

Oct. 29, 1963

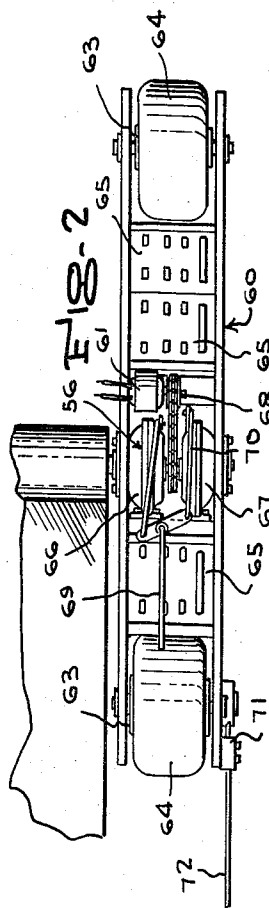
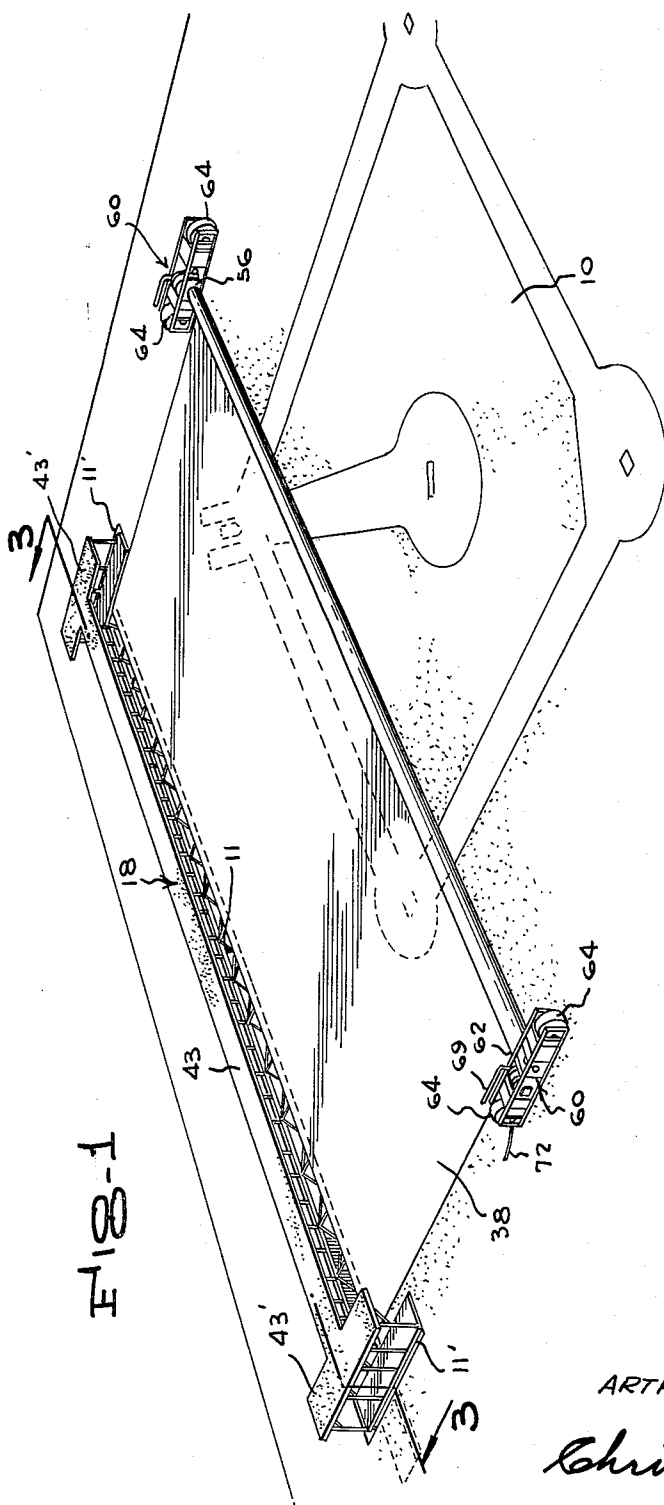
A. W. WAGNER

3,108,804

APPARATUS FOR COVERING OUTDOOR ATHLETIC FIELDS

Filed May 5, 1961

4 Sheets-Sheet 1



INVENTOR.

ARTHUR W. WAGNER

BY

Christian R. Nielsen.
ATTORNEY

Oct. 29, 1963

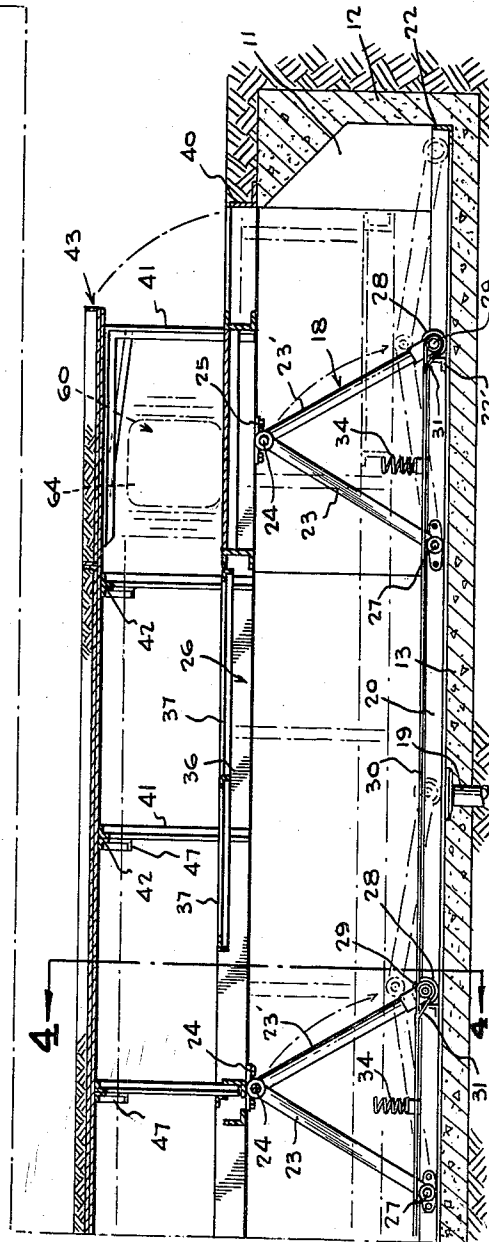
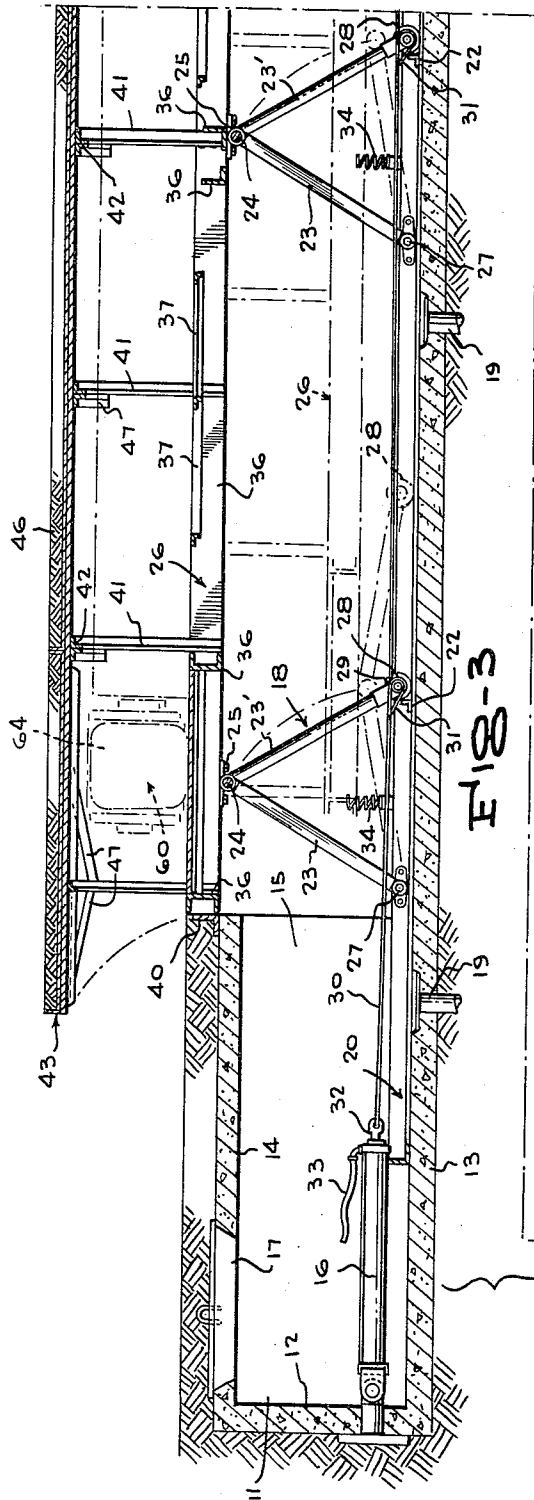
A. W. WAGNER

3,108,804

APPARATUS FOR COVERING OUTDOOR ATHLETIC FIELDS

Filed May 5, 1961

4 Sheets-Sheet 2



INVENTOR.
ARTHUR W. WAGNER
BY
Christian L. Nielsen
ATTORNEY

Oct. 29, 1963

A. W. WAGNER

3,108,804

APPARATUS FOR COVERING OUTDOOR ATHLETIC FIELDS

Filed May 5, 1961

4 Sheets-Sheet 3

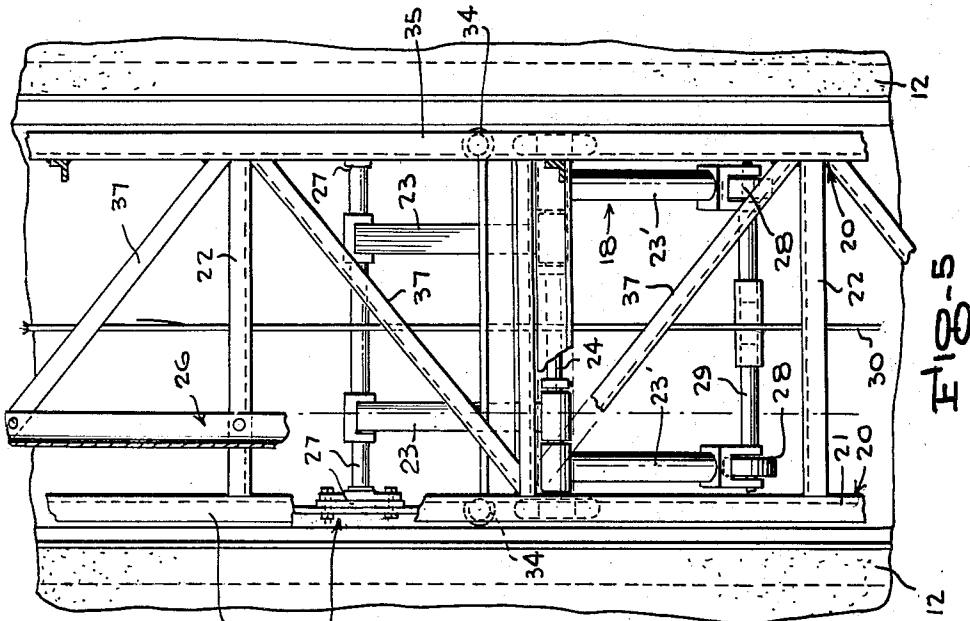
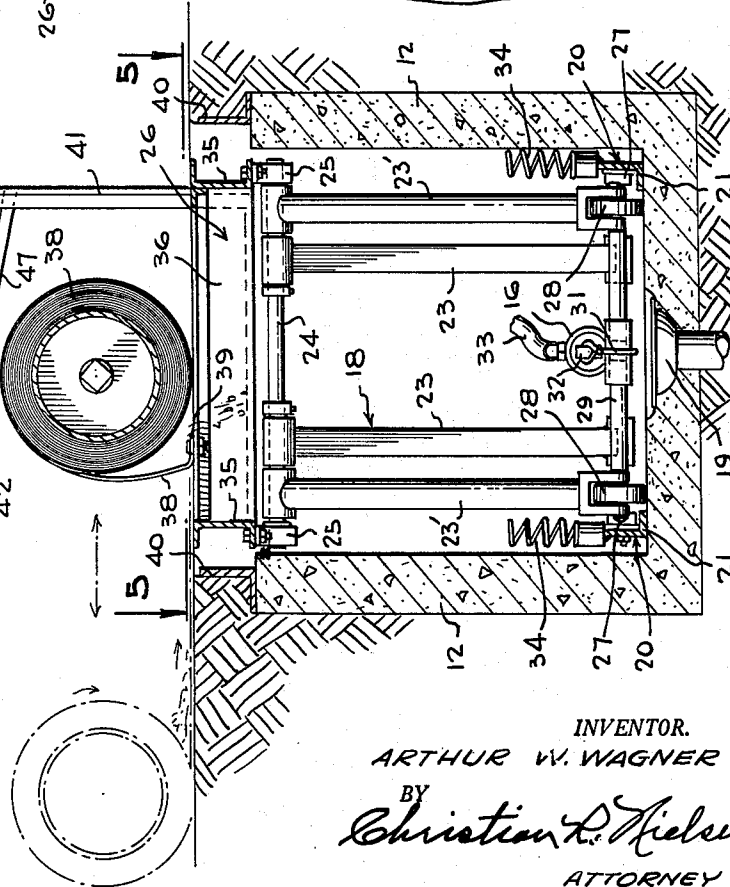


FIG-4



INVENTOR.

ARTHUR W. WAGNER

BY

Christian D. Nielsen

ATTORNEY

Oct. 29, 1963

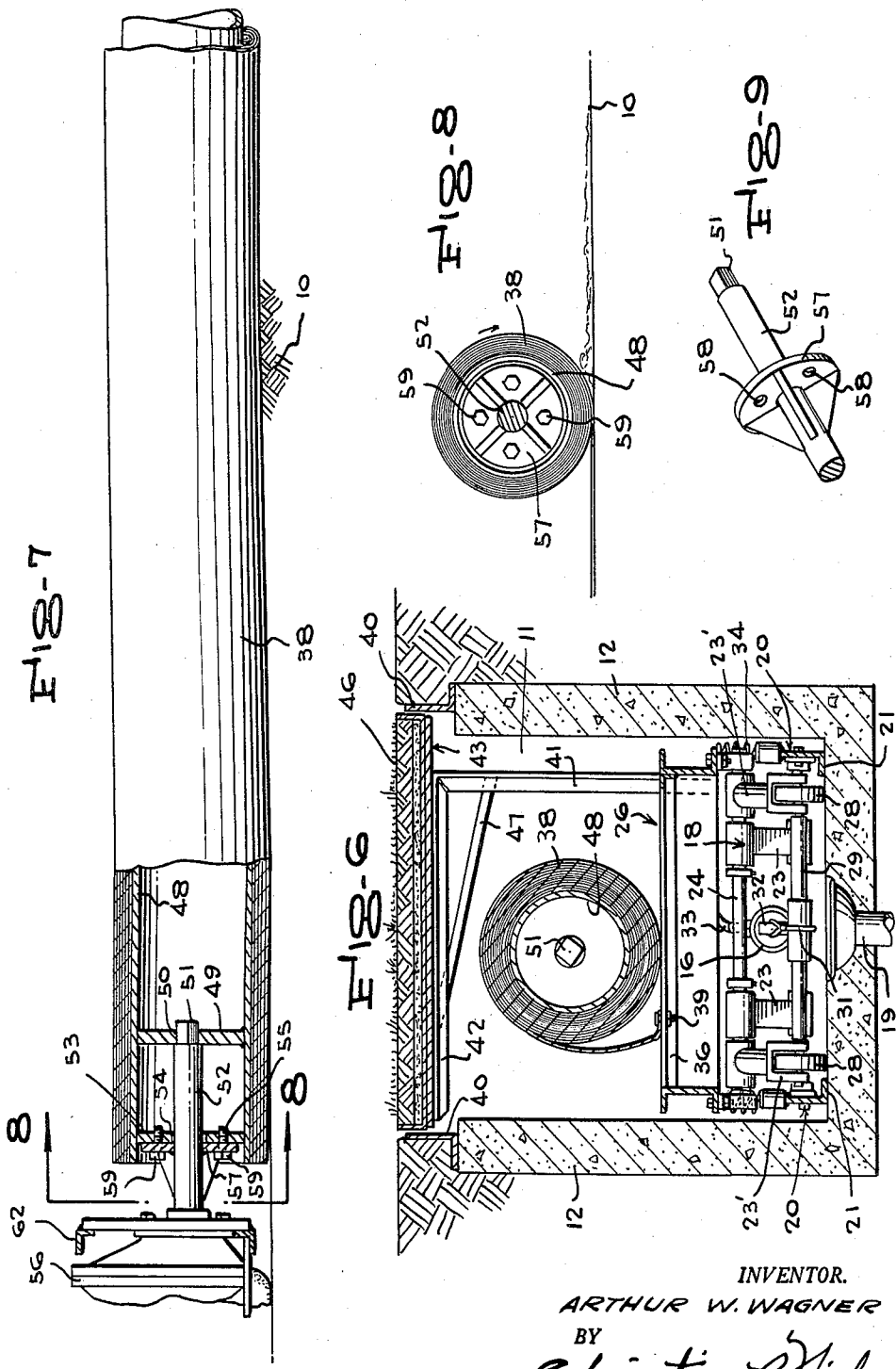
A. W. WAGNER

3,108,804

APPARATUS FOR COVERING OUTDOOR ATHLETIC FIELDS

Filed May 5, 1961

4 Sheets-Sheet 4



INVENTOR.
ARTHUR W. WAGNER
BY
Christian R. Nielsen
ATTORNEY

1

3,108,804

APPARATUS FOR COVERING OUTDOOR ATHLETIC FIELDS

Arthur W. Wagner, Box 112, Butler, Wis.

Filed May 5, 1961, Ser. No. 108,031

2 Claims. (Cl. 273-27)

This invention relates to apparatus for covering outdoor athletic fields and it consists in the constructions, arrangements and combinations herein described and claimed.

In the play of various outdoor games, it is highly important to maintain the playing surface in a dry condition, and especially is this true of the infield of a baseball diamond, where a sudden heavy rain occurrence could soak the field to such an extent that the game would have to be postponed; necessitating the issuance of rain-checks for the next game, which obviously places a burden and expense upon the management of the establishment.

It is therefore the cardinal object of the invention to provide an apparatus which may be employed to spread a tarpaulin over the infield of a baseball diamond in a quick and easy manner, the apparatus being of such construction as to be readily housed in a trench positioned at a suitable side of the playing field; and thus stored the apparatus would not interfere with the various plays which occur on a baseball diamond, as well as being in readiness for quick movement of the tarpaulin upon the field.

It is also an important object of the invention to provide a new and novel mobile means for spreading a tarpaulin upon a playing field, wherein a core upon which the tarpaulin is rolled, is flexible in a longitudinal direction under rotation thereof, thus exerting a downward pressure upon the tarpaulin and the surface of the playing field, which pressure will cause water on the surface of the tarpaulin to be advanced in the direction of a trench or pit for deposit therein upon return movement of the mobile means, thus eliminating spillage of water upon or adjacent to the playing field.

More specifically, it is an important object of the invention to provide an elongated trench or pit for housing an elongated metallic cylindrical core upon which a tarpaulin is rolled, the ends of the core being operatively connected to respective mobile units, the trench or pit being provided with suitable means for elevating the core and mobile units simultaneously to the surface of the ball field; the mobile units being controlled to effect forward movement of each unit to traverse the baseball diamond and cause unrolling of the tarpaulin upon the ball field in a smooth and even manner; the control means for the mobile units being operative to effect steering as well as reverse movement thereof to effect a re-rolling of the tarpaulin upon the core.

Additional objects, advantages and features of invention will be apparent from the following description considered in conjunction with the accompanying drawings, wherein,

FIGURE 1 is a perspective view of a baseball diamond illustrating the apparatus in operation for spreading the tarpaulin upon the infield of the diamond.

FIGURE 2 is a top plan view of one of the mobile units.

FIGURE 3 is a longitudinal section taken on the line 3-3 of FIGURE 1, the view being divided intermediate the length thereof in order to show the parts in such proportions as to properly illustrate the construction and operation thereof.

FIGURE 4 is a cross section taken on the line 4-4 of FIGURE 3.

2

FIGURE 5 is a cross section taken on the line 5-5 of FIGURE 4.

FIGURE 6 is a cross section similar to FIGURE 4, but illustrating the apparatus in lowered position within the trench or pit.

FIGURE 7 is an enlarged fragmentary elevation, partly in section, illustrating the mounting of the core to one of the mobile units.

FIGURE 8 is a cross section taken on the line 8-8 of FIGURE 7, and

FIGURE 9 is a perspective view of the mounting axle between the mobile units and the core.

Referring to the drawings and more particularly to FIGURE 1, there is illustrated a baseball diamond generally indicated by the reference character 10. At one side of the diamond a trench 11 is provided adapted to house the apparatus, as will now be described, reference being had to FIGURES 3, 4 and 5. The trench is provided with concrete side and end walls 12 and a bottom wall 13 and a partial top wall 14; the latter together with the bottom and adjacent end wall forming an open ended compartment 15 for storage of hydraulic operating means 16 which will be described in greater detail as the description proceeds.

The partial top wall 14 is provided with a man-hole and cover 17 permitting access into the compartment as may be required for making repairs or adjusting mechanism of an elevating means generally indicated at 18. The bottom wall 13 is provided with any suitable number of drain or cesspools 19 so that water deposited in the trench upon return movement of the tarpaulin may drain therefrom.

Inwardly of the side walls 12 a metallic frame 20 is secured upon the bottom wall 13, the frame in the present instance being formed by angle iron members 21, secured in spaced relation by means of cross braces 22, the members 21 extending longitudinally of the trench.

The elevator means 18 comprises a series of spaced collapsible supports, each consisting of a pair of lever members 23 and 23', the upper ends of which are pivotally mounted upon a transversely extending shaft 24 suitably mounted in housings 25 fixed to the underside of a tarpaulin supporting frame 26. It will be noted from a consideration of FIGURES 5 and 6, that two sets of the collapsible supports are mounted on the shafts 24 arranged in spaced apart relation to permit free movement of the levers 23 and 23' in the act of raising and lowering the frame 26. The lower ends of the levers 23 of each support are firmly anchored to the angle iron members 21 by means of a shaft and bearing supports as shown at 27; while the lower ends of the levers 23' are provided with a freely rotating roller 28 mounted upon a shaft 29, the rollers being adapted to traverse the bottom wall 13 under raising and lowering movements of the frame 26.

In order to provide collapsing and elevating movements of the supports 18, a steel cable 30 is employed, which cable is anchored to each shaft 29 of the supports, as indicated at 31, the cable being operatively connected to the piston rod 32 of the hydraulic unit 16, the latter being suitably anchored in the adjacent end wall 12 of the trench. The operation of the unit 16 may be controlled by means of any suitable valve (not shown) associated with the hose 33. The tarpaulin and the operating means will be raised and lowered from and into the trench simultaneously and since the operating means and tarpaulin represent considerable weight, an elevating means is positioned directly beneath that portion of the frame 26 which supports the respective operating means.

In order to cushion the lowering movement of the frame 26 within the trench, shock absorbing springs 34

are suitably mounted at spaced points along the angle iron members 21.

The frame 26 for support of the tarpaulin and operating means comprises a pair of longitudinally extending channel irons 35 connected by transverse channel irons 36, the frame being additionally braced by diagonally disposed braces 37. Thus, the frame 26 is of an open-work structure permitting water from the tarpaulin to pass into the pit or trench.

As clearly shown in FIGURE 4, an edge of the tarpaulin 38 is anchored at spaced intervals, to the transverse channel irons 36, as indicated at 39, the opposite end of the tarpaulin being secured to the tube or core 48.

Upon the upper edges of the end and side walls of the trench, a metallic frame 40 is secured forming a finished appearance as well as acting as a retaining means preventing earth from entering the trench.

Obviously, it would be undesirable to have an open trench for storage of the tarpaulin and associated mechanism since this would present a hazard to players who might have occasion to field foul balls in and about the trench; as well as distracting from the appearance of the field.

Provision is therefore made for closing the upper open end of the trench and for an understanding of this construction reference is made particularly to FIGURES 3, 4 and 6 of the drawings. Upon the upper rear portion of the tarpaulin supporting frame 26, a suitable number of upright supports 41 are secured positioned in spaced relation the length of the trench, each support including a horizontal extension 42 for securement of a cover means 43. The cover means is in the form of a rectangular tray defined by circumscribing walls 44 into which there is deposited suitable earth covered with sod, as indicated at 45, the cover means 43 being of such dimensions as to freely enter the upper frame 40 of the trench (see FIGURE 6). Inasmuch as the completed cover means for the trench involves considerable weight, suitable brace rods 47 are secured between the upright supports 41 and the horizontal extension 42.

The tarpaulin 38 is of a length and width greater than the area of the infield to be covered and is suitably rolled upon an aluminum tube or core 48 which is of a length corresponding to the width of the tarpaulin. Inwardly of respective ends of the tube 48 a heavy circular plate 49 is secured, each plate being provided with an angularly shaped opening 50 for reception of a similarly shaped end 51 of a drive shaft 52. Outwardly spaced from the plate 48, a second disk or plate 53 is secured within the tube, as by welding. The plates 53 are provided with an axial opening 54 permitting passage of the shaft 52 there-through and are further formed with suitable threaded openings 55 for a purpose as will presently appear.

As clearly shown in FIGURE 7, the drive shaft 52 is operatively connected with a suitable reversible power transmission 56, the shaft 52 having a rigidly secured plate 57 provided with openings 58 adapted to register with the openings 50 of the plate 53 for reception of mounting bolts 59. Since both ends of the tube or core 48 must be simultaneously rotated in unison, a reversible transmission is employed at respective ends of the tube or core.

Attention is now invited to FIGURE 1 of the drawings where it will be seen that the rolling and unrolling of the tarpaulin 38 is effected by means of a pair of mobile units 60 which in the present instance are powered by electric motors 61, in conjunction with the rolling or unrolling of the tarpaulin. With particular reference to FIGURE 2 of the drawings, it will be noted that the units 60 comprise an elongated frame 62 of substantial structure, in respective ends of which are rotatably mounted a wheel 63. The wheels have mounted thereon a heavy pneumatic tire 64 having a broad tread for effective traction across the playing field. The motors derive current from batteries 65 mounted within the frame.

The reversible transmissions are likewise supported in the frame 62 and comprise a transmission unit 66 for unrolling the tarpaulin upon the playing field and a similar unit 67 for re-rolling the tarpaulin upon the tube or core. These units are mounted in side by side relation within the frame 62, the shaft 52 being common to both units; the shaft being driven by the motor 61 by means of sprockets and chain indicated at 68. Each transmission unit will include a clutch (not shown) for effecting forward and reverse rolling movement of the tube or core, the clutches being operable, as desired by means of a lever 69 and links 70. In the present instance, the lever and links, as well as the control of the motors are manually controlled by an attendant, although if desired, the units may be actuated by conventional remote control switches.

The rear wheels 64 of each unit 60 are provided with an electrical brake unit 71 which may be controlled by an attendant at the trench, by means of a suitable switch associated with the lead wires 72. Thus, by applying brake pressure upon the wheel of one unit and not the other unit, the mobile units may be properly steered to insure proper unrolling and re-rolling of the tarpaulin.

Inasmuch as the units 60 as well as the tarpaulin are to be housed within the trench 11, respective ends of the trench are provided with trenches 11' extending at right angles to the main trench 11 and the cover means 43 will also be provided with right angular extensions 43' so as to close and open the main and right angularly disposed trenches simultaneously.

In use, the tarpaulin and the operating mechanism will be normally housed in the trench as shown in FIGURE 6. In the event of a heavy shower or storm, an attendant would operate a suitable control valve of the hydraulic unit 16 to retract the piston rod 32, which is normally in a forward position, which movement would draw upon the cable 30 causing movement of the levers 23' in the direction of the fixed levers 23, which it will be recalled are pivotally mounted at 27. Thus, the frame 26, which supports the tarpaulin and the mobile units 60 will be elevated to ground level and when such position has been attained, the motors 61 of the mobile units are simultaneously started by operation of a control switch (not shown). With the lever 69 and links 70 set as shown in FIGURE 2, power will be transmitted to the tube or core by transmission unit 66, to rotate the tube and tarpaulin against the surface of the playing field, which causes the mobile units 60 to move forwardly drawing the tarpaulin smoothly upon the surface of the playing field. When the tarpaulin has been fully extended, the motors 61 are stopped. In the event that there is any tendency for one unit to advance at a greater speed than the other unit during transit across the field, the speed of such unit may be controlled by means of energizing the electric brake 71. Return movement of the mobile units 60 and re-rolling of the tarpaulin upon the tube is effected by shifting the lever 69 and links 70 so as to bring the transmission unit 67 into operation. When the apparatus has been returned to position upon the frame 26, the hydraulic unit 16 is actuated to lower the apparatus into the trench 11 to assume the position shown in FIGURE 6. When fully disposed within the trench, the cover means 46 will entirely conceal the trench.

Due to the length of the tube or core 48 and the inherent flexibility thereof, the tube will be bowed downwardly medially of the length thereof so as to contact the playing field thus providing traction to the mobile units under rotation of the tube or core, and also flexing of the tube or core will insure contact with irregular contours of the playing field. When the tarpaulin is spread upon the field, the weight of water which will have collected upon the tarpaulin, will increase the flexing of the tube at points centrally of the tarpaulin insuring retention of the water until discharged into the

5

trench where it will be drawn off by the drains 19. It will also be seen that under re-rolling of the tarpaulin, pressure between the tube and ground surface will be exerted upon the tarpaulin so that substantially all water will have been expelled from the tarpaulin for discharge into the trench.

While I have shown and described a preferred construction of the apparatus, this is by way of illustration only, and I consider as my own all such modifications in construction as fairly fall within the scope of the appended claims.

I claim:

1. A protective covering for an athletic field comprising in combination with a pair of laterally spaced mobile units, each unit comprising an elongated frame, forward and rear pneumatic tired wheels in frictional contacting engagement with the surface of the field and said wheels being rotatably supported within the frame at respective ends thereof, a forward and reverse transmission member mounted within each frame positioned intermediately of the length of each said frame, power means carried by each frame and being operatively connected to each said transmission member, an elongated flexible metallic tube connected between the transmission members of said mobile units, said metallic tube being of a length

6

greater than the width of the playing surface to be covered; a tarpaulin having an edge thereof secured to said metallic tube throughout the length thereof, the opposite end of said tarpaulin being secured at a side of said athletic field, said tarpaulin being in frictional contacting engagement with the surface of the field due to flexing and pressure of said metallic tube, control means for connecting the forwardly moving transmission of each frame with said power means to effect unrolling movement of said tarpaulin upon the field and forward advancement of said mobile units and means for disengaging said power means and engaging the reverse transmission with said power means for re-rolling of said tarpaulin upon said metallic tube to effect reverse movement of said mobile units.

2. The structure of claim 1, wherein a braking means is provided upon the pair of rear wheels of the mobile units for effecting steerage of the mobile units when in motion in either direction.

References Cited in the file of this patent

UNITED STATES PATENTS

1,088,407	Derr	Feb. 24, 1914
1,966,687	Scott et al.	July 17, 1934
2,536,571	Sanguin et al.	Jan. 2, 1951