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L. J. P. LOTT

GOLF GREEN

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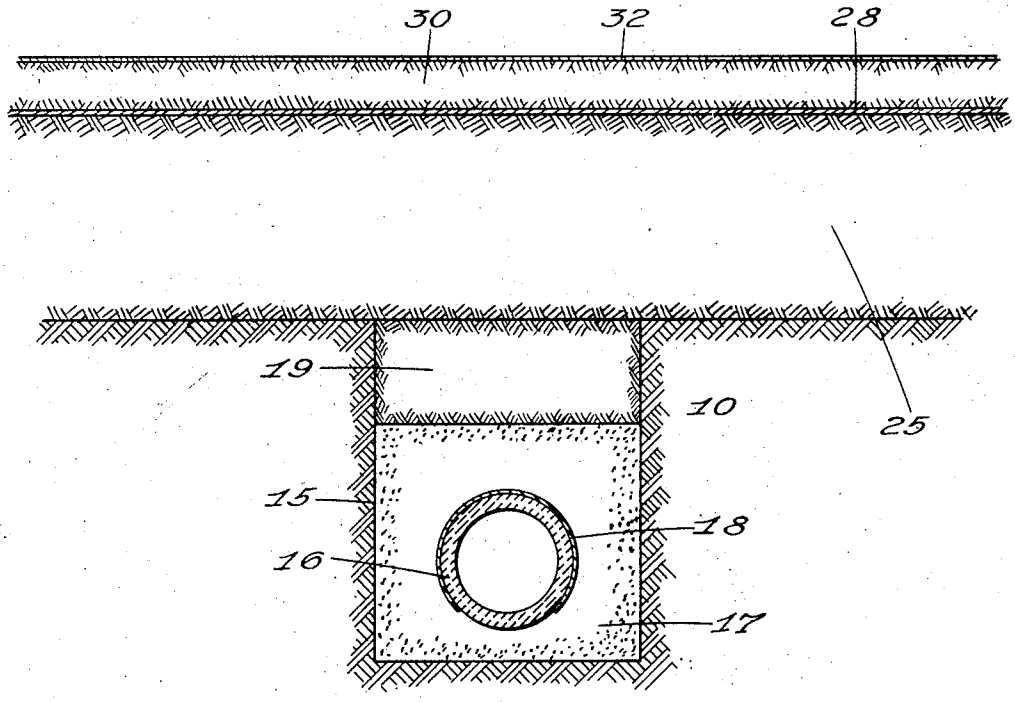

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GOLF GREEN.

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This invention relates to an improved construction of green for golf courses, and one of the principal objects of the invention is to provide a green in which the ingredients are so arranged as to permanently provide for an even stand of grass and a surface which will not be at any time muddy, nor slippery, nor baked, which will be firm but resilient under foot, and in which the seed will not wash when first sown.

Other objects and advantages of the invention will be apparent from the description thereof set out below, when taken in connection with the accompanying drawing, in which is illustrated, diagrammatically, a cross sectional view through a part of a green constructed in accordance with this invention.

In the construction of a green, in accordance with this invention, the top layers of the ground 10 are stripped off to the desired depth to provide a surface adapted to receive the various layers of material which go to make up the built up part of the green.

To provide suitable drainage trenches 15 are provided, within each of which is positioned porous drain tile or pipes 16, constructed to permit the passage of water from the trenches into the interior of the pipe, whence it may drain away. The trenches 15, are preferably arranged so that the various branches of the drain will be laid in the manner of tree branches, converging upon a main trunk line which is to be led to a convenient low point on the outside of the green. The bottom of the trenches should preferably in all cases be about 18 inches below the finished surface of the green, each trench being about 8 inches wide. The tile are firmly bedded in a layer of gravel or cinders 17, at least a one inch layer of gravel or cinders being between the drain tile and the bottom of the trench 15. The tile joints are covered with a strip 18 of tarred building paper or the like, and the trench is then entirely filled with gravel or cinders to a height several inches above the height of the top of the tile. The layer of cinders or gravel surrounding the tile should preferably be at least one inch thick at all points.

The gravel and cinders having been tamped in to a height of several inches above the top of the drain tile the balance of the trench should be filled with soil 19, to the level of the surrounding ground 10, this layer 19 being also tamped in.

Positioned over the prepared surface of the soil 10, and the layer of soil 19, is a deep rooting layer 25. This deep rooting layer should be composed of a mixture of materials which should constitute a good rich humus with distinct moisture holding and warmth qualities. The most desirable constituents for this deep rooting layer are shredded peat moss, such as is found in the peat bogs of Iowa and western Illinois, soil, sand, preferably of a sharp and gritty character, and old cow or horse manure, free from wood shavings. The proportions in which these various ingredients are mixed will depend somewhat upon the nature of the soil used but a very satisfactory mixture has been found to be 105 cubic feet of manure, 315 cubic feet of soil, 80 cubic feet of peat moss, and 25 cubic feet of sand, the mixture to cover an area of one thousand square feet. The character of the soil will vary with different localities, and it may be necessary to vary the proportion of some of the other ingredients accordingly. For instance with a more clayey soil the proportion of sand should be greater than with a less clayey soil.

A deep rooting layer of this composition will have water holding properties, will be a warmth giving soil, and will at the same time have sufficient porosity, particularly due to the moss, to properly aerate the soil and prevent souring, and will also provide a long lived fertilizing layer, so that a continued healthy growth of grass will be secured.

This deep rooting layer, if the proportions above mentioned are used, will be about six and a quarter to six and a half inches thick, when it is spread on the prepared surface of the ground, and should be rolled to compact it.

Immediately on top of this deep rooting layer is a layer 28, consisting of a comparatively thin layer of a fertilizing material which is rich in fertilizing properties, but is of such a nature that it liberates its fertilizing constituents slowly, to thus last for a long time. A thin layer of crushed chicken

bone functions very satisfactorily, and constitutes a long lived fertilizing material.

On top of this layer of crushed chicken bone is a nourishing layer 30 which should be composed of such ingredients that it will have rather long lived fertilizing characteristics, will also have water holding properties, will be sufficiently porous to give warmth and aeration, thus preventing souring, and at the same time will be sufficiently springy to constitute a satisfactory green under foot.

As satisfactory ingredients for this nourishing layer a mixture of shredded peat moss, of the character described above, 42 cubic feet; screened soil, of good character found in the neighborhood of the green, 36 cubic feet; cow manure 9 cubic feet; bone meal, which is a quick acting, powerful fertilizer, 6 cubic feet; and sand of the character above referred to about 9 cubic feet, the admixture to be spread over an area of one thousand square feet, will function very satisfactorily. Of course, as stated above with regard to the deep rooting layer the proportions of the ingredients may be varied where needed to meet particular conditions, but the proportions given will ordinarily function very satisfactorily.

When mixed in the following proportions and spread over an area of 1,000 square feet this nourishing layer will be from one and a quarter to one and a half inches in thickness.

Preferably the nourishing layer should be applied between guide strips about 1¼ inches thick laid close together or far apart according to the undulations of the green, so that a very smooth surface, free from small irregularities that will constitute water pockets, may be secured. The surface should be laid so that it will drain properly, and pools of water will not be allowed to accumulate.

On top of this nourishing layer is the top or germinating layer 32 which should be comparatively thin, preferably about $\frac{3}{16}$ of an inch thick. In this germinating layer the grass seed and other materials constituting it are thoroughly admixed before being spread in place, and consequently washing away of the seed alone will be prevented. It should also be composed of ingredients constituting a quick acting powerful, fertilizer, to give quick initial growth. It should also be springy, and porous.

To secure these characteristics the germinating layer preferably consists of about 7 cubic feet of shredded peat moss, of the character specified above, screened soil and sand 7 cubic feet, and bone meal 2 cubic feet, these ingredients to be thoroughly admixed, along with about two pounds of grass seed, and the resulting admixture spread upon a surface of approximately 1,000 square feet. To insure uniform distribution of the seed over the surface the seed should be admixed with the ingredients constituting this germinating layer before it is spread in place.

This layer is preferably applied by means of guide strips about $\frac{3}{16}$ inch thick and the material filled in between these, beginning at the rear of the green and working forward.

In a green thus constructed the materials of the germinating layer are evenly mixed, and also the underlying layers are uniform in composition, throughout, and consequently equal nourishment and drainage, with a resulting even stand of grass, should be secured. Furthermore because of the composition of the nourishing layer and the deep rooting layer the roots of the grass will be in a warm, moisture holding soil which will be conducive to the growth of a good grade of grass. And because of the springy porous nature of the layers of the green, and the drainage supplied, the surface will not become muddy at any time, nor slippery, nor, on the other hand will it become baked. For while the nourishing layer 30 and the deep rooting layer 25, are sufficiently porous to permit the ready flow of water therethrough, still the layer of soil 19, which is positioned within the upper part of the trench 15, acts somewhat as a retardent, to prevent the too rapid flow of water to the drains, and also tends to prevent the escape from the layers above of the nourishing constituents thereof. This layer 19 functions to allow the excess water to pass off, this excess water readily passing through the porous layers 25 and 30. But because of the porous character of these two layers a considerable quantity of moisture will be retained in them, thus giving a soil having long moisture retaining qualities. Furthermore because of the character of the ingredients within this soil the surface will not bake even though it should become dry, but will at all times form a firm but springy cushion under foot, a cushion adapted to hold the ball. In addition the materials constituting the various lower layers retain their fertilizing properties for a long period, thus insuring a continued and permanent food supply for the grass.

While the form of invention herein described constitutes a preferred embodiment thereof, it is to be understood that the invention is not limited to this precise form, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claim.

What is claimed is:

A golf green of the character described, in which specially prepared grass bearing material is spread upon the prepared sur-

face of the ground, consisting of a germinating layer composed of an admixture of shredded peat moss, soil, and bone meal; a nourishing layer consisting of shredded peat moss, soil, cow manure, bone meal, and sand; a long lived fertilizing layer consisting of crushed chicken bone; a deep rooting layer consisting of manure, soil, shredded peat moss, and sand; and means for draining away the excess moisture passing downwardly through the said layers.

In testimony whereof I hereto affix my signature.

LOUIS J. P. LOTT.