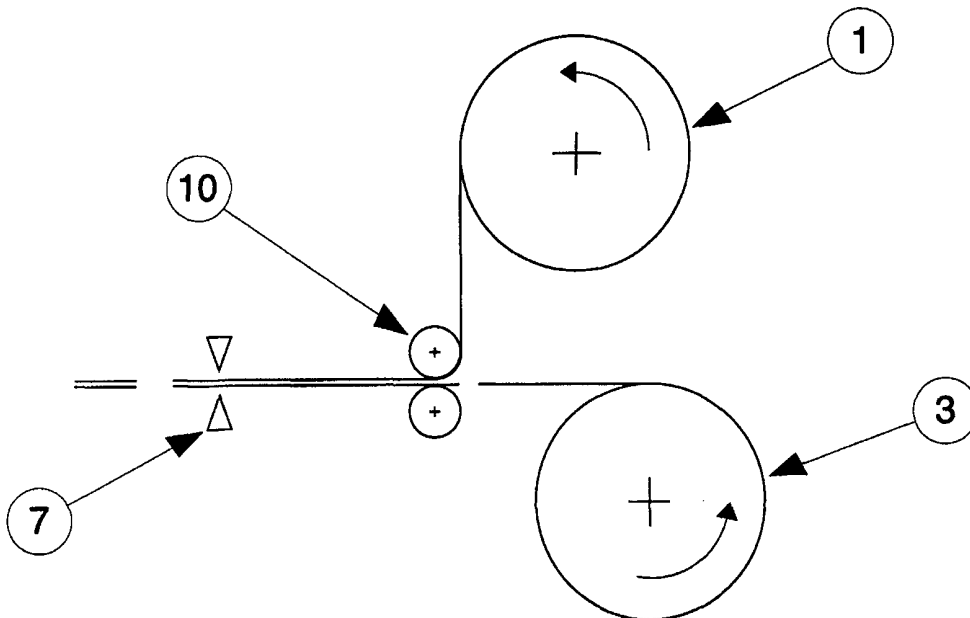




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<p>(21) International Application Number: PCT/SE99/01288 (22) International Filing Date: 19 July 1999 (19.07.99) (30) Priority Data: 9802664-4                      4 August 1998 (04.08.98)                      SE (71)(72) Applicant and Inventor: LÖRD, Kent [SE/SE]; Skeppar- gatan 40, S-272 38 Brantevik (SE). (74) Agents: STRÖM, Tore et al.; Ström &amp; Gulliksson AB, P.O. Box 4188, S-203 13 Malmö (SE).</p>	<p>(81) Designated States: US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> <i>In English translation (filed in Swedish).</i></p>	

(54) Title: A LABEL FEEDER



(57) Abstract

The object of the invention is a label feeder applying labels with electromagnetic wave information under a linerless label web, before this web is applied on the product. By using a label feeder using linerless label web there is a possibility for printing of linerless label web, application of a label with electromagnetic wave information giving or taking information, and inline control before application.

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## A LABEL FEEDER

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### Technical Field

The present invention relates to a label feeder, in which a web with electromagnetic wave information or a label with electromagnetic information is applied on a linerless label web.

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### Technical Background

When self-adhesive labels with electromagnetic wave information today are applied, the most common method is first to apply a label with electromagnetic wave information and then a graphic label on top thereof. The reason for positioning a graphic label (for example a price label) usually on top thereof is for concealing the label with electromagnetic wave information (for example an alarm). A currently used technique is that at label manufacture, before the labels are stamped out of their carrier web, the combined, self-adhesive label front material web is removed from its carrier web (usually silicon paper), whereupon the label with electromagnetic wave information (for example a label with a memory circuit and an antenna or a coil/capacitor with an antenna) is applied on the adhesive. The self-adhesive front web is then joined with the carrier web, whereupon the label is stamped out of the front web, so that the label with the electromagnetic wave information is below and concealed. This label can then be applied on the product in an ordinary label dispenser. In this case thermo printing or thermo transfer printing is a problem, as this printing requires a plane surface, and with a label with electromagnetic wave information below the surface is uneven.

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One technique is to apply the label with electromagnetic wave information in a laminate between two material layers, which gives the same problem as mentioned above.

Another problem today is that each and every mechanical influence or passing of an undesirable electromagnetic field in certain cases influences the stored information or means that it can not receive the desired information. For  
5 this reason the influence shall be as small as possible.

The function of the label with electromagnetic wave information is for example to receive information via radio waves and store this information in a memory and then later emit this information via radio waves at another occasion,  
10 or that the label has a circuit with coil and capacitor, which in a radio wave field emits a wave length of its own, which then can be indicated as an alarm.

#### **Objects and Most Important Features of the Invention**

The object of the invention is to accomplish a label  
15 feeder, which applies a label with electromagnetic wave information under a linerless web, leading to graphic labels. The label feeder gives information to and fetches information from the label with electromagnetic wave information shortly before the graphic label is applied on the  
20 product. The linerless label web can be covered with adhesive on one side and with low adhesive substrate on the other side or be partly covered on both sides, both longitudinally or transversly.

By using a label feeder with linerless labels as  
25 carriers and as covering elements, there is a possibility to print on an even material web and to apply the label with electromagnetic wave information in line before the application on a product, whereby a material saving and thus cheaper design is obtained. By using this label feeder  
30 there is also space for other functions.

### Description of Drawings

Fig 1 is a side view of the feeder.

Fig 2 is a side view of the feeder with a cutter for the web with electromagnetical wave information.

5 Fig 3 is a side view of the feeder with a carrier web for the labels with electromagnetical wave information.

### Description of Embodiments

A linerless material roll is numbered 1 in Fig 3. A  
linerless material is a label material with self-adhesive  
10 material on the lower side and with low adhesive material  
or substrate (usually silicon) on the upper side. The  
linerless material can have such self-adhesive and low  
adhesive substrates over its entire surface or only partly.  
The linerless material (usually thermo or thermo transfer)  
15 passes a printer head 2, which adds graphic information. A  
label 8 with electromagnetic wave information (usually a  
memory circuit or a self-oscillating coil/capacitor) is  
applied on the lower side of the linerless material. These  
labels are present as self-adhesive labels on a carrier web  
20 in a roll 3. The empty carrier web is then rolled on a roll  
9. A driven roll 10 makes the label with electromagnetic  
wave information to stick to the adhesive on the linerless  
web by means of pressure. The combined web then passes a  
programming station 5, where the label with electromagnetic  
25 wave information receives information, via for example  
radio waves, an information which is then stored. Further,  
the combined web passes a control station 6, which via for  
example radio waves controls that the label with electro-  
magnetic wave information functions properly. The combined  
30 web finally passes a cutting equipment 7, which cuts the  
linerless web in suitable labels.

## CLAIMS

1. A device called a label feeder, **characterized** in that linerless label material is unrolled from a roll (1) and with its adhesive side is brought against a material with electromagnetic wave information from a roll (3) and that the combined web is then cut (7) in suitable lengths.

2. A label feeder according to claim 1, **characterized** by a printer head (2), which provides graphic information to the linerless material.

3. A label feeder according to any of the preceding claims, **characterized** in that a sender (5) emits digital information via electromagnetic waves to the material with electromagnetic wave information.

4. A label feeder according to any of the preceding claims, **characterized** in that a sender and a receiver (6) controls the function of the label (11) with electromagnetic wave information via electromagnetic waves.

5. A label feeder according to any of the preceding claims, **characterized** in that the web with electromagnetic wave information is brought forward and is cut (4) in suitable lengths, before it is combined with the self-adhesive linerless material.

6. A label feeder according to any of claims 1 - 4, **characterized** in that the electromagnetic wave material is stamped self-adhesive labels (8) on a carrier web, which is low adhesive treated and is rolled after the labels with electromagnetic wave information are dispensed on the linerless material.

7. A label feeder according to any of the preceding claims, **characterized** in that the adhesive or the low adhesive material is applied on only parts of the surface of the linerless material.

8. A label feeder according to any of the preceding claims, **characterized** in that the linerless material is preprinted with colour or information.

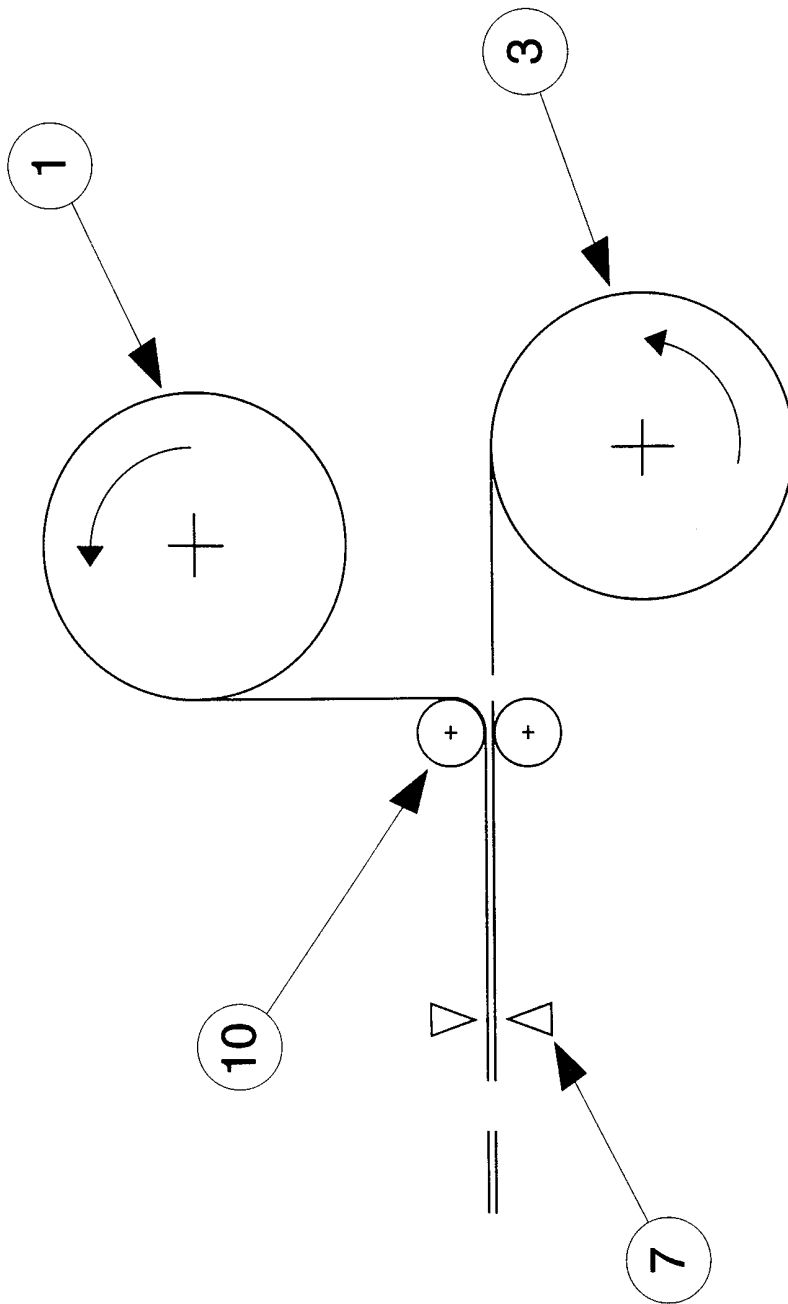


Fig.1

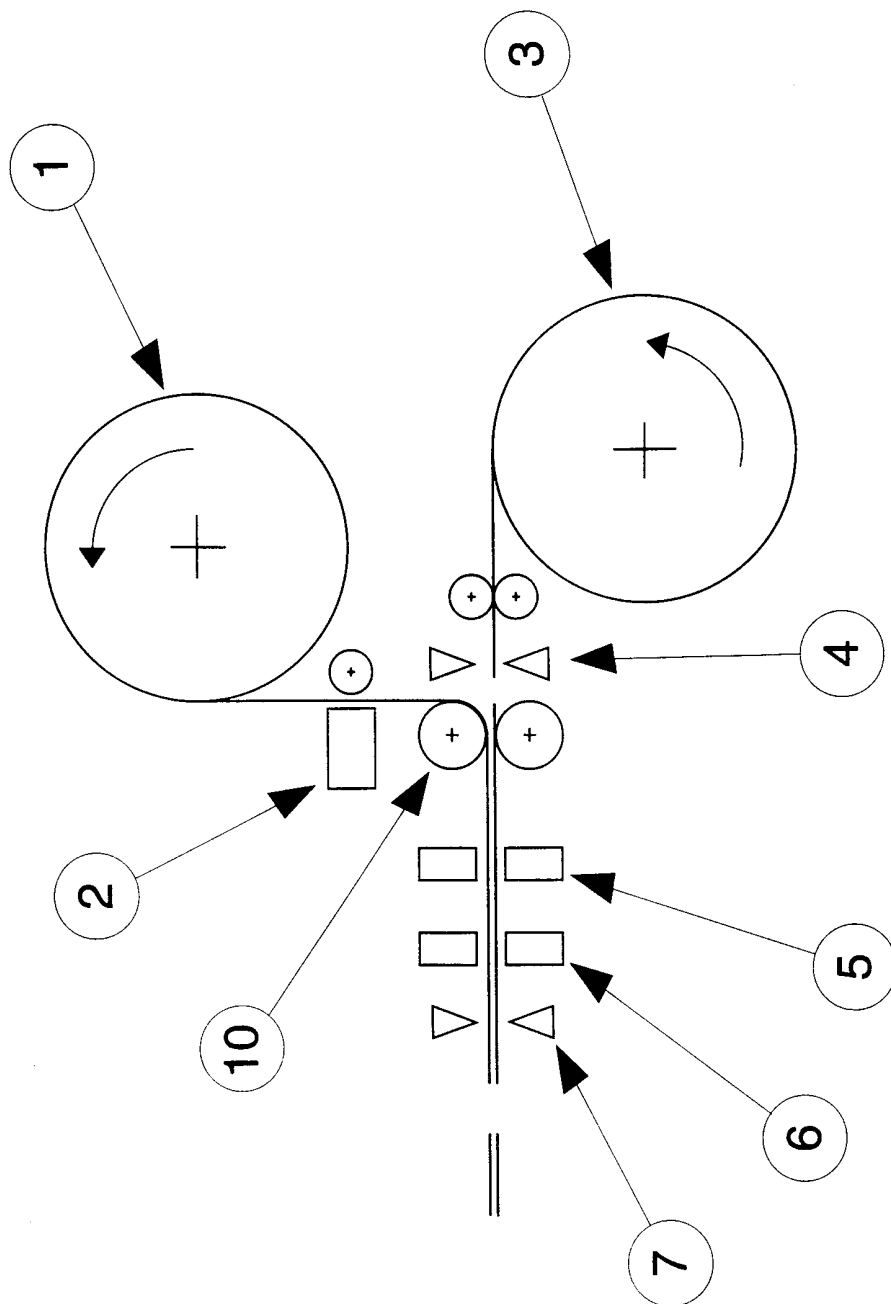


Fig.2

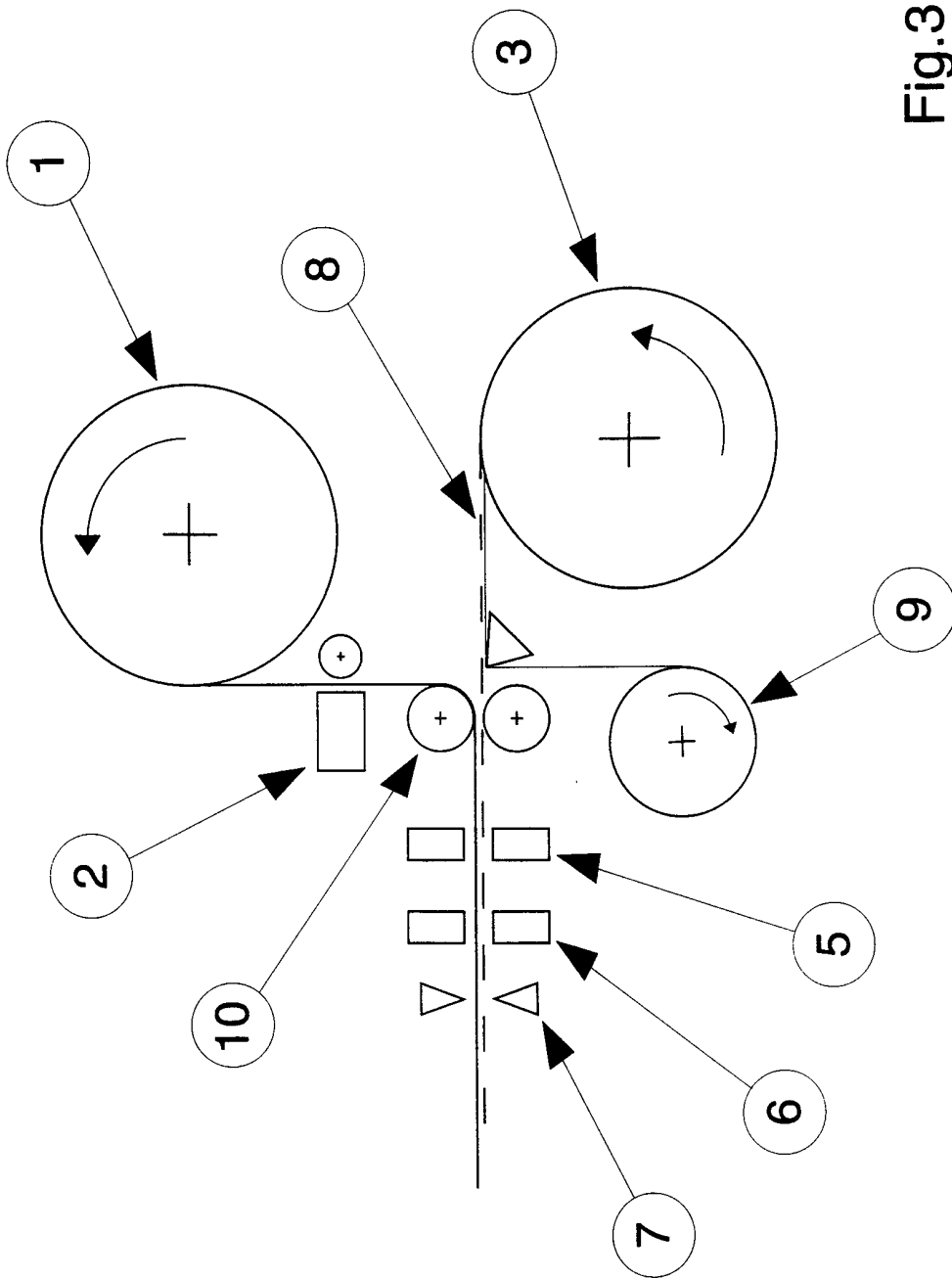


Fig.3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/01288

A. CLASSIFICATION OF SUBJECT MATTER		
IPC7: B31D 1/02 According to International Patent Classification (IPC) or to both national classification and IPC		
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Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SE 507711 C2 (SE LABELS AB), 6 July 1998 (06.07.98), page 2, line 27 - page 5, line 9, figure 1  --	1-8
X	GB 2303613 A (NORPRINT INTERNATIONAL LIMITED), 26 February 1997 (26.02.97), page 6 - page 9, figure 1  --	1-8
X	US 4900386 A (RICHTER-JÖRGENSEN), 13 February 1990 (13.02.90), column 1, line 61 - column 2, line 63, figure 2  --	1-8
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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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P,A	EP 0878403 A1 (MONARCH MARKING SYSTEMS, INC.), 18 November 1998 (18.11.98), figure 2, abstract  -----	1-8

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Information on patent family members

02/12/99

International application No.

PCT/SE 99/01288

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