

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Collapsible Goal Frame

- I, ROLAND FREDERICK SHORES, a British subject, of Glenlyn, Bare Lane, Ockbrook, Derby, formerly of Westwood, Westwood Close, Potters Bar, Middlesex, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—
- 10 This invention relates to a collapsible goal frame intended to be assembled on site at a football or hockey pitch, or at any open space such as a beach where a game is to be played.
- 15 According to the present invention a collapsible goal frame comprises a set of rigid rods and/or tubes, suitably shaped and designed to be detachably and rigidly secured together end to end to form a self-supporting frame structure which comprises a cross-bar extending between the upper ends of two uprights and two elongated feet extending rearwardly from the lower ends of the uprights and intended to lie horizontally along on the ground to afford a stable base for the frame.
- 20 The goal frame may be provided with anchor members for anchoring the feet to the ground, and a part of each foot close to the adjacent upright may be bowed downwards to form a protuberance arranged for engagement with the ground. Such a protuberance helps to prevent rocking of the goal frame as a result of impact of a ball.
- 25 According to a further feature of the invention the goal frame is braced by a transverse tension member comprising a cord or wire drawn tight between the free ends of the feet. Inclined tension members may also be provided in the form of cord or wire extending between the free ends of the feet and anchorages secured to the goal frame adjacent the upper ends of the uprights.
- 30 In a convenient form of the invention the transverse and inclined tension members may all be afforded by a single length of wire or cord which is arranged for sliding engagement with the free ends of the feet and has coupling means, such as hooks or clips for example, attached to its ends whereby they can be readily attached to and detached from the anchorages. These anchorages may consist of rings each either directly secured to the goal frame adjacent the upper end of one of the uprights or secured thereto by a short length of wire or cord.
- 35 Tubular frame members of a goal-frame according to the invention may be of any convenient cross-section, and the frame members may conveniently be arranged so that one of each two adjacent members comprises a tubular frame member into an end of which the other frame member is inserted in the manner of a plug and socket.
- 40 If a net is to be used with the goal frame, for example a lightweight net of nylon, this may be secured to the rear of the goal frame and held back from the goal mouth, for example by two rigid stays each detachably secured to one upright.
- 45 The invention may be carried into practice in various ways and one embodiment will now be described, together with certain modifications thereof, by way of example only with reference to the accompanying drawings, in which:
- 50 Figure 1 shows a fully assembled goal frame, and
- 55 Figure 2 shows the goal frame of Figure 1 in a partly-assembled condition.
- 60 As seen from the drawings a collapsible lightweight goal frame is made of seven frame members of light alloy tubing of circular section joined together end-to-end to form a crossbar 1 extending between the upper ends of a pair of uprights 2 supported by means of a pair of elongated feet 3 extending rearwardly from the lower ends of the two uprights at right angles to the crossbar. The crossbar is formed by two outer tube lengths 4 which are of similar size and shape and are straight over the majority of their lengths, and a central
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length of tubing 5 of an internal bore sufficient to receive within its ends the adjacent ends of the outer tube lengths. These latter ends are plugged into the ends of the central length 5, the extent of their entry into the central length being limited by pins 6 fixed transversely across the bore of the central tubing 5 a short distance from its extremities.

The outer tube lengths 4 are bent over through 90° at their outer ends and their bent-over end portions 7 form sockets in which the tops of the two tubular upright members are received. The lower ends of the upright members 2 are bent back through 90° and each forms a socket 8 into which an end of a foot 3 is plugged. Each foot 3 is formed of a length of tubing which is straight at least over the majority of its length.

If desired, a short length of each foot close to its upright-engaging end may be bowed downwardly to form a protuberance intended to stand on the ground and to help prevent rocking of the goal frame on uneven ground or as a result of impact of a ball upon the frame; and the free end of the foot may be bent over to assist in securing the goal frame upon the ground, although neither of these features is shown in the drawings.

The upright-engaging end of each foot 3 is thrust into the socket portion 8 until it comes firmly into abutment with the curved wall portion 9 at the bend between the vertical and socket portions of the upright member but entry of the top of an upright member 2 into the bent-over portions 7 of the associated outer tube length 4 is limited by a readily removable pin 11 thrust through appropriately located registering holes 12 drilled in the overlapping portions of the upright member 2 and the bent-over portion 7. The pins 12 also act to prevent relative rotation between the upright members and the bent-over portions 7.

Alternatively a pin may be fixed in position across the bores of each of the bent-over portions and two notches or slots cut in the top edges of each of the upright members in positions which are such that when an upright member is plugged into a bent-over portion the slots engage the pin to prevent relative rotation between the overlapping portions.

If the required degree of resistance to rotation can be attained to resist the bracing tension to be applied to the frame as described below, ball catches or studs of the spring loaded kind may be substituted for the pins 12, each ball catch or stud being carried by one frame member for engagement in a recess, or preferably an aperture formed in the wall of the other.

The lengths of the frame members are all approximately 5 feet. The length of the crossbar 1 of the assembled goal frame is about 12 feet and its height above the feet 3 is about 6 feet.

The assembled goal frame is braced by means of a cord or wire 13 which is drawn tight

between the free ends of the feet 3 (the cord or wire 13 being slidably engaged in slots or "runways" formed in the free end of each foot) and has its end portions extending upwards at an angle to the feet and detachably secured to anchorages 14 at the upper end of the upright and adjacent the top corners of the goal frame at the ends of the crossbar. The end portions of the cord or wire thus form oblique tensioning members which together with the horizontal central part of the cord or wire give the goal frame additional rigidity.

Hooks 15 are provided at both ends of the cord or wire 13 for engagement with the anchorages 14, which anchorages are in the form of rings carried at the free ends of two short lengths of cord or wire secured to the adjacent bent-over portions 7 of the outer tube lengths 4. In such an arrangement appropriate tensioning of the cord or wire can be effected by springing the frame manually to enable the hooks 15 to be engaged in the rings of the anchorages 14.

If a net (not shown) of lightweight nylon for example, is to be used, it may be secured to the rear of the goal frame, and possibly also to the tensioning cord or wire 13, and may be held back from the goal mouth by two rigid stays (not shown) each with its front end detachably secured to one of the uprights as, for example, by fitting it into a slot in the upright.

In a modification of the above described portable goal frame the frame members are joined together end-to-end by co-operating screw threads which are formed at adjacent ends of the tubes by distortion of the tube walls, each thread being formed by the actual shaping of the wall of the tube instead of being cut into the material. The screw threads are, of course, formed so that one threaded end portion can be screwed into an adjacent co-operatingly threaded end portion.

The frame members in yet another modification are made from tubing of elliptical cross-section, and can be 'plugged' together in a similar manner to that utilised in the illustrated goal frame. The cross-section of such tubing is of course such that relative rotation between adjacent lengths is prevented.

In a further modification each foot of the goal frame is formed with an upwardly extending end portion for engagement with a straight upright and thus the upright member can be made smaller than in the illustrated arrangement without any loss in height of the total length of the upright and hence in the height of the crossbar.

All the above described goal frames may be anchored to the ground by anchor members such as pegs or pins hooked over or otherwise engaging each rearwardly extending foot and driven into or otherwise engaged with the ground. These pegs or pins are preferably in the form of spade-shaped anchor plates and

- will hold the goal frame against any normally encountered impact, received for example, from a lightweight practice football. Alternatively a hollow block may be secured to each foot if the goal frame is to rest on hard ground.
- It will be appreciated that the frame members need not consist only of tubes but that one or more of the members may consist of rods. Tubing is preferably used however for reasons of stiffness, lightness and ease of carrying.
- Moreover the invention is not restricted to goal frames having 'plug and socket' couplings between the frame members. Any suitable form of end-to-end coupling can be utilised to secure together the frame members forming the goal frame.
- The arrangements described afford lightweight collapsible goal frames made up of rigid members none of which is substantially more than 5 feet long so that a pair of the goal frame sets can easily be carried dismantled in the luggage boot of a car. The weight of a complete frame set may be very small, for example about 5 lbs. and it may readily and easily be erected on a pitch or on any other open space such as a beach where a game is to be played.
- Moreover when the goal frame includes tubular members, certain of the members can be telescoped one within another to reduce the room taken up when the goal frame is collapsed, the number of separate 'parts' for carrying thus being reduced also.
- WHAT I CLAIM IS:—**
1. A collapsible goal frame comprising a set of frame members in the form of rigid rods and/or tubes which are suitably shaped and designed to be detachably secured together end to end to form a self supporting frame structure which comprises a crossbar extending between the upper ends of two uprights and two elongated feet extending rearwardly from the lower ends of the uprights and intended to lie horizontally along the ground to afford a stable base for the frame.
 2. A goal frame as claimed in claim 1 provided with anchor members for anchoring the feet to the ground.
 3. A goal frame as claimed in claim 1 or claim 2 in which a part of each foot adjacent that end of the foot designed for attachment to an upright is bowed downwards to form a protuberance arranged for engagement with the ground.
 4. A goal frame as claimed in any one of the preceding claims which is braced by a transverse tension member comprising a cord or wire drawn tight between the free ends of the feet.
 5. A goal frame as claimed in any one of the preceding claims including inclined tension members of cord or wire tightly drawn between the free ends of the feet and anchorages secured to the goal frame adjacent the upper ends of the uprights.
 6. A goal frame as claimed in claim 4 or claim 5 in which the inclined tension members and the transverse tension member are all afforded by a single length of wire or cord having coupling means attached to its ends whereby the ends can be readily attached to and detached from the anchorages, and in which the free ends of the feet are adapted for sliding engagement with the wire or cord.
 7. A goal frame as claimed in any one of the preceding claims in which one of each two adjacent members is designed to have an end plugged within the adjacent end of the other in the manner of a plug and socket, the member providing the socket being a tube.
 8. A goal frame as claimed in any one of the preceding claims in which the frame members consist of lengths of tubing of circular cross section adapted to be joined end to end by screwed joints whereof the co-operating screw threads are formed by distortion of the wall of the tubes at the ends of the tubes.
 9. A goal frame as claimed in any one of claims 1 to 7, in which the frame consists of lengths of tubing of elliptical cross section.
 10. A goal frame as claimed in any one of the preceding claims including a net for securing to the rear thereof and two rigid struts, the uprights being constructed and arranged to receive respective ones of the rigid struts and support them in positions in which they hold the net, when the net is secured to the rear of the goal frame, away from the goal mouth.
 11. A goal frame as claimed in claim 1 including blocks adapted to be secured to the feet of the frame to rest on the ground and support the goal frame in an upright position.
 12. A goal frame substantially as hereinbefore described with reference to the accompanying drawings
 13. In a kit of parts, a set of components adapted to be assembled to form a collapsible goal frame as claimed in any one of the preceding claims.

KILBURN & STRODE,
Chartered Patent Agents,
Agents for the Applicants

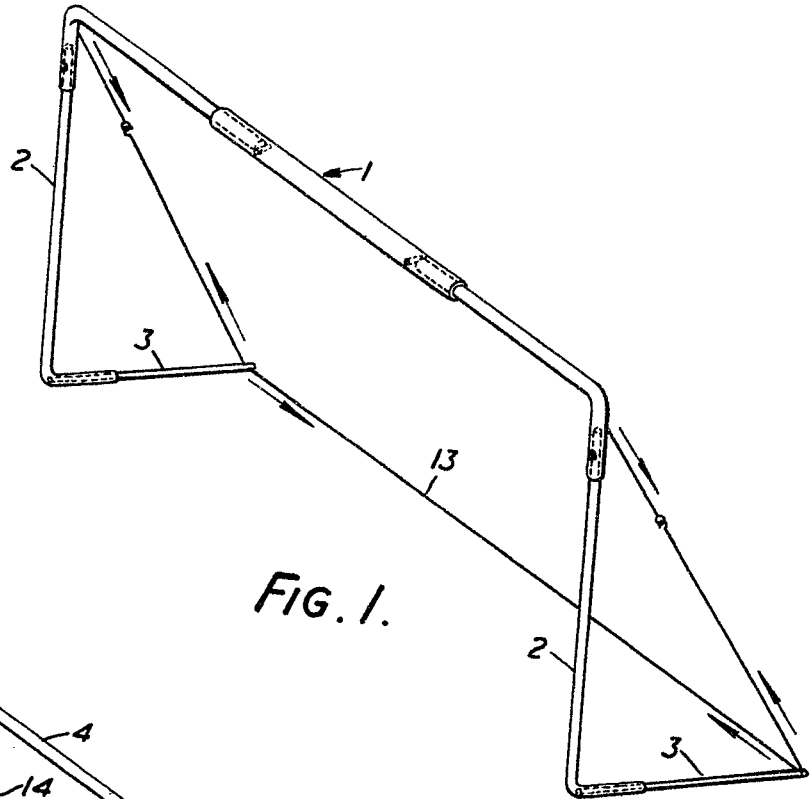


FIG. 1.

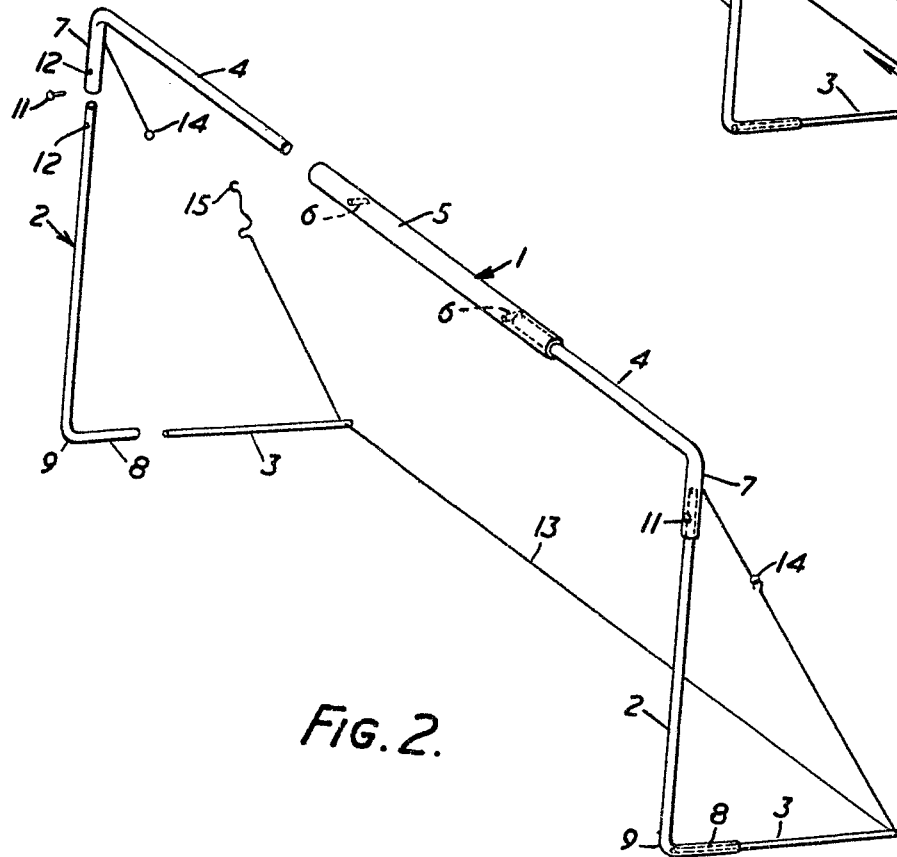


FIG. 2.