

PATENT SPECIFICATION

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(54) METHOD OF STABILISING SOIL

(71) I, PAUL RITTER, a British subject, of 76 Brookton Highway, Kelmscott, in the State of Western Australia, Commonwealth of Australia, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a method of treating the surface area of soil or grassed areas to stabilise the surface layer thereof and permit traffic thereof but also permitting the growth of grass, lawn or the like.

It is current practice in regions where there is a relatively high density of movement of persons and/or vehicles other than on roads, highways and the like such as car parks, minor driveways, foot paths and the like to pave those areas with bitumen paving, concrete and/or slabs. It has been necessary to do such because where such traffic occurs on grassed or lawn areas, the condition of the surface soon deteriorates because of the destruction of the vegetation as a result of such wear. Experience has shown that very little traffic is required to destroy the lawn and/or grass to expose the soil underneath which would become unsuitable for traffic as a result.

The destruction of the vegetation as a result of such traffic is due to the compaction of the soil so reducing the aeration thereof and also the wear experienced by the plant stems, leaves and roots.

It is an object of this invention to provide a surface which permits relatively heavy traffic compared to standard grassed areas, and also permits and promotes the growth of grass over the area and is capable of in itself stabilising the surface against erosive element.

According to the invention there is provided a method of stabilizing the surface layer of a soil or grassed area, comprising incorporating into said surface area a stabilizing means comprising a plurality of rings of tubular configuration and of rigid material which is resistant to wear and corrosion, means fastening said rings together forming a mat-like structure comprising a single layer of said rings where the central

longitudinal axes of said rings are perpendicular to the plane of the layer and said fastening means being capable of preventing the lateral displacement of said rings in said mat-like structure, the plane of the layer being disposed parallel to said surface layer.

The invention will be more fully understood in the light of the following description of several embodiments.

Figure 1 illustrates the concept of the invention as applied to a surface; and

Figure 2A, B and C illustrates a method of fixing the rings together and the apparatus used in relation thereto.

As seen in Figure 1 the embodiment comprises a plurality of rings 11 of asbestos cement placed in a spaced relationship upon a substrate such as sand, loam, clay or the like. The rings may be forced into the substrate or may be placed on the surface and then the spaces between each and within each is partly filled with top dressing. If grass or the like ground cover is not already growing in the substrate such may be planted by any of the recognised means whether it be by runner seed, or a mixture of a binder and seed. As a result of the rings any traffic over the surface, such as vehicle wheels 13 or feet 15 or the like, is maintained clear of the soil surface and as a result damage to the plants together with compaction of the soil is prevented. Therefore the embodiment of Figure 1 facilitates the use of grassed areas as car parks and footpaths which have far more aesthetic appeal than bitumen or concrete paving.

A further use of the embodiment is to stabilise the surface of a substrate which is subject to severe erosion effects such as sand dunes. Placing the rings on the surface of an area of sand which is subjected to high wind conditions will stabilise the surface sufficient for ground cover to grow and complete the stabilisation.

A method of fixing is shown in Figures 2A, B and C. The method comprises placing the rings together such that they remain in spaced relationship to each other during storage and transportation.

The method comprises laying out on a surface parallel to each other a plurality of

coiled lengths of wire 19. The asbestos cement rings 11 are placed in a row upon each coiled length of wire 19 such that at least one coil or helix remains between adjacent rings 11. A further length of wire 21 is passed through each helix of each coiled length of wire such that it lies above the wire 19 and a second length of wire 23 is threaded in transverse relationship to the coiled lengths of wire such that it passes under the coiled length of wire 19 and above the ring 11. Once all of the rings and wires are in place the coiled lengths of wire are straightened by applying a tensioning force thereto. The tensioning force is applied by means of a rod 25 rotatably mounted at each side of the surface supporting the rings and transverse to the coiled lengths of wire. The rod 25 is provided at at least one end with a handle 27. The free ends of the coiled lengths of wire 19 are mounted to the adjacent rod 25 and rotation of the rod will straighten and tension the coiled lengths of wire 19. Once tensioned the coiled lengths of wire 19 are cut and twisted with the further length of wire 21. The mat of rings so formed as seen in Figure 3C may be folded or rolled for storage and transportation and unrolled for use without any danger of displacement of the rings 11 during such. By crimping the further lengths of wire 21 and second lengths of wire 23 it is further ensured that such displacement cannot occur as the rings are engaged more firmly by the wires.

The surface supporting the ring 11 and wires 19, 21 and 23 during assembly of the mat may be provided with upstanding pegs 29 which are intended to maintain the spacing of the rings 11 during the tensioning of the coiled wire 19. In addition it should be

noticed that any suitable means may be provided for tensioning the wires.

It will be appreciated that once in place the interconnection between the rings 11 is of no further purpose unless at a later stage it is required to remove the rings which is highly unlikely. However the interconnection between the rings facilitates more simpler handling and laying of the rings upon a surface.

WHAT I CLAIM IS:—

1. A method of stabilizing the surface layer of a soil or grassed area, comprising incorporating into said surface area a stabilizing means comprising a plurality of rings of tubular configuration and of rigid material which is resistant to wear and corrosion, means fastening said rings together forming a mat-like structure comprising a single layer of said rings where the central longitudinal axes of said rings are perpendicular to the plane of the layer and said fastening means being capable of preventing the lateral displacement of said rings in said mat-like structure, the plane of the layer being disposed parallel to said surface layer.

2. A method as claimed in Claim 1, wherein the rings are held in side by side relationship by a plurality of wires woven between the rings.

3. A method substantially as herein described with reference to the accompanying drawings.

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cement rings 11 are placed in a row upon
each coiled length of wire 19 such that at
least one coil or helix remains between ad-
5 adjacent rings 11. A further length of wire
21 is passed through each helix of each
coiled length of wire such that it lies above
the wire 19 and a second length of wire 23
10 is threaded in transverse relationship to the
coiled lengths of wire such that it passes
under the coiled length of wire 19 and above
the ring 11. Once all of the rings and wires
are in place the coiled lengths of wire are
15 straightened by applying a tensioning force
thereto. The tensioning force is applied by
means of a rod 25 rotatably mounted at
each side of the surface supporting the rings
and transverse to the coiled lengths of wire.
20 The rod 25 is provided at at least one end
with a handle 27. The free ends of the coiled
lengths of wire 19 are mounted to the ad-
jacent rod 25 and rotation of the rod will
straighten and tension the coiled lengths of
25 wire 19. Once tensioned the coiled lengths
of wire 19 are cut and twisted with the fur-
ther length of wire 21. The mat of rings so
formed as seen in Figure 3C may be folded
or rolled for storage and transportation and
30 unrolled for use without any danger of dis-
placement of the rings 11 during such. By
crimping the further lengths of wire 21 and
second lengths of wire 23 it is further en-
sured that such displacement cannot occur
as the rings are engaged more firmly by the
35 wires.

The surface supporting the ring 11 and
wires 19, 21 and 23 during assembly of the
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WHAT I CLAIM IS:—

1. A method of stabilizing the surface
layer of a soil or grassed area, comprising
55 incorporating into said surface area a stabi-
lizing means comprising a plurality of rings
of tubular configuration and of rigid ma-
terial which is resistant to wear and cor-
rosion, means fastening said rings together
60 forming a mat-like structure comprising a
single layer of said rings where the central
longitudinal axes of said rings are perpen-
dicular to the plane of the layer and said
fastening means being capable of preventing
65 the lateral displacement of said rings in said
mat-like structure, the plane of the layer be-
ing disposed parallel to said surface layer.

2. A method as claimed in Claim 1,
wherein the rings are held in side by side
70 relationship by a plurality of wires woven
between the rings.

3. A method substantially as herein des-
cribed with reference to the accompanying
75 drawings.

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