A GOAL AND SHELTER DEVICE

Applicant: QUICK PLAY SPORT LTD, Sheffield (GB)

Inventor: William Parsons, Sheffield (GB)

Assignee: Quick Play Sport LTD, Sheffield (GB)

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ABSTRACT

A collapsible goal and shelter system is provided with a collapsible frame, a net, and a cover. The collapsible frame includes an erect configuration and a collapsed configuration. The net is operable to be attached to the frame, when the frame is in the erect configuration to thereby form a goal. The cover is operable to be attached to the frame, when the frame is in the erect configuration to thereby form a shelter.
A GOAL AND SHELTER DEVICE

FIELD OF INVENTION

[0001] The present invention relates to a goal and shelter device, in particular to a collapsible goal and shelter device, preferably one which, in a collapsed state at least, is substantially portable.

BACKGROUND

[0002] Sports goals well known in the art. Goals are used in many sports and often involve a frame which defines an area into which a projectile (often a ball) may be struck to score points/goals. The goal often also includes a net attached to the frame and operable to retain the projectile within the goal. Goals are used in many games such as, for example, football (soccer), hockey, etc.

[0003] Sports shelters are also well known in the art and are often situated next to a sports ground, such as a football or baseball pitch, and allow users not participating in the game (coaches, substitute players etc.) to sit in a comfortable, position sheltered from the weather. In the sports arena, sheltering from extremely hot weather is just as important to preserve energy as being sheltered from rain and wind. In view of this, such shelters are often used in places were an extreme weather condition may be experienced.

[0004] Such shelters are normally static and solid in construction. This means that it is necessary to erect a permanent shelter at every sports ground. Furthermore, owing to their solid construction, they often require lots of materials and are therefore costly to construct.

[0005] It is an aim of objects of the present invention to address the above mentioned or other problems.

SUMMARY OF THE DISCLOSURE

[0006] According to a first aspect of the present invention there is provided a collapsible goal and shelter system, the system comprising: a collapsible frame comprising a plurality of frame members, the collapsible frame having a first, erect configuration, and a second, collapsed configuration; the frame defining an opening in the erect configuration; the system further comprising a net operable to be attached to the frame, when the frame is in the erect configuration to thereby form a goal; and the system further comprising a cover operable to be attached to the frame, when the frame is in the erect configuration to thereby form a shelter.

[0007] Preferably, the frame comprises two posts, which are preferably operable to be upwardly extending when the frame is in the erect configuration, which posts may each be formed from two or more post elements, which may be detachably connectable. The two or more post elements may be loosely secured together by an elastic member, which may be an elastic cord, for example. The elastic member may extend internally through a portion of the or each post element.

[0008] Preferably, the frame comprises a cross bar, which is preferably operable to be substantially horizontally extending when the frame is in the erect configuration, which crossbar may be formed from two or more crossbar elements which may be detachably connectable. In one embodiment, the crossbar may be formed from three or more crossbar elements which may be detachably connectable. The two or more cross bar elements may be loosely secured together by an elastic member, which may be an elastic cord, for example. The elastic member may extend internally through a portion of the or each cross bar element.

[0009] The same elastic member that extends through a portion of the post may also extend through a portion of the crossbar, and/or a crossbar connected connector, such as to loosely secure together at least a portion of the post and at least a portion of the crossbar.

[0010] The crossbar is suitably arranged to be attachable to the posts to define an opening, when the frame is in the erect configuration.

[0011] Preferably, the frame comprises two side members. The side members may each be formed from at least two side member elements which may be detachably connectable. The side members may be operable to be operable to be detachably connected to the posts. In the erect configuration, each side member may be attached at or toward each end thereof to each of the posts. The two or more side member elements may be loosely secured together by an elastic member, which may be an elastic cord, for example. The elastic member may extend internally through a portion of the or each side member element.

[0012] Preferably, the frame comprises a lower support bar. The lower support bar may be formed from at least two lower support bar elements, which may be detachably connectable. In the erect configuration, the lower support bar is preferably operable to connect between the two side members. The two or more lower support bar elements may be loosely secured together by an elastic member, which may be an elastic cord, for example. The elastic member may extend internally through a portion of the or each lower support bar element.

[0013] Preferably, the frame comprises an upper support bar. The upper support bar may be formed from at least two upper support bar elements, which may be detachably connectable. In the erect configuration, the upper support bar is preferably operable to connect between the two side members. The two or more upper support bar elements may be loosely secured together by an elastic member, which may be an elastic cord, for example. The elastic member may extend internally through a portion of the or each upper support bar element.

[0014] The elements of the post, crossbar, side members, upper support bar and/or the lower support bar, may be attached to other elements of the same type or a different type via a connecting member. Typically, the connecting member is not integrally formed with the components adjacent to which it is arranged in use.

[0015] An elastic member may extend through one or more post elements and be connected to, directly or indirectly via a connector, a crossbar element. An elastic member may extend through one or more post elements and be connected to a further post element via a connector.

[0016] Typically, the connecting member is of substantially smaller height than the elements it is connecting. Suitably, the width and length, or in the case of a cylindrical connector the diameter, of the connector is substantially the same as at least one of the elements it is connecting.

[0017] Preferably, when a connector is connecting post elements, crossbars elements, or post and crossbar elements, the width and length, or in the case of a cylindrical connector the diameter, of the connector is substantially the same as the elements.

[0018] A connector may comprise attachment means operable to form a detachable attachment to the post and/or
Preferably, the connector comprises a first attachment means and a second attachment means, wherein the first attachment means requires more energy to remove that the second attachment means. The first attachment means may be in the form of a rivet, the second attachment means may be in the form of a spring clip.

Preferably, when a connector is connecting post elements or crossbars elements to a side member element the width and length, or in the case of a cylindrical connector the diameter, of the connector is larger than that of the side member elements.

A connector, post, crossbar, side member, upper support bar and/or lower support bar may comprise an internal attachment means to which an elastic member may be secured. Typically, the elastic member may be secured by forming an attachment to a projection in the internal cavity of the connector, post, crossbar, side member, upper support bar and/or lower support bar, and/or by extending the elastic member through an aperture arranged in the connector, post, crossbar, side member, upper support bar and/or lower support bar, preferably in the internal cavity, and attaching to the elastic member, or forming integrally therein, a holding portion that is unable to pass through the aperture during normal use.

Preferably, a connector, post and/or crossbar may comprise an at least partially internal bore operably to receive a side member. Preferably, operable to form a close fit with the side member.

Suitably, the internal bore may have a cross-section of a different shape to the cross-section of the side member to be received, for example the side member may have a substantially circular cross-section whereas the cross-section of the bore may be a tear shape, i.e. substantially rounded but having a pointed corner. Preferably, at least a portion of the internal face of the bore is substantially planar. Preferably, the bore comprises a fitting member operably to allow the bore to form a close fit with the side member. Preferably, the side member operable to be received in the bore comprises a cross-section operable to form a close fit with the bore comprising the fitting member. Preferably, the fitting member comprises a projection into the cavity of the bore. Preferably, the bore comprises a rib extending longitudinally at least at least part of the internal cavity of the bore, wherein the rib allows the bore to form a close fit with a portion of the side member, preferably a portion of a side member of substantially circular cross-section.

Advantageously, the above configuration permits for improved manufacturing, provides a more uniform wall thickness around the bore, reduces shrinkage, and reduces stresses on the component that may result from uneven wall thickness.

The bore may be arranged inside the connector, post or crossbar such that the walls around the bore provide a fixing point around which an elastic member may be secured, for example, by forming a closed loop of the elastic around the walls of the bore.

A connector may comprise portions of variable width and length. Preferably, the connector comprises a portion of width and length suitable to be inserted into a post and/or crossbar element.

Suitably, the elastic cord may be terminated within a connector. The elastic cord may be terminated by attachment to a connector.

The system preferably comprises securing means operable in use to allow the net and or the cover to be detachably secured to the frame, in use.

The securing means may be situated on the net. The securing means may be situated on the cover.

In one embodiment, the securing means may allow for a portion of the net to secure to a further portion of the net. In this manner, the net may be wrapped around the frame and secured to itself.

In one embodiment, the securing means may allow for a portion of the cover to secure to a further portion of the cover. In this manner, the cover may be wrapped around the frame and secured to itself.

In one embodiment, the frame may additionally or alternatively comprise securing means. Securing means on the frame may be arranged and operable to cooperate with securing means on the net or cover. For example, in a hook and loop arrangement or similar.

The cover may be formed from a substantially weatherproof material.

All of the features contained herein may be combined with any of the above aspects and in any combination.

**BRIEF DESCRIPTION OF THE DRAWINGS**

For a better understanding of the invention, and to show how embodiments of the same may be carried into effect, reference will now be made, by way of example, to the accompanying diagrammatic drawings in which:

FIG. 1 shows a perspective partially exploded front view of a collapsible team shelter according to a first embodiment of the present invention;

FIG. 2 shows a perspective partially exploded rear view of a collapsible team shelter according to a first embodiment of the present invention;

FIG. 3 shows a perspective view of a collapsible team shelter according to a first embodiment of the present invention;

FIG. 4a shows a perspective part-cutaway view of a portion of the frame of FIG. 4;

FIG. 4b shows a perspective part-cutaway view of a portion of the frame of FIG. 4;

FIG. 4c shows a perspective part-cutaway view of a portion of the frame of FIG. 4;

FIG. 4d shows a perspective partially exploded view of a portion of the frame of FIG. 4;

FIG. 5 shows a perspective view of a frame of a collapsible team shelter according to a second embodiment of the present invention;

FIG. 5a shows a perspective view of a portion of the frame of FIG. 5;

FIG. 5b shows a rear plan view of the portion of FIG. 5a along line B;

FIG. 5c shows a sectional view of the portion of FIG. 5a along the line C-C';

FIG. 5d shows a sectional view of the portion of FIG. 5a along the line A-A' of FIG. 5c;
FIG. 6 shows a perspective view of a frame of the collapsible team shelter according to a third embodiment of the present invention;

FIG. 6a shows a perspective partially-exploded view of a portion of the frame of FIG. 6;

FIG. 6b shows a sectional view of the portion of FIG. 6a along the line E-E';

FIG. 6c shows a part-cutaway view of the portion of FIG. 6a along the direction of line G;

FIG. 6d shows a sectional view of the portion of FIG. 6a along the line C-C' of FIG. 6c;

FIG. 6e shows a sectional view of the portion of FIG. 6a along the line D-D' of FIG. 6c;

FIG. 7 shows a perspective view of a frame of a collapsible team shelter according to a fourth embodiment of the present invention;

FIG. 7a shows a side part-cutaway view of a portion of the frame of FIG. 7;

FIG. 7b shows a sectional view of the portion of FIG. 7a along the line F-F.

DETAILED DESCRIPTION

FIGS. 1 to 4d show a first embodiment of a collapsible team shelter 102 according to the present invention. Collapsible team shelter 102 is formed of frame 104, cover 110 and net 108. Frame 104 has two post sections 112, crossbar section 118, two side members 122, a lower support bar 126 and an upper support bar 130. Each post section 112 is formed of a linear hollow plastic cylindrical post element 114a and 114d, respectively. The upper end of post element 114a and 114d are detachably joined together by substantially hollow plastic cylindrical joint element 158 and 158a, respectively. Post sections 112 are arranged in a vertical orientation.

Horizontally orientated crossbar 118 is formed of three linear hollow plastic cylindrical crossbar elements 120a, 120b and 120c. Crossbar elements 120a and 120b are detachably joined together at one respective end by hollow plastic cylindrical crossbar joining element 164a. The other end of crossbar element 120b is detachably joined to an end of crossbar element 120c by crossbar joining element 164a.

Each of posts 112 are attached to a respective end of crossbar 118 via corner connectors 162. Corner connectors 162 are of a substantially hollow cylindrical tube having a first cylindrical section arranged at right angles to a second cylindrical section. The first section of corner connector 162 is slotted into an upper end of posts 112 and secured in place by the application of a rivet 144a through cooperating apertures in the upper end of posts 112 and the first section of corner connector 162. The second section of corner connectors 162 is slotted into a respective end of crossbar 118 and secured in place by the passage of a projection on a spring clips 142 arranged in the second section of corner connectors 162 through cooperating apertures in the crossbar 118.

The posts 112 and crossbar 118 thus joined form a planer three-sided rectangular structure that when placed on a surface defines rectangular opening 166.

Posts 112 have running along at least a portion thereof elastic cord 116 an 116a. Post connector 158 has laterally extending solid disc 168 extending across the internal cavity of the connector. Disc 168 is continuous apart from a central aperture through which elastic cord 116 is passed. The portion of cord 116 arranged below the underside face of disc 168 is in the form of a knot of sufficient size to prevent passage through the aperture of disc 168. The cord 116 extends from the knot through the apertures of disc 168 and the internal cavity of post element 114a up to corner connector 162. Corner connector 162 also has a disc (not shown) extending across the internal cavity of the connector, the disc is continuous apart from an aperture through which the end of cord 116 is passed. The portion of cord 116 arranged at the other side of the aperture is in the form of a knot of sufficient size to prevent passage through the aperture of the disc.

In use, post element 114a may be disconnected from post connector 158 and corner connector 162 and yet maintain a connection to the remaining post connector 114b and the crossbar 118. Such an elasticated connection permits the components to be folded and arranged in a collapsed state (not shown) whilst still maintaining a connection to allow for easy assembly.

Post elements 114c and 114d are arranged in a similar manner except that elastic cord 116a is not terminated at post connector 158a. Rather cord 116c is terminated at connector 158a and is attached to tube 146a in foot connector 160 by forming a closed loop of cord 116c around the tube 146a.

Side members 122 are formed of side member elements 124a, 124b, 124c and 124d. Cylindrical side members 124a, 124b, 124c and 124d are connected such as to form substantially crescent shaped side members 122.

Linear horizontally orientated lower support bar 126 is formed of linear cylindrical lower support bar elements 128a, 128b and 128c, wherein support bar element 128a is attached to one end to element 128b and at the other end to element 128c. Each end of lower support bar 126 is attached to a side member 122 towards the lower corner of the apex of the side member 122.

Linear horizontally orientated upper support bar 130 is formed of linear cylindrical upper support bar elements 132a, 132b and 132c, wherein support bar element 132b is attached at one end to element 132a and at the other end to element 132c. Each end of upper support bar 130 is attached to a side member 122 towards the upper corner of the apex of side member 122.

Corner connectors 162 further have internal hollow cylindrical tubes 146 extending laterally along the join of the first and second sections of the connector 162. Tubes 146 are closed at one end and open at the other, wherein the open ends of the tubes 146 project slightly outwardly from a side wall of connectors 162. The non-side member element attached ends of side member elements 124d are inserted into the tubes 146 of connectors 162. Side member elements 124d are attached to the connectors 162 such that the side members extend perpendicularly away from crossbar 118 and posts 112.

The lower ends of posts 112 and the non-side member element attached ends of side member elements 124a are attached via foot connectors 160. Foot connectors 160 are in the form of an open-ended cylinder wherein the upper open end of the connectors 160 is inserted into the lower ends of posts 112 and secured in place by rivet 144b. Foot connectors 160 have internal hollow laterally extending tubes 146a extending along the base of the connectors. Tubes 146a are closed at one end and open at the other,
wherein the open end of tubes 146 project slightly outwardly of a side wall of connectors 160. The non-side member element attached off side member elements 124c are inserted into the tubes 146a of connectors 160. Side member elements 124c are attached to connectors 160 such that the side members extend perpendicularly away from posts 112.

In this arrangement, side members 122, upper support bar 130 and lower support bar 126 form a supporting structure extending from the rear face of the structure formed by the posts 112 and crossbar 118 when the frame 104 is in the erect position (shown).

When frame 104 is in the erect position net 108 may be detachably attached to the frame such as to form a porous barrier around the faces of the supporting structure. In use, this arrangement permits a projectile, such as a football, to enter the interior cavity of frame 104 through opening 166 and be held within, or at least prevented from passing through, the faces of the supporting structure.

Furthermore, when frame 104 is in the erect position waterproof cover 110 may be detachably attached to the frame such as to provide a waterproof barrier around the faces of the supporting structure. In such a configuration users may enter the shelter through opening 166 and obtain protecting from the elements, such as wind and/or rain. To encourage airflow, window 154 is provided in the cover 110.

Cover 110 is detachably attached to frame 104 by a plurality of attachment means 134. Attachment means 134 are formed of elastic loop 136 and toggle 138. Elastic loop 136 is attached to edge of cover 110 with toggle 138 is attached to the cover slightly inwards therefrom. In use, the edges of cover 110 are arranged around the circularly shaped posts 112 and crossbar 118 until loop 136 may engage toggle 138 such as to hold the cover 110 around the post 112 or the crossbar 118.

In an alternative embodiment, a plurality of toggles 538 may be attached to posts 112 and crossbar 118 such that, in use, the loops 536 of attachment means 534 are passed around the posts 112 and the crossbar 118 until the loops 536 may engage toggles 538 such as to hold the cover 110 around the post 112 or the crossbar 118.

FIGS. 5 to 5d show a second embodiment of a collapsible team shelter 202 according to the present invention. Shelters 202 is arranged and works in the same manner as shelter 102 except that the elastic cord 216 is terminated in the corner connectors by forming an attachment to internal projection 252.

Also shown in second embodiment is rib 250. Rib 250 is present but not shown in the first embodiment. Rib 250 projects into the cavity of tube 246 and serves to hold the side frame in place while maintaining a constant wall thickness in the part which stops shrinkage in part during the moulding process.

FIGS. 6 to 6e show a third embodiment of a collapsible team shelter 302 according to the present invention. Shelter 302 is arranged and works in the same manner as shelters 102 and 202 except that the frame does not have an upper support bar and the posts are formed of one element.

FIGS. 7 to 7b show a fourth embodiment of a collapsible team shelter 402 according to the present invention. Shelter 402 is arranged and works in the same manner as shelters 102 and 202 except both posts 412 have the elastic cord terminated at the post connectors.

Attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

Each feature disclosed in this specification (including any accompanying claims, abstract and drawings) may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

The invention is not restricted to the details of the foregoing embodiment(s). The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

1. A collapsible goal and shelter system, the system comprising:
   a collapsible frame comprising a plurality of frame members, the collapsible frame having a first, erect configuration, and a second, collapsed configuration; the frame defining an opening in the erect configuration; the system further comprising a net operable to be attached to the frame, when the frame is in the erect configuration to thereby form a goal; and the system further comprising a cover operable to be attached to the frame, when the frame is in the erect configuration to thereby form a shelter.

2. A system according to claim 1, wherein the frame comprises two posts, which are operable to be upwardly extending when the frame is in the erect configuration, the posts each being formed from two or more post elements, which are detachably connectable, the two or more post elements being loosely secured together by an elastic member.

3. A system according to claim 1, wherein the frame comprises a crossbar, which is operable to be substantially horizontally extending when the frame is in the erect configuration, the crossbar being formed from two or more crossbar elements which are detachably connectable, the two or more cross bar elements being loosely secured together by an elastic member.

4. A system according to claim 3, wherein the system comprises an elastic member and two posts and the elastic member extends through a portion of at least one post, of the two posts and through a portion of the crossbar, and/or a crossbar connected connector, when present, such as to loosely secure together at least a portion of the post and at least a portion of the crossbar.

5. A system according to claim 4, wherein the frame comprises two side members, the side members each being formed from at least two side member elements which are detachably connectable, wherein in the erect configuration each side member is attachable at or toward each end thereof.
to each of the two posts, the two or more side member elements being loosely secured together by an elastic member.

6. A system according to claim 5, wherein the frame comprises a lower support bar, the lower support bar being formed from at least two lower support bar elements which are detachably connectable, wherein in the erect configuration the lower support bar is operable to connect between the two side members, the two or more lower support bar elements being loosely secured together by an elastic member.

7. A system according to claim 6, wherein the frame comprises an upper support bar, the upper support bar being formed from at least two upper support bar elements which are detachably connectable, wherein in the erect configuration the upper support bar is operable to connect between the two side members, two or more upper support bar elements being loosely secured together by an elastic member.

8. A system according to claim 7, wherein at least two elements of the elements of post of the two posts, the crossbar, aside member of the side members, the upper support bar and the lower support bar are attached to another elements of the same type or a different type via a connecting member.

9. A system according to claim 8, wherein at least one connecting member comprises attachment means operable to form a detachable attachment to the post and/or crossbar, the at least one, connecting member comprising a first attachment means and a second attachment means, wherein the first attachment means requires more energy to remove than the second attachment means.

10. A system according to claim 8, wherein at least one of the connecting member, a post of the two posts, the crossbar, a side member of the side members, the upper support bar and the lower support bar, include an internal attachment means to which an elastic member may be secured.

11. A system according to claim 8, wherein the connecting member, a post of the two posts, and/or the crossbar include an at least partially internal bore operable to receive a side member, wherein the at least partially internal bore has a cross-section of a different shape to the cross-section of the side member to be received, wherein the internal bore comprises a fitting member operably to form a close fit with the side member.

12. A system according to claim 11, wherein the at least partially internal bore has a cross-section of a different shape to the cross-section of the side member to be received, the side member having a substantially circular cross-section and the cross-section of the at least partially internal bore having a tear shape.

13. A system according to claim 11, wherein the internal bore comprises a fitting member operably to allow the at least partially internal bore to form a close fit with the side member, the fitting member comprising a projection into the cavity of the at least partially internal bore.

14. A system according to claim 11, wherein the at least partially internal bore is arranged inside the at least one connecting member, at least one post or crossbar such that the walls around the at least partially internal bore provide a fixing point around which an elastic member may be secured.

15. A system according to claim 1, wherein the system further comprises securing means operable in use to allow the net and or the cover to be detachably secured to the frame.

16. A system according to claim 2, wherein the frame comprises a crossbar, which is operable to be substantially horizontally extending when the frame is in the erect configuration, the crossbar being formed from two or more crossbar elements which are detachably connectable, the two or more cross bar elements being loosely secured together by an elastic member.

17. A system according to claim 8, wherein the connecting member, a post of the two posts, and/or the crossbar include an at least partially internal bore operable to receive a side member, wherein the at least partially internal bore has a cross-section of a different shape to the cross-section of the side member to be received, wherein the internal bore comprises a fitting member operably to allow the at least partially internal bore to form a close fit with the side member, and wherein the at least partially internal bore is arranged inside the at least one connecting member, at least one post or crossbar such that the walls around the at least partially internal bore provide a fixing point around which an elastic member may be secured.

18. A system according to claim 11, wherein the at least partially internal bore has a cross-section of a different shape to the cross-section of the side member to be received.

19. A system according to claim 12, wherein the internal bore comprises a fitting member operably to allow the at least partially internal bore to form a close fit with the side member, the fitting member comprising a projection into the cavity of the at least partially internal bore.

20. A system according to claim 12, wherein the at least partially internal bore is arranged inside the at least one connecting member, at least one post or crossbar such that the walls around the at least partially internal bore provide a fixing point around which an elastic member may be secured.

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