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(54) **WIRE HOODS FOR BOTTLE CORKS**

DRAHTHAUBEN FÜR FLASCHENKORKEN

COUVERTURES MÉTALLIQUES POUR BOUCHONS DE BOUTEILLES

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(73) Proprietor: **Panizza, Paolo**
46043 Marmirolo (Mantova) (IT)

(72) Inventor: **Panizza, Paolo**
46043 Marmirolo (Mantova) (IT)

(74) Representative: **Marcio', Paola**
Ing. Mari & C. SRL
Via Garibotti, 3
26100 Cremona (IT)

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Description

Technical Field

[0001] The present invention relates to a wire hood for bottle corks particularly indicated for use in bottles that contain sparkling wines or champagnes.

Background Art

[0002] As it is known, a wire hood for corks is essentially composed of three different parts: a cap, a hood and a belt, as they are called in technical terms and as shown in figure 1. The cap is composed of a sheet of tinplate pressed so as to lend it the classic convex form and with a side edge in which there are four grooves present which create corresponding housings designed to accommodate the stems of the hood.

[0003] The hood is composed of a metal wire frame with an essentially circular upper part from which the four equidistant twisted wire stems run off.

[0004] In particular, the ends of the stems feature eyelets inside which the belt runs, the latter also being composed of metal wire and forming, once the two ends thereof are fastened by twisting together, the mobile belt that serves to secure the cork.

[0005] In more detail, after positioning the hood on the bottle cork, applying traction to the end of the belt and, contemporaneously, rotating and twisting a section of the wire so that the cork is locked in its seat, with the hood gripping the bottle neck and, in particular, the lip, i.e. the slightly protruding section in proximity with the opening of the bottle neck with which the belt lies flush. DE 4015328 A1 discloses a wine hood for bottle corks having the above said features, which are listed in the preamble of claim1 and claim4 FR331946 discloses a wire hood for corks according to the preamble of claim 22.

[0006] The production of the components of the hood illustrated requires a rather complex machine which must perform a series of operations in order to obtain a wire hood. In fact, it is initially necessary to form a star shape, composed of a single metal wire, and then configure the stems with the twisted shape, taking care to form the eyelets at the ends by bending the wires backwards, thus forming the housing for the belt. Next, the belt is machined and made to run through the inside of the relative eyelets and the ends thereof are then fastened by being twisted one around the other.

[0007] Finally, as the last step, the cap is applied, which engages, by interference, in correspondence with the four stems. One variant of the wire hood illustrated earlier is shown in figure 2. In this wire hood configuration, the belt and the hood are obtained from the said metal wire. In fact, as can be seen in figure 2, one stem continues and becomes the belt, the two free ends of which are then joined via a rear tie in which they are either twisted around the belt or are twisted around each other and rest on the said belt. One very relevant drawback of this type of wire hood lies in the fact that, because of its conformation, once it is positioned on the cork it is not positioned straight with respect to the axis of the bottle. This behaviour is due mainly to two causes. The first is attributable to the tie, which - since it is not uniform and is bulky, interferes with the lip of the bottle causing poor positioning of the wire hood. The second cause is the lack of an eyelet which leads to non-uniform positioning when the said wire hood is resting on the lip.

[0008] In fact, in this wire hood, only three eyelets lie flush with the lip and the tie, of whatever type this is, interferes with the said lip, often leading to an incorrect positioning of the said wire hood and consequent frequent machine stoppage during its positioning and engagement with the bottles.

[0009] Also in this case, the machines which construct this wire hood are very complex.

[0010] At present, a different form of wire hood is constituted of a bridge realised with metal sheet and equipped, at each end, with a slightly open eyelet, which is envisaged to house a belt made of metal wire with a twisted fastening, as shown in the exampled in figure 3. Also in this case, once the wire hood is positioned on top of the bottle cork, it is necessary to tighten the belt so that, securing itself to the bottle neck, it can prevent any movement of the cork, with all the difficulties already illustrated for the belts.

[0011] All the wire hoods, illustrated earlier, while fulfilling their task, have nevertheless brought to light diverse drawbacks from both a construction point of view and an aesthetic point of view.

[0012] In fact, a first drawback encountered derives from the fact that, as already mentioned, the machines employed at present are very complex since they have to be able to imprint, via numerous steps, the form comprising belt and hood onto a metal wire which, due to its physical characteristics, is not always easy to process. Likewise, the machines for the realisation of the wire hoods with bridge form are also complex.

[0013] A further drawback stems from the fact that the machines must often be phased, due to continuous variations in the characteristics of the wire of both dimensional and mechanical nature. This results in certain parts of the wire hood being not perfectly processed, thus leading to diverse difficulties at the bottle corking stage. Often, in fact, the eyelets inside which the belt has to run remain open, or differ from one another. When the eyelets are not perfectly closed or uniform, they pose the risk that the person holding the bottle could be wounded, suffering punctures due to the presence of pointed wire elements, and they create problems from both an aesthetic and functional viewpoint. In fact, the eyelets whose task is to restrain the belt also have the function of keeping the wire hood well secured over the bottle neck, being positioned on the lip. If this does not occur correctly, the wire hood tends to be positioned obliquely to the cork and, consequently, since it is not well anchored to the bottle neck, could allow the cork to come out, unexpectedly

uncorking the bottle as there is no longer sufficient force to counter the pressure of the wine, with considerable damage to people or things. In addition, a wire hood positioned incorrectly, or with eyelets which are not adequately closed, etc. compromises the aesthetics of the corked product.

[0014] Similar drawbacks to those illustrated earlier emerge if the belt tie is not realised well. In fact, if the belt is not well closed around the bottle neck it could cause wounds and punctures to the hands of the people holding the bottle, in addition to leading to incorrect positioning of the wire hood around the lip, or could even cut the capsule placed on the bottle neck after corking and the hooding, with problems for the aesthetics of the bottle and problems for the bottling line.

[0015] A further drawback encountered with the wire hoods employed at present derives from the fact that they are not particularly convenient and practical to open. In fact, to open the current wire hoods, one must unwind the twisted ends of the belt several times, with the risk that this may break due to the stresses, rendering it impossible to open, except with specific instruments which are not always immediately available.

[0016] In addition to the above, the wire hood as it is realised at present presents diverse limits in terms of personalisation. In fact, since the machines are very complex and the metal wire not easy to process, there is no margin for or possibility of customising the wire hoods, except with very high costs and, in any case, with limits as to the forms. Furthermore, nowadays, the possibility of realising writing and placing logos on the wire hoods is limited in terms of colouring, quantity, and positioning by the technologies which can be utilised. At present, writing and logos are placed on the external side of the cap but this leads to exposure and deterioration due to the possibility of the graphics being scratched.

[0017] A still further drawback encountered with current wire hoods for bottle corks arises from the fact that it is not possible to have product trackability, which gives rise to the occurrence of bottle counterfeiting, especially where particularly valuable wines are concerned.

[0018] A final but not less important drawback of the current wire hoods for bottle corks concerns the environment. In fact, bottles of sparkling wine are often opened for different occasions and situations; non-biodegradable waste is a problem and since wire hoods are composed of ferrous material, they are recyclable but not biodegradable and therefore can pollute the environment if thrown away carelessly.

Disclosure of Invention

[0019] The aim of the present invention is essentially to the solve the problems of the commonly known technique, overcoming the drawbacks described above by means of a wire hood for bottle corks which can ensure the user simple, easy and safe opening.

[0020] A second aim of the present invention is to realise a wire hood for bottle corks which is perfectly uniform and calibrated and therefore able to be housed on the bottle neck and on the cork in a precise and constant way. A third aim of the present invention is to have a wire hood for bottle corks which is aesthetically pleasing, with various possibilities to vary the configuration in terms of aesthetics and colours, and which allows bottle trackability in order to prevent counterfeiting actions.

[0021] A further aim of the present invention is to have a wire hood for bottle corks which is able to allow reduced production costs, due to both the simpler machines and the materials which are easier to process and to source.

[0022] A further aim of the present invention is to have a wire hood for bottle corks which is biodegradable, easy to dispose of and therefore non-polluting.

[0023] A still further aim of the present invention is to have a wire hood for bottle corks which allows the use of the protective capsule over the wire hood to be avoided.

[0024] A further aim of the present invention is to realise a wire hood for bottle corks, which is simple to realise and works well.

[0025] These aims and others besides, which will better emerge over the course of the present description, are essentially achieved by means of a wire hood for bottle corks, as outlined in the claims 1, 4 and 22.

[0026] Further characteristics and advantages will better emerge in the detailed description of a wire hood for bottle corks, according to the present invention, provided in the form of a non-limiting example, with reference to the accompanying drawings, in which:

- figure 1 shows, schematically and from a perspective view, a wire hood for bottle corks according to the commonly known technique;
- figure 2 shows, schematically and from a perspective view, a different form of the wire hood for bottle corks according to the commonly known technique;
- figure 3 shows, schematically and from a perspective view, a further wire hood for bottle corks according to the commonly known technique;
- figure 4 shows, schematically and from a perspective view, a first embodiment of a wire hood for bottle corks as per the present invention in an opening condition;
- figure 5 shows, schematically and from a perspective view, the wire hood in figure 4 in the fastened condition;
- figure 5A shows a detail of the wire hood in figure 5;
- figure 6 shows, schematically and from a perspective view, a variant of the wire hood in figure 4;
- figures 6A and 6B each show a detail of the wire hood in figure 6;
- figure 7 shows, schematically and from a perspective view, a variant of the wire hood in figure 6;
- figure 7A shows a detail of the wire hood in figure 7;
- figures 7B and 7C each show a detail from figure 7A;
- figure 8 shows, also schematically and from a per-

spective view, a further variant of the wire hood in figure 4;
- figure 8A shows a detail of the wire hood in figure 8;
- figure 9 shows, also schematically and from a perspective view, a different embodiment of the wire hood in figure 8;
- figure 9A shows a detail of the wire hood in figure 9;
- figure 10 shows, also schematically and from a perspective view, a different variant of the wire hood in figure 4;
- figure 10A shows a detail of the wire hood in figure 10;
- figure 11 shows, also schematically and from a perspective view, a variant of the wire hood in figure 10;
- figure 11A shows a detail of the wire hood in figure 11;
- the figure 12 shows, also schematically and from a perspective view, a still further variant of the wire hood in figure 4;
- figure 12A shows a part of the wire hood in figure 12;
- figure 13 shows, also schematically and from a perspective view, a different embodiment of the wire hood in question;
- figure 13A shows a part of the wire hood in figure 13;
- figure 13B shows a section of a part of the wire hood in figure 13;
- figure 14 shows, also schematically and from a perspective view, a further embodiment of the wire hood in question;
- figures 14A, 14B and 14C each show a variant of the wire hood in figure 14;
- figure 15 shows, also schematically and from a perspective view, a different realisation of the wire hood in question;
- figure 15A shows a detail of the wire hood in figure 15;
- figure 15B shows a variant of the detail of the wire hood in figure 15;
- figure 15C shows a variant of the wire hood in figure 15;
- figure 16 shows, also schematically and from a perspective view, a variant of the wire hood in figure 15;
- figure 16A shows a section detail of the wire hood in figure 16;
- figure 17A shows, schematically and from a perspective view, a wire hood with a bridge form according to the present invention;
- figure 17B shows a variant of the wire hood in figure 17;
- figure 18 shows a variant of the wire hood in figure 17;
- figure 18A shows a detail of the wire hood in figure 18;
- figures 19A, 19B and 19C each show a variant of the wire hood in figure 18;
- figure 20 shows a part of the wire hood in figure 19;
- figure 20A shows a detail of the wire hood in figure 20;
- figures 21 A and 21B show further variants of the wire hood with a bridge form.

[0027] With reference to the aforesaid figure, and in particular figure 4, 1 denotes a wire hood for bottle cork as a whole, according to the present invention.

[0028] The wire hood 1 in question is essentially constituted of a cap 2, a hood structure 3 and a belt 4, as shown in figure 4.

[0029] In the present embodiment, cap 2 and the hood structure are of an essentially known type. In fact, the cap is constituted of a sheet of tinplate pressed so as to have a convex configuration so that it couples with the upper part of a cork and with a lateral edge 20 and features four grooves 21, while the hood 3 is composed of a metal wire structure having an essentially circular upper part 30 from which four equidistant twisted wire stems 31 run down and are housed in the corresponding grooves in the cap.

[0030] As clearly shown in figure 5, the free end of each stem 31 features an eyelet 32 inside which the belt 4 will run.

[0031] According to the present embodiment, the belt is not fastened by a rear tie, as in the commonly known technique, instead it is open and features, at each end, a curl 40 envisaged to lend rigidity to the said end. Thus, to fasten the wire hood, once positioned on the bottle cork, it will be sufficient to reciprocally engage the two curls by mutually overlapping them without needing to twist the ends of the belt, as happens with the belts in the commonly known technique.

[0032] In fact, a simple gesture suffices to overlap the two ends so that they intersect, as shown in figure 5 and in the detail in figure 5A.

[0033] To open the wire hood, a user simply has to press the two ends, which - in the fastened configuration - look like a sort of "bow tie", sliding them along one another in order to release the two curls from each other, separating, therefore, the two ends of the belt and releasing the cork from the wire hood.

[0034] The opening system illustrated above allows a simple and easy, as well as quick, opening of the wire hood and considerable safety since there is no longer a risk of the wire breaking and, consequently, without there being loose sections of wire, as happens with the commonly known technique, where - often - the twisted belt, when being untwisted - breaks because of the rigidity of the wire and the stress suffered during the processing stages required for the realisation of the wire hood, with the risk that the ends are so sharp that they can prick or puncture the user's finger. The belt 4 is realised with galvanised or painted metal wire but another metal can also be used, such as, for example, aluminium, which is more ductile, or copper, or even more precious metals.

[0035] In addition to the above, the curls 40 can be coated with a plastic material, obtaining a particular, original and pleasant aesthetic appearance, and greater practicality during both fastening and opening stages as better grip is obtained and safety increased. The fastening obtained with the curls and the butterfly clasp, whether they are coated or not, offers the consumer a considerable improvement from an aesthetic and practical viewpoint.

[0036] Furthermore, once the butterfly clasp is ob-

tained, a seal can be applied to this in order to guarantee that the bottle and the wire hood have not been opened earlier and therefore allow the product to be safeguarded against eventual adulteration or simply as a counterfeiting deterrent. In addition, to prevent the wire hood being reused, with a view to safeguarding the wine contained in the bottle against counterfeiting actions, it is possible to endow the butterfly clasp with a micro-cut so that, once fastened and opened just once, one end of the butterfly clasp breaks, rendering the belt unserviceable.

[0037] Finally, at the two ends it is possible, likewise, to hang a tag with product information or advertising on it.

[0038] A variant of the belt 4 described earlier, is realised with a plastic band belt, as shown in figure 6. The belt 4 is constituted of a band which is equipped with minuscule teeth 43 which will engage with the corresponding teeth located inside a housing tunnel 45 to prevent accidental opening.

[0039] In more detail and as shown in figure 6A, the belt is equipped with a thin appendix 46 which is utilised in the fastening stage and serves solely to help insert the free end 44 of the clamp into toothed tunnel 45. The belt, once the wire hood is applied on the bottle neck, features a semi-closed configuration and is further tightened to restrain and secure the cork exerting traction on the appendix 46. Once the ring of the belt has been created and is tightened over the bottle neck, the appendix 46 breaks and is removed from the belt. Next, when a user decides to open a bottle, to be able to remove the wire hood, it will be sufficient to grip the tab which is created with the free end 44 which protrudes slightly from the tunnel 45, as shown in figure 6A, and pull it in order to tear the teeth 47, which will break the tunnel 45, opening the wire hood and releasing the cork.

[0040] In addition to the above and as mentioned earlier, inside the tunnel 45 there are some teeth located in the centre of the tunnel or in two lateral groups, envisaged to restrain and secure the band.

[0041] Likewise, instead of the tunnel 45, it is possible to obtain the same effect by means of two half-tunnels 48, as shown in figure 7. The two half-tunnels are mutually separate to reduce the dimensions thereof and the second half-tunnel is a through-tunnel which secures the free end 44 of the band, as shown in figure 7C.

[0042] The present embodiment also envisages the presence of an anti-counterfeiting or anti-adulteration seal. The belt offers absolute safety for the user and it notably facilitates bottle opening by the latter.

[0043] In this case, since the belt is made of a plastic material, it offers manufacturers the possibility to create and realise manifold forms and colours, applying writing, logos and pictures, a situation which was impossible to obtain with the embodiments with the commonly known technique since metal wire was processed, which presented the limits imposed by the mechanical characteristics thereof.

[0044] A still further variant of the belt 4 is shown in figure 8. The belt, in this case, is composed of a metal wire but without the classic tie at the ends of the wire. The union of the two parts of metal wire is obtained bringing together the two free ends of the said wire, which are mutually united via either welding or fusion or laser welding.

[0045] In fact, this type of union offers the advantage of uniting the two ends, thereby giving the belt a uniform appearance. The belt can then be equipped with a seal 49 in correspondence with the twisted wire in such as way as to guarantee the uniqueness of the product. The absence of the "traditional rear tie", having been replaced with a welded union, offers the advantage of improving the aesthetics of the wire hood on the bottle neck and of facilitating its positioning since there is no longer an irregular-shaped body lying on the bottle neck and, consequently, the wire hood is straighter.

[0046] A still further advantage obtained by eliminating the rear tie realised by twisting the two ends of the wire around one another is that there are no exposed sharp ends which can cause the breakage of the aluminium capsule applied thereto or cause punctures or small wounds to whoever is holding the bottle, as often happens with the commonly known technique due to the presence of the rear tie in the wire hoods.

[0047] Furthermore, during the bottling stage, there is no longer a risk that the protruding part of the rear tie could entangle with other wire hoods or parts of the wire hood machine, with consequent machine stoppage.

[0048] As shown in figure 9, at the point of union between the two belt wire ends, there is the seal 49 present, which allows any rusting of the wire to be averted if it is exposed to atmospheric agents as, in that section, it is devoid of the usual galvanizing or paint which protects it.

[0049] In accordance with the present invention, a variant of the hood 3 is shown in figure 10 and in detail in figure 10A. The hood 3 features the eyelets 32 sealed via welding to avert the presence of protruding and sharp elements. Furthermore, in figure 11 and in detail in figure 11A, a different configuration of the eyelets 32 is shown, wherein they feature the free end of the wire bent towards the outside and united with the stem simply via fusion or welding.

[0050] As shown in figure 12, one variant of the cap 2 is to have the said cap engaged directly with the hood 3 of the wire hood via a specific mould and realised with a plastic material. The cap in question is composed of two half-parts, a lower one and an upper one, which incorporate the circular upper part 30 of the hood, as shown in figure 12A, and are mutually secured with a mould. Likewise, the cap can be realised by injection-moulding, incorporating therein the upper part 30 of the hood.

[0051] Also in accordance with the present invention, a different embodiment of the wire hood 1 is shown in figure 13.

[0052] In particular, the wire hood 1 features the cap 2, also realised with plastic material, which can be applied like a traditional cap, by interference, fitting it onto the underpart of the upper part 30 of the hood.

[0053] The plastic cap, which is assembled onto the hood later on and is similar to a traditional metal cap, is endowed with four equidistant grooves 21 present in the lateral edge 20, inside which the hood's stems 31 will be positioned by interference, and a semicircular channel 25, inside which the upper part 30 of the hood will also be positioned, also by interference.

[0054] The cap realised with plastic material brings undoubted advantages from a construction viewpoint as it prevents the need for recourse to lithographic, serigraphic or pad printing processing which, because of the costs and the minimal quantity to produce, obstruct the application of labels with logos advertising the winemakers and limit the possibility and the range of colours that can be utilised.

[0055] The cap according to the present embodiment allows the use of transparent plastic materials, therefore it is possible to apply a label to the underpart, the contents of which can be clearly visible in the upper part thereof. This typology of cap allows the processing times to be reduced as it is thus possible to have a good number of "anonymous" caps in stock which are then personalised according to the customer's requirements, later on, simply by affixing a label prepared separately or by pad printing the logo onto the underpart of the cap.

[0056] Applying a label in this position also brings a still further benefit i.e. it protects the label with the logo against risks of deterioration. There is also nothing to stop the user applying the said label to the upper part of the cap too or utilising pad printing on the upper part also.

[0057] In addition to the above, the use of a plastic cap allows, likewise, the application of a programmable tracking chip able to establish the location of the bottle at any moment, a very important condition for finding the bottle following theft, acts of product falsification, or simply for storage in the warehouse.

[0058] Furthermore, a bar code can be applied to the cap, or a matrix code, which allows information and identification data concerning the bottle and the wine to be supplied and management and storage thereof in the warehouse to be facilitated.

[0059] In particular, the cap can be manufactured with biodegradable material with the same properties as traditional plastics but with the advantage of being biocompatible and totally recyclable.

[0060] In accordance with the present invention, there is nothing to stop the user replacing the traditional belt with a plastic band too, or a belt with a butterfly clasp or a belt without a tie, like those described earlier.

[0061] In addition to the above, a different embodiment of the wire hood features a plastic hood, a plastic or metal cap and an interchangeable belt, as shown in figure 13. The form and configuration of the present hood is essentially of the traditional type but the fact that it is realised with plastic material offers the important advantage that the construction stages are very simplified as the hood would no longer be constructed via a series of processes performed on the metal wire over several phases, instead the realisation of the said hood would involve two or three operating stages depending on whether or not the user decides to have the cap as a single part incorporating the hood. In fact, a first stage would involve a mould being used to realise the hood and the cap coupled together, and a second stage would involve the belt being fitted, which could be of the traditional type with a tie or it could be plastic with a band, a butterfly clasp or without a tie but with seal, etc. Otherwise, the realisation of the cap and the realisation of the hood, by means of a mould, could be kept separate in order to obtain a greater number of aesthetic variants, in addition to the possibility of utilising a traditional metal cap. In particular, the wire hood just illustrated and realised by means of moulds can easily replace the current wire hoods on the market without having to adapt the machines in the bottling line, with the still further advantage of having a reduction of the machine stoppage deriving from the inconstant homogeneity of the current metal wire hoods, once the embodiment and the machinery for applying it to the bottle have been developed.

[0062] Also according to the present invention, a further variant of the wire hood in question is shown in figure 14 and in figures 14A, 14B and 14C.

[0063] The wire hood features the hood and the cap united as a single element which can be realised by means of a single mould, with savings in equipment costs and consequently production costs. Furthermore, by keeping the cap and the hood united, a product can be obtained whose form is linked exclusively to the customer's requirements and needs, with ample possibility of configuration which allow the designer to fully exploit their inventive capacities and make the bottle much more attractive, personalised, and fashionable. While it has a hood and cap as a single element, the belt, also in this case, is forced to run through the relative eyelets 32 and is mobile so as to facilitate the positioning and adaptation of the wire hood on the bottle.

[0064] Similarly to the embodiments described earlier, the belt is of the type with a band, or a butterfly clasp, or without a rear tie, or a traditional belt with a rear tie can also be utilised.

[0065] In particular, in certain cases, the wire hood with the configuration illustrated earlier can replace the external capsule which is applied to the cork and the wire hood, thus further reducing the costs of the finished bottle.

[0066] In addition to the above, a different configuration of the hood is shown in figure 15. The hood is realised as a single part with the belt. In particular, the wire creates three stems 31 which feature an eyelet 32 in an essentially known fashion, while the fourth stem 31b features a particular configuration with an S-shaped protuberance 33 and the wire runs into the belt 4, as shown in detail in figure 15A and in a variant in figure 15B. In particular, to obviate the lack of the fourth eyelet and create a symmetrical wire hood, the stem without an eyelet has been lengthened and a pusher has been used to create the

protuberance 33 with dimensions and profile similar to the eyelet in order to obtain a fourth "eyelet" which can be positioned correctly under the lip and give this type of wire hood the right, uniform positioning. Furthermore, to obviate the problem of the tie, it has been decided to eliminate it, joining together - via fusion or welding - the two ends of the wire in such a way that there are no rear ties to disturb the positioning and the aesthetics of the wire hood once housed on the bottle cork.

[0067] The particular configuration of the protuberance 33 allows the hood to be essentially uniform, therefore when it is placed on the cork and on the bottle neck it is straight and symmetrical, unlike as happens with the commonly known technique, in which a dishomogeneity of the hood is encountered which makes the wire hood slant, creating problems and machine stoppage during the fastening of the belt. The wire hood in figure 15C is also even more uniform and symmetrical, as the belt does not feature the traditional rear wire tie.

[0068] A plastic cap can be applied to this type of hood, as shown in figures 16 and 16A.

[0069] In accordance with the present invention, a different embodiment of the wire hood features a bridge 5 instead of the hood. The wire hood with a bridge form is constituted of a metal sheet with an arch form with the ends bent to form an eyelet 50 inside which a belt 4 runs. In more detail, by inserting a belt with a butterfly clasp, as shown in figure 17A, or with a band, in an example not forming part of this invention, as shown in figure 17B, or without a tie, into the eyelets of the bridge, improvements can be obtained from both an aesthetic viewpoint (as there is no rear tie present and the belt is uniform in length) and in terms of production by machine and also bottle positioning. In addition, also in this case, an improvement is encountered in the corking operation and the wire hood opening.

[0070] Furthermore, the use of the aforesaid belts, offers all the advantages illustrated earlier as far as the characteristics and the anti-adulteration and anti-counterfeiting possibilities are concerned. All these characteristics lead, undoubtedly, to the improvement of a product which is nevertheless considered, because of its typology and construction characteristics, to be in the low end of the price range.

[0071] A variant to the current bridge of the wire hoods realised with metal sheet is the wire hood which features a bridge made of plastic material or similar, of a biodegradable type, as shown in figures 18 and 19. This embodiment leads to a series of advantages from a production viewpoint, as - since a mould has to be used - there is a possibility of varying the embodiment according to the wine producer's preferences, thus being able to personalise the wire hood in many ways and, nevertheless, keep it in the low end of the price range by using plastic materials, which are less prestigious but much more easily sourced than the metal sheet used for the current wire hoods with a bridge form.

[0072] Furthermore, it is possible to utilise biodegradable materials which allow a biocompatible wire hood to be obtained.

[0073] Furthermore, with the mould it is possible to realise a bridge endowed with closed slots for the belt to run through, as shown in figure 18A, a condition which allows the wire hood to be better positioned and anchored on the bottle neck, with a benefit from an aesthetical viewpoint.

[0074] In addition, the realisation of the bridge by means of the mould offers, likewise, the possibility of eliminating the sharp areas of the bridge made of metal sheet to increase user safety.

[0075] Finally, with the bridge described earlier, it is possible to replace the belts according to the commonly known technique with a belt made of a plastic band, or with a butterfly clasp, or to join the ends of the wire by fusion, as shown in figures 19A, 19B and 19C.

[0076] Furthermore, with the mould, embossed writing or pictures can be created, which render the bridge more particular, attractive and unique, a situation which allows a wire hood to be personalised and valorised, even if considered in the low end of the price range, as shown in figure 20 and in detail in figure 20A.

[0077] The realisation of the wire hood by means of a mould allows a wire hood with a cap to be obtained which is more economically advantageous, apart from having aesthetically valuable forms, and the addition of writing, pictures and logos, also in this case, is feasible, thereby increasing the value and distinguishing capacity of the said wire hood and increasing the anti-counterfeiting characteristics.

[0078] Finally, as shown in figures 21A and 21B, it is possible to create a wire hood with a bridge form and with a cap incorporated therein as a single part, which allows effective and precise positioning of the wire hood on the cork.

[0079] The wire hood for bottle corks 1 in question is conceived to operate from a resting condition, in which it is inactive and is not fitted over a cork or a bottle neck, and switching to an operative condition in which it engages with a cork, restraining it in the bottle neck.

[0080] After the predominantly structural description above, the operation of the invention in question will now be outlined.

[0081] When a user decides to open a bottle, to remove the wire hood it is sufficient to use the belt to open it in the ways illustrated earlier.

[0082] Thus the present invention achieves the aims set.

[0083] In fact, the wire hood for bottle corks in question is able to allow a user a simple, easy and safe opening.

[0084] The diverse typologies of wire hood illustrated earlier succeed in solving certain important problems in the fabrication and performance, in both aesthetic and functional terms, of the wire hoods for bottle corks presently on the market.

[0085] The use of a material which is different from the metal wire in the commonly known technique allows a

notable simplification to be obtained in the manufacturing stage; in fact, the realisation or the entire wire hood, or part thereof, is done by means of moulds which offer the possibility of customising the wire hood, something which had been considered impossible until now, or had exorbitant costs due to the conformation of the material and the machines utilised. The use of moulds allows the production process to be simplified and to obtain a product which is always optimal and constant, a condition which is not possible at present except with notable expenditure of energy and time. In fact, the machines that have been utilised until now are divided into stations, each one of which deals with the processing of the metal wire in order to lend, step by step, the wire hood its form. With the use of the moulds diverse production stations can be eliminated, such as for example, the formation of the cap, the belt or the hood, until the entire wire hood can be obtained with a single operating step and with a single mould.

[0086] Advantageously, the wire hood in question offers many possibilities of variation, from an aesthetic viewpoint, unlike with the wire hoods obtained with the commonly known technique, which are strictly linked to the forms seen so far, and to obtain a more attractive product, the cork and wire hood must be covered with a capsule made of thermoplastic material or aluminium.

[0087] Furthermore, the wire hood according to the present invention offers the possibility of being realisable with various configurations and of being customised with clearly visible writing and logos, with consequent economic savings since it becomes possible to eliminate the capsule, which essentially becomes useless.

[0088] Advantageously, the wire hood for bottle corks in question allows precise positioning on the cork and, consequently, a perfect grip on the bottle neck, unlike with the wire hoods obtained with the commonly known technique where, once positioned on the cork and fastened, they were not always ideally positioned because of the imperfections arising from the fabrication of the wire hood, often due to the incorrect fastening of the belt. In fact, by eliminating the rear belt tie, i.e. the twisting of the wire which serves to join the two ends of the wire, and replacing it with the fusion of the two ends, a continuous element without protuberances is obtained.

[0089] In addition to the above and within the perspective of having a belt which adheres to the bottle neck in a uniform manner, the wire hood which features the belt with a butterfly clasp, as well as the characteristic of not having the tie, offers an aesthetic improvement and still further progress in safety and the practicality of opening the said wire hood once positioned on the cork. In fact, the user non longer runs absolutely any risk of cutting themself with the crop ends of the wire when opening the wire hood to release the cork.

[0090] Furthermore and also within the perspective of practicality and ease of opening, the belt with a band is aesthetically valuable and customisable, it has no tie, is easy to open, and also guarantees one-off opening, without the possibility of reuse since it is a single-use object, and therefore prevents possible counterfeiting actions against the product as it is sealable.

[0091] In particular, the plastic cap, if transparent, can be personalised on the side facing the cork and be visible on the opposite side, thus improving the possibility of customising the wire hood, since labels can be applied, the cost of which is trifling compared to the current methods and technologies utilised to add writing, such as pad printing, serigraphy, etc.. Furthermore, the cap, according to the present invention, also allows the wire hoods to be personalised later on, after production, without limitations in terms of colours and graphics, thus allowing delivery times for the wire hoods to be reduced.

[0092] In particular, it is possible to apply a microchip to the cap, which offers the possibility of monitoring the bottle's route and trackability to prevent counterfeiting actions, or barcodes or matrix codes which can provide bottle information and identification data. A further but not final advantage of the present invention derives from the fact that the use of biodegradable material lends the wire hood the capacity to be thrown away without the worry that it might pollute the environment.

[0093] A still further but not final advantage of the present invention is that it proves notably easy to use, simple to realise and works well.

[0094] Naturally, further modifications or variants may be applied to the present invention while remaining within the scope of the invention as claimed

Claims

1. A wire hood for bottle corks of the type comprising a cap (2) which features a configuration convex enough to couple with the upper part of a cork and with a lateral edge (20) in which four grooves (21) are present and a hood structure (3) constituted of an upper part which is essentially circular (30) and from which four equidistant stems (31) run down, which are envisaged to be housed in the corresponding grooves in the cap, wherein each of the said stems features an eyelet (32) inside which a belt (4) will run, **characterised by** the fact that the belt (4) is not fastened by a rear tie, instead it is open and features, at each end, a curl (40) envisaged to give rigidity to the said end, the said curls being designed to overlap one another and be mutually engaged, by simply passing one over the other, to fasten the belt and released, by separating the two ends, to open it.

2. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said belt (4), realised by means of a metal wire, features the curls (40) coated with a plastic material to provide a particular and original aesthetic appearance, greater practicality in both the belt fastening and opening stages, and better grip and safety since it is endowed with a guarantee seal.

3. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said belt (4) features, in correspondence with one of the two curls, a micro-cut designed to ensure the belt breaks, rendering it unserviceable after one fastening and opening operation.

4. A wire hood for bottle corks according to the preamble of claim 1, **characterised by** the fact that the said belt (4) is constituted of a plastic band equipped with minuscule teeth (43) envisaged to couple with corresponding teeth located inside a housing tunnel (45) to prevent them opening accidentally and a thin appendix (46) designed to a break once the belt is tightened around a bottle neck, as it is utilised in the fastening stage to help insert the free end (44) of the band into the toothed tunnel (45) and the fastening of the belt over the said bottle neck, the said belt being conceived to operate starting from a resting condition, in which it is not tightened around a bottle neck, and switching to a first operative condition in which, following a traction action on the appendix, the wire hood secures a cork in the bottle, and then a second operative condition in which, by grasping the tab created with the free end (44) which protrudes slightly from the tunnel (45) and pulling it in order to tear the teeth (47) which will break the tunnel (45), the wire hood opens, releasing the cork.

5. A wire hood for bottle corks according to claim 4, **characterised by** the fact that with the said belt (4) inside the tunnel (45) there are some teeth present, located in the centre of the tunnel or in two lateral groups, envisaged to restrain and secure the band.

6. A wire hood for bottle corks according to claim 4, **characterised by** the fact that the said tunnel (45) is composed of two half-tunnels (48) which are mutually separate to reduce the dimensions thereof and the second half-tunnel is a through tunnel which secures the free end (44) of the band.

7. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said belt is provided with an anti-counterfeiting or anti-adulteration seal.

8. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said belt features various configurations, colours, writing, pictures and logos.

9. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said belt (4) is realised with metal wire without the wire ends being tied at the rear as they are mutually joined via fusion or laser welding.

10. A wire hood for bottle corks according to claim 9, **characterised by** the fact that the said belt (4) features a seal (49), in correspondence with the point of union of the ends, suitable to prevent eventual oxidation of the wire.

11. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said hood (3) features the eyelets (32) fastened by means of fusion or welding.

12. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said cap (2) is realised with plastic material and is composed of two half-parts, one lower and one upper, which incorporate the upper circular part (30) of the hood and are mutually secured by means of a mould.

13. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said cap (2) is realised with plastic material via injection moulding, incorporating in the interior thereof the upper part (30) of the hood.

14. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said cap (2), realised with plastic material, comprises four equidistant grooves (21) present in the lateral edge 20 inside which the stems (31) of the hood will be positioned and secured, and a semicircular channel (25) inside which the upper part (30) of the hood will be positioned and engaged via interference.

15. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said cap allows the application of labels with writing and logos to the underpart of the said cap.

16. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said cap is provided with a programmable tracking chip which establishes the location of the bottle at any time, or a bar code or a matrix code which allows information and identification data to be provided about the bottle and the wine.

17. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said cap is realised with a biodegradable material with the same properties of the traditional plastics and therefore becomes biocompatible and totally recyclable.

18. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said hood is realised with plastic or biodegradable material by means of moulding.

19. A wire hood for bottle corks according to claim 1,

characterised by the fact that the said cap, the said hood and the said belt can be made of a metallic or plastic material and are mutually interchangeable.

20. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said cap and the said hood are realised as a single part.

21. A wire hood for bottle corks according to claim 1, **characterised by** the fact that the said hood is realised, with a metallic material, as single part with the belt, with the wire creating three stems (31) which feature an eyelet (32) while the fourth stem (31b) features a particular configuration with an S-shaped protuberance (33) and the wire continues into the belt (4) and enters the eyelets in order to obtain a wire hood which is essentially symmetrical, with the protuberance (33) having dimensions and profile similar to an eyelet (32) and the ends of the wire mutually joined by means of fusion or laser welding.

22. A wire hood for bottle corks wherein said wire hood features a bridge (5) composed of an arch with the ends bent to form an eyelet (50) inside which a belt (4) runs, **characterised by** the fact that the belt (4) is not fastened by a rear tie, instead it is open and features, at each end, a curl (40) envisaged to give rigidity to the said end, the said curls being designed to overlap one another and be mutually engaged, by simply passing one over the other, to fasten the belt and released, by separating the two ends, to open it.

23. A wire hood for bottle corks according to claim 22, **characterised by** the fact that the said bridge with an arch is realised with a plastic material or a biodegradable material which renders it bio-compatible and features a plurality of forms and configurations.

24. A wire hood for bottle corks according to claim 22, **characterised by** the fact that the said bridge (5) features embossed writing or drawings.

Patentansprüche

1. Eine Drahtkappe für Flaschenkorken vom Typ, umfassend einen Deckel (2), der eine genügend konvexe Konfiguration aufweist, um mit dem oberen Teil des Korken gekoppelt zu werden, und mit einer Seitenkante (20), in der vier Einkerbungen (21) vorhanden sind, und umfassend eine Kappenstruktur (3), bestehend aus einem oberen Teil, der im Wesentlichen kreisförmig ist (30) und von dem vier gleichweit entfernte Stiele (31) herunterragen, die dafür bestimmt sind, in den entsprechenden Einkerbungen im Deckel aufgenommen zu werden, wobei jeder der besagten Stiele eine Öse (32) aufweist, in der ein Band (4) verläuft, **gekennzeichnet durch** die Tatsache, dass das Band (4) nicht durch eine rückwärtige Verknotung befestigt ist, sondern es ist offen und weist an jedem Ende einen Kringel (40) auf, der vorgesehen ist, um dem besagten Ende Festigkeit zu verleihen, wobei besagte Kringel vorgesehen sind, dass sie einander überlappen und ineinander eingreifen können, indem sie einfach übereinander geführt werden, um das Band zu befestigen, und freigegeben werden, indem man die beiden Ende beim Öffnen trennt.

2. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass das mithilfe eines Metalldrahts realisierte besagte Band (4) Kringel (40) aufweist, die mit Plastikmaterial überzogen sind, um ein besonders originelles ästhetisches Aussehen, größere Zweckmäßigkeit sowohl beim Schließen als auch in Öffnungsphase des Bandes und eine bessere Griffigkeit und Sicherheit zu verleihen, denn es ist mit einem Garantieverschluss ausgestattet.

3. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass das besagte Band (4) in Übereinstimmung mit einem der beiden Kringel einen Mikroschnitt aufweist, der so gestaltet ist, dass er reißt und es nach einem Schließ- und Öffnungsvorgang unbrauchbar macht.

4. Eine Drahtkappe für Flaschenkorken nach der Einleitung zu Anspruch 1, **gekennzeichnet durch** die Tatsache, dass das besagte Band (4) ein Plastikband ist, das mit winzigen Zähnchen (43) ausgestattet ist, die vorgesehen sind, um in die in einem Gehäusetunnel (45) liegenden entsprechenden Zähne einzugreifen, um ihr versehentliches Öffnen zu verhindern, und aus einem dünnen Fortsatz (46) besteht, der gestaltet ist, um zu reißen, sobald das Band um den Flaschenhals befestigt ist, denn es wird in der Befestigungsphase dazu benutzt, um das Einstecken des freien Endes (44) des Bandes in den verzahnten Tunnel (45) und das Befestigen des Bandes über dem besagten Flaschenhals zu erleichtern, wobei besagtes Band so gestaltet ist, um zu arbeiten, indem es in einer Ruhelage beginnt, bei der es nicht um den Flaschenhals befestigt ist, und auf einen ersten betriebsfähigen Zustand umwechselt, bei dem, nachdem der Fortsatz einer Zugkraft unterzogen wurde, die Drahtkappe einen Korken in der Flasche fixiert, und dann in einen zweiten betriebsfähigen Zustand übergeht, bei dem - indem man die Lasche, die mit dem etwas aus dem Tunnel (45) herausragenden freien Ende (44) gebildet wurde, ergreift und daran zieht, um die Zähne (47) loszureißen, die den Tunnel (45) durchbrechen - die Drahtkappe sich öffnet und den Korken freigibt.

5. Eine Drahtkappe für Flaschenkorken nach Anspruch

4, **gekennzeichnet durch** die Tatsache, dass zusammen mit besagtem Band (4) im Inneren des Tunnels (45) einige Zähne vorhanden sind, die in Tunnelmitte oder in zwei Seitengruppen liegen und vorgesehen sind, um das Band zurückzuhalten und zu befestigen.

6. Eine Drahtkappe für Flaschenkorken nach Anspruch 4, **gekennzeichnet durch** die Tatsache, dass der besagte Tunnel (45) aus zwei halben Tunneln (48) besteht, die voneinander getrennt sind, um die Ausmaße von diesem zu reduzieren, und der zweite halbe Tunnel ein durchgehender Tunnel ist, der das freie Ende (44) des Bandes festhält.

7. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass das besagte Band mit einem nachahmungs- oder fälschungssicheren Verschluss versehen ist.

8. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass das besagte Band verschiedene Konfigurationen, Farben, Schriften, Bildes und Logos zeigt.

9. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass das besagte Band (4) aus Metalldraht realisiert ist, ohne dass die Drahtenden auf der Rückseite verknotet sind, da sie **durch** einen Schmelzvorgang oder **durch** Laserschweißen miteinander verbunden sind.

10. Eine Drahtkappe für Flaschenkorken nach Anspruch 9, **gekennzeichnet durch** die Tatsache, dass das besagte Band (4) einen Verschluss (49) in Übereinstimmung mit dem Verbindungspunkt der Enden aufweist, der geeignet ist, ein eventuelles Oxidieren des Drahtes zu verhindern.

11. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass die besagte Kappe (3) Ösen (32) aufweist, die mittels Schmelzvorgangs oder Schweißen befestigt sind.

12. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass besagter Deckel (2) aus Plastikmaterial realisiert ist und aus zwei Halbteilen besteht, einem unteren und einem oberen, welche den oberen runden Teil (30) der Kappe eingliedern und beide **durch** eine Vertiefung festgehalten werden.

13. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass besagter Deckel (2) aus Plastikmaterial **durch** Spritzguss realisiert ist und im Inneren desselben den oberen Teil (30) der Kappe aufnimmt.

14. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass der besagte Deckel (2), der aus Plastikmaterial realisiert ist, vier gleichweit entfernte Einkerbungen (21) in der Seitenkante (20) umfasst, in der die Stiele (31) der Kappe positioniert und befestigt werden, und einen halbkreisförmigen Kanal (25) umfasst, in den der obere Teil (30) der Kappe positioniert und **durch** Überlagerung in Anspruch genommen wird.

15. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass der besagte Deckel die Anbringung von Labels mit Beschriftung und Logos auf der Unterseite des besagten Deckels erlaubt.

16. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass der besagte Deckel mit einem programmierbaren Tracking-Chip versehen ist, der die Lage der Flasche zu jeder Zeit ermittelt, oder mit einem Barcode oder mit einem Matrix-Code, der Informations- und Identifikationsdaten über die Flasche und den Wein erlaubt.

17. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass der besagte Deckel aus bioabbaubarem Material mit den gleichen Eigenschaften der traditionellen Kunststoffe realisiert und deshalb biokompatibel und vollständig recycelbar ist.

18. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass die besagte Kappe aus Plastik- oder bioabbaubarem Material mittels Pressform realisiert ist.

19. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass der besagte Deckel, die besagte Kappe und das besagte Band aus Metall-oder Plastikmaterial gemacht sein können und untereinander austauschbar sind.

20. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass der besagte Deckel und die besagte Kappe als Einzelteile realisiert werden.

21. Eine Drahtkappe für Flaschenkorken nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass die besagte Kappe aus Metallmaterial als Einzelteil mit dem Band realisiert wird, wobei mit dem Draht drei Stiele (31) gebildet werden, die eine Öse (32) aufweisen, während der vierte Stiel (31 b) eine besondere Konfiguration mit einer S-förmigen Ausstülpung (33) aufweist, und sich der Draht bis in das Band (4) fortsetzt und in die Ösen eindringt, damit eine Drahtkappe entsteht, die im Wesentlichen symmetrisch

ist, wobei die Ausstülpung (33) Ausmaße und Profile besitzt, die einer Öse (32) ähneln, und die Drahtenden **durch** einen Schmelzvorgang oder **durch** Laserschweißen miteinander verbunden werden.

22. Eine Drahtkappe für Flaschenkorken, wobei besagte Drahtkappe einen Sattel (5) aufweist, bestehend aus einem Bogen, dessen Enden umgebogen sind, so dass sie eine Öse (50) bilden, in denen ein Band (4) verläuft, **gekennzeichnet durch** die Tatsache, dass das Band (4) nicht **durch** eine rückwärtige Verknotung befestigt ist, sondern es ist offen und zeigt an jedem Ende einen Kringel (40), der dazu bestimmt ist, dem besagten Ende Festigkeit zu verleihen, wobei besagte Kringel vorgesehen sind, dass sie einander überlappen und ineinander eingreifen können, indem sie einfach übereinander geführt werden, um das Band zu befestigen, und freigegeben werden, indem man die beiden Ende beim Öffnen trennt

23. Eine Drahtkappe für Flaschenkorken nach Anspruch 22, **gekennzeichnet durch** die Tatsache, dass der besagte Sattel mit einem Bogen aus Plastikmaterial oder einem bioabbaubarem Material realisiert ist, das sie biokompatibel macht und eine Vielfalt an Formen und Konfigurationen aufweist.

24. Eine Drahtkappe für Flaschenkorken nach Anspruch 22, **gekennzeichnet durch** die Tatsache, dass der besagte Sattel (5) geprägte Schriftzüge oder Zeichnungen aufweist.

Revendications

1. Un muselet pour les bouchons en liège de bouteille de type comprenant une capsule (2) dotée d'une configuration suffisamment convexe pour s'accoupler avec la partie supérieure d'un bouchon en liège et disposant d'un bord latéral (20) doté de quatre rainures (21) et d'une structure de muselet (3) composée d'une partie supérieure essentiellement circulaire (30) et de laquelle descendent quatre pattes équidistantes (31), qui sont prévues pour être logées dans les rainures correspondantes de la capsule, où chacune desdites pattes comprend un oeillet (32) à l'intérieur duquel passe une ceinture (4), **caractérisé par le fait que** la ceinture (4) n'est pas attachée par une attache arrière, mais elle est en revanche ouverte et comprend, à chaque extrémité, une boucle (40) prévue pour apporter rigidité à ladite extrémité, lesdites boucles étant conçues pour se superposer l'une sur l'autre et s'engager mutuellement, en passant simplement l'une sur l'autre, pour attacher la ceinture et étant libérées, en séparant les deux extrémités, pour l'ouvrir.

2. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite ceinture (4), réalisée à l'aide d'un fil métallique, comprends les boucles (40) revêtues d'un matériau plastique pour fournir un aspect esthétique particulier et original, une plus grande facilité des étapes d'attache et d'ouverture de la ceinture et une meilleure prise et sûreté puisqu'elle est dotée d'un sceau de garantie.

3. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite ceinture (4) comprend, au niveau de l'une des deux boucles, une micro-coupure conçue pour assurer la rupture de la ceinture, la rendant inutilisable après une opération d'attache et d'ouverture.

4. Un muselet pour les bouchons en liège de bouteille selon le préambule de la revendication 1, **caractérisé par le fait que** ladite ceinture (4) est constituée d'une bande en plastique dotée de minuscules dents (43) prévues pour s'accoupler avec les dents correspondantes situées à l'intérieur d'un tunnel de logement (45), pour éviter qu'ils s'ouvrent accidentellement, et un appendice fin (46) conçu pour se rompre une fois que la ceinture est serrée autour d'un col de bouteille puisqu'il est utilisé lors de l'étape d'attache pour favoriser l'introduction de l'extrémité libre (44) de la bande dans le tunnel denté (45) et l'attache de la ceinture sur ledit col de bouteille, ladite ceinture étant conçue pour fonctionner à partir d'une condition de repos, dans laquelle elle n'est pas serrée autour d'un col de bouteille, et passer à une première condition opérationnelle dans laquelle, suite à une action de traction sur l'appendice, le muselet fixe un bouchon en liège dans la bouteille, puis à une deuxième condition opérationnelle dans laquelle, en saisissant l'onglet créé avec l'extrémité libre (44) qui dépasse légèrement du tunnel (45) et en le tirant pour déchirer les dents (47) qui casseront le tunnel (45), le muselet s'ouvre et libère le bouchon.

5. Un muselet pour les bouchons en liège de bouteille selon la revendication 4, **caractérisé par le fait qu'**avec ladite ceinture (4) à l'intérieur du tunnel (45) se trouvent des dents situées au centre du tunnel ou dans deux groupes latéraux, prévues pour retenir et fixer la bande.

6. Un muselet pour les bouchons en liège de bouteille selon la revendication 4, **caractérisé par le fait que** ledit tunnel (45) se compose de deux demis tunnels (48) qui sont séparés mutuellement pour réduire les dimensions de celui-ci et que le deuxième demi tunnel est un tunnel passant qui fixe l'extrémité libre (44) de la bande.

7. Un muselet pour les bouchons en liège de bouteille

selon la revendication 1, **caractérisé par le fait que** ladite ceinture est dotée d'un sceau anticontrefaçon ou antifalsification.

8. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite ceinture comprend différentes configurations, couleurs, inscriptions, images et logos.

9. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite ceinture (4) est réalisée avec un fil métallique sans que les extrémités du fil ne soient liées à l'arrière puisqu'elles sont jointes mutuellement par fusion ou soudage laser.

10. Un muselet pour les bouchons en liège de bouteille selon la revendication 9, **caractérisé par le fait que** ladite ceinture (4) comprend un sceau (49), au niveau du point d'union des extrémités, prévu pour éviter l'éventuelle oxydation du fil.

11. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ledit muselet (3) comprend des oeillets (32) attachés par fusion ou soudage.

12. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite capsule (2) est réalisée en matériau plastique et composée de deux moitiés, une inférieure et une supérieure, qui incorporent la partie supérieure circulaire (30) du muselet et sont mutuellement fixées à l'aide d'un moule.

13. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite capsule (2) est réalisée en matériau plastique par moulage par injection, incorporant dans son intérieur la partie supérieure (30) du muselet.

14. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite capsule (2), réalisée en matériau plastique, comprend quatre rainures équidistantes (21) présentes dans le bord latéral (20) à l'intérieur desquelles les pattes (31) du muselet seront positionnées et fixées, et un canal semi-circulaire (25) à l'intérieur duquel la partie supérieure (30) du muselet sera positionnée et engagée par interférence.

15. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite capsule permet l'application d'étiquettes avec une inscription et des logos sur la partie de dessous de ladite capsule.

16. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite capsule est dotée d'une puce de suivi programmable qui établit le lieu de la bouteille à tout moment, ou d'un code à barres ou d'un code à matrice permettant de fournir les informations et les données d'identification à propos de la bouteille et du vin.

17. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite capsule est réalisée en matériau biodégradable ayant les mêmes propriétés que le plastique traditionnel et qui devient ainsi biocompatible et totalement recyclable.

18. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ledit muselet est réalisé en plastique ou en matériau biodégradable par moulage.

19. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite capsule, ledit muselet et ladite ceinture peuvent être réalisés en matériau métallique ou plastique et sont mutuellement interchangeable.

20. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ladite capsule est réalisée en une seule pièce.

21. Un muselet pour les bouchons en liège de bouteille selon la revendication 1, **caractérisé par le fait que** ledit muselet est réalisé, en matériau métallique, en une seule pièce avec la ceinture, avec le fil créant trois pattes (31) qui comprennent un oeillet (32) tandis que la quatrième patte (31 b) comprend une configuration particulière avec une protubérance en S (33) et le fil continue dans la ceinture (4), puis pénètre dans les oeillets afin d'obtenir un muselet essentiellement symétrique, avec la protubérance (33) ayant des dimensions et un profil similaire à un oeillet (32) et les extrémités du fil jointes mutuellement par fusion ou soudage laser.

22. Un muselet pour les bouchons en liège de bouteille où ledit muselet comprend un pont (5) composé d'une arche avec les extrémités courbées pour former un oeillet (50) à l'intérieur duquel passe une ceinture (4), **caractérisé par le fait que** la ceinture (4) n'est pas attachée à une attache arrière, mais qu'elle est ouverte et comprend, à chaque extrémité, une boucle (40) prévue pour fournir rigidité à ladite extrémité, lesdites boucles étant conçues pour se superposer l'une sur l'autre et s'engager mutuellement, en passant simplement l'une sur l'autre, pour attacher la ceinture et étant libérées, en séparant les deux extrémités, pour l'ouvrir.

23. Un muselet pour les bouchons en liège de bouteille selon la revendication 22, **caractérisé par le fait que** ledit pont avec une arche est réalisé en matériau plastique ou en matériau biodégradable qui le rend biocompatible et comprend une pluralité de formes et configurations.

24. Un muselet pour les bouchons en liège de bouteille selon la revendication 22, **caractérisé par le fait que** ledit pont (5) comprend des inscriptions ou des dessins en relief.

FIG.1

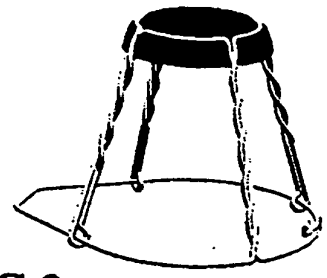
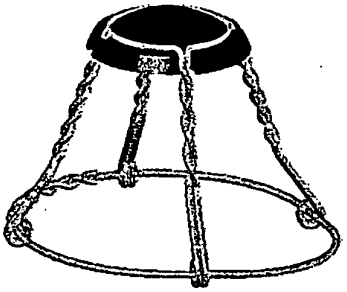


FIG.2



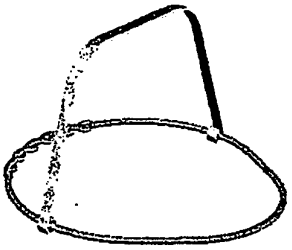


FIG.3

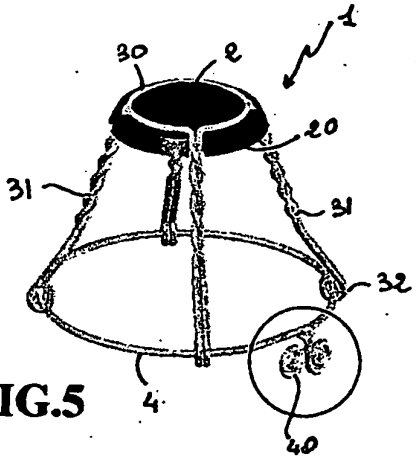
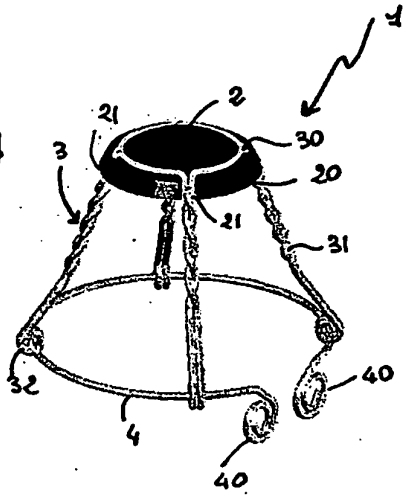


FIG.5

FIG.4



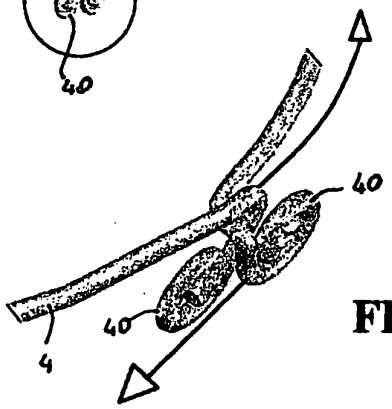


FIG.5A

FIG.6

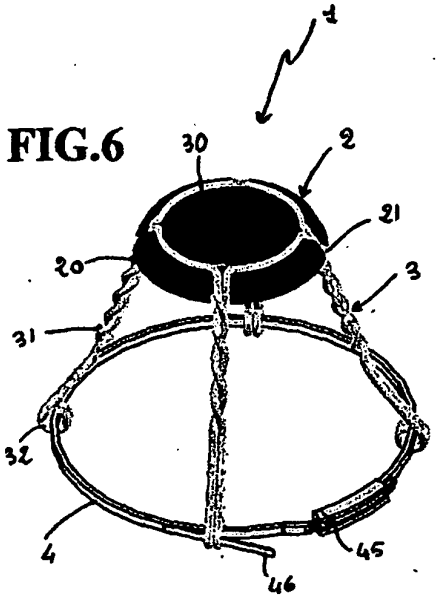


FIG.6A

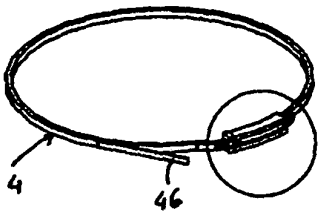


FIG.6B

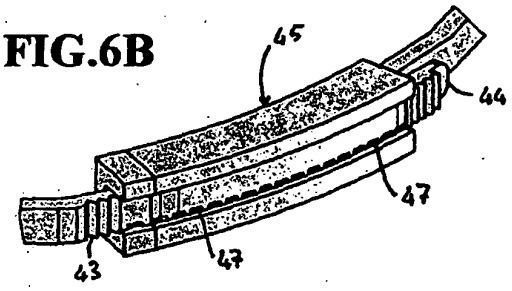


FIG.7

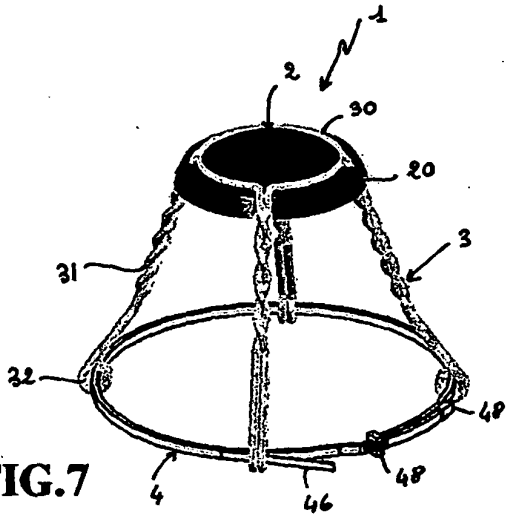
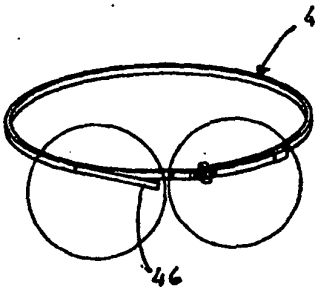


FIG.7A



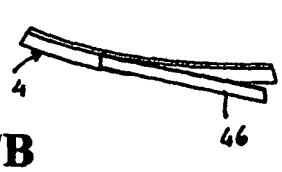


FIG.7B

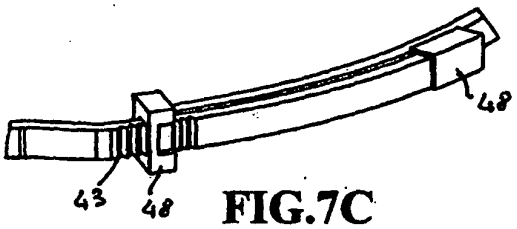
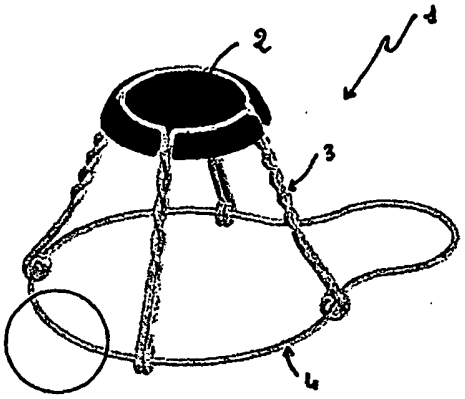


FIG.7C

FIG.8



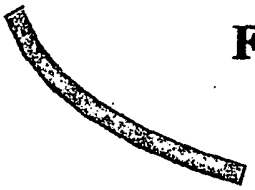
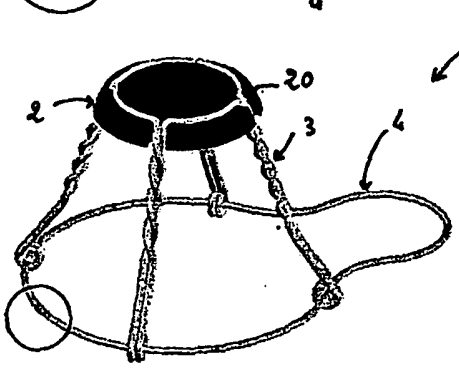


FIG.8A

FIG.9



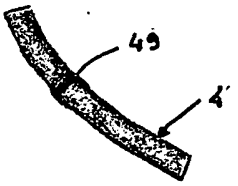


FIG.9A

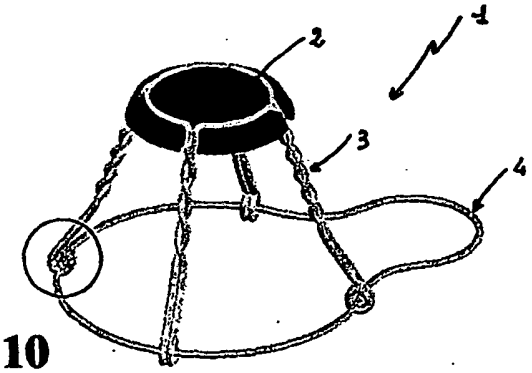


FIG.10

FIG.10A

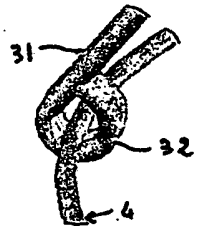


FIG.11

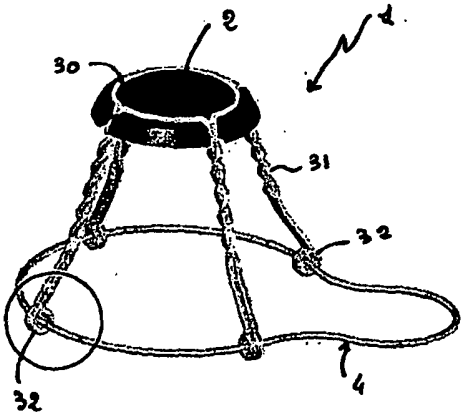
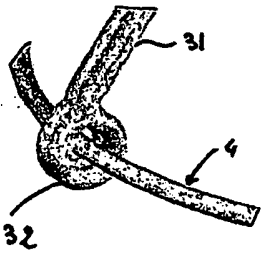


FIG.11A



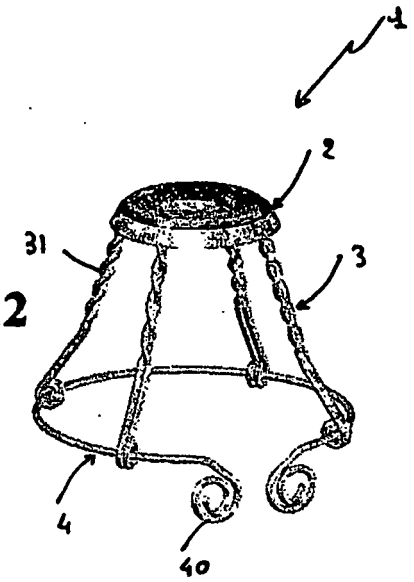
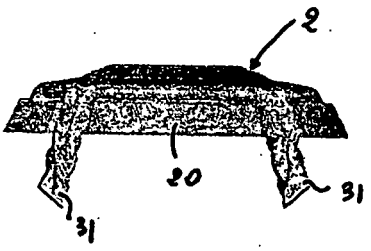


FIG.12

FIG.12A



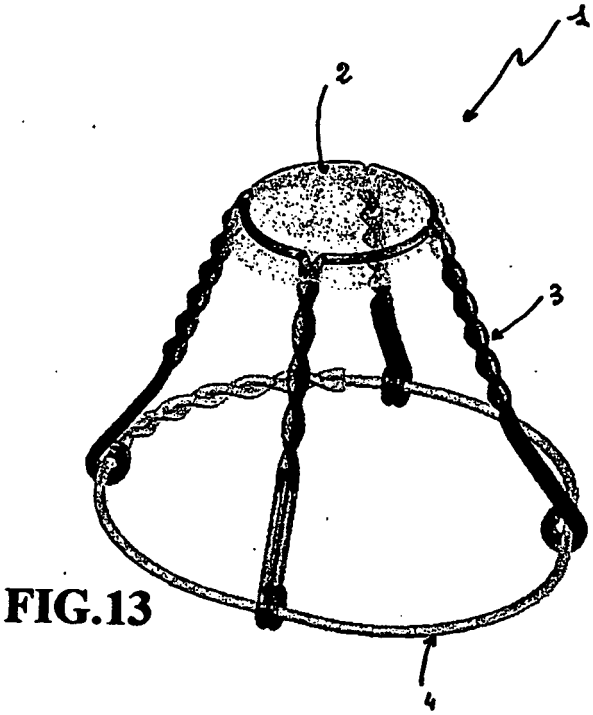


FIG.13

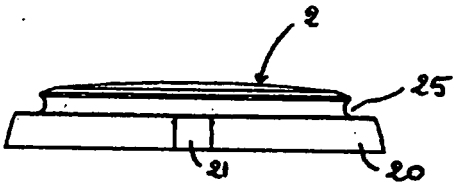


FIG.13A

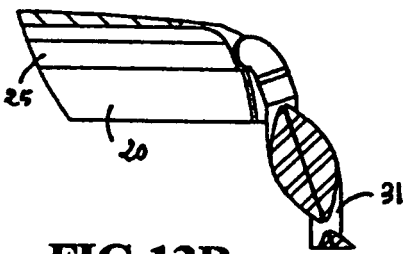


FIG.13B

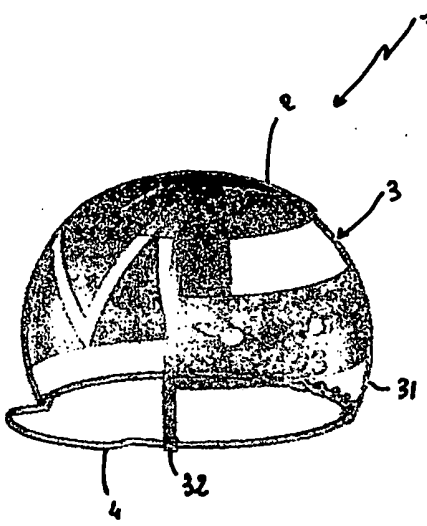


FIG.14

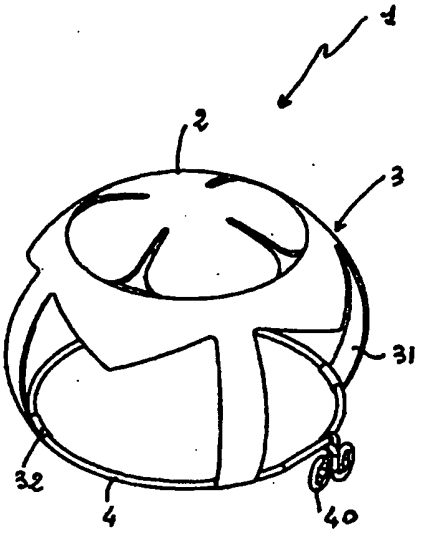


FIG.14A

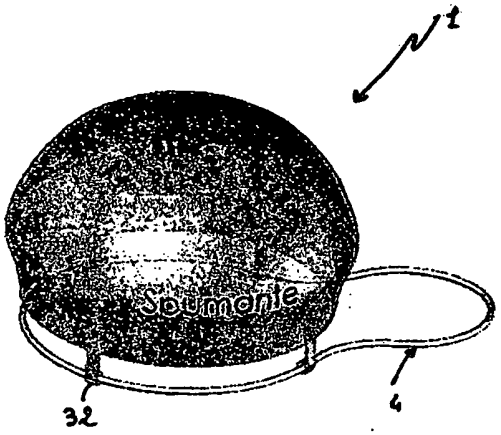


FIG.14B

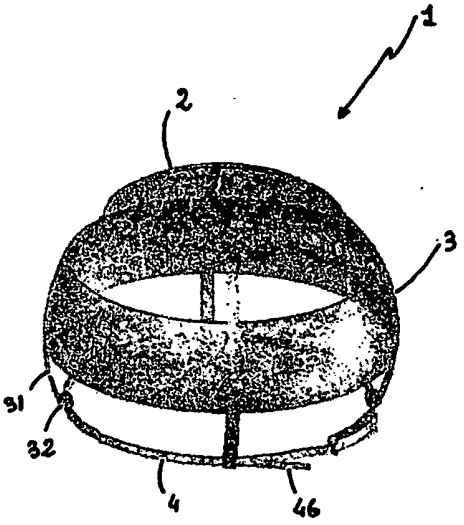
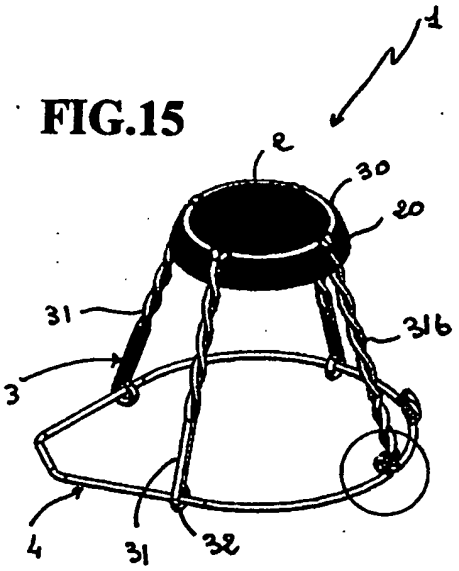


FIG.14C

FIG.15



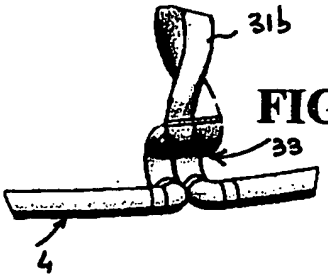


FIG.15A

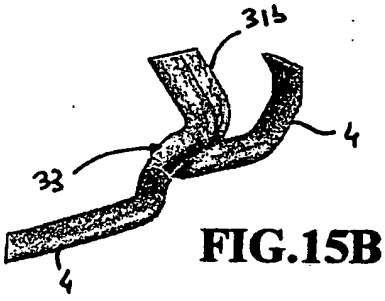


FIG.15B

FIG.15C

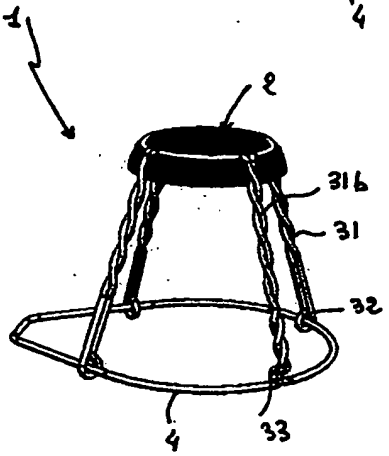
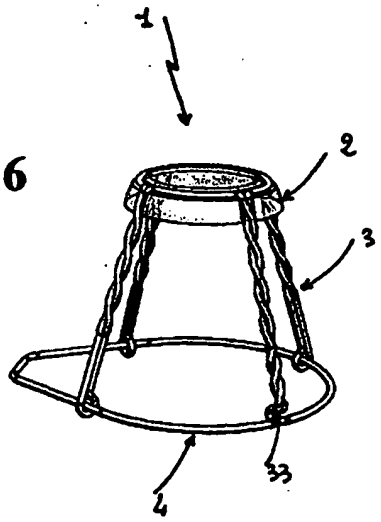


FIG.16



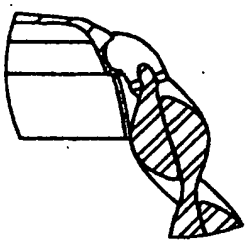


FIG.16A

FIG.17A

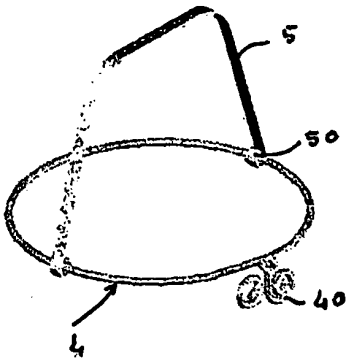
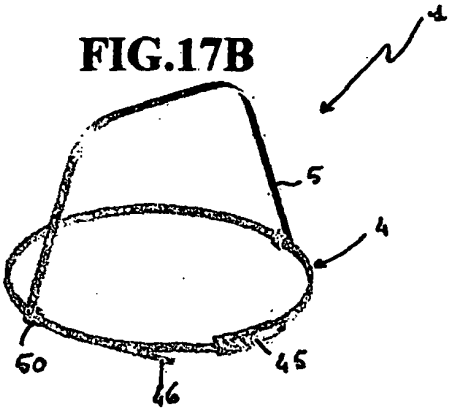


FIG.17B



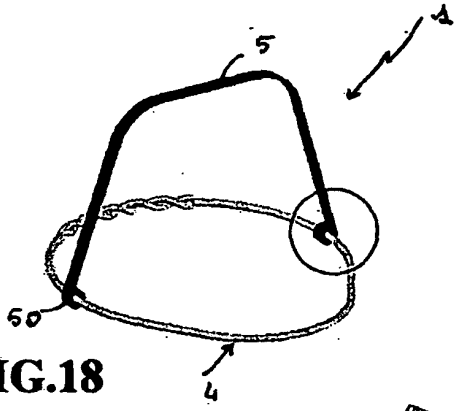


FIG.18

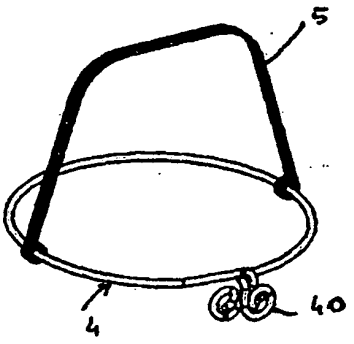


FIG.19A

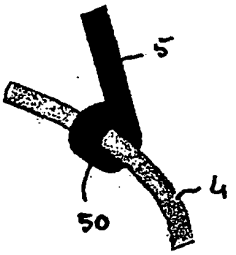


FIG.18A

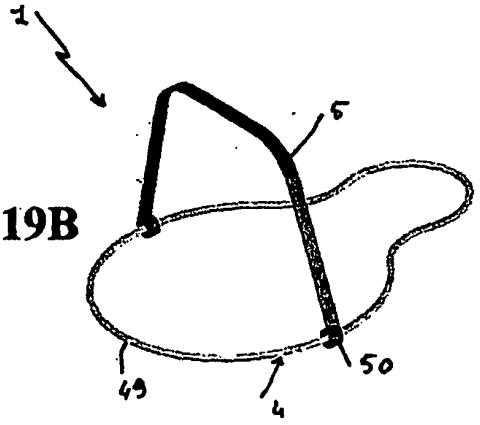


FIG.19B

FIG.19C

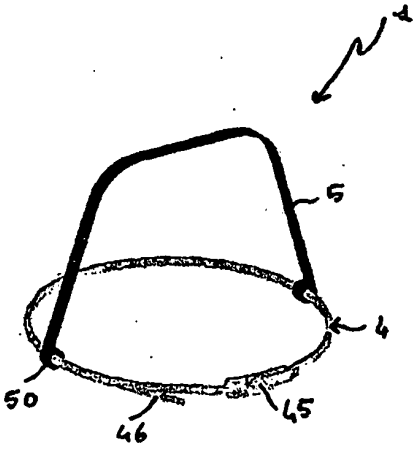


FIG.20A

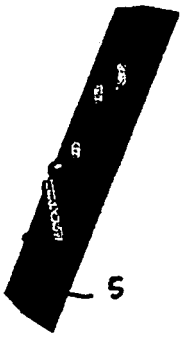
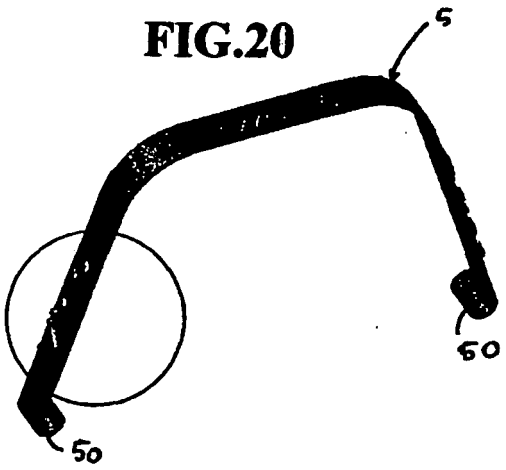


FIG.20



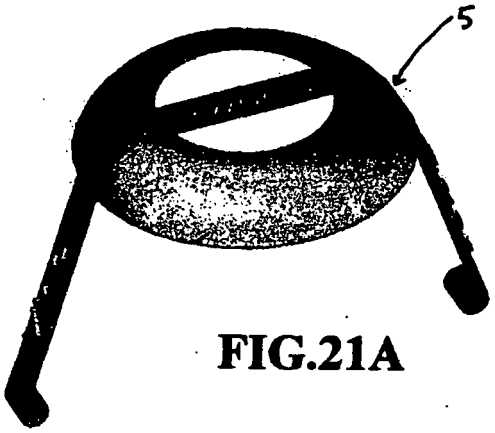


FIG.21A

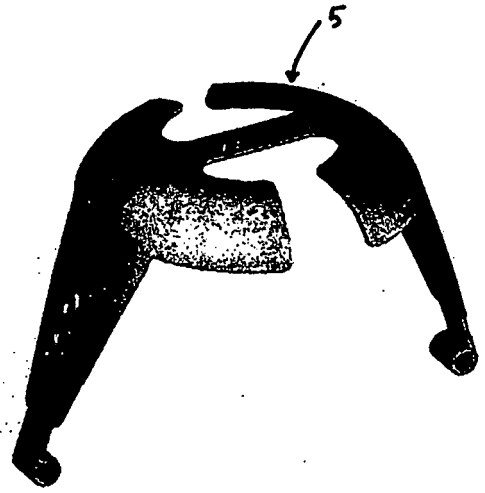


FIG.21B

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- DE 4015328 A1 **[0005]**
- FR 331946 **[0005]**