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Szállítótasak, különösképp biztonsági tasak

Az európai szabadalom ellen, megadásának az Európai Szabadalmi Közlönyben való meghirdetésétől számított kilenc hónapon belül, felszólalást lehet benyújtani az Európai Szabadalmi Hivatalnál. (Európai Szabadalmi Egyezmény 99. cikk(1))

A fordítást a szabadalmas az 1995. évi XXXIII. törvény 84/H. §-a szerint nyújtotta be. A fordítás tartalmi helyességét a Szellemi Tulajdon Nemzeti Hivatala nem vizsgálta.

Shipping bag, in particular security bag

Description

- 5 The invention relates to a shipping bag, in particular a security bag, of plastic, comprising an interior space, which is accessible through an access opening, and a closure element, which is provided with an adhesive layer, wherein the closure element can be attached to the access opening by means of the adhesive layer in such a way that the access opening is closed, wherein a first thermal indicator is
- 10 provided, which exhibits a colour change when the ambient temperature rises to a value above a first limit value, and wherein a second thermal indicator is provided, which exhibits a colour change when the ambient temperature falls to a value below a second first limit value.
- 15 A shipping or security bag of this type, as is described in WO01/04014 A1, serves to receive valuable items which are not to be unnoticeably removed, or even just touched, by an unauthorized user. It is hereinafter assumed, by way of example, that the shipping or security bag is used for the transport of money.
- 20 Once a predefined sum of money is placed in the shipping or security bag, the latter is tightly sealed. For this purpose, a closure element, for instance in the form of a tab-like plastics closure strip, is provided, which on its one side bears an adhesive layer that, in the unused state of the shipping or security bag, is covered with a cover. For the closure of the shipping or security bag, the user
- 25 pulls the cover off the adhesive layer and places the closure strip, with the side bearing the adhesive layer, onto the access opening in such a way that this is fully closed.

From WO 96/04177 A1, it is known to indicate manipulations of the shipping or

30 security bag, and in particular of the closure strip, through the use of security indicators. An attempt to subsequently pull off the closure strip is indicated, for



instance, by the detachment of a previously applied coating, which reveals a signal word. The attempt to mechanically damage the shipping or security bag or the closure strip can thus be displayed at the destruction site.

- 5 It is also known that unauthorized persons, by applying heat, for instance, by means of a hot-air blower, attempt to reduce the adhesive effect of the adhesive to the point where the closure strip detaches itself from the shipping or security bag. In order to display this, the first thermal indicator can be provided close to the through opening, which thermal indicator, in the event of an excessive
10 heating to an ambient temperature above a first limit value, shows a colour change.

- It is also expedient to indicate a manipulation in which the ambient temperature is excessively lowered, for instance by the application of a cold spray. An
15 excessive temperature fall makes the adhesive brittle and substantially reduces its adhesiveness. This is clearly indicated in that the second thermal indicator shows a colour change, preferably to a clearly visible colour such as red or orange.

- 20 In this way, in the case of the shipping or security bag, an excessive variance of the ambient temperature upwards (heating) or downwards (cooling) is clearly and reliably indicated, so that a corresponding manipulation is immediately recognized.

- 25 Expediently, the change of colour of the second thermal indicator, which indicates a fall in the ambient temperature to a value below the second limit value, is irreversible, i.e. the colour change cannot be reversed, even by subsequent raising of the ambient temperature to a value above the second limit value. In this way, an attempted manipulation of the shipping or security bag can
30 still be reliably recognized even after a lengthy period of time.

In practice, it has proved very difficult, however, to produce an appropriate second thermal indicator having an irreversible colour change. An appropriate thermal indicator is expensive and unreliable in use, so that no security is given that a manipulation attempt is reliably indicated.

5

The object of the invention is to provide a shipping or security bag which indicates an attempted manipulation of the seal by means of lowering of the ambient temperature.

- 10 This object is achieved by a shipping or security bag having the features of Claim 1. It is here provided that the change of colour of the first thermal indicator is irreversible, and to use a second thermal indicator, the change of colour of which is reversible. The second thermal indicator resumes its original colour when the ambient temperature rises to a value above a third limit value,
15 wherein the third limit value is greater than or equal to the first limit value of the first thermal indicator.

If, in the event of a manipulation, the ambient temperature is reduced, for instance by means of a cold spray, to a value below the second limit value, the
20 second thermal indicator changes its colour, for instance from yellow to red or orange. An appropriate colour change can occur, for instance, at -20°C .

When the cold spray is no longer effective, the second thermal indicator, in the course of time, assumes the temperature of the surrounding atmosphere or the
25 room temperature. It here usually maintains its colour change. Only once the ambient temperature in the region of the second thermal indicator lies above the third limit value does the second thermal indicator again change its colour change from red or orange back into its original yellow colour. Since the third limit value is greater than or equal to the first limit value of the first thermal
30 indicator, the first thermal indicator previously or simultaneously likewise changes its colour in irreversible form, so that then, in this way, the manipulation

is reliably indicated. Although the change of colour of the second thermal indicator is reversible, the interaction with the first thermal indicator serves to ensure that an excessive lowering of the ambient temperature to a value below the second limit value is reliably indicated even when the ambient temperature is afterwards raised again.

The change of colour of the first thermal indicator in the event of a rise in the ambient temperature to a value above the first limit value is irreversible, i.e. the colour change is also maintained when the ambient temperature is subsequently lowered again to a value below the first limit value.

It has also proved expedient if the first limit value lies in the range from +40°C to +80°C, and preferably in the range from +50°C to +70°C, and is in particular +60°C.

It has also proved expedient if the second limit value lies in the range from -5°C to -45°C, and preferably in the range from -15°C to -35°C, and is in particular -20°C.

For the third limit value it has proved expedient if this lies in the range from +50°C to +90°C, and preferably in the range from +60°C to +80°C, and is in particular +70°C.

The first thermal indicator and/or the second thermal indicator can be attached as a separate element to the shipping or security bag and/or the closure element. In a preferred embodiment of the invention, it is provided, however, that the first thermal indicator and/or the second thermal indicator is directly integrated in the adhesive layer.

In a refinement of the invention, it can be provided that the first thermal indicator and/or the second thermal indicator is integrated in the adhesive

forming the adhesive layer, in that to this adhesive is added, for instance, a component which, upon excessive action of heat and/or upon excessive action of cold, reacts with a colour change in the said manner. The component can be added to the adhesive in a proportion ranging from 5% to 25%, and in particular
5 in a proportion ranging from 10% to 15%.

It has proved beneficial if the closure element is a closure strip, which is applied by means of the adhesive layer to a slot of the security bag, which slot forms the access opening. The closure element or the closure strip can here be a separate
10 component which is independent from the plastics foil of the security bag, though alternatively it is also possible that the closure element or the closure strip is formed by a portion of the plastics foil forming the security bag and is thus an integral part of the security bag.

15 Further details and features of the invention are evident from the following description of illustrative embodiments with reference to the drawing,

in which:

20 Fig. 1 shows a schematic representation of a shipping or security bag according to a first embodiment,

Fig. 2 shows a schematic temperature scale with exemplary limit values,

25 Fig. 3 shows a schematic representation of a shipping or security bag according to a second embodiment, and

Fig. 4 shows a schematic representation of a shipping or security bag according to a third embodiment in open and closed state.

Figure 1 shows in schematic representation a cross section through the components of a shipping or security bag 10. The shipping or security bag 10 consists of a lower sheet 11 and an upper sheet 12 of a plastics foil, which are connected to each other in a known manner and form between them an interior space 14, which is accessible only via a slot-like access opening 13. Directly next to the access opening 13, to the upper sheet 12 of the shipping or security bag is attached a first thermal indicator 17, for instance in the form of an externally sprayed-on or pressed-on coating, which, when the ambient temperature rises to a value above a first limit value of $+60^{\circ}\text{C}$, shows an irreversible colour change.

Next to the first thermal indicator 17 is provided, on the upper sheet 12 of the shipping or security bag 10, also a second thermal indicator 18, which, if the ambient temperature falls to a value below a second limit value of, for instance, -20°C , shows an irreversible or a reversible colour change.

In order to close the access opening 13, a closure element 21, for instance in the form of a plastics closure strip 15, is provided, which on one side is coated with an adhesive layer 16. The adhesive layer 16 is covered with a band-like cover 19, which can be pulled off by a user, as is indicated by the arrow A.

In order to close the access opening 13, the user pulls off the cover 19 and presses the closure strip 15 with the adhesive layer 16 onto the access opening 13 in such a way that this is fully covered over. At the same time, the first thermal indicator 17 and the second thermal indicator 18 are also covered, so that they are protected from an external chemical manipulation.

Figure 2 shows a schematic temperature scale with exemplary limit values. In the represented illustrative embodiment, the first limit value of the first thermal indicator is $+60^{\circ}\text{C}$. The second limit value of the second thermal indicator is -20°C . If the ambient temperature in the region of the thermal indicators is raised

to a value of more than $+60^{\circ}\text{C}$, i.e. to a value above the first limit value of the first thermal indicator, the latter shows an irreversible colour change, so that this manipulation is reliably indicated.

- 5 If the ambient temperature is lowered to less than -20°C , i.e. to a value below the second limit value of the second thermal indicator, this likewise shows a colour change. If this colour change is irreversible, it can still be reliably recognized even after a lengthy period of time.
- 10 If the change of colour of the second thermal indicator is reversible, however, the second thermal indicator is configured such that it resumes its original colour only once the ambient temperature rises to a value above a third limit value which is greater than or equal to the first limit value of the first thermal indicator and, in the represented illustrative embodiment, is $+70^{\circ}\text{C}$.
- 15 If the ambient temperature of the second thermal indicator has been reduced to a value of less than -20°C , the second thermal indicator shows a colour change, for instance from yellow to red. If the ambient temperature of the second thermal indicator is then raised again, the colour change, i.e. the red appearance, is
- 20 initially maintained until the ambient temperature has a value of more than $+70^{\circ}\text{C}$, i.e. above the third limit value. In this case, the second thermal indicator resumes its original yellow colour. Since the third limit value lies, however, above the first limit value of the first thermal indicator, the latter shows an irreversible colour change when the first limit value of $+60^{\circ}\text{C}$ is reached, so that
- 25 the manipulation is reliably indicated even when the second thermal indicator shows only a reversible colour change.

Figure 3 shows an illustrative embodiment which is very similar to the illustrative embodiment according to Figure 1 and differs therefrom only by

30 virtue of the fact that both the first thermal indicator 17 and the second thermal

indicator 18 are integrated in the adhesive layer 16 and, in particular, are added to the adhesive forming the adhesive layer.

5 In the illustrative embodiments represented in Figures 1 and 3, the closure element 21 or the closure strip 15 is always configured as a separate component, which is connected via the adhesive layer 16 to the plastics foil forming the security bag 10. In Figure 4 is represented a further illustrative embodiment, which is distinguished by the fact that the closure element 21 is configured, in the form of a closure strip 15, as an integral part of the plastics foil forming the security bag 10. For this purpose, the upper sheet 12 of the plastics foil projects beyond the lower sheet 11 by a portion 20, which forms the closure strip 15. In this portion 20 is applied the adhesive layer 16, which is covered by the cover 19. For the closure of the access opening 13, next to which the first thermal indicator 17 is arranged, the cover 19 is removed and the protruding portion 20 bearing the adhesive layer 16 is turned over such that the adhesive layer 16 ends up on the outside of the access opening 13 and of the first thermal indicator 17, as can be seen in Figure 4 on the right-hand representation. The second thermal indicator 18 is here integrated in the adhesive layer 16.

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SZABADALMI IGÉNYPONTOK

SZÁLLÍTÓTASAK, KÜLÖNÖSKÉPP BIZTONSÁGI TASAK

1. Műanyag szállító vagy biztonsági tasak (10) egy bemeneti nyílással (13) a belső térhez (14) elérésére, és egy záróelemmel (21), amely egy ragasztó réteggel (16) van ellátva, ahol a záróelemnek (21) egy ragasztóréteg (16) által a bemeneti nyílásra (13) úgy vihető fel, hogy azt lezárja, ahol egy első hőindikátor (18) található, amely a környezeti hőmérséklet emelkedésével egy első határérték fölötti értéken egy színváltozást mutat, és ahol van egy második hőindikátor (18), amely a környezeti hőmérséklet csökkenésével egy második határérték alatti értéken egy színváltozást mutat, azzal jellemezve, hogy az első hőindikátor (17) színváltozása visszafordíthatatlan, hogy a második hőindikátor (18) színváltozása visszafordítható, és hogy a második hőindikátor (18) a környezeti hőmérsékletnek egy harmadik határérték fölé történő emelkedésével újra visszanyeri az eredeti színét, ahol a harmadik határérték nagyobb vagy egyenlő az első határértékkal.

2. Az 1. igénypont szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy az első határérték $+40^{\circ}\text{C}$ és $+80^{\circ}\text{C}$ közötti.

3. A 2. igénypont szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy az első határérték $+50^{\circ}\text{C}$ és $+70^{\circ}\text{C}$ közötti, előnyösen $+60^{\circ}\text{C}$.

4. Az 1-3. igénypontok egyike szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy a második határérték -5°C és -45°C közötti.

5. A 4. igénypont szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy a második határérték -15°C és -35°C közötti, előnyösen -20°C .

6. Az 1-5. igénypontok egyike szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy a harmadik határérték $+50^{\circ}\text{C}$ és $+90^{\circ}\text{C}$ közötti.

7. A 6. igénypont szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy a harmadik határérték $+60^{\circ}\text{C}$ és $+80^{\circ}\text{C}$ közötti, előnyösen $+70^{\circ}\text{C}$.

8. Az 1-7. igénypontok egyike szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy az első hőindikátor (17) és/vagy a második hőindikátor (18) a ragasztórétegbe (16) van integrálva.



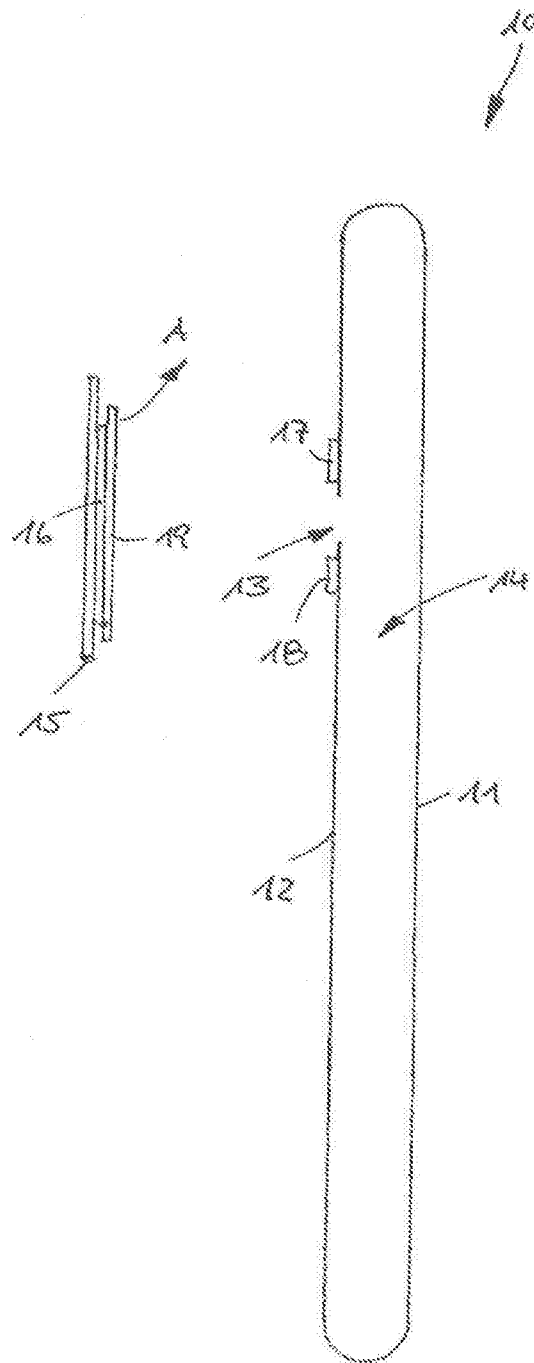
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9. Az 1-7. igénypontok egyike szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy az első hőindikátor (17) és/vagy a második hőindikátor (18) a ragasztóréteget (16) alkotó ragasztóanyagba van integrálva.

10. Az 1-9. igénypontok egyike szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy a záróelem (21) egy zárószalag (15).

11. Az 1-10. igénypontok egyike szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy a záróelem (21) a szállító vagy biztonsági tasakkal egy darabot alkotó alkotórész.

12. Az 1-10. igénypontok egyike szerinti szállító vagy biztonsági tasak, azzal jellemezve, hogy a záróelem (21) egy különálló alkatrész.

FIG. 1

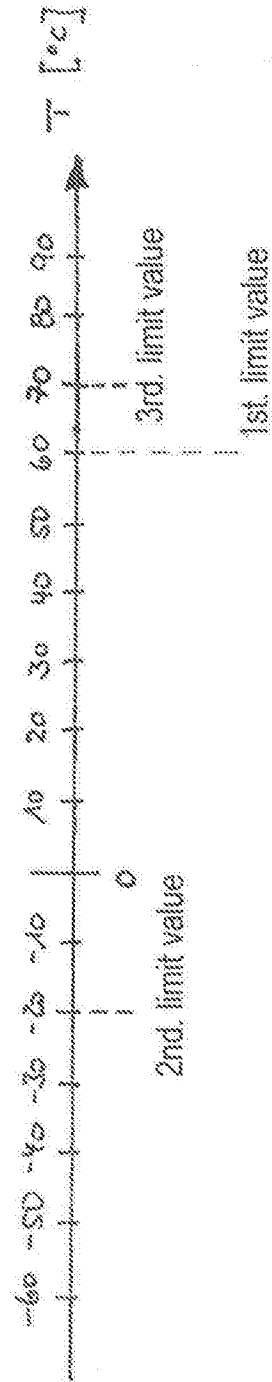


FIG. 2

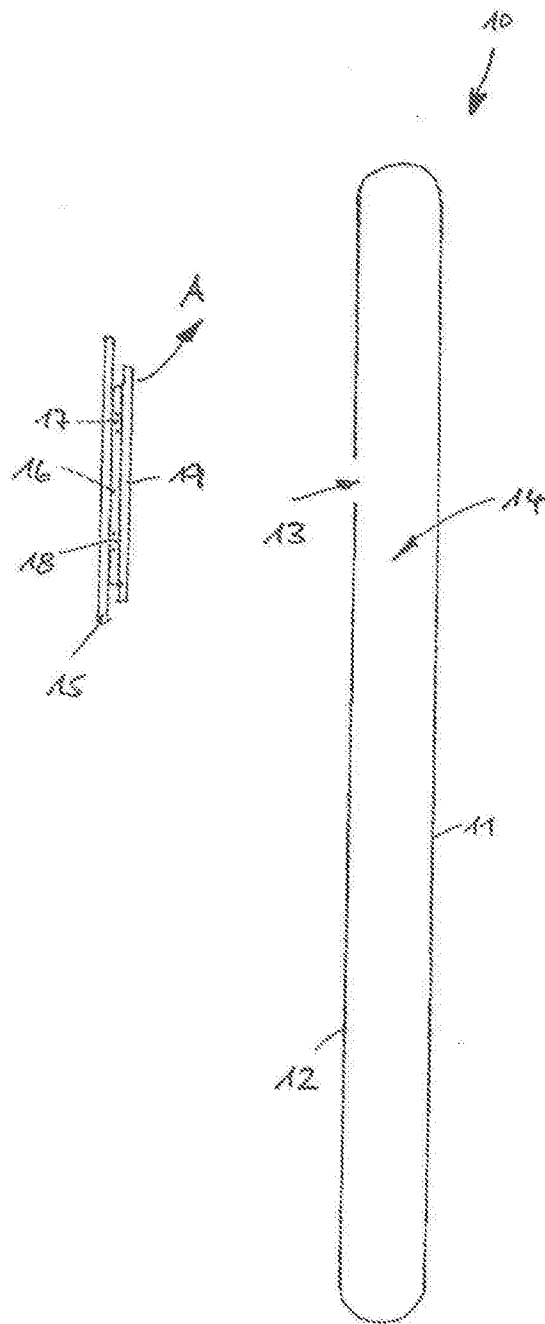
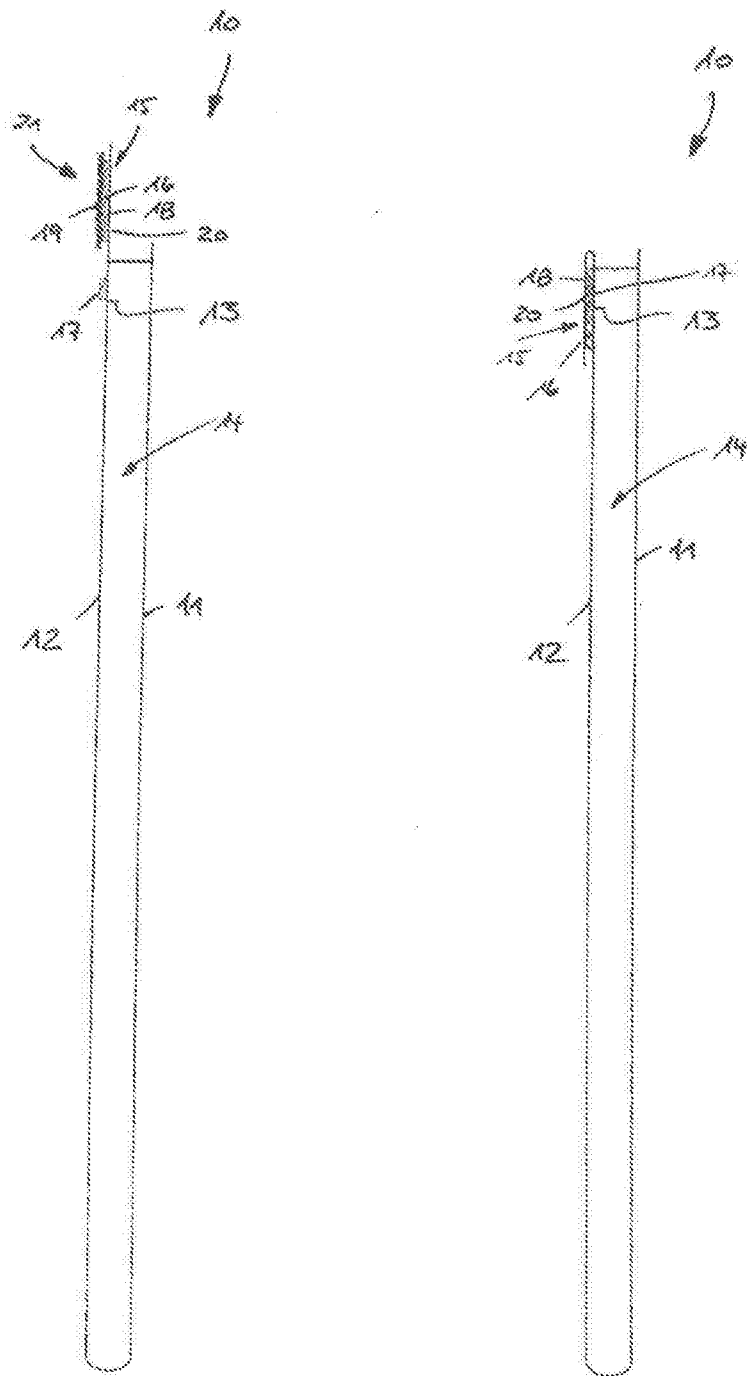


Fig. 3

FIG. 4