(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 102 371 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
29.12.2010 Bulletin 2010/52

(21) Application number: **07822727.9**

(22) Date of filing: **20.11.2007**

(51) Int Cl.:
C14B 5/00 *(2006.01)* ***B26D 7/01*** *(2006.01)*

(86) International application number:
PCT/EP2007/062550

(87) International publication number:
WO 2008/065022 (05.06.2008 Gazette 2008/23)

(54) **A MACHINE FOR MOVING AND CUTTING HIDES AND THE LIKE**

MASCHINE ZUM BEWEGEN UND SCHNEIDEN VON HÄUTEN UND DERGLEICHEN

MACHINE POUR DÉPLACER ET DÉCOUPER DES PEAUX ET SIMILAIRES

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

(30) Priority: **28.11.2006 IT BO20060810**
17.04.2007 IT BO20070277

(43) Date of publication of application:
23.09.2009 Bulletin 2009/39

(73) Proprietor: **Teseo S.p.A.**
63023 Fermo (Ascoli Piceno) (IT)

(72) Inventor: **GALLUCCI, Gianni**
63015 Monte Urano (Ascoli Piceno) (IT)

(74) Representative: **Dall'Olio, Giancarlo et al**
Invention S.r.l.
Via delle Armi 1
40137 Bologna (IT)

(56) References cited:
JP-A- 11 000 894

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 102 371 B1

Printed by Jouve, 75001 PARIS (FR)

Description

TECHNICAL FIELD

[0001] The present invention relates to the particular technical sector of machines for automatic working of flat articles, in particular to the movement, for example intermittent, of hides and similar materials and to the cutting and/or incision thereof in order to obtain shapes therefrom.

BACKGROUND ART

[0002] In the above-mentioned technical sector, it is very important to keep the hides well-laid-out and perfectly stretched during the cutting and/or incision operations, performed by a special mobile cutting unit.

[0003] To this end, the present applicant is the proprietor of a PCT application, PCT/IB2006/001619, entitled "A Machine for Moving and Automatically Cutting Hides and the Like" (corresponding to WO-A-2006/136907).

[0004] This machine, partially illustrated in figure 1, comprises: a fixed plate 1, affording a series of through-holes, not illustrated, which are connected to a depressed source; a cutting unit T arranged and operating above the aspirating plate 1; a first ring-wound conveyor 2, constituted by a belt 20 wound on relative rollers 22A, 22B, respectively a drive roller and a driven roller, the upper branch 21 of which is arranged such as to overlie, in proximity, the aspirating fixed plate 1, the belt 20 being provided with a central region made of a permeable material, destined, as a consequence of transiting above the plate 1, to be attracted thereby and drag unconstrainedly above it; a second ring-wound conveyor 3, constituted by a belt 30 made of a permeable material, such as felt, which is wound on relative idle rollers 32 and the upper branch 31 of which is destined to restingly receive the hides P in a stretched configuration.

[0005] The second conveyor 3 comprises idle rollers 32 positioned externally of the rollers 22A, 22B of the first conveyor 2, and an upper branch 31 interposed between the cutting unit T and the upper branch 21 of the first conveyor 2, in proximity thereof. The upper branch 31 of the second conveyor 3 is destined, together with the hides P stretched thereon, to be attracted adheringly to and drawn by the upper branch 21 of the first conveyor 2, consequently to the aspirating action of the plate 1; it transits thus below the cutting unit T, enabling the cutting unit T to perform the cutting operations on the hides P stretched thereon, and also represents a protection element of the central region of the upper branch 21 of the first conveyor 2 and the plate 1 from the action of the cutting unit T.

[0006] The width of the belt 20 is such as not to project beyond the rollers 22A, 22B; it is constituted by a heterogeneous material, such as a synthetic textile material, impregnated with synthetic resin, for example PVC, and is woven such as to identify a plurality of through-holes.

[0007] Owing to the special characteristics of the material used for the conveyor, it can happen that during machine functioning the belt does not stay in trim, i.e. it tends to deviate from the axis thereof.

[0008] Use of rollers provided with guide edges does not solve the problem as the belt tends to move towards one side, with all the problems that this brings for the movement thereof and for the automatic cutting of the hides and the like stretched on the belt of the second conveyor 3.

[0009] The fact that the belt 20, during the functioning of the machine, does not maintain its initial trim leads to incorrect advancing of the belt 30 of the second conveyor 3 and therefore of the hides resting thereon, as the aspirating action of the plate is no longer homogeneous on the belt 30 of the second conveyor 3 and therefore on the hides, damaging the cutting of the hides.

[0010] The present applicant has performed experiments with the aim of finding new technical solutions aimed at maintaining a predetermined trim of the belt of the first conveyor with repect to the drive and driven rollers the belt is wound upon, as well as to reduce both the realisation costs of the belt itself and the times required for setting it up to work.

DISCLOSURE OF INVENTION

[0011] In this regard an aim of the invention is to provide a machine, of the type described herein above, which is conformed such as to maintain the correct spatial position of the belt of the first conveyor over time, independently of the transversal dimensions thereof.

[0012] A further aim of the present invention is to provide a machine which attains the preceding aim by means of an easily-assemblable combination of elements which require only limited maintenance.

[0013] A still further aim of the invention consists in providing a machine in which mounting and dismounting of the belt of the first conveyor on and from the drive and driven rollers is simple and rapid.

[0014] A further aim of the present invention consists in providing a machine the costs of which are relatively contained with respect to the advantages which are provided.

[0015] The above-cited aims are attained, as set out in the content of the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The characteristics of the invention will emerge from the following description, in which a preferred through not exclusive embodiment of the invention will be illustrated, with reference to the accompanying figures of the drawings, in which:

figure 1 schematically illustrates, in a frontal view, a part of the machine for moving and cutting hides and the like of international application

PCT/IB2006/001619, described in the introduction hereto;

figure 2 is an enlarged view of section II-II of figure 1;

figure 3 is an enlarged view of section III-III of figure 1;

figure 4 is a schematic illustration, in frontal view, of a machine for moving and automatically cutting hides and the like, according to a third embodiment of the present invention;

figures 5A, 5B illustrate a view in enlarged scale of section V-V of figure 4 in a first embodiment of the machine of the invention, relating respectively to the mounting operation of the first conveyor and during the normal functioning of the first conveyor;

figures 5C, 5D illustrate the enlarged-scale view of section V-V of figure 4 in a second embodiment of the machine of the invention, relating respectively to the mounting operation of the first conveyor and during the normal functioning of the first conveyor;

figure 6 is an enlarged-scale view of section VI-VI of figure 4;

figure 7 is a schematic plan view in enlarged scale of detail K of figure 6;

figure 8 illustrates a partial perspective view, in a different scale with respect to the preceding figures, of an important detail of the machine, in a third embodiment of the machine.

BEST MODE FOR CARRYING OUT THE INVENTION

[0017] During the following description a first (figures 5A, 5B), a second (figures 5C, 5D) and a third (figures 4, 6, 7, 8) embodiments of the machine of the present invention will be described in order. In particular, the first and second embodiments will refer, for the sake of simplicity, to figure 4, where the presence of the abutment organs 50 are however to be disregarded, being provided only in the third embodiment of the invention, as will better emerge from the following description.

[0018] With reference to figures 5A, 5B and figure 4, 100 denotes a machine for moving and automatically cutting hides and the like. The machine 100 comprises functional parts already considered in figures 1, 2 and 3, relating to the prior art, and are therefore used herein with the same identifying numbers.

[0019] The machine 100 comprises: a fixed plate 1, interested by a series of through-holes, not illustrated, which are connected to a source in depression, also not illustrated; a cutting unit T arranged and operating above the aspirating plate 1; a first ring-wound conveyor 2, constituted by a belt 20 wound on relative rollers 22A, 22B, respectively a drive and a driven roller, an upper branch 21 of which belt 20 is arranged such as to be superposed above, and in proximity of, the aspirating plate 1, the belt 20 being provided with a central region realised in permeable material, destined, consequently of the transit thereof above the plate 1, to be attracted by the plate 1 and to drag without constraint above the plate 1; a second ring-wound conveyor 3, constituted by a belt 30 made of a permeable material, for example felt, which is wound on relative idle rollers 32 and an upper branch 31 of which is destined to restingly receive hides P in a stretched-out configuration.

[0020] The second conveyor 3 comprises idle rollers 32 positioned externally of the rollers 22A, 22B of the first conveyor 2, and an upper branch 31 interposed between the cutting unit T and the upper branch 21 of the first conveyor 2, in proximity thereof. The upper branch 31 of the second conveyor 3 is destined, together with the hides P stretched thereon, to be attracted adheringly and drawn by the upper branch 21 of the first conveyor 2, in consequence of the aspirating action of the plate 1; thus the upper branch 31 transits below the cutting unit T, enabling the cutting unit T to perform the cutting operations on the hides P, and further represents a protection element of the central region of the upper branch 21 of the first conveyor 2 and of the plate 1 from the action of the cutting unit T.

[0021] The belt 20 has a width such as not to project with edges thereof from the rollers 22A, 22B; the belt 20 is constituted by a heterogeneous material, such as a synthetic textile, impregnated with a synthetic resin, for example PVC, and is woven such as to identify a plurality of through-holes at least at the relative central region thereof; with reference to figure 5A, the belt 20 is further interested, at a relative edge thereof, by a broadening 250 which develops along the edge and is constituted, for example: by a fold R of the edge, folded at 180° towards the outside and blocked (for example glued) to the belt 20 (see detail A); or by an annular strip S, of a stiffer material than the belt 20, blocked (for example glued) externally to the edge of the belt (see detail B); or differently it can be obtained by conforming an annular edge in which a cable that is more rigid than the belt 20 can be inserted. Similar considerations are valid also for the broadenings 25, 26 that will be introduced in the following description with reference to the second and third embodiments of the invention.

[0022] Figure 5A illustrates a possible position of the belt 20 consequent to the mounting thereof on the rollers 22A, 22B (in figure 5A the drive roller is illustrated); consequently to the functioning of the first conveyor 2, it has been found during experiments that the upper branch 21 of the belt 20 is subjected to a transversal force T directed towards the broadening 250, which is annulled only when the broadening 250 is at the position of the adjacent heads X_1 of the rollers 22A, 22B (see figure 5B). The belt 20 self-positions with respect to the rollers 22A, 22B, reaching a stable trim during the functioning of the first

conveyor 2. This advantageous technical-functional aspect is manifested in both rotation directions of the rollers 22A, 22B (and thus the movement of the upper branch 21) and does not require the axes of the rollers 22A 22B to be maintained parallel.

[0023] The realisation of the belt 20 is also simple and the mounting and dismounting thereof onto and from the rollers 22A, 22B does not require highly specialised personnel, all of which has a positive effect on the costs associated to the machine.

[0024] A still further advantage of the present invention consists in having designed a machine for moving and automatically cutting hides and the like the costs of which are relatively contained with respect to the advantages obtained, and which is made up of a combination of elements that are easy to assemble and that require limited maintenance.

[0025] In the second embodiment of the present invention, see figures 4, 5C, 5D, both the edges of the belt 20 are interested by broadenings 25, 26, which are conformed in the same way as the broadening 250 of figures 5A, 5B.

[0026] Figure 5C illustrates a possible position of the belt 20 following mounting thereof on the rollers 22A, 22B (in this figure the drive roller 22A is shown); following the activating of the first conveyor 2, experiments have shown that two opposite forces T_1 and T_2 originate in the upper branch 21 of the belt 20, which forces T_1 and T_2 are respectively directed towards the broadenings 250A, 250B, such as to transversally stretch the belt 20. It has also been found that one of these forces slightly prevails over the other, with a consequence that the belt 20 is subjected to a resultant force that displaces it laterally until one of the broadenings 250A, 250B is positioned against the corresponding head (in figure 5D the broadening 250A is positioned at the head X_1); in this position the forces T_1 and T_2 compensate one another, with a consequent annulling of the resultant force, and the belt 20 thus reaches a stable equilibrium configuration, in which it remains during the functioning of the machine 100 and in which it is transversally stretched.

[0027] There is, therefore, a stable self-positioning of the belt 20 with respect to the rollers 22A, 22B and at the same time a permanent transversal stretching of the upper branch 21 of the belt 20; these advantageous technical-functional aspects are independent of the movement direction of the belt 20 and are not subordinated to the maintaining of the parallel situation of the axes of the rollers 22A, 22B.

[0028] The second embodiment retains the above-described advantages of the first embodiment.

[0029] In a third embodiment of the invention, see figures 4, 6, 7, 8, the machine comprises abutment organs 50, solidly constrained to the frame 80 of the machine 100, for encountering the internal lateral surfaces 25h, 26h of the broadenings 25, 26 of the belt 20, and for guiding the belt 20 and keeping it in position with respect to the drive roller 22A and the driven roller 22B of the first conveyor during the functioning thereof.

[0030] In the illustrated example, the abutment organs 50 are provided, for example, in proximity of the driven roller 22B (but they could also be located, or only located, at the drive roller 22A, see the part described in a broken line in figure 4) and are constituted by two identical units 51, 52 which are solidly constrained to the frame 80 and arranged respectively on opposite sides and laterally with respect to the belt 20 of the first ring-wound conveyor 2, symmetrically with respect to the vertical plane of the longitudinal development of the belt 20. Each unit 51, 52 includes two small plates, a first plate 53 and a second plate 54, facing and close to one another, and constrained to one another by means for fastening 56, between which plates 53, 54 a peripheral portion of the belt 20 is destined to run, comprising the respective broadening 25, 26; the first plate 53 exhibits on a more external part thereof an abutment 55 for contacting the internal lateral surface 25h, 26h of the relative broadening 25, 26. To facilitate the relative sliding of the belt 20 with respect to the fixed units 51, 52, each abutment 55 exhibits two guides 55h, 55j in inlet and outlet of the belt 20 into and out of the unit 51, 52 and on the side in which the abutment 55 is destined to meet the corresponding broadening 25, 26.

[0031] The complementary action of the units 51, 52 on the belt 20 ensures correct positioning of the belt with respect to the rollers 22A, 22B on which the belt is wound; the abutments 55 of the units 51, 52 respectively contact the internal lateral surfaces 25h, 26h of the broadenings 25, 26, maintaining the belt 20 in position. As can be seen in figure 6, the reciprocal arrangement of the units 51, 52 in relation to the lateral dimensions of the belt 20 is such as not to permit lateral displacements of the belt 20 with respect to the winding rollers 22A, 22B during the functioning of the machine 100. Generally speaking, however, the units 51, 52 can be arranged and/or sized such as to enable limited variations in the position of the belt 20 with respect to the rollers 22A, 22B; still with reference to figure 6, this state could be obtained by nearing the units 51, 52 to one another (a solution which is not shown in the figures).

[0032] The suitable mutual arrangement of the units 51, 52 further guarantees the transversal stretching of the belt 20, thanks to the abutment action exerted by the relative abutments 55 against the broadenings 25, 26, with all the positive implications which this brings to the correct functioning of the cutting operations on the hides P.

[0033] In the light of the above, the units 51, 52 can be integrated into the machine 100 to impose a definite positioning, for example centred, of the belt 20 with respect to the winding rollers 22A, 22B, or to function substantially as guide elements of the belt 20 if the reciprocal arrangement thereof is such as to enable zeroing of the resultant force originating in the belt 20 (see above); in the first case the abutments 55 of the units 51, 52 compensate the resultant transversal force of the opposite forces T_1,

T_2, while in the second case the abutments 55 will merely have a guide function. In both cases the belt 20 maintains its stable spatial trim, with respect to the rollers 22A, 22B on which it is wound, and an optimal transversal stretch; these advantageous technical-functional aspects are the same for belts of any width, even greater than 150 cm.

[0034] The advantage of the present invention consists in having defined a machine which fully satisfies the predetermined aims, as it ensures a stable spatial trim of the belt of the first conveyor and the transversal stretching thereof, with all the positive implications of this for an optimal and precise hide P cutting operation; the machine is also functional, reliable and constituted by elements that are easy to assemble. Advantageously the presence of the abutment and guide organs of the belt 20 of the first ring-wound conveyor 2 improves the stability thereof during functioning even for belts wider than 150cm, thus ensuring a predetermined spatial positioning of the belt 20 with respect to the rollers 22A, 22B on which it is wound, as well as an optimal transversal stretching of the belt 20 itself. This objective has been attained by providing abutment and guide organs which are simply conceived, of modest dimensions, easy to assemble and the reciprocal distance of which, thanks to their constructional simplicity, can easily be adjusted according to operating requirements (definition of a degree of play which enables limited transversal displacements of the belt) and the format of belt used.

[0035] It is stressed that the organs 50, constituted in the illustrated example by a pair of units 51, 52 which are reciprocally complementary, can be provided, either in addition or alternatively, at other regions of the first ring-wound conveyor 2, for example in the central zone of the lower branch, in proximity of the drive roller 22A or on the upper branch 21; it is further stressed that the organs 50 can alternatively be constituted by a sole abutment and guide unit of the belt 20, which cooperate to advantageously increase the stability of the belt 20. All the above-cited variants have not been represented in the enclosed figures, as they are simple to deduce from the illustrated embodiment.

[0036] The above has been described by way of non-limiting example, so that any variants of a practical-applicational nature can be considered to fall within the ambit of protection sought for the invention as it is described in the following claims.

Claims

1. A machine for moving and automatically cutting hides and the like, comprising: an aspirating plane (1) supplied by a source in depression; a cutting unit (T) arranged and operating above the aspirating plane (1); a first ring-wound conveyor (2) comprising a belt (20) made of a permeable material wound on relative rollers (22A, 22B), comprising a drive roller (22A) and a driven roller (22B), having an upper branch (21) which is superposed on and in proximity of the aspirating plane (1), the belt (20) being attracted, during its transit, by the aspirating plane (1), dragging without constraint above the aspirating plane (1); a second ring-wound conveyor (3), with a relative belt (30) made of permeable material and wound on idle rollers (32), an upper branch (31) of which is destined to restingly receive the hides (P) in a stretched-out configuration and is interposed between the cutting unit (T) and the upper branch (21) of the first conveyor (2), the machine being **characterised in that** the belt (20) is not wider than an axial development of the rollers (22A, 22B) and is interested, at at least an edge thereof, by a corresponding broadening (25, 26, 250A, 250B) developing in a closed ring along the edge.

2. The machine of claim 1, **characterised in that** both the edges of the belt (20) are interested by relative broadenings (25, 26, 250A, 250B) developing in a closed ring along the edges.

3. The machine of claim 1 or 2, **characterised in that** it comprises organs (50) which are solidly constrained to the frame (80) of the machine (100), which organs (50) are abutment organs for each broadening (25, 26) of the belt (20), which abutment organs guide the belt (20), keeping the belt (20) stably in position with respect to the drive roller (22A) and the driven roller (22B) of the first ring-wound conveyor (2).

4. The machine of claim 2, **characterised in that** it comprises organs (50), which are solidly constrained to the frame (80) of the machine (100), which organs (50) are provided with abutments (55) for encountering each broadening (25, 26) at a lateral internal surface (25h, 26h) thereof, which organs (50) guide the belt (20), keeping the belt (20) stably in position with respect to the drive roller (22A) and the driven roller (22B) of the first ring-wound conveyor (2).

5. The machine of claim 4, **characterised in that** the abutment and guide organs (50) comprise at least two complementary units (51, 52) which are solidly constrained to the frame (80) and which are respectively arranged on opposite sides and laterally with respect to the belt (20) of the first ring-wound conveyor (2), each unit (51, 52) comprising two facing plates, a first plate (53) and a second plane (54), between which a peripheral portion of the belt (20) is destined to run, which peripheral portion comprises at least one broadening (25, 26), the first plate (53) being provided with an abutment (55) for encountering the broadening (25, 26) at the internal lateral surface 25h, 26h thereof.

6. The machine of claim 4 or 5, **characterised in that**

each abutment (55) exhibits at least a guide (55h, 55j).

7. The machine of any one of the claims 1 to 5, **characterised in that** each broadening (25, 26, 250A, 250B) is constituted by a fold (R) of a corresponding edge of the above belt (20), folded by 180° in an external direction and blocked to the belt (20).

8. The machine of any one of claims from 1 to 5, **characterised in that** each broadening (25, 26, 250A, 250B) is defined by an annular strip (S), externally blocked to the edge of the belt (20), a rigidity of the annular strip being greater than a rigidity of the belt (20).

9. The machine of any one of claims from 1 to 5, **characterised in that** each broadening (25, 26, 250A, 250B) is defined by a corresponding annular edge in which a cable is inserted, the cable being more rigid than the belt (20).

Patentansprüche

1. Eine Maschine zum Bewegen und automatischen Schneiden von Häuten und Ähnlichem, umfassend: eine Ansaugebene (1), die durch eine Unterdruckquelle versorgt wird, eine Schneideinheit (T), die oberhalb der Ansaugebene (1) angeordnet und betrieben wird, einen ersten ringgewundenen Förderer (2), der ein Band (20) umfasst, das aus einem durchlässigen Material hergestellt ist, das um jeweilige Rollen (22A, 22B) gewunden ist, der eine Antriebsrolle (22A) sowie eine angetriebene Rolle (22B) umfasst, der einen oberen Zweig (21) aufweist, der überlagernd auf und in Nähe der Ansaugebene (1) angeordnet ist, wobei das Band (20) während seiner Durchfahrt von der Ansaugebene (1) angezogen wird und der ohne Zwang oberhalb der Ansaugebene (1) schleppt, einen zweiten ringgewundenen Förderer (3), der ein jeweiliges Band (30) aufweist, das aus einem durchlässigen Material hergestellt ist und auf Leerlaufrollen (32) gewunden ist, von dem ein oberer Zweig (31) vorgesehen ist, um ruhend die Häute (P) in einer ausgedehnten Konfiguration zu empfangen, und der zwischen der Schneideinheit (T) und dem oberen Zweig (21) des ersten Förderers (2) angeordnet ist, die Maschine ist **dadurch gekennzeichnet, dass** das Band (20) nicht breiter ist als ein axialer Aufbau der Rollen (22A, 22B) und an mindestens einem Rand davon durch eine entsprechende Verbreiterung (25, 26, 250A, 250B) geführt ist, die in einem geschlossenen Ring entlang des Rands aufgebaut ist.

2. Die Maschine gemäß Anspruch 1, **dadurch gekennzeichnet, dass** beide Ränder des Bands (20) durch jeweilige Verbreiterungen (25, 26, 250A, 250A) geführt sind, die in einem geschlossenen Ring entlang der Ränder aufgebaut sind.

3. Die Maschine gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** sie Organe (50) umfasst, die fest an den Rahmen (80) der Maschine (100) gezwängt sind, während die Organe (50) Angrenzorgane für jede Verbreiterung (25, 26) des Bands (20) sind, wobei die Angrenzorgane das Band (20) führen und das Band (20) in Bezug auf die Antriebsrolle (22A) und die angetriebene Rolle (22B) des ersten ringgewundenen Förderers (2) stabil in Position halten.

4. Die Maschine gemäß Anspruch 2, **dadurch gekennzeichnet, dass** sie Organe (50) umfasst, die fest an den Rahmen (80) der Maschine (100) gezwängt sind, wobei die Organe (50) mit Angrenzungen (55) zum In-Berührung-Kommen mit jeder Verbreiterung (25, 26) an einer seitlichen inneren Oberfläche (25h, 26h) davon bereitgestellt sind, während die Organe (50) das Band (20) führen und das Band (20) in Bezug auf die Antriebsrolle (22A) und die angetriebene Rolle (22B) des ersten ringgewundenen Förderers (2) stabil in Position halten.

5. Die Maschine gemäß Anspruch 4, **dadurch gekennzeichnet, dass** die Angrenz- und Führungsorgane (50) mindestens zwei sich ergänzende Einheiten (51, 52) umfassen, die fest an den Rahmen (80) gezwängt sind und jeweils auf entgegengesetzten Seiten sowie seitlich in Bezug auf das Band (20) des ersten ringgewundenen Förderers (2) angeordnet sind, wobei jede Einheit (51, 52) zwei sich gegenüberliegende Platten umfasst, eine erste Platte (53) sowie eine zweite Ebene (54), zwischen denen ein umfänglicher Bereich des Bands (20) zum Laufen bestimmt ist, wobei der umfängliche Bereich mindestens eine Verbreiterung (25, 26) umfasst, während die erste Platte (53) mit einer Angrenzung (55) zum In-Berührung-Kommen mit der Verbreiterung (25, 26) an der inneren seitlichen Oberfläche (25h, 26h) davon bereitgestellt wird.

6. Die Maschine gemäß Anspruch 4 oder 5, **dadurch gekennzeichnet, dass** jede Angrenzung (55) mindestens eine Führung (55h, 55j) aufweist.

7. Die Maschine gemäß einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** jede Verbreiterung (25, 26, 250A, 250B) durch eine Falz (R) von einem entsprechenden Rand des oberen Bands (20) erzeugt wird, die um 180° in einer äußeren Richtung gefaltet ist und an dem Band (20) blockiert ist.

8. Die Maschine gemäß einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** jede Verbreite-

rung (25, 26, 250A, 250B) durch einen ringförmigen Streifen (S) definiert ist, der außen an dem Rand des Bands (20) geblockt ist, wobei eine Steifigkeit des ringförmigen Streifens größer ist als eine Steifigkeit des Bands (20).

9. Die Maschine gemäß einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** jede Verbreiterung (25, 26, 250A, 250B) durch einen jeweiligen ringförmigen Rand definiert ist, in den ein Kabel eingesetzt ist, wobei das Kabel steifer ist als das Band (20).

Revendications

1. Machine pour déplacer et couper automatiquement des peaux et similaires, comprenant : un plan d' aspiration (1) alimenté par une source de vide ; une unité de coupe (T) agencée et fonctionnant au-dessus du plan d'aspiration (1) ; un premier transporteur en anneau (2) comprenant une courroie (20) réalisée avec un matériau perméable enroulé sur des rouleaux (22A, 22B) relatifs, comprenant un rouleau d'entraînement (22A) et un rouleau entraîné (22B) ayant une branche supérieure (21) qui est superposée sur et à proximité du plan d'aspiration (1), la courroie (20) étant attirée, pendant son passage, par le plan d'aspiration (1) et traînant sans contrainte au-dessus du plan d'aspiration (1) ; un deuxième transporteur en anneau (3) avec une courroie (30) relative réalisée avec un matériau perméable et enroulée sur des galets de guidage (32), dont une branche supérieure (31) est destinée à recevoir au repos les peaux (P) dans une configuration étirée et est interposée entre l'unité de coupe (T) et la branche supérieure (21) du premier transporteur (2), la machine étant **caractérisée en ce que** la courroie (20) n'est pas plus large qu'un développement axial des rouleaux (22A, 22B) et est concernée, au niveau d'au moins l'un de ses bords, par un élargissement correspondant (25, 26, 250A, 250B) se développant dans un anneau fermé le long du bord.

2. Machine selon la revendication 1, **caractérisée en ce que** les deux bords de la courroie (20) sont concernés par des élargissements (25, 26, 250A, 250B) relatifs se développant dans un anneau fermé le long des bords.

3. Machine selon la revendication 1 ou 2, **caractérisée en ce qu'**elle comprend des organes (50) qui sont contraints fermement sur le châssis (80) de la machine (100), lesquels organes (50) sont des organes de butée pour chaque élargissement (25, 26) de la courroie (20), lesquels organes de butée guident la courroie (20), maintenant la courroie (20) stable en position par rapport au rouleau d'entraînement (22A) et au rouleau entraîné (22B) du premier transporteur en anneau (2).

4. Machine selon la revendication 2, **caractérisée en ce qu'**elle comprend des organes (50) qui sont contraints fermement sur le châssis (80) de la machine (100), lesdits organes (50) sont équipés de butées (55) pour rencontrer chaque élargissement (25, 26) au niveau de sa surface interne latérale (25h, 26h), lesquels organes (50) guident la courroie (20), maintenant la courroie (20) stable en position par rapport au rouleau d'entraînement (22A) et au rouleau entraîné (22B) du premier transporteur en anneau (2).

5. Machine selon la revendication 4, **caractérisée en ce que** les organes de butée et de guidage (50) comprennent au moins deux unités complémentaires (51, 52) qui sont contraintes fermement sur le châssis (80) et qui sont respectivement agencées sur des côtés opposés et latéralement par rapport à la courroie (20) du premier transporteur en anneau (2), chaque unité (51, 52) comprenant deux plaques en vis-à-vis, une première plaque (53) et une deuxième plaque (54), entre lesquelles une partie périphérique de la courroie (20) est destinée à passer, laquelle partie périphérique comprend au moins un élargissement (25, 26), la première plaque (53) étant équipée d'une butée (55) pour rencontrer l'élargissement (25, 26) au niveau de sa surface latérale interne (25h, 26h).

6. Machine selon la revendication 4 ou 5, **caractérisée en ce que** chaque butée (55) présente au moins un guide (55h, 55j).

7. Machine selon l'une quelconque des revendications 1 à 5, **caractérisée en ce que** chaque élargissement (25, 26, 250A, 250B) est constitué par un pli (R) d'un bord correspondant de la courroie (20) ci-dessus, plié à 180° dans une direction externe et bloqué sur la courroie (20).

8. Machine selon l'une quelconque des revendications 1 à 5, **caractérisée en ce que** chaque élargissement (25, 26, 250A, 250B) est défini par une bande annulaire (S), bloquée extérieurement sur le bord de la courroie (20), une rigidité de la bande annulaire étant supérieure à une rigidité de la courroie (20).

9. Machine selon l'une quelconque des revendications 1 à 5, **caractérisée en ce que** chaque élargissement (25, 26, 250A, 250B) est défini par un bord annulaire correspondant dans lequel est inséré un câble, le câble étant plus rigide que la courroie (20).

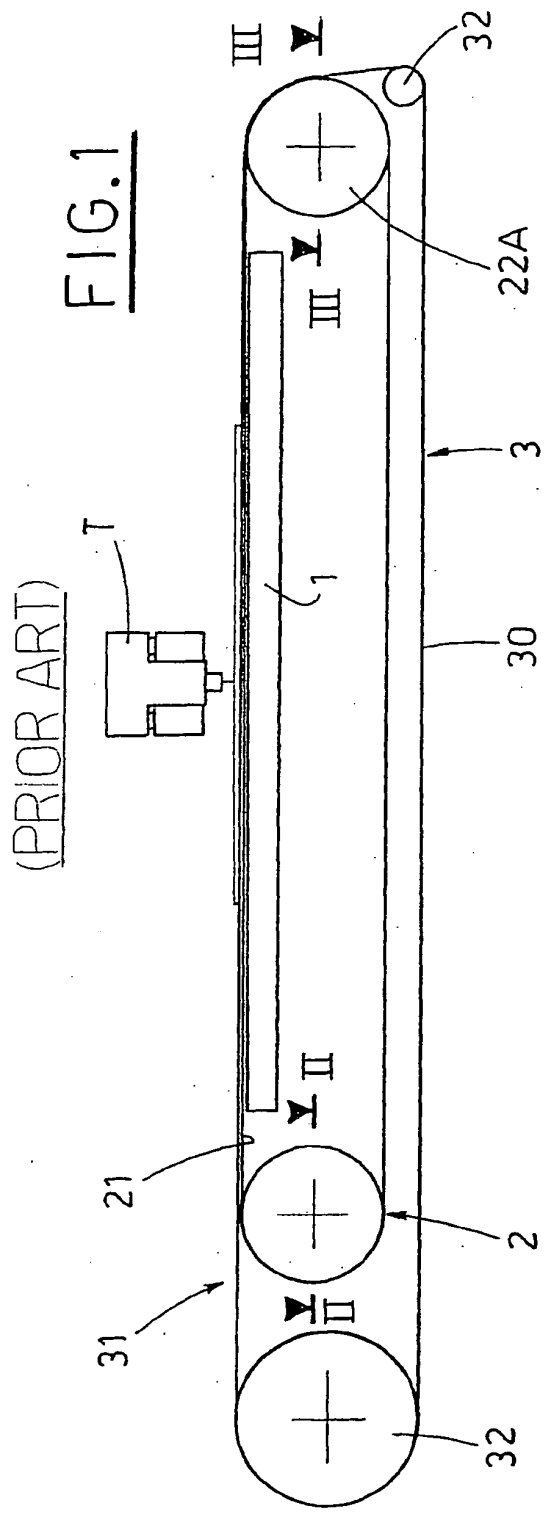


FIG.1

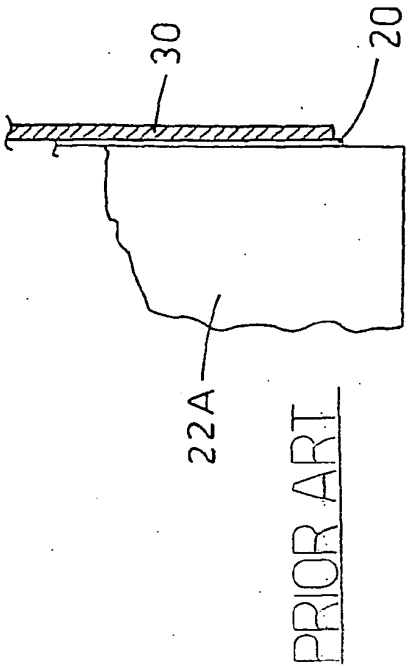


FIG.3

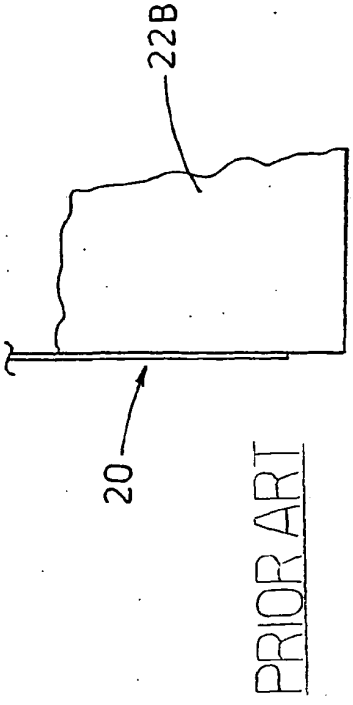


FIG.2

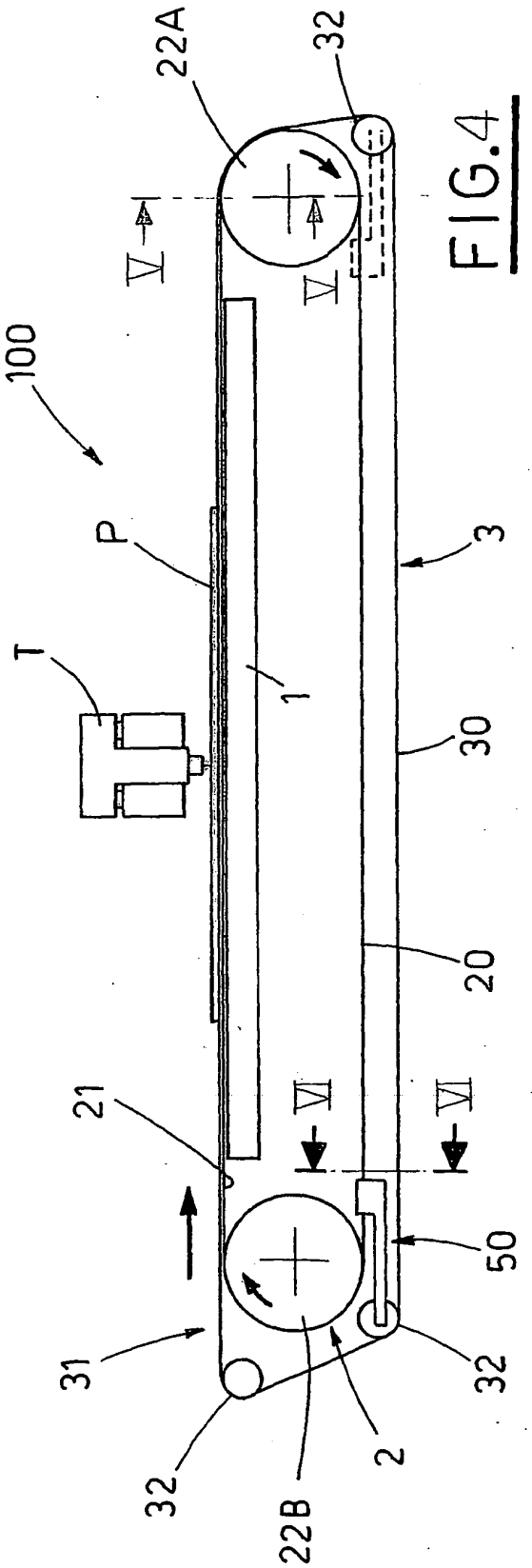

22A
32
100
P
T
1
3
30
20
21
50
31
32
22B
2

FIG.4

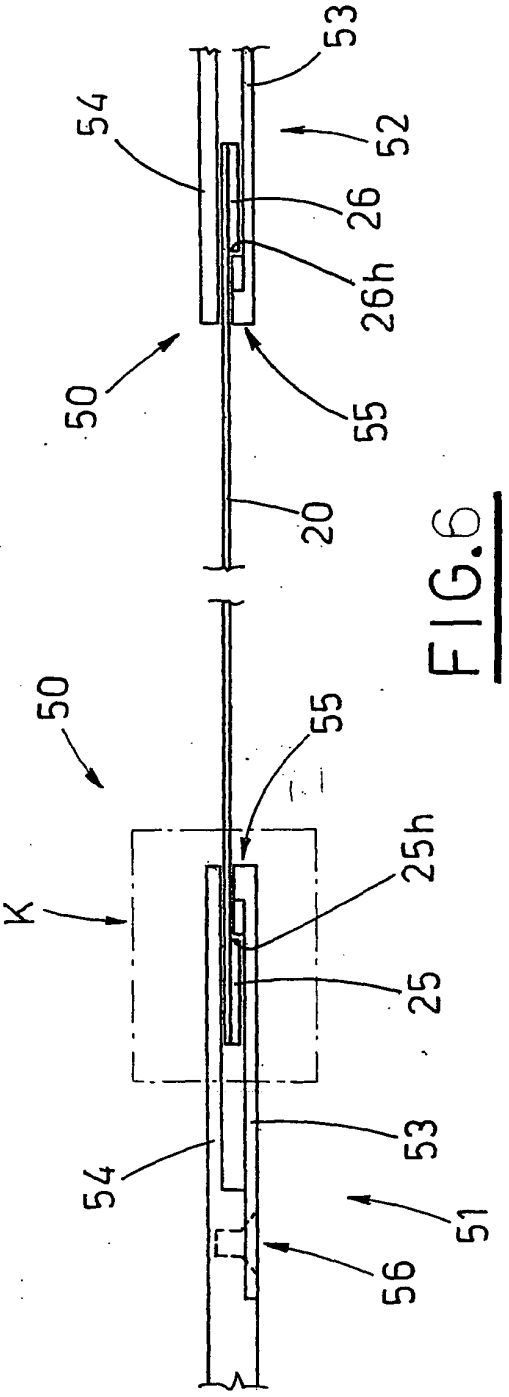

53
54
52
26
26h
50
55
20
50
55
25h
K
25
53
54
51
56

FIG.6

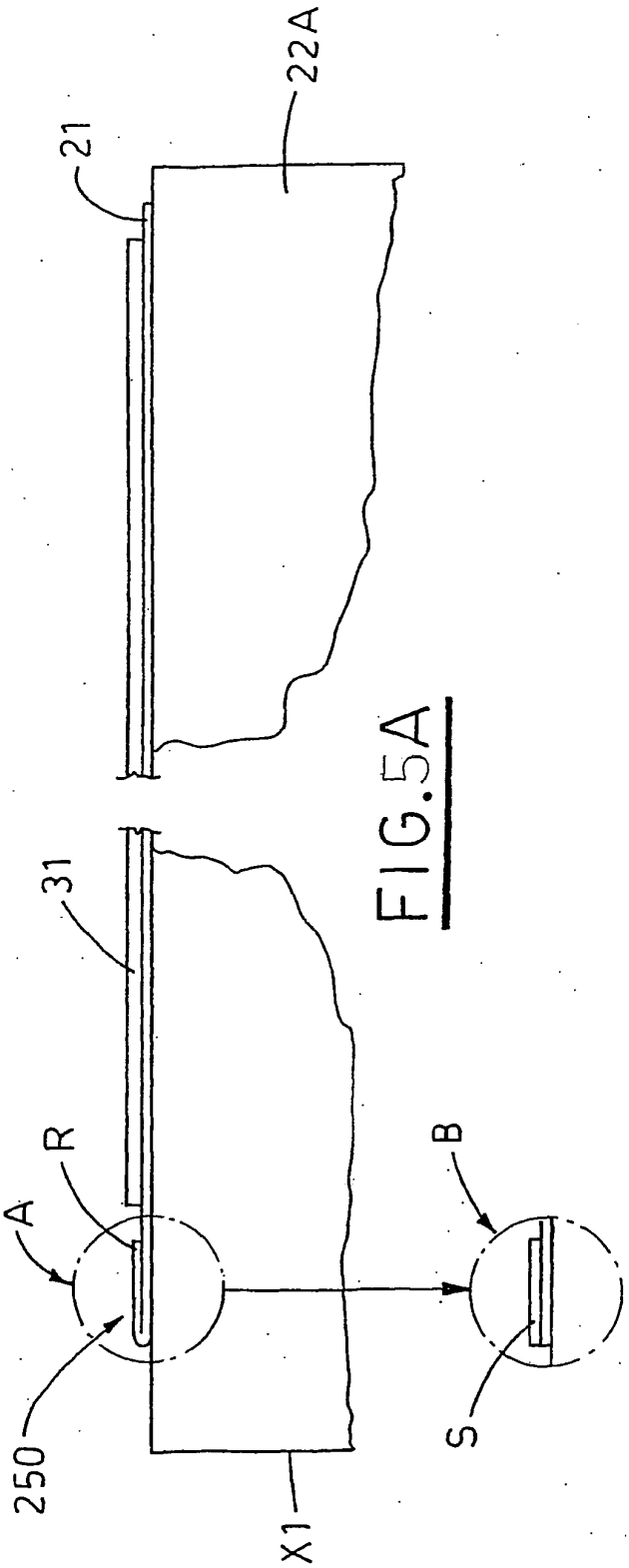


FIG.5A

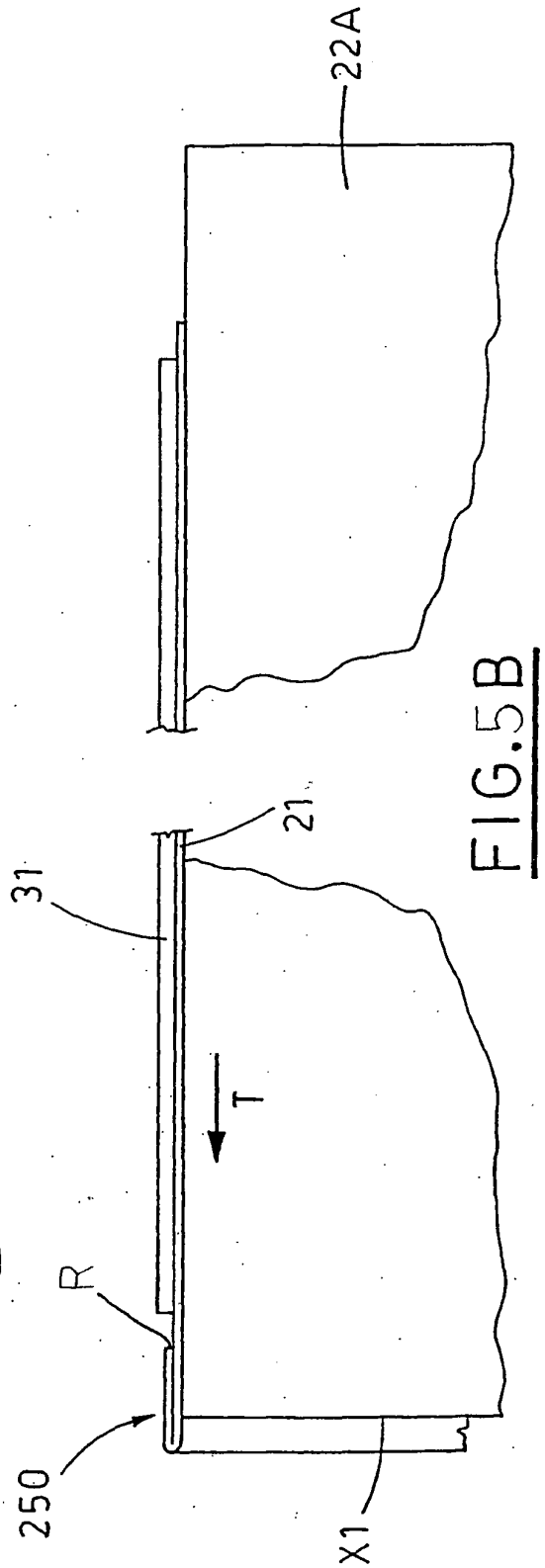


FIG.5B

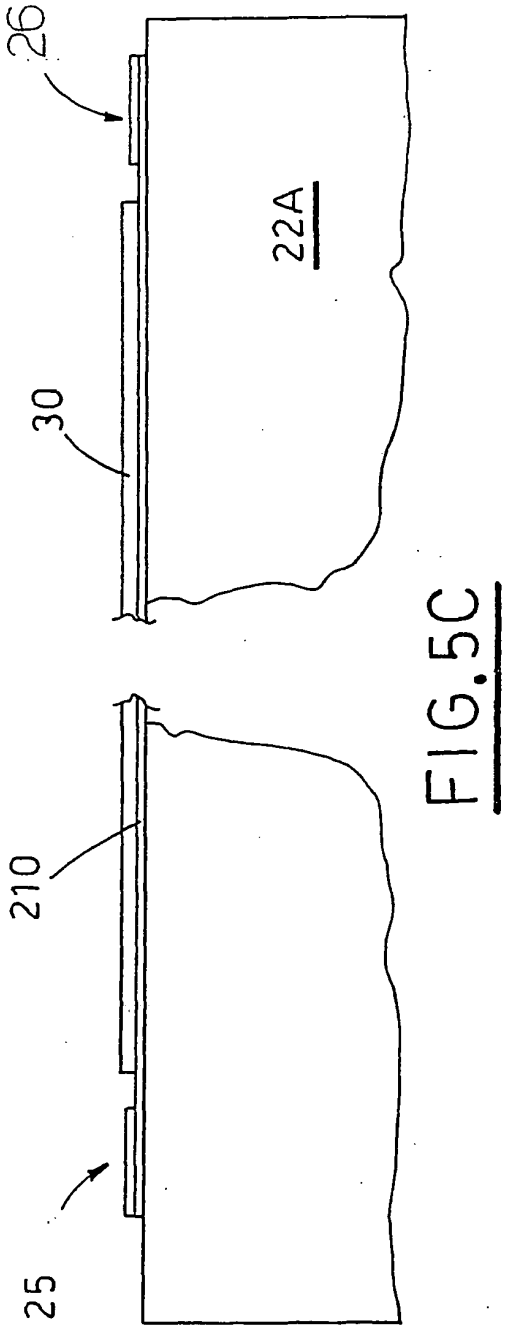


FIG.5C

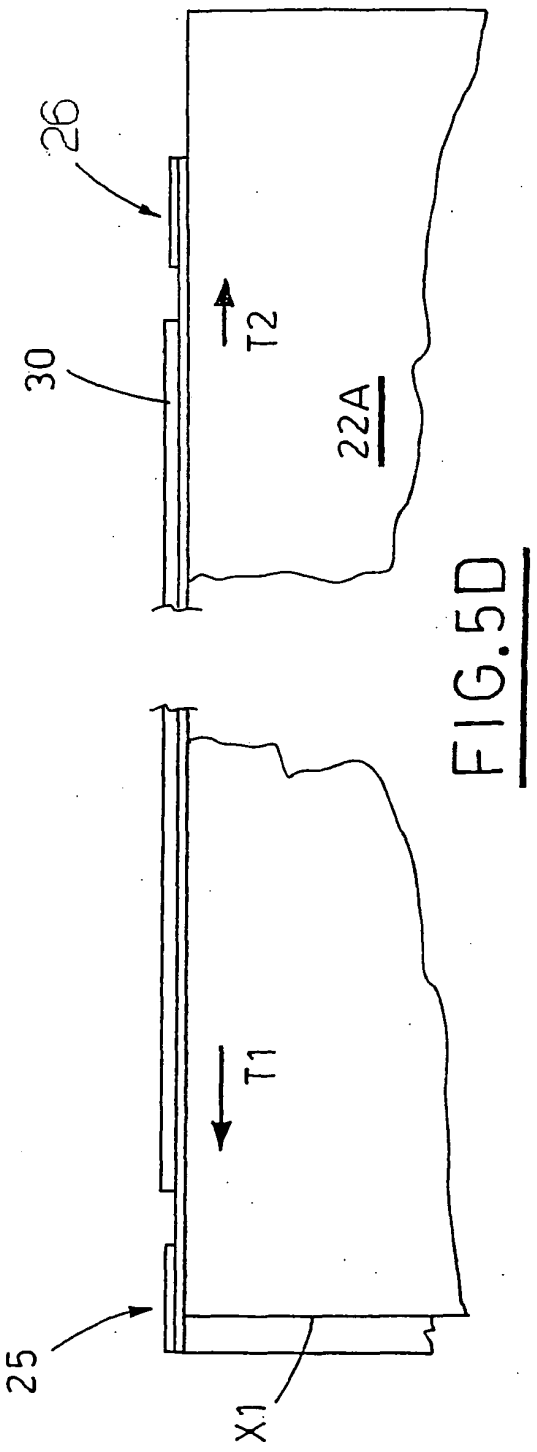


FIG.5D

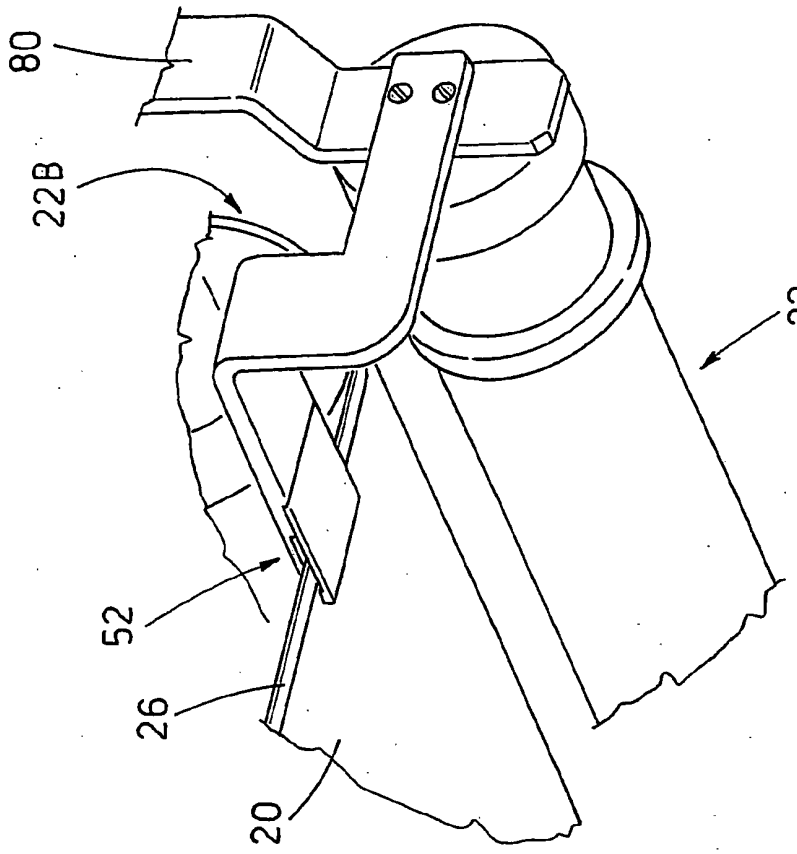


FIG.8

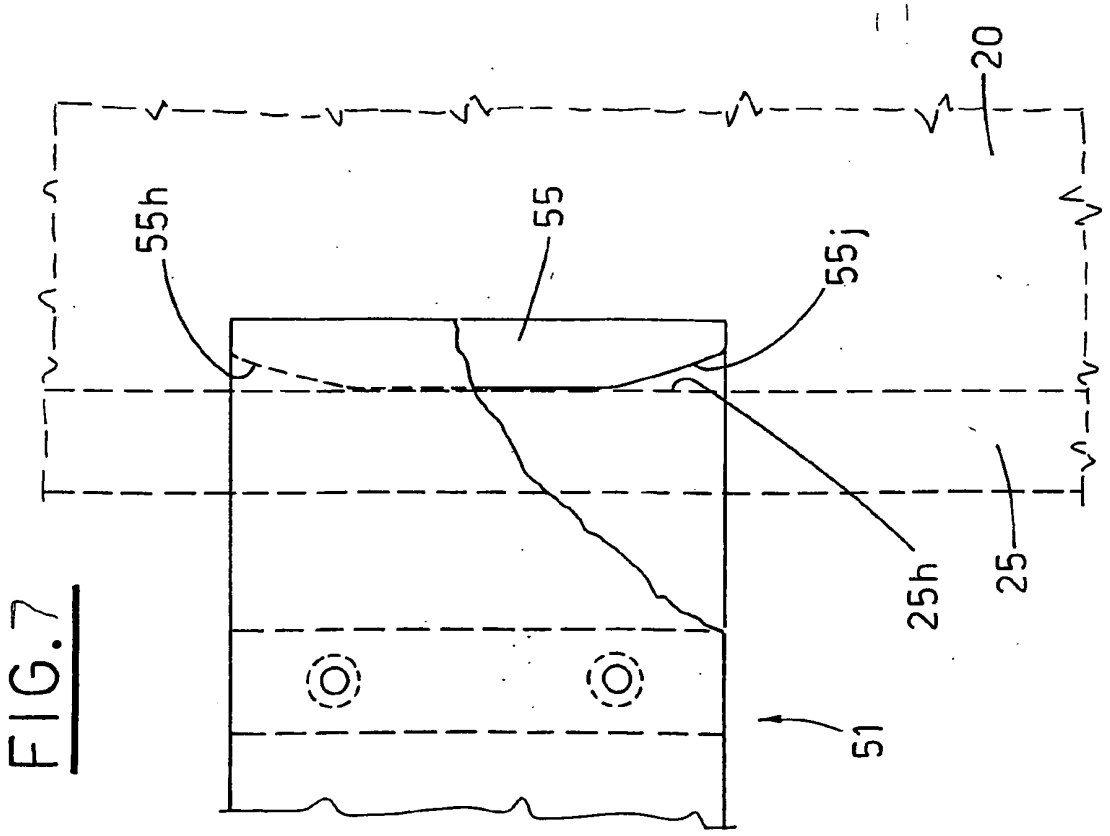


FIG.7

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2006136907 A **[0003]**