

July 17, 1934.

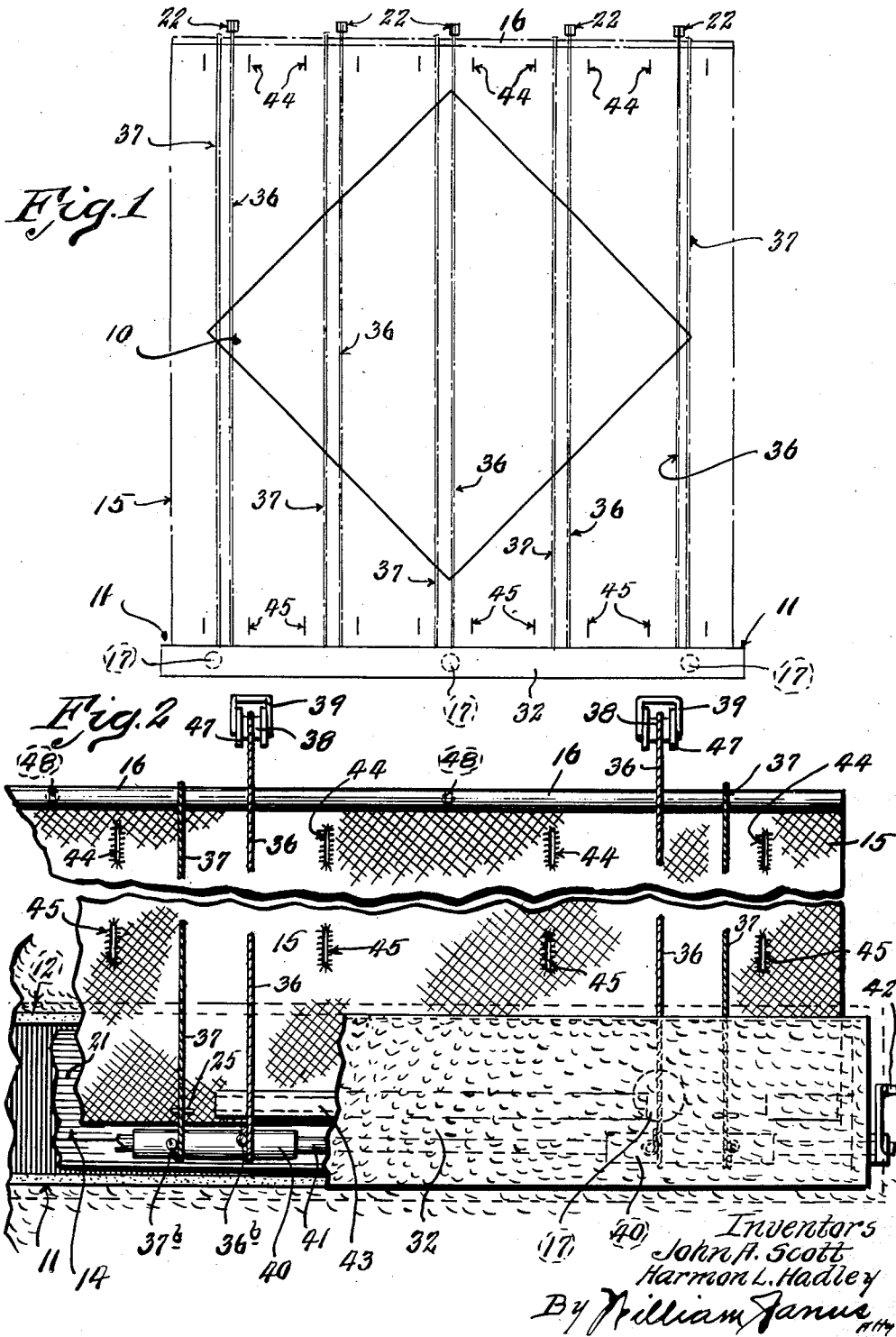
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COVERING DEVICE FOR OUTDOOR PLAYING FIELDS

Filed June 29, 1931

2 Sheets-Sheet 1



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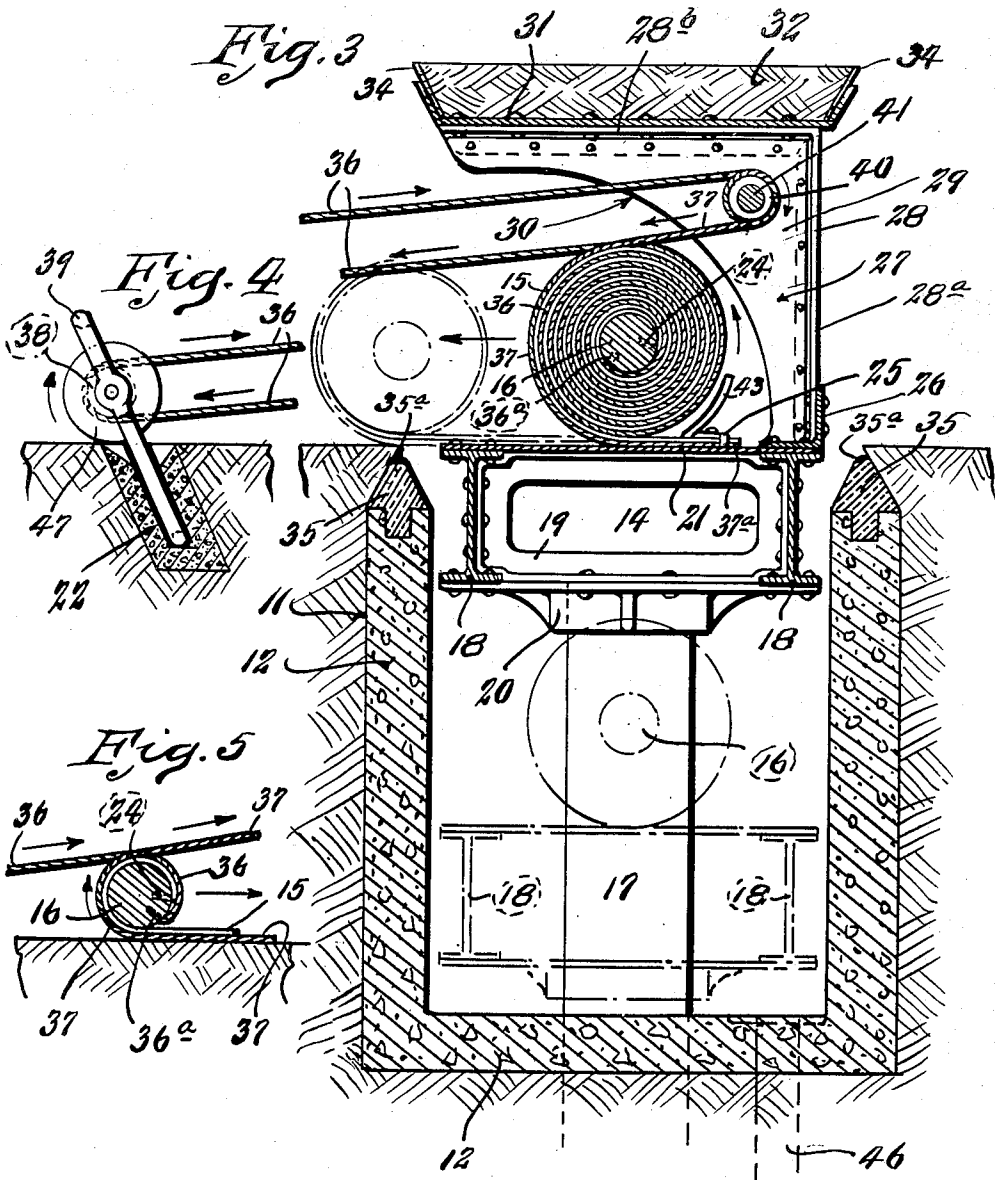
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UNITED STATES PATENT OFFICE

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COVERING DEVICE FOR OUTDOOR PLAYING FIELDS

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10 Claims. (Cl. 273-27)

This invention relates to devices for covering outdoor playing fields.

In playing various outdoor games and particularly baseball, it is highly desirable that the playing field, such as the diamond, be kept dry. This is especially true where it rains just before the game is scheduled to start or where the game has been started and is interrupted by rain of comparatively short duration.

The present practice is to bring out a tarpaulin and carry it to the field and then spread it thereover. This requires a large number of men and takes considerable time so that the diamond is generally pretty well soaked before the men succeed in completely spreading the covering. Furthermore, the life of the cover is of short duration due to rough handling.

The present invention has for its primary object the provision of a canvas cover which can be stored on the field without interfering with the appearance or the use of the latter and which can be operated in such a manner that the playing field or diamond can be covered at a moment's notice and with minimum amount of labor.

Other objects of the invention are to provide a playing field with a trench, located a suitable distance in relation therewith, and to mount in said trench actuating mechanism preferably operated by hydraulic means for supporting a cover, which latter is rolled on a suitable core and can be moved upwardly in said trench so as to unroll said cover over the playing field and which, when not in use, is moved downwardly in said trench out of the way.

Still other objects of the invention are to provide a suitable support operatively mounted within a trench and carrying a roll of canvas, and to provide means for unrolling said canvas over the field in an efficient manner, said means being operable to roll up said canvas when not in use, said support being provided with a cover carrying sod whereby when said support is moved downwardly within said trench, said cover completely closes the upper end of said trench.

Further objects of the invention are to provide means for winding the cover on a suitable core and to provide suitable mechanism to operate said winding and unwinding means.

With these and other objects in view, my invention consists in certain novel features of construction and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a playing field

equipped with our device and showing the cover in dotted lines in unwound position.

Figure 2 is an enlarged top plan view of our device, partly broken away, and showing the cover in extended position.

Figure 3 is an enlarged vertical cross section taken through the trench and showing the support in raised position with the cover wound on the core member.

Figure 4 is a vertical cross-section showing one of the stakes in position and showing one set of ropes connected thereto.

Figure 5 shows a step in the winding of the roll of canvas.

Referring by numerals to the accompanying drawings, 10 indicates a playing field, such as a baseball diamond, to one side of which is formed a trench 11 which is provided preferably with concrete walls 12 and contains the supporting means 14 which carry the canvas cover 15 when rolled on a core body 16. The supporting means 14 are mounted on the upper ends of a plurality of vertically movable standards 17 which extend below the bottom of said trench and are operated in any suitable manner, preferably by hydraulic means, to raise and lower said supporting means 14.

The supporting means preferably consists of two side members or I-beams 18 which extend longitudinally of the trench and are held in spaced relation by cross members 19 and are supported on standards 17 by caps 20. A horizontally disposed plate 21 is secured to and extends between the side members 18. The canvas cover 15 is rolled on core body 16 and is of sufficient length so that when unrolled it extends from said trench over the field and adjacent to stake pockets 22 which are arranged in the field in spaced relation with the diamond.

The inner end of the canvas cover is secured to the core member, as indicated at 24, and the outer end of said cover is secured to plate 21 as indicated at 25.

In protecting the diamond, the cover is rolled thereover in the direction from the trench toward said stake pockets and as the outer end of said cover is fixed the field will be completely covered.

The I-beam 18 arranged remotely from the playing field has fixed thereto a longitudinally disposed angle iron 26. This angle iron extends the full length of the I-beam 18 and has fixed thereto at spaced intervals upwardly extending brackets 27. Each bracket is formed preferably of an angle iron 28 having a vertically disposed leg 28a and a horizontally disposed leg 28b and having its vertically extending flanges presented

inwardly. A gusset plate 29 is fixed to these flanges and reinforces said bracket. This gusset plate is curved inwardly, as indicated at 30, in order to clear the roll of canvas when the latter
 5 is located on the floor or plate member 21. The horizontally disposed portions 28b of the angles 28 have fixed thereto a longitudinally disposed pan 31 which is filled with sod, as indicated at 32. When the supporting means 14 occupy downward
 10 position, the sod portion 32 contained in said pan 31 is disposed in the same horizontal plane with the sod of the field and forms the cover for the trench.

When the canvas is rolled on the core member 16 it occupies position shown in full lines in Figure 3 so that the supporting means 14 can be lowered into position shown in dotted lines, whereupon the sod 32 is arranged in horizontal plane with the ground and the trench is completely
 15 covered.

To prevent sharp edges or portions from extending upwardly through the sod and causing injury to the players or other persons, the pan 31 has its edges preferably terminating below the
 20 top of the sod and the latter is preferably protected by a flexible lining 34. The vertical walls 12 of the trench terminate a suitable distance below the sod and are provided with rubber caps 35 which are resilient so as to yield under the
 25 player's foot and also to form proper contact with the edges of the pan 31.

The upper portions of said rubber inserts or caps terminate below the horizontal plane of the sod, as indicated at 35a. These rubber pieces are
 30 preferably triangular in cross section, thereby providing sloping walls, and the pan 31 has correspondingly inclined sliding walls to form a proper contact with said rubber members.

Thus the canvas is always ready for use and
 35 when moved into elevated position can be readily unrolled over the diamond. To accomplish this, a plurality of ropes or cables 36 is used, while to roll the canvas upon the core body a plurality of ropes or cables 37 is provided for this purpose.
 40 Cables or ropes 36 and 37 are arranged at suitable intervals throughout the whole length of the core member and the canvas as indicated in Figures 1 and 2. One end of each rope 36 is secured to core member 16, as indicated at 36a. When
 45 the canvas is rolled upon said core body, portions of these ropes are also rolled thereon, as shown in Figure 3, and when the canvas is unrolled these portions of said ropes are disposed under said canvas. Each rope 36 after leaving the roll extends outwardly and passes over a sheave 38
 50 each of which is mounted on a stake 39. This stake is adapted to be placed in a corresponding pocket 22, preliminary to the unwinding operation of the canvas. From sheave 38 rope 36 then
 55 returns and has its other end 36b secured to a corresponding sheave 40 which is fixed to a horizontally disposed shaft 41. This shaft is disposed a suitable distance under pan 31 and rearwardly of the core member 16 when the latter occupies
 60 home position. Said shaft 41 extends the entire length of said core member and is preferably provided at one end with a handle 42 by means of which said shaft can be operated. However, if desired, an electric motor can be used to actuate
 65 said shaft. To unwind the canvas the shaft 41 is actuated in the direction indicated by arrow in Figure 3. This causes rope 36 to travel in directions indicated by arrows in Figures 3 and 4 whereupon said rope is wound upon shaft 41 and
 70 the roll of canvas is caused to unroll and travel

over the diamond until the core member 16 is located adjacent to the stakes 39. In this manner the entire diamond is covered by said canvas and said core member 16 occupies positions shown in
 75 Figure 5.

The cables 37 are used to roll the canvas upon the core member 16 and return the canvas into the positions shown in solid lines in Figure 3. Preferably cables or ropes 37 are arranged adjacent to cables or ropes 36 as indicated in Figures
 80 1 and 2. One end 37a of each cable 37 is anchored by means 25 which are also used to anchor the inner end of the canvas in position on plate 21. Cable 37 then passes upwardly over the
 85 far side of the roll of canvas, and has its other end secured to shaft 41, as indicated at 37b. When the canvas is unwound by the actuation of shaft 41 and cable 36, (as indicated by arrow in Figure 3) cable 37 is unwound from shaft 41 and is laid on the playing field under said canvas,
 90 as indicated in Figure 5, there being sufficient length of cable 37 wound on shaft 41 to permit this unrolling movement of the canvas. When the shaft 41 is actuated in the opposite direction, cable 37 is wound upon said shaft, there-
 95 by causing core member 16 to roll in the loops of cables 37 toward shaft 41, thereby causing the canvas to be wound on said core. At the same time, cable 36 is unwound from said shaft 41 and a corresponding portion thereof is wound on core
 100 member 16 in correlation with the canvas. A suitable number of cables 36 and 37 is used to permit efficient operation of the device.

A stop member 43 is secured to plate 21 inwardly of said roll of canvas and serves to limit
 105 the inward movement thereof during the rolling or restoring operation. This stop member may be of a single piece, extending the full length of the roll, or a plurality of short lengths thereof
 110 may be used.

Preferably the canvas is provided near its outer end or adjacent to the core member 16 with a plurality of slits or openings 44 and near its inner end or adjacent to the trench with similar
 115 openings or slits 45. These openings permit the water to be drained from said canvas during the rolling operation. The trench 11 is preferably provided with suitable drains 46 through which water may be conveyed away from the trench. Stake pockets 22 are preferably arranged at an
 120 angle from vertical and in a direction away from the trench so that when the stakes 39 are placed therein they occupy positions shown in Figure 4 and will not be displaced by the pull exerted thereagainst by the operation of the cables 36.
 125 Each stake is preferably provided with a pair of wheels 47 arranged to each side of sheave 38 whereby said stakes can be rolled over the ground before and after the placement of the canvas. When the canvas or cover is not in use, the ropes
 130 36 as well as the stakes are placed upon plate 21 and are stored in the trench with the roll of canvas. Thus everything necessary for the operation of the device is contained within the trench and is always ready for use.
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As the cover is always located at the field and ready for use, said field can be covered at a moment's notice with the minimum amount of labor. The displaceable top 32 closes the trench when
 140 said cover and parts associated therewith occupy lowered position.

When stakes 39 are removed from pockets 22, the upper ends of the latter are closed by suitable covers (not shown). In order to permit the core member 16 to adapt itself to the contour or sur-
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face irregularities of the field over which it is traveling when the canvas is being unrolled, said core member is preferably jointed or provided with a plurality of universal joints, as indicated at 48.

5 These joints are arranged at regular intervals throughout the entire length of the core member so that the sections of the latter can occupy positions slightly angular with respect to the main axis.

10 Our device is simple in operation, can be readily operated by inexperienced persons, and is highly efficient in performing its intended functions.

We claim:

1. A protective device for outdoor playing fields comprising a support arranged on one side of said field, a plurality of sheaves detachably supported adjacent to the opposite side thereof, a core member normally loosely carried by said support, a section of canvas rolled on said core member, the inner end of said canvas being secured thereto and the outer end being secured to said support, a revoluble member carried by said support and arranged above said core member when it occupies normal position, a first set of cables wound on said core member in juxtaposed relation with said canvas, each cable having a looped portion extending across said field and engaging the corresponding sheave, the inner end of each cable being secured to said core member and the outer end to said revoluble member whereby the operation of the latter in one direction winds said cable thereon and moves said core member over said field and unrolls said canvas, and a second set of cables each having its outer end attached to said support adjacent to said outer end of said canvas and having a looped portion extending over the other half of said canvas roll, the other end of each cable being secured to said revoluble member whereby the operation of the latter in opposite direction winds the second set of cables thereon and moves said core member toward said support thereby rolling said canvas and said first set of cables on said core member.

2. A protective device for outdoor playing fields comprising a support movably arranged to one side of the playing field, a plurality of sheaves arranged adjacent to the opposite side of said playing field, a core member, a section of canvas rolled thereon and having its inner end secured thereto and having its outer end secured to said support at a point remote from said playing field, said core member and the canvas rolled thereon normally occupying position on said support, a revoluble member carried by said support above said canvas roll, a first set of spaced-apart cables arranged in juxtaposed relation with said canvas and having their inner ends fixed to said core member, each of said cables having a looped portion extending from said canvas roll and engaging the corresponding sheave, the outer end of each of said cables being secured to said revoluble member, a second set of spaced-apart cables each having one end secured to said revoluble member and being wound thereon in a direction opposite to the first set of cables and having a looped portion extending over the playing field side of said roll, the other end extending under the latter and being anchored to said support adjacent to the anchored end of said canvas whereby the operation of said revoluble member in one direction winds thereon the first set of cables and causes said core member to travel over said playing field, thereby unrolling the canvas while the second set of cables is un-

rolled from said revoluble member in conjunction with the movement of said core member, the operation of said revoluble member in opposite direction winding thereon said second set of cables, thereby causing retractive movement of said core member and the rolling up of said canvas and restoring said core member and said canvas in normal position on said support.

3. In a device of the class described, the combination with a playing field having a trench arranged to one side thereof, of a support arranged in said trench and movable therein in a vertical plane into raised and lowered positions, a core member normally carried by said support, a section of canvas rolled on said core member and having its inner end throughout its entire length secured thereto and having its outer end throughout its entire length secured to said support, means for moving said core member over said field away from said support and the fixed outer end of said canvas, thereby unrolling said canvas over said field, and means for moving said core member toward said support to roll up said canvas thereon and position said core member and said canvas on said support.

4. In a device of the class described, the combination with a playing field having a trench adjacent to one side thereof, of a support movably mounted in said trench and movable therein in a vertical plane, a cover carried by said support for closing said trench when said support occupies lowered position, a core member normally carried by said support below said cover, a section of canvas rolled on said core member and having its inner end throughout its entire length secured thereto and having its outer end throughout its entire length secured to said support, means for moving said core member and the canvas rolled thereon over said field away from said support and the fixed end of said canvas, thereby unrolling said canvas and covering said field, and means for retracting said core member and causing said canvas to be rolled on said core member and the latter and said rolled canvas restored to normal position on said support.

5. A device of the class described comprising in combination with a playing field having a trench arranged adjacent to one side thereof, of a supporting means mounted in said trench for movement in vertical plane and including a horizontally disposed cover fixed to said supporting means and adapted to close the upper end of said trench when said supporting means occupies retracted position; a core, a section of canvas rolled on said core and having its inner end secured thereto, both said core and said canvas being removably carried by said supporting means, said canvas having the outer end anchored to said supporting means, and means for moving said core and the canvas rolled thereon over said playing field thereby unrolling and rolling said canvas thereover and protecting said field against rain.

6. A device of the class described comprising in combination with a playing field provided at one side with a trench, of a support mounted for movement in a vertical plane in said trench, a core member, a section of canvas rolled thereon and having its inner end secured thereto and having its outer end permanently anchored to said support, said core member and said canvas being removably mounted on the latter, and actuating means for moving said core and the canvas rolled thereon over said playing field so as to cover the latter, said actuating means includ-

ing a plurality of stakes adapted to be anchored on the opposite side of said playing field, a sheave mounted on each stake, and a plurality of cables engaging said core and said roll of canvas, and operating over said sheaves, said cables being operable to unroll said canvas over said playing field.

7. A device of the class described comprising a core member, a roll of canvas having one end secured to said core member and having its other end anchored, said canvas being of sufficient dimensions to cover when unrolled the entire playing field, a first set of cables arranged in spaced relation with each other throughout the entire length of said roll and having one of their ends anchored adjacent to the anchored end of said canvas and having loop portions engaging the outer side of said roll, a second set of cables arranged in spaced relation with the first set of cables and with each other and having their inner ends secured to said core member and wound thereon in juxtaposed relation with said canvas, a horizontally disposed revoluble member arranged above said roll of canvas and rearwardly thereof, the outer ends of both sets of cables being fastened thereto, the second set of cables being provided each with a loop extending from said roll across said playing field, and sheaves supported adjacent to said playing field remote from said roll and receiving said looped ends, whereby the operation of said revoluble member in one direction winds the second set of cables on said revoluble member and thereby moves said core and said roll of canvas over said playing field and unwinds said canvas, the operation of said revoluble member in the opposite direction causing winding of the first set of cables, thereby returning said core and rolling the canvas thereon and toward the anchored end thereof.

8. A device of the class described comprising a core member, a water-proof canvas having the inner end secured to said core member and adapted to be rolled thereon and having its outer end anchored adjacent to and rearwardly of the normal position of said core member and the canvas rolled thereon, said canvas being of sufficient dimensions to cover when unrolled the entire playing field, a first set of cables spaced throughout the entire length of said roll of canvas, the inner ends of said cables being secured to said core member and said cables being rolled thereon in juxtaposed relation with said canvas, a revoluble member mounted above and rearwardly of said roll of canvas when the latter occupies normal position, the outer ends of said cables being fixed to said revoluble member, said cables being provided with looped portions adapted to extend to the opposite side of said playing field, and a plurality of sheaves arranged on the last mentioned side of said field and adapted to receive said looped ends, whereby when said revoluble member is operated in one direction said cables are wound on said revoluble member and are unwound from said core member, thereby moving the latter and causing unrolling of said canvas over said playing field.

9. A device of the class described comprising a core member, a water-proof canvas having the inner end secured to said core member and adapted to be rolled thereon and having its outer end anchored adjacent to and rearwardly of the normal position of said core member and the canvas rolled thereon, said canvas being of sufficient dimensions to cover when unrolled the entire playing field, a first set of cables spaced throughout the entire length of said roll of canvas, the inner ends of said cables being secured to said core member and being rolled thereon in juxtaposed relation with said canvas, a revoluble member mounted above and rearwardly of said roll of canvas when the latter occupies normal position, the outer ends of said cables being fixed to said revoluble member, said cables having looped portions adapted to extend to the opposite side of a playing field, a plurality of sheaves arranged on said side of said playing field and adapted to receive said looped ends, whereby when said revoluble member is operated in one direction said cables are wound on said revoluble member and are unwound from said core member, thereby moving said core member and unrolling said canvas over said playing field, a second set of cables arranged in spaced relation with the first set and with each other and having one of their ends anchored adjacent to the outer end of said canvas and having their inner ends fixed to said revoluble member, the looped portion of said second set of cables extending over the outer side of said roll whereby when said revoluble member is wound in opposite direction said second set of cables is wound thereon and causes said canvas and said first set of cables to be rolled upon said core member and restored to normal position, and means for supporting and containing said roll of canvas and said cables when occupying retracted positions.

10. A device of the class described comprising in combination with an outdoor playing field having a trench formed adjacent to one side thereof, of a support mounted in said trench for movement in a vertical plane, a core member, a section of canvas rolled thereon and having its outer end anchored to said support, said core member and said rolled canvas being normally carried by said support, a set of cables cooperating with said core member and with said canvas for moving said core member and the canvas rolled thereon over said playing field, thereby unrolling said canvas over the latter, a set of cables engaging the canvas rolled on said core member for moving said core member to its home position and thereby rolling up said canvas, and a top fixed to said support in spaced relation and above said core member, said top being disposed in a horizontal plane and adapted when said support occupies retracted position to close the upper end of said trench.

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