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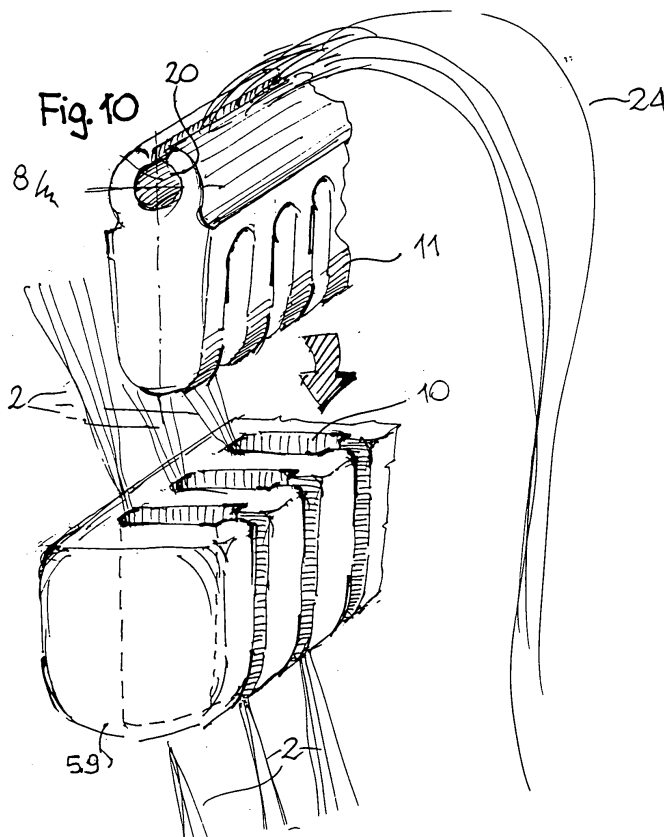
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(54) Device for the application of hair extensions

(57) Device for the application of "extensions" (24) for hair (2), applicable following the orientation of the scales of keratin, engineered in a way that generates low specific pressure on the hair, in which the holding force is achieved thanks to the combination of the friction among the surfaces in contact (10,11), and the "fitting effect" created among the tip of the scales of the hair, with the calculated micro - roughness of the inner sur-

faces of the disposal; disposals light, simple, cheap, quickly applicable and removable by hand or with a special tool, having tiny size and low aesthetic impact, in version "ready-for-the-use" in various lengths, or in version "easy-cutting", built with bio - compatible material, flexible, coloured, perfumed, containing anti-bacteria substances, anti-virus substances, in the version "disposable", and in the version for animals.



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Description

1- DESCRIPTION OF THE STATE OF THE ART

[0001] 1.1- FOREGROUND- The present invention is related to the disposals used in the hair fashion sector, for the connection of true and / or synthetic hair, commonly named "extensions", with the existing hair and, in consequence, with the scalp. Precisely, the invention here described is not only referred to a single object (from now on simply named "dips"), but to a system of means of connection based on the same concept arranged in a way to solve, in an organic, quick, modular and cheap way, all the needs of the modern arrangements required from the new tendencies of the market.

[0002] 1.2- THE EXISTING PRODUCTS- At the state of the art, in the specific sector of destination of the present invention, some kinds of disposals are known since long time; the most known and most efficient uses springs 1 (fig. 2), that first are installed in open position, near the scalp among the hair, and then released, trapping a certain quantity of hair 2 (fig. 1, 2 and 3), therefore connecting itself and the extensions to the scalp.

[0003] For obvious aesthetic reason, these mechanisms must have tiny dimensions, because the apparatus must be invisible after the installation; similarly, no signs of its presence under the hair must be detected. This means that, after the installation, no protuberance and / or edge (fig. 3) could not be visible. For this reason, the external diameter of the springs is very little (around 3 mm), the diameter of the wire is around 0,5 mm, and the length from 20 mm to 40 mm; only for special applications, the length can be longer (tenth of centimetres), as described, for example, in the patent US 4284092 - ref. 1 (fig. 4).

[0004] 1.3-THE EXISTING PATENTS- Here listed below the principal patents found in the phase of searching about the state of the art

GB A305395 - GRUMBAR (1928) - Improved means for attaching additional hair to coiffure

US A 1713616- OPPENHEIM (1928)- Hairdressing accessory

US A 4284092 - AURETTA (1980) Hairpiece attaching structure and method

FR A 626676 - CAHN (1926) Dispositif d'attache pour cheveux

US A 3635228 - HEIKES (1969) Adornment device

US A 3201952 - TRIANGOLO (1962) Hornamental Hair clamp

IT 01246455- HAIR FASHION (1990) Dispositivo per...-

[0005] Examining the dates of the patents listed above, it's possible to appreciate that the technologies in use, still considered and appreciated, in some cases were invented at the beginning of the last century; and this observation gives an important element of evaluation about the possibility that, using up-to-date technologies, it would be possible to develop innovative connecting systems. In addition, in the latest years, as consequence of the increased social attention to the aesthetic factors, the necessity to solve aesthetic situations connected with the health of the hair, come b light

[0006] 1.4- NEGATIVE POINTS- All the listed disposals, except for the one as in the patent IT 01246455 described later, work in consequence of the effect of at least one mechanical spring, and present the following negative points.

[0007] 1.4.1- HIGH SPECIFIC PRESSURE- The main negative point is represented by the effects that the spring itself creates, on the original hair to whom is connected; In fact, to give a sufficient strength of connection, the spring must transmits a load of some kilograms to the hair, printing on the true hair, important and not easily erasable "cutting effects". And these results are so well known among the experts, that after the removing of the extensions, they often suggest the necessity to get a treatment suitable for the rebuilding of the hair (and this because its structure appears seriously damaged). Basically, the level of the specific pressure applied by each couple of wire of the springs on each hair trapped in between, is very high, and able b damage the structure of the keratin, creating in the long run, serious damages to the hair itself.

[0008] 1.4.2- SIZES OF THE PARTS IN CONTACT, AND APPLIED FORCES- The aspect described before, became understandable taking into account the ratio between the load applied (some kg), and the very little dimension of the parts in contact they are in fact (fig. 5):

- Diameter of the wire of the spring 1 (fig. 5): 0,5 mm
- Diameter of the hair 2 (fig. 5): variable from 0,007 mm and 0,012 mm, depending on the thickness of each hair.

[0009] Practically, the hair 2 (fig. 5) is compressed between two parts having dimensions from 40 to 70 times bigger than the hair itself, two parts that transmit all the holding pressure to the hair, along a series of very small areas of contact, having in theory the size of a point 3 (fig. 6). Consequently it means that, in the instant of the first contact, a very high specific pressure on the hair itself is generated; pressure to whom the hair gradually reacts changing its shape, till it reaches the shape illustrated in 4 (fig. 7). So, after these observations, it became understandable the reason why the application of the traditional kind of extension, easily gives origin to forces on the hair, that could often be very close to the break point of the hair itself. For completion, in the description of the invention in chapter 3, the relationship between

the applied forces and their consequences on the hair will be deeply described.

[0010] 1.4.3- DIFFICULTY IN MANIPULATION- Other problems come with the difficulties in manipulating the small pieces of the traditional extension disposal, during the operations around the scalp; in fact, the activity of installing and removing the spring on the true hair, easily origin the "pulling" of hair, creating consequently pain.

[0011] 1.4.4- HAZARD- An other negative point is related with some functional and general aspects; for example, it could not be pleasant to feel the presence of objects in metal, placed close to the scalp. And this also because, in case of accidental contact or impact, these parts could create damages on the head.

[0012] 1.5- THE PATENT IT 01246455- HAIR FASHION (1990) Dispositivo per...- For what concern the patent IT01246455, it's necessary to observe first of all that it protects a connection system (fig. 8), that has not reached the market, that doesn't use springs, and that for the installation on the head, requires the introduction of a lock of hair 2 (fig. 8), inside the little hole in the small bushing 5 (fig. 8), in which a pin 6 (fig. 8) is then screwed; pin on which the new added hair are fixed. As said, this disposal doesn't exist on the market and its basic principle seems far from the idea protected with the present patent application. In fact it presents the following characteristics and limitations.

[0013] 1.5.1- In the opinion of the experts in hair fashion, this system could only be used for the connection of a single little lock of ornamental or coloured hair, and, due to its dimension and visibility, it's not considered suitable for the application of large locks, or for the covering of extended areas without hair.

[0014] 1.5.2- The manipulation of the components around the head appears really difficult; in fact it's first necessary to use a special tool in the shape of a hook, and then, for the connection of the added hair inside the bushing, a second tool (a screwdriver), is required.

[0015] 1.5.3- The application origins movements and forces that have opposite direction respect to the orientation of the scales of keratin 7 (fig. 9) (scales that represent the external part of the hair), and that are positioned like files on a roof, creating in this way a sort of micro-upsetting of the structure of the hair itself.

[0016] That said, according with the reasons mentioned above, there is now the necessity to find a new system for the connection, with the aim of reducing the problems described, taking in account the new aesthetic needs too.

2- DESCRIPTION OF THE DRAWINGS

[0017]

Fig. n.

- | | |
|--------------------|--|
| 1,3,4 | Example of application of extensions with traditional spring systems |
| 2 | Kind of spring used for the connection of fake hair |
| 5 | Proportion between the wire of the spring and the hair |
| 6 | Theoretic area of contact between the coil of the spring and the hair |
| 7 | Practical area of contact between the coil of the released spring and the hair |
| 8 | Example of extension application, as described in patent IT 01246455 |
| 9 | Surface of the hair, with its scales of keratin |
| 10 | Clips application, in the version "longitudinal sliding" |
| 11 | Clips in the version "longitudinal sliding" (in section - assembled) |
| 12 | Clips in the version "orthogonal sliding" (in open position) |
| 13 | Clips in the version "orthogonal sliding" (in closed position) |
| 14 | Clips in the version "orthogonal sliding" (sect.II - fig. 12) |
| 15 | Detail of the rounded shape of the clips in the version "longitudinal sliding" |
| 16 | Detail of the rounded shape of the clips in the version "orthogonal sliding" (sect.I - fig. 12) |
| 17 | Detail of the augmented contact surface, respect to the traditional clips, and detail of the special profile of the areas in contact |
| 18, 19 | Shapes and sections of the coupling areas of the clips - sect III - fig. 18 |
| 20, 21 | Examples of the components of the clips in the versions "longitudinal sliding"- cross section female / male |
| 22, 23, 24, 25, 26 | Examples of the components of the clips in the version "longitudinal sliding" - different precalculated lengths |
| 27 | Example of a full application of the new clips system |
| 28 | Examples of the components of the clips in the version "orthogonal sliding"- section II -fig. 12 |
| 29 | Application of the clips in the version "longitudinal sliding" with tool - view from IV - fig. 31 |
| 30 | Removing of the clips in the version "longitudinal sliding" with tool - view from IV - fig. 31 |

(continued)

Fig. n.

31	Tool for application and removing of the clips in the version "longitudinal sliding"
32, 33	Application an removing of the clips in the version "orthogonal sliding" with the special tool here described
34	Example of the clips in the version "disposable"
35	Example of the clips in the version "Perfumed", "coloured", "self-cleaning"
36	Application of extensions to the animals

3- DESCRIPTION OF THE INVENTION

[0018] The application described here below, that only represents an example of the principles claimed in the patent application, is referred to an innovative system that permits to get the needed connection of the extensions, and reduces the negative aspects described before; and first of all, it solves the negative consequences related with the health of the hair. At the same time, we are pleased to conclude that the present new disposal, has been developed by adding step after step innovative devices not yet included in the state of the art, that have given new functional advantages to the entire connection system, described here below.

[0019] 3.1- CHARACTERISTICS- For marketing reasons, the product has been developed in two versions, the first one named "longitudinal sliding" 8 (fig. 10 and 11), and the second one named "orthogonal sliding" 9 (fig. 12, 13 and 14); both of them follow the same principle, that consists in trapping locks of hair, among a plurality of wide surfaces of friction. The most important technical characteristics, are the following:

- Low specific pressure on the surface of the hair
- Direction of application in the same direction and orientation of the scales of keratin
- Holding effect due to the friction generated as consequence of the pressure between the parts in contact
- Increased holding effect due to the fitting effect among the scales of the hair, and the calculated roughness of the surfaces of the clips in the area of contact with the hair itself
- Biological compatibility of the components, and absence of metal parts in contact with the human body
- Easy manufacture and low cost of the disposal
- Quick preparation of the disposal in the needed length
- Possibility to install more and different kinds of locks of hair on the same clips support
- Possibility to easily arrange applications of hair having different shapes and colours
- Quick installation and removing of the clips, with or without tools
- Easy bending and better adaptability of the clips to every profile of the head
- Version "disposable", and "self-cleaning"

[0020] 3.2- DESCRIPTION OF THE PRINCIPLE- The principle is the following: the locks of hair 2 (fig. 10 and 12) are simply pushed with in a series of slots 10 (fig. 10 and 12) by hands, without any tools; then the male part 11 (fig. 10 and 12) is pushed by hands in the slots 10 (fig. 10 and 12). In this way, true hair on the scalp are correctly and more "healthily" compressed with a pre-calculated load. And this thanks to the calculated shape, slope and dimensions of the male and female parts in contact. The removing of the clips from the head, is achieved pushing back the lower side of the male part the slight calculated elasticity of the external structure of the clips 8 and 9 (fig. 10 and 12), facilitates the operation.

[0021] 3.3- BIOLOGICAL COMPATIBILITY- The materials used for this new kind of clips, are modern technological polymers, having different hardness and elasticity, chosen with reference to the physical reaction to the contact with the human body; with the aim to create a strength that does not allow the accidental disengagement of the connection, the male and the female surfaces are shaped according to the friction coefficient between the materials in contact. Moreover, the tip of the male part, presents a portion 12 (fig. 15 and 16), that changes its shape for elastic deformation during the assembling phase, and that recovers its original shape when the stroke-end position is reached; creating an efficient locking effect on the clips.

[0022] 3.4- DIRECTION OF THE SCALES- It is important to notice that contrary to what described in the point 1.5.3 (fig. 9), the application of the male part is performed by following the same orientation of the scales of keratin 7 (fig. 9), in this way avoiding the consequent micro-upsetting effect on hair structure.

[0023] 3.5- LOW SPECIFIC PRESSURE- This important effect has been achieved by searching a sort of a calculated equilibrium between the external dimensions of the disposal (it was mandatory to have tiny dimensions with reference to the other disposal with springs or bushings), and the area of the surfaces compressed against the lock of hair, for the optimisation of that parameters, the following criteria of calculation has been applied:

Iterative calculations and practical determination of the minimum necessary strength for the sufficient connection of one single clips (fig. 10 and 12) to the hair, in combination with the maximum possible surface of contact 13 (fig. 13 and 17) of the lock of hair 2 (fig. 13 and 17), inside the surfaces of contact of this new kind of clips.

The maximisation of that surface of contact, has consequently reduced in an important way, the specific pressure on the hair trapped inside the clips, reducing at the same time the damages on the structure of the hair itself. Compared with the traditional spring connection system, the optimisation of this parameter, increased at least of 30 times the length 13 (fig. 13 and 17) - 3 mm -, of the surface of contact between hair and clips, with respect to the correspondent length 14 (fig. 5 and 7) - 0,1 mm - between the hair and the coil of the springs 1 (fig. 5 and 7) in the traditional clips.

[0024] At the same time, please note that an additional holding effect on the surfaces in contact with the hair 2 (fig. 17) has been achieved; and this thanks to a undulated sloped profile, with a superficial roughness 58 (fig. 17), in which its pitch and deepness are in phase with the shape of the tip of the scales of keratin 7 (fig. 17) of the hair.

[0025] 3.6- SIMPLICITY IN MANUFACTURE- As shown in fig. 10 and 12, each clips is simply composed by 1 male part and 1 female part that could both be produced at a very low cost, with the traditional moulding plastic technologies; contrary to what described in the state of the art about the existing patents, in the present new kind of clips, there are no springs and no screws to install.

[0026] 3.7- DIMENSIONS AND SHAPES OF THE TEETH AND SLOTS- The practical experience has suggested that the best equilibrium among load, robustness and easy handling of the new kind of clips, is reached when the dimension of the teeth is around 2 - 2,5 mm (fig. 18); this because with those dimensions, a sufficient distribution of hair inside the slot is obtained. Particularly, the cross section of the teeth could be round, rectangular, in shape of ovoid, of lens, 15, 16, 17 and 18 (fig. 19), etc.. These suggestions / indications, that don't limit the principle protected with the present patent application, could be also applied for the clips in the version "orthogonal sliding" 9 (fig. 12); it is supposed that the best choice about those aspects, could be influenced by a lot of factors, as, for example, the kind of material used, and the friction coefficient between the parts in contact.

[0027] 3.8- VERSIONS- According to the kind of applications, as the practical experience suggests, the lock of the added hair could be connected with the male or with the female part in consequence, in order to satisfy the major part of the installations, 2 versions of the female parts are available: a version 19 (fig. 20), without the portion 20 (fig. 20) used for the connection of the locks of extensions 24 (fig. 20), and other versions with this portion. Different kinds and shapes of this portion 21, 22 and 23 (fig. 20) (with sewing, slots, grooves), are proposed. And this according to the needed requirements of robustness, visibility, orientation of the extension 24 (fig. 20), as suggested by the general characteristic of each specific installation. The male part is consequently available in the following shapes: without the portion for the connection of the lock of extensions 25 (fig. 20), and with the portion for the connection of the lock of extensions 26, 27, 28 and 29 (fig. 21); please note that on the special element 27, it is possible to link 2 or more extensions on a unique support, giving to the hair a more important "hair volume" and "vaporous effect".

[0028] 3.9- LENGTH OF THE CLIPS AND CRITERIA OF PRODUCTION- For economic reasons, according to the volume of production, the production of a long clips 30 (fig. 22), could be considered convenient; then the hairdresser will cut it at the needed length during the installation. For this reason, series of "easy-break" points 31 (fig. 22) are arranged. "Easy-break" points that at the same time give the clips a degree of elasticity that improves the adaptation of the clips itself, to the round head profile. In case of high volume of production, the following 3 different standard lengths will be arranged; and this with the intention of combining, solving and satisfying the largest variety of applications, in an acceptable aesthetic way.

- With 2 teeth, 32 (fig. 23), for single locks
- With 5 teeth, 33 (fig. 24), for short locks
- With 8 teeth, 34 (fig. 25), for long locks

[0029] This choice will be up to the hairdresser, with reference to the position of the clips on the scalp, and of the degree of "mimetic effect" that is possible to get in each area of the head; in fig. 27, installations of locks on the rear 35 (fig. 27), and on the lateral 36 (fig. 27) side of the head, are represented.

[0030] 3.10- CONTINUOUS FABRIC- In case of baldness, for the protection of important areas of the head, if necessary it's possible to create a sort of "continuous hair fabric", by joining the clips 8 (fig. 10) with a plurality of male parts 11 (fig. 26) (shifted as shown in the picture); in this way, we connect together an infinite number of female parts 10 (fig. 26); and we obtain a sort of continuous clips 37 (fig. 26) of the desired length..

[0031] 3.11- CLIPS IN THE VERSION "ORTHOGONAL SLIDING"- This version has been developed because more suitable for the application of widest versions of extensions; this kind of clips seems easier to manipulate because the male part 11 (fig. 12) and female part 10 (fig. 12), are pre-assembled when the clips is in opened position. This means that, for example in case of a high volume of hair, its application could be performed in a "blind" way simply by using

one hand, while the second hand prepares and pushes the locks of hair 2 (fig. 3 and 12) inside the slots 10 (fig. 12). At the end of this operation, the fixed connection is achieved by pushing the terminal portion 38 (fig. 12) with the finger of the first hand, as far as we reach the stroke-end position; in this way we get a clear connection of the hair. Please note that the path of the hair inside the clips, has been studied in a way that avoids contacts against edges, that could damage the keratinous structure of the hair.

[0032] 3.11.1- As described at point 3.8, and for the same reasons, for the "orthogonal sliding" version 9 (fig. 12 and 28), different versions 38, 39 and 40 (fig. 28) of the portion used for the connection of the lock of extensions 20 (fig. 28) are available too; in this case too, the choice will be based on the orientation and on the needed level of "hair volume" and "vaporous effect". At the same time, as already said at point 3.9, for the clips in the version "orthogonal sliding" 9 (fig. 12 and 28), different pre-calculated lengths are available too.

[0033] 3.12- INSTALLATION AND REMOVING OF THE CLIPS- The locking of the clips type "longitudinal sliding" 8 (fig. 10) (after having manually aligned together the male and the female part), could be performed by hand or with a special tool in shape of pliers 48 (fig. 31); by applying a load 52 (fig. 29) on the handle 49 (fig. 31), the two portions 50 and 51 (fig. 29 and 31) of the pliers create the sliding of some millimetres of the male part 11 (fig. 29) with respect to the female part 10 (fig. 29), locking therefore definitely the hair 2 (fig. 29).

[0034] The unlocking operation, can be obtained with the same special pliers 48 (fig. 31), turned upside down; in this case the load on the handle 49 (fig. 31), generates a force 52 (fig. 30), that gets the sliding of the male part 11 (fig. 30) out from the inner part of the female part 10 (fig. 30). After that, the two parts -male and female-, will be easily removed by hand. In the same way, and by applying the same principle described above, the locking and the unlocking of the clips in the version "orthogonal sliding" 9 (fig. 32 and 33), can be performed with the special tool 48 (fig. 32 and 33); tool 48 used as in fig. 32 for the installation of the clips, and as in fig. 33 for the removing.

[0035] 3.13- VERSION "DISPOSABLE"- This version has been basically created for health reasons, in order to avoid the use and the repeated use of the clips; in fact the components of the clips are engineered in a particular way, and the removing of the clips (performed by applying by hand a force of deflection on the clips), originates the expulsion of the male part 11 (fig. 34) from the inner part of the female part 10 (fig. 34), and the contemporaneous irreversible damage of both the male and female parts around the pre-calculated "weak points" 54 (fig. 34). In this way we prevent any possibility of re-use of the clips.

[0036] 3.14- PERFUMED, COLOURED, SELF-CLEANING VERSIONS- New and special plastic technologies could be applied; in fact it's possible to disseminate perfumed substances 55 (fig. 35), and / or human-body-compatible coloured substances 56 (fig. 35) in the row materials, which may have the same colour of the hair. It is also possible to use special materials like the technologic polymer named Corian Du Pont, in which are disseminated molecules of anti bacteria 57 (fig. 35), that prevent the contamination of the clips themselves. Obviously, these new high tech materials, at the same time are free from any kind of dangerous effects for the human being.

[0037] 3.15- VERSION FOR ANIMALS- Please note that thanks to the growing attention for the animal world, the present kind of clips could be used for applications on animals (fig. 36), such as dogs, cats, horses, cows, etc., to which, sometimes, for example for aesthetic reasons (participation to meetings, competitions, etc.), an aesthetic adjustment could be suggested.

Claims

- Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, composed
 - by one female part 59 (fig. 10 and 12) connectable with at least one lock of hair 2 (fig. 10 and 12) connected to the scalp,
 - by one male part 11 (fig. 10 and 12) co-operating with the female part 59 (fig. 10 and 12) to get its connection with the scalp,
 - by one or more parts 20 (fig. 20, 21 and 28) connectable to one or to a plurality of extensions 24 (fig. 10 and 14), **characterised by** the fact that
 - the portion 20 (fig. 20, 21 and 28) or the portions 20 (fig. 20, 21 and 28), connectable to the extension 24 (fig. 20, 21 and 28), could be included in the female part 59 (fig. 10, 12 and 14) and / or included in the male part 11 (fig. 10),
 - the holding force that traps the locks of hair 2 (fig. 10 and 12) is achieved thanks to the opposite surfaces of the male parts 11 (fig. 10, 11, 12 and 13) and of the female parts 59 (fig. 10, 11, 12 and 13),
 - the holding force between the opposite surfaces of the male parts 11 (fig. 10, 11, 12 and 13) and of the female parts 59 (fig. 10, 11, 12 and 13), is improved thanks to the calculated roughness 58 (fig. 17) of their profiles,
 - the lock or the locks of hair 2 (fig. 10 and 12) are positioned either inside one or inside a plurality of slots 10 (fig. 10 and 12), and quickly joined to the internal surfaces of said slot or slots 10 (fig. 10 and 12), and compressed into the same slots 10 (fig. 10 and 12), with the insertion and with the sliding of one or a plurality of male parts 11 (fig. 11, 13 and 14), applying holding forces 52 (fig. 29 and 32) oriented in the same direction of the direction of orientation

of the scales of keratin 7 (fig. 9 and 17), holding forces 52 (fig. 29 and 32) for this reason less dangerous for the health of the hair 2 (fig. 9 and 17),

the lock or the locks of hair 2 (fig. 10 and 12) are quickly removable from the apparatus, for example 8 (fig. 10), 9 (fig. 12), by applying forces 52 (fig. 30 and 33), on the portion 53 (fig. 30 and 33) of the male parts 11 (fig. 30 and 33), the professional disposals 8 (fig. 10), 9 (fig. 12) are produced in modular length, and / or are quickly prepared in the desired length, and / or are quickly connected to one another in a continuous way, produced with biological-compatible materials, produced with materials that allow a slight deformation in a curved shape, produced in neutral colours, similar or not to the colour of the hair, in "disposable" version, containing perfumed and / or medical substances, containing repulsive substances and / or substances that prevent the growth of dangerous elements, and / or containing anti-bacteria substances, and / or anti-virus substances and so on, and are also produced in special kind for animals, and in general satisfying all the main needs of installation, that the present patented system permits.

2. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claim 1, **characterised by** the fact that the opposite surfaces of the male parts 11 (fig. 10, 11, 12 and 13) and female parts 59 (fig. 10, 11, 12 and 13), have wide and calculated dimensions, in order to get the lowest specific pressure on the hair 2 (fig. 10 and 12).
3. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1 and 2, **characterised by** the fact that the slope, the pitch, the deepness and the superficial roughness of the undulated profile 58 (fig. 17), is compatible and in phase with the profile of the tip of the scales of keratin 7 (fig. 17).
4. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2 and 3, **characterised by** the fact that the locks of the hair 2 (fig. 10 and 12) are positioned without tools through either one or a plurality of slots 10 (fig. 10 and 12).
5. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3 and 4, **characterised by** the fact that the locks of hair 2 (fig. 10 and 12) and quickly joined to the internal surfaces of said slots 10 (fig. 10 and 12), with the insertion and with the sliding of either one or a plurality of male parts 11 (fig. 11, 13 and 14).
6. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3, 4 and 5, **characterised by** the fact that the holding forces 52 (fig. 29 and 32) and the removing forces 52 (fig. 30 and 33), can be applied by hand and / or with tools 48 (fig. 31, 32 and 33).
7. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3, 4, 5 and 6, **characterised by** the fact that the professional disposals 8 (fig. 10), 9 (fig. 12) are produced either in different modular length 32 (fig. 23), 33 (fig. 24), 34 (fig. 25), or quickly prepared in the desired length, applying calculated forces on either one or on more of the weak-points for the easy separation 31 (fig. 22) obtained into the disposals 30 (fig. 22), or quickly prepared connecting parts 10 and 11 (fig. 26) in a continuous way the one to the others, as shown in fig. 26.
8. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3, 4, 5, 6 and 7, **characterised by** the fact that the said disposals are produced with biological-compatible materials.
9. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3, 4, 5, 6, 7 and 8, **characterised by** the fact that they are produced (in the version "disposable"), with materials having a calibrated density, where are created weak-areas 54 (fig. 34), that collapse during the removing operations, avoiding the repeated - use of the same disposal itself.
10. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3, 4, 5, 6, 7, 8 and 9, **characterised by** the fact that they are produced in a version containing perfumed substances 55 (fig. 35).
11. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10, **characterised by** the fact that they are produced in neutral colours, or in colours either similar or not to the colour of the hair 56 (fig. 35).

12. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11, **characterised by** the fact that they are produced in versions containing medical substances, containing repulsive substances and / or containing substances that prevent the growth of dangerous elements, and / or containing anti-bacteria substances, and / or containing anti-virus substances and so on, as for example the technologic polymer Corian 57 (fig. 35), developed by Du Pont De Nemours, or with parts protected with films Autotex AM (anti microbial), developed by Autotype Ltd, or other similar products.
13. Professional disposals 8 (fig. 10), 9 (fig. 12) for the application of "extensions" 24 (fig. 10 and 14), for example for hair, according with claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12, **characterised by** the fact that they are produced with characteristics studied for the animals world, as for example dogs, cats, horses, cows and so on (fig. 36).



Fig. 1

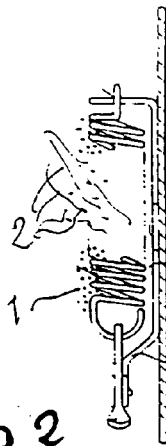


Fig. 2

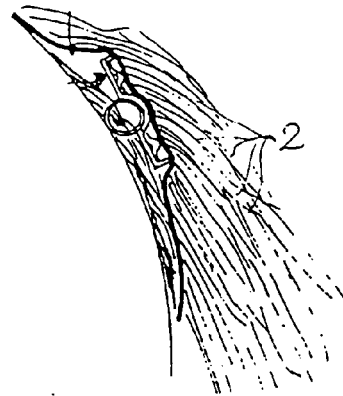


Fig. 3

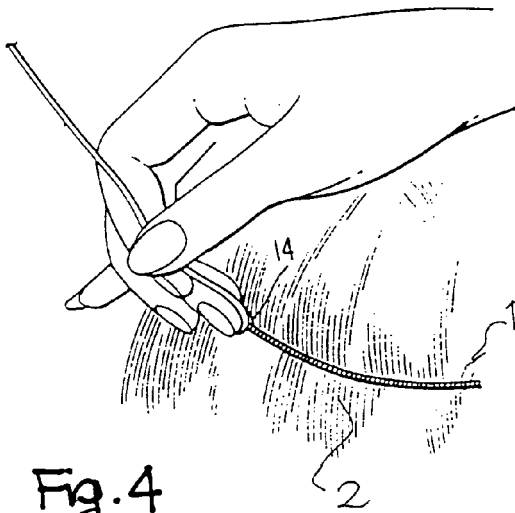


Fig. 4

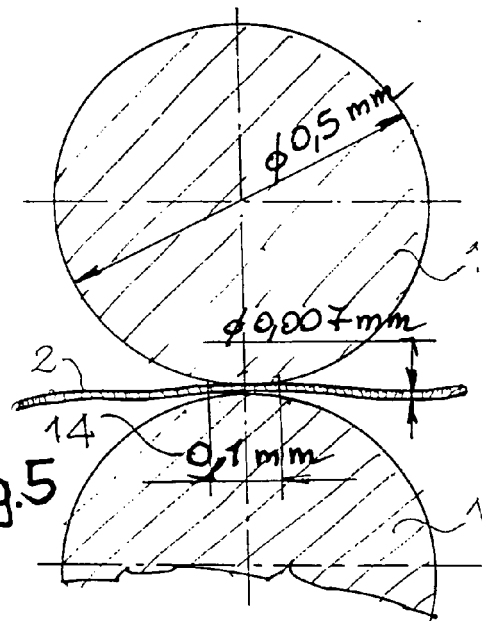


Fig. 5

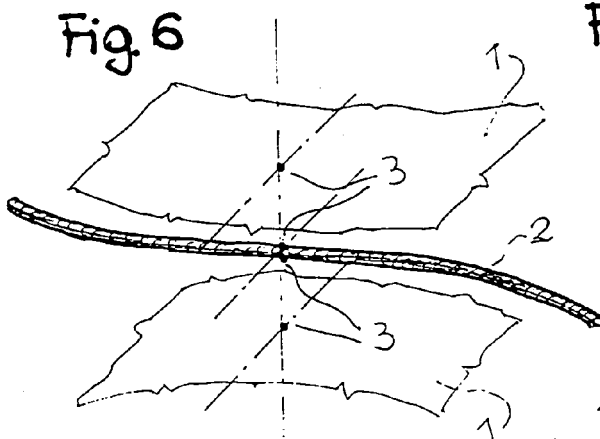


Fig. 6

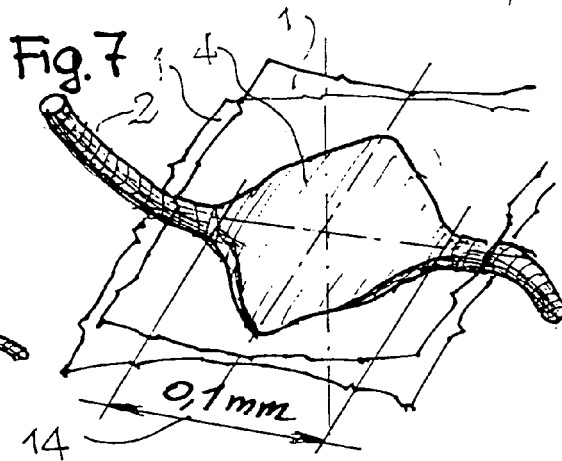
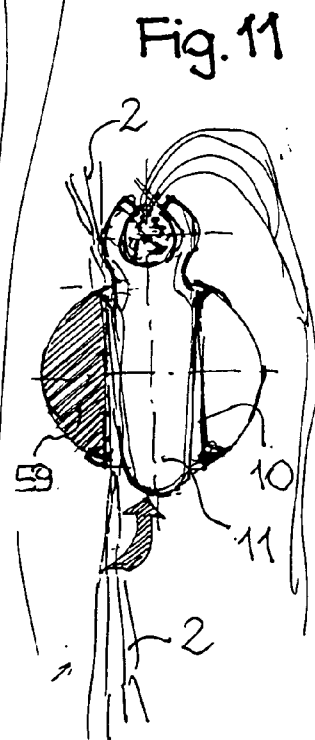
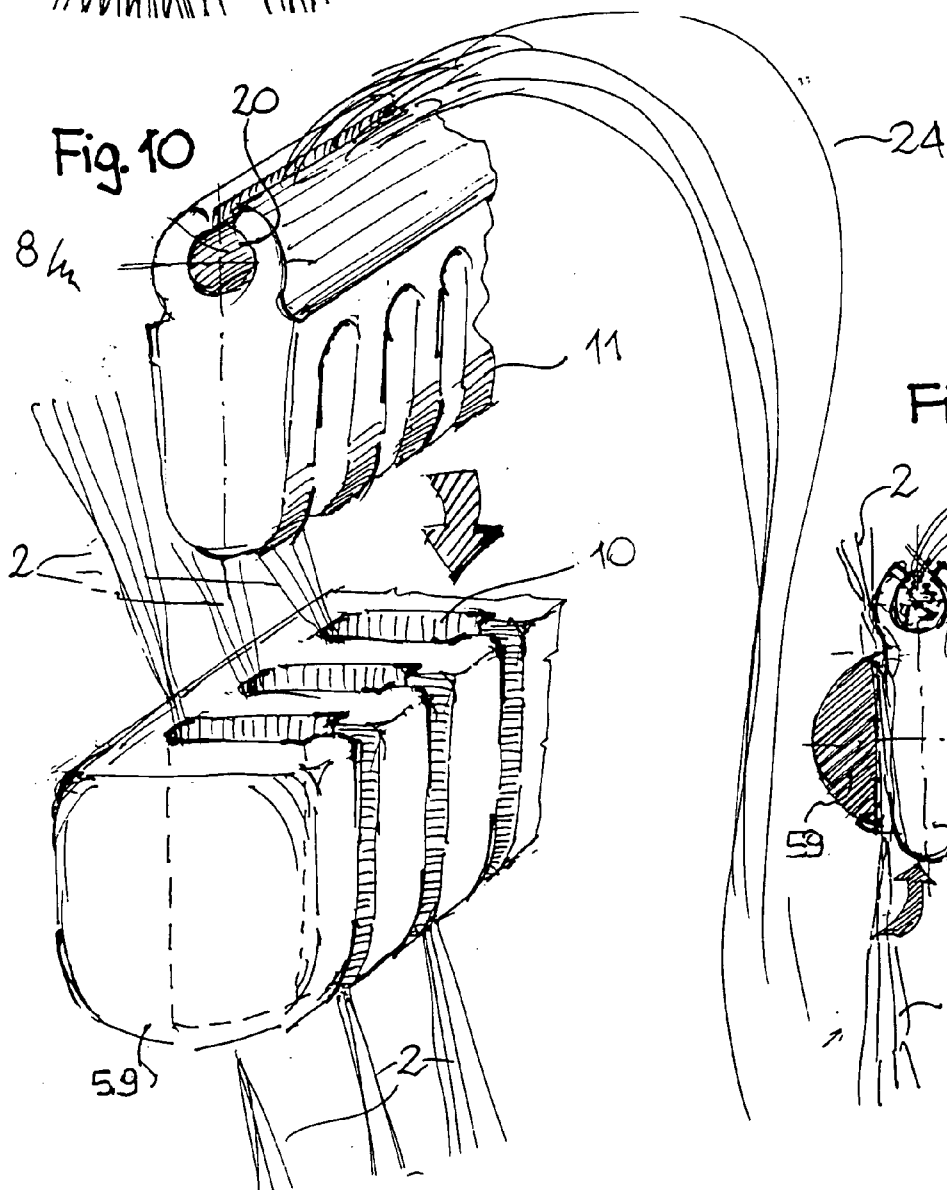
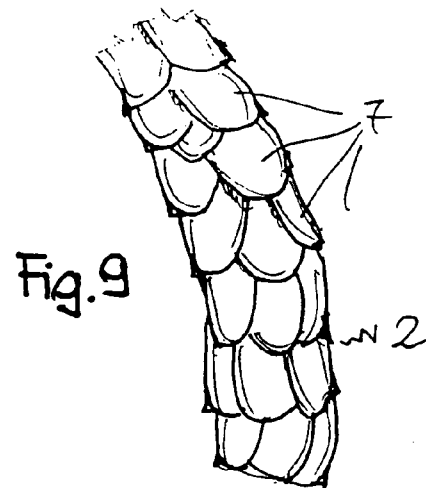
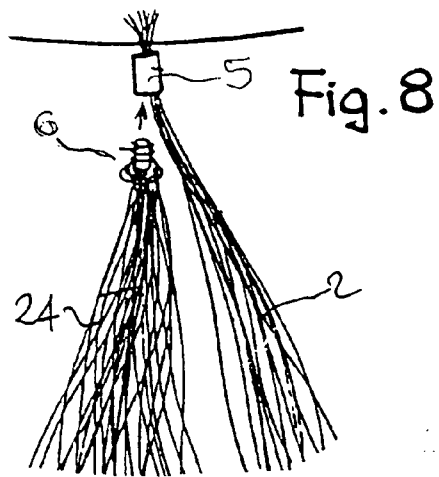
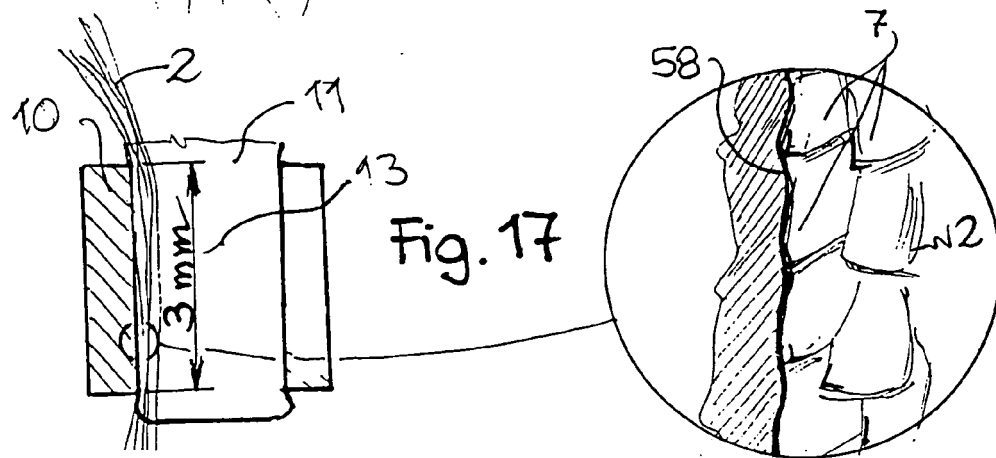
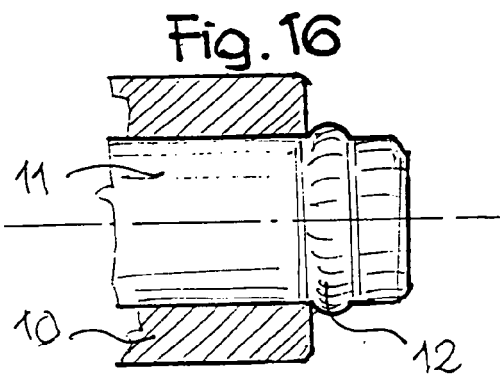
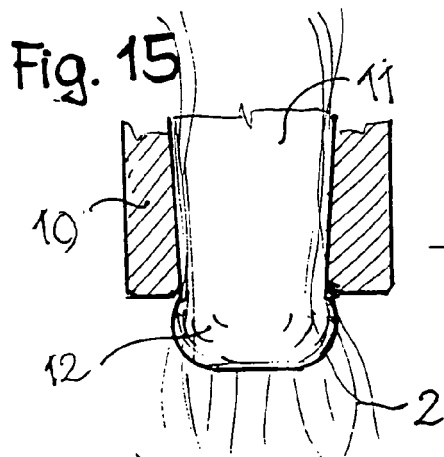
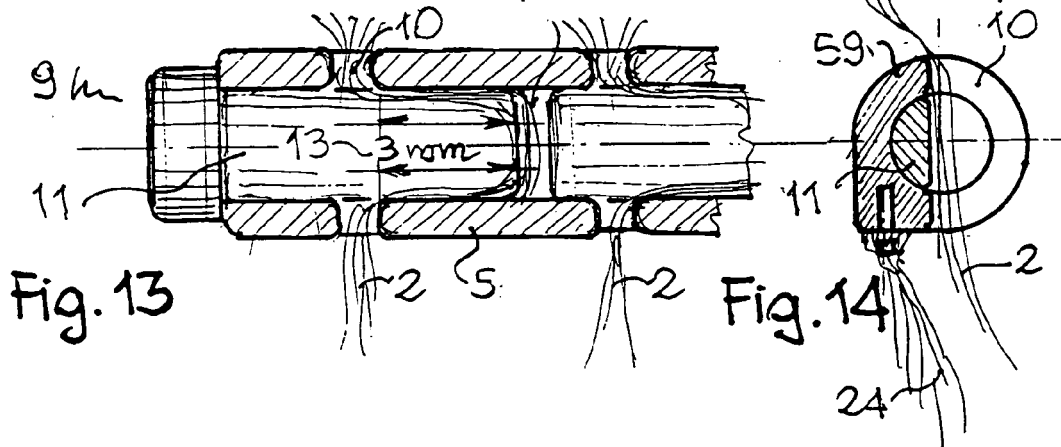
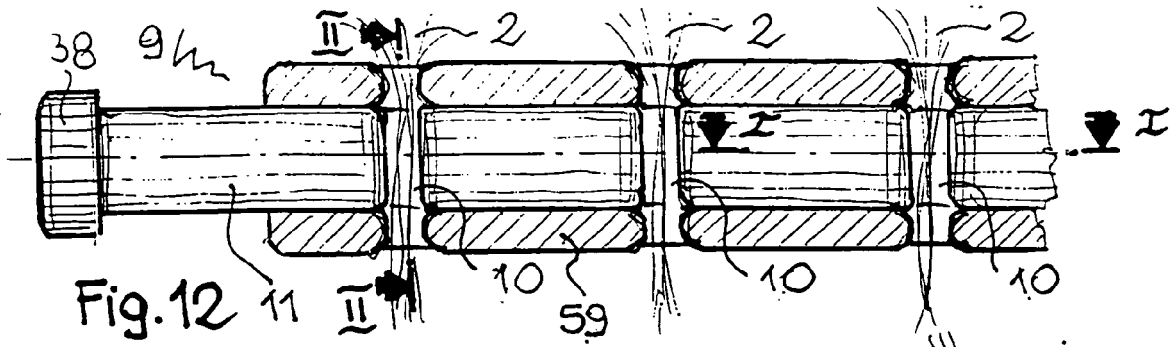
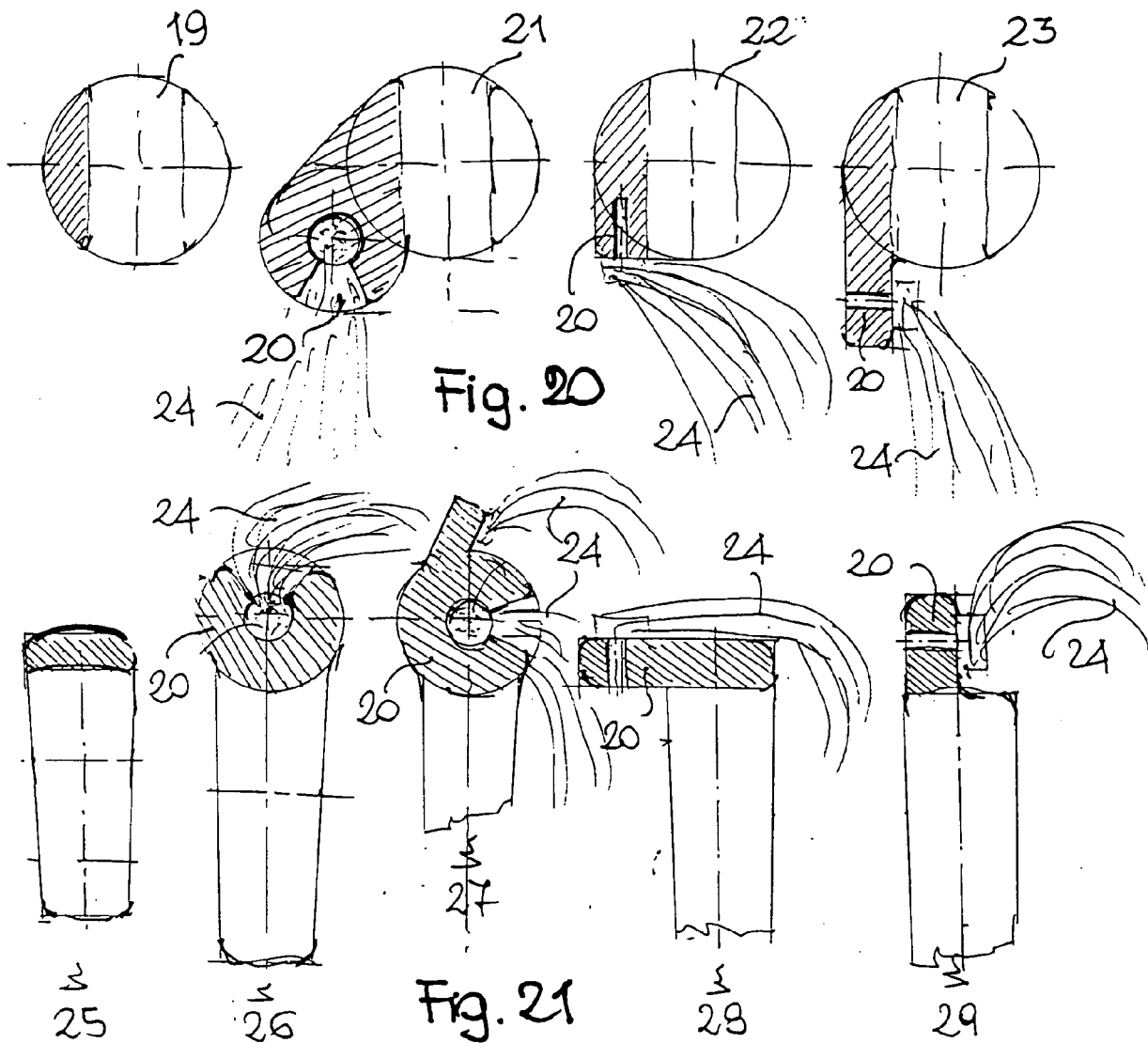
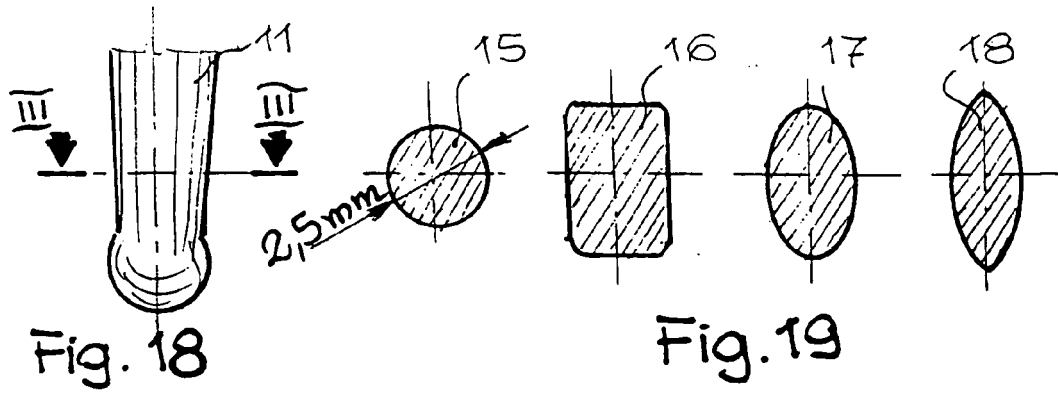


Fig. 7







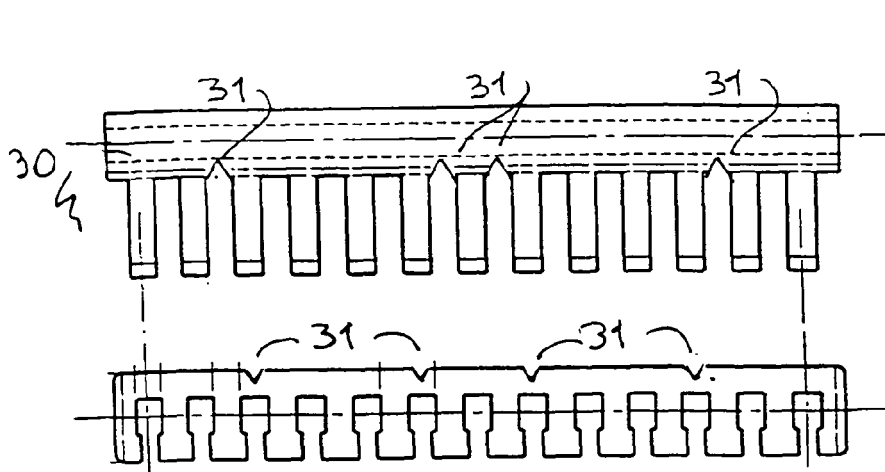


Fig. 22

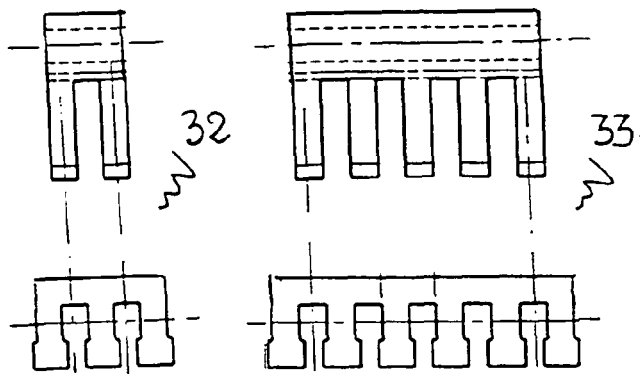


Fig. 23

Fig. 24

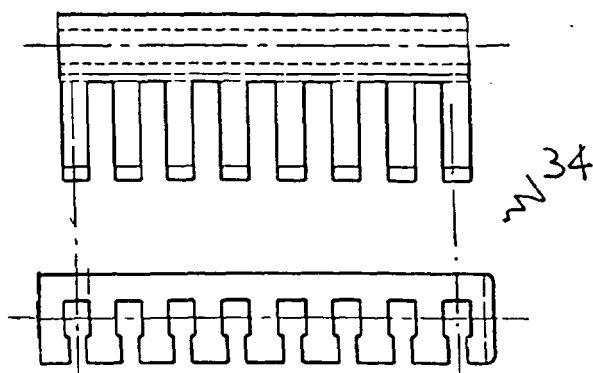


Fig. 25

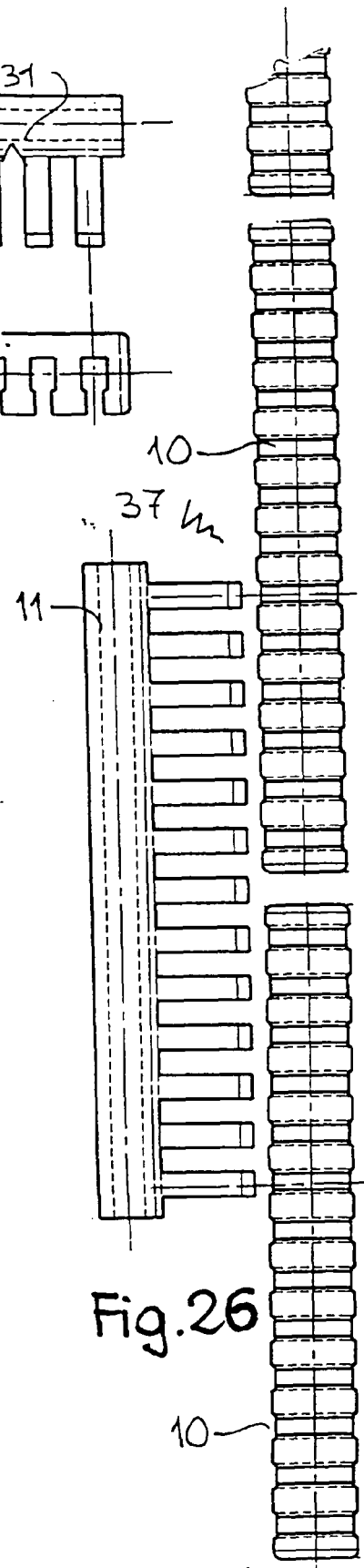
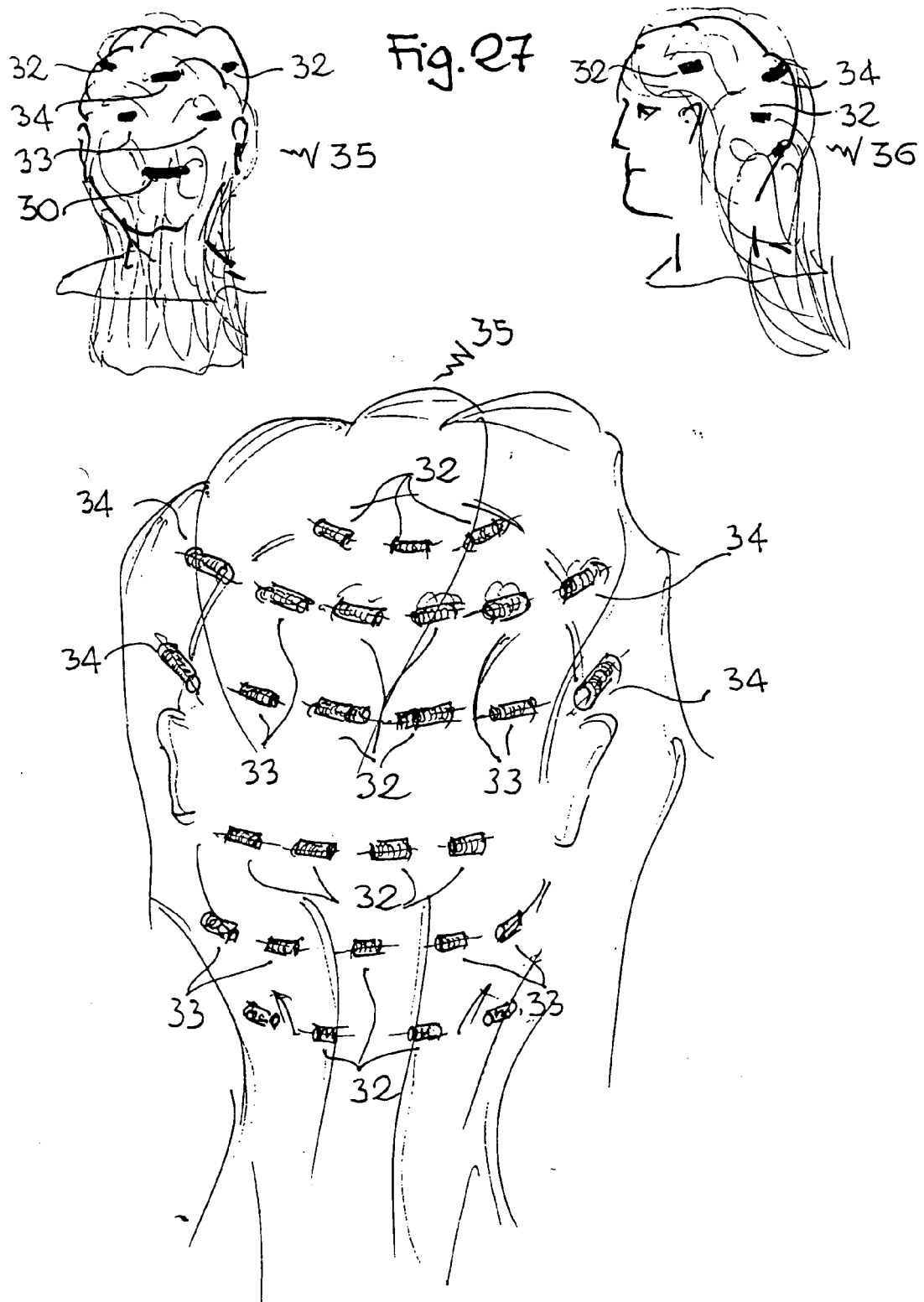


Fig. 26



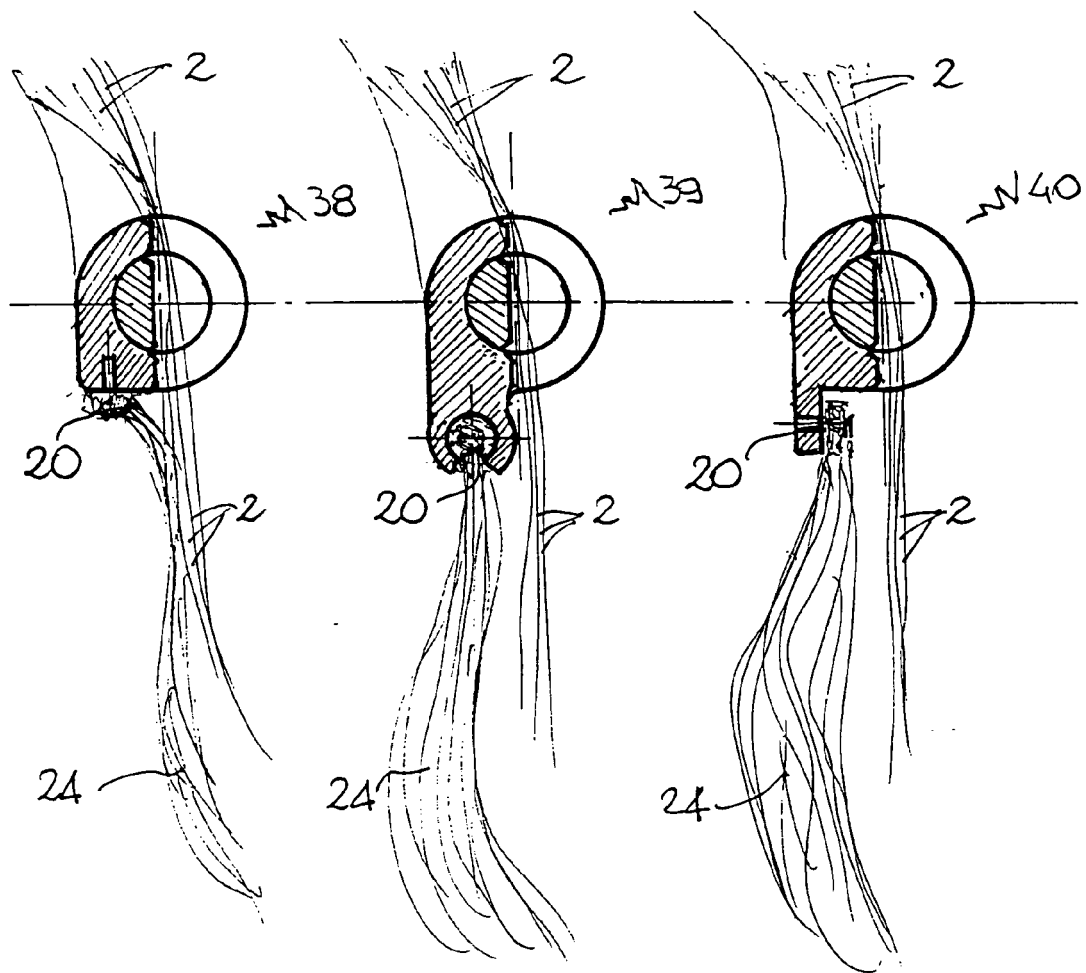
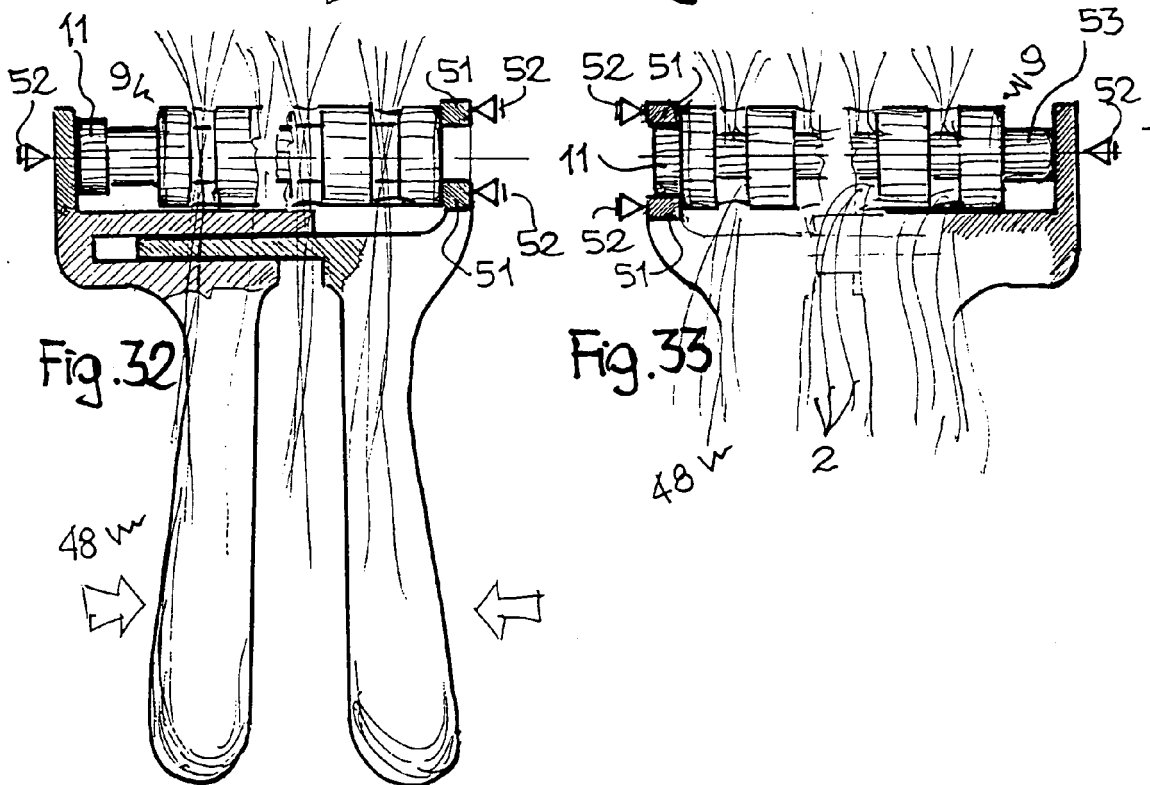
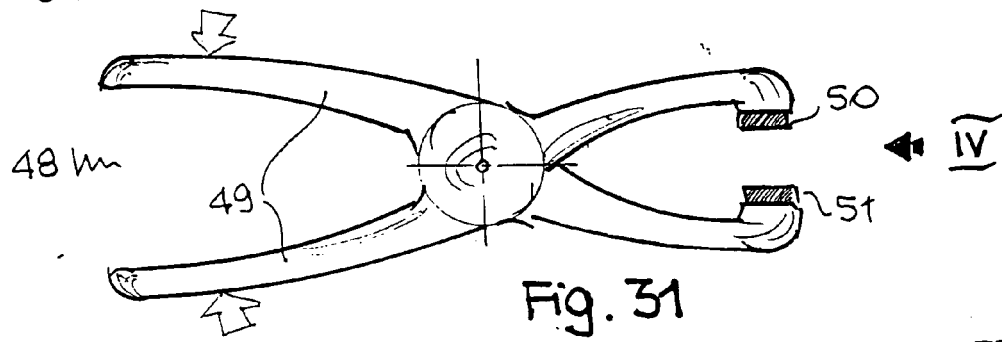
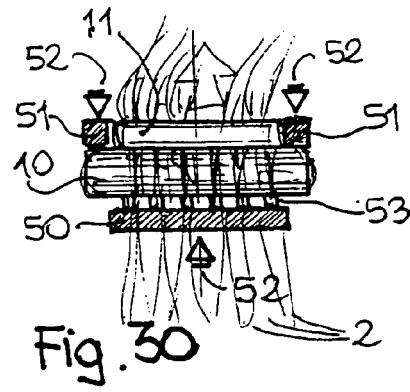
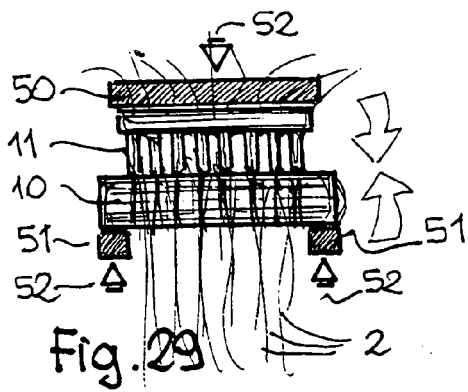


Fig. 28



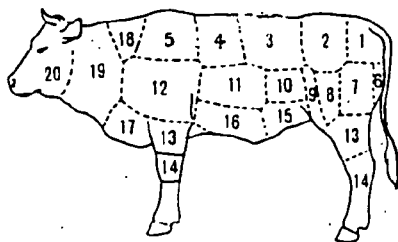
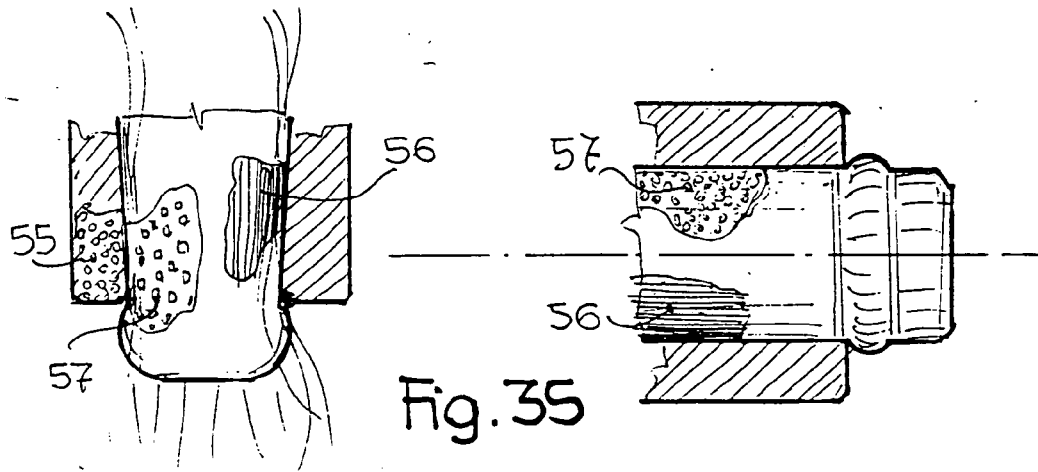
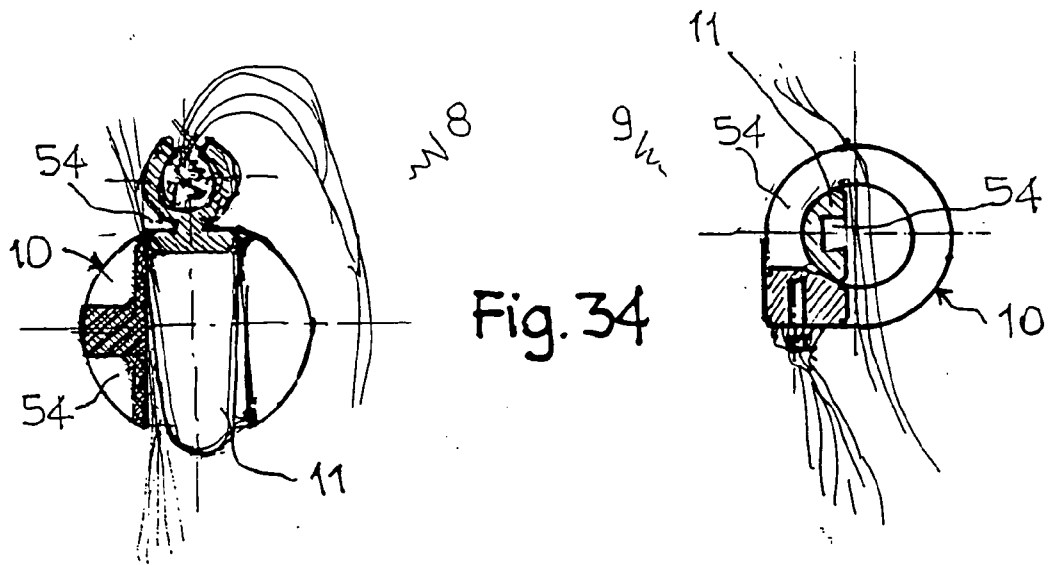


Fig. 36



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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 February 2007	Examiner Dreyer, Claude
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