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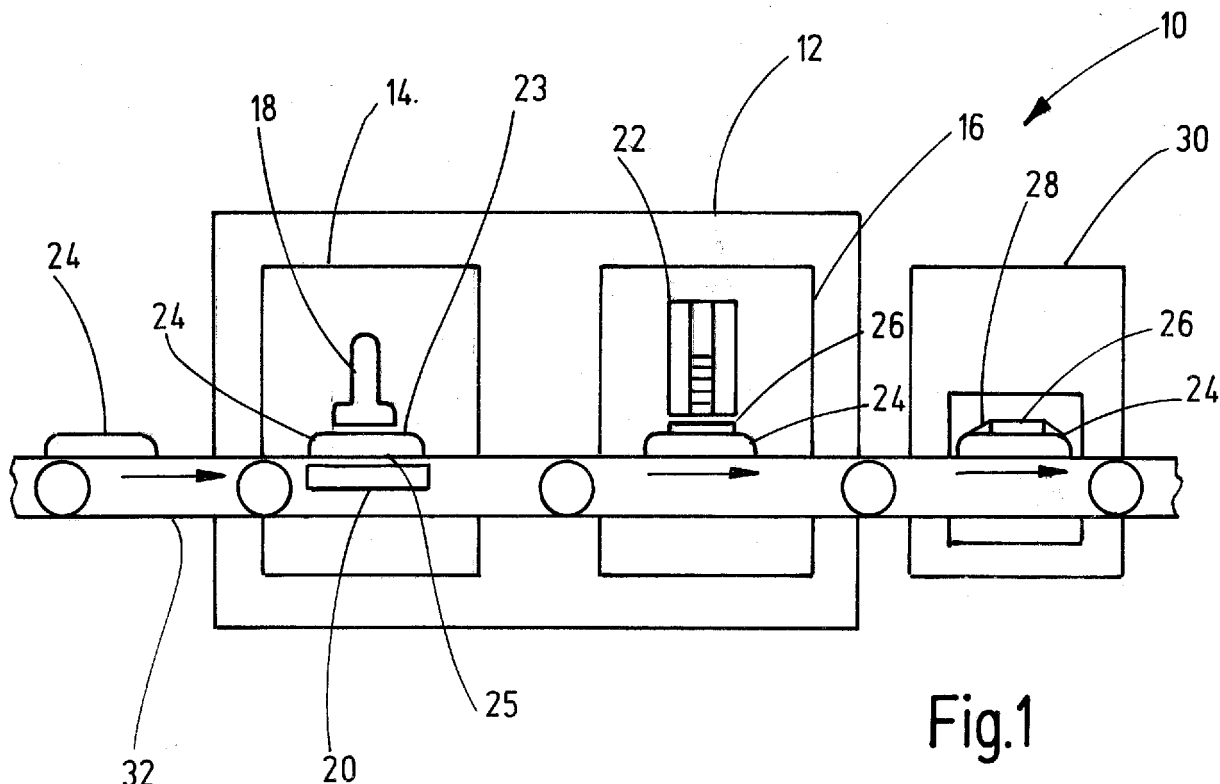
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(54) **PACKAGING TOBACCO WITH ADDITIONAL ITEM BY USING ELECTROSTATICALLY CHARGING**

(57) A method of packaging loose tobacco includes a step of temporarily bonding an article (26), in particular a tobacco related commodity, such as a booklet of cigarette papers, to a tobacco pouch (24). The step of temporarily bonding the article (26) to the tobacco pouch (24), in particular a tobacco related commodity, such as a booklet of cigarette papers, to a tobacco pouch (24). The step of temporarily bonding the article (26) to the tobacco pouch (24), in particular a tobacco related commodity, such as a booklet of cigarette papers, to a tobacco pouch (24).

porarily bonding the article (26) to the tobacco pouch (24) includes a step of electrostatically charging the tobacco pouch (24).



**Fig.1**

## Description

### FIELD OF INVENTION

**[0001]** The present invention relates generally to a method of packaging tobacco and a packaging unit for packaging tobacco.

### BACKGROUND OF THE INVENTION

**[0002]** Tobacco, in particular smokable tobacco in the form of loose tobacco, can be packaged into a tobacco pouch.

**[0003]** Sometimes it is desirable to add a further article to the tobacco pouch, in particular a tobacco-related commodity, such as a booklet of cigarette papers, or the like, before the tobacco pouch is wrapped by means of a plastic film or plastic foil in a later packaging step.

**[0004]** In a respective packaging unit, different packaging steps, such as filling tobacco into the pouch, adding the further article to the pouch, and wrapping the pouch together with the article, are generally carried out in different stations of the packing unit. During packaging, the pouch can e.g. be transported between these stations by means of a conveyor.

**[0005]** At present, in order to prevent the article from being separated from the tobacco pouch when the tobacco pouch together with the added article is moved, e.g. transported to a wrapping station of the packing unit, the article is glued to the tobacco pouch by means of a suitable adhesive.

**[0006]** It is an object of the present invention to suggest an alternative solution to the above-mentioned problem of preventing the article from being separated from the pouch when being moved.

**[0007]** This object is solved by a method of packaging tobacco, a packaging unit and a tobacco-related product with the features defined in the independent claims. Preferred embodiments and enhancements are defined in the dependent claims.

### SUMMARY OF THE INVENTION

**[0008]** In accordance with one aspect of the present invention there is provided a method of packaging loose tobacco. The method includes a step of temporarily bonding an article to a tobacco pouch, in particular a tobacco related commodity. Such an article may be a lighter or means to ignite a cigarette, a booklet like e.g. a booklet of cigarette papers or a supplement like e.g. a commercial product, a give-away or an advertising supplement. The step of temporarily bonding the article to the tobacco pouch includes a step of electrostatically charging the tobacco pouch.

**[0009]** That is, the basic idea of the present invention is to use electrostatic forces to temporarily bond the article to the pouch, instead of permanently gluing the article to the pouch. Surprisingly, already moderate elec-

trostatic forces are sufficient to bond also non sheet-like articles, such as a booklet of cigarette papers, to the pouch. The article can easily be separated from the pouch by a user when unwrapping the pouch, because the charge generally naturally dissipates. Further, in contrast to an article that is glued to the pouch by means of an adhesive, the article does not permanently cover information printed on the pouch, such as user information or health warnings.

**[0010]** Tobacco pouches, as known in the art, are often manufactured from a thin material. The thin material may comprise or consist of a laminate. The laminate can be composed of at least an inner, an outer layer and a printed element arranged between the outer and inner layer. Preferred materials are e.g. polyethylene (PE), metallized polyethylene terephthalate (MPET), polypropylene (PP) and cast polypropylene (CPP).

**[0011]** According to an embodiment, while the tobacco pouch is charged according to a first polarity, e.g. negatively, the article can also be electrostatically charged - according to a second polarity opposite to the first polarity, e.g. positively. Alternatively, an article can be used that is already inherently charged, such as a booklet of cigarette papers, which is - consisting of paper - inherently positively charged.

**[0012]** According to an embodiment, the step of electrostatically charging the tobacco pouch includes charging a first surface of the tobacco pouch according to a first polarity, in particular negatively. The method further includes the step of arranging the article on the first surface of the tobacco pouch, wherein the article carries a charge according to a second polarity opposite to the first polarity. Thereby, the article is temporarily bonded to the tobacco pouch - due to the opposite charges.

**[0013]** Preferably, the step of electrostatically charging the tobacco pouch is carried out prior to arranging the article on the first surface of the tobacco pouch. However, it is also possible to first arrange the article on the pouch and to then charge the pouch, as long as the uncharged pouch together with article arranged thereon is essentially not moved before the pouch is charged and the article is bonded to the pouch.

**[0014]** According to a preferred embodiment, the first surface of the tobacco pouch is negatively charged by means of negatively charged ions emitted from a charging generator that is arranged adjacent to the first surface of the tobacco pouch. During negatively charging the first surface of the tobacco pouch, an effective earth or a virtual earth can be arranged adjacent to a second surface of the tobacco pouch, which second surface is opposite to the first surface of the tobacco pouch. In particular, the virtual earth can be provided in the form of an anti-static bar which emits positively charged ions and negatively charged ions. The positively charged ions generated by the anti-static bar are attracted to the second surface of the tobacco pouch while the negatively charged ions generated by the charging generator are attracted by the first surface of the pouch. Due to the opposite charges on the

first surface and the second surface of the tobacco pouch, field lines pass through the pouch, causing the article to be bonded to the pouch.

**[0015]** According to an embodiment, the method may further comprise at least one of the steps of filling loose tobacco into the tobacco pouch, closing the tobacco pouch, e.g. by means of an adhesive tape, and wrapping the tobacco pouch by means of a plastic film or plastic foil, in order to prevent the tobacco from drying out.

**[0016]** According to an embodiment, the tobacco pouch together with the article temporarily bonded to the tobacco pouch is transported by means of a conveyor, e.g. from an article attaching station of a packaging unit to a wrapping station of the packing unit before being wrapped in the wrapping station. Due to the electrostatic charge introduced into the tobacco pouch, the article reliably sticks to the pouch while being transported.

**[0017]** According to another aspect of the invention, a packaging unit is provided. The packaging unit is configured to package a tobacco pouch and comprises an attaching station and a wrapping station. The attaching station is configured to attach an article, in particular a tobacco related commodity, such as a booklet of cigarette papers, to the tobacco pouch. The wrapping station is configured to wrap the tobacco pouch by means of a plastic film or plastic foil. The article attaching station in turn includes a charging station and an article arranging station. The charging station is configured to electrostatically charge a first surface of the tobacco pouch according to a first polarity, and the article arranging station is configured to arrange the article on the first surface of the tobacco pouch.

**[0018]** Optionally, the packing station may include a filling station that is configured to fill loose tobacco into the tobacco pouch. Alternatively, tobacco pouches already filled with loose tobacco can be supplied to the packaging unit.

**[0019]** According to an embodiment, the charging unit is configured to electrostatically charge the article according to a second polarity opposite to the first polarity.

**[0020]** The packaging unit may further include a conveyor that is configured to transport a tobacco pouch at least from the article attaching station to the wrapping station. According to a preferred embodiment, the conveyor is a conveyor belt.

**[0021]** According to an embodiment, the charging station includes a charging generator that is configured to be arranged adjacent to the first surface of the tobacco pouch when the tobacco pouch is arranged in the charging station. The charging generator is configured to emit negatively charged ions towards of the first surface of the tobacco pouch when arranged adjacent to the first surface.

**[0022]** The charging station may further include a virtual earth in the form of an anti-static bar that is configured to be arranged adjacent to a second surface of the tobacco pouch when the tobacco pouch is arranged in the charging station, which second surface is opposite to the

first surface. The anti-static bar is configured to emit positively charged ions and negatively charged ions towards the second surface of the tobacco pouch when arranged adjacent to the second surface.

**[0023]** According to an embodiment, the conveyor is configured to transport the article in a horizontal direction, wherein the charging generator is arranged above the conveyor and the anti-static bar is arranged below the conveyor, opposite to the charging generator.

**[0024]** According to still another aspect, a tobacco-related product is provided. The tobacco-related product includes a tobacco pouch and an article, in particular a tobacco related commodity, such as a booklet of cigarette papers, wherein the article is at least temporarily bonded to the tobacco pouch by means of electrostatic force.

**[0025]** According to a preferred embodiment, the article is temporarily bonded to the tobacco pouch using a method according to the first aspect of the invention.

**[0026]** The characteristics, features and advantages of this invention and the manner in which they are obtained as described above, will become more apparent and be more clearly understood in connection with the following description of exemplary embodiments, which are explained with reference to the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0027]** In the drawings, same element numbers indicate same elements in each of the views:

Figure 1 is a schematic illustration of an exemplary packaging unit according to an embodiment of the invention;

Figure 2 illustrates steps of a preferred embodiment of an inventive method.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

**[0028]** In Fig. 1 a packaging unit 10 is illustrated. The packaging unit 10 includes an article attaching station 12 and a wrapping station 30. The packaging station 10 further includes a conveyor 32, which is shown in the example as a conveyor belt. By means of the conveyor 32, tobacco pouches 24 can be transported between the different stations 12, 14, 16, 30 of the packaging unit 10, in particular between the article attaching station 12 and the wrapping station 30, along the horizontal direction indicated by the arrows in Fig. 1.

**[0029]** The article attaching station 12 includes a charging station 14 and an article arranging station 16.

**[0030]** The charging station 14 includes a charging generator 18 and an anti-static bar 20. The charging generator 18, e.g. in the form of a 6-point linear pinner electrode, as manufactured by Simco-Ion, is configured to generate negatively charged ions. The anti-static bar 20, e.g. in the form of a Simco P-SH-N anti-static discharge

bar, is configured to generate positively charged ions and negatively charged ions. The charging generator 18 and the anti-static bar 20 are arranged such that when a tobacco pouch 24 is arranged in the charging station 14, the charging generator faces a first surface 23 of the tobacco pouch 24 and the anti-static bar faces a second surface 25 of the tobacco pouch 24 opposite to the first surface 23. In particular, in the exemplary arrangement shown in Fig. 1, the charging generator 18 is arranged above the conveyor 32 and the anti-static bar 20 is arranged below the (portion of the) conveyor 32 which supports the tobacco pouch 24 when the tobacco pouch 24 is arranged in the charging station 14.

**[0031]** The article arranging station 16 may include an article dispensing unit 22 and is configured to arrange an article 26, such as a booklet of cigarette papers, on the first surface 23 of the tobacco pouch 24.

**[0032]** Other kinds of articles, in particular other tobacco related commodities, such as filters, tubes or filter tubes for cigarettes, a lighter or means to ignite a cigarette, or the like, can be arranged on the tobacco pouch 24 by means of the arranging station 16, but also articles in the form of supplements, such an information sheet, a commercial product, a give-away or an advertising supplement.

**[0033]** The wrapping station 30 is arranged to wrap the tobacco pouch 24, together with the article 26 arranged thereon, by means of a plastic film or plastic foil 28. Optionally, a flap of tobacco pouch 24 is folded to cover the article 26 arranged on the first surface 23 of the tobacco pouch 24 prior to wrapping.

**[0034]** Further optional station of the packaging unit 10, such as a filling station that is configured to fill loose tobacco into a pouch 24, or a packing station for packing wrapped pouches into larger containers, are not shown in Fig. 1.

**[0035]** With reference to Fig. 2, steps of a method of packaging tobacco are described in more detail.

**[0036]** A pouch 24 filled with tobacco is transported to the charging station 14 of the article attaching station 12 by means of the conveyor 32.

**[0037]** Basically, the tobacco pouch 24 can be formed of any non-conductive material. Suitable known materials are e.g. thin materials that may comprise or consist of a laminate. The laminate can be composed of at least an inner, an outer layer and a printed element arranged between the outer and inner layer. Preferred materials are e.g. polyethylene (PE), metallized polyethylene terephthalate (MPET), polypropylene (PP) and cast polypropylene (CPP).

**[0038]** In step S1, in the charging station 14, the tobacco pouch 24 is electrostatically charged by means of the charging generator 18. The charging generator 18 can have an operating voltage between 10 and 50kV DC, and is preferably operated between 15 and 30 kV DC, most preferably at about 20kV DC. [TO THE INVENTORS: is this correct?]

**[0039]** In more detail, the charging generator 18 gen-

erates negatively charged ions that are emitted towards the first surface 23 of the tobacco pouch 24, while at the same time, the anti-static bar 20 generates positively charged ions and negatively charged ions. The positively charged ions are attracted by the second surface 25 of the tobacco pouch 24, due to the negative charge on the opposite first surface 23. The charging time generally lies between 0.2 and 2 seconds, preferably between 0.3 and 1.5 seconds, most preferably between 0.5 and 1 second. [TO THE INVENTORS: is this correct?]

**[0040]** The charged tobacco pouch 24 is then transported to the article attaching station 16 by means of the conveyor 32, where in step S2 the article 26, in the example a booklet of cigarette papers, is arranged on the first surface 23 of the tobacco pouch 24. Due to the fact that paper is inherently positively charged, the article 26 is temporarily bonded to the tobacco pouch 24 by means of electrostatic force.

**[0041]** According to an alternative embodiment not shown, the article attaching unit 12 may comprise a combined charging and article arranging unit, so that a transport between these two stations is no longer necessary. In this case, the steps of arranging the article and charging the pouch can be interchanged, i.e. the article can be arranged on the pouch before the pouch is charged.

**[0042]** Next, the pouch 24 together with the article 26 at least temporarily bonded thereto is transported by the conveyor 32 to the wrapping station 30 where the pouch 24 together with the bonded article 26 is wrapped in step S3 by means of a plastic foil 28.

**[0043]** While this invention has been described in connection with what is presently considered to be practical exemplary embodiments, it is to be understood that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the scope of the appended claims.

#### LIST OF REFERENCE SIGNS

##### **[0044]**

10	packaging unit
12	article attaching station
14	charging station
16	article arranging station
18	charging generator
20	anti-static bar
22	article dispensing unit
23	first surface
24	tobacco pouch
25	second surface
26	article
28	plastic foil
30	wrapping station
32	conveyor
S1, S2, S3	method steps

**Claims**

1. A method of packaging tobacco, including the step of temporarily bonding an article (26), in particular a tobacco related commodity, such as a booklet of cigarette papers, to a tobacco pouch (24), wherein the step of temporarily bonding the article (26) to the tobacco pouch (24) includes a step of electrostatically charging (S1) the tobacco pouch (24). 5
2. The method according to claim 1, wherein the tobacco pouch (24) is charged according to a first polarity, including the step of electrically charging the article (26) according to a second polarity opposite to the first polarity. 10
3. The method according to claim 1 or 2, wherein the step of electrostatically charging the tobacco pouch (24) includes charging a first surface (23) of the tobacco pouch according to a first polarity, the method further including the step of arranging (S2) the article (26) on the first surface (23) of the tobacco pouch, wherein the article (26) carries a charge according to a second polarity opposite to the first polarity. 20
4. The method according to claim 3, wherein the step of electrostatically charging the tobacco pouch (24) is carried out prior to arranging the article on the first surface (23) of the tobacco pouch (24). 25
5. The method according to claim 3 or 4, wherein the first surface (23) of the tobacco pouch (24) is negatively charged by means of negatively charged ions emitted from a charging generator (28) that is arranged adjacent to the first surface (23) of the tobacco pouch (24). 30
6. The method according to any one of claims 3 to 5, wherein, during negatively charging the first surface (23) of the tobacco pouch (24), an effective earth or a virtual earth (20) is arranged adjacent to a second surface (5) of the tobacco pouch (24), which second surface (25) is opposite to the first surface (23) of the tobacco pouch (24), wherein the virtual earth (20) can be provided in the form of an anti-static bar (20) which emits positively charged ions and negatively charged ions. 40
7. The method of any one of claims 3 to 6, further comprising at least one of the steps of 45
- filling tobacco into the tobacco pouch (24);
  - closing the tobacco pouch (24); and
  - wrapping (S3) the tobacco pouch (24) by means of a plastic film or plastic foil (28). 50
8. The method according to claim 7, wherein the tobacco pouch (24) together with the article (26) temporarily bonded to the tobacco pouch is transported by means of a conveyor (32) before being wrapped.
9. A packaging unit (10), configured to package a tobacco pouch (24), the packaging unit (10) comprising; 55
- an article attaching station (12), configured to attach an article (26), in particular a tobacco related commodity, such as a booklet of cigarette papers, to the tobacco pouch (24); and a
  - wrapping station (30), configured to wrap the tobacco pouch (24) by means of a plastic film or plastic foil (28);
- wherein the article attaching station (12) includes
- a charging station (14), configured to electrostatically charge a first surface (23) of the tobacco pouch (24) according to a first polarity, and
  - an article arranging station (16), configured to arrange the article (26), which article (26) carries a charge according to a second polarity opposite to the first polarity on the first surface (23) of the tobacco pouch (24).
10. The packaging unit (10) according to claim 9, wherein the charging unit (14) is configured to electrostatically charge the article (26) according to a second polarity opposite to the first polarity. 30
11. The packaging unit (10) according to claim 9 or 10, further including a conveyor (32) that is configured to transport a tobacco pouch (24) at least from the article attaching station (12) to the wrapping station (30), wherein the conveyor (32) can be a conveyor belt. 35
12. The packaging unit (10) according to any one of claims 9 to 11, wherein the charging station (14) includes a charging generator (18) that is configured to be arranged adjacent to the first surface (23) of the tobacco pouch (24) and to emit negatively charged ions. 40
13. The packaging unit (10) according to any one of claims 9 to 12, wherein the charging station (14) includes an anti-static bar (20) that is configured to be arranged adjacent to a second surface (25) of the tobacco pouch (24), which second surface (25) is opposite to the first surface (23), and to emit positively charged ions and negatively charged ions. 45
14. The packaging unit (10) according to claims 11 to 13, wherein the conveyor (30) is configured to transport the article (26) in a horizontal direction, wherein the charging generator (18) is arranged above the conveyor (32) and the anti-static bar (20) is arranged

below the conveyor (32), opposite to the charging generator (18).

15. A tobacco-related product (24, 26), including a tobacco pouch (24) and an article (26), in particular a tobacco related commodity, such as a booklet of cigarette papers, wherein the article (26) is at least temporarily bonded to the tobacco pouch (24) by means of electrostatic force, wherein the article (26) can be temporarily bonded to the tobacco pouch (24) using a method according to any one of claims 1 to 8.

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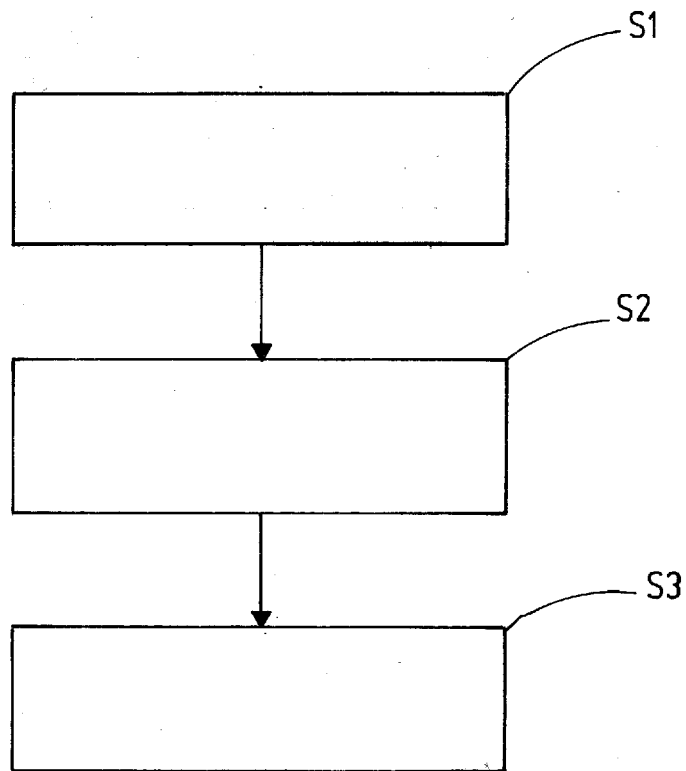
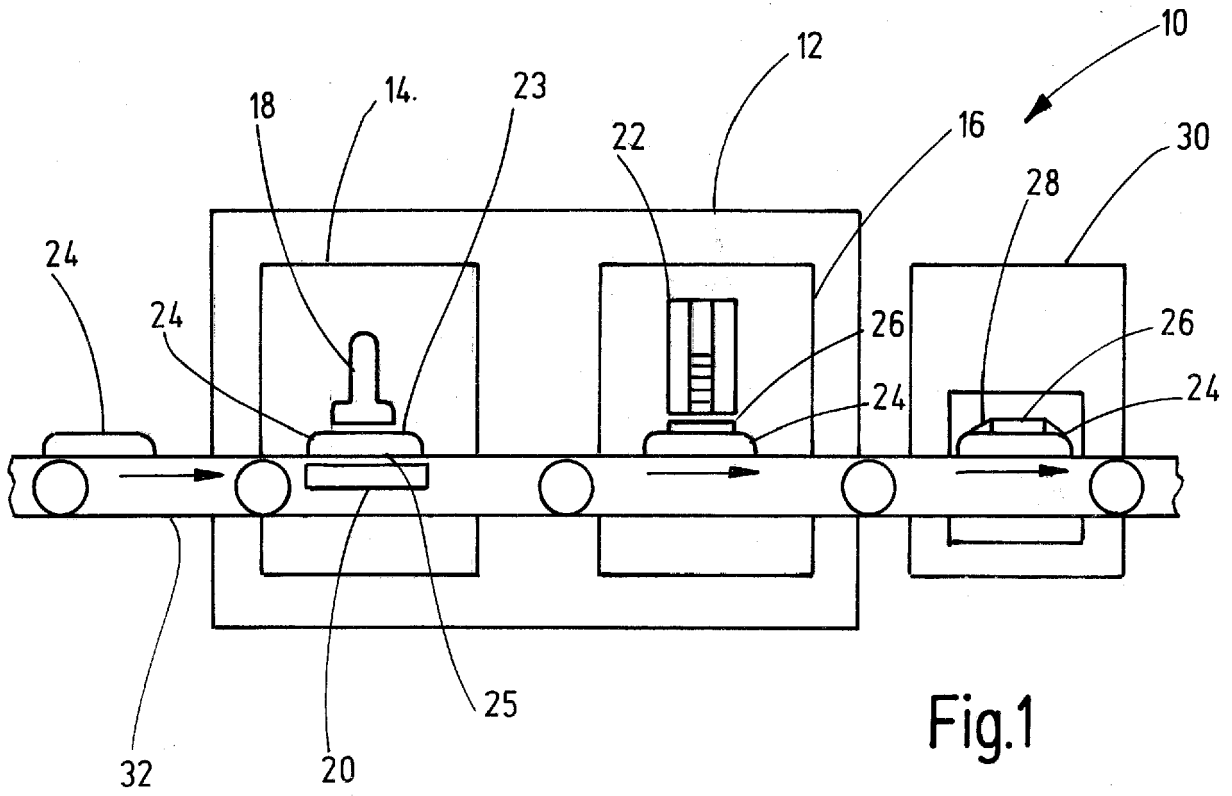
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Application Number  
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