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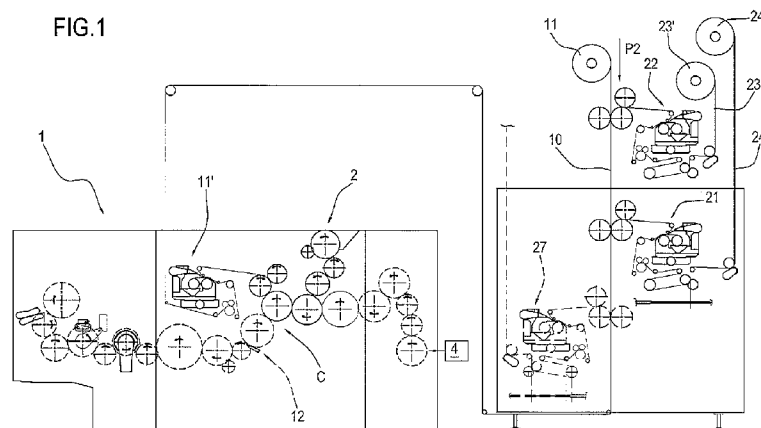
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(54) **Title:** APPARATUS FOR MAKING SMOKERS' ARTICLES.



(57) **Abstract:** An apparatus (1) for making smokers' articles comprises conveyor means (C) for transversely feeding along a first path (P1) a succession of groups of pieces (3, 5) of smokers' products arranged transversely to the feed direction and intended to form part of cylindrical smokers' articles (8), feed means (11') for feeding a web (10) of sheet material, a cutting device (9) for separating patches (6) in succession from the web (10) of sheet material; and a rolling unit (12) for rolling a patch (6) around each group of cylindrical pieces (3, 5) of smokers' products; the apparatus (1) comprises at least one applicator device (21, 22, 27) for applying strips (23, 24) of web to at least one surface of the web (10) of sheet material; the applicator device (21, 22, 27) is located along a second path (P2) to apply the strips (23, 24) on at least one surface of the web (10) of sheet material in such a way that they are oriented longitudinally relative to the second path (P2).

**DESCRIPTION****APPARATUS FOR MAKING SMOKERS' ARTICLES****Technical field**

This invention relates to an apparatus for making smokers' articles.

More specifically, the invention has for an object an apparatus for making cylindrical smokers' articles each of which is composed of a group comprising at least two cylindrical pieces which are joined to each other by gummed sheet material wrapped at least partly around the group itself and in which the surface of the sheet material has connected to it, in the context of each group, at least one strip of web material placed circumferentially round the group itself.

**Background art**

For convenience of description and without limiting the scope of the invention, reference is made herein to the production of cylindrical smokers' articles composed of two or more cylindrical pieces of smokers' products juxtaposed end to end or separated by a gap or having, between at least some of them, spaces filled with loose material of any kind. These cylindrical smokers' articles, again by way of example, are then considered as filter cigarettes comprising one or more pieces which contain filter material and which are connected to a piece of cigarette.

More in general, therefore, the smokers' articles this invention refers to comprise a succession of cylindrical pieces of smokers' products of any kind used to make up cylindrical smokers' articles.

In some cases, in the production of smokers' articles, a web which is to be wrapped around cylindrical pieces and glued thereto in order to join the pieces to each other, has to be provided, on one or both sides of its peripheral surface, with one or more strips of suitable material to be glued to the web itself in such a way as to define one or more annular inserts on

the surface of the cylindrical smokers' articles obtained by wrapping the web itself round the above mentioned pieces. Depending on circumstances, these annular inserts may have aesthetic functions, in which case, they may be made of foil paper or of plastic material, or they  
5 may have a functional purpose, in which case, the strips in question may be used for flavouring purposes.

In manufacturing machines which make smokers' articles of the above mentioned type, it is standard practice to use webs on which the strips have already been provided during the production of the webs  
10 themselves. This practice, however, involves relatively high costs because the special rolls of web of this kind are not only very expensive but also create technical problems which call for complex and uneconomical solutions because it means the manufacturing machines have to be provided with somewhat complicated synchronizing systems  
15 designed to position the annular inserts properly relative to the cylindrical which are wrapped in the webs themselves.

### **Disclosure of the invention**

The aim of this invention is to provide an apparatus for making smokers' articles which is free of the disadvantages described above with reference  
20 to the prior art.

The invention accordingly provides an apparatus for making smokers' articles as set out in the appended claims.

### **Brief description of the drawings**

The invention is described below with reference to the accompanying drawings, which illustrate a non-limiting embodiment of it, and in which:

Figure 1 is a schematic front view of an apparatus for making smokers' articles according to this invention; and

30 Figure 2 is a schematic plan view of smokers' articles in various stages of

their production in the apparatus of Figure 1.

### **Detailed description of preferred embodiments of the invention**

Figure 1 shows an apparatus 1 for making smokers' articles and comprising a filter tip attachment machine 2 of known type, capable of  
5 applying filters to cigarettes. The filter tip attachment machine 2 (see also Figure 2 which schematically illustrates the steps in the production of a filter cigarette) receives cigarette pieces 3 in sequence from a cigarette making machine schematically represented as a block 4 in Figure 1,  
10 axially interposes a double length filter piece 5 between each pair of cigarette pieces 3, causes a succession of groups of pieces 3 and 5 to be fed transversely by conveyor means C comprising a plurality of rotary conveyor rollers, and joins the pieces 3 and 5 to each other in known manner by rolling round them a patch 6 coated with adhesive on one  
15 surface of it to make a double cigarette 7 having a piece of filter in the middle of it, which is then divided in two to make two finished filter cigarettes 8. One of the filter cigarettes 8 thus obtained from each double cigarette 7 is then turned head to tail so that all the filter cigarettes 8 in the succession fed out of the filter tip attachment machine 2 are oriented  
20 in the same direction. While the patches 6 are wrapped round the groups comprising one piece 5 and two pieces 3 aligned axially, these cylindrical pieces 5 and 3 of smokers' product are fed transversely to their axes along a first predetermined path P1 in a feed direction.

The patches 6 are separated in sequence from a web 10 of paper (or  
25 other sheet material) by means of transversal cuts made by a cutting device of known type schematically represented as a block 9 in Figure 2. The web 10 is unwound continuously from a roll 11 by feed means of known type denoted in their entirety by 11', and the patches 6 cut from the web 10 are fed in sequence to a rolling section of the filter tip attachment  
30 machine 2, denoted in its entirety by the numeral 12, to be wrapped in

known manner round the pieces 3 and 5 according to what is described above. More specifically, the feed means 11' for the web 10 of sheet material direct the web 10 longitudinally along a second path P2.

Located along the second path P2 followed by the web 10 upstream of the feed means 11', in the order defined by the direction of feed of the web 10 itself, there are applicator devices 21, 22, 27 for applying juxtaposed longitudinal strips 23, 24 of web to the web 10 itself and which unwind these strips 23, 24 from respective rolls 23', 24' and apply a spot of glue on a surface thereof by means of respective gluing devices of known type, not illustrated. In other words, the applicator device 21, 22, 27 is located along the second path P2 to apply the strips 23, 24 on at least one surface of the web 10 of sheet material in such a way that they are oriented longitudinally to the second path P2.

As a result of applying the strips 23, 24 to the web 10, the patches 6 which are separated from the selfsame web 10 are provided with two pieces 23'', 24'' of web, parallel to each other, obtained from the strips 23 and 24 and glued to a surface of them. The pieces 23'', 24'' of web are positioned on the patches 6 in such a way as to make on each of the smokers' articles constituted by the cigarettes 8, after the patches 6 themselves have been wrapped round the pieces 5 and 3 by the rolling section 12, an annular insert 23''', 24''' which respectively surrounds a portion of each of the two cigarettes 8 obtained by cutting in half a corresponding double cigarette 7 with a filter in the middle of it.

As shown in Figure 1, one or more strips similar to the strips 23, 24 are applied to the surface of the web 10 opposite the surface the strips 23 and 24 are applied to. For this purpose, one or more applicator devices 27 similar to the applicator devices 21 and 22 may be provided (Figure 1 shows one, drawn with dashed lines) in such a way as to act on the opposite surface. Obviously, the number of applicator devices 21, 22, 27 which may be used in the apparatus 1 can be selected as needed to apply

to the patches 6 any desired number of pieces of web like the pieces 23" and 24".

It should be noted that in accordance with the above, the strips 23, 24 can be applied, according to requirements, to a surface of the web 10 which, on the patches 6 separated from the web 10 itself and rolled round  
5 respective groups of pieces 3, 5, is opposite the surface in contact with the groups of pieces 3, 5, or to a surface of the web 10 which, on the patches rolled round respective groups of pieces 3, 5 is in contact with the groups of pieces 3, 5, or to both of these surfaces.

10 The strips 23, 24 may be made of any suitable material, for example paper or plastic material, or they may comprise metallic material and hold any substance, such as a flavouring, for example, capable of affecting the properties of the web 10 and hence of the cigarettes 8 incorporating the patches 6.

15 Lastly, it should be noted that using separate applicator devices 21, 22, 27 which can be adjusted independently of each other allows varying the positions of the strips 23 and 24 in order to space them apart according to requirements and/or to position them in any desired manner relative to the web 10.

**CLAIMS**

1. An apparatus for making smokers' articles comprising conveyor means (C) for transversely feeding along a first path (P1) a succession of groups of pieces (3, 5) of smokers' products arranged transversely to the feed direction and intended to form part of smokers' articles (8); feed means (11') by which a web (10) of sheet material is directed longitudinally along a second path (P2); a cutting device (9) for separating patches (6) in succession from the web (10) of sheet material; and a rolling unit (12) for rolling a patch (6) around each group of cylindrical pieces (3, 5) of smokers' products; characterized in that it comprises at least one applicator device (21, 22, 27) for applying strips (23, 24) of web; the applicator device (21, 22, 27) being located along the second path (P2) to apply the strips (23, 24) on at least one surface of the web (10) of sheet material in such a way that they are oriented longitudinally relative to the second path (P2).
2. The apparatus according to claim 1, wherein each applicator device (21, 22, 27) comprises a gluing device for applying glue to the longitudinal strips (23, 24) of web.
3. The apparatus according to claim 1 or 2, wherein the longitudinal strips (23, 24) of web are applied to a surface of the web (10) of sheet material which, in the patches (6) separated from the selfsame web (10) and rolled around respective groups of pieces (3, 5), is opposite to the surface which is in contact with the groups of pieces (3, 5).
4. The apparatus according to claim 1 or 2, wherein the longitudinal strips (23, 24) of web are applied to a surface of the web (10) of sheet material which, in the patches (6) separated from the selfsame web (10) and rolled around respective groups of pieces (3, 5), is in contact with the groups of pieces (3, 5).

5. The apparatus according to any one of claims 1 to 4, wherein the longitudinal strips (23, 24) of web are made of paper or comprise paper material.

5 6. The apparatus according to any one of claims 1 to 4, wherein the longitudinal strips (23, 24) of web are made of metal or comprise metallic material.

7. The apparatus according to any one of claims 1 to 4, wherein the longitudinal strips (23, 24) of web are made of plastic or comprise plastic material.

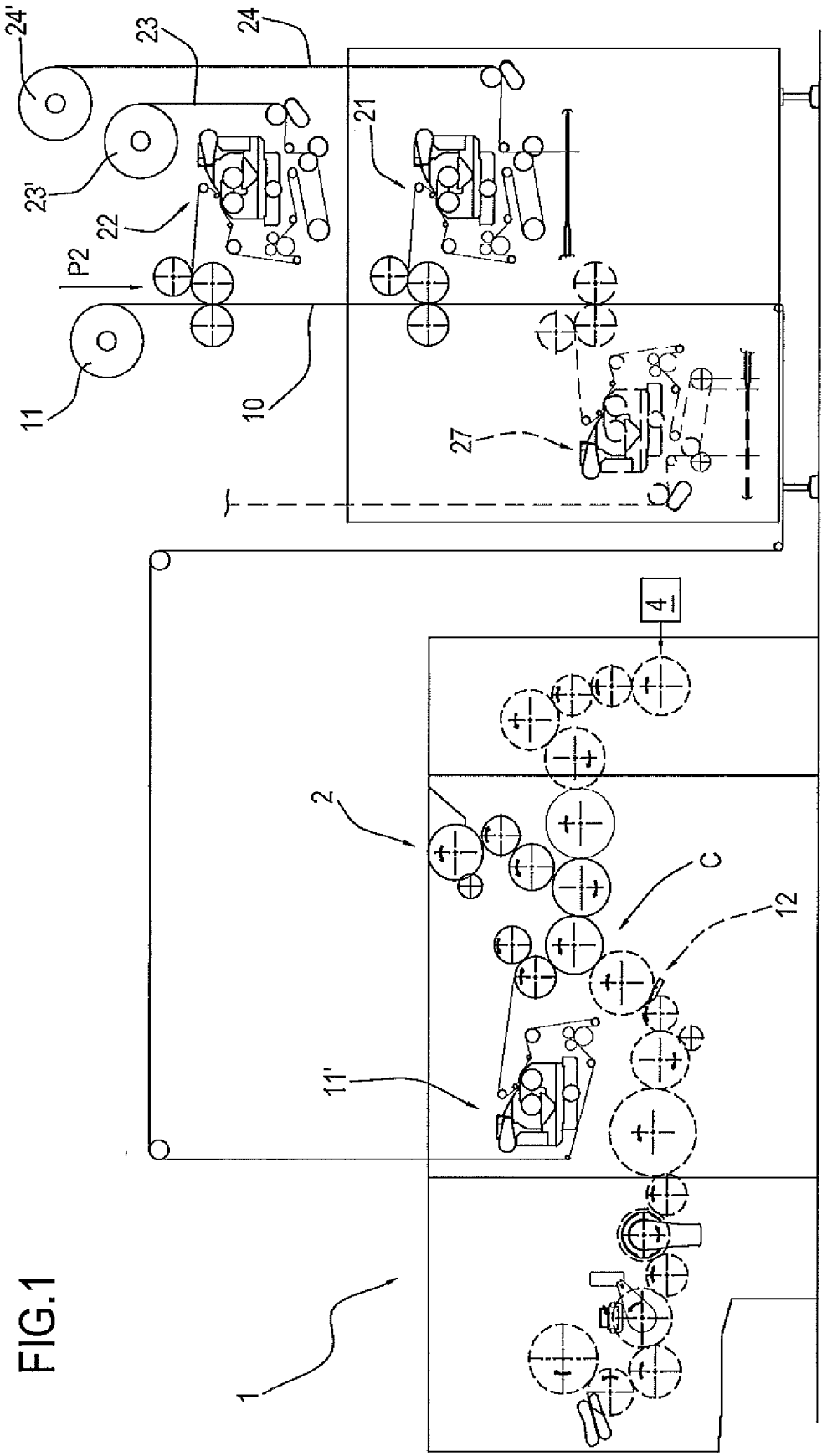
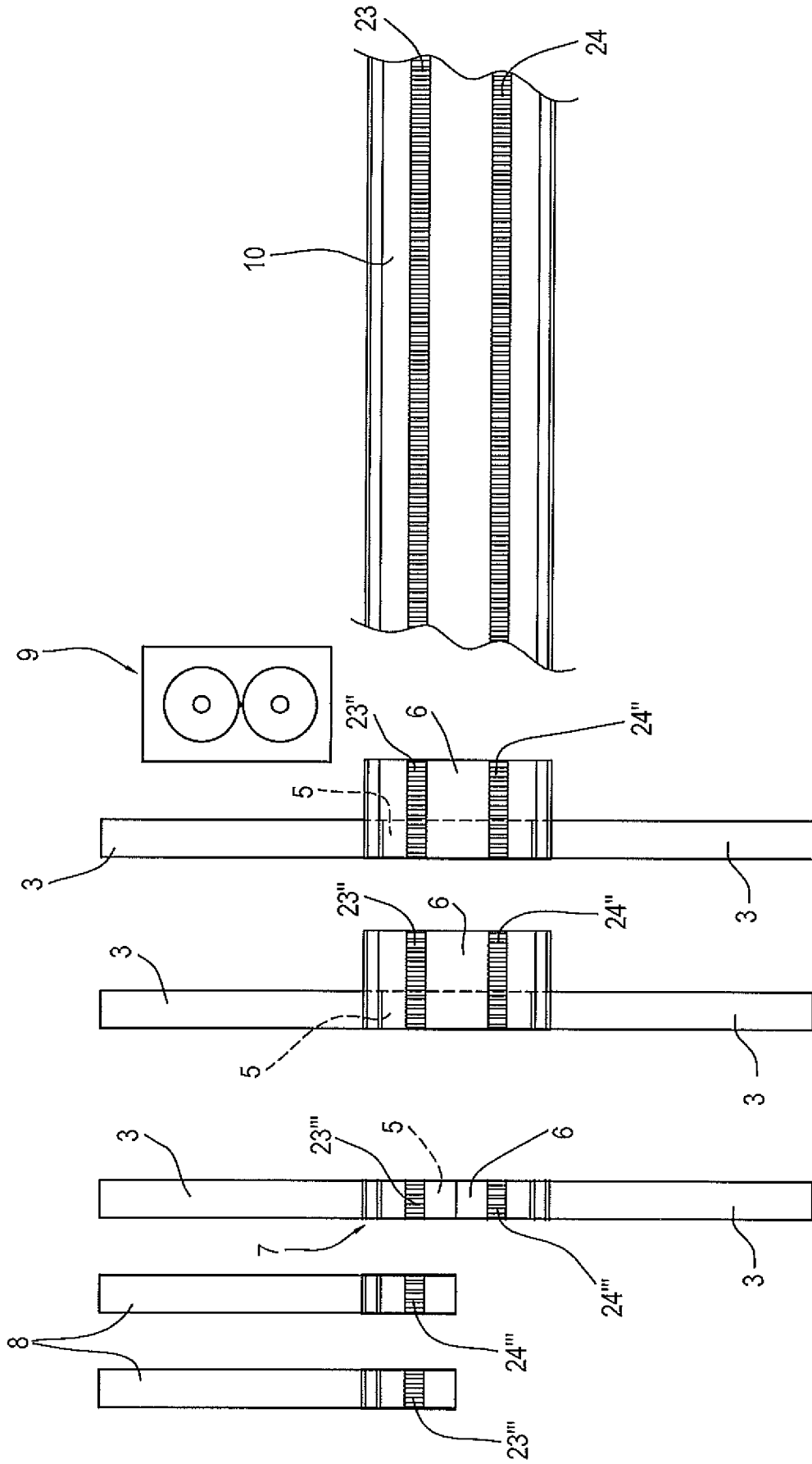


FIG.1

FIG.2



# INTERNATIONAL SEARCH REPORT

International application No PCT/IB2014/061490
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. A24C5/47 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) A24C A24D		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	EP 0 766 928 A1 (GD SPA [IT]) 9 April 1997 (1997-04-09) the whole document -----	1-7
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<input type="checkbox"/> Further documents are listed in the continuation of Box C. <span style="margin-left: 100px;"><input checked="" type="checkbox"/> See patent family annex.</span>		
* Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
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Information on patent family members

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