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(54) **Riding stirrup**

(57) The invention is a riding stirrup (1) comprising a supporting element (2) provided with means (3) for connection to a stirrup-strap (F; F') and a tread (4) provided with a supporting surface (5) suited to support a rider's foot resting thereon, and furthermore comprising a coupling device (20) suited to allow the coupling of a belt (C). The invention concerns also an assembly comprising a saddle (S), two stirrups (1, 1') connected to the saddle (S) through corresponding stirrup-straps (F, F') and a belt (C) suited to be coupled to the stirrups (1, 1').

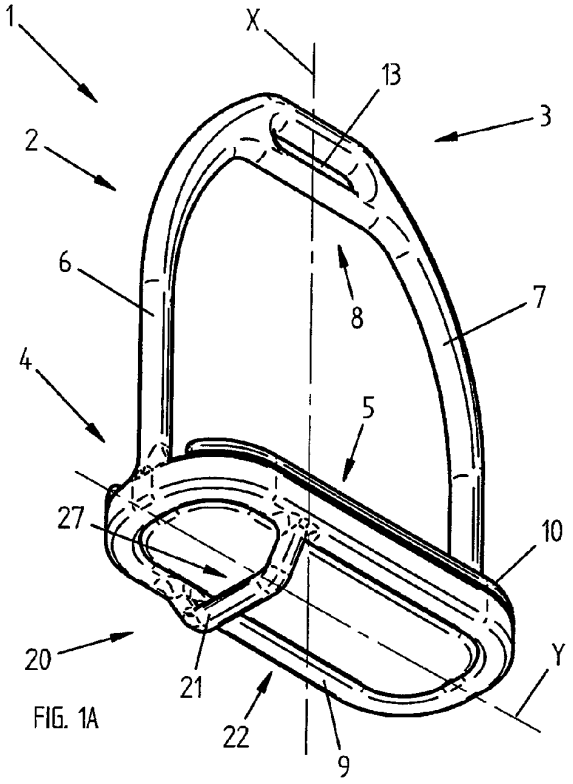

FIG. 1A

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Description

FIELD OF APPLICATION OF THE INVENTION

[0001] The present invention concerns the technical field of the equipment used for mounting animals, especially horses.

[0002] In particular, the present invention concerns a stirrup suited to support the foot of a rider that is mounting an animal.

[0003] More particularly, the present invention concerns a stirrup suited to be used by riders in sporting disciplines, in particular Horseball.

DESCRIPTION OF THE STATE OF THE ART

[0004] The invention concerns a stirrup particularly suited to be used for mounting animals.

[0005] As is known, in order to facilitate a rider who has to ride a horse or a donkey or an animal in general, special pieces of equipment are used, called saddles, which are applied to the animal's back.

[0006] Saddles, and in particular saddles for riding horses, are generally made of leather and substantially comprise a seat provided with belts or a girth suited to anchor it to the animal's back and two lateral supporting hooks for the stirrup-straps, at the ends of which there are the two stirrups that are the elements on which the rider rests his/her feet.

[0007] The stirrups of the known type substantially comprise a substantially flat portion, also called tread, on which the rider rests his/her foot, and a loop-shaped portion, also called loop, on top of which there is a ring through which the stirrup-strap is introduced.

[0008] Between the tread and the loop a housing is thus defined, inside which the rider can rest his/her foot on the tread.

[0009] In particular cases, the two stirrups, which are arranged laterally with respect to the saddle, are connected to each other by means of a belt that passes under the horse's belly. The belt serves to keep the two stirrups firmly connected to each other.

[0010] According to the known technique, the belt is connected to each stirrup by means of a buckle or a spring catch that is coupled to a vertical section of the loop of the stirrup, that is, in a portion of the loop between the tread and the ring where the stirrup-strap is introduced. When the rider's foot is resting on the tread, said coupling portion is directed towards the horse's belly.

[0011] The use of said connection belt becomes of fundamental importance if the horse is used for sporting disciplines, in particular Horseball.

[0012] In Horseball two teams of 4 players each oppose each other in a game that is similar to basket, in which the winner is the team that scores more goals with the ball.

[0013] In this case, however, the ball is not elastic and when it falls on the ground the players have to pick it up without getting off the horse. In practice, in order to be able to pick up the ball while remaining on the saddle, the player firmly rests a foot in the stirrup on the side from which he/she is going to bend towards the ground, while with the back of the other foot he/she firmly clings to the upper portion of the loop of the other stirrup, pulling it upwards. The main function of the belt between the two stirrups is to prevent the stirrups from moving upwards or downwards, and thus to provide a reliable point of anchorage to the player who has to bend to pick up the ball with his/her hand. The anchorage of the belt to the stirrups and the position of the belt that adheres to the horse's belly guarantee that the stirrups are mutually held in position.

[0014] A first drawback posed by the stirrups of the known type lies in that the buckle for coupling the belt to the stirrup projects from the stirrup and can annoy or even injure the horse.

[0015] Another drawback is constituted by the fact that in some cases coupling the belt to the stirrup loop means being able to rotate the stirrup itself by 180° or 360° along a vertical axis, which forces the rider to fit his/her foot the other way round, thus hindering his/her own movements and disturbing the horse.

[0016] A further drawback is represented by the fact that the use of buckles or spring catches for coupling the belt with the vertical section of the stirrup loop reduces the space available for the rider's foot and can affect the correctness of the position of the foot resting on the tread.

[0017] A further drawback of the stirrups of the known type is constituted by the fact that when the belt is fixed in the vertical position with respect to the stirrups, the belt itself must be rotated by 90° so that it can be flattened under the horse's belly, in such a way that it does not annoy the horse and can be fitted, if necessary, into a slot in a girth that helps keep it adherent to the horse's belly.

[0018] The object of the present invention is to overcome said drawbacks.

[0019] In particular, it is an object of the invention to provide a riding stirrup that makes it possible to reduce the risk of annoying and/or scratching and/or irritating or/or injuring the horse with coupling elements used for coupling the belt to the stirrup, like buckles or spring catches.

[0020] It is another object of the invention to provide a stirrup that is capable of offering as much comfort as possible to both rider and horse.

[0021] It is a further object of the invention to provide a stirrup that is capable of guaranteeing as much comfort as possible to the rider in the area of the stirrup where he/she introduces his/her foot.

[0022] It is another object of the invention to provide a stirrup that is capable of maintaining its position as firm as possible and correctly oriented, in such a way as to avoid any discomfort for both rider and horse.

[0023] It is a further object of the invention to provide a stirrup, or a pair of stirrups, capable of maintaining the

belt in horizontal position along the entire distance between the two stirrups.

SUMMARY OF THE PRESENT INVENTION

[0024] The present invention is based, therefore, on the general consideration that it is desirable to be able to provide a riding stirrup equipped with a specific coupling device suited to allow the coupling of a belt.

[0025] According to a first aspect of the present invention, the subject of the same is, therefore, a riding stirrup comprising a supporting element provided with means for connection to a stirrup-strap and a tread provided with a supporting surface suited to support a rider's foot resting thereon, wherein the stirrup comprises also a coupling device suited to allow the coupling of a belt.

[0026] In a preferred embodiment of the invention, the coupling device is associated with the tread.

[0027] The coupling device is preferably arranged in said tread on one of its sides opposite the supporting surface.

[0028] In a preferred embodiment of the invention, the coupling device is made in a single piece with the tread or the supporting element.

[0029] According to another preferred embodiment of the invention, the coupling device is removably associated with the tread or the supporting element.

[0030] Preferably, the coupling device is removably associated in a fixed position with respect to the tread or the supporting element.

[0031] Alternatively, the coupling device is preferably associated in a removable manner with the tread or the supporting element and is provided with at least one degree of freedom with respect to the tread or the supporting element.

[0032] In a preferred embodiment of the invention, said degree of freedom comprises at least one rotary movement of the coupling device with respect to the tread or the supporting element.

[0033] Preferably, the rotary movement of the coupling device is performed with respect to a rotation axis that is substantially parallel to the plane defined by the tread. Alternatively, the rotary movement of the coupling device is preferably performed with respect to a rotation axis that is substantially perpendicular to the plane defined by the tread.

[0034] According to another preferred embodiment of the invention, said degree of freedom comprises at least one translation movement of the coupling device with respect to the tread.

[0035] The coupling device preferably comprises a cross element suited to allow the belt to be coupled directly or through coupling elements.

[0036] Said cross element is preferably obtained in a portion of the tread.

[0037] Alternatively, said cross element is obtained in a portion of the supporting element.

[0038] In another preferred embodiment of the invention, said coupling device comprises an eyelet suited to allow the belt to be coupled directly or through coupling elements.

[0039] The tread is properly provided with a perimeter supporting edge and a plate suited to define the supporting surface.

[0040] According to a preferred embodiment of the invention, the coupling device is associated with the perimeter edge.

[0041] In another preferred embodiment of the invention, the coupling device is associated with the plate.

[0042] In a preferred embodiment of the invention, the coupling device is provided with an opening/closing system suited to define a first closed operating position and an open operating position.

[0043] Preferably, the supporting element is substantially loop-shaped and is provided with two arms suited to be connected to the tread at their ends.

[0044] According to another aspect, the present invention concerns an assembly comprising a saddle, two stirrups connected to said saddle through corresponding stirrup-straps and a belt suited to be coupled to said stirrups, wherein each one of said stirrups is made according to the description provided above.

BRIEF DESCRIPTION OF THE DRAWINGS

[0045] Further advantages, objects and characteristics, as well as further embodiments of the present invention are defined in the claims and will be illustrated in the following description, with reference to the enclosed drawings; in the drawings, corresponding or equivalent characteristics and/or components are identified by the same reference numbers. In particular:

- Figure 1A shows an axonometric view of a stirrup made according to the invention;
- Figure 1B shows a front plan view of the stirrup shown in Figure 1A;
- Figure 1C shows a side plan view of the stirrup shown in Figure 1A;
- Figure 1D shows a bottom plan view of the stirrup shown in Figure 1A;
- Figure 1E shows the stirrup of Figure 1 associated with a belt;
- Figure 1F shows a possible use of two stirrups made according to Figure 1A;
- Figures from 2A to 26A show variant embodiments of the stirrup shown in Figure 1A;
- Figures from 7B to 26B show the stirrups shown in the corresponding Figures from 7A to 26A from a different point of view and partially exploded.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

[0046] Although the present invention is described below with reference to its embodiments illustrated in the

drawings, the present invention is not limited to the embodiments described below and illustrated in the drawings. On the contrary, the embodiments described and illustrated herein clarify some aspects of the present invention, the scope of which is defined in the claims.

[0047] The present invention has proved to be particularly advantageous in the production of stirrups to be used for sporting disciplines, especially Horseball.

[0048] It should however be noted that the present invention is not limited to the use of stirrups in the practice of sporting disciplines. On the contrary, the present invention can be conveniently applied in all the cases where it is desirable to help a rider mount an animal.

[0049] An example of embodiment of a riding stirrup made according to the invention is shown in Figure 1A, where it is indicated as a whole by 1.

[0050] It comprises a supporting element or loop 2, provided with means 3 for connection to a stirrup-strap F of a saddle S, as shown for example in Figure 1F, and a tread 4 that defines a supporting surface 5 on which the rider's foot rests.

[0051] The supporting element 2 preferably comprises two lateral portions 6, 7 that on one side are joined at the level of a connection area 8 where the connection means 3 are provided, and on the other side are associated with the tread 4.

[0052] As is known, when the stirrup 1 is used, with the rider's shoe resting on the tread 4, one of the two lateral portions 6, 7, for example the left one 6 as shown in Figure 1a, is intended to be oriented towards the horse H, while the other lateral portion 7 will be arranged laterally towards the outside of the horse H, as shown for example in Figure 1F.

[0053] In the embodiment illustrated herein, the connection means 3 preferably comprise a slot 13 obtained in the connection area 8 of the lateral portions 6, 7 of the supporting element 2, more preferably in a centre position with respect to a main axis X of development of the stirrup 1.

[0054] In variant embodiments, however, the shape and position of said connection means can be different and be adapted to the different needs from time to time.

[0055] It should be noted that the tread 4 substantially defines a supporting surface and has a substantially rectangular rounded shape that develops along a longitudinal direction Y. Furthermore, at the level of at least part of the supporting surface 5, the tread 4 preferably has a surface finish that is such as to increase the grip of the rider's shoe sole on the tread 4.

[0056] In the embodiment illustrated herein, the tread 4 comprises a perimeter portion or edge 9 that is associated with a plate 10 where said supporting surface 5 is defined.

[0057] The edge 9 is preferably made in a single piece with the supporting element 2, and in particular with the lateral portions 6, 7. The plate 10 is preferably of the removable type, so that it can be advantageously removed and/or re-positioned for cleaning and/or maintenance and/or replacement operations.

[0058] In variant embodiments of the invention, however, the supporting element and the tread can be different from those described above. For example, the lateral portions, the edge and the plate can make up a single body, or the tread and the plate can make up a single body removably associated with the lateral portions, etc.

[0059] According to the invention, the stirrup 1 comprises a coupling device 20 suited to allow the coupling of a belt C, as shown for example in the view of Figure 1E and in Figure 1F.

[0060] In the preferred embodiment of the invention illustrated therein, the coupling device 20 comprises a cross element 21 that joins two sides of the edge 9 of the tread 4. The cross element 21 advantageously extends from the underside 22 of the tread 4, meaning the side of the tread 4 opposite the supporting surface 5.

[0061] Preferably, the cross element 21 extends perpendicularly with respect to the sides of the edge 9 or, in other words, perpendicularly to the longitudinal direction Y of the tread 4.

[0062] The cross element 21 is located in a position that is not central and is nearer the lateral portion 6 of the supporting element 2, that is, the portion that is intended to be directed towards the horse H.

[0063] The cross element 21 is preferably made in a single piece with the edge 9 of the tread 4. The cross element 21 defines, to advantage, a coupling area where the end portion of a belt C can be comfortably coupled. For example, as shown in Figure 1E, a portion of the belt C is wrapped around the cross element 21.

[0064] The cross element 21 also defines, with respect to the tread 4, a passage area 27 through which the end of the belt C can be inserted while being locked.

[0065] In variant embodiments of the invention, and as represented and described here below, the belt C can be coupled by means of suitable coupling elements, like metal rings or buckles of the type shown, for example, in Figure 9B, or by means of a spring catch of the type shown, for example, in Figure 10B.

[0066] The word "coupling" can mean the actual locking of the end of the belt C to the coupling device, as well as a condition of anchorage in which the belt C is in any case able to slide, as can happen in the situation shown in Figure 1E.

[0067] The various components of the stirrup 1 can be made using the materials and the technologies that are most suitable for their intended use.

[0068] Thus, for example, it will be possible to use metallic materials and melting and/or welding technologies for assembling the various pieces, or polymeric materials and moulding technologies.

[0069] An advantageous application of the stirrup 1 is shown in Figure 1F.

[0070] In practice, in this configuration two stirrups 1, 1' of the type described above are used, each one of which is connected to a saddle S by means of a corresponding stirrup-strap F, F'.

[0071] A belt C is advantageously arranged between the two stirrups 1, 1' and is passed under the belly of the horse H.

[0072] The ends C1 and C2 of the belt C are coupled to the two stirrups 1, 1' by means of the corresponding coupling devices 20, 20' according to the present invention. Advantageously, the stirrups 1', 1' and the corresponding coupling devices 20, 20' according to the invention provide a specific coupling point for the belt C that connects them.

[0073] Advantageously, the position of the coupling devices 20, 20' on the underside 22 of the tread 4 avoids any contact of the end portion of the belt C and of any of its coupling elements, such as metal rings, spring catches or similar elements, with the body of the animal H. This makes it possible to eliminate any risk of annoying and/or scratching and/or irritating or/or injuring the horse with said coupling elements.

[0074] Still advantageously, the coupling devices 20, 20' according to the invention allow the belt C to be coupled without affecting in any way the area where the rider's foot fits in the stirrup, meaning the area included between the loop 2 and the tread 4. This ensures that the rider is as comfortable as possible.

[0075] Always with reference to the configuration of use of the stirrups 1, 1', it should be noted that the position of the coupling devices 20, 20' on the underside 22 of the tread 4 makes it possible to place the entire belt C in its full extension in a substantially horizontal planar position, with no need to twist it, and thus to position it correctly against the body of the animal H, contrary to what may happen in the solutions of the known art. This makes it possible to ensure that the horse is as comfortable as possible.

[0076] Furthermore, the coupling devices 20, 20' of the stirrups 1 and 1' help maintain the stirrups 1, 1' in the correct position and prevent them from being twisted or rotated around their vertical axis V.

[0077] Said advantages are particularly important when a horse H is mounted for a Horseball match and in the phases in which the player bends laterally to pick up the ball with his/her hand and at the same time exerts a considerable thrust on the stirrup to which the supporting foot adheres, as substantially and schematically shown in Figure 1F.

[0078] Other embodiments of a stirrup according to the invention are shown in the Figures from 2A to 23A.

[0079] The stirrup 1a of Figure 2A is differentiated from the previous one due to the fact that the cross element 21a is located in a centre position with respect to the lateral portions 6 and 7 of the supporting element 2.

[0080] The stirrup 1b of Figure 3A is differentiated from the stirrup 1 of the first embodiment due to the fact that the cross element 21b extends obliquely, and not perpendicularly, with respect to the sides of the edge 9 or, in other words, obliquely with respect to the longitudinal direction Y of the tread 4.

[0081] The stirrup 1c of Figure 4A is differentiated from the stirrup 1 of the first embodiment due to the fact that, in addition to the first cross element 21, it also has a second cross element 23.

[0082] The second cross element 23 is located in a position that is not central and is nearer the lateral portion 7 of the supporting element 2 intended to be oriented towards the outside with respect to the horse H.

[0083] The stirrup 1d of Figure 5A is differentiated from the stirrup 1 of the first embodiment due to the fact that the cross element 21 comprises a through hole 24.

[0084] The through hole 24 advantageously allows the belt C to be coupled by means of suitable coupling elements, like for example metal rings or buckles of the type represented, for example, in Figure 9B, or by means of a spring catch of the type represented, for example, in Figure 10B.

[0085] The stirrup 1e shown in Figure 6A is differentiated from the stirrup 1d previously described due to the fact that the cross element 21 with the through hole 24 is located in a centre position with respect to the lateral portions 6 and 7 of the supporting element 2. The stirrup 1f shown in Figures 7A and 7B is differentiated from the stirrup 1 of the first embodiment due to the different configuration of the two lateral portions 6f, 7f of the supporting element 2f.

[0086] The two lateral portions 6f, 7f bifurcate in the lower area suitable for connection to the tread 4, and thus the lateral portions 6f, 7f assume the shape of an upturned V. The lower ends of the branches are connected by substantially parallel lateral edges 9f', 9f" that support the plate 10f where the supporting surface 5 is defined.

[0087] The cross element 21 joins said lateral edges 9f', 9f" in a position in proximity to one of the two lateral portions 6f of the supporting element 2f.

[0088] The stirrup 1g shown in Figures 8A and 8B is differentiated from the stirrup 1f described above due to the fact that said lateral edges 9f', 9f" are joined by two terminal cross elements 21g and 23g rather than by a single cross element.

[0089] One of the two cross elements 21g, 23g advantageously defines the coupling area for a belt C.

[0090] The stirrup 1h shown in Figures 9A and 9B is differentiated from the stirrup 1 of the first embodiment due to the fact that the tread 4h comprises an underside 9h associated with the plate 10, and to the fact that the coupling device 20h comprises an eyelet 25 suited to define a through hole 26.

[0091] The eyelet 25 is made in a single piece with the underside 9h.

[0092] The eyelet 25 is located in a non-central position, nearer the lateral portion 6 of the supporting element 2, that is, the portion that is intended to be directed towards the horse H.

[0093] As shown in Figure 9B, the through hole 26 allows the belt C to be coupled by means of suitable coupling elements, like for example metal rings or buckles, or by means of a spring catch of the type represented, for example, in Figure 10B. The stirrup 1i shown in Fig-

ures 10A and 10B is differentiated from the stirrup 1h previously described due to the fact that the eyelet 25 with the through hole 26 is located in a centre position with respect to the lateral portions 6 and 7 of the supporting element 2.

[0094] In Figure 10B, the eyelet 25 is advantageously associated with a spring catch for connection to the end of a belt.

[0095] The stirrup 1l shown in Figures 11A and 11B is differentiated from the stirrup 1 of the first embodiment due to the fact that the tread 4l comprises a supporting rod 9l extending between the lateral portions 6, 7 of the supporting element 2 and a plate 101 supported by the supporting stirrup 9l.

[0096] The coupling device 201 comprises an eyelet 25 suited to define a through hole 26. The eyelet 25 is made in a single piece in the supporting rod 9l in a position that is not central and is nearer the lateral portion 6 of the supporting element 2, that is, the portion that is intended to be directed towards the horse H.

[0097] The through hole 26 substantially extends along a direction Z that is substantially perpendicular to the longitudinal direction Y of the tread 4l .

[0098] The stirrup 1m shown in Figures 12A and 12B is differentiated from the stirrup 1l previously described due to the fact that the eyelet 25 with the through hole 26 is located in a centre position with respect to the lateral portions 6 and 7 of the supporting element 2.

[0099] The stirrup In shown in Figures 13A and 13B is differentiated from the stirrup 1l previously described due to the fact that the coupling device 20n comprises a squared eyelet 25n suited to define a through hole 26n. The eyelet 25n is made in a single piece in the supporting rod 9l in a terminal position at the level of the lateral portion 6 of the supporting element 2, that is, the portion that is intended to be directed towards the horse H.

[0100] The through hole 26n substantially extends along the longitudinal direction Y of the tread 4n .

[0101] The stirrup 1o shown in Figures 14A and 14B is differentiated from the stirrup

[0102] In previously described due to the fact that the squared eyelet 25n with the through hole 26n is located in a more central position with respect to the lateral portions 6 and 7 of the supporting element 2.

[0103] The stirrup 1p shown in Figures 15A and 15B is differentiated from the stirrup 1 of the first embodiment due to the fact that in the coupling device 20p the cross element 21p does not join the two sides of the edge 9 of the tread 4p but extends directly from the underside 11 of the plate 10p, that is, from the side of the plate 10p opposite the supporting surface 5.

[0104] The cross element 21p is preferably made in a single piece with the plate 10p. The plate 10p is associated with the edge 9 of the tread 4p through suitable connection means 40, like for example fixing screws.

[0105] The stirrup 1q shown in Figures 16A and 16B is differentiated from the stirrup 1a of the embodiment shown in Figure 2A due to the fact that the cross element 21q is not made in a single piece with the edge 9 of the tread 4 but is removably associated with its sides through suitable connection means 41 preferably constituted by fixing screws.

[0106] The stirrup 1r shown in Figures 17A and 17B is differentiated from the stirrup 1h of the embodiment shown in Figure 9A due to the fact that the eyelet 25r is not made in a single piece with the underside 9h but is removably associated with it through suitable connection means 42 preferably constituted by fixing screws. The eyelet 25r of said embodiment is shaped in such a way as to define a corresponding through hole 26r that substantially extends along the longitudinal direction Y of the tread 4r .

[0107] The stirrup 1s shown in Figures 18A and 18B represents another possible embodiment of the stirrup 1s of the invention provided with a removable eyelet 25s.

[0108] In the stirrup 1s, the tread 4s comprises a supporting rod 9s that extends between the lateral portions 6, 7 of the supporting element 2 and a plate 10s supported by the supporting rod 9s. The plate 10s is fixed to the supporting rod 9s by means of locking plates 50, 51 provided with fixing screws.

[0109] The coupling device 20s comprises an eyelet 25s suited to define a through hole 26s.

[0110] The eyelet 25s is removably associated with the underside 11s of the plate 10s. For this purpose, the eyelet 25s comprises a shaped element provided with two terminal branches 53, 54 suited to be inserted in two corresponding channels 55, 56 created on the underside 11s of the plate 10s.

[0111] Two fixing screws 57, 58 inserted in corresponding holes 59, 60 of the plate 10s become engaged with the terminal branches 53, 53 of the eyelet 25s so as to lock it in position. It is evident, however, that in variant embodiments of the invention the eyelet 25s can be fixed to the plate 10s in a different manner. For example, the eyelet can be fixed with glue, or forced into said channels, or again it can be fixed by means of grub screws with recessed hexagon inserted in vertical threaded holes made under the tread, which with their tip press against a portion of the rod iron of which the eyelet is made.

[0112] The stirrup It shown in Figures 19A and 19B is differentiated from the stirrup 1q of the embodiment shown in Figure 17A due to the different structure of the connection means 41t that connect the cross element 21t to the edge 9 of the tread 4t.

[0113] The stirrup 21t is made in a single piece with a supporting base 61 that is removably associated with the edge 9 of the tread 4t through connection means 41t comprising a coupling plate 62 suited to be connected to the supporting base 61 through fixing screws. Connecting the coupling plate 62 to the supporting base 61 fixes the two parts to the edge 9 of the tread 4t.

[0114] Advantageously, the present solution makes it possible to locate and fix the cross element 21t in any desired position along the longitudinal direction Y of the tread 4t.

[0115] The stirrup 1u shown in Figures 20A and 20B is differentiated from the stirrup 1q of the embodiment shown in Figure 17A due to the fact that the coupling device 20u, in addition to being removably associated with the edge 9 of the tread 4u, can also rotate on an axis W defined by a pin 63. For this purpose, the coupling device 20u comprises a tubular base portion 67, suited to be rotated with respect to the pin 63, from which the cross element 21u extends.

[0116] The rotation axis W of the coupling device 20u is substantially perpendicular to the longitudinal direction Y of the tread 4u, or the rotation axis W of the coupling device 20u is even substantially parallel to the plane defined by the tread 4u.

[0117] In variant embodiments of the invention, however, said rotation axis can be oriented in a different and suitable manner as needed.

[0118] Advantageously, the coupling device is properly oriented depending on the direction of the force exerted by the girth belt, thus making the direction and position of assembly of the stirrup irrelevant for the correct use of the same.

[0119] The stirrup 1v shown in Figures 21A and 21B is differentiated from the stirrup 1i of the embodiment shown in Figure 10A due to the fact that the coupling device 20v constituted by the eyelet 25v is removably associated with the underside 9h of the tread 4v and furthermore can rotate on an axis that is substantially parallel to the main axis X of development of the stirrup 1v, or even on an axis that is substantially perpendicular to the plane defined by the tread 4v.

[0120] In variant embodiments of the invention, however, said rotation axis can be oriented in a different and suitable manner as needed.

[0121] The rotation of the eyelet 25v is advantageously obtained by fitting the eyelet 25v itself on the tread 4v through a pin with threaded end 71 inserted in a hole made in the underside 9h of the tread, at the end of which a nut 70 is fixed that prevents it from slipping out but at the same time allows it to rotate freely. Advantageously, when the end of a belt C is connected to a stirrup 1v of this type, the belt C can rotate freely and be automatically arranged in the best possible position against the body of the animal H, guaranteeing to said animal H as much comfort as possible.

[0122] The stirrup 1w shown in Figures 22A and 22B is differentiated from the stirrup 1v described above due to the fact that the coupling device 20w, in addition to being able to rotate on an axis that is substantially parallel to the main axis X of development of the stirrup 1w, can rotate on a further axis Q.

[0123] The coupling device 20w comprises a first base portion 72 that rotates by means of a pin mounted on the tread 4v with a nut 73 that is locked on the pin itself without exerting pressure on the tread, in such a way as to allow the free rotation around the axis X, and an eyelet 25w associated with the base portion 72 in a hole aligned along said further rotation axis Q.

[0124] Advantageously, when the end of a belt C is connected to a stirrup 1w of this type, the belt C can rotate freely and be automatically arranged in the best possible position against the body of the animal H, guaranteeing as much comfort as possible to said animal H.

[0125] The stirrup 1z shown in Figures 23A and 23B is differentiated from the stirrup 1o of the embodiment shown in Figure 14A due to the fact that the coupling device 20z constituted by the eyelet 25z is removably associated with the supporting rod 9l and furthermore can slide on an axis substantially parallel to the longitudinal direction Y of the tread 4z.

[0126] Advantageously, the device that is the subject of the invention can slide in the direction of traction of the girth belt, thus making the direction and position of assembly of the stirrup irrelevant for the correct use of the same.

[0127] The stirrup 1x shown in Figures 24A and 24B is differentiated from the stirrup 1w of the embodiment shown in Figure 22A due to the fact that the coupling device 20x, in addition to being able to rotate on an axis that is substantially parallel to the main axis X of development of the stirrup 1x, can slide on an axis substantially parallel to the longitudinal direction Y of the tread 4x.

[0128] The coupling device 20x comprises a first base portion 72 that rotates by means of a pin mounted on a slot 74 on the tread 4x with a nut 73 that is locked on the pin itself without exerting pressure on the tread 4x and on the slot 74, in such a way as to allow both the free rotation around the axis X and the free translation along the longitudinal direction Y of the tread 4x.

[0129] Advantageously, the device that is the subject of the invention can rotate freely and be automatically arranged in the best possible position against the body of the animal H, thus ensuring the animal itself as much comfort as possible. Advantageously, the device that is the subject of the invention can slide in the direction of traction of the girth belt, thus making the direction and position of assembly of the stirrup irrelevant for the correct use of the same.

[0130] The stirrup 1y shown in Figures 25A and 25B is differentiated from the stirrup 1 of the first embodiment of the invention due to the fact that in the coupling device 20y the cross element 21y is provided with an opening/closing system 80y.

[0131] Preferably, the opening/closing system 80y comprises a portion 21y' of the cross element 21y suited to be arranged in a first closed operating position, suitable for normal use, as indicated in Figure 25A, and in a second open operating position, as shown in Figure 25B.

[0132] The open operating position can advantageously favour the insertion of the end of the belt C, in particular if provided with a coupling ring, for example of the type shown in Figure 9B.

[0133] Preferably, the portion 21y' of the cross element 21y is provided with elastic thrusting means suited to maintain the portion 21y' in the closed operating position, in addition to automatically moving it back to said closed

position from the open operating position.

[0134] The stirrup 1k shown in Figures 26A and 26B is differentiated from the stirrup 1y of the embodiment shown in Figure 25A due to the different configuration of the opening/closing system 80k.

[0135] Preferably, in said opening/closing system 80k the entire cross element 21k is suited to be arranged in a first closed operating position, suitable for normal use, as indicated in Figure 26A, and in a second open operating position, as shown in Figure 26B.

[0136] The opening/closing system 80k preferably comprises a rotation pin 81k associated with a first end of the cross element 21k that is connected to the tread 4k and a second removable pin 82k associated with the other end of the cross element 21k that is connected to the tread 4k.

[0137] The open operating position can advantageously favour the insertion of the end of the belt C, in particular if provided with a coupling ring, for example of the type shown in Figure 9B.

[0138] The above description clearly shows that the proposed solution allows the drawbacks described above to be eliminated and the set goals to be achieved. Advantageously, the stirrup that is the subject of the invention is provided with a coupling device for a belt that makes it possible to obtain a higher degree of comfort for the horse and the rider compared to the stirrups of the known type.

[0139] It is clear that the components described can have any size and shape, provided that these are compatible with the intended use of the stirrup and the goals set.

[0140] The preferred materials for the construction of at least some parts of the stirrup of the invention are an aluminium alloy that makes it particularly resistant and light, stainless steel and titanium. It is clear, however, that other embodiments can be made using other materials, like for example steel in general, brass, carbon fibre or plastic materials in general.

[0141] It is also clear that the tread can even be provided with inserts.

[0142] While the present invention has been described with reference to the particular embodiments shown in the figures, it should be noted that the present invention is not limited to the specific embodiments illustrated and described herein; on the contrary, further variants of the embodiments described herein fall within the scope of the present invention, which is defined in the claims.

Claims

1. Riding stirrup (1) comprising a supporting element (2) provided with means (3) for connection to a stirrup-strap (F; F') and a tread (4) provided with a supporting surface (5) suited to support a rider's foot resting thereon, **characterized in that** it also comprises a coupling device (20) suited to allow the coupling of a belt (C).

2. Stirrup (1) according to claim 1, **characterized in that** said coupling device (20) is associated with said tread (4).

3. Stirrup (I) according to claim 2, **characterized in that** said coupling device (20) is arranged in said tread (4) on one of its sides (22) opposite said supporting surface (5).

4. Stirrup (1) according to any of the preceding claims, **characterized in that** said coupling device (20) is made in a single piece with said tread (4) or said supporting element (2).

5. Stirrup (1) according to any of the claims from 1 to 3, **characterized in that** said coupling device (20) is removably associated with said tread (4) or said supporting element (2).

6. Stirrup (1) according to claim 5, **characterized in that** said coupling device (20) is removably associated in a fixed position with said tread (4) or said supporting element (2).

7. Stirrup (1) according to claim 5, **characterized in that** said coupling device (20) is removably associated with said tread (4) or said supporting element (2) and is provided with at least one degree of freedom with respect to said tread (4) or said supporting element (2).

8. Stirrup (1) according to claim 7, **characterized in that** said degree of freedom comprises at least one rotary movement of said coupling device (20) with respect to said tread (4) or said supporting element (2).

9. Stirrup (1) according to claim 7, **characterized in that** said degree of freedom comprises at least one translation movement of said coupling device (20) with respect to said tread (4).

10. Stirrup (1) according to any of the preceding claims, **characterized in that** said coupling device (20) comprises a cross element (21) suited to allow the coupling of said belt (C), obtained directly or through coupling elements.

11. Stirrup (1) according to any of the claims from 1 to 9, **characterized in that** said coupling device (20) comprises an eyelet (25) suited to allow the coupling of said belt (C), obtained directly or through coupling elements.

12. Stirrup (1) according to any of the preceding claims, **characterized in that** said tread (4) comprises a

supporting perimeter edge (9) and a plate (10) suited to define said supporting surface (5).

13. Stirrup (1) according to claim 12, **characterized in that** said coupling device (20) is associated with said perimeter edge (9).

14. Stirrup (1) according to claim 12, **characterized in that** said coupling device (20) is associated with said plate (10).

15. Assembly comprising a saddle (S), two stirrups (1, 1') connected to said saddle (S) by means of corresponding stirrup-straps (F, F') and a belt (C) suited to be coupled to said stirrups (1, 1'), **characterized in that** each one of said stirrups (1, 1') is a stirrup (1) according to any of the preceding claims.

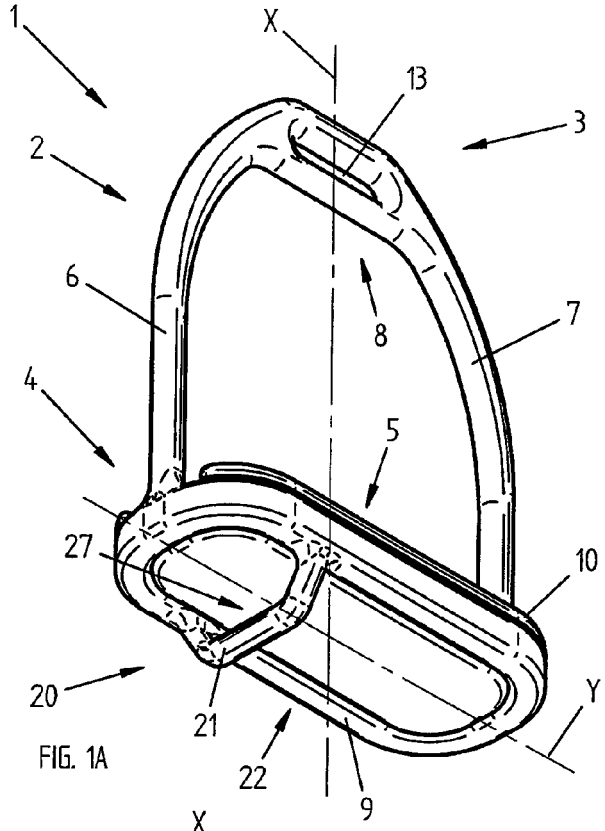

FIG. 1A

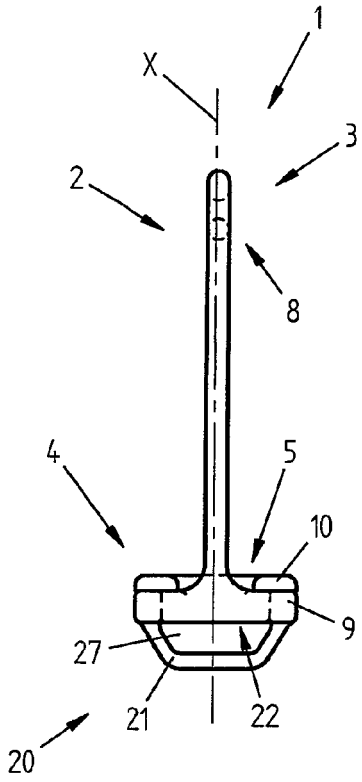

FIG. 1C

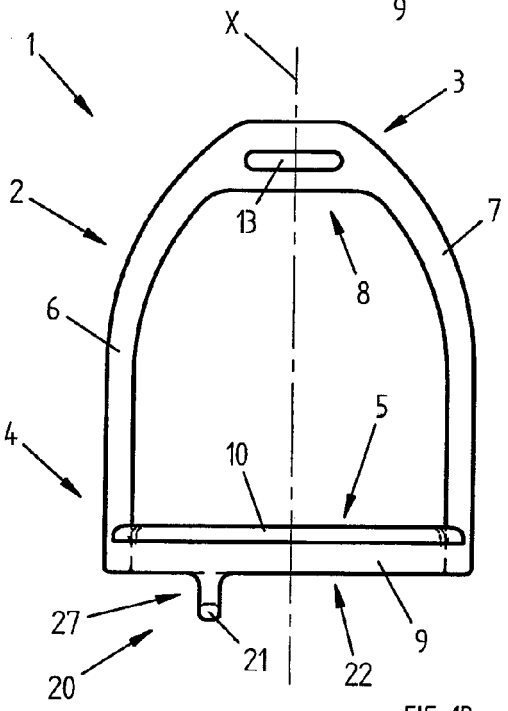

FIG. 1B

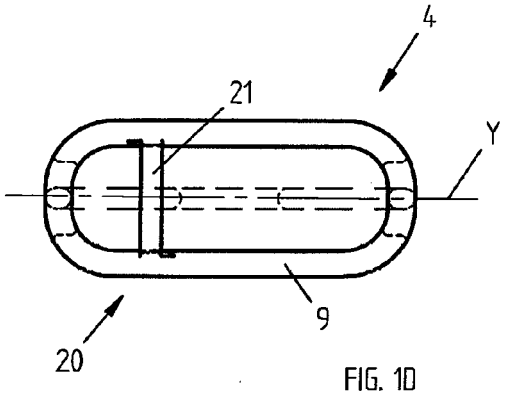

FIG. 1D

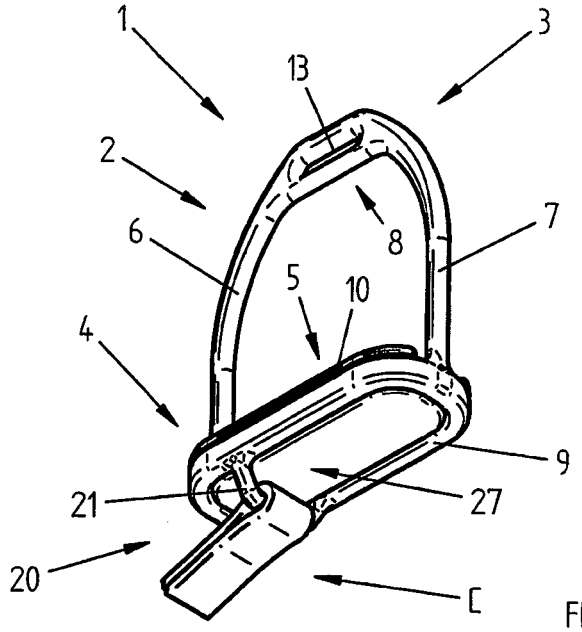

FIG. 1E

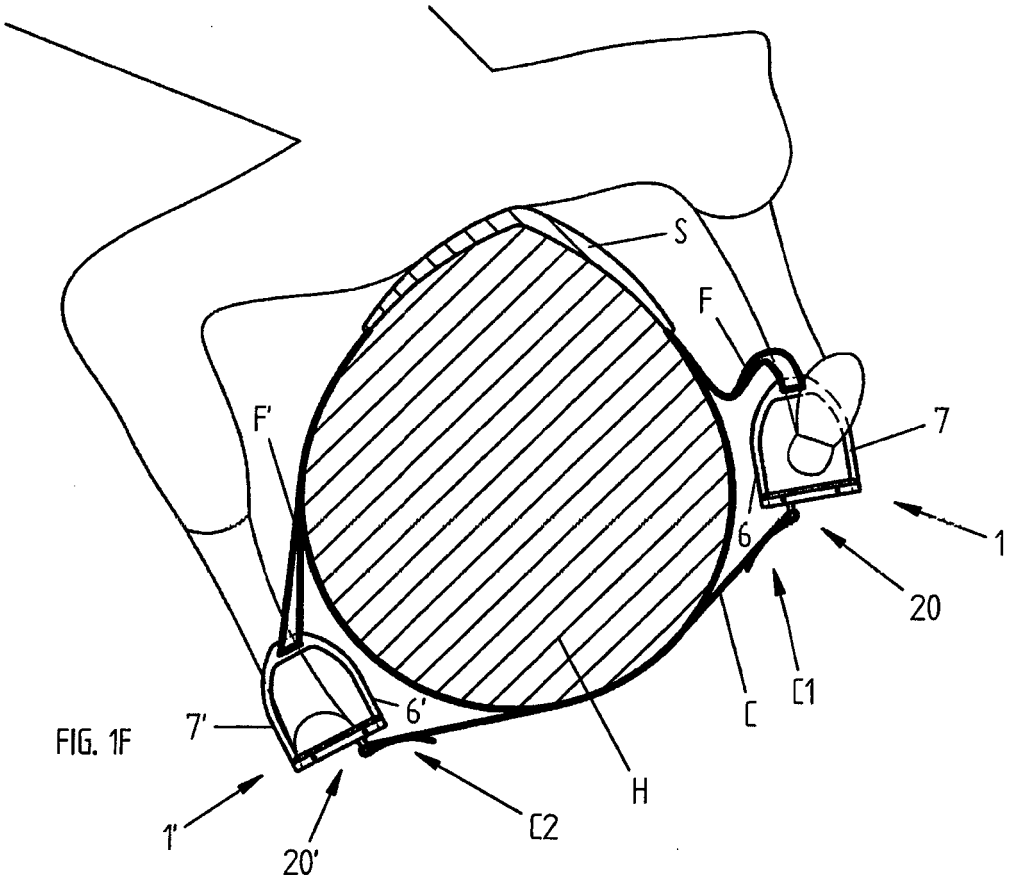

FIG. 1F

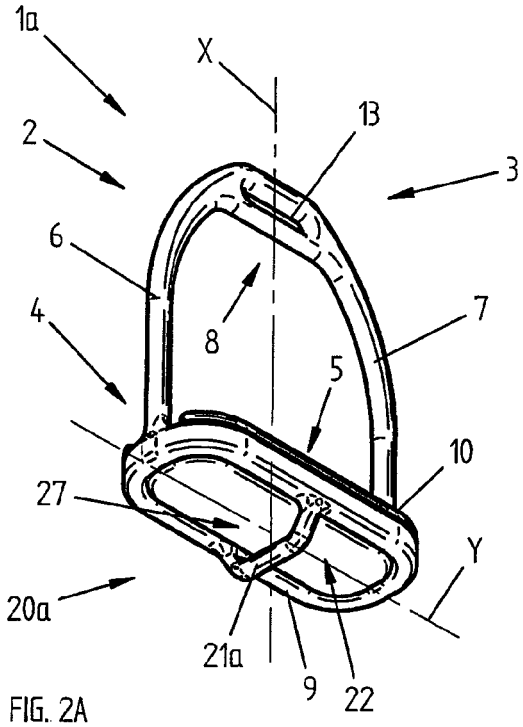

FIG. 2A

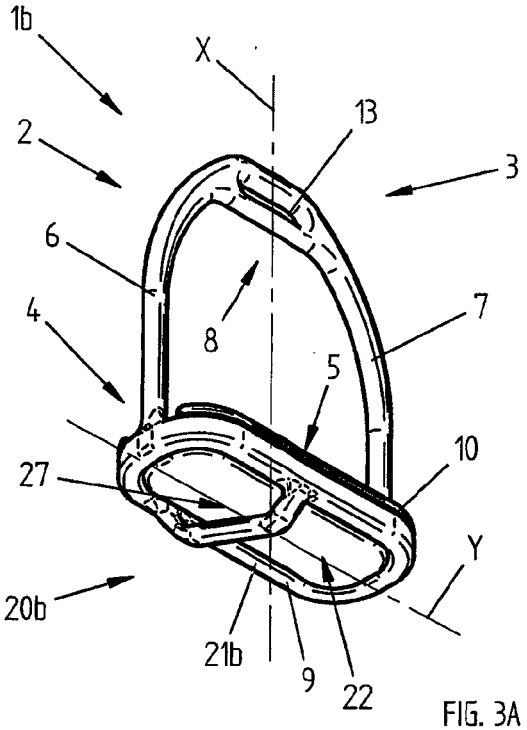

FIG. 3A

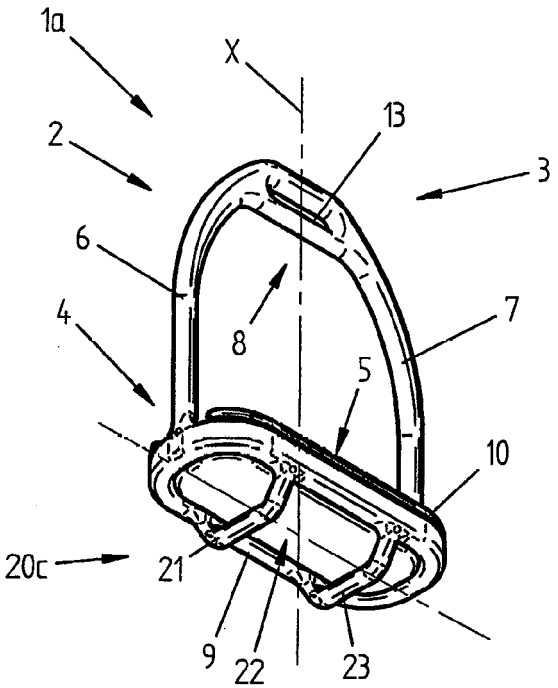

FIG. 4A

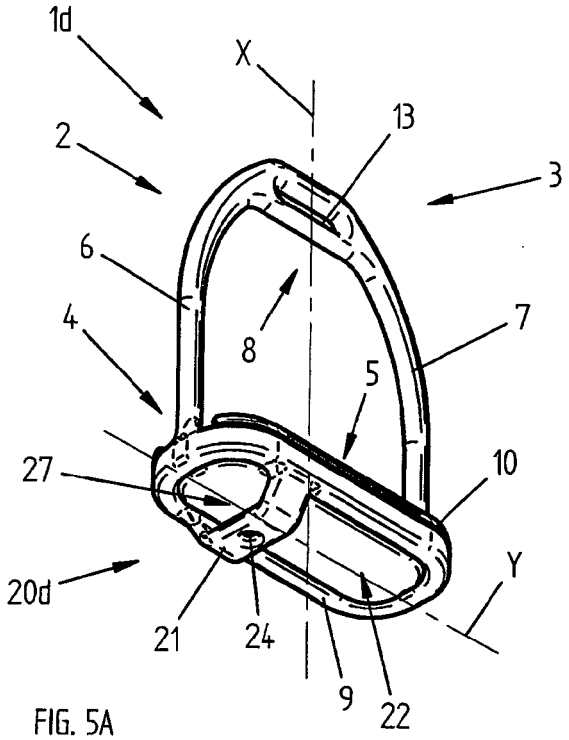

FIG. 5A

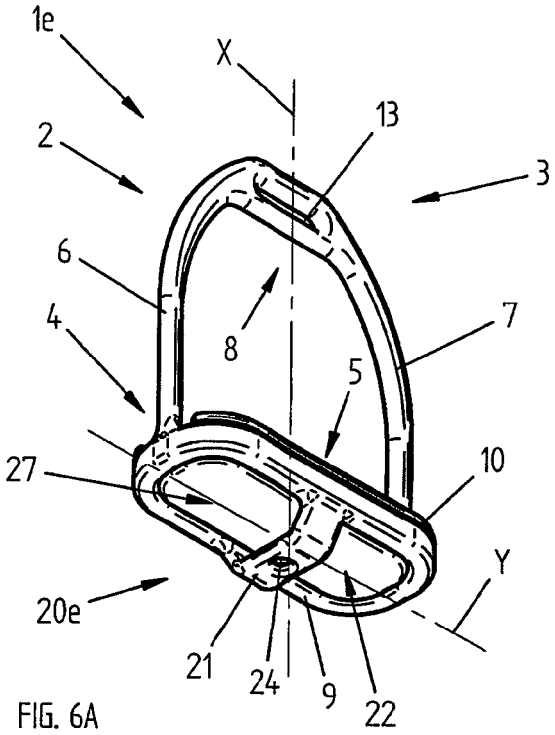

FIG. 6A

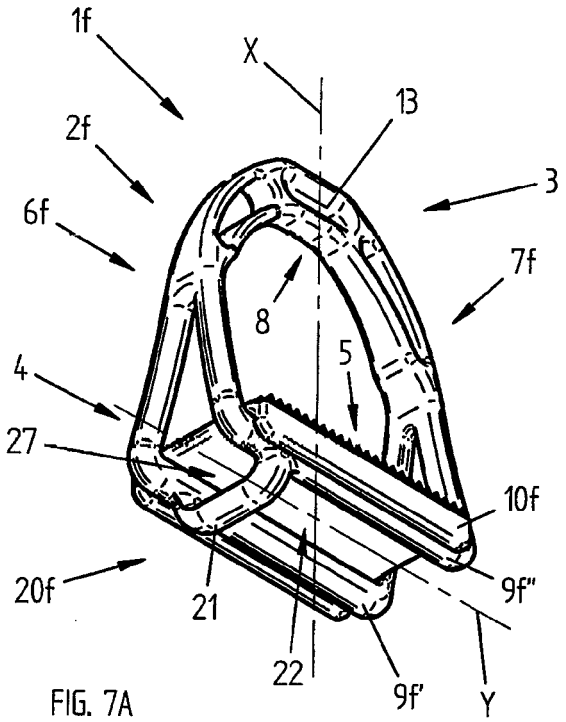

FIG. 7A

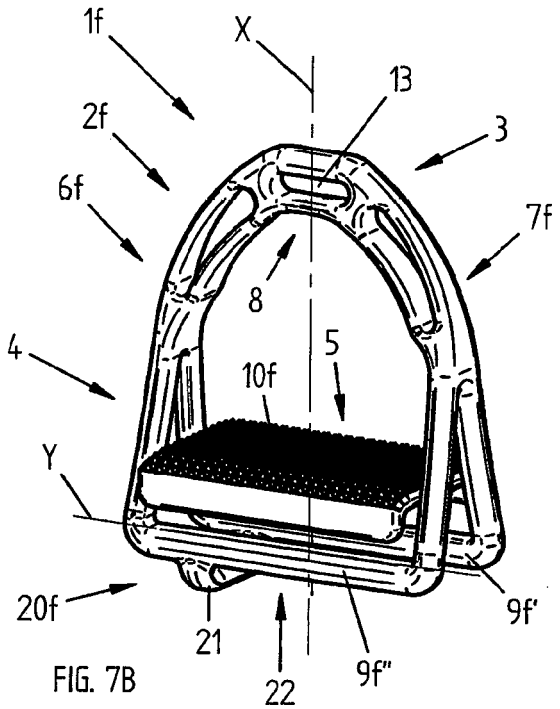

FIG. 7B

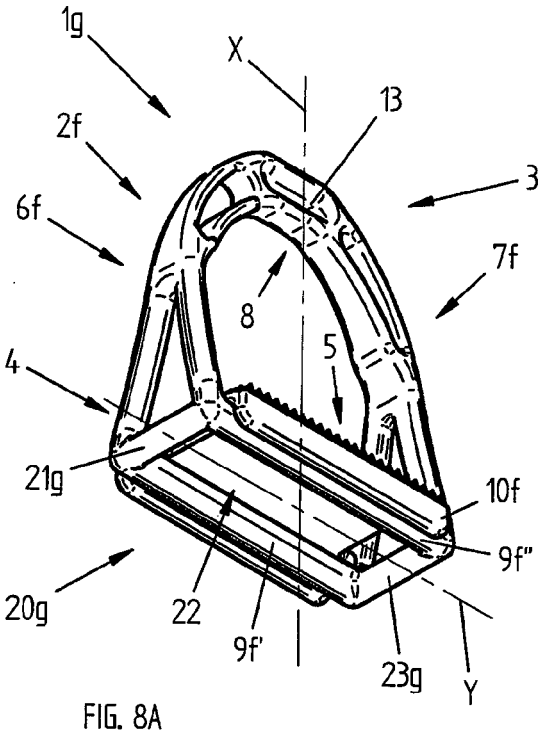

FIG. 8A

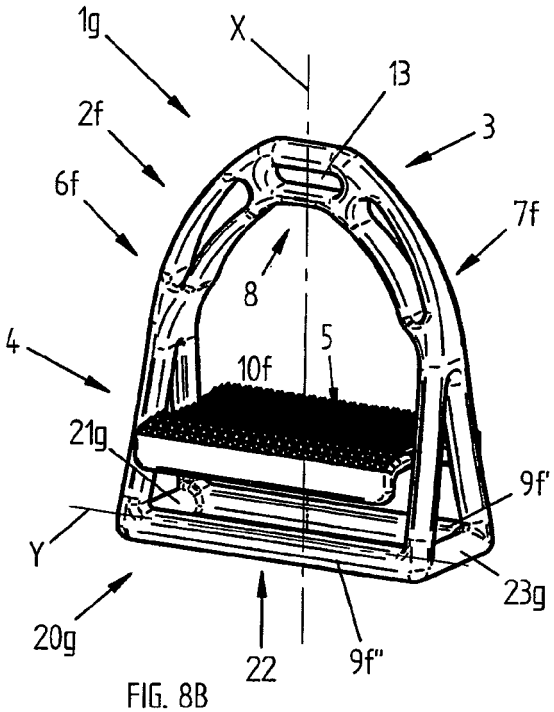

FIG. 8B

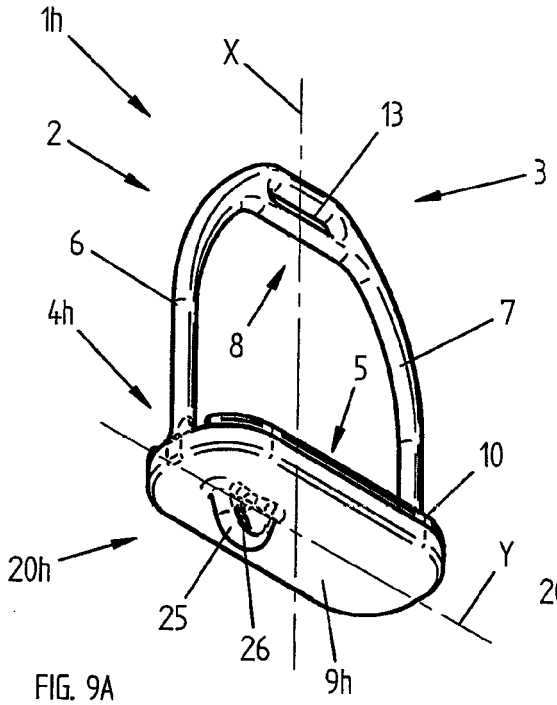

FIG. 9A

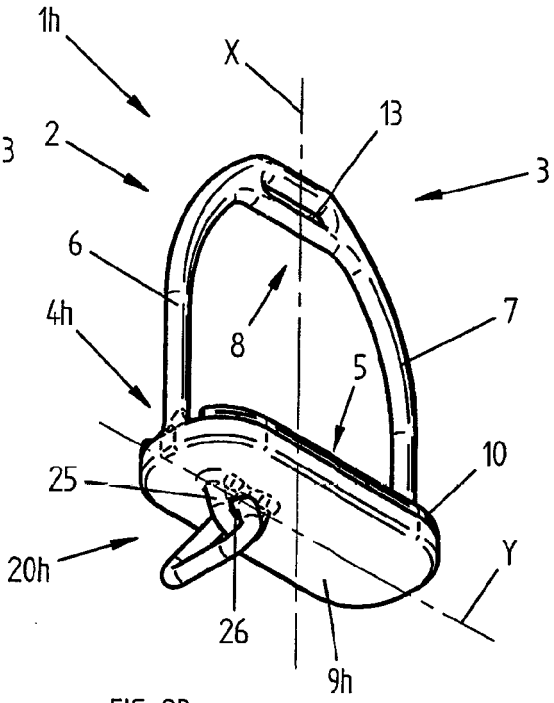

FIG. 9B

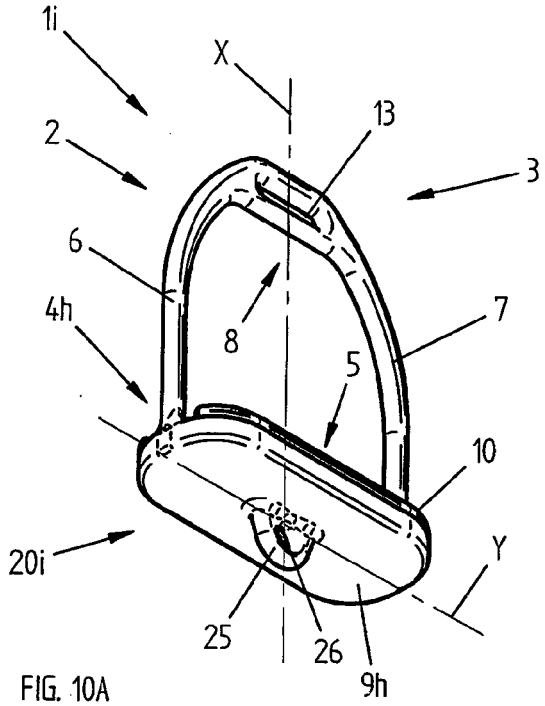

FIG. 10A

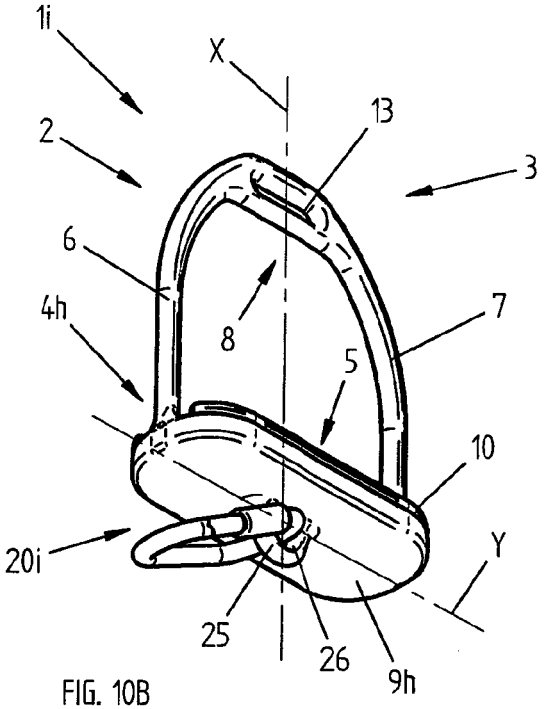

FIG. 10B

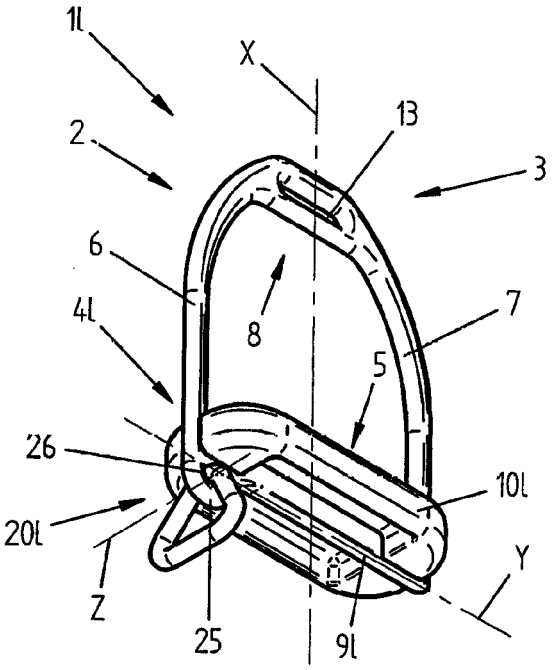

FIG. 11A

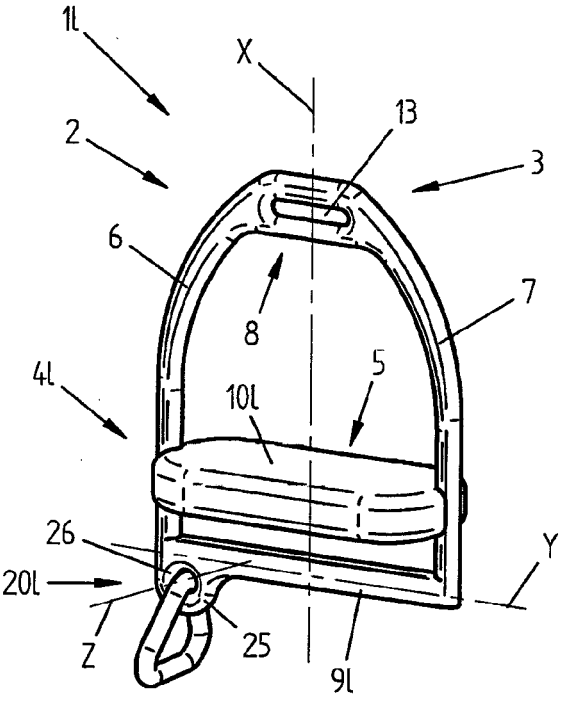

FIG. 11B

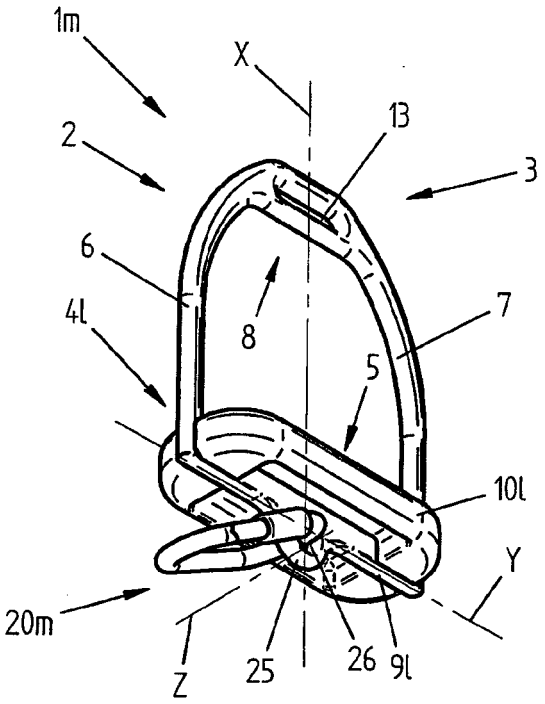

FIG. 12A

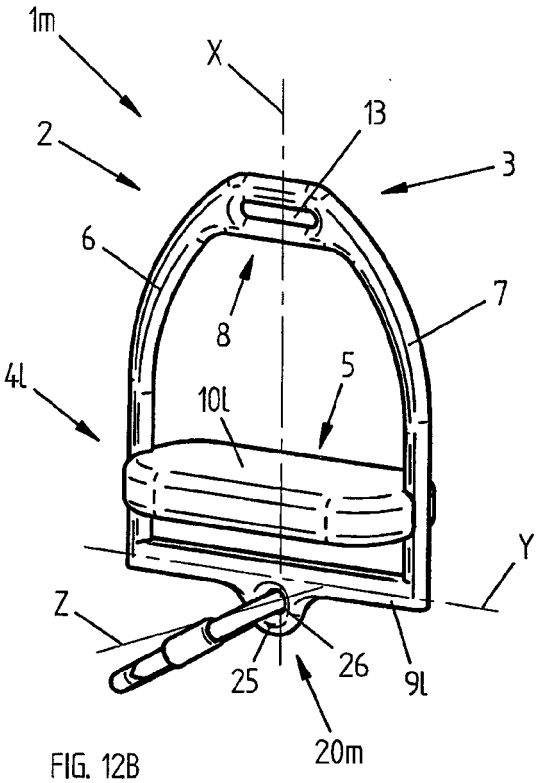

FIG. 12B

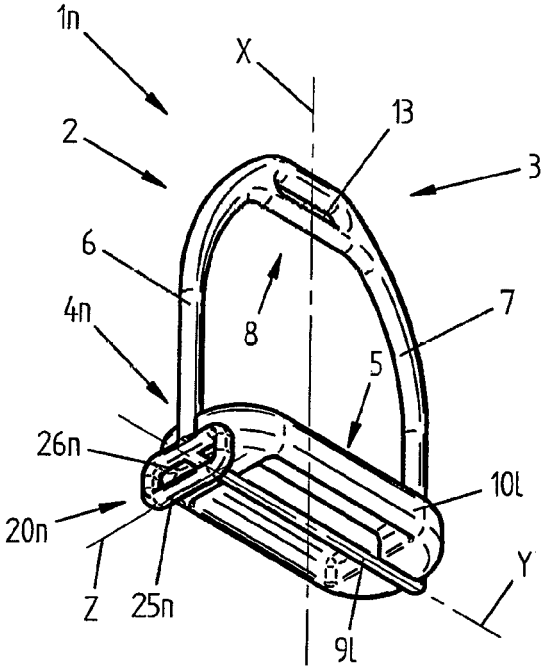

FIG. 13A

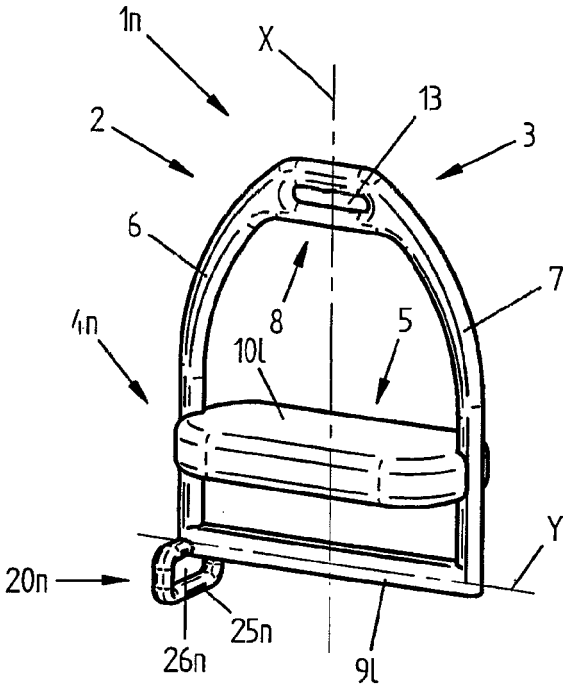

FIG. 13B

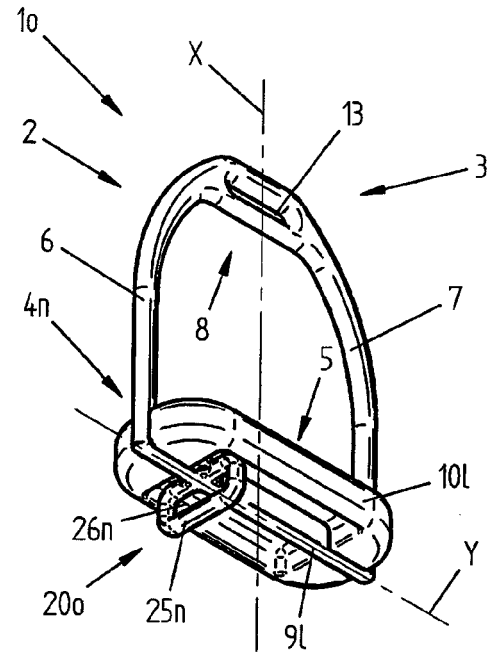

FIG. 14A

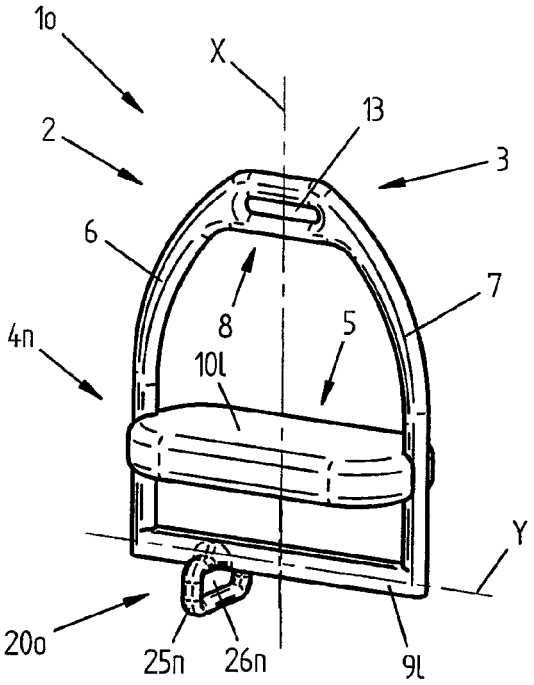

FIG. 14B

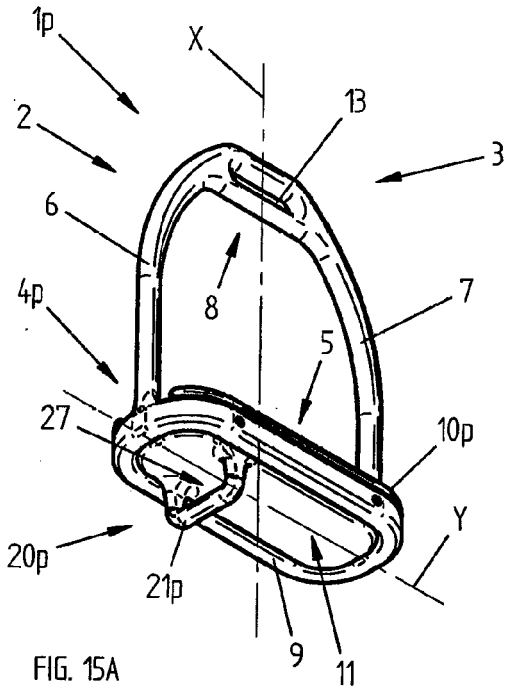

FIG. 15A

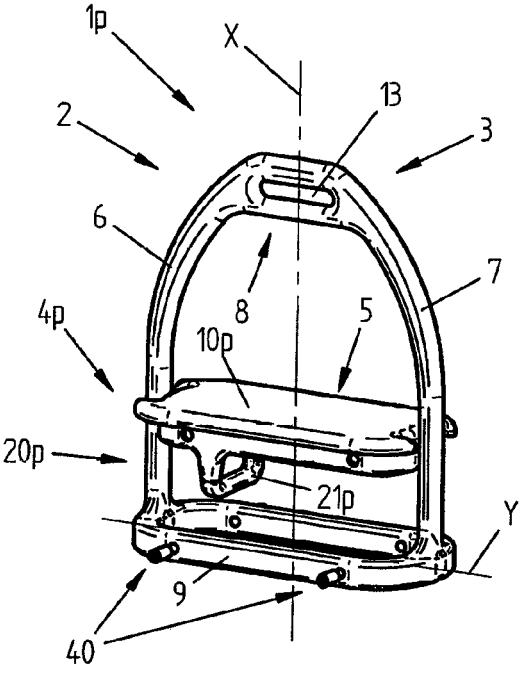

FIG. 15B

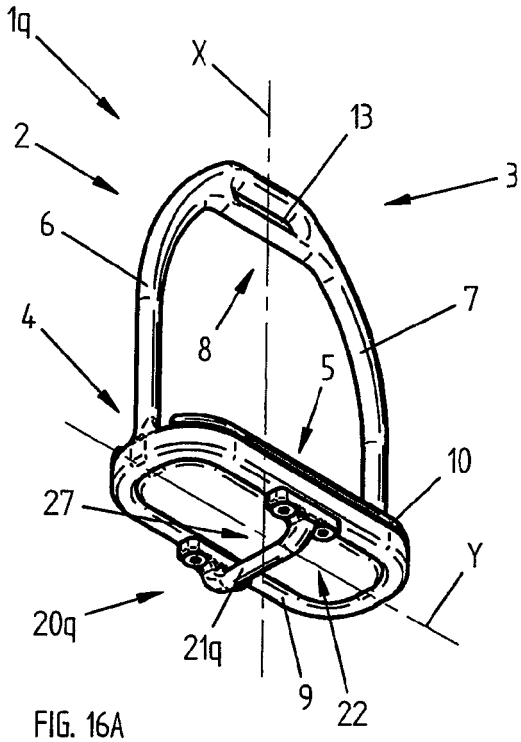

FIG. 16A

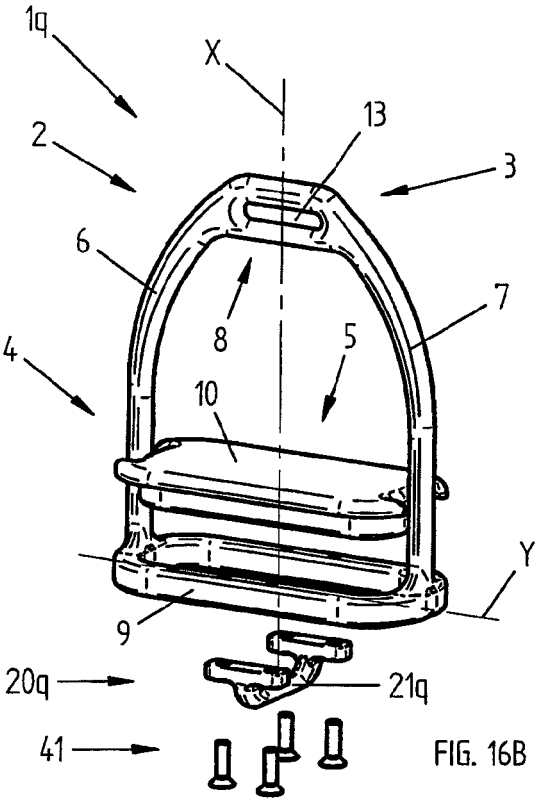

FIG. 16B

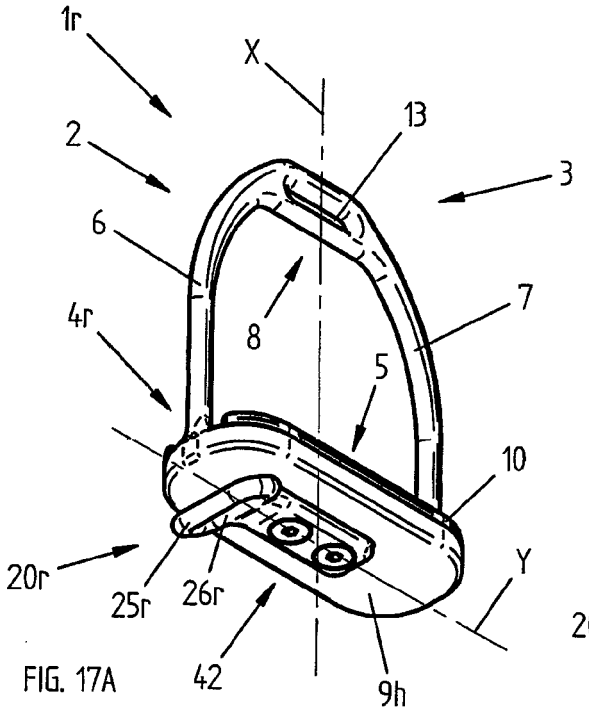

FIG. 17A

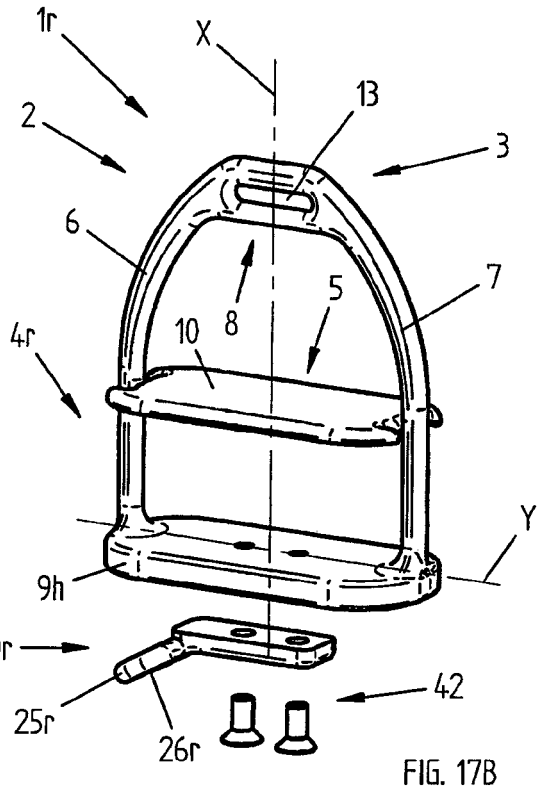

FIG. 17B

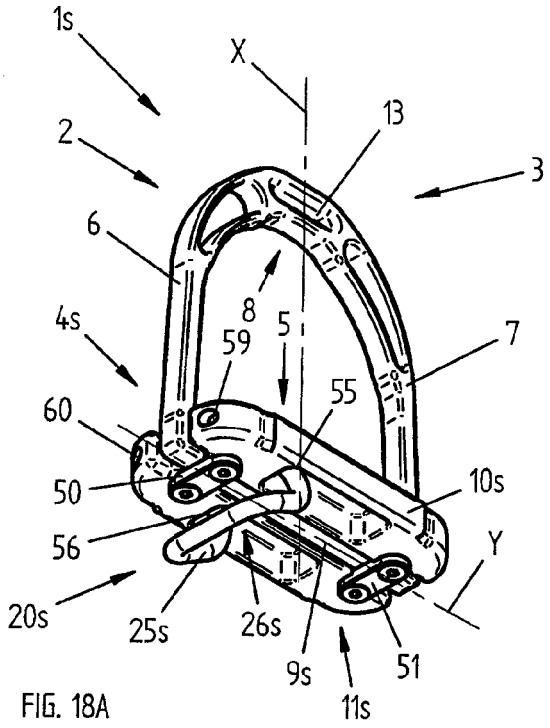

FIG. 18A

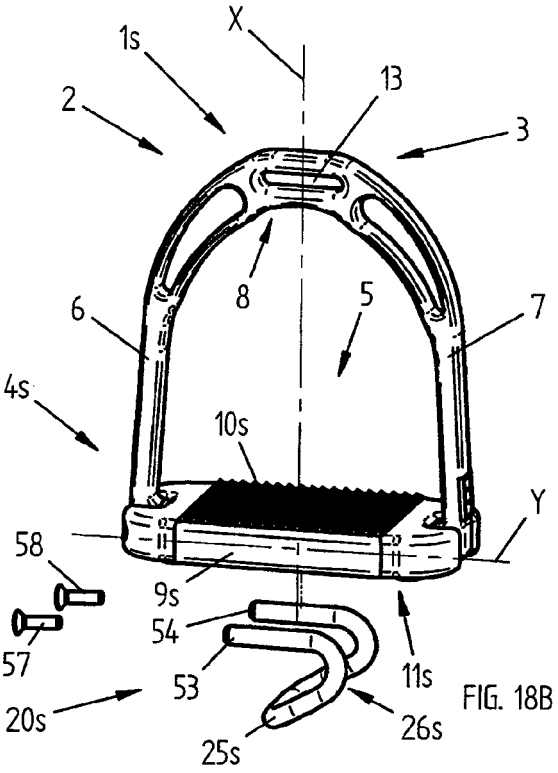

FIG. 18B

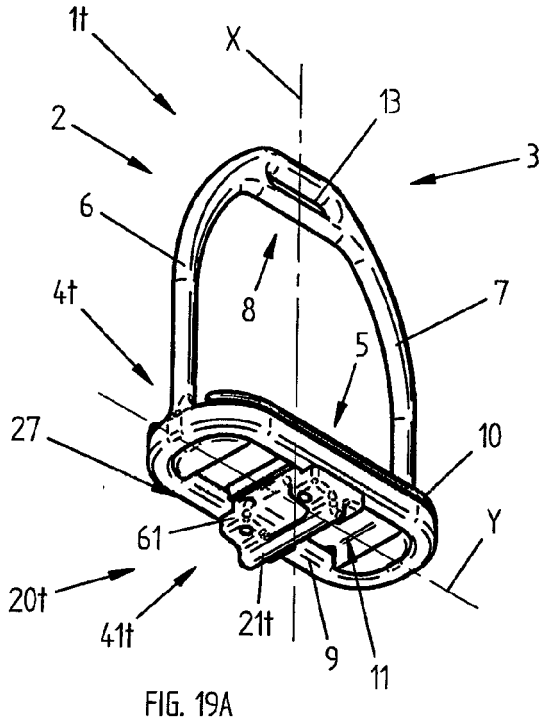

FIG. 19A

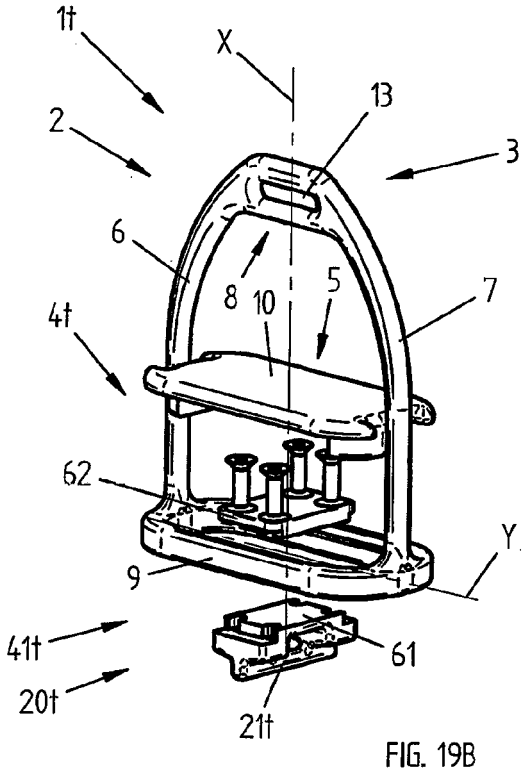

FIG. 19B

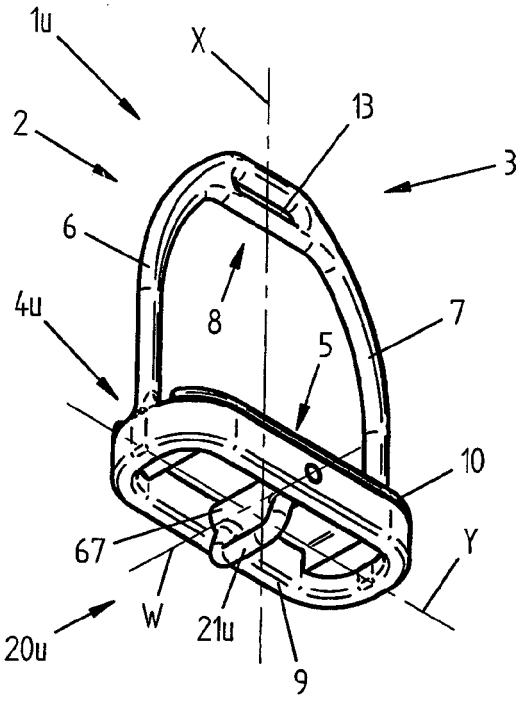

FIG. 20A

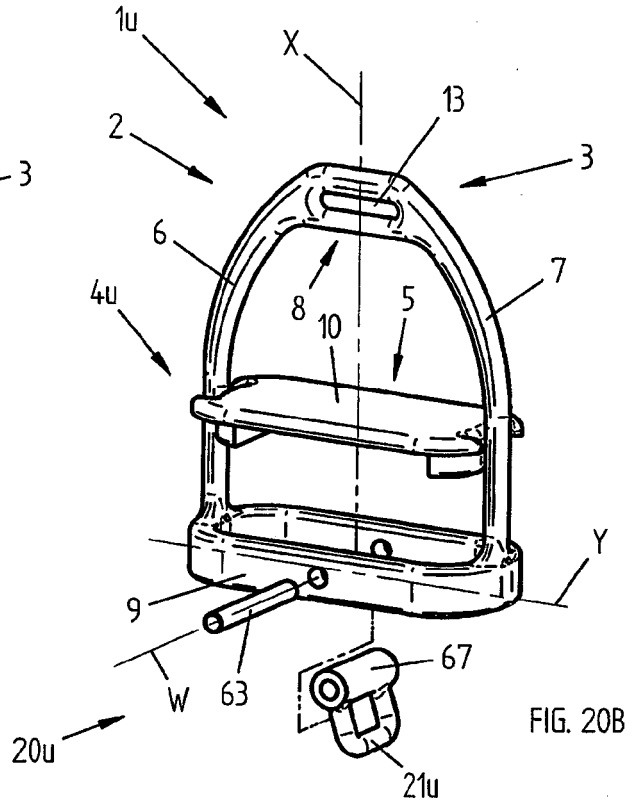

FIG. 20B

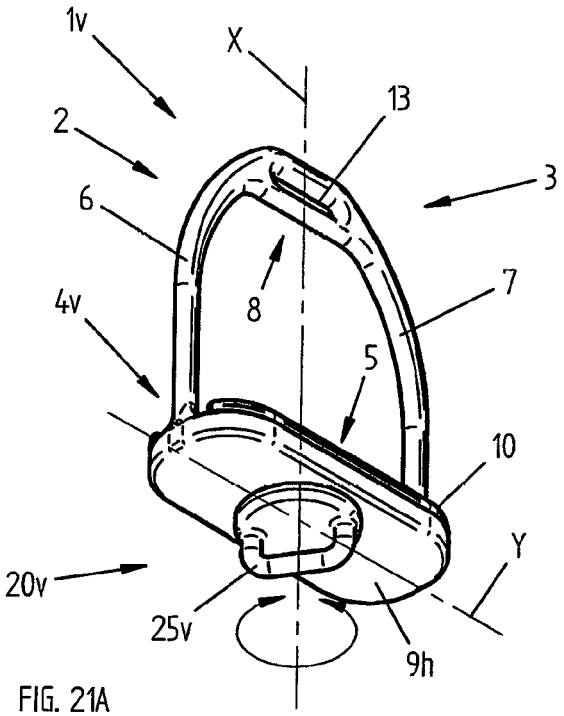

FIG. 21A

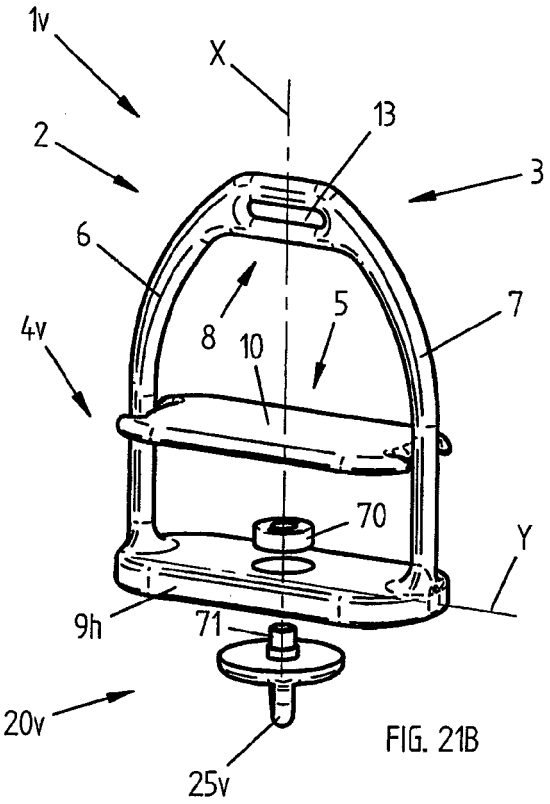

FIG. 21B

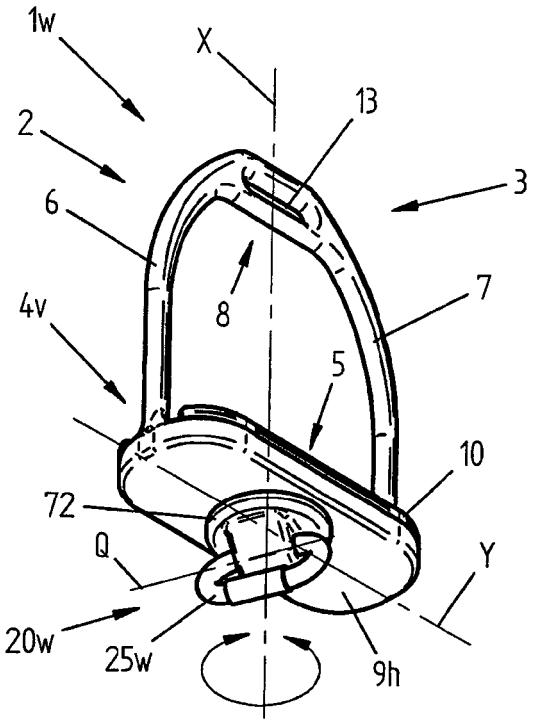

FIG. 22A

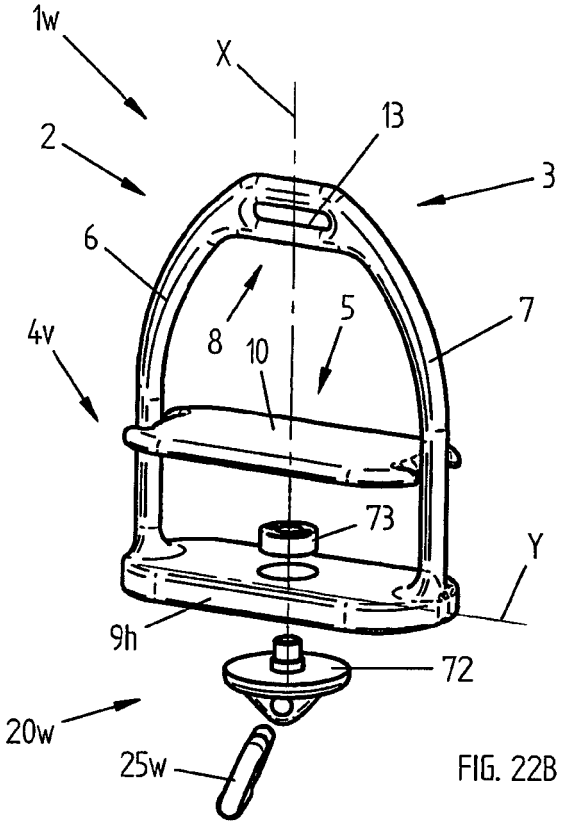

FIG. 22B

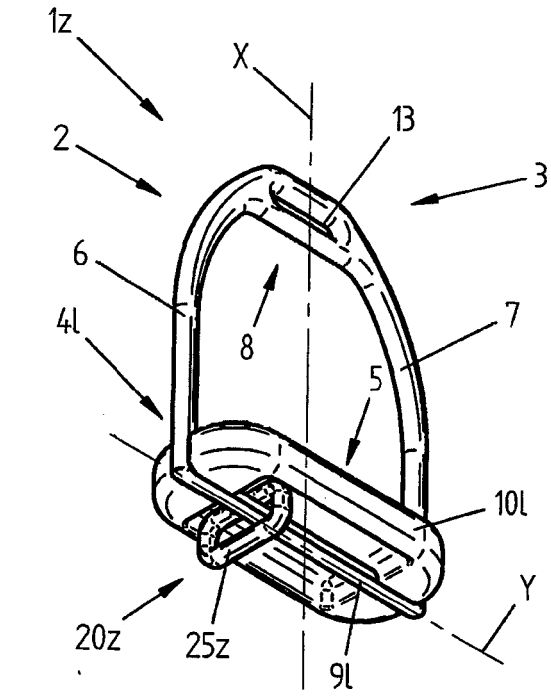

FIG. 23A

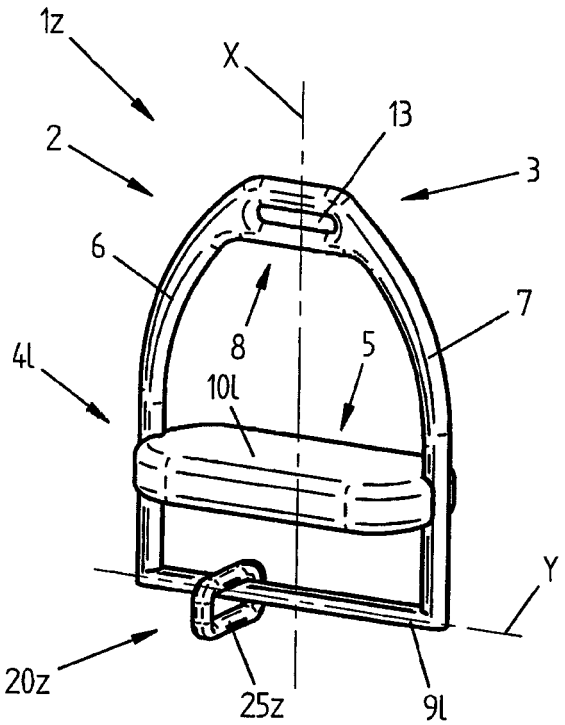

FIG. 23B

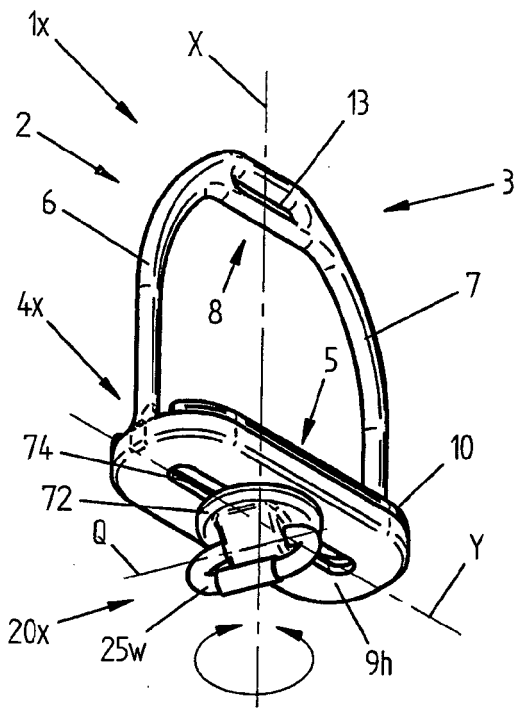

FIG. 24A

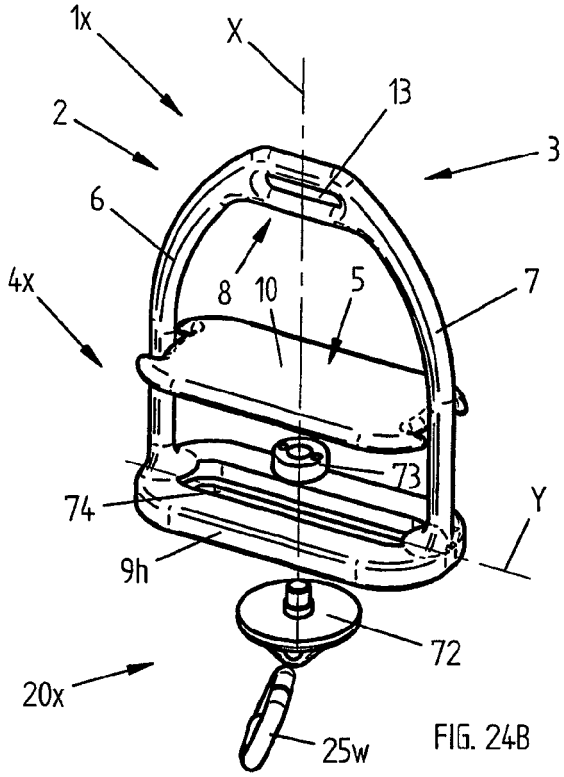

FIG. 24B

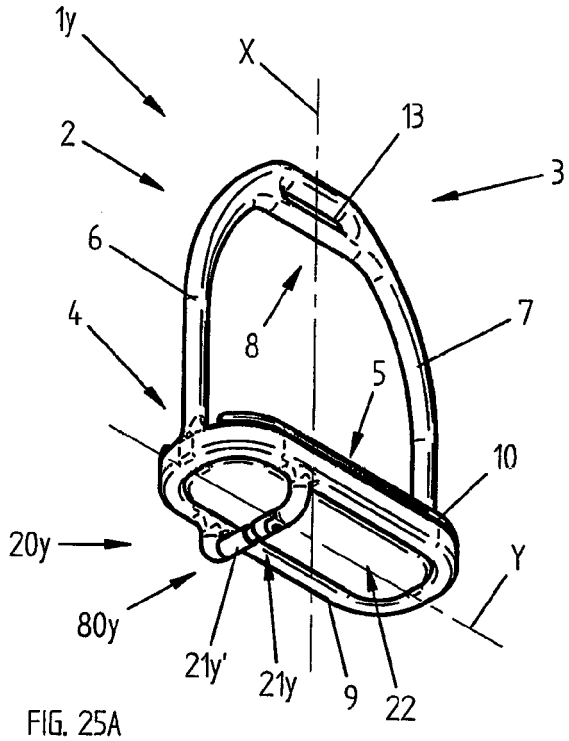

FIG. 25A

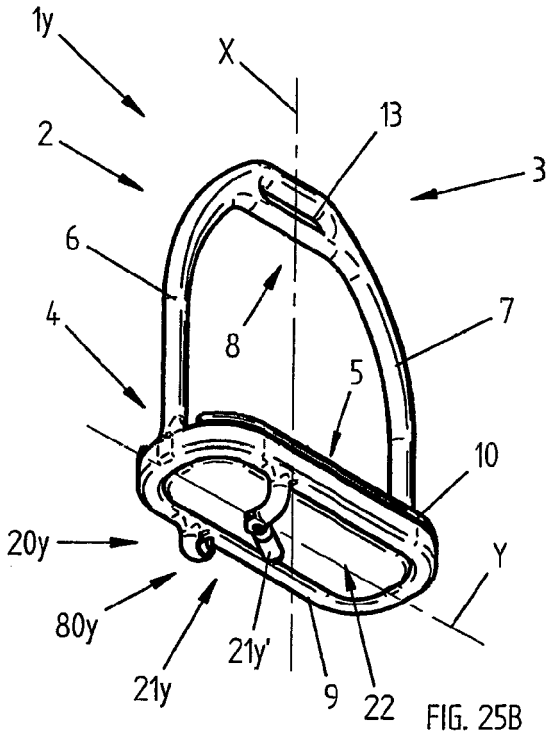

FIG. 25B

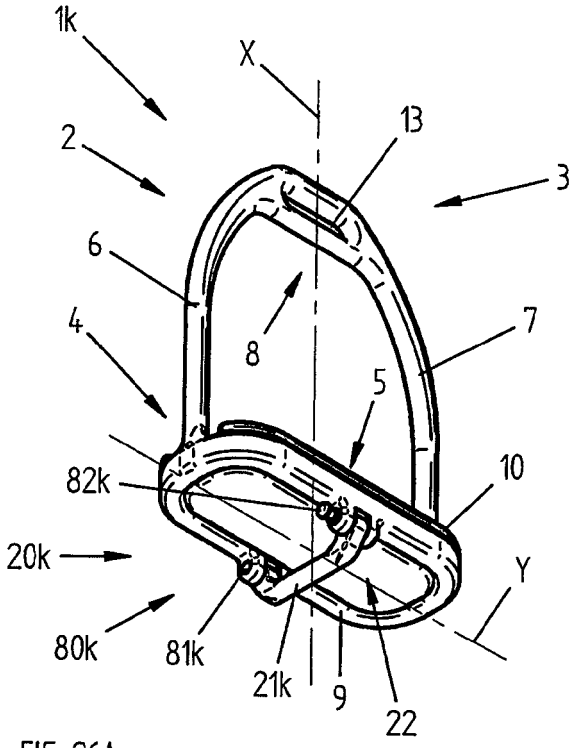

FIG. 26A

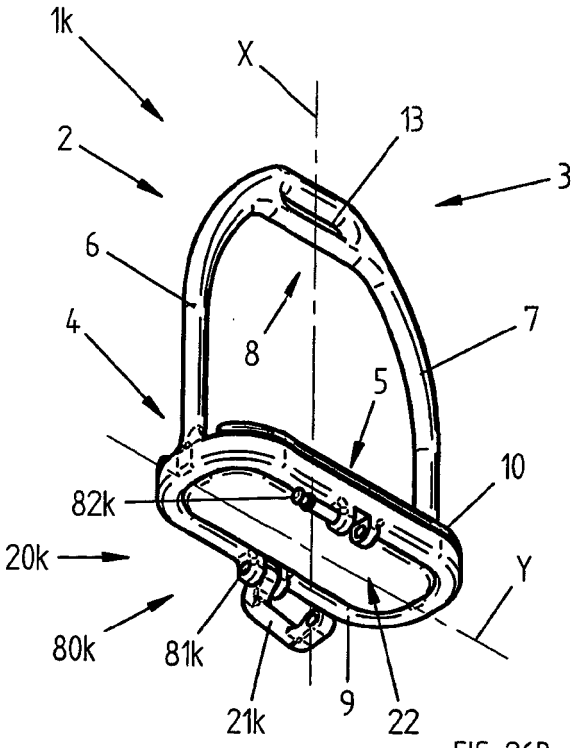

FIG. 26B

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EUROPEAN SEARCH REPORT

Application Number
EP 13 00 5176

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 A	DE 89 12 813 U1 (SIGMUND HÖNLE) 21 December 1989 (1989-12-21) * page 5, paragraph 5 - page 8, paragraph 1 * * figure 1 * -----	1-3,5-8, 10,12,15 4,9,11, 13,14	INV. B68C3/00
X A	DE 74 891 C (J. KRAUSE) 27 October 1893 (1893-10-27) * the whole document * -----	1,4,11, 15 2,3, 5-10, 12-14	

TECHNICAL FIELDS SEARCHED (IPC)

B68C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	9 January 2014	Espeel, Els

CATEGORY OF CITED DOCUMENTS

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09-01-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 8912813 U1	21-12-1989	NONE	
DE 74891 C	27-10-1893	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82