March 5, 1963 M. W. HUNTER 3,079,620

MOBILE DEVICE FOR REMOVING WATER FROM PLAYING FIELDS

Filed Aug. 3, 1959 2 Sheets-Sheet 1

Fig. 1

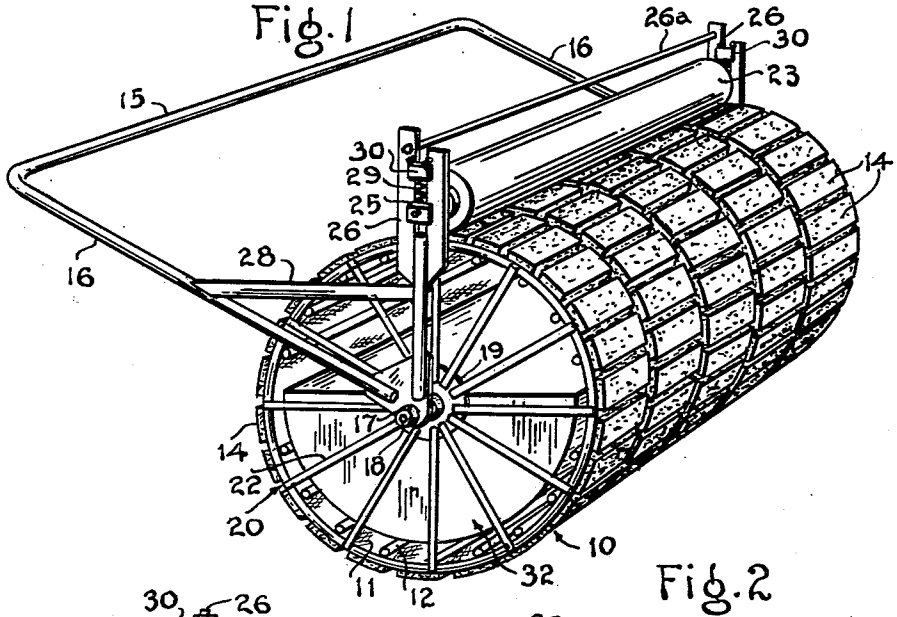
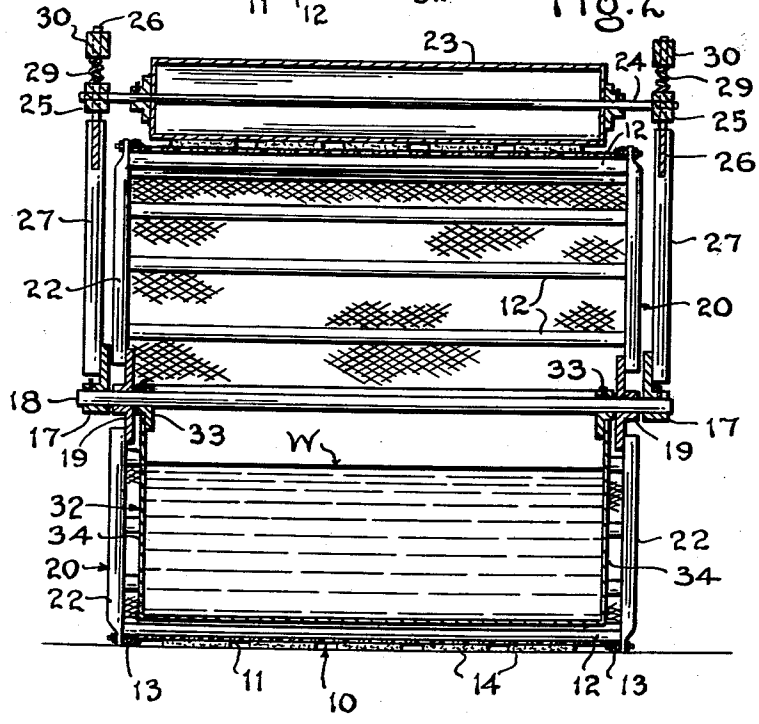


Fig. 2



INVENTOR.
Melmoth W. Hunter

BY
William Cleland
Attorney

March 5, 1963 M. W. HUNTER 3,079,620

MOBILE DEVICE FOR REMOVING WATER FROM PLAYING FIELDS

Filed Aug. 3, 1959 2 Sheets-Sheet 2

Fig. 3

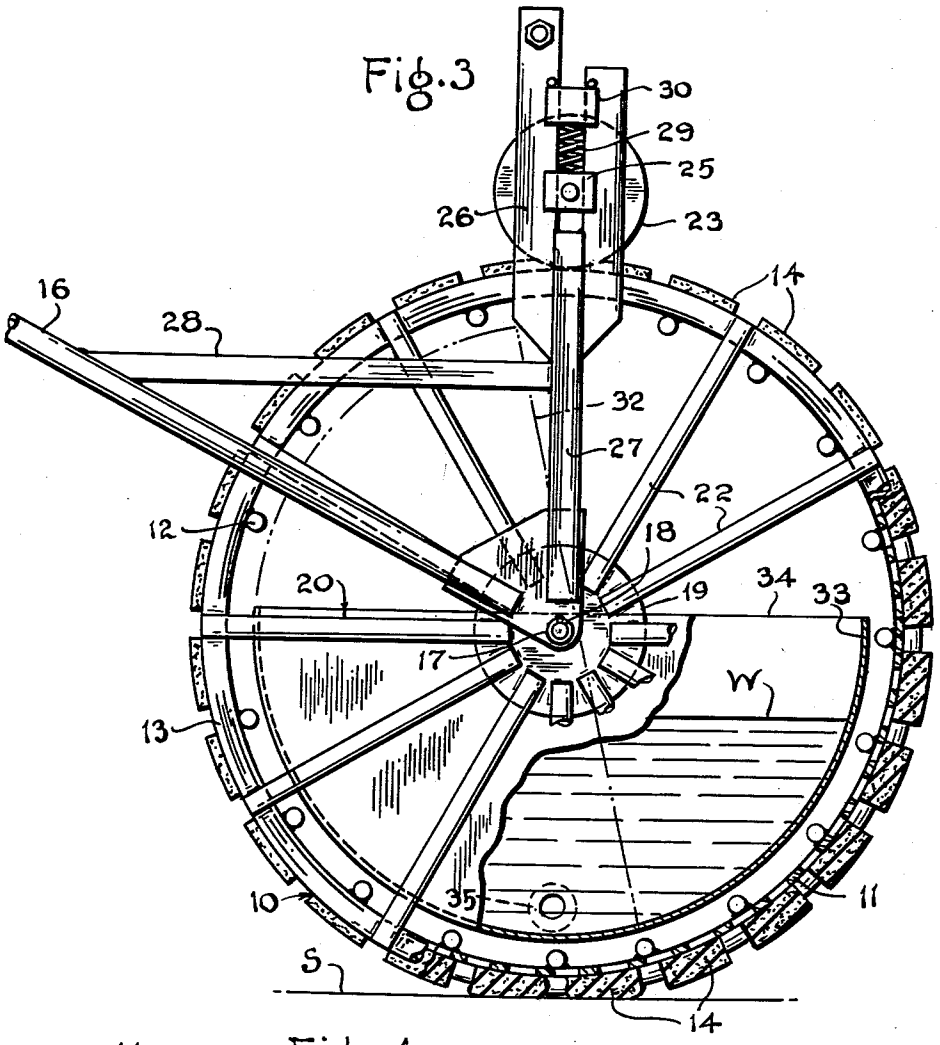
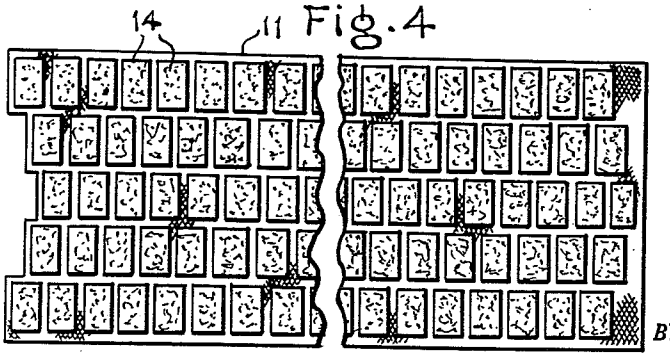


Fig. 4



INVENTOR.
Melmoth W. Hunter

BY
William Cleland
Attorney

United States Patent Office

3,079,620

Patented Mar. 5, 1963

3,079,620

MOBILE DEVICE FOR REMOVING WATER FROM PLAYING FIELDS

Melmoth W. Hunter, Lorain, Ohio; Carrie E. Hunter, executrix of said Melmoth W. Hunter, deceased

Filed Aug. 3, 1959, Ser. No. 831,404
6 Claims. (Cl. 15—119)

This invention relates to a mobile device for removing accumulations of water from playing fields or the like.

In the past it has been a common practice to postpone or cancel baseball games, for example, because of accumulation of rain water on the playing areas. As a result attendance at scheduled games was often substantially reduced if rain threatened, with a consequent substantial loss in gate receipts. Frequently games have been stopped, because of sudden downpours of rain, which might otherwise have been continued if some way had been devised to remove resulting puddles of water. Many outdoor games of various kinds would have been played to greater advantage to all concerned had it not been for wet playing field conditions.

One object of the present invention is to provide an improved mobile device by which playing fields may be quickly dried up or made more playable, either prior to or during scheduled programs of baseball, foot races, horse races, and other outdoor sporting events.

Another object of the invention is to provide a mobile liquid removing device which does not necessarily require pump or other power-operated means to remove water from the ground.

Another object of the invention is to provide a mobile water-removing device of the character described which is easily manually or power operable, both to remove the water from the ground and to dispose of the collected water.

Still another object of the invention is to provide a mobile unit of the character described which requires no complicated mechanisms, and is thereby correspondingly economical to manufacture, operate, and maintain.

These and other objects of the invention will be manifest from the following brief description and the accompanying drawings.

Of the accompanying drawings:

FIGURE 1 is a perspective view of one embodiment of the improved liquid-removing machine.

FIGURE 2 is an enlarged cross-section, taken substantially in a vertical plane through the turning axis of the machine, as viewed in the direction from the left of FIGURE 1.

FIGURE 3 is an end view, on an enlarged scale and partly broken away and in section, as viewed from the left of FIGURE 2.

FIGURE 4 is a developed view of the peripheral wall of a roller or drum embodied in the machine, illustrating an arrangement of water absorbent sponges thereon.

Referring particularly to FIGURES 1, 2 and 3, of the drawings, the numeral 10 designates a hollow drum or roller having a cylindrical peripheral wall 11 of porous material, such as expanded sheet metal or heavy gauge wire screen, substantially solidly backed and supported on peripherally spaced, rigid cross-bars 12, 12 of metal tubing welded or otherwise attached between axially spaced rings 13, 13 of similar tubing. The rings 13 may extend beyond the outer periphery of the porous wall 11 for rolling engagement with the ground surface S. On the outer periphery of the porous wall 11 may be a plurality of peripherally and laterally spaced rectangular pads 14, 14 of water-absorbent spongy material, such as cellular vinyl resin, elastic material. The sponge pads 14 may be cemented, or otherwise affixed to the porous

metal wall 11, as illustrated in FIGURES 3 and 4, to extend radially outwardly substantially beyond the depth of the rings 13 from the outer surface of wall 11, so as to be compressed to predetermined limited extent against the ground surface S.

For manually operating the machine to roll the drum 10 on a surface S, a U-shaped handle 15 may have inturned arms 16, 16 thereof attached to brackets 17, 17, non-rotatably affixed on the opposite outer ends of a central shaft 18, which is journalled in bearings 19, 19 constituting the hubs of end spiders 20, 20 at the opposite ends of the drum. The end spiders include radial spokes 22, which are bolted or otherwise attached at the outer ends thereof to the respective rings 13.

For squeezing or expressing water from the pads 14, a hollow idler roller 23 is yieldingly urged against the sponges, at the upper side of the drum wall 11. Accordingly the roller may be keyed on a shaft 24 having opposite ends thereof journalled in bearings 25, 25, which are vertically slidably mounted in bearing brackets 26, 26 affixed on the upper ends of vertically extending arms 27, 27, in turn affixed at the lower ends thereof to the brackets 17, and reinforced at a suitable angle to the handle arms 16 by means of braces 28, 28. The brackets 26 are rigidly connected by tie rod or spacer 26a. Roller 23 may be yieldingly urged against the pads 14, as by springs 29 between the bearings 25 and relatively fixed parts 30 of the brackets 26. Upon rotation of the drum on a wet surface, therefore, the roller 23 will progressively express water from the sponge pads 14 at the top of the drum, through the porous wall 11, and the expressed water will fall by gravity toward the bottom of the drum.

For receiving this expressed water, an open-topped, semicircular trough or container 32 has hubs 33, 33, on axially opposite end walls 34, 34 of the same non-rotatably affixed on drum shaft 18 to be normally gravitationally suspended in the lower part of the drum. The weight of the container, coupled with the spring-urged pressure of roller 23 against the sponge pads 14 at the top of the drum, tends to retain these parts in the position thereof best shown in FIGURES 1, 2 and 3, and to present the handle 15 at a convenient angle for pushing the drum. If desired, a suitable drain plug 35 may be provided at a low point on one wall 34 of the container 32, for draining or cleaning the container in the suspended positions thereof shown.

In use of the improved machine for drying up puddles or wet areas of an outdoor playing field, the operator, by grasping the handle 15 in the relationship shown in FIGURES 1 and 3, pushes the drum 11 for continuous rolling contact of the water absorbent sponge pads 14 with the ground surface S. While the pads 14 are closely spaced for smooth rolling contact with the ground, FIGURES 1 to 4 show the spaces between adjacent pads to be sufficient to permit surface liquid to flow between and around the respective pads to be absorbed from all sides thereof. As the water is picked up by the sponge pads, the spring-pressed roller 23 continuously yieldingly compresses the pads to express the water therefrom, which to a great extent will be exuded at the exposed edges of the pads. In any even the expressed water falls by gravity, downwardly through the closely spaced perforations in cylindrical wall 11, into the container 32 (see FIGURE 3). When the container is filled the operator then pushes the machine to a convenient drain, where, by tilting the handle 15 upwardly, the container may be tipped as shown in chain-dotted lines in FIGURE 3, to dump the collected water W therefrom into the drain (not shown). The machine is then ready for further use in drying up the wet surface S.

The principle described may be utilized in modified

forms (not shown) which include movement of resilient water-absorbent means on a continuous surface other than cylindrical. Also, it is contemplated that the water-absorbent pads may be progressively staggered in overlapping relationship axially of the drum **10**. Moreover, two or more such machines may be hooked in tandem to a tractor, for example.

Other modifications of the invention may be resorted to without departing from the spirit thereof, or the scope of the appended claims.

What is claimed is:

1. A mobile device for removing accumulated water from playing field or like surfaces, comprising a continuous perforated member, means for mounting said continuous member for continued movement against a wet surface, a plurality of closely spaced pads of resilient, spongy liquid-absorbent material affixed on the surface engaging side of said continuous member to absorb liquid from said wet surface, means engageable with said wet surface as said continuous perforated member is moved against the same to restrict compression of said pads and thereby to facilitate retention of absorbed liquid therein, the spaces between adjacent said pads being sufficient to permit the surface liquid to flow between and around the pads, means for expressing absorbed liquid from said absorbent pads through said perforated member, said means for expressing including a pressure element yieldingly engaging said resilient absorbent pads against said continuous member, said spaces between said pads also permitting the expressed liquid to flow freely from the edges of the pads and through the perforated member, and means for collecting the expressed liquid.

2. A mobile device for removing accumulated water from playing field or the like surfaces, comprising a rigid hollow drum having a peripheral wall of perforate material, means on said drum operable to roll the same on a said surface, a plurality of peripherally and axially closed spaced pads of liquid-absorbent spongy material affixed on said peripheral wall and engageable with a wet surface to absorb liquid therefrom, means progressively engageable with said wet surface as said drum is rolled against the same to restrict compression of said pads and thereby to facilitate retention of absorbed liquid therein, the spaces between adjacent said pads being sufficient to permit the surface liquid to flow between and around the pads, spring-pressed roller means mounted on said drum for yieldingly engaging said pads against the backing of said peripheral wall to express absorbed liquid from the pads, said spaces between adjacent said pads also permitting said expressed liquid to flow freely from the edges of the pads and through the perforations of said peripheral wall, and means in said drum for receiving the liquid expressed from said pads.

3. A mobile device for removing accumulated water from playing field or like surfaces, comprising a rigid hollow drum having a peripheral wall of perforate material, means on said drum operable to roll the same on a said surface, a plurality of peripherally and axially closely spaced pads of liquid absorbent material affixed on said peripheral wall and engageable with a wet surface to absorb liquid therefrom, the spaces between adjacent said pads being sufficient to permit the surface liquid to flow between and around the pads, spring-pressed roller means mounted on said drum for yieldingly engaging said pads against the backing of said peripheral wall to express absorbed liquid from the pads, said spaces between adjacent said pads also permitting said expressed liquid to flow freely from the edges of the pads and through the perforations of said peripheral wall, supporting means on said drum for rolling support thereof on said surface with said outer periphery spaced therefrom, and means in said drum for receiving the liquid expressed from said pads, said pads being in peripherally extending, axially spaced rows thereof, said pads being prevented by said supporting means from being fully compressed against said wet surface.

4. A mobile device for removing accumulated water from playing field or like surfaces, comprising a rigid hollow drum having a peripheral wall of perforate material, means on said drum operable to roll the same on a said surface, a plurality of peripherally and axially closely spaced pads of spongy, liquid-absorbent material affixed on said peripheral wall and engageable with a wet surface to absorb liquid therefrom, means progressively engageable with said wet surface as said drum is rolled against the same to restrict compression of said pads and thereby to facilitate retention of absorbed liquid therein, the spaces between adjacent said pads being sufficient to permit the surface liquid to flow between and around the pads, spring-pressed roller means mounted on said drum for yieldingly engaging said pads against the backing of said peripheral wall to express absorbed liquid from the pads, said spaces between adjacent said pads also permitting said expressed liquid to flow freely from the edges of the pads and through the perforations of said peripheral wall, and means in said drum for receiving the liquid expressed from said pads, said pads being in peripherally extending, axially spaced rows thereof, the pads of the adjacent said rows thereof being progressively staggered in overlapping relationship axially of the drum.

5. A mobile device for removing accumulated water from playing field or the like surfaces, comprising a rigid hollow drum having a peripheral wall of perforate material, means on said drum operable to roll the same on a said surface, a plurality of peripherally and axially closely spaced pads of spongy liquid-absorbent material affixed on said peripheral wall and engageable with a wet surface to absorb liquid therefrom, the spaces between adjacent said pads being sufficient to permit the surface liquid to flow between and around the pads, spring-pressed roller means mounted on said drum for yieldingly engaging said pads against the backing of said peripheral wall to express absorbed liquid from the pads, said spaces between adjacent said pads also permitting said expressed liquid to flow freely from the edges of the pads and through the perforations of said peripheral wall, and means in said drum for receiving the liquid expressed from said pads, said drum having axially spaced peripherally extending members projecting radially outwardly of the outer periphery of said peripheral wall, for rolling support of the drum on said surface with said outer periphery spaced therefrom, said pads extending radially outwardly beyond the depth of said annular members from said outer periphery, whereby said pads will be compressed to predetermined extent against said wet surface as limited by said members.

6. A mobile device for removing accumulated water from playing field or like surfaces comprising a rigid hollow drum having a peripheral wall of perforate material, means on said drum operable to roll the same on a said surface, a plurality of peripherally and axially closely spaced pads of spongy, liquid absorbent material affixed on said peripheral wall and engageable with a wet surface to absorb liquid therefrom, the spaces between adjacent said pads being sufficient to permit the surface liquid to flow between and around the pads, spring-pressed roller means mounted on said drum for yieldingly engaging said pads against the backing of said peripheral wall to express absorbed liquid from the pads, the spacing between opposing edges of adjacent said pads permitting said expressed liquid to flow freely from the edges of the pads and through the perforations of said peripheral wall, and means in said drum for receiving the liquid expressed from said pads, said pads being in peripherally extending, axially spaced rows thereof, said drum having axially spaced annular members projecting radially outwardly of the outer periphery of said peripheral wall for rolling support of the drum on said surface with said outer periphery spaced therefrom, said

pads extending radially outwardly beyond the depth of said annular members from said outer periphery, whereby said pads will be compressed to predetermined extent against said wet surface as limited by said members.

References Cited in the file of this patent

UNITED STATES PATENTS

550,971	Hoffheins	Dec. 10, 1895
2,290,217	Trindl et al.	July 21, 1942
2,395,094	Booharin	Feb. 19, 1946

FOREIGN PATENTS

890	Australia (Also cognate 4383/31)	Dec. 24, 1931
122,787	Germany	July 29, 1901
371,524	Great Britain	Apr. 28, 1932