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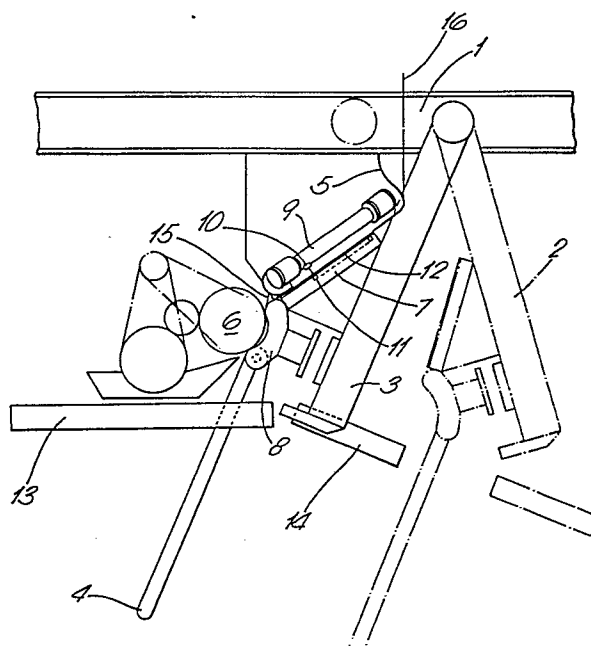
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Cutting device for a running web.

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A device for cutting a running web (16), for instance of paper, plastic, textiles or similar materials, comprising a cutting tool (11), for instance a knife, nail, etc., a device (9) giving the cutting tool high speed, a holding-on tool or base-table (7) with a slot (12) where the slot adopts an oblique angle in relation to the outer edge of the running web, and where the course of the cutting tool runs parallel to the plane of the running web.



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The present invention concerns the cutting of a running web, such as a paper, plastic or textile web.

5 For manufacturers of paper, for instance, there have been certain problems involved in cutting a running paper web, particularly webs of some thickness, such as wrapping paper etc. It is known to cut a paper web over a fixed edge along the full width of the paper web in an instantaneous cut. This occurs when the edge of a knife is placed across the
10 longitudinal direction of the web and on the under-side of the latter, but close to the web. On the top side of the web a hammer is placed, having great mass, which is dropped against the paper web close to the edge of the knife, cutting the paper web as it passes by.

15 However, this method often causes uncontrolled tensions to occur in the paper at the moment of cutting. For instance when wrapping paper is put on a paper roll, the roll will, at the moment of cutting, be exposed to a temporary retardation
20 with a subsequent acceleration when the web has been cut completely. This leads to an uneven and wrinkled wrapping of the roll. In extreme cases, especially in the case of smaller rolls, ejection of the roll may take place.

25 By means of the present cutting device according to the invention, the above drawbacks are avoided. At the same time a cutting device that is more dependable and reliable in operation is attained, which also produces a straighter and better-looking cut. When the device according to the invention
30 is used in packaging activities, it has yet another advantage compared with previous embodiments in that when applying glue to the wrapping paper it applies glue all the way to the edge, thus avoiding a non-glued flap.

35 For instance when cutting a paper web, the adjustment of the knife in relation to the hammer is very painstaking and time-consuming, and the adjustment depends on the paper

quality and the condition of the paper (degree of moisture), and readjustments must be made relatively frequently. This is avoided with the new cutting device, and a more continuous operation of the plant is achieved.

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Another advantage, though of a more environmental nature, is the fact that the the level of noise is reduced to a considerable extent.

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This is achieved according to the invention by a cutting device being guided from one of the outer edges of the web to the other along a course running at an oblique angle to the outer edge of the web, with a speed which in relation to the feeding speed of the web is such as to allow a right angle or approximately right angle cut. This is also achieved if the running web is under tensile stress. The cutting is performed using a cutting or slitting tool, which is guided along one side of the web, while running in a groove in a holding-on tool or base-table on the opposite side.

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The cutting device comprises a cutting tool, for instance a knife, a nail etc., a device to give the cutting tool high speed, a holding-on tool or base-table with a slot in it, the slot adopting an oblique angle in relation to the outer edge of the running web, and the course of the cutting tool runs parallel with the plane of the running web. The holding-on tool is rotatable to and from the cutting tool for catching the advancing web, and the holding-on tool is jointly constructed with a holding-on tool devised to press the web against a per se known roll for glue application. A guide for the web is rotatably attached to the holding-on tool for the glue application roll at the exit from the glue application roll. It is rotatable by means of a fluid power cylinder or a similar device, so as to catch the end of the web when the holding-on tool for the cutting device, the holding-on tool for the glue application roll and the guide have been swung away from the cutting tool, and the cutting tool is mobile by

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means of a fast-working fluid power cylinder, for instance of the "Origa" type.

5 The cutting device according to the invention is shown in the drawings, where
fig.1 shows a sketch in principle of a packaging machine,
fig.2 shows a perspective sketch of the device, with the holding-on tool in cutting position,
fig.3 shows the cutting device in use in a packaging machine
10 for paper rolls, the holding-on tool being indicated in both extreme positions. For a more detailed description, reference is made to an exemplified application of the invention via fig.3. The device is made so as to act jointly with a roller battery for various widths of roll, where the different webs
15 are guideable backwards and forwards in relation to the cutting tool.

The wrapping paper is guided through the gap 1, while the holding-on tool 7 is in a fully retracted position 2. The
20 paper is caught and guided by a guide 4 and brought forward and down towards the roll that is to be wrapped. This roll is rotating at a minimum speed of at least that of the feeding speed of the paper, and the paper is applied to the roll in one or more layers - always with the holding-on tool in the
25 rear position. An adjustable length of web is to have glue applied to it, which occurs by the holding-on tool moving towards its second extreme position 3. The paper web is lifted by the holding-on tool up towards a guide contour 5, next coming into contact with a glue application roll 6 for
30 application of glue to one side of the paper web by means of a holding-on tool 8 which is assembled with the holding-on tool 7 of the cutting tool. For cutting of the paper web a fast-working fluid power cylinder 9 is used, for instance an "Origa" cylinder, with a "rider" 10 connected to it which has
35 a cutting tool 11 mounted on it, for instance a knife, nail, etc. The cutting tool passes in a slot 12 in the holding-on tool, and the slot adopts an oblique angle in relation to the

outer edge of the running web.

After cutting, the glue application continues right to the edge of the web end that is wound on to the roll. The other
5 web end is retracted away from the cutting device and up towards the roll battery, so that the device may optionally receive paper of a different width.

The cutting device according to the invention may also be
10 applied without the use of a holding-on tool or base-table to webs that are under tensile stress.

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P a t e n t C l a i m s

1. A method for cutting a running web (16) of for instance paper, plastic, textiles or similar materials,
5 c h a r a c t e r i z e d in that a cutting device (11) is guided from one outer edge of the web to the other along a course running at an oblique angle to the outer edge of the web, at such a speed in relation to the feeding speed of the web that a right angle or approximately right angle cut is
10 obtained.
2. A method according to claim 1,
c h a r a c t e r i z e d in that the running web is stretched.
- 15 3. A method according to claims 1 - 2,
c h a r a c t e r i z e d in that the cutting is performed by means of a cutting or slitting tool (11), which is guided across one side of the web, running in a groove (12) in a
20 holding-on tool (7) on the opposite side.
4. A device for carrying out the method according to claims 1, 2, and 3, c h a r a c t e r i z e d in that it comprises a cutting tool (11), such as for instance a knife,
25 nail etc., a device (9) giving the cutting tool high speed along a course which runs at an oblique angle in relation to the outer edge of the running web, and in that the course of the cutting tool runs parallel to the plane of the running web.
- 30 5. A device according to claim 4,
c h a r a c t e r i z e d in that it comprises a holding-on tool or base-table (7) with a slot (12), where the slot adopts an oblique angle in relation to the outer edge of the running
35 web.

6. A device for interaction with a roll battery for different roll widths, where the different webs are guideable backwards and forwards in relation to the cutting tool, characterized in that the holding-on tool is
5 rotatable to and from the cutting tool so as to catch the web that is being advanced at the moment.

7. A device according to claims 4 - 6, characterized in that the holding-on tool (7) of
10 the knife is assembled with a holding-on tool (8) devised to guide the web against a per se known glue application roll (6).

8. A device according to claims 4 -7,
15 characterized in that a guide for the web at the exit from the glue application roll is rotatably attached to the holding-on tool, and in that it is rotatable by means of a fluid power cylinder (14) or a similar device, so as to catch the web end when the holding-on tool for the cutting device,
20 the holding-on tool for the glue application roll, and the guide have been swung away from the cutting tool.

9. A device according to claims 4 -8, characterized in that the cutting tool is mobile
25 by means of a fast-working fluid power cylinder (9).

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Fig . 1.

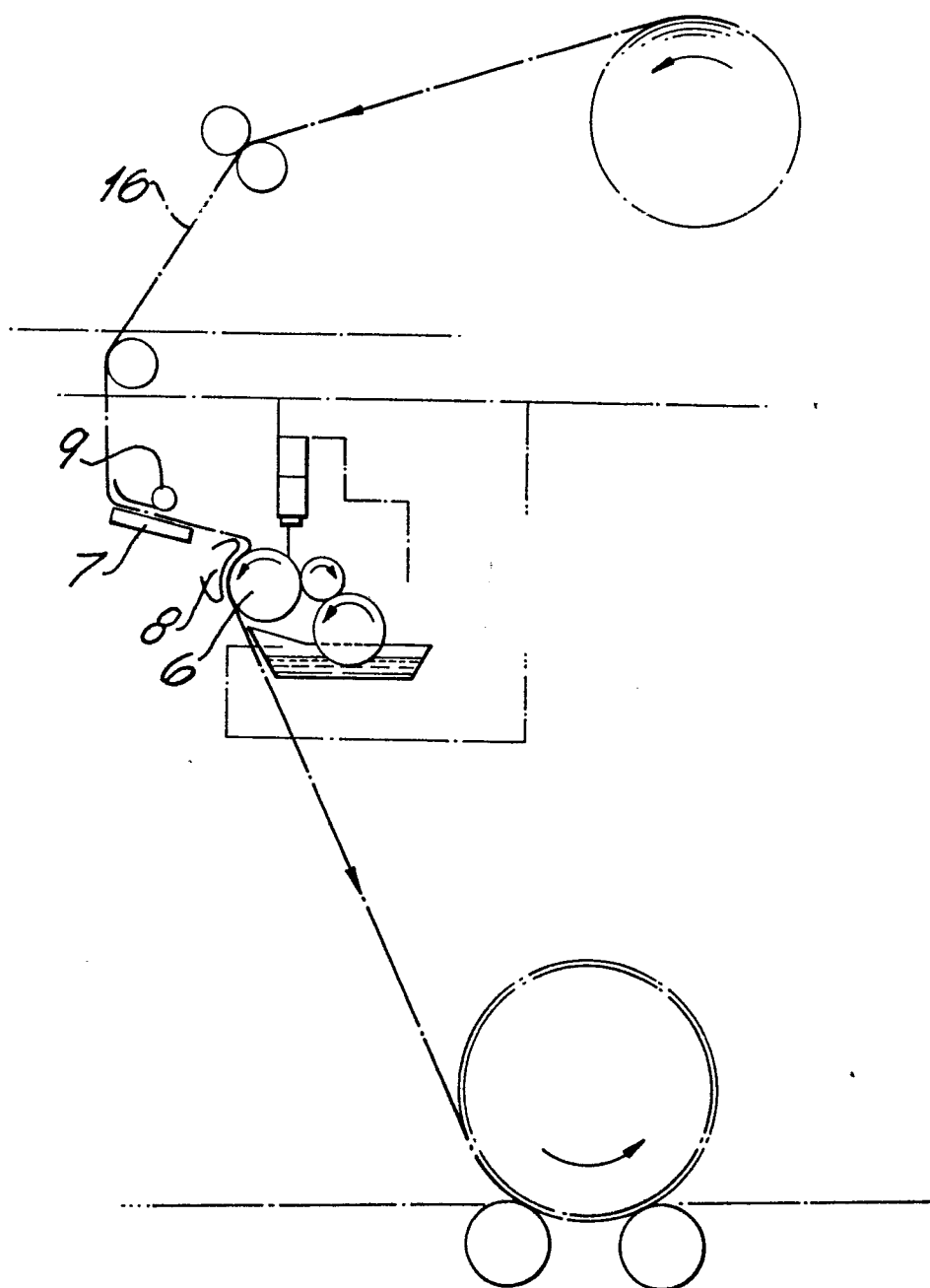


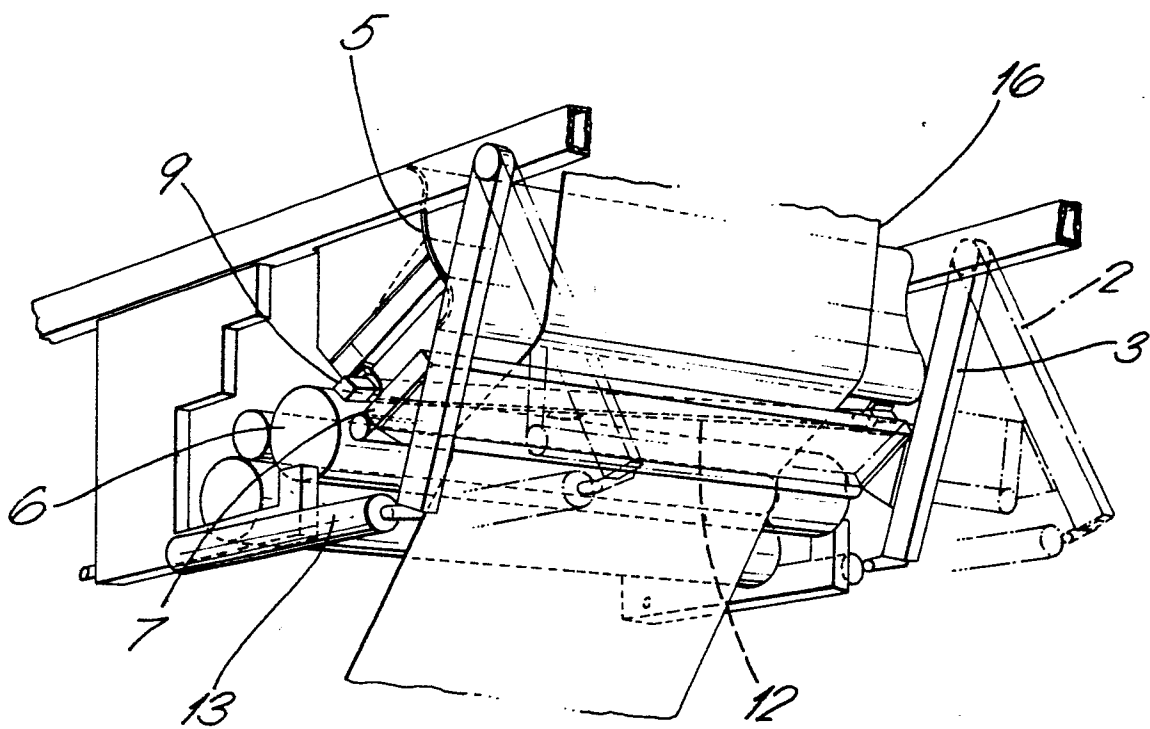
Fig . 2.

Fig . 3.

