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(54) SADDLE TREE FOR A HORSE-RIDING SADDLE

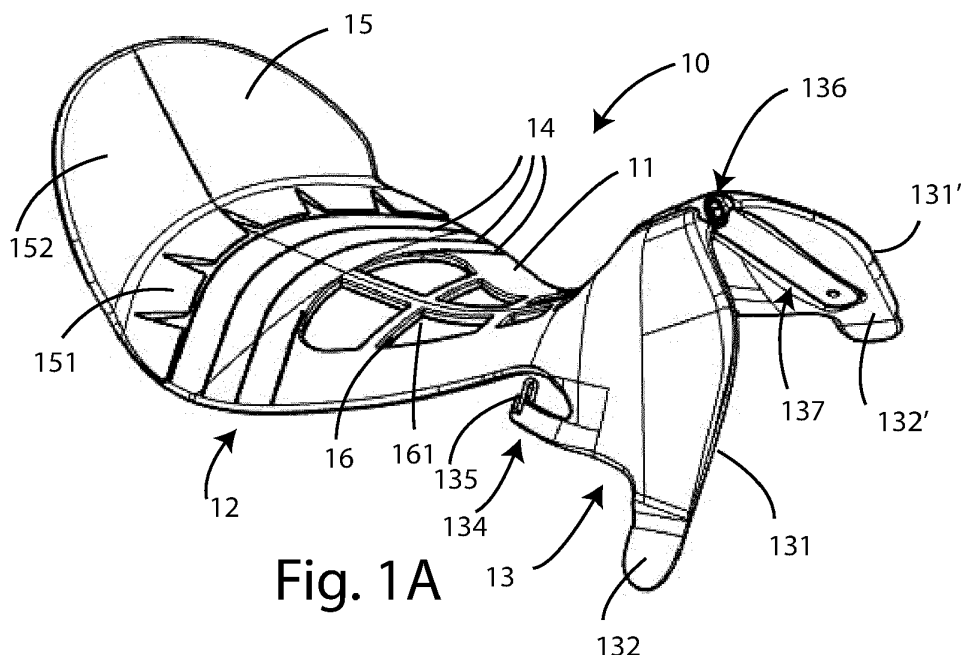
(57) The invention relates to a saddle tree (10) for a horse-riding saddle for a rider and applicable to an equine.

In particular, such a saddle tree (10) comprises a frame (11) apt to rest on the back of said equine and having:

- a first posterior portion (12) pointing in the direction of the tail of the equine;

- a second front portion (13), opposite the first portion (12), and such as to be, when in use, in contact with the rider.

In addition, advantageously, between the first portion (12) and the second portion (13) there is a central reticulated portion (16) for the rider's seat, such that the rider's load on the equine is reduced overall.

**Fig. 1A**

Description

[0001] The present invention relates to a saddle tree for a horse-riding saddle.

[0002] Generally, in horse-riding, the saddle tree is a structure that is considered comparable to the skeleton of the saddle as it performs a support and protection function for the horse and the rider, ensuring and allowing their movement. In addition, a horse-riding saddle tree has the task of supporting all the elements that will then form the final saddle.

[0003] The tailoring of the saddle tree and its fit are determining factors for manufacturing a quality saddle capable of safeguarding the wellbeing and movement of the horse and allowing perfect symbiosis with the rider. In fact, an unsuitable saddle tree negatively affects the performance of the horse and rider combination, and even worse, can cause serious physical damage to the horse.

[0004] Moreover, a problem relating to the horse-riding saddles used today is inherent in that such saddles are not always adaptable to the morphology of the horse's withers. In more detail, the term "withers" refers to the highest point of the horse's back, i.e., between the neck and the trunk, at the area where the neck meets the shoulder blades.

[0005] Such a morphology of the withers varies from horse to horse, and even during the life of the animal itself; in fact, the passing of the years and a training aimed at developing and improving the muscular structure of the horse lead to a continuous, constant, more or less sudden change of the withers.

[0006] Therefore, there is currently no saddle tree that, with a single product, is such as to be adapted and thus then used in any type of discipline in the horse-riding field, as well as to any withers morphology, respecting the bone and muscle structure of the horse and ensuring the correct balance of the rider.

[0007] It is the main object of the present invention to provide a saddle tree, in particular for horse-riding saddles, such as to solve the problems of the prior art, and in particular the problems just described. In particular, a practical and functional saddle tree capable of respecting the horse's morphology and providing comfort to the rider.

[0008] In detail, it is an object of the invention to manufacture a saddle tree for horse-riding saddles such as to take into account the natural physical changes of the horse and the different needs of the rider.

[0009] It is another object of the present invention to manufacture a saddle tree, in particular for horse-riding saddles, such that it does not break or its structure is not modified over time, ensuring resistance while supporting the movements of the horse and the rider.

[0010] It is another object of the present invention to manufacture a saddle tree for horse-riding saddles which is lighter, ensuring a smaller volume and a better fit.

[0011] It is a further object of the invention in hand to

manufacture a functional saddle tree, such as to be modified based on the needs of the individual horse and rider.

[0012] Last but not least, it is an object of the present invention to manufacture a saddle tree for horse-riding saddles designed to optimise the production, assembly, and storage process with the aim of providing a highly customisable product according to the individual needs of the customer in short times and at low costs.

[0013] These and other objects are achieved by a saddle tree for horse-riding saddles, as will be clearer in the continuation of the present description.

[0014] Further features and advantages of the saddle tree for horse-riding saddles according to the present invention will become more apparent from the following description, and from the accompanying drawings, in which:

- figure 1A is a perspective view of a first embodiment of a horse-riding saddle tree, according to the present invention, particularly suitable for the dressage discipline;
- figure 1B is a perspective view of the detail of the cantle of the saddle tree in figure 1A;
- figure 1C is a top view of the saddle tree in figure 1A;
- figures 1D and 1E are two views, a side view and a front view, respectively, of the saddle tree in figure 1A;
- figure 2A is a perspective view of a second embodiment of a horse-riding saddle tree, according to the present invention, particularly suitable for the show jumping discipline;
- figure 2B is a perspective view of the detail of the cantle of the saddle tree in figure 2A;
- figure 2C is a top view of the saddle tree in figure 2A;
- figures 2D and 2E are two views, a side view and a front view, respectively, of the saddle tree in figure 2A;
- figure 3A is a perspective view of an adjustment mechanism according to a first embodiment, pertaining to the saddle tree according to the present invention;
- figure 3B is an exploded view of the mechanism in figure 3A;
- figures 3C to 3E are perspective views of the mechanism in figure 3A in which the operation thereof is shown by way of example;
- figure 4A is a partially bottom view of the saddle tree in which the adjustment mechanism according to a second embodiment thereof can be seen;
- figure 4B is a detailed view of the adjustment mechanism in figure 4A in three sizes thereof;
- figure 5A is a top view of the adjustment mechanism according to a further embodiment thereof;
- figure 5B is a perspective view of the adjustment mechanism in figure 5A;
- figure 5C is a front view of the adjustment mechanism in figure 5A;
- figure 5D is a side view of the adjustment mechanism

- in figure 5A;
- figure 6A is a top view of the adjustment mechanism of the co-injected type, according to a further embodiment thereof;
- figure 6B is a perspective view of the adjustment mechanism in figure 6A;
- figure 6C is a front view of the adjustment mechanism in figure 6A;
- figure 6D is a side view of the adjustment mechanism in figure 6A;
- figures 7A to 7C are perspective views relating to the various steps of assembling the reinforcing plates for fastening each arm of the saddle tree adjustment mechanism, according to the present invention;
- figures 8A to 8D are various views relating to the support plates in figure 7A;
- figures 9A to 9D are further perspective views of the saddle tree in figure 1A and a detail thereof relating to the co-injected stirrup strap holders;
- figures 10A to 10D are various detailed views related to the stirrup strap holders in figure 9A.

[0015] With reference to the figures, reference numeral 10 indicates as a whole a saddle tree for a horse-riding saddle, applicable for example to an equine.

[0016] Figures 1A to 1E relate to a first embodiment of the saddle tree 10.

[0017] Figures 2A to 2E show a second embodiment of the saddle tree 10.

[0018] Figures 2F to 2H show a further embodiment of the saddle tree 10.

[0019] Regardless of the embodiment in hand, the saddle tree 10 comprises a base element or frame 11 apt to rest on the back of an equine and suitable for following its development so as to respect its bone and muscle structure, also ensuring the correct balance of the rider.

[0020] In particular, the aforesaid base or frame 11 rests indirectly on the horse's back; the term indirectly means that the saddle tree 10, being a structural equivalent of a skeleton for the saddle, should then be coated to be functional and thus will not be in direct contact with the horse's back.

[0021] Advantageously, such a frame 11 can be preferably made of a composite material, e.g., reinforced nylon, so as to ensure maximum levels of resistance, elasticity, and lightness of the saddle tree 10. Moreover, in other embodiments, such a frame 11 can be made of any material capable of ensuring or improving the standards of lightness, strength, and elasticity thereof.

[0022] Furthermore, such a frame 11 is substantially drop-shaped and comprises, at the base of the drop, i.e., at the portion of the frame 11 of greater width, a first posterior portion 12, pointing in the direction of the posterior part of the equine. Moreover, at the tip of the drop, i.e., the portion of frame 11 opposite the first portion 12 and in which there is a narrowing of the corresponding width, such a frame 11 comprises a second front portion

13.

[0023] Advantageously, such a second portion 13, when the saddle tree is in use, will be in contact with the rider's groin area, having a substantially smaller width as compared to similar devices of the known type.

[0024] In practice, such a second portion 13 allows the rider to achieve better positioning on the saddle, increasing contact, i.e., the sensitivity between the rider and the horse, ensuring a more natural position of the rider's leg, and reducing the possibility of any groin pain in the leg joint.

[0025] Furthermore, at the second portion 13, the saddle tree 10 comprises two front striking points: a first right striker 131 and a second left striker 131', contiguous to the second portion 13 itself and such as to extend laterally to the second portion 13 itself. In particular, when the saddle tree is applied to the equine, the first and second strikers 131, 131' extend laterally, close to the horse's shoulders.

[0026] In addition, each first striker 131 and each second striker 131' have respective frontal support apices 132 and 132' of the flexible type, which are such as to make the saddle tree 10 more ergonomic for the horse, reducing the pressure on its shoulder blades and shoulders, and also ensuring better and wider movement during all the different performance stages.

[0027] Furthermore, such first and second strikers 131, 131' comprise respective stirrup strap holders 134 and 134' directly integrated and facing from the side of the first portion 12, in an adjacent position to the respective frontal apex 132 and 132'.

[0028] Advantageously, unlike similar devices of the known type, the aforesaid stirrup strap holders 134 and 134', are made by moulding and are directly integrated with the saddle tree 10 and thus do not need to be applied later, thus avoiding the presence of additional elements such as screws, bolts, etc., and spacers causing the alteration of the structure of the saddle tree 10 compromising the anatomic nature thereof. Moreover, still advantageously, the integrated stirrup strap holders 134 and 134' described above eliminate the need to perform external applications in order to complete the saddle tree 10, thus allowing the assembly process to be optimised.

[0029] In further embodiments, the aforesaid stirrup strap holders 134 and 134' comprise respective plates 1341, as can be seen in figures 9A-9D and 10A-10D, made of metal material and inserted by co-injection during the moulding step, e.g., as described above. Again, in even more detail, such a co-injected metal material is preferably steel. Advantageously, the addition of the aforesaid plates is suitable for giving the saddle tree 10 a more resistant appearance as a whole.

[0030] Advantageously, each stirrup strap holder 134, 134' is suitable for accommodating a horse-riding stirrup strap and has a substantially upwardly pointing comma shape. In particular, the aforesaid stirrup strap holders 134 and 134' further comprise a respective safety device 135, 135', e.g., of the spring type.

[0031] Advantageously, such a comma shape of the aforesaid stirrup strap holders 134 and 134' and the respective spring devices 135 and 135' ensure safety, since they allow the stirrup strap to maintain the correct position but at the same time, in case of emergency, to release from the seat, i.e., from the related stirrup strap holder 134 and 134', thus safeguarding the rider in the event of a fall.

[0032] Moreover, as just described, the comma shape of the stirrup strap holders 134 and 134' and the spring device 135 and 135' respond to and fulfil the requirements of the different schools of thought and thus the needs of each individual rider.

[0033] As can be seen in figures 1E and 2E, still adjacent to the second portion 13 and on the opposite side with respect to the first portion 12, such a saddle tree 10 comprises a third arcuate portion 136 structured to comply with the morphology of the horse's withers.

[0034] Advantageously, the third arcuate portion 136 allows adapting the saddle based on the physical changes of the horse or based on the characteristics of different horses. As previously mentioned, the morphology of the withers varies from horse to horse, and even during the lifetime of the animal itself. In order to ensure the correct fit of the saddle tree 10 throughout the horse's lifetime, or on different horses, the possibility to adjust and change the width of the second portion 13, and thus of the third arcuate portion 136 close to the withers, is necessary and fundamental.

[0035] Advantageously, in order to allow the practice described above, the saddle tree 10 according to the present invention also comprises an instantaneous adjustment mechanism 137 applicable at the side facing the inside of the third arcuate portion 136 of the frame 11. Solely for clarity of language, the side facing the inside of the third arcuate portion 136 means the side thereof which will be placed in the direction of the horse.

[0036] Advantageously, for its design and structure which will be better described, the aforesaid mechanism comprises a plurality of configurations such as to respond to market demands and rider's needs.

[0037] In particular, in the following description, some embodiments of the adjustment mechanism 137 are disclosed, still applicable to the same frame 11 based on the rider's requirement and preference. Advantageously, such an adjustment mechanism 137, regardless of the related embodiment, can be made of materials such as steel, plastics, etc., solely by way of example.

[0038] In a first embodiment of the adjustment mechanism 137, as can be seen in detail in figures 1E, 2E and 3A-3E, referred to as an "easy fit gullet system", the mechanism 137 is such as to adjust the size of the opening of the third arcuate portion 136 of the saddle tree 10 in an instantaneous manner, based on the morphology of the horse.

[0039] Such an instantaneous adjustment mechanism 137 differs from known systems in terms of the features disclosed below.

[0040] Advantageously, the adjustment is allowed without the use of external tools such as hex keys or the like, but simply by pulling or pressing, using the hands only.

5 **[0041]** In particular, the mechanism 137 in the embodiment in hand comprises a rotor 1372 having two mutually rotatable circular portions.

10 **[0042]** In particular, the rotor 1372 comprises a first inner circular portion 1373 oriented substantially in the direction of the first portion 12, and a second outer circular portion 1374 adjacent thereto, and oriented substantially in the direction of said second portion 13, where the first inner circular portion 1373 and the second outer circular portion 1374, being annular and adjacent to each other, structurally form a toothed crown seat for the insertion of an interlocking star-shaped system.

15 **[0043]** As can be seen in figure 3B, such an interlocking star-shaped system comprises a first toothed pin 271 of the longitudinally hollow type and suitable for being inserted into said first inner circular portion 1373 and a second toothed pin 271' of the hollow type and suitable for being inserted into the second outer circular portion 1374. Moreover, the aforesaid star-shaped system comprises a threaded pin 272 suitable for being inserted into the aforesaid toothed pins 271 and 271'. In addition, at the ends of the aforesaid toothed pins there are respective flat washers 273 and 273' and a nut 274 placed to close the interlocking system and on the side of the first toothed pin 271'.

20 **[0044]** Advantageously, the separation of the two circular portions 1373 and 1374 with respect to the longitudinal axis X of the rotor 1372 allows widening and narrowing the entire third arcuate portion 136.

25 **[0045]** In more detail, such two circular portions extend laterally forming two arms 1371, configured to be fixed at the frame 11 of the portion 136. Advantageously, such two arms 1371 allow bending the whole frontal portion of the frame 10 and the consequent possibility to adjust the dimension thereof instantaneously close to the withers.

30 **[0046]** Furthermore, at such a rotor 1372, and connected thereto, the mechanism 137 comprises an elastic system, preferably a spring 275 shown in the figure, suitable for promoting the configuration of the mechanism according to the required needs. In more detail, such a spring mechanism 275 is placed substantially between the aforesaid first toothed pin 271 and the lock nut 274.

35 **[0047]** Still advantageously, as can be seen in figures 3C-3E, the adjustment of the mechanism 137 is allowed by applying a light pressure to the elastic system simply, quickly, and safely compared to other types of existing mechanisms.

40 **[0048]** In particular, as can be seen in figure 3C, in order to activate the operation of the mechanism 137, the aforesaid threaded pin 272 is pulled towards the outside of the mechanism 137 according to the direction of the axis X of the rotor 1372 and the direction L in the figure, by moving the aforesaid toothed pins 271 and 271'

which are substantially released from the toothed crown.

[0049] The system, when so activated, allows widening and narrowing the two arms 1371 instantaneously, according to a rotation direction R with respect to the aforesaid axis X, shown by way of example in figure 3D up to the required position. The threaded pin 272 is then released and mechanically returned in by the spring mechanism 275 still according to the direction L in figure 3E, which will engage the toothed pins 271 and 271' again in the toothed crown. More simply, it will be sufficient to release the elastic system 275 to lock the rotor and fix the saddle tree 10 in the desired position. The result of the above is a versatile product, capable of responding to the morphological needs of each individual horse. In fact, the rider can thus adapt the saddle tree 10 autonomously and quickly, and therefore the saddle itself, based on the moment needs without structurally and irreversibly intervening on the product or again without the need to have different saddles for each individual horse, or to replace the entire product every time the horse's withers undergo a physical change. Moreover, the aforesaid system is also very safe because the rotation force is distributed in the rotation axis of the rotor by the toothing of the toothed pins, always ensuring at all times a single body of the mechanism the components of which, even during adjustment, never leave their seat.

[0050] In a second embodiment of the mechanism 137, referred to as the "fast change gullet system", shown in figures 4A and 4B, the mechanism 137 is substantially placed in the same place as described in the first embodiment and thus in the same seat. In more detail, as can be seen in figure 4B, the mechanism 137 comprises two arms 1371', in particular such as to form a rigid arch 1375 designed to be perfectly integrated into the frame 11. Advantageously, only by way of example, in order to minimise the volume and not alter the anatomic structure of the frame 11, the arch 1375 comprises an embossed central portion 1376, such as to be perfectly integrated at the third portion 136.

[0051] The aforesaid arch 1375, as can be seen in figure 4B, can be of different sizes, e.g., small, medium, or large, where each arch 1375 is interchangeable by the rider in order to adjust the opening close to the withers without the intervention of a professional or a special machine. Advantageously, the rider can open the portion 136 and apply the arch 1375 of the most suitable size in a quick and completely autonomous manner.

[0052] In a third embodiment of the mechanism 137, referred to as the "mouldable gullet system" and shown in figures 5A and 5D, the mechanism 137 is substantially the same as that described in the second embodiment (fast change gullet system).

[0053] Advantageously, the only difference with respect to the second embodiment of the mechanism 137 lies in the implementation obtained by moulding a material such as steel, for example. In the embodiment in hand, such a mechanism 137 is such as to be perfectly integrated with the skeleton of the saddle tree, ensuring

minimum volume and maximum resistance. Furthermore, again in the embodiment in hand, the change to the opening of the arch only occurs with the aid of an appropriate machine, as will now be described.

[0054] In fact, advantageously, as described in the second embodiment, such a mechanism 137 is manufactured to adapt exactly to the skeleton of the saddle tree but, unlike the second embodiment, the adjustment thereof is only possible with the aid of a specific machine and with the intervention of a specialized technician.

[0055] Therefore, in the embodiment in hand, this is a mechanism 137 with a single size which can be changed and adjusted with the aid of the aforesaid special machine, such as to allow an absolutely precise and perfectly personalised adjustment according to the customer's needs.

[0056] Furthermore, the mechanism 137 in the embodiment in hand is then rivetted/locked/screwed, at the related lateral arms using a reinforcement plate 140 for each arm 1371, where the plate 140 is placed on the opposite side of the saddle tree 10 with respect to the positioning point of the mechanism 137, as can be seen in figure 7A. Advantageously, in preferred embodiments, such a plate 140 has (figures 7A-7C and 8A-8D) a plurality of holes 141, in particular two, to house fastening means 143 such as screws, rivets, etc., which will then be locked on the side of the arch 1375 and then on the side of the saddle tree 10 facing the equine, e.g., by bolts or nuts, etc., 142.

[0057] Still advantageously, such a plate is made of materials such as steel.

[0058] Advantageously, the addition of the aforesaid reinforcement plate 140 ensures a better seal on the saddle tree 10 and reinforces the mechanism 137 itself, especially at the lateral arms thereof.

[0059] Furthermore, in a further embodiment of the mechanism 137, which is substantially identical to the above description for the aforesaid embodiments. In particular, as can be seen in figures 6A-6D, the mechanism 137 is made of plastic material co-injected with metal material, e.g., during the moulding step. Again, in even more detail, such a co-injected metal material is preferably steel.

[0060] Advantageously, as can be seen in figures 1C, 2C, 2F and 2G, the arcuate portion 136 comprises an appropriate seat, in particular a through hole 1361, to facilitate the adjustment of the second portion 13. The aforesaid hole 1361, as will be better explained below, is suitable for giving elasticity to the aforesaid portion 13, as well as to promote the adjustment of the portion 136.

[0061] In more detail, the aforesaid through hole 1361 of the arcuate portion 136 is designed to perfectly coincide with the three adjustment systems described, creating an appropriate seat for their arrangement therein.

[0062] Advantageously, this particular configuration is such as to minimise the volumes and ensure, for example, in particular in the case of the adjustment system having the arch 1375 with the related central portion

1376, a maximum resistance thereof where more necessary in a point of the arch 1375 which is more prone to breaking.

[0063] In preferred but not limiting embodiments, in an adjacent position to the front portion of the through hole 1361, there is a plurality of cutting lines 1362 suitable for guiding the possible removal of material placed between the aforesaid lines 1362, if an accessory having a substantially different perimeter from that of the two adjustment systems as described above is to be accommodated inside said hole 1361.

[0064] Moreover, the arch 1375 is provided with ribs on the inner part, in particular the surface thereof which, when in use, will come into contact with the horse, in order to increase the strength thereof without reducing its elasticity.

[0065] The arch 1375, in preferred embodiments, is made by moulding and of a material such as to comply with the strength standards and so as to minimise the volume of the saddle tree 10 where it is not necessary and increase it where it is more necessary, but without compromising the general shape thereof.

[0066] Still advantageously, the frame 11, as can be seen in figures 1A, 1C and 2A, 2C at the first portion 12, comprises a plurality of cutting lines 14 which substantially follow the geometry of the first portion 12. In particular, such a plurality of cutting lines 14 is such as to allow the saddle tree 10 of the present invention to be used for any type of desired size.

[0067] In fact, due to these cutting lines 14, it is possible to obtain a single functional mould which is valid for all sizes of saddle tree 10 since, by cutting them, the frame 11 can be adapted according to requirements.

[0068] With particular reference to figures 1A, 1B and 2A and 2B, being adjacent to the first portion 13, on the opposite side with respect to the second portion 13, in particular in the area of the saddle tree 10 which, when in use, will come substantially into contact with the horse's back, there is a cantle 15 suitable for acting as a backrest and apt to be coupled to the first portion 12.

[0069] The cantle 15 is substantially L-shaped and comprises a support base 151, substantially parallel to the frame 11 and such as to follow the geometry thereof, and a backrest 152.

[0070] The aforesaid support base 151 has a substantially sunburst shape, allowing it to be coupled at at least one of the cutting lines 14 of the first portion 13 once the size of the saddle tree 10 has been decided.

[0071] Moreover, such a backrest 152, as can be seen in figures 1B and 2B, can be substantially orthogonal with respect to the frame 11 or be substantially inclined with respect thereto, so as to allow the rider to choose the posterior support that he/she prefers, even based on to the type of discipline to be practiced, e.g., show jumping or dressage.

[0072] Advantageously, between the first portion 12 and the second portion 13 there is a reticulated central portion 16 for the rider's seat.

[0073] In particular, since the area of the saddle tree 10 in which the rider will sit is substantially one of the areas more prone to stresses, the reticulated structure 16 will be such as to ensure elasticity for the saddle tree 10 itself, reducing the overall weight thereof, both due to its substantially net-like geometry and its positioning.

[0074] Moreover, in a first embodiment of the saddle tree 10, as can be seen in figures 1A-1E, the frame 11, at the area in which the reticulated structure 16 is present, comprises a plurality of holes 161 having a geometry such as to ergonomically follow the rider's seat.

[0075] Advantageously, the aforesaid holes are substantially mutually adjacent, with a decreasing size in the direction of the second portion 13. The soobtained structure is defined as being "sitting bone free" because, by means of the aforesaid holes 161, the pressure between the rider's sitting bones and the saddle tree 10 itself is strongly reduced, thus ensuring maximum comfort throughout the activity.

[0076] Alternatively, in a second exemplary non-limiting embodiment of the saddle tree 10, diagrammatically shown in figures 2A-2E, the aforesaid frame is of the singlepiece and solid type.

[0077] Furthermore, as can be seen in figures 2F-2H, the frame 11 also comprises a seat 111 suitable for allowing the coupling of a tray 112, having a shape complementary to said seat, so as to be perfectly interlocked with the aforesaid frame 11. Advantageously, the aforesaid tray 112 structurally comprises a lowering such as to accommodate a soft material padding. In fact, since the aforesaid embodiment of the frame 11 includes a soft material padding, it is particularly advantageous for riders who want a more rigid frame 11, but without sacrificing comfort; in fact, the aforesaid padding protects against impacts, reduces the pressure points, and allows the redistribution of the weight, thus ensuring maximum comfort for the rider throughout the entire performance.

[0078] Furthermore, both the seat 111 of the frame 11 and the tray 112 comprise a respective toothed engagement system 113, such as to be complementary between the two parts, allowing the interlocking of the tray 112 without the use of other fastening tools such as glue or claws, screws, etc. In fact, all the aforesaid fastening tools would damage the structure of the frame 11 and would create undesired and potentially annoying thicknesses during the development of the finished product and during the horse riding.

[0079] Advantageously, the application of the tray 112 by virtue of the aforesaid toothed engagement system 113, also possibly according to needs, makes the product more versatile. In fact, the frames are normally covered by a soft layer but in this case, due to the structural lowering of the tray 113, a further layer of material can be added, perhaps with higher performance, without creating additional thicknesses because perfect integration is possible by virtue of this lowering.

[0080] Finally, advantageously, the tray 113 can be made of different types of material as will now be de-

scribed.

[0081] In particular, depending on the material chosen for manufacturing the tray 113 and on the rigidity thereof, the flexibility or rigidity of the frame 11 is also determined. Only by way of example, if the tray 113 is made of a carbon-filled material, the frame 11 obtained will be very rigid, instead if the tray 113 is made of rubber-filled nylon, the resulting frame 11 will be more flexible as compared to the previous case.

[0082] In other words, advantageously, due to the different material for moulding only one component, in this case the tray 113, but more generally any component of the saddle tree 10 of the present invention, there is the possibility to manufacture a different product according to the customer's needs or the demands of the market/different markets.

[0083] The invention thus devised and disclosed herein is susceptible to many changes and variants, all falling within the scope of the inventive concept.

[0084] Moreover, all construction details can be replaced by technically equivalent elements.

[0085] Finally, the components used, as long as they are compatible with the specific use, and the dimensions, may be any according to needs and the prior art.

[0086] Where the features and techniques mentioned in any one of the claims are followed by reference signs, such reference signs were included for the sole purpose of increasing the intelligibility of the claims, and therefore such reference signs have no limiting effect on the interpretation of each element identified by such reference signs by way of example only.

Claims

1. Saddle tree (10) for a horse-riding saddle for a rider, applicable to an equine, comprising a frame (11), substantially drop-shaped, apt to rest on the back of said equine, wherein said frame (11) comprises:

- a first posterior portion (12) pointing in the direction of a tail of said equine and placed at a base with a width greater than said drop;
- a second front portion (13), opposite said first portion (12), and such as to be, when in use, in contact with said rider;

in which between said first portion (12) and said second portion (13) there is a central reticulated portion (16) for the rider's seat, such that the rider's load on the equine is reduced overall.

2. Saddle tree (10) as to at least one of the preceding claims, **characterised in that** it comprises, laterally with respect to said second portion (13), a first right striker (131) and a second left striker (131') comprising a respective first frontal support apex (132) and a second frontal support apex (132') of the flexible

type and such as to extend, when said saddle tree (10) is in use, at the shoulders of said equine, reducing the pressure exerted by said saddle tree (10).

3. Saddle tree (10) as to the preceding claim, **characterised in that** said first and second strikes (131, 131') directly comprise integrated a respective stirrup holder (134; 134') for the attachment of a riding stirrup, wherein said stirrup holder (134; 134') has a substantially upwardly pointing comma shape and is facing in the direction of said first portion (12) and in a position adjacent to said respective first apex (132) and second apex (132').

4. Saddle tree (10) as to the previous claim, **characterised in that** said stirrup holder (134, 134') includes a respective safety device (135, 135'), in particular of the spring type, for securing said stirrup.

5. Saddle tree (10) as to at least one of the preceding claims, **characterised in that** said second portion (13), on the opposite side with respect to the first portion (12), comprises a third arcuate portion (136) such that it can be adjusted, instantaneously, according to the morphology of the equine, wherein said third portion (136) comprises a through hole (1361), to facilitate adjustment of the second portion (13).

6. Saddle tree (10) as to the preceding claim, **characterised in that** it comprises an instantaneous adjusting mechanism (137) having two arms (1371; 1371') applicable at said arcuate portion (136) and at said through-hole (1361), on the side facing in the direction of said equine.

7. Saddle tree (10) as in the preceding claim, **characterised in that** said instantaneous adjustment mechanism (137) comprises a rotor (1372) comprising a first inner circular portion (1373) of the annular type oriented substantially in the direction of said first portion (12) of said saddle tree (10) and a second outer circular portion (1373) of the annular type adjacent to said first inner circular portion (1373), and oriented substantially in the direction of said second portion (13) of said saddle tree (10), wherein said first inner circular portion (1373) and said second outer circular portion (1374) are laterally developed from said two arms (1371), respectively.

8. Saddle tree (10) as to at least one of claims 67, **characterised in that** said first inner circular portion (1373) and said second outer circular portion (1374) adjacent thereto are suitable for accommodating an interlocking star-shaped system comprising

a first toothed pin (271) suitable for being engaged in said first inner portion (1373) and a

second toothed pin (271') suitable for being engaged in said second outer portion (1374);
a threaded pin (272) suitable for being inserted into said first toothed pin (271) and said second toothed pin (271');
an elastic mechanism (275) preferably a spring placed between said first toothed pin (271') and a lock nut (274) included in said system.

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9. Saddle tree (10) as at least one of claims 6-7, **characterised in that** said two arms (1371') structurally form an arch (1375). 10
10. Saddle tree (10) as to at least one of claims 1-9, **characterised in that** said frame (11) further comprises a seat (111) and a tray (112) of a shape complementary to said seat (111), wherein both said seat (111) and said tray (112) comprise a respective toothed system (113) of complementary engagement for the respective attachment. 15
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11. Saddle tree (10) as in claim 6, **characterised in that** said instant adjustment mechanism (137) is made of plastic material co-injected with metal material, preferably steel. 25

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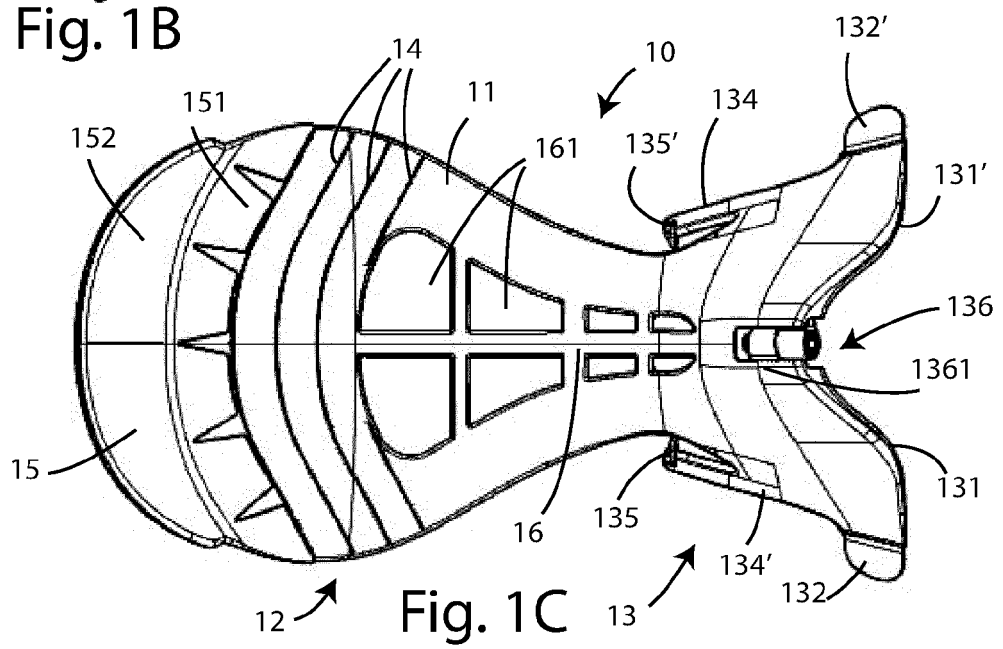
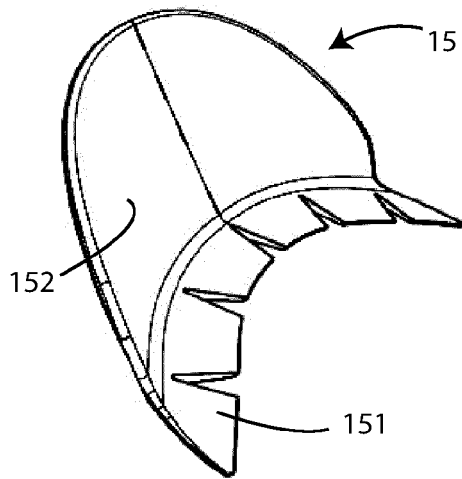
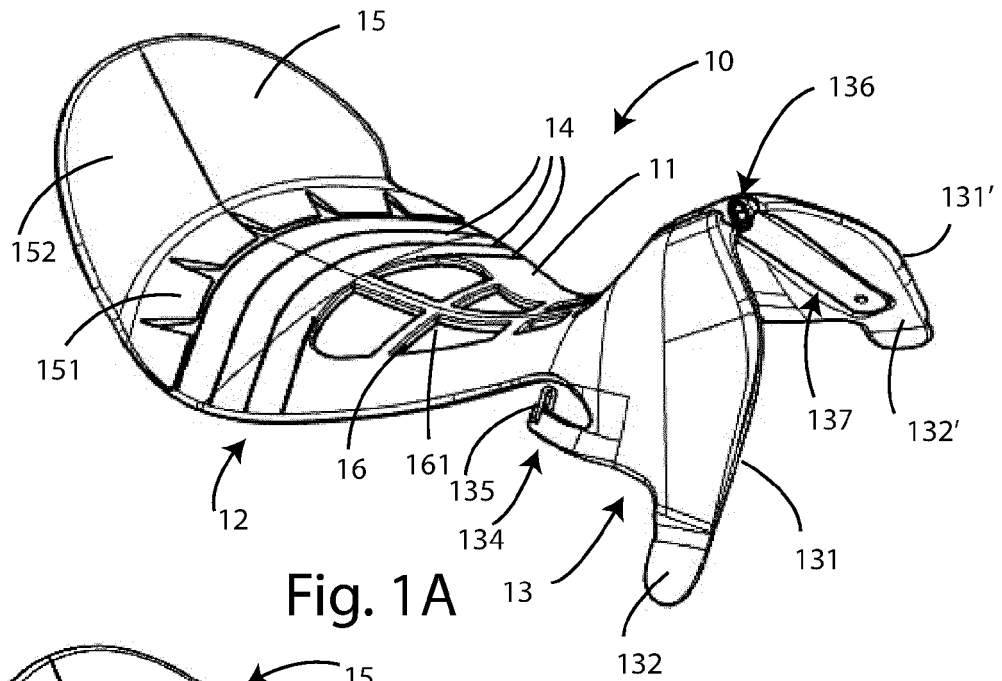
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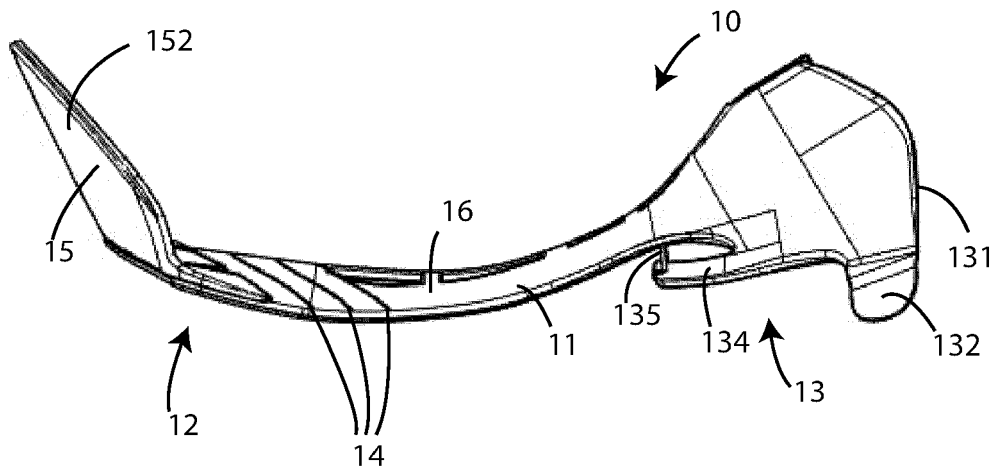


Fig. 1D

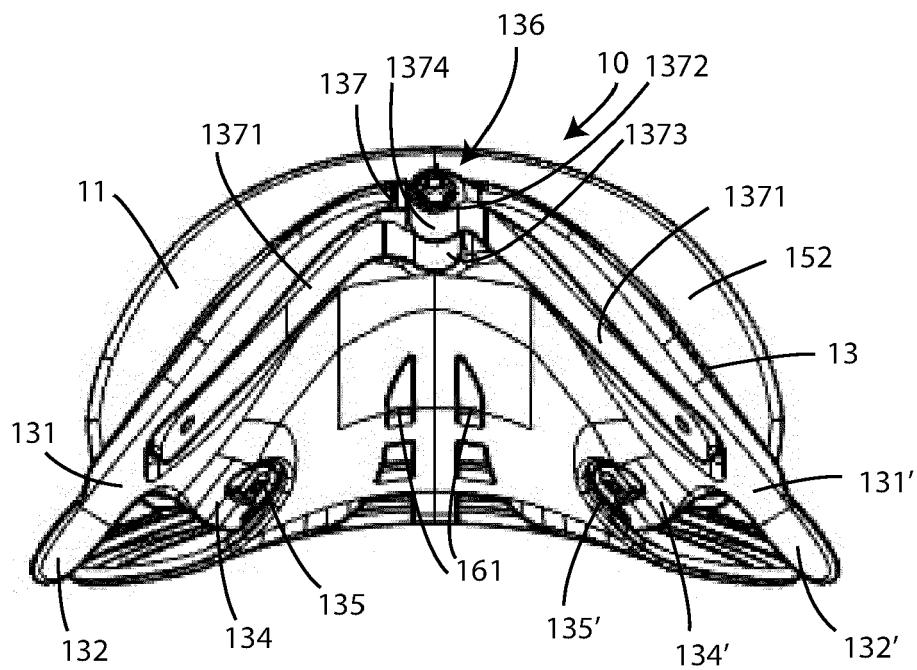
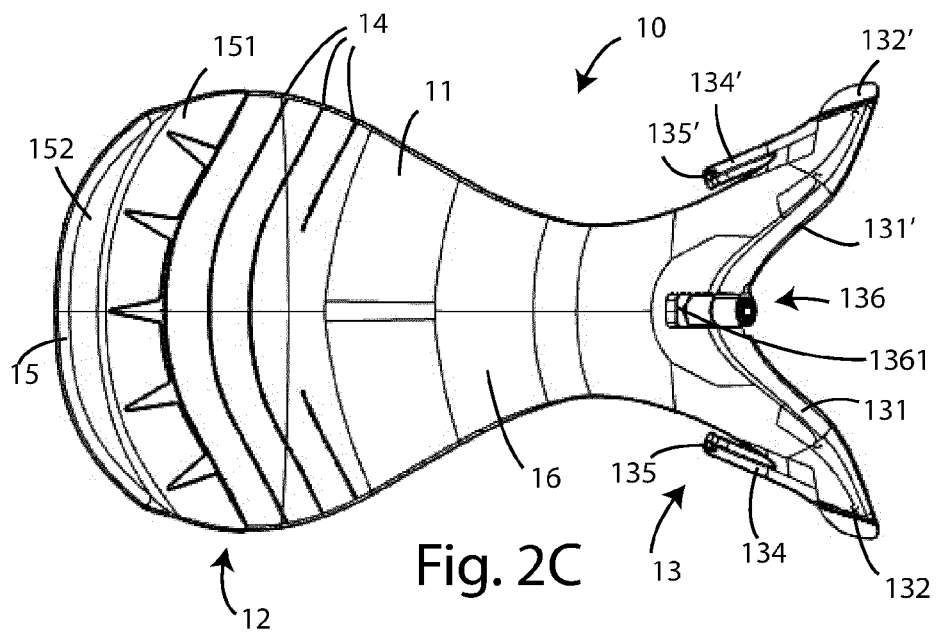
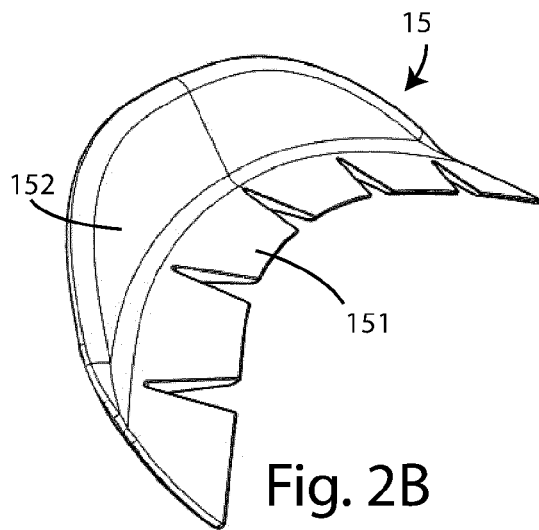
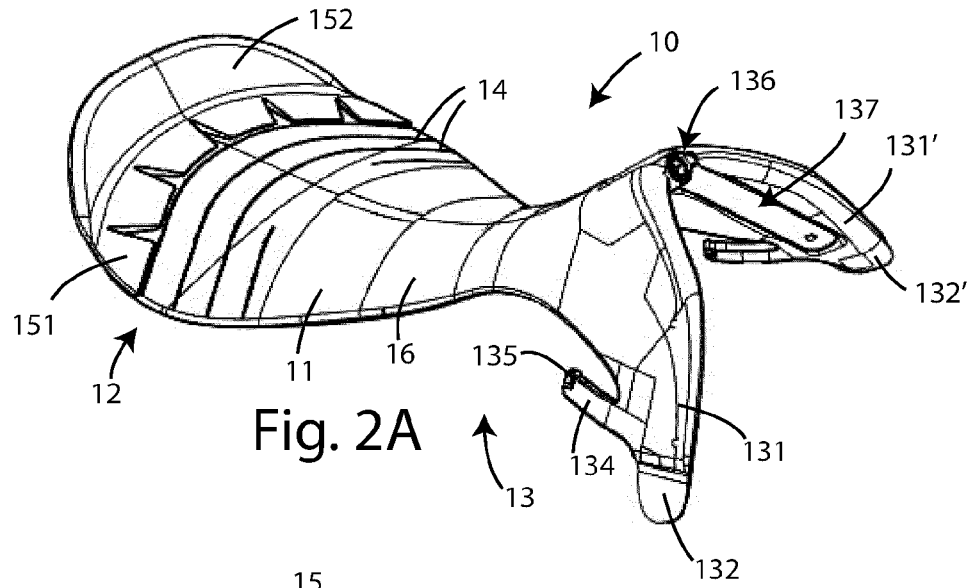


Fig. 1E



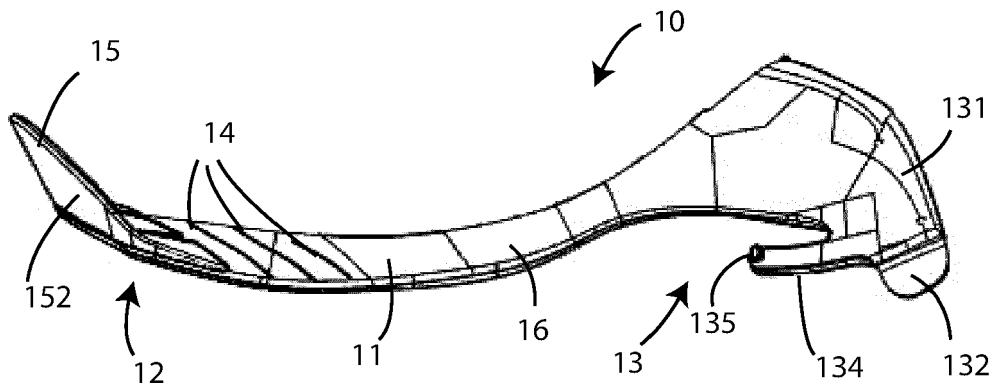


Fig. 2D

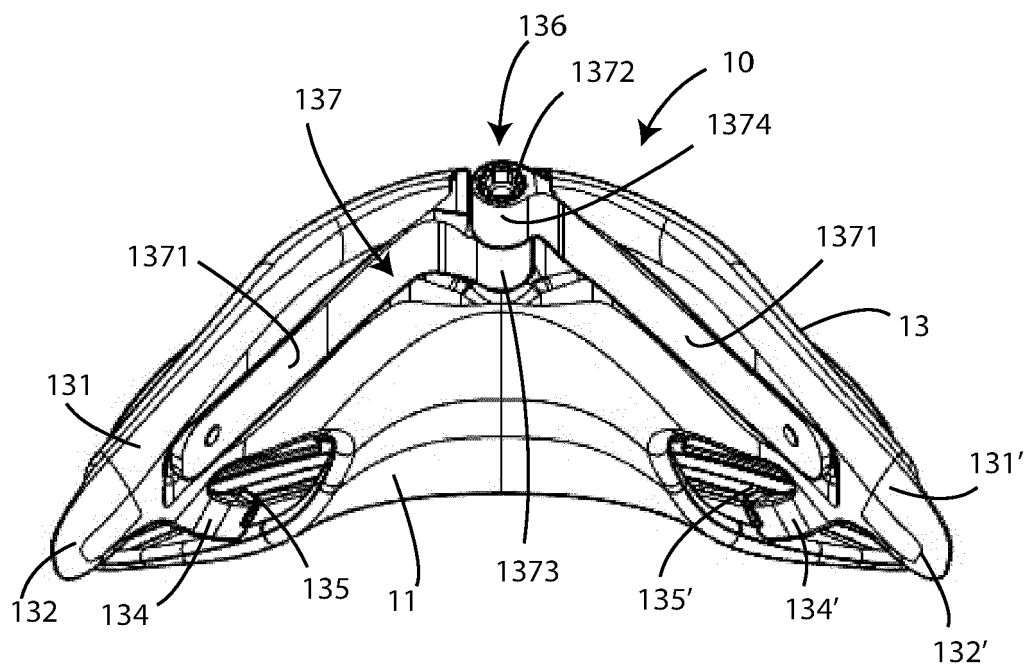
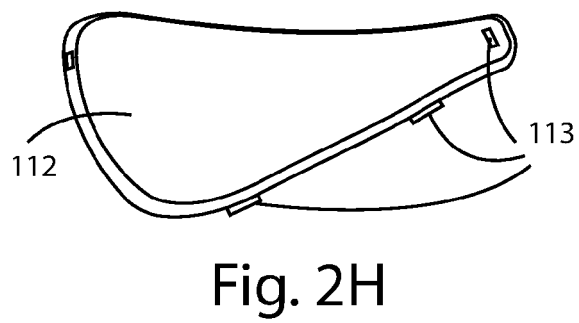
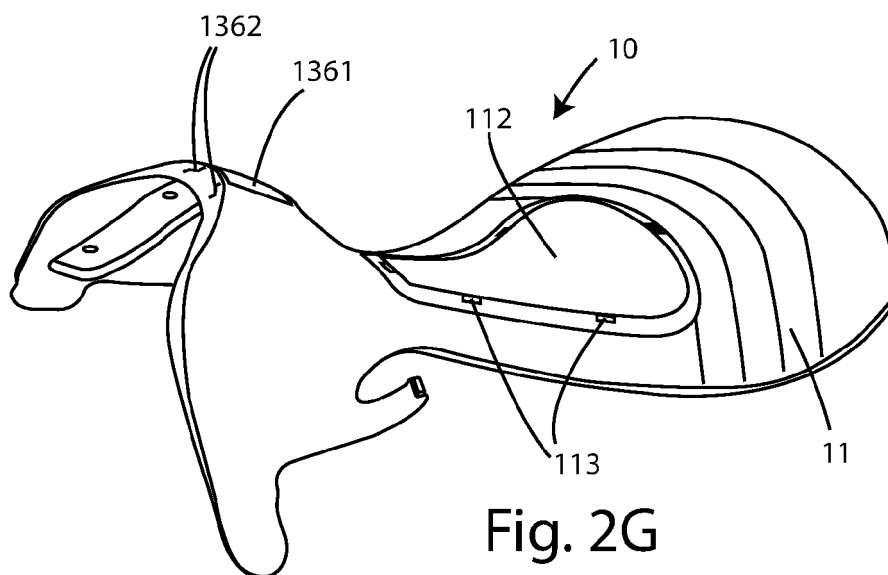
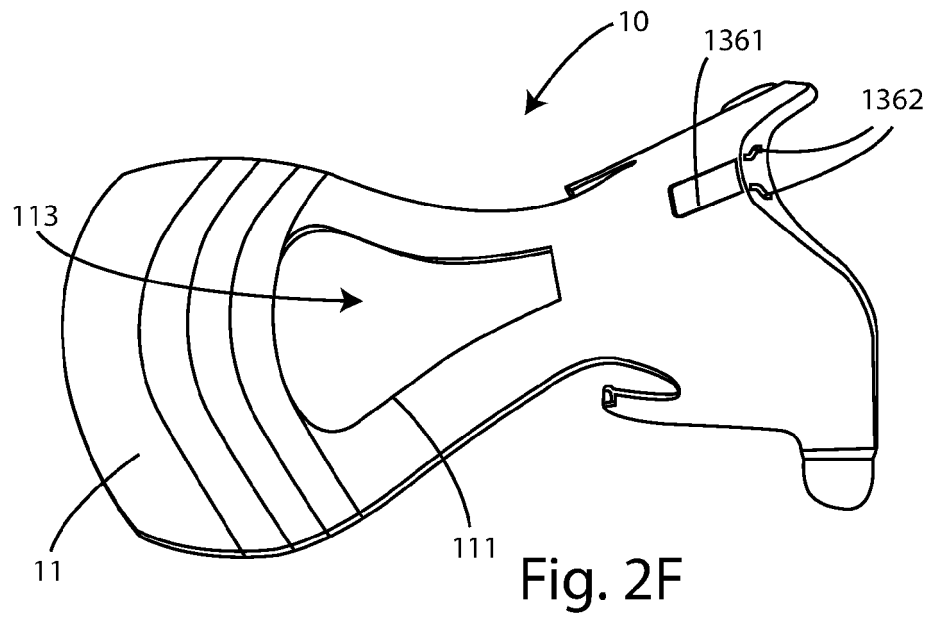
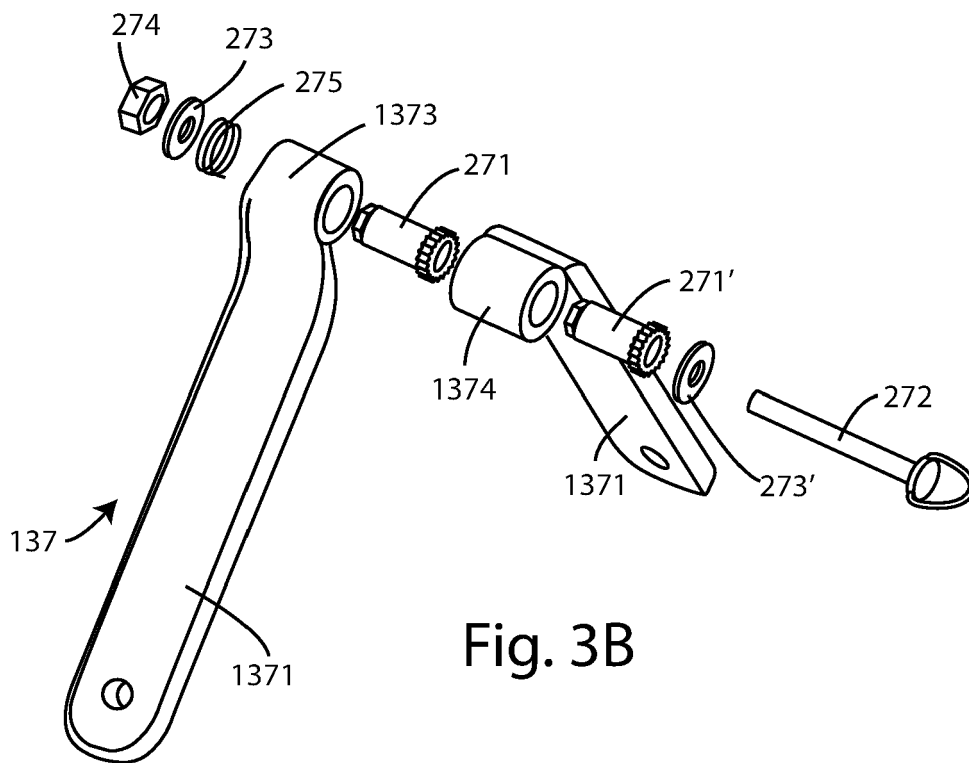
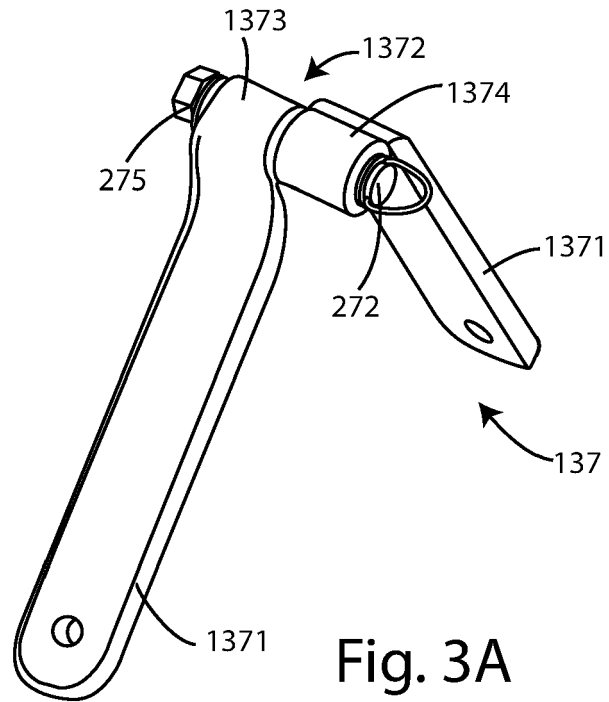


Fig. 2E





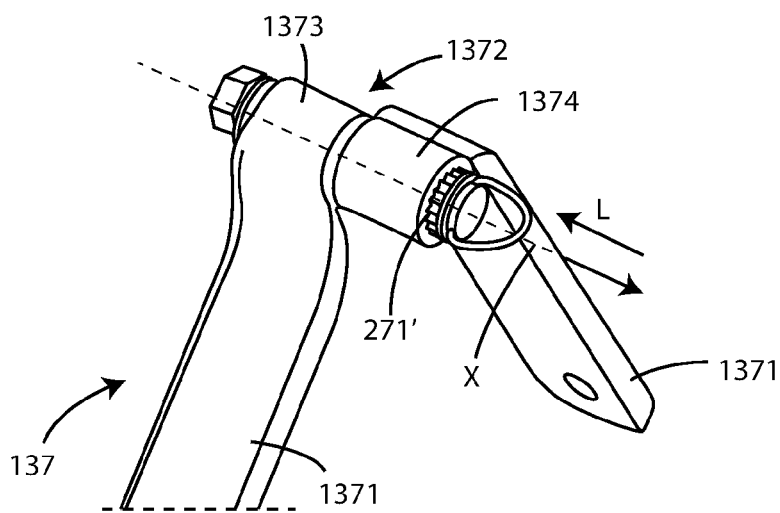


Fig. 3C

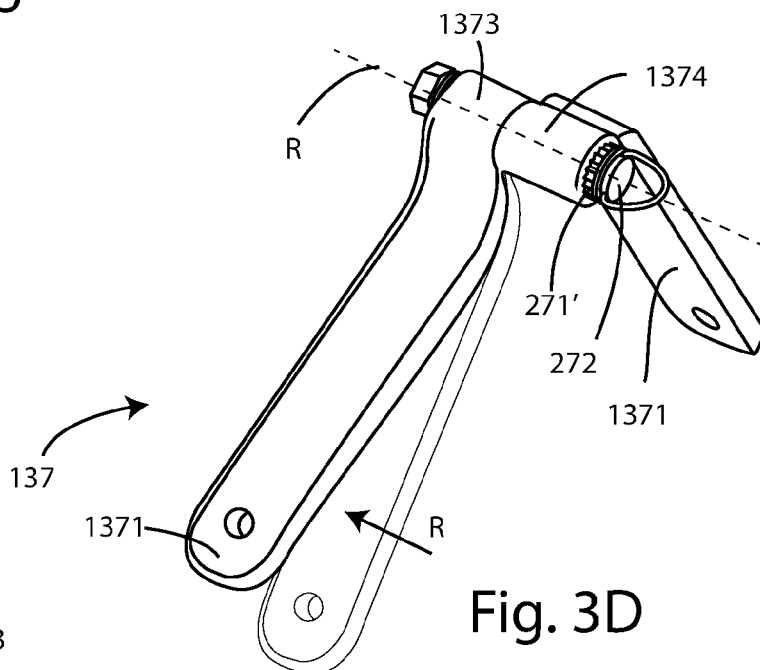


Fig. 3D

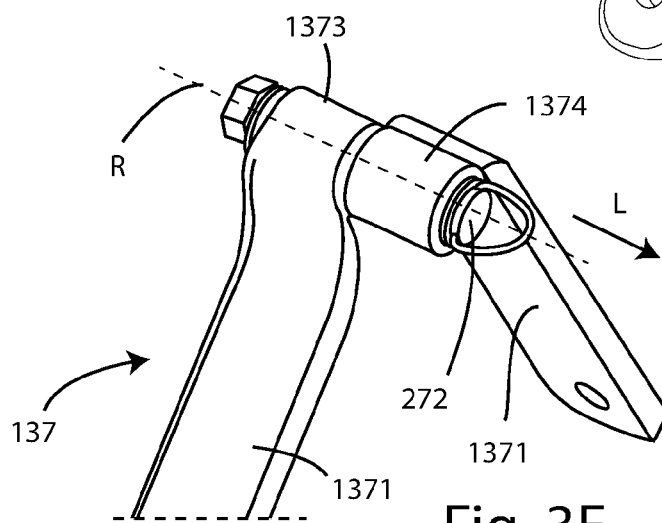


Fig. 3E

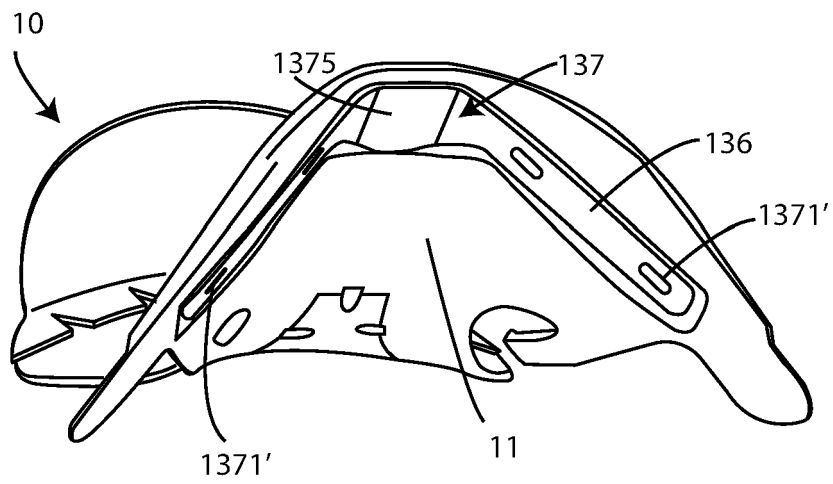


Fig. 4A

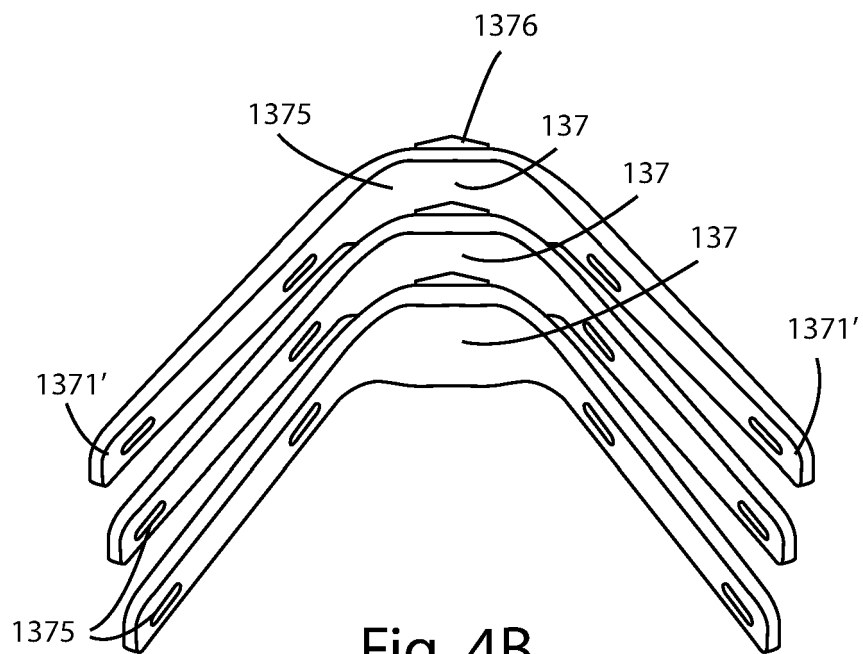


Fig. 4B

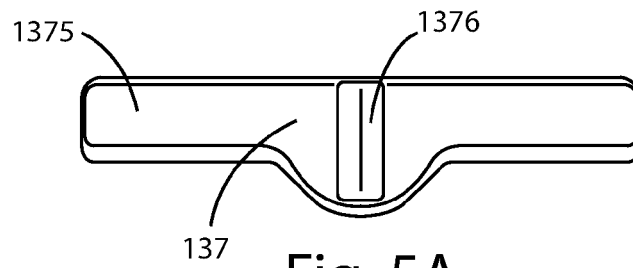


Fig. 5A

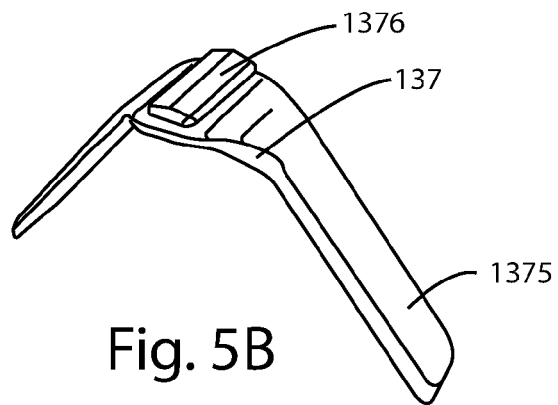


Fig. 5B

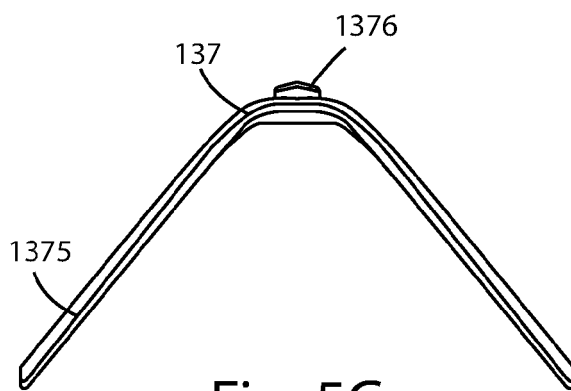


Fig. 5C

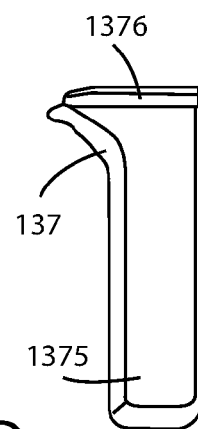


Fig. 5D

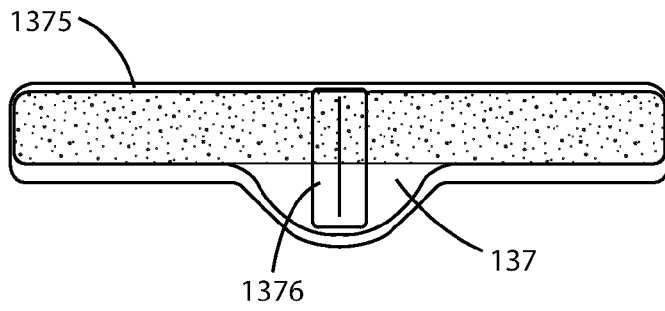


Fig. 6A

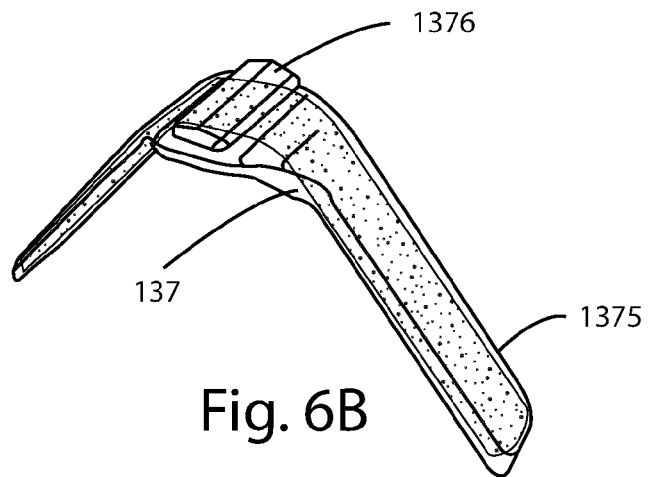


Fig. 6B

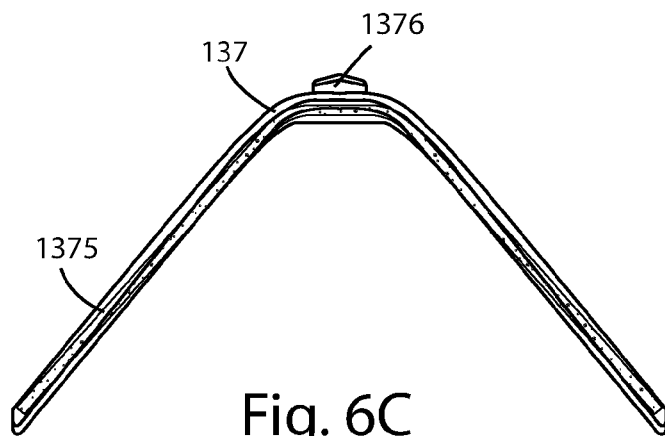


Fig. 6C

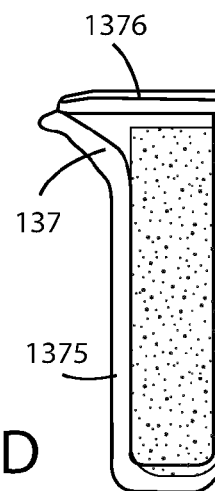
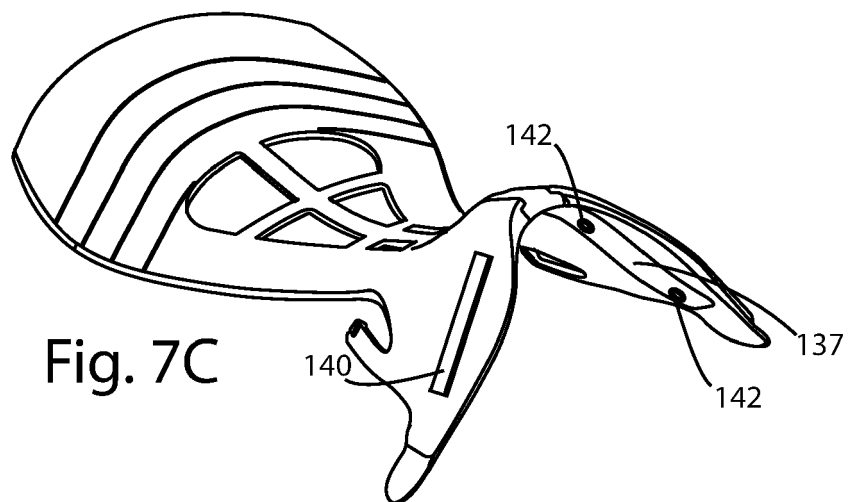
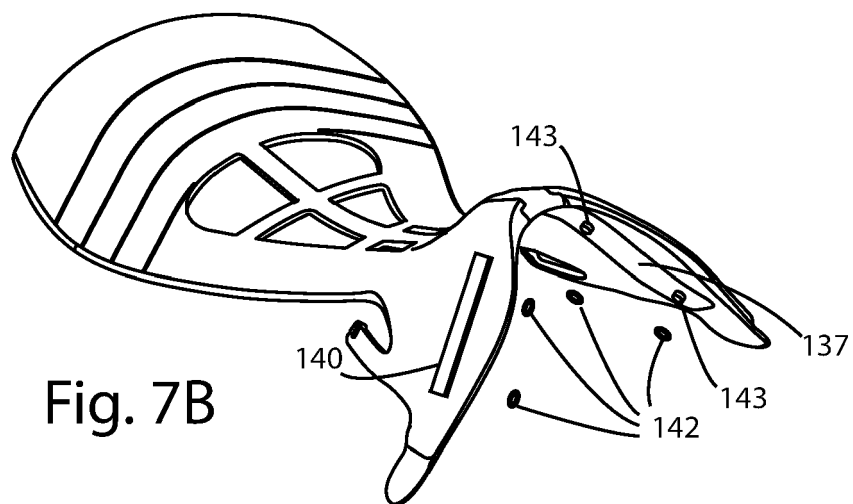
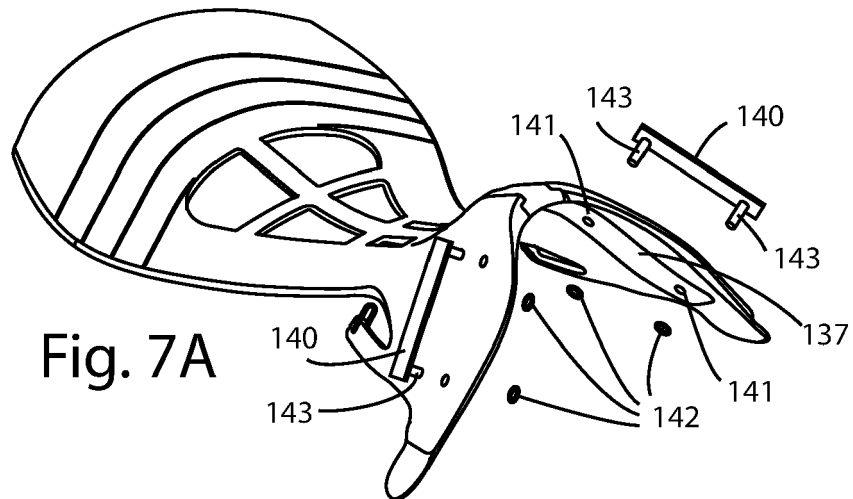


Fig. 6D



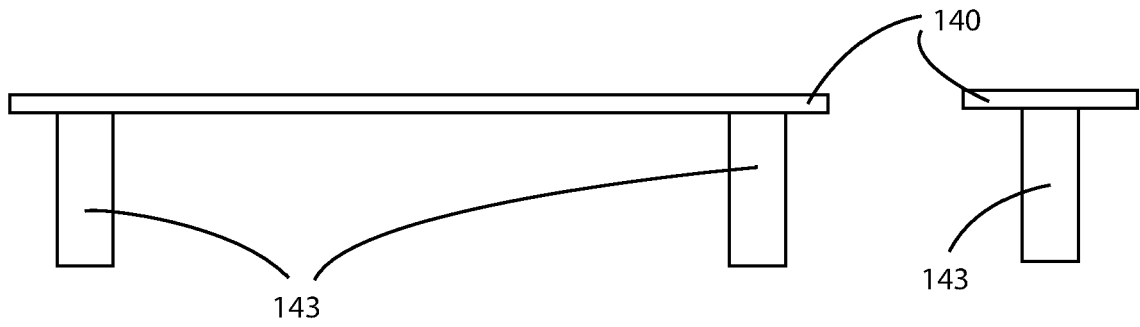


Fig. 8A

Fig. 8B

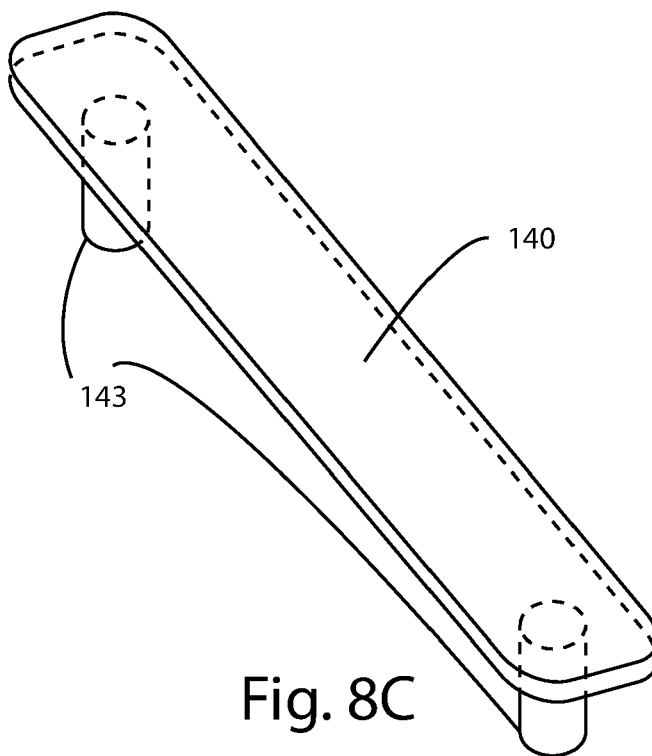


Fig. 8C

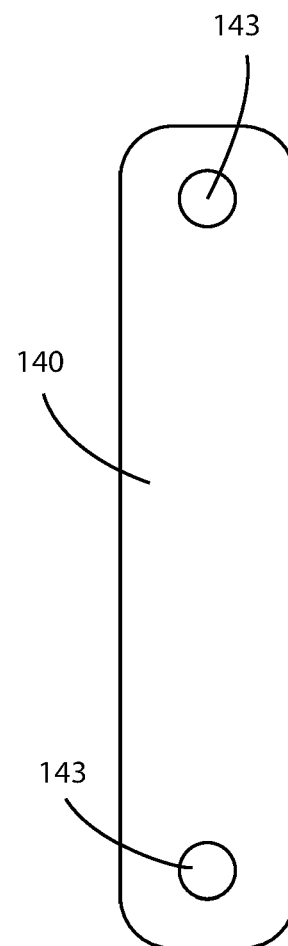


Fig. 8D

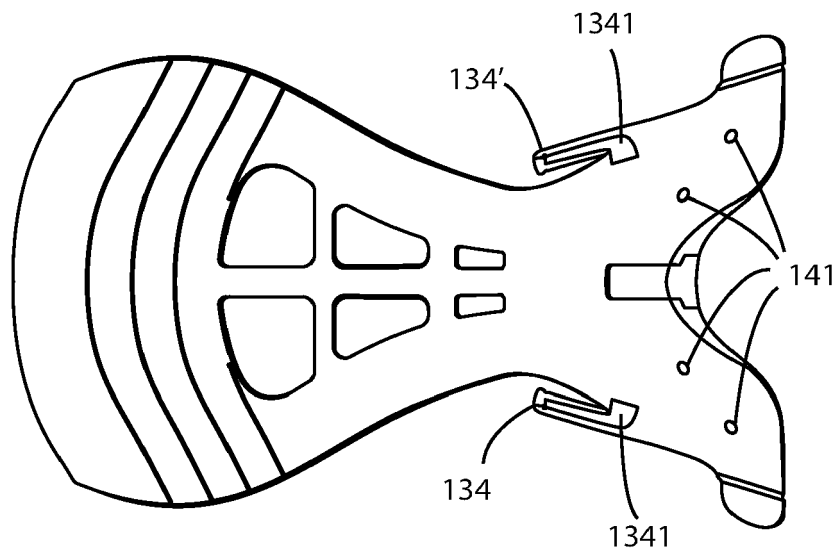


Fig. 9A

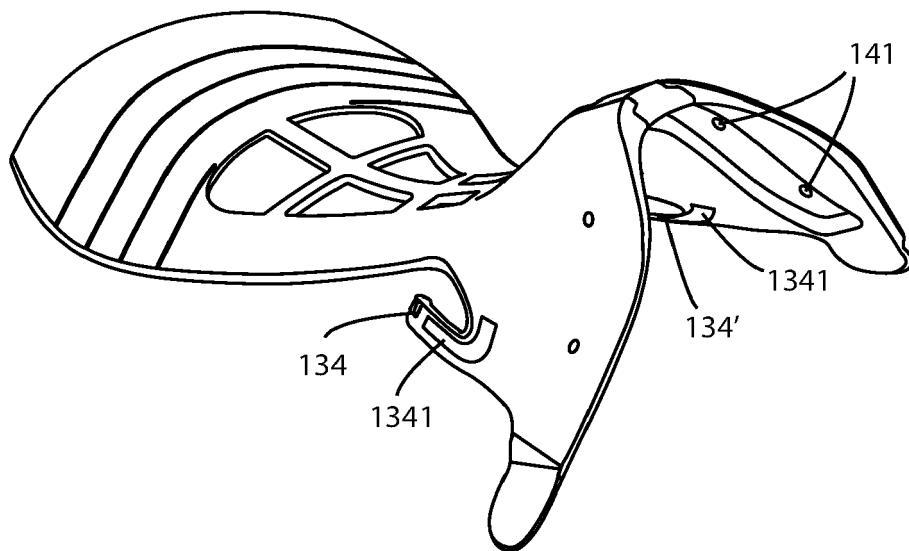


Fig. 9B

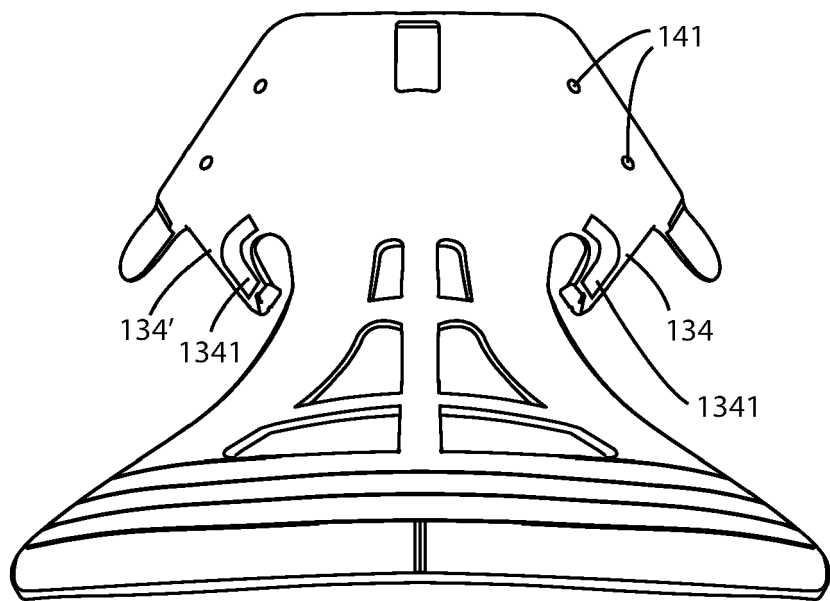


Fig. 9C

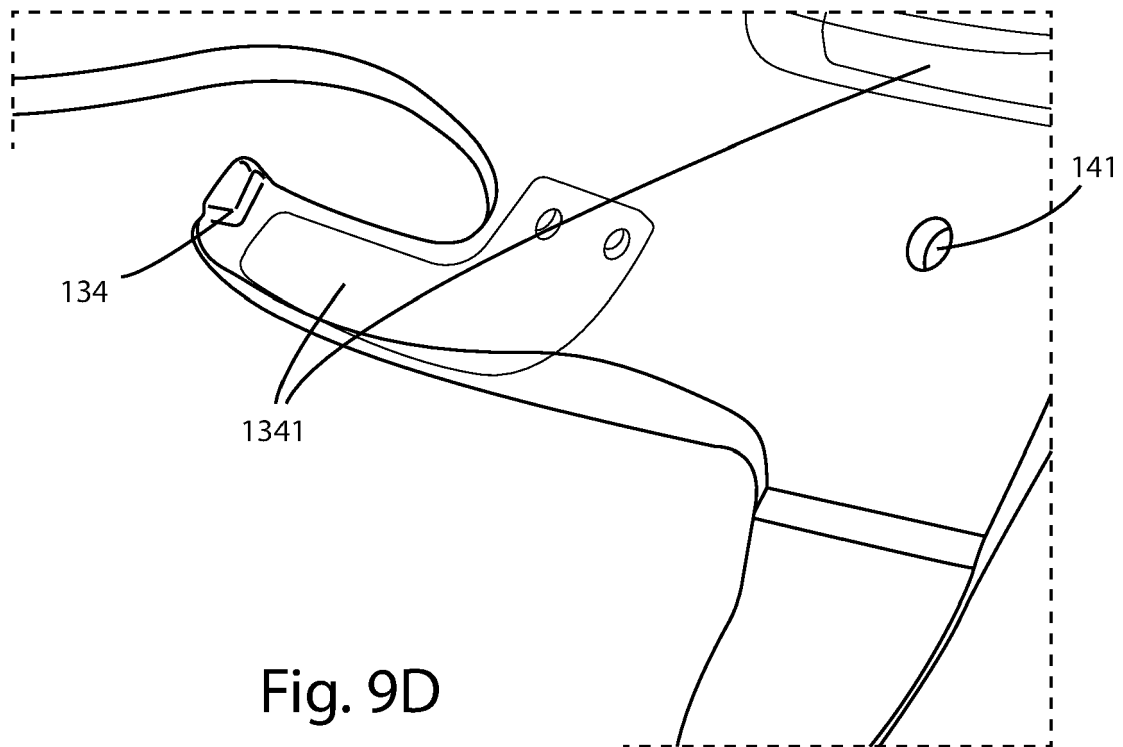


Fig. 9D

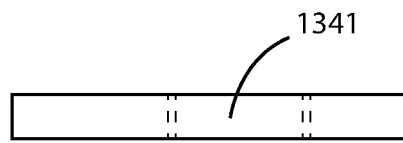


Fig. 10A

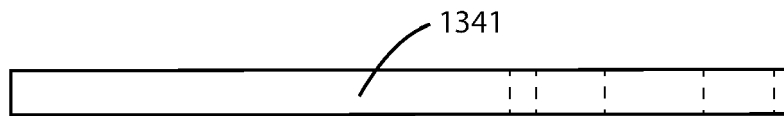


Fig. 10B

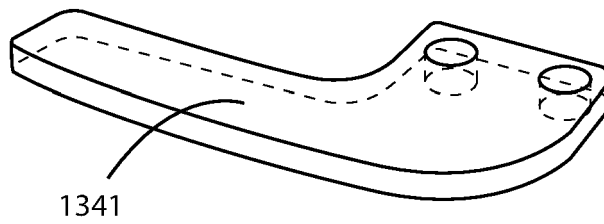


Fig. 10C

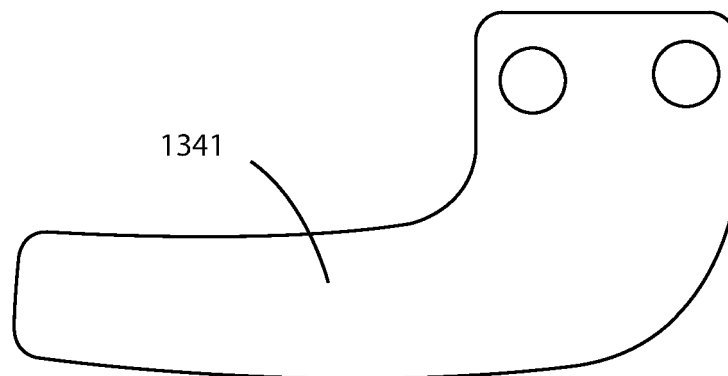


Fig. 10D



EUROPEAN SEARCH REPORT

Application Number

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Y	* abstract *	3-11	B68C1/02
	* page 2, line 1 - page 9, line 21 *		B68C1/04
	* figures 1-9 *		
	* claims 1-14 *		

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	* abstract *		
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	* abstract *		B68C
	* page 1, line 14 - page 12, line 25 *		B68F
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	* claims 1-11 *		

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A	* abstract *	3-11	
	* paragraphs [0006] - [0051] *		
	* figures 1-7 *		
	* claims 1-16 *		

The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		31 August 2023	Espeel, Els
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone		T : theory or principle underlying the invention	
Y : particularly relevant if combined with another document of the same category		E : earlier patent document, but published on, or after the filing date	
A : technological background		D : document cited in the application	
O : non-written disclosure		L : document cited for other reasons	
P : intermediate document		& : member of the same patent family, corresponding document	

**ANNEX TO THE EUROPEAN SEARCH REPORT
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