adhesive agent of an acrylic acid/octyl acrylate copolymer, a 2-ethylhexyl acrylate/N-vinyl-2-pyrrolidone/dimethacrylate-1,6-hexane glycol dimethacrylate copolymer, a 2-ethylhexyl acrylate/vinyl acetate copolymer, a 2-ethylhexyl acrylate/vinyl acetate/acrylic acid copolymer, a 2-ethylhexyl acrylate/2-ethylhexyl methacrylate /dodecyl methacrylate copolymer, a methyl acrylate-2-ethylhexyl acrylate copolymer resin emulsion, an acrylic-type polymer contained in acrylic resin alkanolamine solution, or the Duro-Tak acrylic pressure-sensitive adhesive agent series (manufactured by National Starch and Chemical Company), the GELVA acrylic pressure-sensitive adhesive agent series (manufactured by Monsanto Company), the SK-Dyne Matriderm (manufactured by Soken Chemical & Engineering Co., Ltd.), or the

Eudragit series (manufactured by HIGUCHI INC.) may be used.

[0049] The above-described rubber-based, acrylic-based, or silicone-based adhesive base may be singularly used or two of those may be mixed to be used.

5 [0050] Further, in a case of a plaster, tackifier resin, a plasticizing agent, a filler, and a stabilization agent may be appropriately compounded therein.

[0051] For example, an anti-inflammatory agent, an analgesic drug, an antihistamine, a local anesthetic, a blood circulation promoter, an
10 anesthetic, an ataractic drug, an antihypertensive agent, an antibacterial agent, or a vasodilator, may be cited.

[0052] In detail, as a drug, at least one nonsteroidal anti-inflammatory agent, which is selected from methyl salicylate, glycol salicylate, l-menthol, capsicum extract, nonylic acid vanillylamide, mint oil,
15 diclofenac, ibuprofen, indometacin, ketoprofen, loxoprofen, sulindac, tolmetin, lobenzarit, penicillamine, fenbufen, flurbiprofen, naproxen, pranoprofen, tiaprofenic acid, suprofen, felbinac, ketorolac, oxaprozin, etodolac, zaltoprofen, piroxicam, pentazocine, buprenorphine hydrochloride, and butorphanol tartrate, and an ester derivative or salt thereof, or a steroid anti-inflammatory agent such as prednisolone,
20 dexamethasone, hydrocortisone, betamethasone, fluocinonide, fluocinolone acetonide, prednisolone valerate acetate, dexamethasone dipropionate, diflucortolone valerate, difluprednate, betamethasone valerate, hydrocortisone butyrate, clobetasone butyrate, betamethasone butyrate, propionic acid clobetasone, succinic acid dexamethasone,
25 prednisolone 21-(2E, 6E) farnesylate, hydrocortisone valerate,

diflorasone diacetate, propionic acid dexamethasone, betamethasone dipropionate, amcinonide, dexamethasone valerate, halcinonide, budesonide, or alclometasone dipropionate may be cited. Two or more drugs may be used together as needed. Further, these drugs may be contained in or attached to the pressure-sensitive adhesive agent layer 14 in the form of a compound which is induced into an ester body, a compound which is induced into an amide body, a compound which is induced into an acetal body, or inorganic salt or organic salt which is medically allowed as needed. An amount of the drug is appropriately selected according to a type and usage of the adhesive patch 10 such as a poultice or a plaster so as to apply an effective amount set in advance to the skin at the time of applying it to a patient.

[0053] As the release sheet 16, in addition to polypropylene, for example, casted polypropylene or oriented polypropylene, a colorless or colored sheet such as plastic film of polyethylene terephthalate, polybutylene terephthalate, polyethylene, polyester, polyurethane, polyvinyl chloride, or polystyrene silicone-treated paper that silicone processing is applied to synthetic resin, a synthetic paper, or synthetic fiber, laminated-treated paper that an aluminum foil or a craft paper is laminated with polyethylene, is used.

[0054] The thickness of the release sheet 16 is preferably formed within a range of 10 μm to 75 μm , and preferably 12 μm to 50 μm . When the thickness of the release sheet 16 is thinner than 10 μm , the release sheet 16 is too thin, and therefore, the release sheet 16 tends to tangle on the pressure-sensitive adhesive agent layer 14 at the time of releasing it, or the release sheet 16 tends to be immediately divided at the time of

manufacture, which reduces the workability, or the release sheet 16 tends to easily wrinkle in the case where the release sheet 16 is adhered to the pressure-sensitive adhesive agent layer 14. Further, although it will be described in detail in the following, in use of the adhesive patch
5 10 according to the present invention, the release sheet 16 and the pinching piece forming sheet 18 are divided along the weakened parts 20 by pulling to the right and left. Meanwhile, when the thickness of the release sheet 16 is thicker than $75\ \mu\text{m}$, it is difficult to divide the release sheet 16 and the pinching piece forming sheet 18, and it is
10 difficult to cut the original material web at the time of manufacture, which starts showing a tendency to reduce the workability.

[0055] Moreover, although not shown in the drawings, it is preferable to add concavity and convexity to the release sheet 16 by embossing. Further, in order to make the method of division clear, indicated parts of
15 graphics such as arrows or letters, marks, may be provided or coloring, may be applied on the right and left portions of the release sheet 16. The indicated parts may be formed by embossing.

[0056] In the case where the release sheet 16 is embossed, the following function effects are exerted. That is, by forming concavity
20 and convexity on the surface of the release sheet 16 by embossing, the concavity and convexity may increase the frictional resistance with fingers or the pressure-sensitive adhesive agent layer 14. Therefore, the effect that the concavity and convexity on the release sheet 16 serve as friction to easily get stuck by fingers at the time of dividing the
25 release sheet 16 and the pinching piece forming sheet 18, is exerted. Further, because the frictional resistance between the release sheet 16

and the pressure-sensitive adhesive agent layer 14 increases, at the time of pulling the adhesive patch 10 to the right and left, the force reliably reaches the release sheet 16, which makes it easy to divide the release sheet 16. Moreover, because the thickness of the release sheet 16 varies depending on positions due to the concavity and convexity by embossing, the ends of the release sheet 16 along the dividing line tend to naturally detach from the pressure-sensitive adhesive agent layer 14 after dividing the release sheet 16, and this also makes it easy to release the release sheet 16.

[0057] In addition, due to such a detaching phenomenon of the ends of the release sheet 16, the exposed portions of the support 12 may be curved or the pressure-sensitive adhesive agent layer 14 corresponding to the portions may be adhered to one another. However, because the pinching piece forming sheet 18 (pinching pieces 18a and 18b) is fixed along the weakened part 20 of the release sheet 16, it is possible to prevent the ends of the release sheet 16 from detaching inadvertently from the pressure-sensitive adhesive agent layer 14.

[0058] The pinching piece forming sheet 18 is rectangular in shape in the illustrated embodiment, and a length of its long side D1 is substantially the same as the length of a short side D2 of the adhesive patch 10, and the length of a short side D3 is shorter than the length of a long side D4 of the adhesive patch 10. The pinching piece forming sheet 18 formed in this way is arranged such that the long sides of the pinching piece forming sheet 18 are parallel to the short sides of the release sheet 16 in substantially the central portion of the release sheet 16. The pinching piece forming sheet 18 is fixed to the release sheet

16 so as to be substantially unable to be separated at a position at predetermined spaces x (for example, 0.5 to 25 mm) on the right and left both sides from the longitudinally central axis (the position of the weakened part 20). Each of the right and left fixed portions 22 of the pinching piece forming sheet 18 and the release sheet 16 preferably extends over the entire length of the pinching piece forming sheet 18. Further, the pinching piece forming sheet 18 is not fixed to the release sheet 16 with respect to the portions on the outer side of the respective fixed portions 22 (in the directions departing away from the longitudinally central axis of the pinching piece forming sheet 18), and those non-fixed portions are to function as the pinching pieces 18a and 18b which will be described later. Because those pinching pieces 18a and 18b are to be pinched by fingers, they are appropriately determined as long as its size is able to be pinched by fingers. However, a width y of each of the pinching pieces 18a and 18b is preferably approximately 2 to 4 cm. This is because, when the width y is shorter than 2 cm, it is difficult to pinch the pinching pieces by fingers, and when the width y is longer than 4 cm, the pinching pieces 18a and 18b are too large to handle, and its material cost is increased.

[0059] A width z of the fixed portions 22 of the pinching piece forming sheet 18 and the release sheet 16 may be appropriately determined as long as a minimum size in which fixing of both sheets 16 and 18 is unable to be separated is ensured. Meanwhile, in order to effectively transfer the force from the pinching piece forming sheet 18 to the release sheet 16 at the time of dividing the sheet which will be described later, it is effective to have a constant width. For example, the width z

is preferably approximately 0.1 to 10 mm.

[0060] In addition, in a case of the adhesive patch 10 with the length of the short side D2 of 150 mm, and the length of the long side D4 of 200 mm, a sheet with the length of the long side D1 of 150 mm, and the length of the short side D3 of 70 mm is preferably used as the pinching piece forming sheet 18, and a sheet in which the spaces x from the longitudinally central axis of the pinching piece forming sheet 18 (the position of the weakened part 20) to the fixed portions 22 are set to 2.5 mm, and the widths z of the fixed portions 22 are set to 1.0 mm, and therefore, widths y of the pinching pieces 18a and 18b are set to 31.5 mm is preferably used.

[0061] As means for fixing the pinching piece forming sheet 18 and the release sheet 16, any means may be used as long as it is possible to fix both sheets 16 and 18 so as to be substantially unable to be separated. Meanwhile, a method using an adhesive, or a heat-sealing method is preferable. In particular, in a case of a heat-sealing method, it is preferable for the reason that it is possible to significantly shorten a fixing time, as compared with a case of using an adhesive.

[0062] Further, the fixed portions 22 are in the form of continuous lines in the drawing. However, the fixed portions 22 may be in the form of discontinuous lines such as dotted lines.

[0063] Moreover, as a material of the pinching piece forming sheet 18, a material which is the same as that of the release sheet 16 described above may be used. However, in particular, in consideration of the function as pinching pieces, polyethylene terephthalate, which is unable to be easily ripped, is effective. However, in the case where the release

sheet 16 has a single layer structure of polyethylene terephthalate, and at least the surface layer of the release sheet 16 is made of polypropylene and concavity and convexity is formed thereon by for example embossing, it may be difficult to heat-seal both in some cases. In that case, an adhesive may be used. However, in order to carry out heat-sealing, the pinching piece forming sheet 18 may be formed into a two-layered structure as schematically shown in Fig. 4. That is, by laminating polypropylene on the bottom surface of the base layer of polyethylene terephthalate (the surface on the side of the release sheet 16), it is possible to easily carry out heat-sealing with respect to the release sheet 16 of polypropylene having concavity and convexity as well.

[0064] In addition, the thickness of the pinching piece forming sheet 18 may be appropriately determined. However, in consideration of the strength as pinching pieces, the feeling at the time of pinching it, the thickness is preferably approximately 10 to 100 μm . Further, in the case of a two-layered structure of polyethylene terephthalate and casted polypropylene, the polyethylene terephthalate layer is 5 to 40 μm , and the casted polypropylene layer is approximately 10 to 60 μm . In the case where an oriented polypropylene layer is used in place of the casted polypropylene layer, the thickness of the oriented polypropylene layer is preferably approximately 10 to 60 μm .

[0065] Further, by coloring the pinching piece forming sheet 18 or the portions to be the pinching pieces 18a and 18b with a color different from that of the release sheet 16, it is possible to easily distinguish the pinching pieces 18a and 18b from the release sheet.

[0066] The weakened parts 20 formed in substantially the central portion of the release sheet 16 and the pinching piece forming sheet 18 are for easily dividing both sheets 16 and 18, and is formed over the entire length of the pinching piece forming sheet 18. In the present embodiment, as clearly shown in Fig. 2, the weakened part 20 is a so-called perforated line in which perforations 20a penetrating through the release sheet 16 and the pinching piece forming sheet 18 are continuously formed. The configuration of the perforated line may be appropriately determined. However, a ratio of lengths between the perforation 20a and a connecting region 20b between the perforations 20a is preferably "20a" : "20b" = 1 to 1500:1 to 25, and is more preferably "20a" : "20b" = 1 to 1000:1 to 20, and is furthermore preferably "20a" : "20b" = 100 to 1000:1 to 10. When the length of the perforation 20a is longer than the length of the connecting region 20b out of the above-described range, the sheets may be divided even when not in use, and the medicinal properties vaporize to reduce its medicinal effect, that starts showing a tendency to decrease the convenience and workability. In addition, it is possible to prevent or suppress evaporation of the medicinal properties and moisture from the perforations 20a by tensioning the release sheet 16 to close the perforations 20a. On the other hand, when the length of the perforation 20a is shorter than the length of the connecting region 20b out of the above-described range, there is a tendency that it is difficult to divide the release sheet 16, to decrease the reliability and convenience. Further, the length of the connecting region 20b as well may be appropriately determined. However, the length of the connecting

region 20b is preferably within a range of 0.03 to 10 mm. When the connecting region 20b gets too long, it is difficult to divide the sheet. On the other hand, when the connecting region 20b is short, it is easy to divide the sheet. However, when the connecting region 20b is too short, the sheet is easily torn even when not in use.

[0067] In addition, because the weakened parts 20 are for easily dividing the release sheet 16 and the pinching piece forming sheet 18, a groove as shown in Fig. 5 may be formed in place of the perforated line. This groove penetrates through the pinching piece forming sheet 18 to extend part of the way of the release sheet 16 that is a so-called half-cut. Therefore, the weakened part 20 made by a groove in this way has the advantage that there is no problem of leakage of medicinal properties as that in the perforated line. In addition, as the weakened parts 20, as one in which the release sheet 16 and the pinching piece forming sheet 18 are locally heated by for example, a laser, to make the portion be easily divided, thinning of the films may be variously conceived of.

[0068] In consideration of division of the release sheet 16 and the pinching piece forming sheet 18 along the weakened parts 20, the tensile strength of the release sheet 16 is within a range of 1g/cm to 200g/cm, and preferably within a range of 1g/cm to 100g/cm. This range is based on the fact that the material of the pinching piece forming sheet 18 fixed to the release sheet 16 is preferably polyethylene terephthalate, which has stiffness higher than that of the release sheet 16. That is, even when the tensile strength of the release sheet 16 having the weakened part 20 is low at approximately 1g/cm, because the pinching piece forming sheet 18 is fixed to the release sheet 16,

moderate dividing property is provided. On the other hand, as the tensile strength of the release sheet 16 is decreased to be less than 1g/cm, the release sheet 16 is cut off in the process at the time of manufacture, and it is impossible to continuously adhere the release sheet 16 to the pressure-sensitive adhesive agent layer 14. Further, in the case where the adhesive patch 10 such as a poultice or a plaster is put in a packing bag, the release sheet 16 easily shows a tendency to be easily divided, which decreases a yield ratio. In contrast, as the tensile strength is increased to be greater than 200g/cm, the release sheet 16 shows a tendency to be difficult to divide in use, which reduces the convenience.

[0069] As a method for manufacturing the adhesive patch 10 configured as described above, basically, a method shown in Fig. 6 is adopted. That is, first, the support 12 on which the pressure-sensitive adhesive agent layer 14 is spread and adhered to one surface is prepared. Further, the pinching piece forming sheet 18 is fixed to the release sheet 16, and thereafter, the weakened parts 20 such as perforated lines are formed. Then, the release sheet 16 having the pinching piece forming sheet 18 is adhered to the pressure-sensitive adhesive agent layer 14 on the support 12.

[0070] Of course, in the case where the adhesive patch 10 is continuously manufactured, the manufacture process is as shown in Fig. 7. As is clear from this drawing, a first continuous web 12A which will be the support 12 is unwound from a first rolled original material, and a pressure-sensitive adhesive agent is spread and adhered thereon by a spreading and adhering device 24 to form the pressure-sensitive

adhesive agent layer 14. At the same time, or as another process, a second continuous web 16A which will be the release sheet 16 is unwound from a second rolled original material, and a third continuous web 18A which will be the pinching piece forming sheet 18 is unwound from a third rolled original material, and the third continuous web 18A is superposed on the second continuous web 16A to fix both by heat-sealing with a fixing device 26. Subsequently, this two-layered continuous web 16A and 18A is fed to a weakened part forming device 28, to form the weakened parts 20 such as perforated lines therein. Then, the continuous web 16A and 18A in which the weakened parts 20 are formed is superposed on the pressure-sensitive adhesive agent layer 14 of the first continuous web 12A, to be thereafter transmitted to a cutting device 30, and this is cut out in predetermined size and timing, to complete the desired adhesive patch 10. In such a manufacturing process, because folding processing is not necessary for the continuous webs 16A and 18A which will be the release sheet 16 and the pinching piece forming sheet 18, and it is possible to continuously carry out fixing of the second continuous web 16A and the third continuous web 18A and formation of the weakened parts 20 along the sheet feeding direction, and therefore, it is possible to efficiently carry out the manufacture.

[0071] Next, the usage of the adhesive patch 10 as described above will be described.

[0072] First, as shown in Fig. 8(a), both ends of the adhesive patch 10 are pinched to pull the release sheet 16 together with the support 12 to the right and left, to divide the release sheet 16 and the pinching piece

forming sheet 18 to the right and left along the weakened parts 20. At this time, in the case where concavity and convexity is formed on the release sheet 16 by embossing, the release sheet 16 serves as a slip stopper, which makes it easy to pull the adhesive patch 10.

5 [0073] Further, the fixed portions 22 include both thicknesses of the release sheet 16 and the pinching piece forming sheet 18, and the strength or the stiffness thereof is increased according to the thicknesses. Therefore, when both ends of the adhesive patch 10 are
10 pinched to pull to the right and left, the tensile force disperses over the entire fixed portions 22. As a result, when the weakened parts 20 start breaking partially, the breakage spreads over the entire weakened parts 20 in a moment, which makes it possible to instantly divide both sheets 16 and 18.

15 [0074] In particular, in the case where the weakened part 20 is a perforated line, and the release sheet 16 and the pinching piece forming sheet 18 are formed of preferable materials and their thicknesses are within the preferable ranges described above, it is possible to provide a unique cutting feeling to the user because the connecting regions 20b
20 between the perforations 20a of the perforated line are cut instantly. Further, this cutting feeling includes, not only the feeling that it is possible for a user to confirm that the release sheet 16 and the pinching piece forming sheet 18 are split into two, but also the feeling that the support 12 stretches following the instant cutting. Therefore, in the
25 case where there is no feeling of division, but there is the feeling of stretching in a moment of pulling it, there is a possibility that the release sheet 16 of the adhesive patch 10 has been already split. That is, it is

possible to offer the feeling of security to the user that the pressure-sensitive adhesive agent layer 14 of the adhesive patch 10 is protected before use, which means greater availability for the user.

[0075] In addition, in the aspect shown in Fig. 2, because the weakened parts 20 are on the non-fixed portion of the release sheet 16 and the pinching piece forming sheet 18, the weakened parts 20 are free of the influence of the fixed portions 22, i.e., heat-sealing, or the adhesive. Therefore, it is possible to divide the release sheet 16 and the pinching piece forming sheet 18 while controlling cutting of the weakened parts 20.

[0076] Further, even after the release sheet 16 and the pinching piece forming sheet 18 are divided, the fixed portions 22 between both sheets 16 and 18 are not separated to maintain the fixed state. Therefore, although the shape gets some curvature, it is possible to maintain substantially the linear state or planar state. Due to such shape stability, it is possible to maintain the shape of the support 12 adhered to the fixed portions 22, which makes it possible to prevent the support 12 from wrinkling.

[0077] When the release sheet 16 and the pinching piece forming sheet 18 are divided, the pressure-sensitive adhesive agent layer 14 on the support 12 is exposed. Next, as shown in Fig. 8(b), the exposed pressure-sensitive adhesive agent layer 14 is put on the skin. Although the exposed portion of the pressure-sensitive adhesive agent layer 14 is small, the adhesive patch 10 can be provided with a temporary holding effect on the skin S. When the pinching piece forming sheet 18 is divided, the pinching pieces 18a and 18b are formed with respect to the

respective release sheets 16. Therefore, by pinching and pulling the pinching pieces 18a and 18b after temporary holding of the adhesive patch 10, it is possible to apply the pressure-sensitive adhesive agent layer 14 to the skin S while releasing the divided release sheets 16 from the pressure-sensitive adhesive agent layer 14 on the support 12.

[0078] Because the free ends of the pinching pieces 18a and 18b are close to the exposed portion of the pressure-sensitive adhesive agent layer 14, and the portion at which the release sheet 16 and the pinching pieces 18a and 18b are two-layered has the thicknesses and stiffness to some extent, it is possible for a user to arrange the adhesive patch 10 at a desired position by a tactile sensation. Further, in a state in which the pinching pieces 18a and 18b are pinched, because the fingers are close to the exposed portion of the pressure-sensitive adhesive agent layer 14, it is easy to finely adjust the position of the adhesive patch 10 that dramatically improves the convenience for the user.

[0079] With respect to the adhesive patch described in the above-described Patent Literatures 1 and 2, when the adhesive patch is temporarily held on the skin, the release sheet is sandwiched between the support and the skin, which makes it difficult to release the release sheet in some cases. However, because the pinching pieces 18a and 18b are formed in the present invention, it is possible to easily release the release sheet 16 by pinching and pulling. Further, because it is possible to prevent the fingertips from touching the pressure-sensitive adhesive agent layer 14, the pressure-sensitive adhesive agent does not stick to the hands in any case.

[0080] Moreover, because not only is it possible to pinch any one of the

right and left pinching pieces 18a and 18b, but it is also possible to simultaneously pinch the right and left pinching pieces 18a and 18b and also pull them, the workability for application is improved for the user.

[0081] Further, at the time of pinching and pulling the pinching pieces 18a and 18b, in the same way as that at the time of dividing the release sheets, because the stiffness of the fixed portions 22 of the release sheet 16 and the pinching pieces 18a and 18b is high, the tensile force disperses over the entire fixed portions 22, to substantially evenly act on it. When the release sheet 16 is being peeled off from the pressure-sensitive adhesive agent layer 14 in such a state, the force substantially evenly acts on the diverging line between the release sheet 16 and the pressure-sensitive adhesive agent layer 14 (the border line with the outside of the adhered portion of the release sheet 16 and the pressure-sensitive adhesive agent layer 14). As a result, it is possible to prevent the support 12 from wrinkling, and the pressure-sensitive adhesive agent layer 14 from adhering to one another.

[0082] In this way, according to the present invention, it is possible to cleanly apply the adhesive patch 10 to the skin without making hands sticky and without wrinkling.

[0083] In addition, for the adhesive patch 10 according to the present invention, there are other usages other than the above-described method. For example, a method may be adopted in which the portions serving as the pinching pieces 18a and 18b of the pinching piece forming sheet 18 are held to pull to divide the release sheet 16 and the pinching piece forming sheet 18, and thereafter, one of the pinching pieces 18a and 18b is pinched to release the release sheet 16 on the side thereof, to expose

the half of the pressure-sensitive adhesive agent layer 14 on the support 12, and thereafter, it is applied to the skin. In this case, because the pinching pieces 18a and 18b are symmetrically formed, it is possible for a user to freely select one of the pinching pieces 18a and 18b which is easy to be pinched, which is convenient.

[0084] As one aspect of the present invention for preferably exerting the above-described function effects, a poultice may be cited. The poultice is formed such that the support 12 is a non-woven fabric, and the pressure-sensitive adhesive agent layer 14 is aqueous gel. In the case where the pressure-sensitive adhesive agent layer 14 is aqueous gel, because it has a sufficient thickness and a sufficient weight, moderate releasing strength is provided thereto, and the release sheet 16 is not peeled off too easily in any case. Therefore, because there is no need to provide anti-releasing means such as a wound dressing described in Patent Literature 5, manufacturing is easy and the cost is low.

[0085] The preferred embodiments of the present invention have been described in detail above.

[0086] For example, in the above-described embodiments, the support 12 has stretching properties. However, in the case where there is no need to divide the release sheet 16 by pulling the adhesive patch 10 to the right and left, the stretching properties of the support 12 are not required.

[0087] Further, in the embodiment shown in Figs. 1 to 3, the right and left fixed portions 22 are spaced from the weakened parts 20. However, because the fixed portions 22 are formed at positions

relatively close to the weakened parts 20, it is difficult to pinch the inner portions of the pinching piece forming sheet 18 (the portions on the opposite side of the pinching pieces 18a and 18b) after dividing the sheet. Then, as shown in Fig. 9, an aspect in which the right and left fixed portions 22 are formed at positions relatively separated away, for example, by approximately 15 to 25 mm from the weakened parts 20, may be conceived of.

[0088] In the embodiment as shown in Fig. 9, after the release sheet 16 and the pinching piece forming sheet 18 are divided along the weakened parts 20, not only the outer portions 18a and 18b, but also inner portions 18c and 18d function as pinching pieces. Thereby, it is possible to provide various usages according to the convenience of a user. For example, as shown in Fig. 10, it is possible to pinch the inner pinching piece 18c on the left side and the outer pinching piece 18b on the right side, to release the release sheet 16.

[0089] Further, the shape of the fixed portions 22 may be not only the linear shape as that in Fig. 2, but also another shape, for example, a curved line shape as shown in Fig. 11. In a case of the shape shown in Fig. 11, after the pinching piece forming sheet 18 is cut off along the weakened parts 20, when the pinching pieces 18a and 18b are pulled to the right and left, it is possible to sterically curve it so as to float the exposed surface (medicinal agent surface) of the pressure-sensitive adhesive agent layer 14 of the adhesive patch 10, which makes it possible to easily apply the adhesive patch 10 without bringing about wrinkles on the body surface to be applied. Further, because the space between the two fixed portions 22 is narrowed in the central portion of

the adhesive patch 10, at the time of pulling the pinching pieces 18a and 18b to the right and left, the tensile force is concentrated on the weakened parts 20 located in the central portion of the adhesive patch 10, which makes it easy to divide the release sheet 16 and the pinching piece forming sheet 18. Moreover, the space between the two fixed portions 22 is widened on the long sides of the adhesive patch 10, a usage by pinching these portions as shown in Fig. 10 may be adopted.

[0090] In addition, in contrast to the embodiment in Figs. 1 to 3, a state in which the outer portions 18a and 18b are made smaller or completely removed, and only the inner portions 18c and 18d are served as pinching pieces is within the scope of the present invention.

[0091] Furthermore, there is no need to form the fixed portions 22 at two places at the right and left. As shown in Fig. 12, the release sheet 16 and the pinching piece forming sheet 18 may be fixed at one place in substantially the central portion that is on the weakened parts 20.

[0092] Further, as shown in Fig. 13, the pinching piece forming sheet 18 may be fixed at a position off-set from the central portion of the release sheet 16.

[0093] Moreover, the weakened part 20 may be formed into a wave shape or a saw-tooth shape as shown in Fig. 13. In this case, the shape of the fixed portions 22 may be formed into a wave shape or a saw-tooth shape so as to correspond to the shape of the weakened part 20.

[0094] Further, the pinching piece forming sheet 18 may be formed into a shape other than the rectangular shape, for example, various shapes as shown in Figs. 14(a) to 14(g). Further, a mode in which the pinching piece forming sheet 18 does not cross over the entire adhesive patch 10

as shown in Figs. 14(a) to 14(c) may be adopted. In addition, the fixed portions are not shown in Figs. 14.

Reference Signs List

[0095] 10 ... Adhesive patch, 12 ... Support, 12A ... Original material
5 web for support, 14 ... Pressure-sensitive adhesive agent layer, 16 ...
Release sheet, 16A ... Original material web for release sheet, 18 ...
Pinching piece forming sheet, 18a, 18b, 18c, 18d ... Pinching pieces,
18A ... Original material web for pinching piece forming sheet, 20 ...
Weakened part, 22 ... Fixed portion, 24 ... Spreading and adhering
10 device, 26 ... Fixing device, 28 ... Weakened part forming device, 30
... Cutting device.

CLAIMS

1. An adhesive patch comprising:

a support;

a pressure-sensitive adhesive agent layer provided on one
5 surface of the support;

a release sheet which is releasably attached to the
pressure-sensitive adhesive agent layer; and

a first weakened part which is formed in the release sheet, the
weakened part being for easily dividing the release sheet into two parts,
10 wherein

wherein a pinching piece forming sheet is fixed on the release
sheet such that the pinching piece forming sheet covers the first
weakened part, and portions of the pinching piece forming sheet which
are other than the at least one fixed portion function as pinching pieces,
15 and in the pinching piece forming sheet, a second weakened part for
easily dividing the release sheet is formed at a position corresponding to
the first weakened part of the release sheet,

wherein the support has stretching properties, and

wherein the two fixed portions between the release sheet and the
pinching piece forming sheet are formed such that they are spaced from
20 the second weakened part on the right and left of the weakened part.

2. The adhesive patch according to claim 1, wherein the release
sheet is embossed.

3. The adhesive patch according to claim 1 or 2, wherein the
release sheet is made of polypropylene,
25

the pinching piece forming sheet comprises a layer of

polyethylene terephthalate and a layer of polypropylene, and

the polypropylene layer of the pinching piece forming sheet is heat-sealed on the release sheet.

4. The adhesive patch according to any one of claims 1 to 3,
5 wherein the stiffness of the pinching piece forming sheet is higher than that of the release sheet.

5. The adhesive patch according to claim 4, wherein the tensile strength of the release sheet is within a range of 1 g/cm to 200 g/cm.

6. The adhesive patch according to any one of claims 1 to 5,
10 wherein the support is made of one selected from the group consisting of a woven fabric, a knit fabric, a nonwoven fabric, a nonwoven paper, and a film.

7. The adhesive patch according to any one of claims 1 to 6,
15 wherein the support has a 50% modulus of 0.5 N/mm to 10 N/mm in a longitudinal direction and a transverse direction of thereof.