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(54) **Mirror with a lighting system**

(57) The present invention concerns a mirror with a lighting system comprising at least one reflective portion (5), **characterised in that** the mirror comprises a plurality of light emitting points (10, 210), and at least one light emitting point comprises at least one optical filter (45, 245, 246).

Preferably at least one light emitting point (10, 210), more preferably all of them, comprises at least two optical filters (245, 246), preferably of different types.

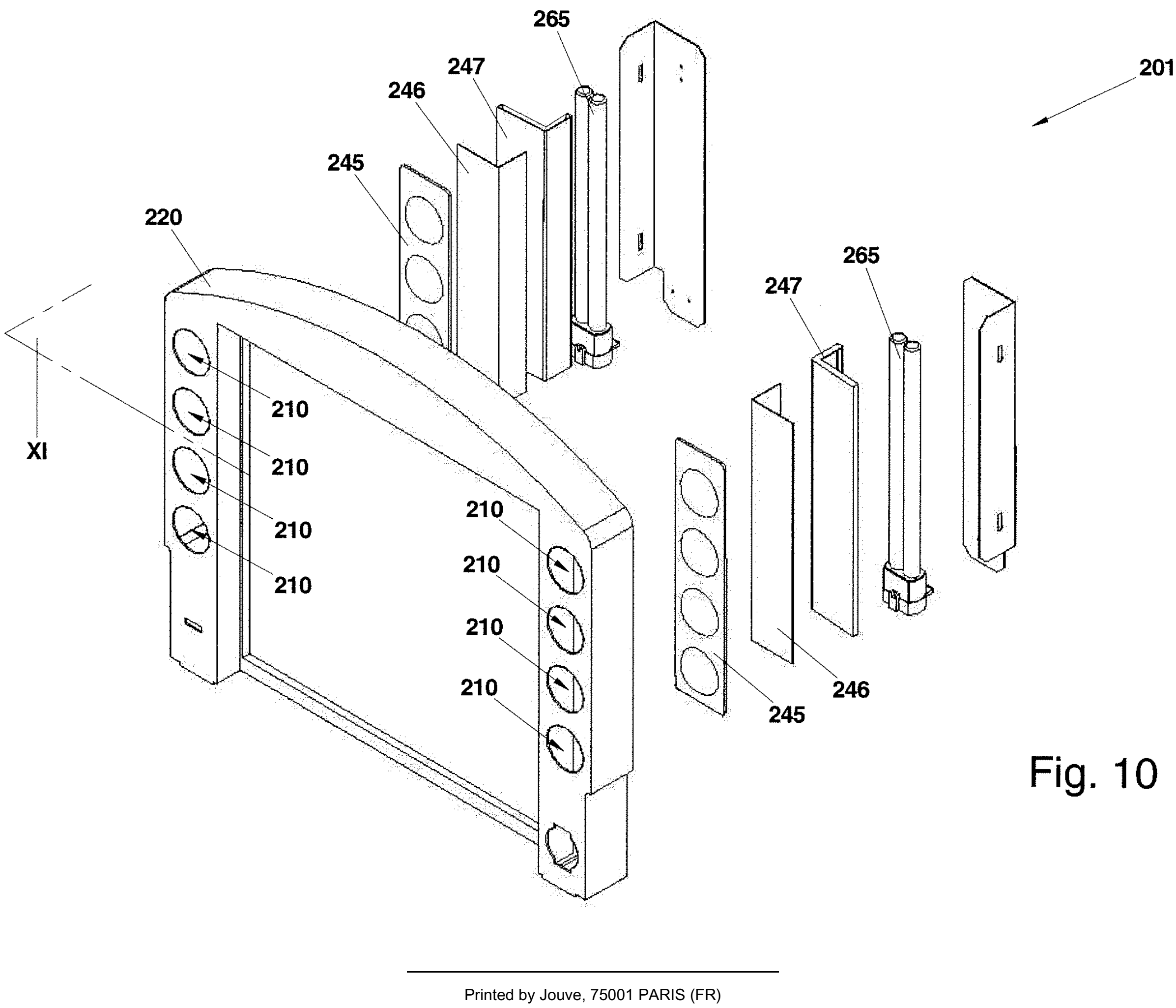

Fig. 10

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Description

[0001] The present invention concerns a mirror with a lighting system. More specifically, the present invention can be applied to the field of mirrors with a lighting system used by professional make-up artists, for example in cinematography, photography or catwalk modelling. Nevertheless, this does not rule out the use of the present invention also in other fields.

[0002] In the field of mirrors for professional use it is desirable to have a lot of light emitted so as to uniformly light up the face of the subject to be made up, at the same time avoiding a glare effect and the emission of heat, since people may have to stay in front of the mirror for many hours, which can thus be uncomfortable.

[0003] Existing mirrors are unable to ensure the optimal presence of all of the desired characteristics. In particular, the most appreciated mirrors are those that comprise a plate of reflective material surrounded by lamps, which still produce a substantial amount of heat. Often some lamps are thus removed by the user at the expense of both the amount of light and its uniform distribution. Moreover, they risk burning the workers or exploding, and they are particularly fragile if subjected to vibrations, especially in the case of transportation in cases. Indeed, it is usual to incorporate professional mirrors inside cases for transporting cosmetics and make-up equipment, and in this case it should also be observed that conventional lamps take up a lot of space at the expense of the remaining objects.

[0004] In the present description and in the following claims by "mirror" we mean a reflective device that comprises at least one reflective portion intended to reflect the image of an object or person located in front of it, and that preferably also comprises other portions and/or elements, like for example a lighting system.

[0005] One of the purposes of the present invention is to totally or at least partially solve the problems of the prior art, in particular to provide a mirror with an optimal lighting system for professional use, and at the same time to reduce to the minimum the elements of discomfort for the users, such as glare and heat.

[0006] A further purpose is to make a mirror with lighting that is more robust compared to the prior art, especially in the case of transportation, and less bulky in the case in which it is incorporated in a case.

[0007] A further purpose is to make a mirror with lighting that is less dangerous than the prior art.

[0008] A further purpose is to make a mirror with lighting that is simpler and less expensive to make than the prior art.

[0009] According to a first aspect thereof the invention comprises a mirror as defined in claim 1, in other words a mirror with lighting system comprising at least one reflective portion, **characterised in that** the mirror comprises a plurality of light emitting points, and at least one light emitting point comprises at least one optical filter.

[0010] In the present description and in the following claims by "optical filter" we mean a filter that selectively allows just a part of the light coming from a light source to pass based on predetermined properties, like for example a predetermined wavelength, or a predetermined colour or light range. The filter can, for example, be selected among the following types: absorption filter, reflection filter, monochrome filter, infrared filter, ultraviolet filter, neutral filter, high-pass or low-pass filter, polarizing filter.

[0011] The filter according to claim 1 preferably comprises a translucent element, i.e. an element that allows light to pass partially without allowing the outlines of a possible body situated behind it to be distinguished, and preferred examples of translucent elements used in the present invention are elements made from opaline materials.

[0012] The first claim is the result of the general intuition that better distribution of light on the face of people is obtained through a plurality of light emitting points and that such distribution is not altered, rather improved, if the light does not directly light up the face of the people to be made up like in the prior art, but it is filtered in order to damp it, and possibly add tones able to emphasise the lit outlines. Thanks to the interposition of the at least one filter between the face of the person and the light source the glare effect of the mirror is negated. Moreover, the at least one optical filter is able to at least partially screen the heat emitted by at least one light source arranged behind it, either physically or for example by filtering the infrared component of the light, making it even more comfortable to stay in front of the mirror. Finally, the at least one optical filter at least partially prevents the contact of an operator with a light source arranged behind it, thus avoiding burns and thus making the mirror safer to use.

[0013] Preferably, the at least one optical filter has an at least partially convex shape, where by convex shape we mean not just a curved shape, although this is preferred, but any cap. This definition thus covers both hemispherical and pyramid-shaped caps. The advantage of this shape is given by a more homogeneous distribution of light, so that, for example, it is possible to move within certain limits towards or away from the mirror and still stay lit in an optimal manner.

[0014] Preferably, said convexity projects at least partially towards the outside of the mirror. In this way, advantageously, the light can be emitted according to a wider lighting cone.

[0015] More preferably, a plurality of light emitting points, and even more preferably all of them, comprise at least one optical filter.

[0016] Advantageously it is preferable for at least one optical filter to have dimensions such that at least one group of light emitting points comprise it as common optical filter, so that the number of components of the mirror reduces, and its constructive simplicity increases.

[0017] According to a particularly preferred solution of the invention at least one light emitting point comprises at least two optical filters, preferably of different types.

[0018] More preferably, a plurality of light emitting points, even more preferably all of them, comprise at least two optical filters.

[0019] According to a general aspect of the invention, the two optical filters, if present, are preferably arranged in series with one another so as to be both crossed by the same ray of light coming out from the mirror.

[0020] Constructively, a particularly advantageous case is the one in which at least two optical filters have dimensions such that at least one group of light emitting points comprise them both as common optical filters, so that the total number of components of the mirror is less.

[0021] Preferably, one of the at least two optical filters comprises a rigid element, whereas the other comprises a yielding element. In this way, advantageously, the rigid filter can contribute to preventing the accidental contact or the collision of a possible light source placed behind it. In addition, the first filter acts as protection for the second filter against external agents or against the abrasion due to cleaning, use or transportation, and in this way the second filter can be more perishable than the first.

[0022] Moreover, preferably the yielding filter is pressed against the rigid filter, which in this way acts as a support element. The yielding filter, indeed, preferably is of the type comprising at least one layer of gel, for example polycarbonate or acrylic. On the one hand the use of gel avoids increasing the bulk and weight of the mirror, especially if used in association with a case, and on the other hand the fact that the gel is kept pressed against a rigid element prevents it from curling due to the heat.

[0023] The man skilled in the art will understand that the ideal distribution of components going from the inside towards the outside of the mirror is given by: at least one light source, at least one yielding optical filter, at least one rigid optical filter, however, this does not rule out applications in which the yielding optical filter is arranged just or also outside of the rigid filter.

[0024] Preferably, the light emitting points are oriented so as to emit light directly towards an object or person located in front of the mirror in a position such as to be reflected.

[0025] In order to keep down the number of components and the cost of the mirror it is preferable for at least one group of light emitting points to filter the light coming from the same light source.

[0026] Moreover, the mirror preferably comprises a bearing structure that supports a plate of reflective material, the at least one optical filter and at least one light source. In this way, the mirror is made as a self-supporting unit and it can be introduced for example into cases of the standard type or in any case into cases that do not require special preparatory work.

[0027] In this way, when one or more of the light emitting points comprise at least two optical filters, both of them are preferably supported by the bearing structure, directly or indirectly.

[0028] The bearing structure preferably comprises at least one support element in a single piece made from thermoplastic or thermosetting material, preferably opaque where preferably all of the light emitting points are made. Such materials, as well as being particularly cost-effective, allow practically any kind of shape to be made, for example it is possible to form the bearing structure comprising one or more box-like structures containing one or more light sources. The light emitting points are made as openings of the box-like structure each screened by one or more filters.

[0029] According to a totally general consideration of the invention, the Applicant has identified the best ratio between reflective portion and light emitting points for professional requirements, in particular the area A1 of the reflective portion is within the range [0.10 - 0.50] m2, more preferably [0.15 - 0.25], and the total area of light emission A2, i.e. the sum of the area of all of the light emitting points, is less than or equal to 1/5, more preferably less than or equal to 1/10, of A1.

[0030] According to a totally general consideration of the invention, the Applicant has worked out that the light emitting points defined by edges with a substantially curved shape allow better light distribution, since they do not produce problematic shadows during make-up application.

[0031] According to a second aspect thereof, the present invention comprises a mirror according to claim 19, in other words a mirror with a lighting system comprising at least one reflective portion and at least one light emitting portion, **characterised in that** the light emitting portion comprises at least one optical filter arranged behind a rigid element that light can at least partially pass through. In this way, it is advantageously possible to apply optical filters that are even very delicate and technical to the field of mirrors for professional make-up, since thanks to the protection of the rigid element they are not damaged or dirtied during use, during cleaning of the mirror or during possible transportation, for example if the mirror is associated with a case. Preferably, the light emitting portion comprises a plurality of light emitting points.

[0032] According to a third aspect thereof the present invention comprises a unit according to claim 19, in other words an image reflection unit comprising a bearing structure, at least one plate of reflective material and at least one light source, the bearing structure comprising at least one box-like seat inside which the at least one light source is housed and comprising at least one light emission opening preferably screened by one or more optical filters. The plate of reflective material is supported by the bearing structure outside of the box-like seat, and preferably it is at least partially surrounded by one or more of such box-like seats. Such a unit can advantageously be easily transported or inserted as an accessory into other elements, such as cases, for example of the standard type, without significant - or any - change to such elements.

[0033] According to a fourth aspect thereof the invention comprises a case according to claim 20, **characterised in that** it comprises a mirror or a unit according to any one of the previous aspects.

[0034] The mirror or unit structure according to the present invention, indeed, lends itself very well to transportation since it is compact and particularly robust, and, moreover, its bulk inside the case does not interfere with the presence of other objects, which on the other hand in the prior art can get caught between the lamps. Moreover, the residual heat transmitted inside the case is minimal.

[0035] Preferably, the at least one support element is coupled with a portion of a case, so that the mirror is arranged for use always associated with the case itself. Even more preferably, such a coupling is with one of the closing panels of the case, so that the other panel remains available for the transportation of other objects. According to a further preferred solution, the coupling is jointed, so as to require little or no adaptation of the case, which can for example be of the standard type.

[0036] According to a fifth aspect thereof the invention concerns the use of a mirror, of a unit or of a case as defined, respectively, in claims 1 to 19, for professional make-up.

[0037] According to a sixth aspect thereof the invention comprises a mirror with a lighting system comprising at least one reflective portion, **characterised in that** it comprises a plurality of light emitting points, at least one of which comprises at least one optical filter arranged in front of at least one light source.

[0038] According to a seventh aspect thereof the invention concerns a mirror with a lighting system according to claim 21, in other words a mirror with a lighting system comprising at least one reflective portion and at least one light emitting portion, **characterised in that** the light emitting portion is placed inside the reflective portion. Preferably, the light emitting portion comprises a plurality of light emitting points.

[0039] According to other general considerations of the invention, preferably the at least one light source used has low emission of heat so as to allow even more comfortable use of the mirror or unit. Moreover, the residual heat after the light source has been switched off it minimal and dissipates quickly, for which reason in the case in which the mirror or unit is closed inside a case for the transportation of cosmetics or make-up tools there is no deterioration of such products. The preferred solutions comprise at least one light source with a power within the range [25,100] WATT, more preferably [40, 60] WATT. Preferably the total power of the mirror is within the range [25,600] WATT, more preferably [25, 400] WATT. The Applicant has found it to be particularly advantageous to use at least one neon and/or at least one LED as the light source - more preferably a light source comprises a series of LEDs with a total power within the ranges indicated above.

[0040] Further characteristics and advantages of the present invention will become clearer from the following detailed description of preferred embodiments thereof, made with reference to the attached drawings and given just for indicating and not limiting purposes. In such drawings:

- figure 1 schematically represents a perspective view according to a frontal observation point of a mirror according to the present invention;
- figure 2 schematically represents an exploded perspective view according to a frontal observation point of the mirror of figure 1;
- figure 3 schematically represents an exploded perspective view according to a rear observation point of the mirror of figure 1;
- figures 4 and 5 schematically represent respective front and side views of a translucent element of the mirror of figure 1;
- figure 6 schematically represents a perspective view according to a rear observation point of the mirror of figure 1;
- figure 7 schematically represents a section of the mirror along the horizontal plane VII of figure 6;
- figure 8 schematically represents a perspective view of a case comprising the mirror of figure 1;
- figure 9 schematically represents a perspective view according to a frontal observation point of an alternative embodiment of the mirror of figure 1, in particular comprising LEDs;
- figure 10 schematically represents a perspective view according to a frontal observation point of a second alternative embodiment of the mirror of figure 1 comprising an additional optical filter placed in front of the light source;
- figure 11 schematically represents a section of the mirror along the horizontal plane XI of figure 10;
- figure 12 schematically represents a perspective view according to a frontal observation point of a third alternative embodiment of a mirror according to the present invention;
- figure 13 schematically represents a front view of a fourth alternative embodiment of a mirror according to the present invention; and
- figure 14 schematically represents a perspective view according to a frontal observation point of a fourth alternative embodiment of a mirror according to the present invention inserted into a case with sup-

port legs.

[0041] Initially with reference to figure 1, a mirror with a lighting system in accordance with the present invention is shown. Such a mirror with lighting hereafter will in short be called "mirror" and will be wholly indicated with reference numeral 1.

[0042] The mirror 1 comprises a reflective portion 5, preferably but not exclusively central, and a plurality of light emitting points 10, preferably but not exclusively arranged outside of the reflective portion 5. The reflective portion 5 and the light emitting points 10 are arranged on a bearing structure 15 preferably, but not exclusively, comprising a single support element 20, or frame, made for example from thermoplastic or thermosetting material.

[0043] The reflective portion 5 preferably is polygonal in shape, in the example shown rectangular, and the light emitting points 10 surround at least one of its sides 24, more preferably at least two parallel sides 24 and 26, even more preferably two vertical sides 24 and 26. Preferably, a section of length H1 equal at least to half of the height H2 of the at least one side 24, more preferably of both sides 24 and 26, is surrounded by light emitting points 10. In figure 1 it is shown H1>H2, moreover, the man skilled in the art will understand that the greater the distribution of light points, the better the uniformity of the lighting, for which reason he will know how to adapt the invention for example to obtain H1=H2. The Applicant also observes that the best lighting results are obtained when the maximum extension D3 of each light emitting point 10 is less than or equal to one quarter of the length H2 of the side 24, 26 of the reflective portion 5 along which they are arranged. In other words, when the light emitting points 10 have a small area with respect to the reflective portion 5 and they are numerous, better if distributed with equal distances from one another or in groups inside which they are equal distances apart. For example, in the case in which the light emitting points have a circular edge, their diameter is preferably within the range [0.0030 - 0.0080] m.

[0044] The Applicant also observes that, in order to improve the lighting and decrease the glare, it has identified the best ratio between the area A1 of the reflective portion and the total light emitting area A2, i.e. the sum of the area of all of the light emitting points, preferably indeed the area A1 is within the range [0.10 - 0.50] m2, more preferably [0.15 - 0.25] and the total light emitting area A2, i.e. the sum of the area of all of the light emitting points is less than or equal to 1/5, more preferably less than or equal to 1/10, of A1. Preferably, moreover, the light emitting points 10 are arranged aligned with the edge of the reflective portion 5, so as to be grouped in series, however the man skilled in the art will known how to adapt the invention to cases in which such points have a different distribution.

[0045] As can be seen in figure 1, the light emitting points are oriented so as to project beams of light in the frontal direction with respect to the mirror 1, i.e. in such a way as to directly hit a person located in front of the mirror and looking to reflect their own image. Also on this aspect the man skilled in the art will be able to understand that other orientations can be used, even if they are less preferred, for example such that the light beams light up the reflective portion 5.

[0046] Again figure 1 highlights that the light emitting points 10 are grouped at one or more portions having a box-like shape 28 of the support element 20. The man skilled in the art will understand that in the case of a single group of light emitting points 10 one box-like structure will be sufficient, but in the case in which there is more than one group of light emitting points 10, for example two indicated with the reference numerals 30 and 31 in figure 1, it will be possible to adopt one box-like structure for each group or for more than one group. In the case illustrated, there is just one box-like structure 28 for the two groups 30 and 31, since it extends over three sides of the reflective portion 5, including a side optionally without light emitting points. The reflective portion 5 in this case is set back, in other words built in, with respect to the light emitting points 10, and comprises for example a plate of reflective material. Advantageously, the front space 35 circumscribed by the box-like structure 28 can be exploited to house other objects in the case in which the mirror 1 is associated with a case, as will be described hereafter.

[0047] Now with reference to figures 2, 3 4 and 5 the lighting system of the mirror 1 will be described in greater detail. As better shown in figures 2 and 3, the box-like structure 28 comprises a plurality of openings 38 corresponding to the light emitting points 10 and defined by edges 40, preferably curved, more preferably substantially circular, for example with a diameter within the range [0.0030 - 0.0080] m.

[0048] Each opening 38 is screened by an optical filter 45, comprising for example a translucent element, preferably configured like a cup or bulb, so as to project through the opening towards the front area of the mirror. In other words, it is preferable for the cups 45 to be the portions farthest forwards in the frontal direction of the mirror. In the detail of figure 7, it is clearly visible how the front openings 38 are formed at an opaque front plane 39 of the support element 20 and the cups 45 are frontally farther forward with respect to this plane.

[0049] As better shown in figures 4 and 5, preferably the translucent elements 45 of an entire group 30, 31 of light emitting points 10 are joined in a single translucent element 50 comprising a flat edge 52 from which the cups 45 project. The flat edge 52 is preferably glued to the inner side 54 (fig 3) of the box-like structure 28 around the edge 40 of the openings 38. The man skilled in the art will, nevertheless, be able to understand that other systems for fixing the translucent element 50 to the support element 20 can be adopted, like for example thrusting elements, screws or rivets.

[0050] As can be seen more clearly in figure 3, the box-like structure 28 forms a rear space 60 on the back of the mirror 1, capable of receiving both the translucent elements 50 and other components of the lighting system, preferably all of them. In particular, at least one light source 65 is housed in the rear space 60. In the illustrated embodiment two light sources 65 are used, one for each group of light emitting points 30 and 31. In greater detail, the light sources 65 illustrated in figures 2 and 3 are neon. The man skilled in the art will nevertheless understand that other types of light sources can be used, in particular of particular interest for the purposes of the invention are light sources with low heat emission, for example with a power within the range [25,100] WATT and more preferably [40, 60] WATT. The number of light sources used, moreover, can also vary largely with respect to what is illustrated, being able to reach one or more than one light source for each light emitting point 10, even if preferably the total power absorbed by the lighting system stays within the range [25,600] WATT and more preferably [25, 400] WATT.

[0051] Each light source 65 is supported by the support element 20, directly or through the interposition for example of a second support element or frame 68, fixed to the support element 20 for example through screws, rivets or jointing. In the example illustrated in figures 2 and 3, the second support element comprises a plate bent into an L shape.

[0052] Figure 6 shows, from a rear point of observation, the mirror 1 completely mounted, and figure 7 represents a detail thereof in section according to the plane VII, in particular said figures highlight that the mirror 1 with lighting system forms a self-supporting unit in which all of the elements are supported by the support element 20. In particular the light source(s) 65 and the second support element 68 are preferably stably kept inside the rear space 60.

[0053] Figure 8 represents the mirror 1 inserted into a professional make-up case 70, for example of the wheeled type with support legs 76 able to be reclined to form a work plane. The closing panels 72 of the case 70 can for example be of the standard type, since the mirror 1 forms a single unit that can be inserted into one of them without modifications. In the other closing panel 72 there is a space to house object-holders 74 of the desired shape. It should be observed that when the closing panels are closed the space 35 of the mirror 1 leaves space to house the object-holder 74 or other objects to be transported in the case.

[0054] Hereafter some alternative embodiments of the invention will be described where elements that are the same or similar will be indicated with the same reference numerals used above and increased by 100 or by a multiple thereof.

[0055] With reference now to figure 9, a mirror 101 is illustrated that differs from the mirror 1 solely for the fact that it comprises a series of LEDs 165 instead of each neon 65. All of the remaining components are the same as the embodiment of figures 1 to 8.

[0056] With reference to figures 10 and 11, a mirror 201 is illustrated that differs from the mirror 1 of figures 1 to 8 in that it comprises, for each light emitting point 210, a second optical filter 246 in addition to the first optical filter 245. Both of the filters 245 and 246 are placed in front of the light source 265 and supported by the support element 220. In particular, the first filter 245 is a rigid filter, for example identical to the filter 45 of figures 1 to 8, and it is preferably glued inside the rear space 260. The second filter 246 is preferably an optical filter of a different type to the first filter 245, for example it is a UV ray filter, and even more preferably it is made with a yielding material, for example gel. The rigid filter 245 can advantageously be used as a support for the gel filter 246, which for example can stick to it, and/or be kept at least partially pressed against it through a thrusting element 247. For reasons of protection it is preferable for the gel filter 246 to be totally contained in the rear space 260, or for it to be totally placed behind the rigid filter 245. Like in the case of figure 1, it is preferable for the filters 245 and 246 to have an extension such as to be common to many light emitting points 210.

[0057] As can be seen more clearly in figure 11, the thrusting element 247, for example, can be a rigid element, comprising a front face 280 able to be at least partially passed by light. The face 280 can be transparent or open, for example made from plexiglass, in such a way as to allow light to pass without a substantial filtering effect, or alternatively it can be a third rigid optical filter. Two wings 282 and 283 extend laterally to the front face 280 and substantially perpendicular to it, one wing preferably extending farther than the other and at least one being intended for attachment to the support element 220, for example through gluing, rivets or screws. According to an alternative that is not illustrated the thrusting element 247 is elastic and presses against two opposite walls 261 and 262 of the rear space 260 so as to be held there elastically, and so as to squash at least one portion 263 of the gel filter 246 at least against one of such walls.

[0058] With reference to figure 12, a mirror 301 is illustrated that differs from the mirror 1 in that the light emitting points 310 are placed inside the reflective portion 305. In general, this characteristics makes it possible to have a greater diffusion of light. This is preferably obtained by forming a front portion of the mirror 301 all on the same reflective plane 339. Even more preferably, the reflective portion 305 is divided in a central portion 305A and in an edge portion 305B, where the light emitting points 310 are positioned inside the reflective edge portion 305B. The edge portion 305B can for example be made from thermoplastic or thermosetting material, whereas the central portion 305A can for example be made from glass. Advantageously, in this way the need to perforate the glass reflective part to make the light emitting points is avoided, which could be fragile and break. The final optical effect is of a single totally reflective surface 339 but with the strength and protection given by the edge made from thermoplastic or thermosetting material. The remaining parts of the mirror 301 can for example be made like for the other embodiments or combinations thereof.

[0059] With reference to figure 13, a mirror 401 is illustrated that differs from the mirror of figure 1 in that it has light emitting points 410 of rectangular or square shape arranged along two side edges 428. The remaining parts of the mirror 401 can for example be made like for the other embodiments or combinations thereof.

[0060] With reference to figure 14, a case 570 is illustrated that differs from the case 70 in that it contains a mirror 501 of substantially rectangular shape, in particular with the upper edge 428B straight. The remaining parts of the mirror 401 can for example be made like for the other embodiments or combinations thereof.

[0061] Although the embodiments described and illustrated up to now comprise a rigid optical filter, the man skilled in the art will understand, according to a totally general aspect of the invention, that in the case in which a second filter is adopted the first can be replaced by an element that light can totally pass through, i.e. without a substantial filtering effect, so as to be just a protection for the second filter placed behind it. The second filter can thus also be the only filter and preferably be entirely contained in the box-like structure.

[0062] In addition, it should be observed that although all of the embodiments described and illustrated up to here comprise light sources common to many light emitting points, this does not rule out solutions in which one, some or all of the light emitting points have their own dedicated light source.

[0063] Again in addition it should be observed that although all of the embodiments described and illustrated up to here comprise a series of light emitting points of regular shape and arranged in series on two sides of the reflective portion, this does not rule out solutions with different arrangements and/or shapes of the light emitting points. For example, one or more light emitting points can also be arranged along the upper edge of the mirror, their shape being able to be the same as or different from that of possible other light emitting points. For example, it is possible to foresee one or more openings in such an upper edge to form a logo, a symbol, a trademark or a generic word as a whole.

[0064] Of course, the embodiments described and illustrated up to here are purely examples and a man skilled in the art can bring numerous modifications and variants, in order to satisfy specific and contingent requirements, including for example the combination of said embodiments, all of which are moreover covered by the scope of protection of the present invention as defined by the following claims.

Claims

1. Mirror with lighting system comprising at least one reflective portion (5, 305, 405), **characterised in that** the mirror comprises a plurality of light emitting points (10, 210, 310, 410), and at least one light emitting point comprises at least one optical filter (45, 245, 246).

2. Mirror according to claim 1, **characterised in that** the at least one optical filter (45, 245, 246) has an at least partially convex shape.

3. Mirror according to claim 2, **characterised in that** said convexity projects at least partially towards the outside of the mirror.

4. Mirror according to any one of the previous claims, **characterised in that** a plurality of light emitting points (10, 210, 310, 410), preferably all of them, comprise at least one optical filter (45, 245, 246).

5. Mirror according to claim 4, **characterised in that** at least one optical filter (45, 245, 246) has dimensions such that at least one group of light emitting points comprise it as common optical filter.

6. Mirror according to any one of the previous claims, **characterised in that** at least one light emitting point (10, 210, 310, 410) comprises at least two optical filters (245, 246), preferably of different types.

7. Mirror according to claim 6, **characterised in that** a plurality of light emitting points (10, 210, 310, 410), preferably all of them, comprise at least two optical filters (245, 246).

8. Mirror according to any one of claims 6 to 7, **characterised in that** one of the at least two optical filters (245, 246) comprises a rigid element (245), whereas the other comprises a yielding element (246).

9. Mirror according to claim 8, **characterised in that** the yielding filter (246) is pressed against the rigid filter (245).

10. Mirror according to any one of the previous claims, **characterised in that** the light emitting points (10, 210, 310, 410) are oriented so as to emit light directly towards an object or person located in front of the mirror in a position such as to be reflected.

11. Mirror according to any one of the previous claims, **characterised in that** at least one group of light emitting points (10, 210, 310, 410) filter the light coming from the same light source (65, 165, 265).

12. Mirror according to any one of the previous claims, **characterised in that** it comprises a bearing structure (15) that supports a plate of reflective material (5), the at least one optical filter (45, 245, 246) and at least one light source (65, 165, 265).

13. Mirror according to any one of the previous claims, **characterised in that** the light emitting points (10, 210, 310) are defined by substantially curved shaped edges.

14. Mirror according to any one of the previous claims, **characterised in that** the area A1 of the reflective portion (5, 305, 405) is within the range [0.10 - 0.50] m2, more preferably [0.15 - 0.25], and the total light emission area A2, i.e. the sum of the area of all of the light emitting points (10, 210, 310), is less than or equal to 1/5, more preferably less than or equal to 1/10, of A1.

15. Mirror with lighting system comprising at least one reflective portion (5, 305) and at least one light emitting portion (10, 210), **characterised in that** the light emitting portion (10, 210, 310) comprises at least one optical filter (246) arranged behind a rigid element (245) at least partially able to allow light to pass through it.

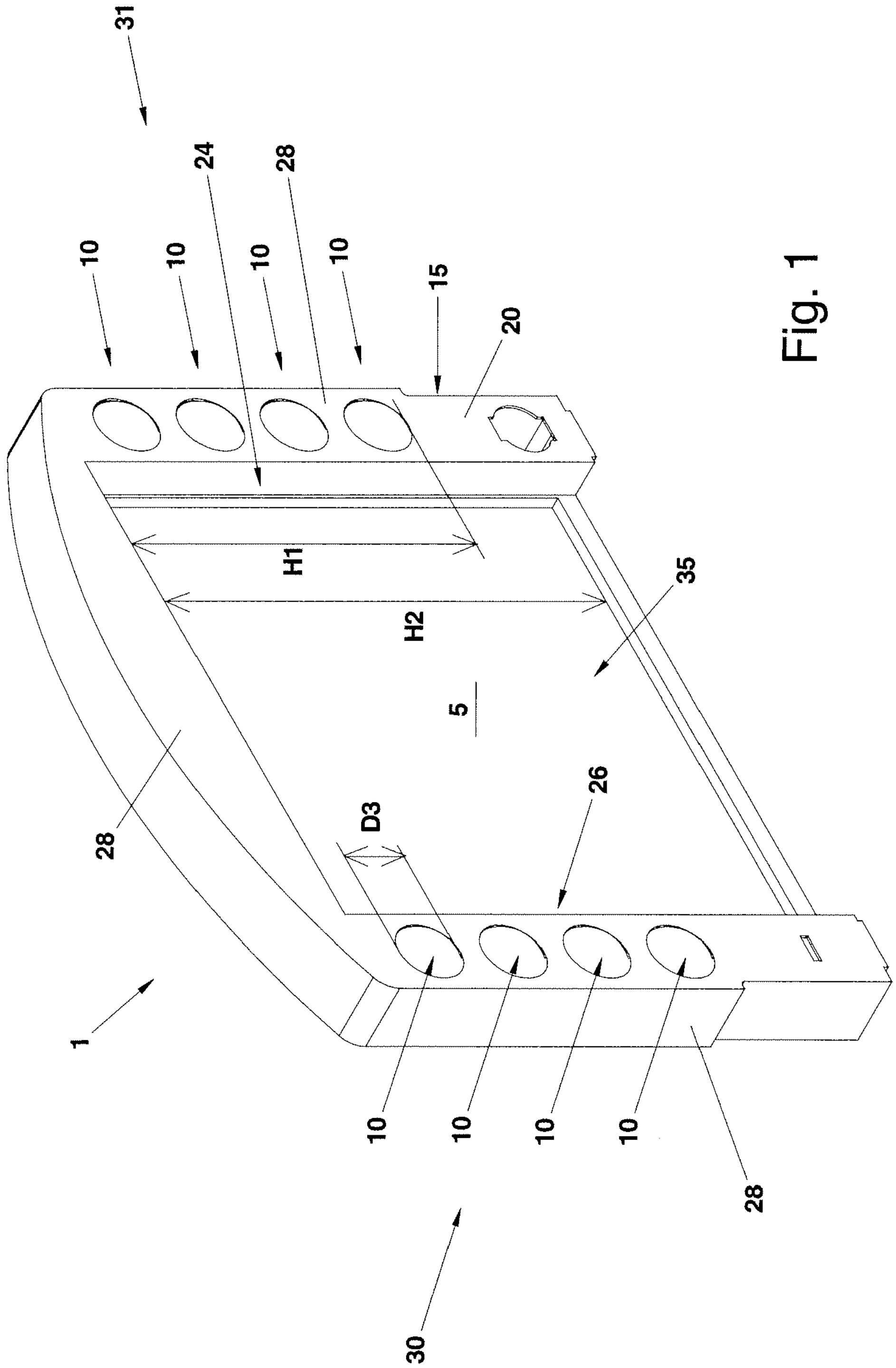


Fig. 1

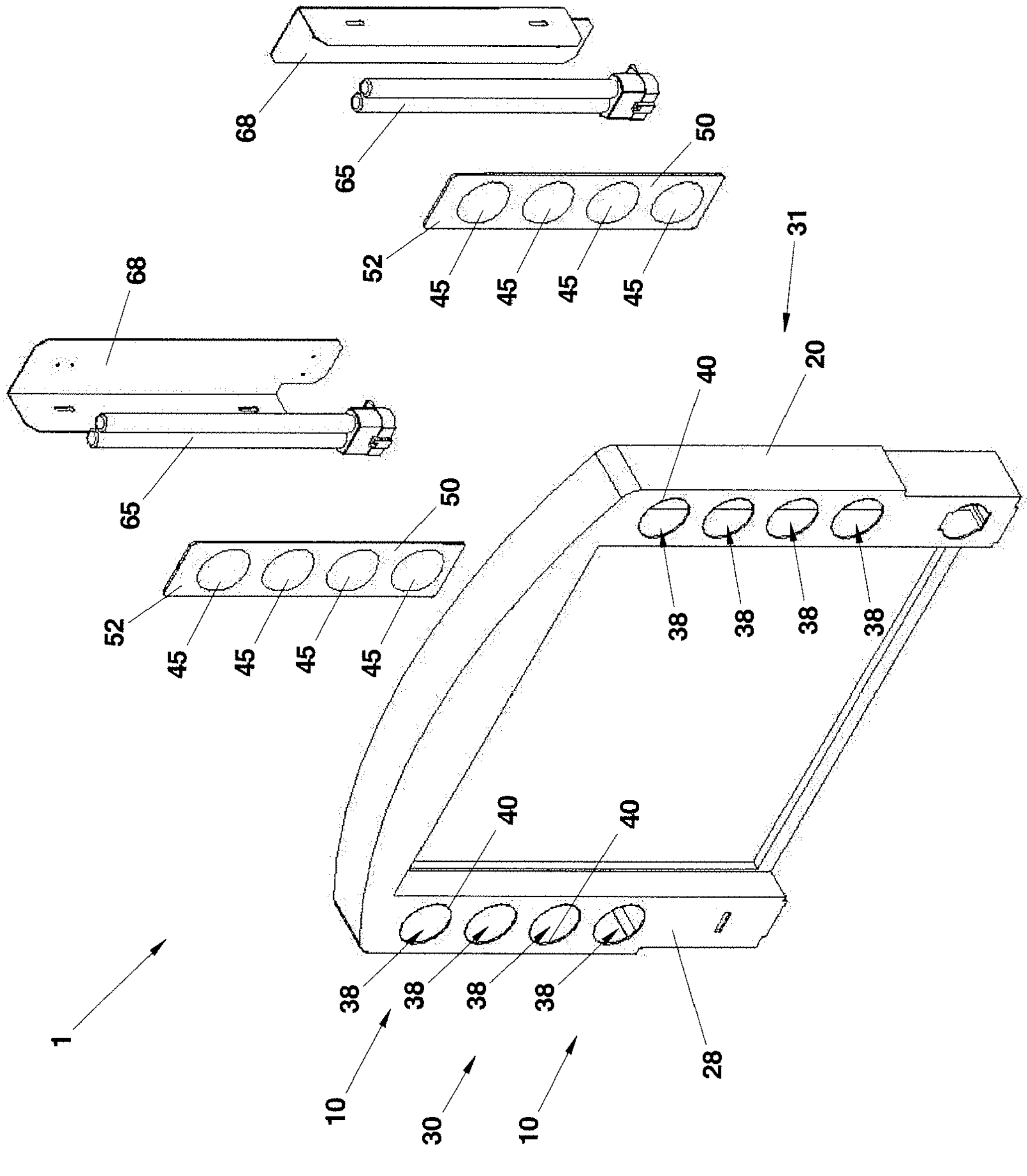


Fig. 2

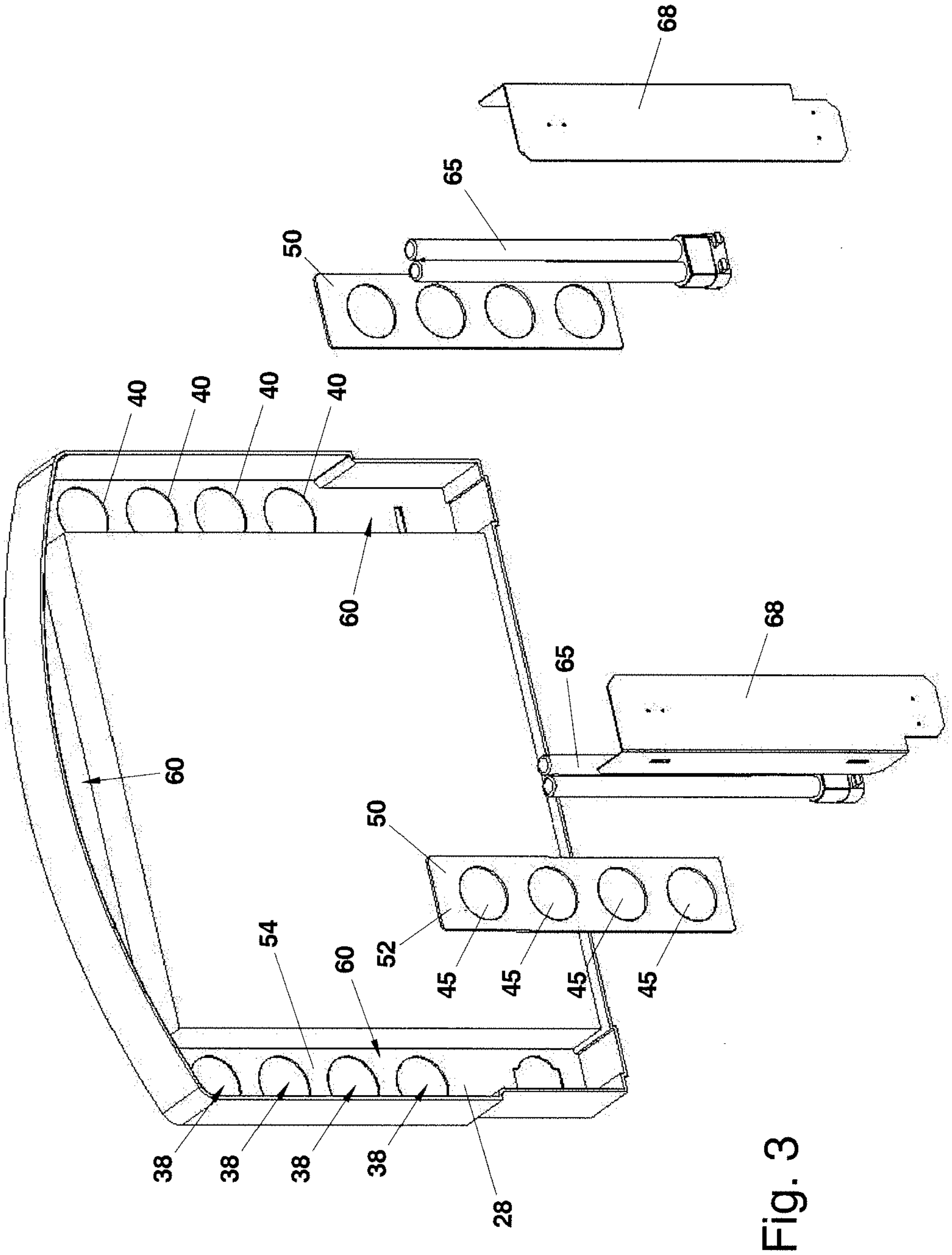


Fig. 3

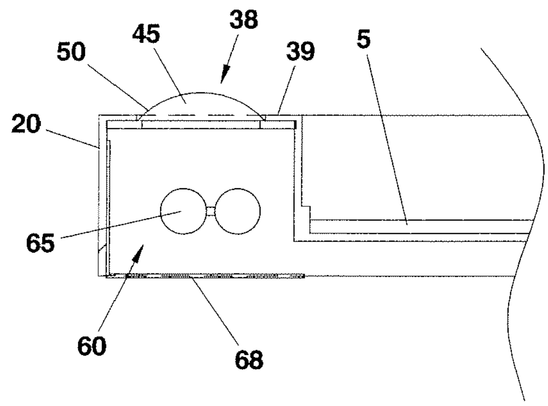
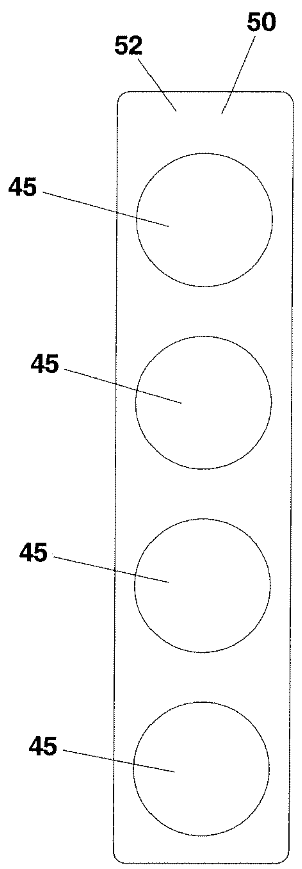


Fig. 7



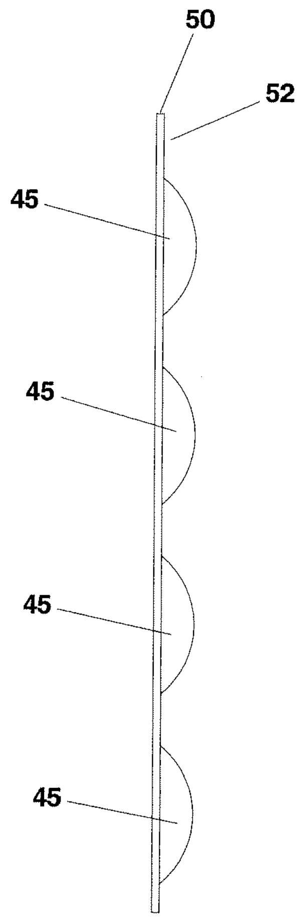


Fig. 4

Fig. 5

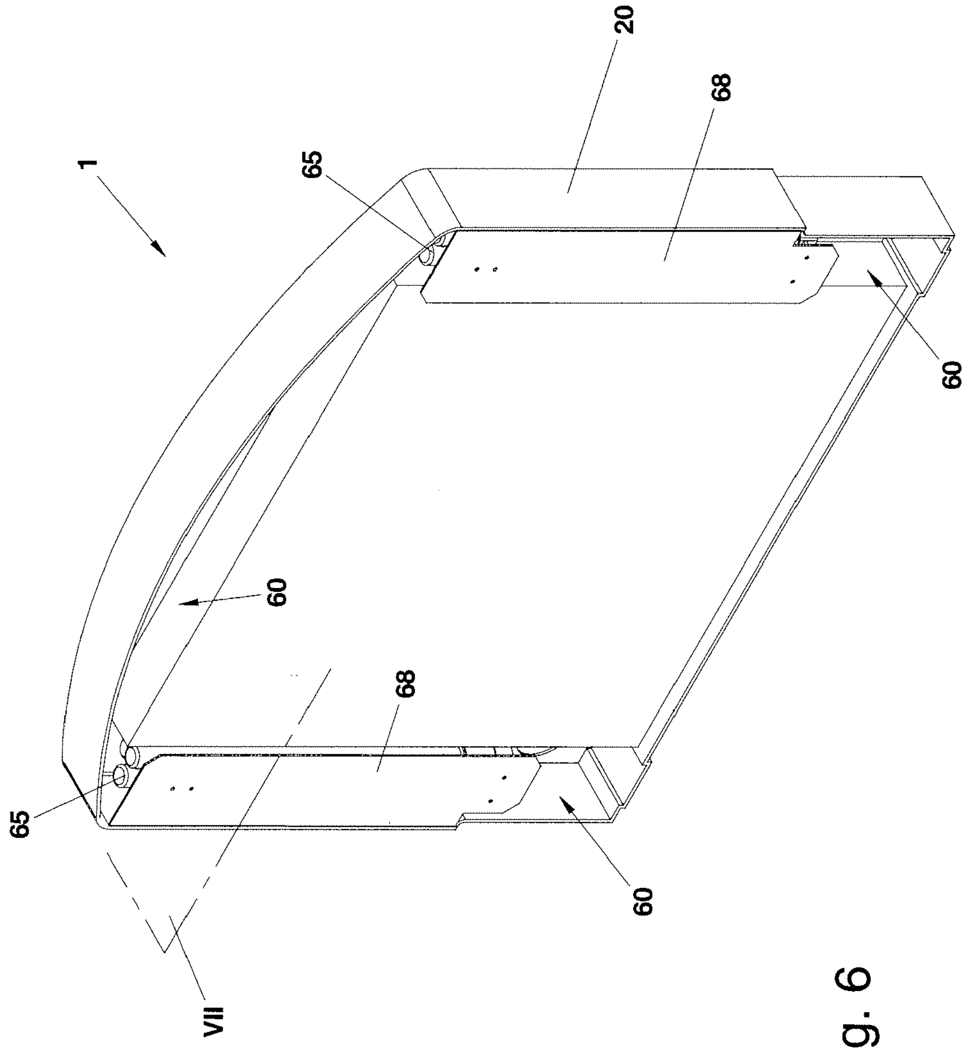


Fig. 6

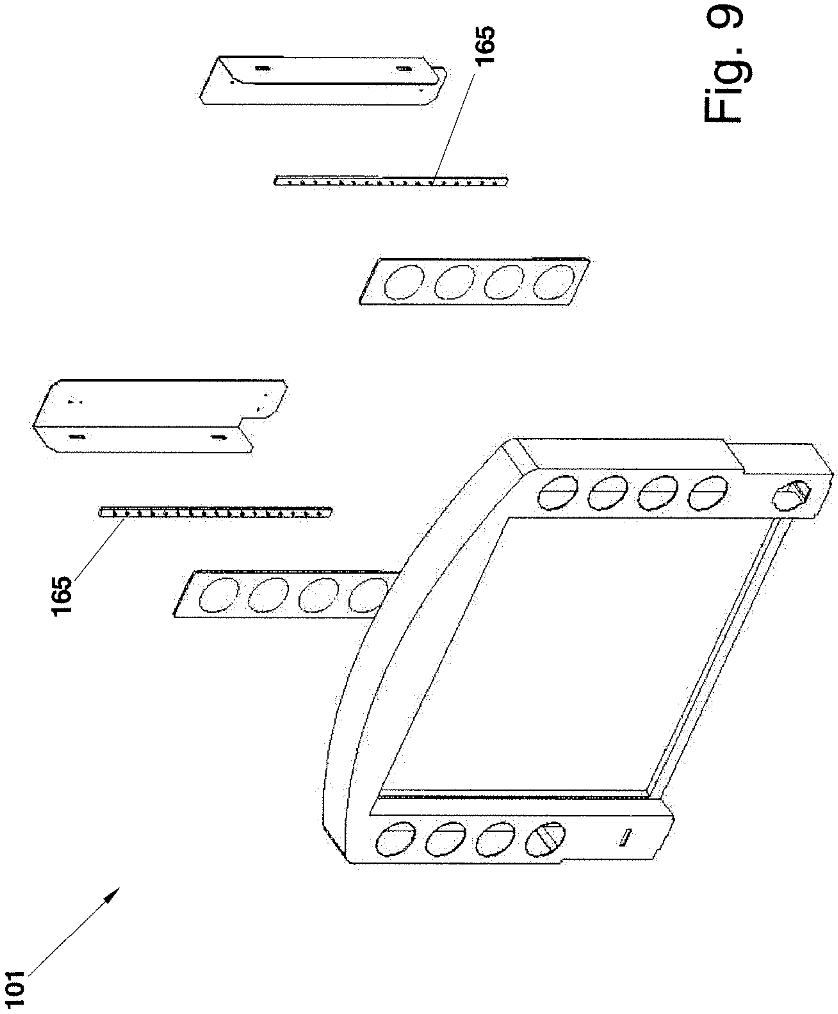
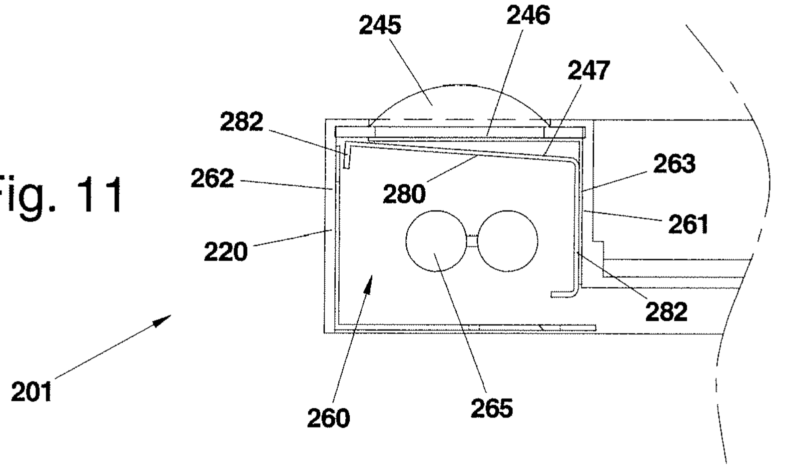


Fig. 9

Fig. 11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201
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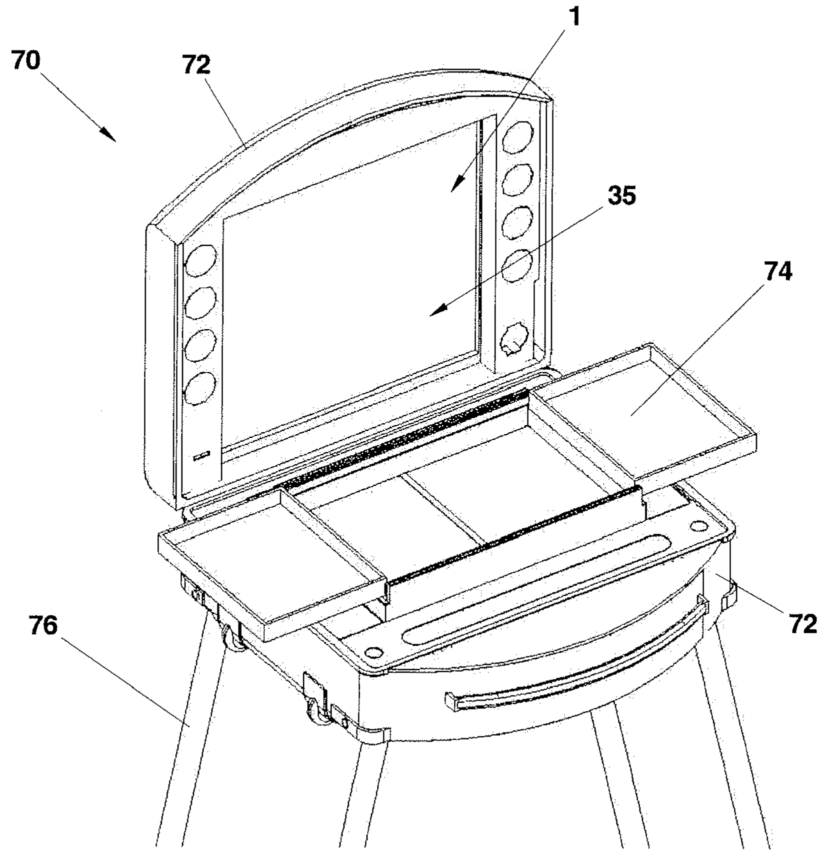
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Fig. 8

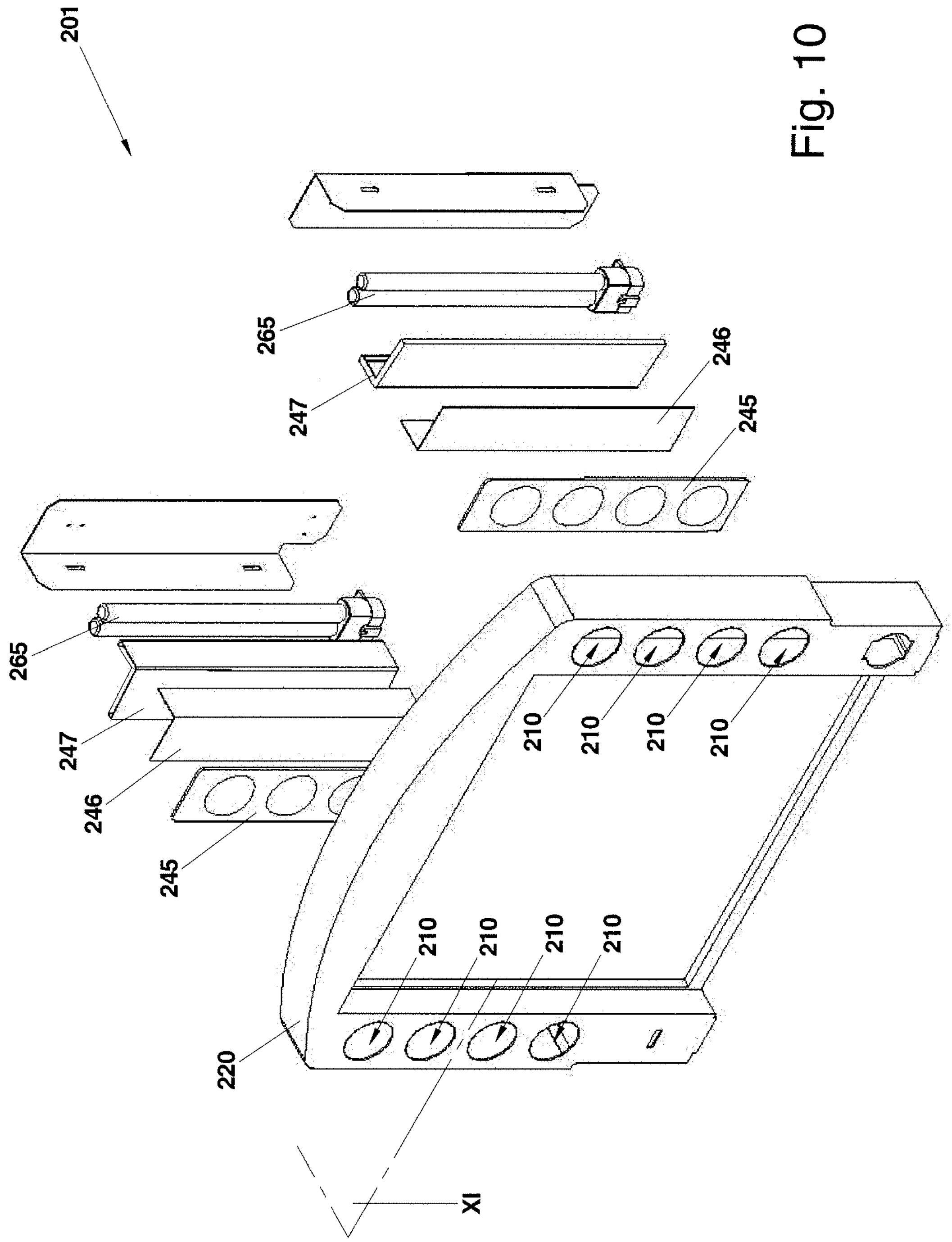
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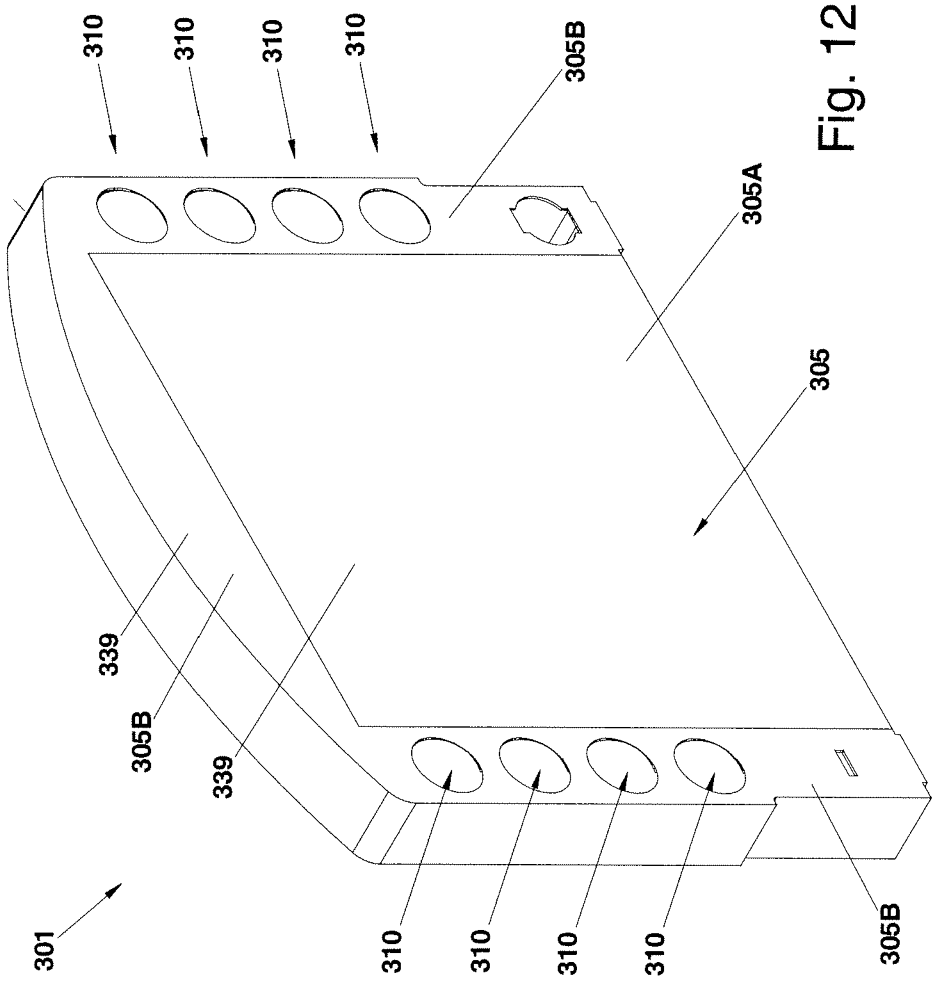
Fig. 10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305B

Fig. 12

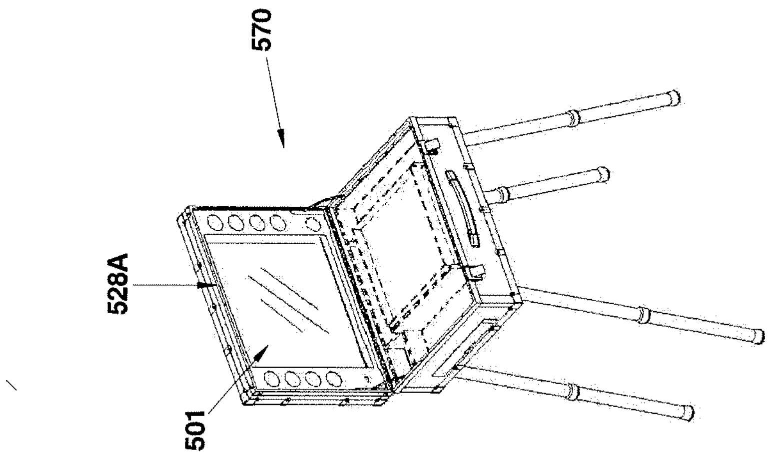

Fig. 14

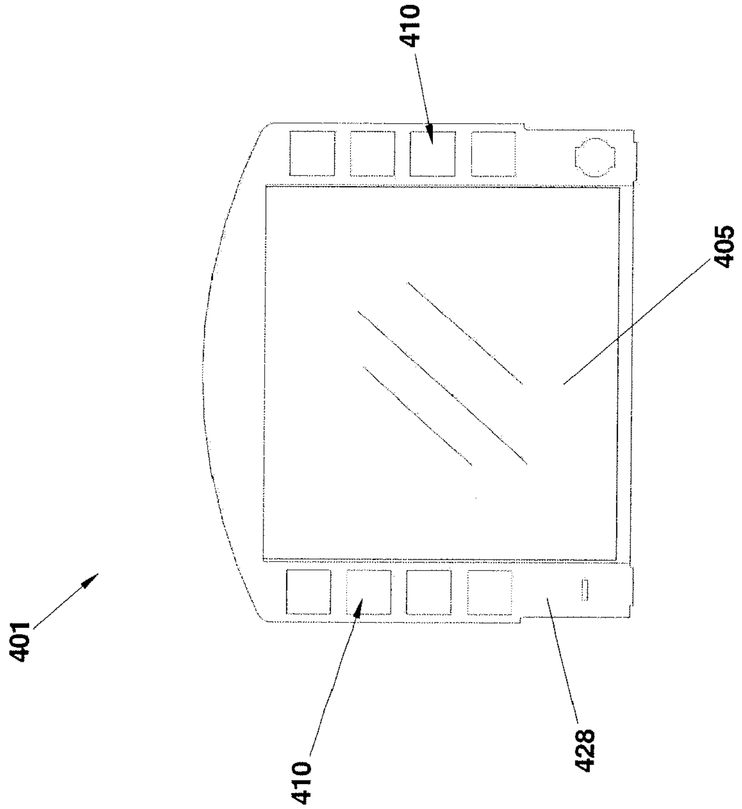

Fig. 13

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EUROPEAN SEARCH REPORT

Application Number
EP 10 17 6362

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 3 757 103 A (WALTER H) 4 September 1973 (1973-09-04) * column 4, lines 10-34 * -----	1-8, 10-15	INV. A47G1/02
X Y	EP 1 792 553 A2 (DAR LIGHTING LTD [GB]) 6 June 2007 (2007-06-06) * abstract; figures 1-6 * -----	1-6, 10-15 9	
X	US 2 046 393 A (HENRY LEWINSOHN ET AL) 7 July 1936 (1936-07-07) * page 1, column 1, lines 1-3 - page 2, column 2, lines 13-36; figures 1-19 * -----	1-5, 10-13,15	
X	GB 2 241 435 A (INWARDS JOHN DEREK) 4 September 1991 (1991-09-04) * abstract * * page 6, lines 4-21 - page 7, lines 1-19; figures 1,3 * -----	1-8, 10-15	
Y	GB 2 384 424 A (PAUL VERBURG LTD [GB]) 30 July 2003 (2003-07-30) * page 10, lines 1-10; figure 1 * -----	9	TECHNICAL FIELDS SEARCHED (IPC) A47G A45D F21V

The present search report has been drawn up for all claims

1

Place of search	Date of completion of the search	Examiner
The Hague	26 November 2010	Longo dit Operti, T

CATEGORY OF CITED DOCUMENTS

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26-11-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3757103 A	04-09-1973	CA 949526 A1	18-06-1974
EP 1792553 A2	06-06-2007	GB 2432904 A	06-06-2007
US 2046393 A	07-07-1936	NONE	
GB 2241435 A	04-09-1991	AU 7443491 A	18-09-1991
		WO 9112753 A1	05-09-1991
GB 2384424 A	30-07-2003	EP 1472492 A1	03-11-2004
		WO 03064920 A1	07-08-2003
		JP 2005516361 T	02-06-2005
		US 2005174756 A1	11-08-2005

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