Office de la Propriété Intellectuelle du Canada
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An agency of Industry Canada

CA 2511994 C 2012/09/18

(11)(21) 2 511 994

(12) BREVET CANADIEN
CANADIAN PATENT

(13) C

(22) Date de dépôt/Filing Date: 2005/07/13

(41) Mise à la disp. pub./Open to Public Insp.: 2006/02/24

(45) Date de délivrance/Issue Date: 2012/09/18

(30) Priorité/Priority: 2004/08/24 (DE10 2004 040 814.9)

(51) Cl.Int./Int.Cl. *C09J 7/02* (2006.01), *B32B 7/10* (2006.01), *B65H 19/18* (2006.01)

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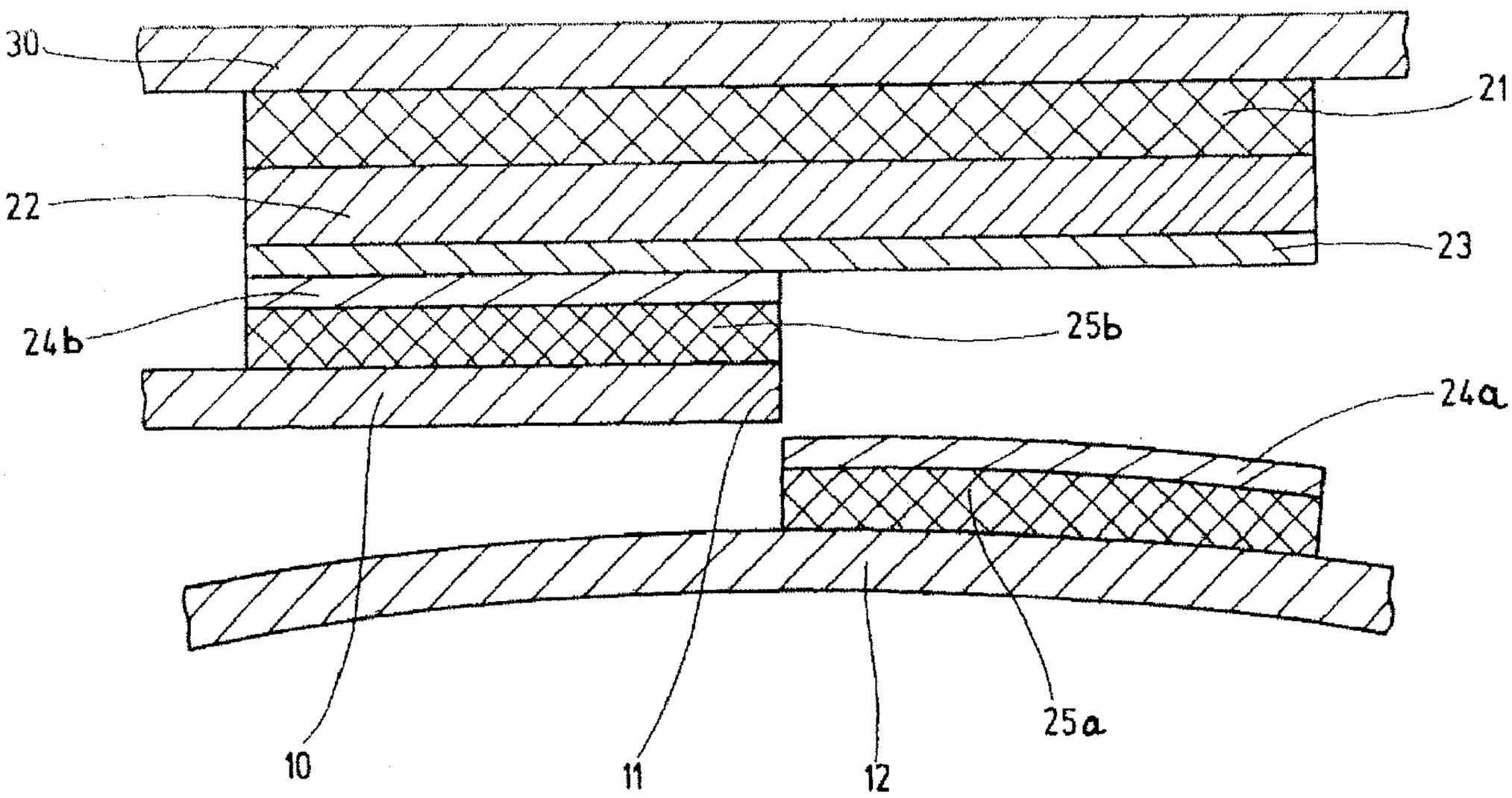
(54) Title: ADHESIVE TAPE FOR PRODUCING A SPLICE



(57) Abrégé/Abstract:
An adhesive tape (20) having a carrier material (22) which is coated on the upper side with a self-adhesive compound (21) and is finished on the opposite underside of the carrier material with a cleavable system (23, 24) which, in turn, is finished on its underside with a further self-adhesive compound (25), in order to release a connection of mutually overlapping materials bonded over each other, in particular for producing a splice connection between two flat web materials wound up into reels during a flying reel change, is formed in such a way that the cleavable system (23, 24) cleaves as far as the overlap and, at the point of the overlap of the two materials bonded over each other, part of the cleavable system (24) and also the self-adhesive compound (25) located underneath tear off, so that the residue (24a) of the cleavable system ,(23, 24) that remains on the overlapped part (12) covers the remaining self-adhesive compound (25a) in a non-adhesive manner.

Abstract

An adhesive tape (20) having a carrier material (22) which is coated on the upper side with a self-adhesive compound (21) and is finished on the opposite underside of the carrier material with a cleavable system (23, 24) which, in turn, is finished on its underside with a further self-adhesive compound (25), in order to release a connection of mutually overlapping materials bonded over each other, in particular for producing a splice connection between two flat web materials wound up into reels during a flying reel change, is formed in such a way that the cleavable system (23, 24) cleaves as far as the overlap and, at the point of the overlap of the two materials bonded over each other, part of the cleavable system (24) and also the self-adhesive compound (25) located underneath tear off, so that the residue (24a) of the cleavable system (23, 24) that remains on the overlapped part (12) covers the remaining self-adhesive compound (25a) in a non-adhesive manner.

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Description

Adhesive tape for producing a splice

The invention relates to an adhesive tape for producing a splice.

Flat web materials, in particular paper, are wound up onto reels, in order for example to be supplied to a paper-processing machine or a printing and packaging machine. In order to permit continuous operation of the plant, it is necessary that, as soon as a first reel of the flat web material has been used up, the start of a further material web, which is unwound from a new reel, be placed on the end of this material web in a flying change and connected thereto in a suitable way without having to stop the high-speed machines when changing the reels. This procedure is known as splicing ("to splice"). For this purpose, primarily in the paper industry, use is made of double-sided adhesive tapes which are highly sticky/tacky and which consist substantially of a carrier layer which is provided with a self-adhesive compound on its upper and lower side in each case, in order in this way to produce a connection between the end of the old material web and the start of the new material web. In the process, the end of the old material web is adhesively bonded to the start of the new material web.

As a rule, the adhesive tapes are stuck to the web start manually and the adhesive bonds are relatively thick as a result of a sequence of two paper webs and an adhesive strip in each case, a result which is undesired in the paper/printing industry. Furthermore,

the production of such a splice is very complicated and holds a certain potential for error.

To this end, different procedures and different adhesive tapes are known to those skilled in the art, attention having to be paid to exact execution of the bonding, since tearing of the web material would lead to undesired and costly machine stoppages and the new material web would have to be threaded manually into the machine.

In order to improve the result, an adhesive tape having a cleavable system is described in DE 198 41 609 A1, a contact adhesive element consisting of a base element and a top element. The base element consists of a material which divides between the upper side and lower side under the stress of a normal force, which means when a tensile force is exerted on the adhesive tape substantially perpendicular to the main plane of the latter. Applied to the upper side and the lower side are a large number of adhesive layer elements which, after the division of the connection, are in each case covered by the constituents of the base element which remain on the adhesive layer elements, so that these areas cannot remain stuck to further parts of the web material. This adhesive tape is stuck under the uppermost layer of a new reel of the web material and, during the cleaving process, fibres are torn out of a paper carrier lying above this layer by the adhesive layer elements applied in the manner of spots. A comparable adhesive tape is disclosed by EP 057 657 B1. In this case, two polymer layers coated over the entire surface separate and in this way expose the web start of the new paper reel.

DE 199 02 179 A1 describes a single-sided adhesive tape, under whose underside a double-sided adhesive tape in strip form is stuck, having a carrier of a cleavable paper. The latter cleaves under the action

of the force of the flying reel change and in this way exposes the new paper reel and, at the same time, using the cleaved papers, covers the adhesive compounds, so that no disruptions occur as they pass through the machine.

In DE 101 23 981 A1, an adhesive tape has two cleaving strips, which can have different cleavage forces, in order to be able to react to different grammages of the material to be spliced.

In the case of all the aforementioned adhesive tapes, these are stuck under the outer layer on the reel of web material. In this case, however, care must be taken that this outer layer nevertheless rests on the reel without creases, so that these adhesive tapes can be applied to a reel only with a great deal of effort.

Furthermore, adhesive tapes are known which, at the transition between the outer layer of the reel and the layer of the reel located underneath, must be stuck onto the reel directly at the cut edge or at the end of the outer layer, covering this transition. For this purpose, the adhesive tape, whose length substantially corresponds to the width of the reel, has two different self-adhesive systems on its underside and on the underside of the carrier layer. The first system is a non-cleavable system and is stuck onto the outside of the reel in the region of the cut edge. The second system is a cleavable system and is stuck onto the layer or winding of the web material located underneath on the reel, likewise in the region of the cut edge or of the transition from the outer layer to the layer located underneath. The upper side of the adhesive tape is designed to be self-adhesive in a manner known per se and, during the flying reel change, the end of the web material of the used reel is pressed against this upper side of the adhesive tape and bonded. Thus, the web material is pulled off the new reel by the web

end of the empty reel and the second system is cleaved at the transition, the residue of an adhesive remaining on the layer underneath being covered by the cleaved system. In this case, it is to be seen as disadvantageous that the cut edge of the new reel has to be executed exactly, since the two systems are at only a short distance from each other, in order to avoid coming into contact with the second self-adhesive system of the adhesive tape and, as a result, the outer layer being torn as the web material is unwound from the new reel. This is possible only with the use of precise cutting tools or machines and with corresponding effort.

Adhesive tapes which are stuck onto the uppermost paper layer from above are described in DE 198 60 673 A1, but this adhesive tape also has considerable weaknesses because of the product structure and the adhesive bonding which is therefore complicated, since this adhesive tape must be adjusted very accurately for satisfactory functioning although here, nevertheless, automatic application is possible. This adhesive tape must be stuck flush with the leading paper edge of the new paper reel, since otherwise the self-adhesive compound on the underside of the main carrier also bonds the second paper layer, which then leads to uncontrolled opening and thus to breaks.

Furthermore, an adhesive tape is proposed which is applied from above, namely to the uppermost and second layer of a new paper bale. This adhesive tape, coated on one side with a self-adhesive compound on a main carrier, bears on its non-adhering rear side a self-adhesive cleavable system S2 which has a paper carrier that is easy to cleave and covers the respective adhesives. In order to permit application from above to the uppermost layer of the new web, the adhesive tape bears a non-cleaving, self-adhesive system S1 on its non-adhering rear side. This adhesive tape is stuck to

the uppermost layer (Fig. 8), as described in the following text:

- Firstly, the outermost turns of the paper bale, which may have been damaged or soiled during transport, are removed.

- The now outermost, topmost layer of the new paper bale must be cut off in a straight line, if possible approximately but not exactly at right angles to the side edges of the paper bale. In order to permit reliable application, the paper must be cut off very accurately. Inaccuracies in the cut line must have dimensions here no greater than the distance A1 of the two self-adhesive systems S1 and S2 to the adhesive tape to be applied. However, this is quite difficult in practice and, as a rule, makes the use of a knife or the like necessary.

- The adhesive tape is then stuck in a straight line with the self-adhesive, non-cleavable system S1 onto the topmost layer and with the cleavable self-adhesive system S2 onto the second topmost layer of the paper bale in such a way that the web start, the cut edge of the paper, lies exactly between the two self-adhesive systems S1 and S2, and the start of the new web lies on the non-adhering part between them. As soon as any displacement of the adhesive bond takes place, which would lead to part of the self-adhesive system S1 or of the self-adhesive system S2 being stuck beyond the start of the paper web, this leads to failure of the splice in every case, which in turn results in expensive machine stoppages.

Thus, application of such an adhesive tape is possible only by machine, since sticking manually with this

accuracy is impossible, even in the case of small web widths. The use of automated machines is in turn firstly costly and requires additional space, so that such a product is not suitable for many potential users.

On the basis of this prior art, those skilled in the art are presented with the task of specifying an adhesive tape with which a flying reel change can be carried out in a straightforward manner, reliable and destruction-free unwinding of the web material from the new reel being ensured. In addition, the adhesive tape should be capable of being handled without the use of machines and the intention is to enable manual, simple application from above to the uppermost layer of the material to be spliced.

This object is achieved by the features specified in Claim 1.

The basic idea of the invention is that, for example during the production of a connection between two flat web materials wound up onto reels, during a flying reel change, a cleavable system is applied to the underside of the carrier layer and is in turn provided with a further self-adhesive compound to be connected to the different layers of the new reel of web material. In this case, the adhesive tape is arranged and stuck over the transition between the overlapping part and the overlapped part located underneath in such a way that this transition, viewed over the width of the reel, is covered by the adhesive tape over the entire area or part of the area. If, then, in a manner which is known per se for the flying reel change, the fresh reel provided with the adhesive tape is moved in the direction of the web end of an empty reel or vice versa, then, by means of the self-adhesive compound on the upper side of the carrier layer, an adhesive connection or splice with the web end of the old reel

takes place. As soon as the web end has been drawn, for example, into a paper-processing machine, the start of the web on the new reel is pulled off via this adhesive connection and the adhesive tape. As a result of the tensile forces acting on the cleavable system substantially in the normal direction, that is to say radially outwards, cleavage of the cleavable system is carried out, the lower part of the cleavable system remaining on the self-adhesive compound arranged underneath, and the upper part of the cleavable system being pulled off upwards with the carrier layer and the self-adhesive compound arranged above. It goes without saying that the adhesive forces of the self-adhesive compounds are in each case set appropriately.

In this case, the cleavable system cleaves exactly as far as the web start of the outermost wound layer. As a result of the outermost wound layer being lifted in the radially outwardly oriented direction, the lower part of the cleavable system and the self-adhesive compound located underneath, which is located on the second layer of the reel, tears exactly at the web start. The said parts do not remain sticky, since the cleavable system covers the self-adhesive compound. The part of the cleavable system which has not cleaved and the self-adhesive compound located underneath on the outermost layer of the reel are connected to the outgoing web via the carrier and the self-adhesive compound located on the upper side of the latter.

In this case, the cleavable system and the self-adhesive compound located underneath and the cleavage of the lower part of the cleavable system can be formed and carried out, respectively, in any manner known per se or as described in the following text.

According to the latter, the adhesive tape according to the invention is formed in such a way that it can be applied from above to the uppermost layer of the flat

web material wound up, for example the paper web material. The present invention provides an adhesive tape which, on account of its construction, has a substantially lower thickness than the adhesive tapes which are normally currently used.

Located on the underside of the adhesive tape is the cleavable system, preferably over the entire width of the adhesive tape, which is likewise finished in a self-adhesive manner on the exposed side. This cleavable system cleaves during the splice in such a way that no tacky residues remain and hinder the passage of the splice through the machine.

The material used for the carrier layer can be paper or plastic film which, in particular, can be coated and/or metallized. It is obvious to those skilled in the art that the papers or films have adequate tearing strengths. For example, slightly creped papers, machine-finished body papers, single-side coated smooth body papers, two-side coated, densified, printable décor papers, single-side coated woodfree high-gloss kraft papers, papers laminated to metal foil, polyester films, MOPP films, metallized films or the like can be used.

In an extension to the invention, the carrier layer of the adhesive tape is finished in such a way that it is used for detection by machine. In an advantageous embodiment of the invention, the adhesive tape has at least one detectable additive. It is finished with a detectable feature that can be detected by machine. This is in particular an optical marking, for example a coloured marking, and/or a marking that can be detected by electromagnetic means, such as a metal thread. Thus, in the automatic reel change, the web start can be detected automatically by the marking in the adhesive tape and, consequently, the reel can be moved.

Use is advantageously made of a cleavable system which has a considerably lower cleavage strength than the carrier which has to absorb tensile forces. The cleavable system comprises at least two layers which separate from each other under the action of a specific force, such as occurs during the flying reel change, it being possible for one of the two layers to be formed from the material of the main carrier, such as is the case, for example, if the main carrier used is a paper laminated to a metal foil or a film.

The advantage of the invention is that the adhesive tape can be stuck over the end of the overlapping part and the outer layer of the reel of web material in a simple way and without excessive precision, it merely being necessary to ensure that the adhesive tape also makes an adhesive connection to the web located underneath. The transition edge, which does not necessarily have to be made exactly in a straight line, must merely be arranged within the longitudinal edges of the adhesive tape. In addition, it is consequently possible to reduce the width of the adhesive tape considerably, so that up to a 50% saving in materials can be achieved as compared with adhesive tapes which are applied under the uppermost layer. This adhesive tape can also be designed to be substantially thinner than comparable adhesive tapes, so that the adhesive tape cannot lead to undesired thickening of the wound material and thus to problems in the further-processing machine.

According to a further refinement according to the invention, it is proposed that the further self-adhesive compound on the underside of the adhesive tape be segmented. This can be achieved, for example, by the self-adhesive compound being assembled from a large

number of adhesive spots and/or adhesive strips arranged closely adjacent to one another, each of the adhesive spots being stuck either to the outer layer or to the layer of the reel located underneath. If, then, the upper part of the adhesive tape is pulled off the old reel, in the region of the adhesive spots which are stuck to the layer of the new reel located underneath, cleavage of the cleavable system occurs and, at the transition to the overlapping part of the reel lying above, tearing off occurs in the self-adhesive compound and the plurality of adhesive spots and the lower part of the cleavable system. Likewise, the ability to be segmented can also be implemented with a frangible varnish system, described below, which is applied to a carrier layer.

In order to permit application from above to the uppermost layer of the wound flat web material, use is made of a cleaving system which cleaves accurately as far as the transition from the second layer to the uppermost layer, that is to say the start of the web material, the cleavage process stopping exactly at this point.

This is achieved by the adhesive tape according to the invention in that a frangible varnish system is applied to a coated or metallized paper carrier or film carrier, the separating force between the varnish layer and the carrier having to be set in such a way that, when the new reel of web material is accelerated, the varnish layer is so high that cleavage is avoided but, secondly, cleavage occurs as soon as the old web of flat web material sticks to the upper side of the adhesive tape and forces act on the bond which result in cleavage between the carrier and the varnish layer, the cleavage process being interrupted exactly at the transition from the second to the uppermost layer of flat web material.

In the process, in the adhesive compound coated in segments, the varnish always tears at the points at which adhesive compound is applied and covers the latter in such a way that they do not remain adhesive. This cleavage process runs reliably always only as far as the transition from the second to the uppermost layer. Once the uppermost layer has been reached, the cleavage process is interrupted and the adhesive compound on the upper side of the carrier material produces the secure connection between the uppermost layer of the new reel and the old reel.

In the case of coating the entire area with adhesive compound, the varnish always cleaves over the entire area from the carrier as far as the transition from the second to the uppermost layer. The use of fibres and/or fillers in the self-adhesive compound enables the adhesive compound to tear off exactly at the transition from the second to the uppermost layer.

The fact that the cleavable system has a varnish layer means that the separating force between the varnish layer and the carrier layer can be set in such a way that, during the acceleration of the new reel of web material, the varnish layer has sufficient adhesive forces to prevent cleavage of the cleavable system. This means that the adhesive tape does not cleave prematurely as a result of the centrifugal forces. Cleavage of the cleavable system occurs only when the upper side of the adhesive tape additionally sticks to the web end of the old reel and, as a result, greater forces are exerted in the radial direction, here, too, the cleavage process in the cleavable system being interrupted exactly at the transition from the overlapped part to the overlapping part of the web material. In this case, in the self-adhesive compound coated in segments, the varnish always tears at the points at which self-adhesive compound is applied, so

that the self-adhesive compound is covered by the remaining varnish.

As a result of the cleavage, which can be set in a defined manner as far as the web start of the outermost wound layer, the adhesive tape according to the invention provides the possibility of being able to be applied manually from above to the new reel of flat web material without the use of automatic application aids, since the bonding is very simple, because the web start of the new web must merely be located somewhere within the longitudinal edges of the adhesive tape. It is not necessary to position this adhesive tape very accurately. Secondly, the width of the adhesive tape can be reduced by the part which, in the variants to be stuck underneath, is needed in order to fix the uppermost layer, which can mean up to 50% width reduction. Therefore, the adhesive tape provides a considerable advantage as compared with the prior art.

In order to apply the self-adhesive compound to the underside of the adhesive tape and the lower part of the cleavable system, it is proposed that this be carried out by the screen printing process. This makes it possible to obtain a sufficiently large number of mutually separated adhesive spots which, nevertheless, permit bonding of the adhesive tape to the web material over the entire area.

According to a further alternative refinement, the self-adhesive compound is applied by strip coating, the strips running substantially in the longitudinal direction of the adhesive tape and therefore parallel to the transition between the various layers on the reel.

In both methods, the choice relating to processing suitable self-adhesive compounds having adequate

adhesion forces is possible for those skilled in the art.

The materials used for the self-adhesive compound preferably include, inter alia, acrylic contact adhesive compounds, which can comprise both water-soluble and water-insoluble acrylates and their dispersions. Furthermore, natural and synthetic rubber compounds and their dispersions are proposed. In principle, all types of contact-adhesive compounds which fulfil the inventive criteria can be used.

The materials used for the cleavable system are preferably acrylic dispersions and/or polyvinyl alcohols and/or methyl cellulose and/or their derivatives. If the carrier used is, for example, a paper carrier, the cleavable system can be formed from an acrylic dispersion applied to this carrier and from a further layer of methyl cellulose applied to this layer.

By means of the application of the self-adhesive compound by screen printing or strip printing or by other coating techniques which permit coating over less than a complete area, the intended rupture points in the self-adhesive compound in the bonded state on the new reel are predefined since, exactly at the gaps between adjacent points of the self-adhesive compound, at which the transition in the various layers of the new reel is arranged, tearing occurs both in the layer of self-adhesive compound and in the lower part of the cleavable system immediately adjacent to this layer.

It is obvious to those skilled in the art that, for the purpose of handling and/or storage of the adhesive tape, the self-adhesive compounds on the upper side and underside can each be provided with strip-like or web-like covering elements, also called "liners", which are pulled off by hand before the bonding operations.

The adhesive tapes can be used for bonding paper and/or plastic film webs or other web material.

An exemplary embodiment of the invention will be explained in more detail below by using the drawings, in which:

Fig. 1 shows an adhesive tape in a perspective illustration,
Fig. 2 shows a reel of a web material,
Fig. 3 shows the adhesive tape stuck to the reel,
Fig. 4 shows the old and the new material web with the adhesive tape before bonding,
Fig. 5 shows the bonded material webs,
Fig. 6 shows the cleavage of the adhesive tape,
Fig. 7 shows a cleaved adhesive tape,
Fig. 8 shows an adhesive tape according to the prior art.

The exemplary embodiment of the invention illustrated in Figs 1 to 7 is an adhesive tape 20 which comprises a carrier layer 22, for example of coated and/or metallized paper or plastic film, to whose upper side a self-adhesive compound 21 of a self-adhesive material that is suitable for this purpose is applied, substantially over the entire area. In order to handle the adhesive tape, the self-adhesive compound 21 is covered with a covering element 26, for example likewise a coated paper or a coated film, in order to avoid the adhesive tape 20 sticking firmly at undesired points. Arranged on the underside of the carrier layer 22, over the entire area, is a cleavable system 23, 24 which substantially comprises two layers 23, 24 which can be cleaved from each other and is fixed in any desired way to the carrier layer 22, for example in turn bonded firmly with a self-adhesive compound. The lower part of the cleavable system 23, 24, namely the layer 24, is in turn provided on its underside with a

further self-adhesive compound 25, in order to stick the adhesive tape 20 to a reel of web material, as described below. The dividing plane 27, at which the system 23, 24 is subsequently cleaved or divided, is formed between the layers 23, 24 of the cleavable system.

The illustration in Fig. 2 reveals a reel of a flat web material such as, inter alia, a paper reel, which is assigned to a paper processing machine, a printing or packaging machine or the like. On the reel, the web material is wound up in layers which rest closely on one another, the overlapping part 10 at least partly covering the overlapped part 12 arranged underneath. The end of the web material forms a transition 11 between the overlapping part 10 and the overlapped part 12 located underneath.

In order to prepare for the splicing or bonding of the web start or of the overlapping part 10 on the reel to the web end of an empty reel in order to carry out a flying reel change, in order that continuous operation of the machine downstream is ensured, the transition 11 has the adhesive tape 20 stuck over it in such a way that it is stuck between the two longitudinal edges 20a, 20b of the adhesive tape 20. This means that the transition 11 runs within the longitudinal edges 20a, 20b and is covered by the adhesive tape 20. Thus, this transition 11 does not have to be made exactly in a straight line by machine but, instead, can be torn, for example manually, or executed with a cutting knife.

This state is revealed by the cross-sectional illustration in Fig. 4. The overlapping part 10 ends at the transition 11, the overlapping part 10 covering the overlapped part 12 located underneath only as far as this transition 11. The adhesive tape 20 is stuck to the web material in such a way that a section of the adhesive tape 20 is stuck on the outer layer 10 and the

other section on the layer 12 located underneath; this is carried out with the self-adhesive compound 25.

In order to permit a seamless transition from the old web 30 to the overlapping part 10 of the new reel, first of all the new reel is accelerated to a sufficient angular speed, which is indicated by the arrow X_1, in order that, in the region of the transition, the new web material has substantially the same speed as the old web material 30, specifically up to 120 km/h in the case of a paper-processing machine, as illustrated by the arrow X. As soon as this speed has approached the intended speed, the old material web 30 is moved in the Y direction until the exposed self-adhesive compound 21, the covering 26 having previously been removed, comes into contact with the web 30 and sticks firmly to the latter. This state can be seen from Fig. 5.

As soon as the adhesive bond between the self-adhesive compound 21 and the old web 30 has been produced, on account of the circular movement, relative to the substantially linear movement of the old web 30, of the new web material wound onto a reel and stuck firmly to the latter by the adhesive tape 20, there follows the exertion of a tensile force on the adhesive tape 20, as illustrated by the arrow F in Fig. 6. As a result of this tensile force, cleavage of the cleavable system 23, 24 takes place along the dividing plane 27, which runs through the adhesive tape 20 in the direction of arrow P.

In the process, as a result of the forces acting radially outwards in the self-adhesive compound 25, an intended rupture point is produced, which has the effect that the cleavage process, as soon as the transition 11 between the overlapping part 10 and the overlapped part 12 located underneath is reached, the self-adhesive compound 25 tears off at the intended

rupture point produced there. At the same time, the lower layer 24 of the cleavable system 23, 24 is designed in such a way that, at the point at which the self-adhesive compound 25 tears off, the lower layer 24 also tears off and, accordingly, the cleavage operation is interrupted at this transition from the uppermost to the second layer. This therefore achieves a situation where the outer overlapping part 10, as depicted in Fig. 7, is lifted off the overlapped part 12 located underneath and is pulled in the linear direction by the old web 30, for example into a paper-processing machine. In this case, 24a designates the part of the cleavable system 23, 24 which covers in a non-adhesive manner the part of the self-adhesive compound 25a remaining on the overlapped part 12. 24b is the uncleaved part of the cleavable system 23, 24, which remains on the layer 23 on the carrier 22. The part of the self-adhesive compound 25 that produces the connection of the adhesive tape 20 to the overlapping part 10 or material is indicated at 25b.

On account of the configuration of the adhesive tape 20, this can be designed to be substantially thinner than comparable adhesive tapes, so that there is no undesired thickening of the wound material in the machine downstream. In addition, by means of the remaining section of the layer 24a, which remains firmly bonded to the section of the self-adhesive compound 25a on the web 12 located underneath, it is ensured that this self-adhesive compound 25a cannot come into adhesive contact with further parts.

In order to form the intended rupture points in the self-adhesive compound 25, it is proposed that the self-adhesive compound 25 be applied either by screen printing or by strip printing to the layer 24 of the cleavable system 23, 24 or in another manner that can be configured by those skilled in the art in order to obtain a large number of mutually separated adhesive

spots or adhesive strips, the intended rupture point in each case being formed between the adhesive spots which, on one side, are stuck to the outer overlapping part 10 and, on the other side, are stuck to the overlapped part 12 located underneath. In order to tear off the lower layer 24, either suitable papers are chosen in which the self-adhesive compound 25 which is stuck to the overlapped part 12 located underneath exerts such a tensile force on the layer 24 that, at the transition, fibres are torn out of the paper layer 24 and the latter is sheared off. Likewise, the layer 24 can be implemented in the form of a frangible varnish which, in the region of the transition 11, breaks out in the desired manner in order to tear off the layer 24, so that the part of the self-adhesive compound 25 which remains on the overlapped part 12 is covered by the layer 24 remaining thereon.

LIST OF REFERENCE SYMBOLS

10	Overlapping part (= outer layer)
11	Transition
12	Overlapped part (= lower layer)
20	Adhesive tape
20a, 20b	Longitudinal edges of the adhesive tape
21	Self-adhesive compound
22	Carrier layer
23	Upper part of the cleavable system
24	Lower part of the cleavable system
24a	The part of the cleavable system which covers in a non-adhesive manner the part of the self-adhesive compound (25a) remaining on the overlapped part 12
24b	The uncleaved part of the cleavable system (23, 24), remains on the layer (23) on the carrier (22)
25	Further self-adhesive compound
25a	Self-adhesive compound that has remained on the overlapped part
25b	The part of the self-adhesive compound (25) producing the connection between the adhesive tape (20) and the overlapping material (10)
26	Covering element
27	Dividing plane
30	Old web
X, X_1, Y	Directions of movement
P	Cleavage direction
F	Tensile force

Patent claims

1. Adhesive tape (20) having a carrier material (22) which is coated on the upper side with a self-adhesive compound (21) and is finished on the opposite underside of the carrier material with a cleavable system (23, 24) which, in turn, is finished on its underside with a further self-adhesive compound (25), in order to release a connection of mutually overlapping materials bonded over each other, characterized in that the cleavable system (23, 24) cleaves as far as the overlap and, at the point of the overlap of the two materials bonded over each other, part of the cleavable system (24) and also the self-adhesive compound (25) located underneath tear off, so that the residue (24a) of the cleavable system (23, 24) that remains on the overlapped part (12) covers the remaining self-adhesive compound (25a) in a non-adhesive manner.

2. Adhesive tape according to Claim 1, characterized in that the self-adhesive compound (25) is applied in a segmented manner and the cleavable system thus stops cleaving in a defined way at the transition from the second to the uppermost layer at the nearest adhesive compound segment, the residues of the cleavable system (24) covering the self-adhesive compound (25).

3. Adhesive tape according to Claim 2, characterized in that the further self-adhesive compound (25) is applied in the screen printing process.

4. Adhesive tape according to Claim 2, characterized in that the self-adhesive compound (25) is applied by strip coating.

5. Adhesive tape according to Claim 1, characterized in that the self-adhesive compound (25) is applied over the entire area and the tearing-off of the adhesive compound when stopping the cleavage process is ensured by the use of fibres and/or fillers in the self-adhesive compound.

6. Adhesive tape according to one of Claims 1 to 5, characterized in that the carrier layer (22) consists of paper or plastic film.

7. Adhesive tape according to one of Claims 1 to 6, characterized in that the adhesive tape (20) has a detectable feature.

8. Adhesive tape according to one of Claims 1 to 7, characterized in that the cleavable system (23, 24) comprises at least one varnish layer.

9. Adhesive tape according to one of Claims 1 to 7, characterized in that the cleavable system (23, 24) is formed from two varnish layers.

10. Adhesive tape according to one of Claims 1 to 7, characterized in that the cleavable system (23, 24) is formed from a carrier layer (22) and a varnish layer.

11. Adhesive tape according to one of Claims 1 to 7, characterized in that the cleavable system (23, 24) is formed by a carrier material of a coated or metallized paper or film carrier with a varnish layer.

12. Adhesive tape according to one of Claims 1 to 5, characterized in that the self-adhesive compounds (21, 25) comprise acrylates, repulpable and/or non-repulpable acrylates and/or natural and/or synthetic rubber compounds.

13. Adhesive tape according to one of Claims 1 to 12, characterized in that the cleavable system (23, 24) comprises acrylic polymers, polyvinyl alcohols or methyl cellulose and their derivatives.

14. Splicing method, in which the uppermost paper web of a new reel has stuck over it an adhesive tape according to any one of Claims 1 to 13, in that the cleavable system (23, 24) located on the rear of the adhesive tape is stuck from above on the transition between the uppermost to the second uppermost layer, the web start of the new paper web having to be located within the two longitudinal edges of the adhesive tape, whereupon, for the purpose of the final preparation of the splicing method, removing any covering still present, whereupon the paper reel equipped in this way is accelerated to the same rotational speed as the almost completely unwound paper reel, is then pressed against the old paper web, the exposed self-adhesive compound of the front side of the adhesive tape sticking to the old paper web at substantially identical speeds of the paper webs, while at the same time the cleavable system (23, 24) on the underside of the adhesive tape cleaves as far as the web start of the new paper web and covers in a non-adhesive manner both the self-adhesive compounds with which it has been coated.

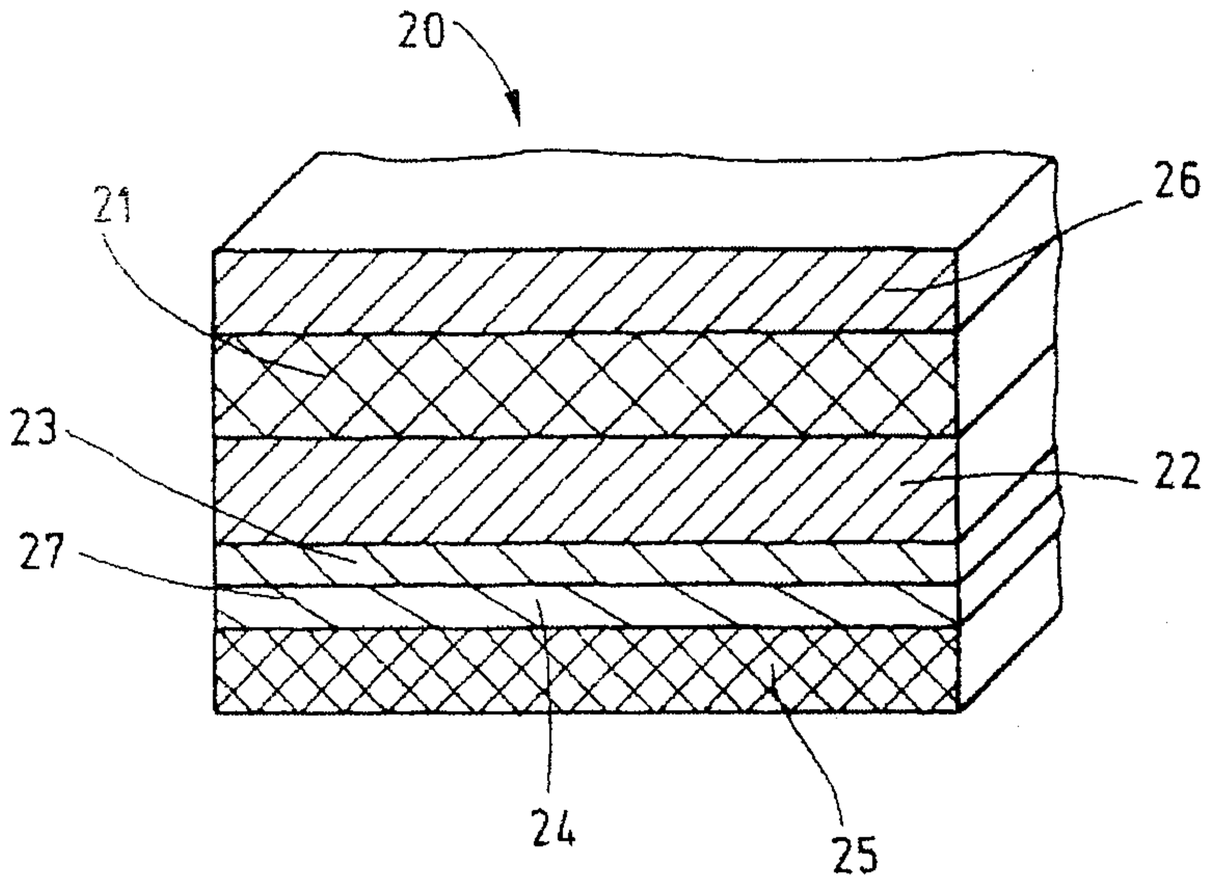

Fig.1

Fig.2

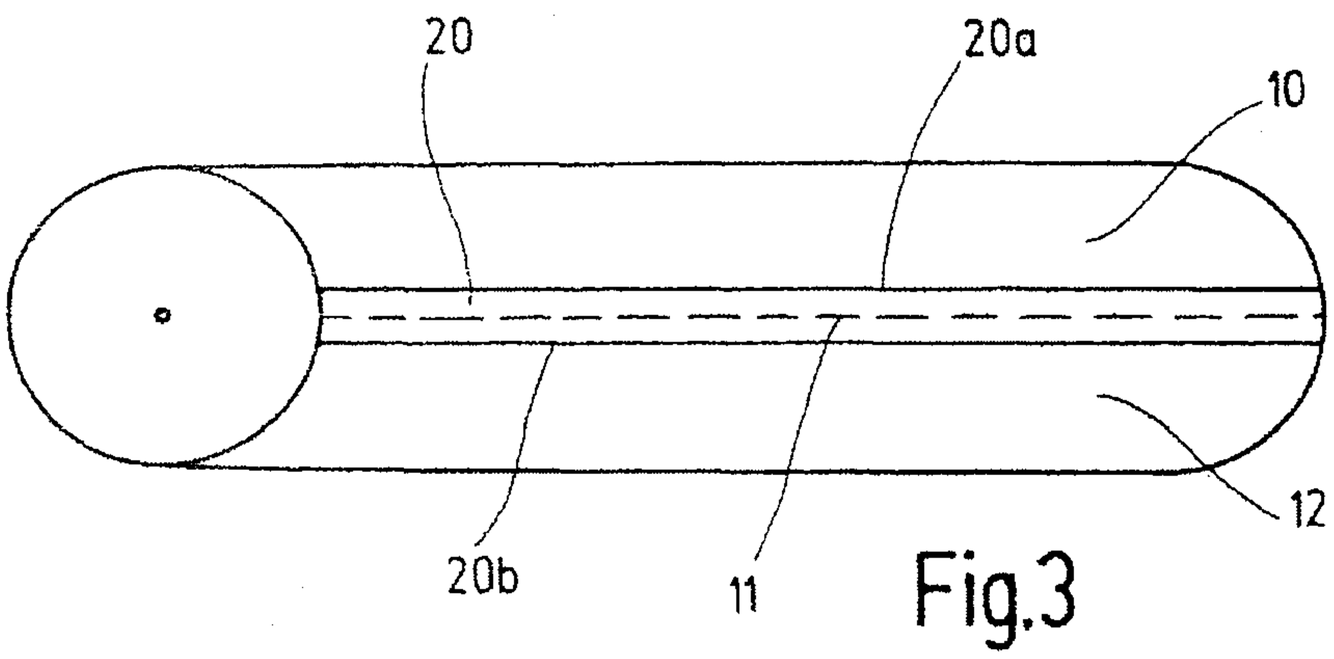

Fig.3

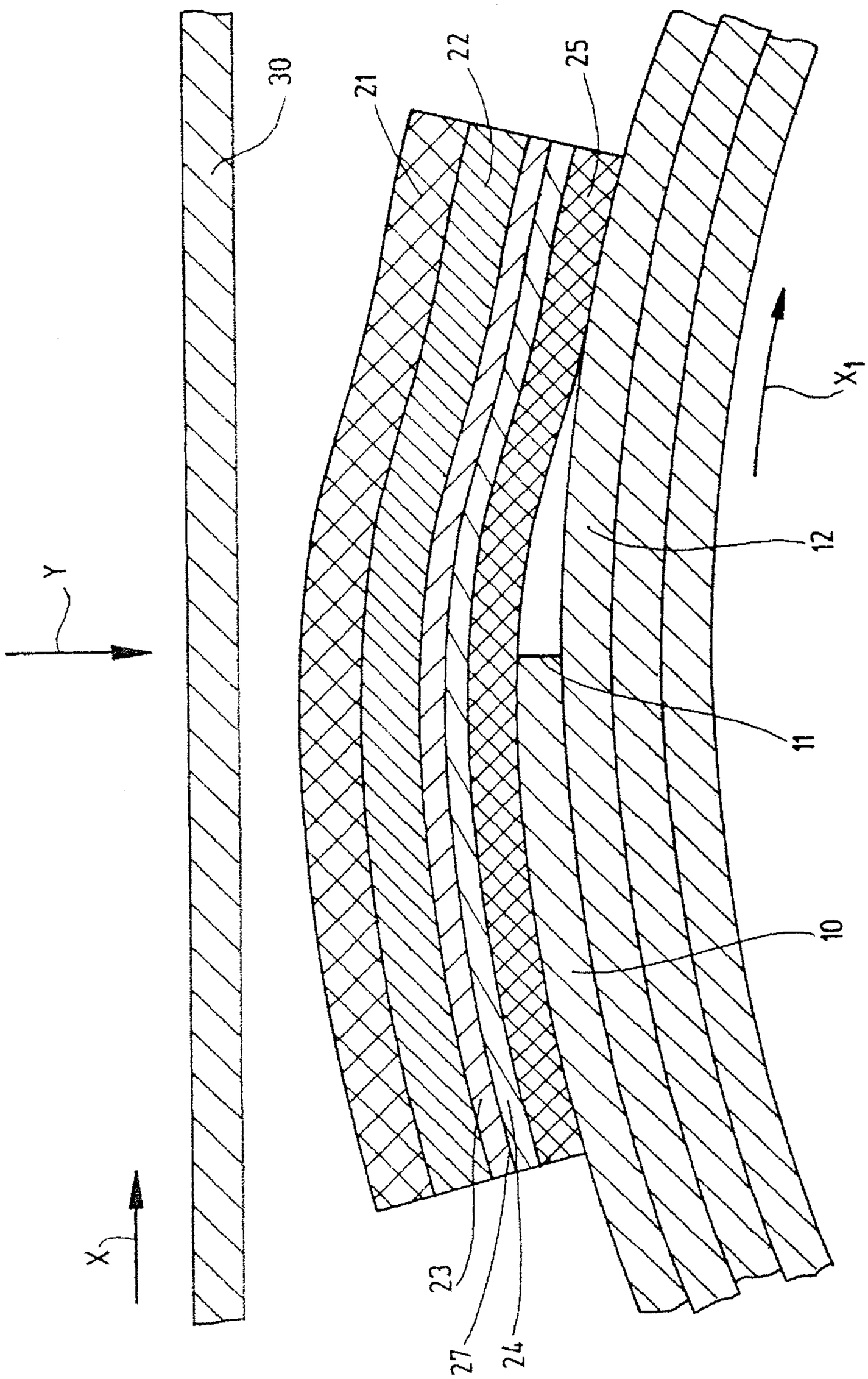

Fig.4

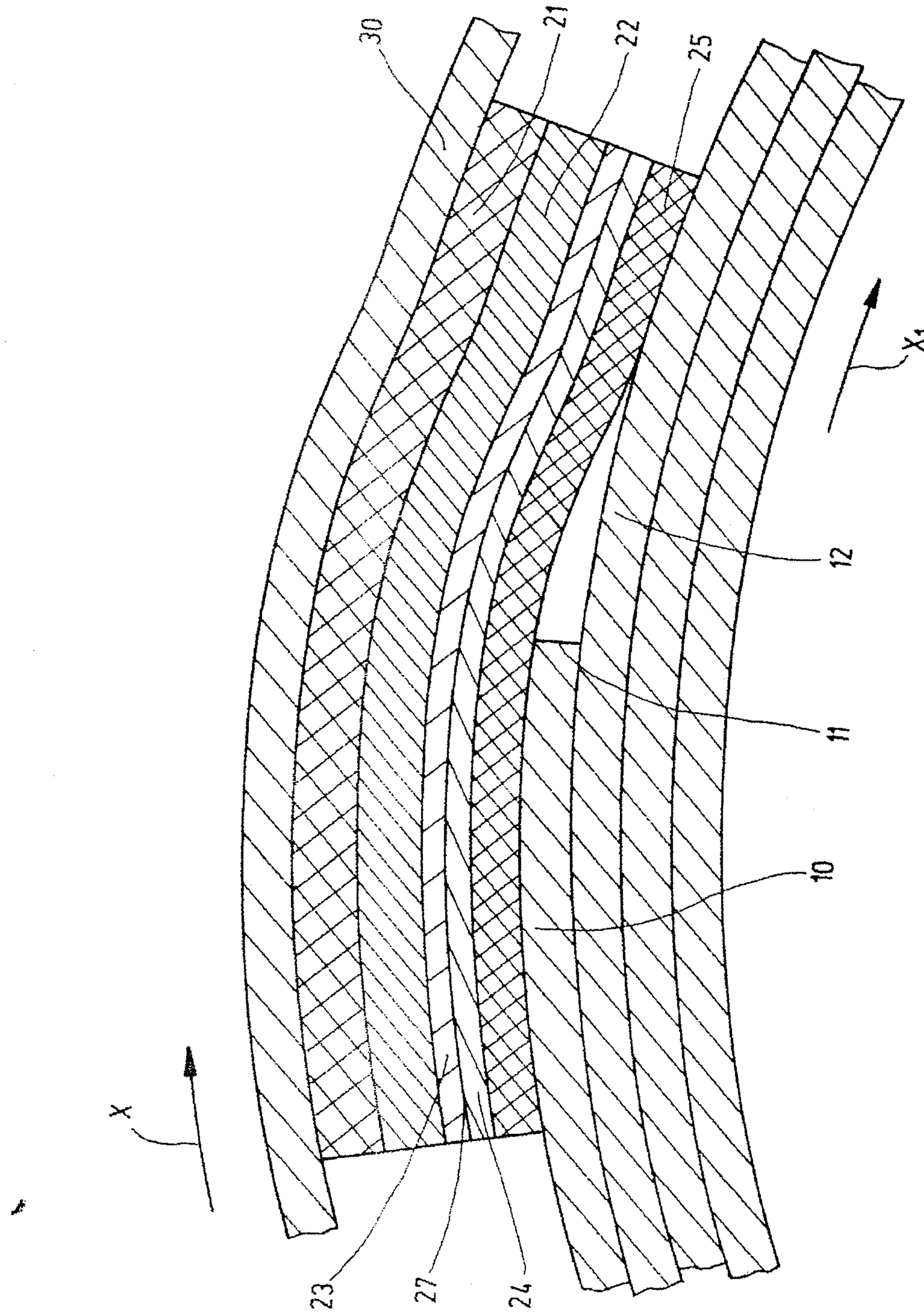

Fig.5

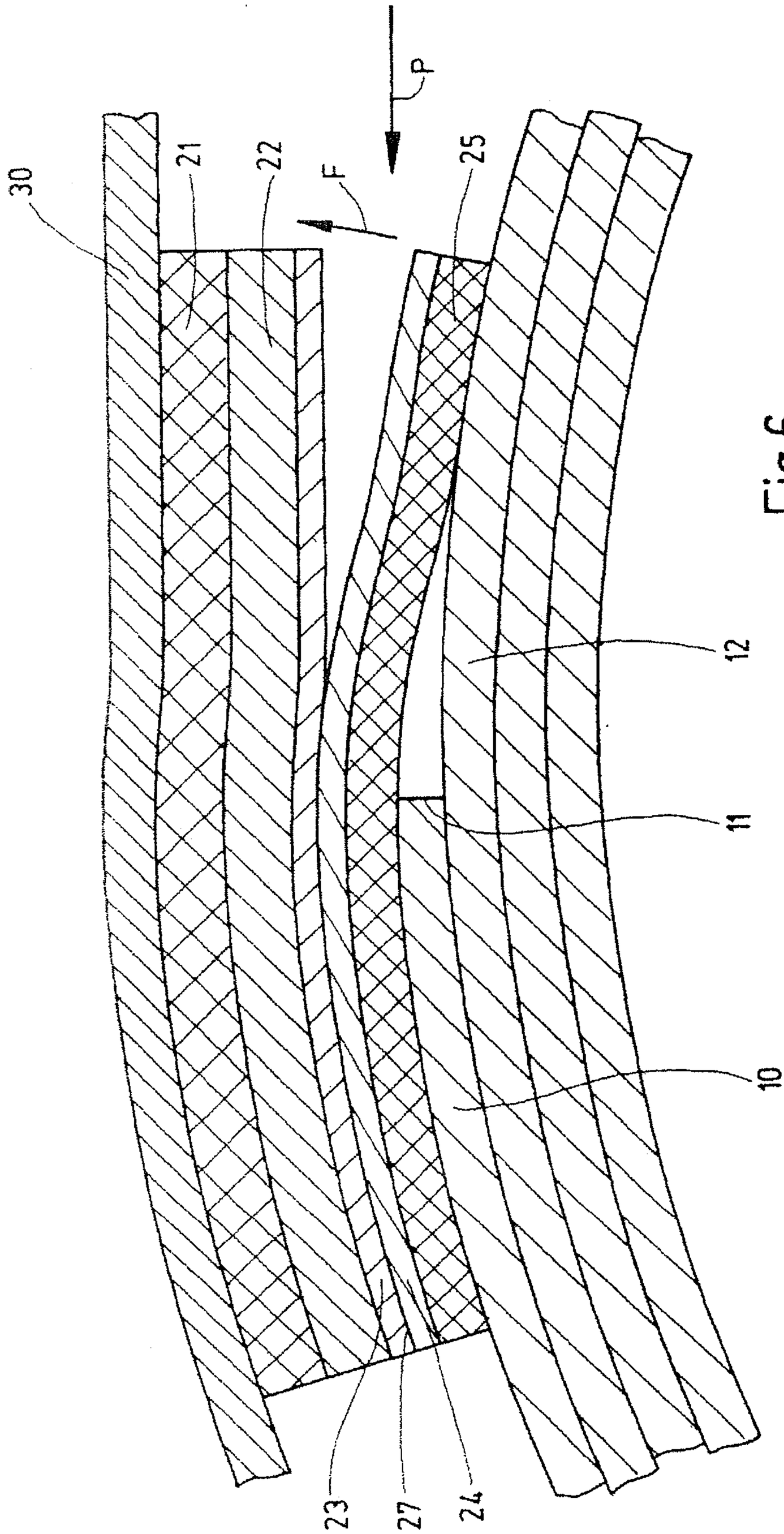

Fig.6

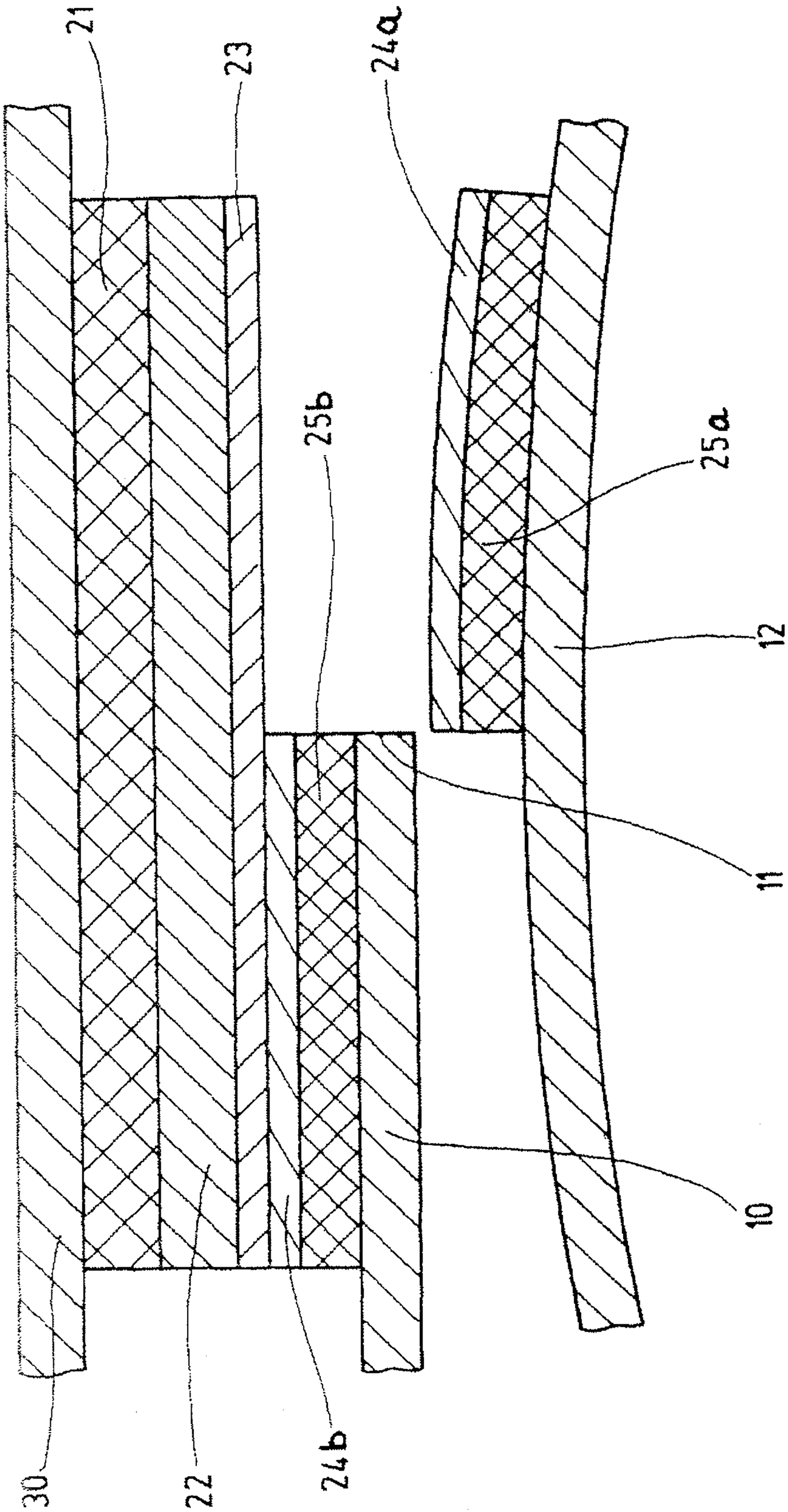

Fig.7

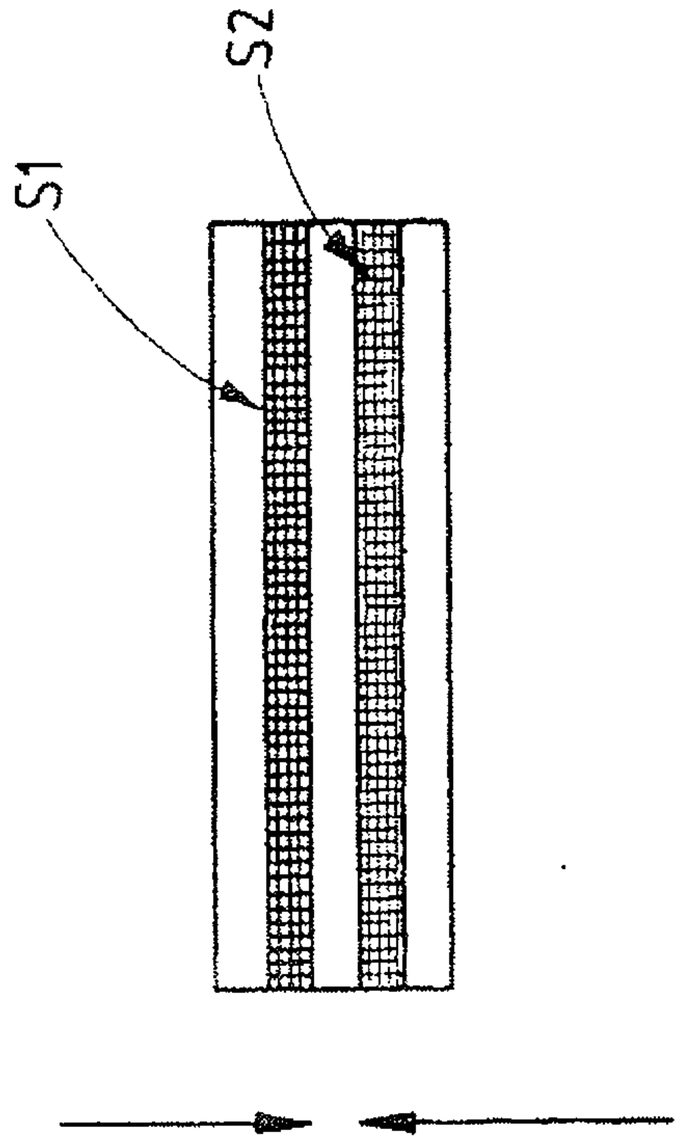

Fig.8
Known
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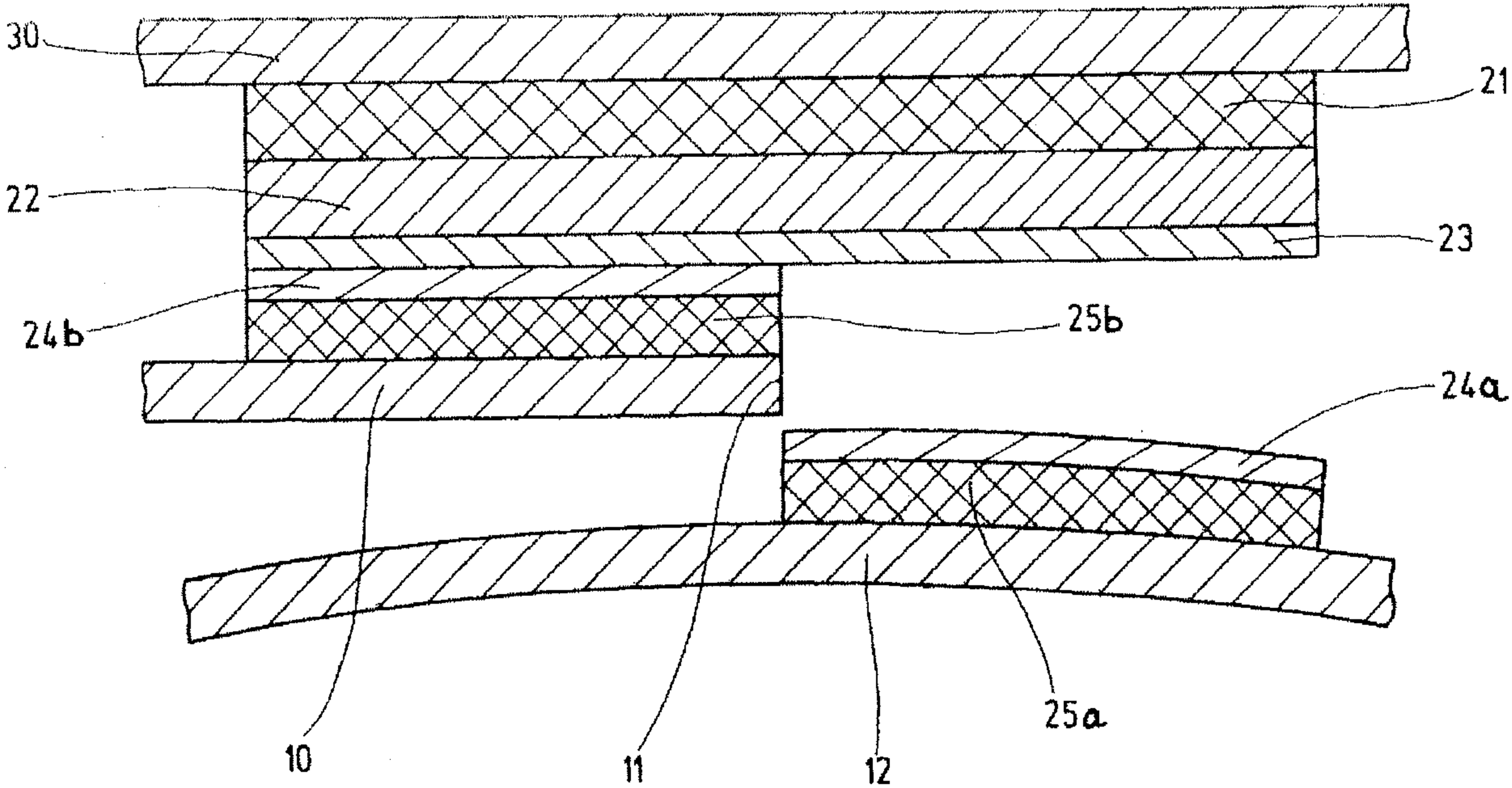
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