June 23, 1970 J. W. TRIMBLE ET AL 3,516,666

TELESCOPIC GOAL POST

Filed Oct. 24, 1966 2 Sheets-Sheet 1

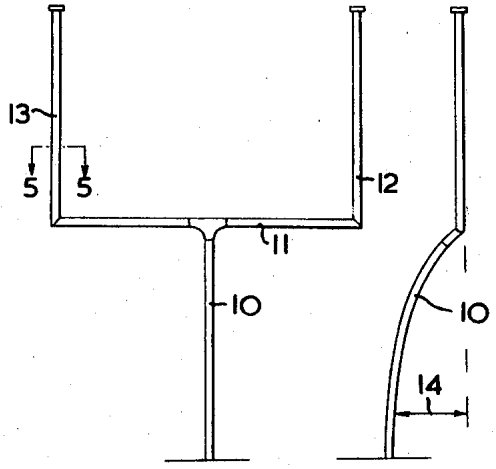

FIG. 1

FIG. 2

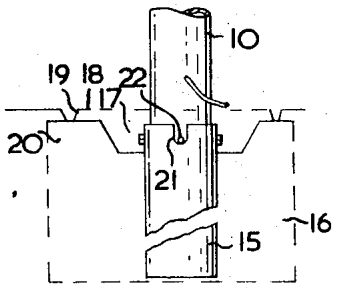

FIG. 4

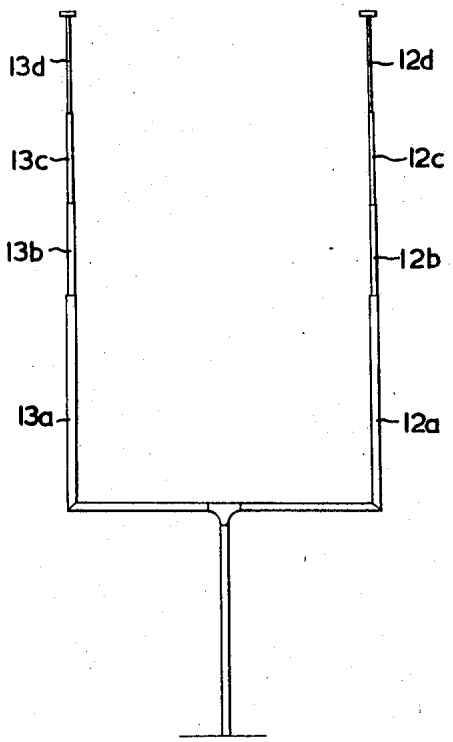

FIG. 3

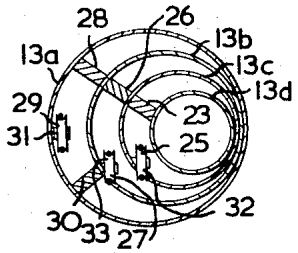

FIG. 5

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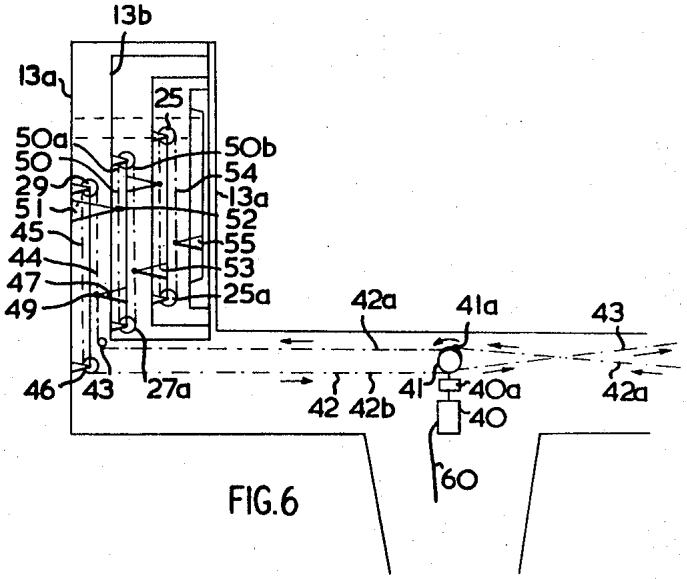

FIG.6

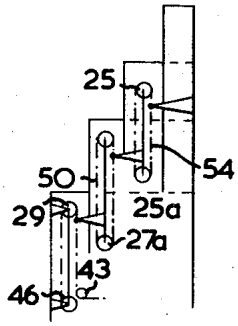

FIG.7

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TELESCOPIC GOAL POST

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Int. Cl. A63b 71/02
U.S. Cl. 273—55 12 Claims

ABSTRACT OF THE DISCLOSURE

A goal post for use in playing the game of football in which the upright structures mounted at each end of the cross-bar comprises a plurality of upright members at least one of which is telescopically received in another of said members, remotely controlled drive pulleys being provided for extending and retracting the telescopic member or members.

This invention relates to the construction of goalposts suitable for use in the game of football.

The conventional goalpost has a pair of standards above which there is a crossbar and uprights forming extensions of the standards. There has recently been introduced offset standards which are displaced into the end zone so as to decrease interference with play at the goal line. The conventional uprights assist the officials in determining whether in the case of a conversion or field goal the ball has passed between the uprights. However, these uprights normally extend ten to twenty feet above the crossbar, whereas the ball may travel twenty or more feet above the crossbar. It is sometimes difficult for the field officials to determine whether a conversion or field goal attempt has succeeded, even when the ball passes between the uprights and the possibility of errors in judgment is greatly increased when the ball travels above the level of the uprights. During the last few years conversions and field goal attempts, particularly the latter, have been critical in deciding the outcome not only of individual games, but of a season's play. The field official must make an instantaneous decision, he cannot wait for photographs to be developed to assist him in judging whether a score should be awarded. Furthermore, even if this were possible, camera angles can often be misleading. If an erroneous call is made this will have a substantial financial impact upon the players and clubs involved. The fans will become disgruntled if the team they are supporting appears to have lost the game because of what is likely to be regarded as being a biased decision.

Increasing the height of the uprights would not provide a satisfactory solution because the goalposts have a tendency to interfere with other plays including both passing plays and running plays. The larger the goalposts the more likelihood there is for interference. It is for this reason that the standards of goalposts have recently been offset into the end zone to decrease the interference with running plays. If the height of the uprights were increased this would be a retrograde step from the point of view of interference with other plays, because the frequency with which a passed ball strikes the uprights would be increased.

The general object of this invention is to decrease the possibility of errors in judgment in determining whether a conversion or field goal attempt has been successful without the disadvantage attendant upon increasing the normal height of the upright. A further advantage of this invention in its preferred aspect is to combine an improvement in the facility with which field goal or conversion attempts

can be judged with a decrease in the interference of the goalposts with other plays.

In accordance with this invention there is provided uprights which are telescopically extensible so that the height of the upright can be increased for field goal or conversion attempts and the height can readily be reduced to normal dimensions for other plays.

In accordance with this invention in its preferred aspect the conventional pair of standards is replaced with a single central standard which is preferably of a goosenecked construction and the mechanism for controlling the telescoping of the uprights is mounted at the top of this single standard. Thus the replacement of double standards by a single standard together with the offsetting achieved by the goosenecked configuration results in a decrease in interference with normal plays while at the same time the top of the single standard provides a convenient mounting for the mechanism which controls the extensions of the uprights.

In the drawings which illustrate the preferred embodiments of this invention:

FIG. 1 is a front elevation view of goalposts in accordance with this invention showing the uprights in a condition for normal play;

FIG. 2 is a side elevation view of FIG. 1;

FIG. 3 is a front elevation view similar to FIG. 1 but showing the uprights extended for a field goal or conversion attempt;

FIG. 4 is a detailed elevation view of the base of the standard for the goalpost illustrated in FIGS. 1, 2 and 3;

FIG. 5 is a sectional plan view along the lines **5—5** in FIG. 1;

FIG. 6 is a detailed sectional view of the interior mechanism in the uprights and crossbar of FIG. 1;

FIG. 7 is a schematic view similar to part of FIG. 6, but illustrating the extended position of the uprights.

Referring now to FIGS. 1 and 2, the goalpost comprises a standard **10** upon which is mounted a crossbar **11**. Standard **10** is connected to the centre of crossbar **11** in the form of a "T." Uprights **12** and **13** extend upwardly at each end of crossbar **11**. As apparent from FIG. 2, standard **10** is provided with a progressively goosenecked configuration so as to combine an offset distance illustrated at **14** of about six feet with a more stable support for the crossbar and upright structure than would be provided by the previously known vertical standard with an offset step.

FIG. 3 illustrates the uprights in their extended position and it will be noted that each upright comprises a lower upright member **13***a*, from which there telescopically extends a second upright member **13***b*. A third upright member **13***c* telescopically extends from upright member **13***b* and a fourth upright member **13***d* telescopically extends from upright member **13***c*. Similarly, upright **12** comprises upright members **12***a*, **12***b*, **12***c* and **12***d*. It will be noted that if at the extended position of the uprights there is in each case a two-foot overlap between the extended upright member and the upright member from which it extends and assuming each upright member to be ten feet in height, a total height of more than thirty feet will be achieved. As this is in addition to the ten feet distance above the ground of the crossbar, the top of the uprights will be at a height of more than forty feet which should be entirely adequate. Even if the ball travelled slightly above this it will be much easier for the field officials to line up its position with the extended uprights provided in accordance with this invention, as compared with conventional uprights. If additional height is required, the upright members can be made correspondingly longer.

FIG. 4 illustrates the details of the base of standard **10**. Standard **10** is engaged within a tubular pipe **15** which is embedded in concrete footing **16**. The concrete footing

16 has an annular recess 17 to receive artificial sod 18 which fits within the recess and extends at 19 over shoulder 20 of the footing. Steel pipe 15 has a socket 21 to receive a pin 22 extending laterally adjacent to the base of standard 10.

Referring now to FIGS. 5 and 6 of the drawings, it will be noted that upright member 13*d* is received within upright member 13*c* and is spaced therefrom by a spacer 23 which is preferably a nylon pad. Substantially diametrically opposed from pad 23 upright members 13*c* and 13*d* are juxtaposed in sliding contact. As indicated at 24 the consequent displacement of the axis of upright members 13*c* and 13*d* from each other provides room for pulley 25 which on one side extends into the interior of upright member 13*c* and on the other side extends exteriorly of upright member 13*c*. The manner in which this pulley functions will be apparent from the description given below in relation to FIGS. 6 and 7. Similarly, spacing member 26 spaces upright member 13*d* from upright member 13*c* to provide space for pulley 27 which extends on one side within and on the other side outside upright member 13*b*. Spacer 28 spaces upright member 13*a* from upright member 13*b* to provide space for pulley 29. Spacer 28 is balanced by spacer 30 on the other side of pulley 29 from spacer 28. Additional spacers can, if necessary, be provided between upright members 13*d* and 13*c*, and 13*c* and 13*b* respectively to provide additional balance. Pulley 29 is entirely within upright member 13*a* and is mounted on a shaft 31 which extends radially as compared with the shafts 32 and 33 for pulleys 25 and 27 respectively, which extend at an inclination to the radius.

As will be apparent from FIG. 6, a self starting reversible electric motor 40 in combination with a gear reduction means 40*a* drives pulley 41. Pulley 41 in turn drives a continuous cable or chain 42 to control the extension of uprights 13. A second pulley 41*a* is mounted coaxially with pulley 41 to drive continuous cable or chain 42*a*. Cable 42*a* has a cross over as indicated at 43 to reverse the direction of the drive so that both uprights can be extended or retracted at the same time. The manner in which the movement of cable 42 controls the extension of the upright 13 will now be described and it will be understood that with the exception of the crossover at 43 or other suitable reverse mechanism, the extension of upright 12 will be accomplished in the same manner and this will not separately be described. Cable 42 has an upper run 42*a* and a lower run 42*b*. In FIG. 6 pulley 41 is rotated in an anticlockwise direction to cause upper run 42*a* to move to the left and lower run 42*b* to move to the right. Upper run 42*a* is guided by idler pulley 43 and from thence has an upward extension 44 to pulley 29, where it meets the upward extension 45 of lower run 42*b*. Lower run 42*b* passes over pulley 46. An anchor member 47 is mounted on the casing of upright member 13*b*. The tip 49 of anchor member 47 is connected to portion 44 of upper run 42*a*. Consequently, when pulley 41 is moved in an anticlockwise direction upright member 13*b* is raised. Pulleys 27 and 27*a* are as previously explained, mounted so as to be partially within and partially outside upright member 13*b*. A continuous cable 50 travels around pulleys 27 and 27*a* and has at any one time an outer run 50*a* and an inner run 50*b*. An anchor member 51 is mounted on the interior casing of upright member 13*a* and is connected at its end 52 to the outer run 50*a* of cable 50. Consequently, the raising of telescoping member 13*b* causes cable 50 to travel in an anticlockwise direction. Another anchor member 53 is mounted on upright 13*c* and is connected to the inner run 50*b* of cable 50 with the consequence that this anticlockwise movement of cable 50 causes the extension of upright member 13*c*. Similarly, pulleys 25 and 25*a* support a continuous cable 54. Anchoring member 55 is mounted on upright member 13*d* and is connected to cable 54 to cause upright member 13*d* to be extended.

It is apparent therefore that each of the uprights 13*b*, 13*c* and 13*d* will become simultaneously extended upon the anticlockwise movement of pulley 41 and the mechanism will then assume the position illustrated in FIG. 7.

Motor 40 is connected by cable 60 to a suitable source of power (not shown) and to a control switch indicated at 61 which includes provision for stopping and/or reversing the direction of rotation of the motor. Switch 61 can be located at the base of the goalpost or at a remote location as indicated in FIG. 1. Cable 60 is preferably placed within standard 10.

A suitable protective cap 62 can be mounted on the top of upright members 12*d* and 13*d* to protect the mechanism when the uprights are in their normal retracted position.

While one convenient mechanism for extending the uprights has been described it will be appreciated that within the scope of this invention in its broadest aspect other mechanisms can be used including a hand operated crank, compressed gas and hydraulic arrangement.

We claim:

1. A goalpost for football comprising at least one central standard, a crossbar mounted on said standard and an upright structure at each end of said crossbar, each of said upright structures comprising a plurality of upright members at least a second one of which is telescopically received in another of the upright members and means operable remotely of said upright members for extending and retracting the received member in relation to the member in which it is received, for regulating the length of the upright structures within the range between a fully retracted, normal length and a fully extended substantially greater length than said normal length.

2. A goalpost as in claim 1 in which the means for extending and retracting the upright members is mounted at the top of a single central standard.

3. A goalpost as in claim 1 in which said single central standard has a base offset into the end zone area of a football field and has a goosenecked configuration.

4. A goalpost as in claim 1 in which said extending and retracting means comprises a drive pulley mounted in the crossbar, a continuous cable driven by said drive pulley and having upper and lower runs extending within said crossbar and into a space between the lower upright members, an anchorage member mounted on the second upright member and connected to the portion of the upper run of said cable which extends upwardly within the lower upright member so that the rotation of the drive pulley causes telescopic extension or retraction of the second upright member.

5. A goalpost as in claim 2 in which said extending and retracting means comprises a drive pulley mounted in the crossbar, a continuous cable driven by said drive pulley and having upper and lower runs extending within said crossbar and into a space between the lower upright members, an anchorage member mounted on the second upright member and connected to the portion of the upper run of said cable which extends upwardly within the lower upright member so that the rotation of the drive pulley causes telescopic extension or retraction of the second upright member.

6. A goalpost as in claim 3 in which said extending and retracting means comprises a drive pulley mounted in the crossbar, a continuous cable driven by said drive pulley and having upper and lower runs extending within said crossbar and into a space between the lower upright members, an anchorage member mounted on the second upright member and connected to the portion of the upper run of said cable which extends upwardly within the lower upright member so that the rotation of the drive pulley causes telescopic extension or retraction of the second upright member.

7. A goalpost as in claim 1 in which said extending and retracting means comprises a drive pulley mounted in

the crossbar, a continuous cable driven by said drive pulley and having upper and lower runs extending within said crossbar and into a space between the lower upright members, an anchorage member mounted on the second upright member and connected to the portion of the upper run of said cable which extends upwardly within the lower upright member so that the rotation of the drive pulley causes telescopic extension or retraction of the second upright member, and in which said extending and retracting means further comprises a pair of pulleys mounted in the casing of the second upright member, a second continuous cable passing around the last mentioned pulleys, an anchorage member mounted within the casing of the lower upright member and connected to the outer run of the second cable and an anchorage member mounted on a third upright member which telescopes within the second upright member and being connected to the inner run of the second cable so that the third upright member is telescopically extended from the second upright member at the same time as the second upright member is telescopically extended from the lower upright member.

8. A goalpost as in claim **2** in which said extending and retracting means comprises a drive pulley mounted in the crossbar, a continuous cable driven by said drive pulley and having upper and lower runs extending within said crossbar and into a space between the lower upright members, an anchorage member mounted on the second upright member and connected to the portion of the upper run of said cable which extends upwardly within the lower upright member so that the rotation of the drive pulley causes telescopic extension or retraction of the second upright member, and in which said extending and retracting means further comprises a pair of pulleys mounted in the casing of the second upright member, a second continuous cable passing around the last mentioned pulleys, an anchorage member mounted within the casing of the lower upright member and connected to the outer run of the second cable and an anchorage member mounted on a third upright member which telescopes within the second upright member and being connected to the inner run of the second cable so that the third upright member is telescopically extended from the second upright member at the same time as the second upright member is telescopically extended from the lower upright member.

9. A goalpost as in claim **3** in which said extending and retracting means comprises a drive pulley mounted

in the crossbar, a continuous cable driven by said drive pulley and having upper and lower runs extending within said crossbar and into a space between the lower upright members, an anchorage member mounted on the second upright member and connected to the portion of the upper run of said cable which extends upwardly within the lower upright member so that the rotation of the drive pulley causes telescopic extension or retraction of the second upright member, and in which said extending and retracting means further comprises a pair of pulleys mounted in the casing of the second upright member, a second continuous cable passing around the last mentioned pulleys, an anchorage member mounted within the casing of the lower upright member and connected to the outer run of the second cable and an anchorage member mounted on a third upright member which telescopes within the second upright member and being connected to the inner run of the second cable so that the third upright member is telescopically extended from the second upright member at the same time as the second upright member is telescopically extended from the lower upright member.

10. A goalpost as in claim **1** in which the axes of said upright members are successively displaced in one direction to provide space for said means for extending and retracting the telescopically received upright members.

11. A goalpost as in claim **2** in which the axes of said upright members are successively displaced in one direction to provide space for said means for extending and retracting the telescopically received upright members.

12. A goalpost as in claim **3** in which the axes of said upright members are successively displaced in one direction to provide space for said means for extending and retracting the telescopically received upright members.

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