United States Patent

Williams

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[45] **Jan. 18, 1972**

[54] WRAPPING FOR TREE ROOT BALLS

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[52] **U.S. Cl.** **47/37,** 206/DIG. 30, 217/52

[51] **Int. Cl.**.....**A01g 23/04**

[58] **Field of Search** .....217/35, 52–53; 47/37, 23, 34; 206/DIG. 30, 46 FR; 37/3

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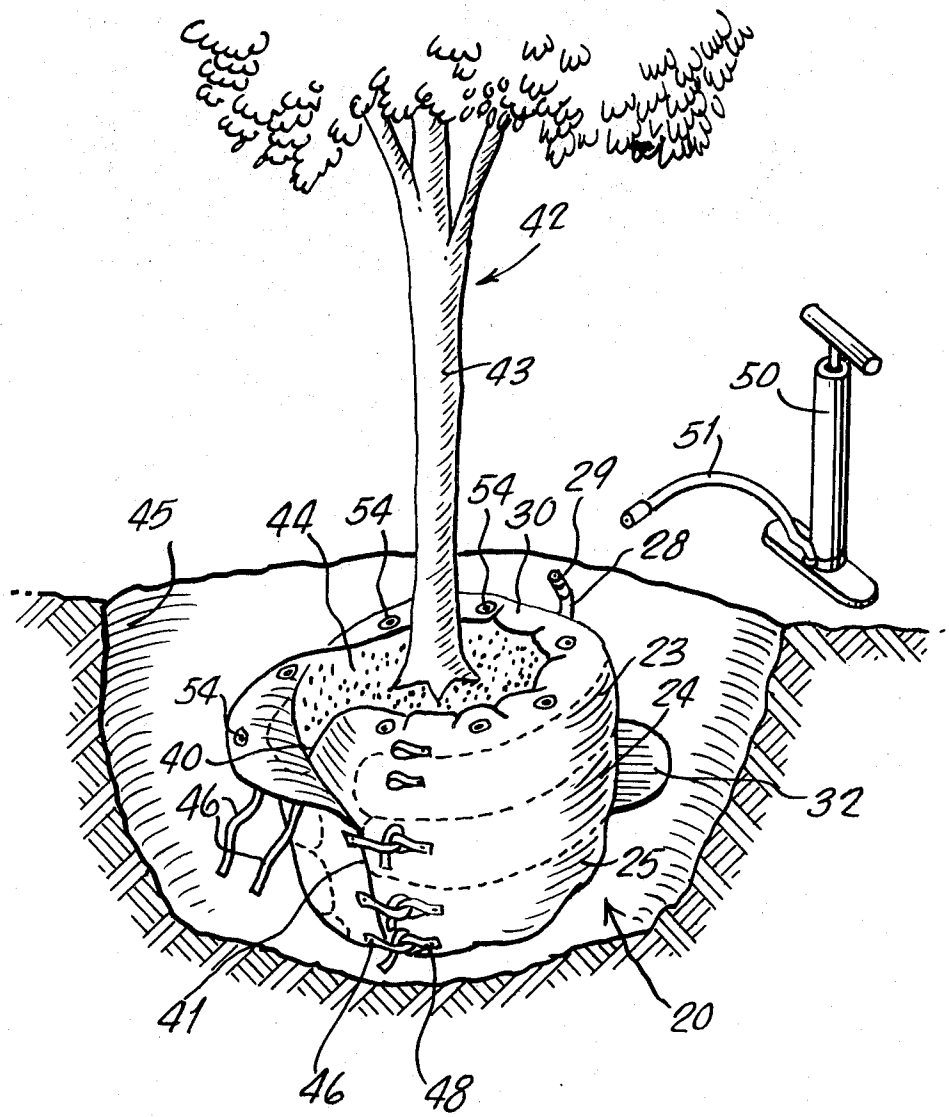
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[57] **ABSTRACT**

A wrapping for the earth ball of a tree to be moved consists of a circumferential belt inflated against the ball for tight compressive engagement, to prevent loosening of the earth or the contained tree root structure. The inflatable belt, made in sections if desired, has means for tying it in place and preferably means for holding or encasing at least parts of the upper and lower ball surfaces. A supplemental, inflated collar, secured to the main, wrapped belt, aids in maintaining the integrity of the trunk and roots with the ball.

15 Claims, 15 Drawing Figures



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SHEET 1 OF 4

Fig. 1.

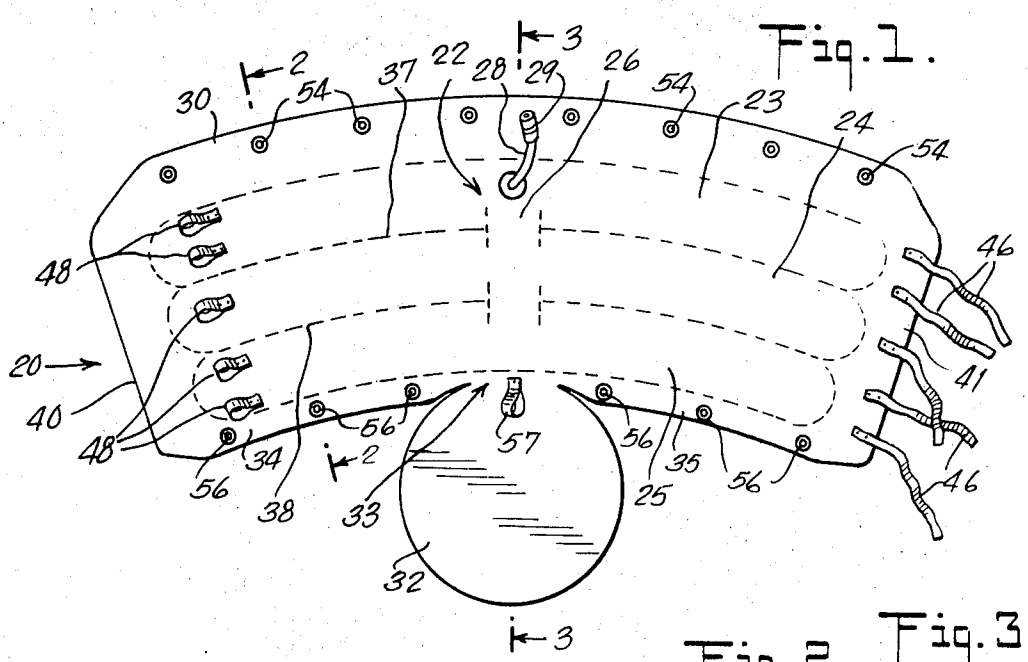


Fig. 2.

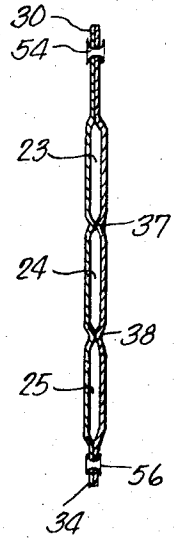


Fig. 3.

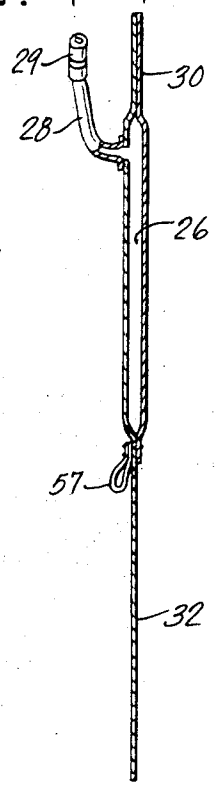
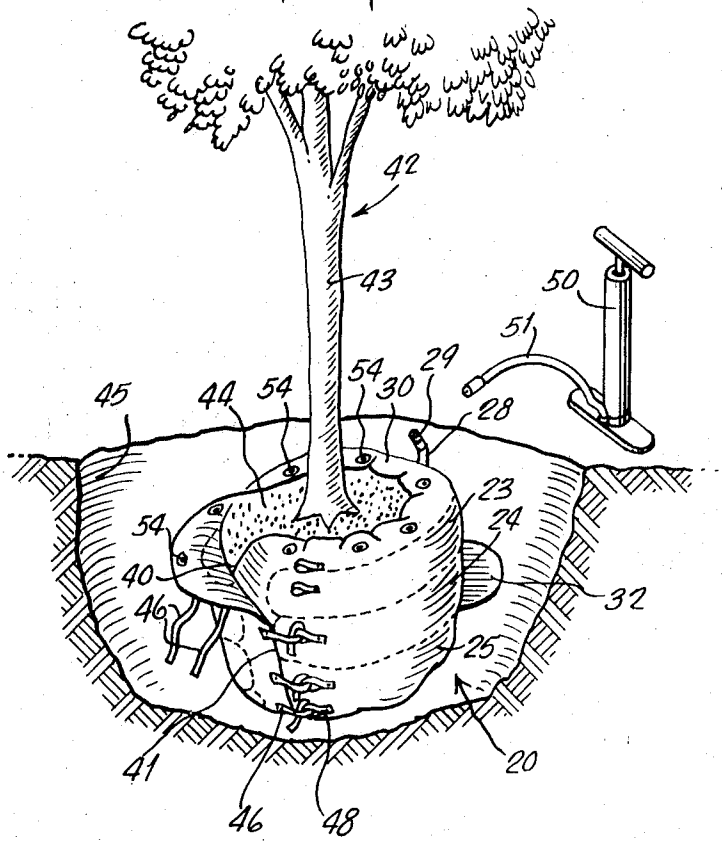


Fig. 4.



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Fig. 5.

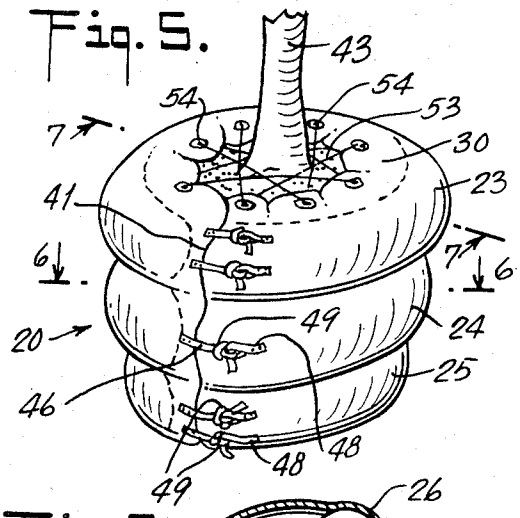


Fig. 6.

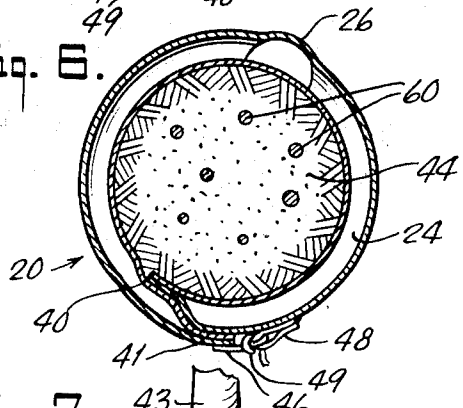
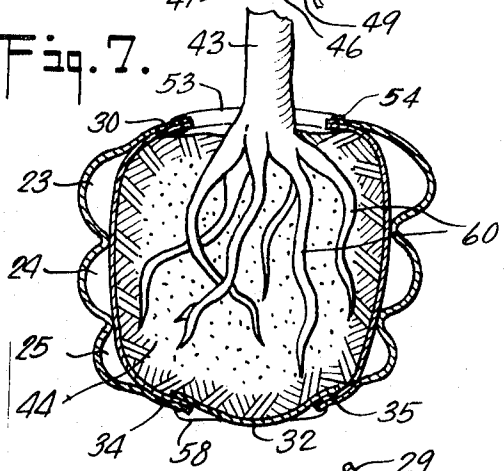


Fig. 7.



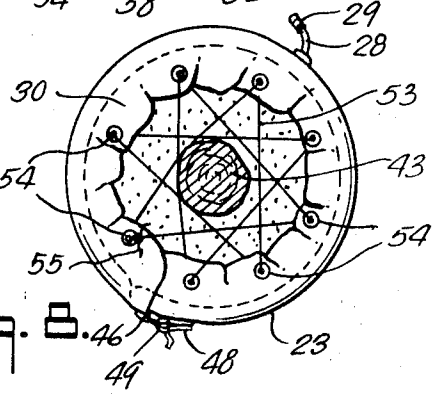


Fig. 8.

Fig. 9.

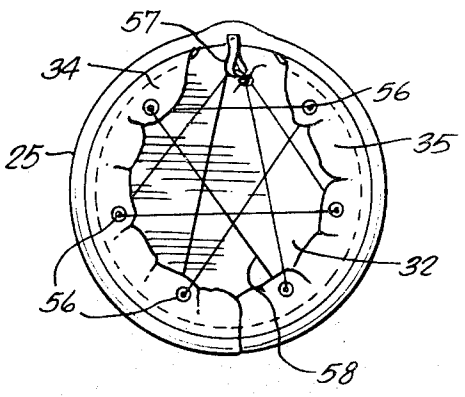


Fig. 10.

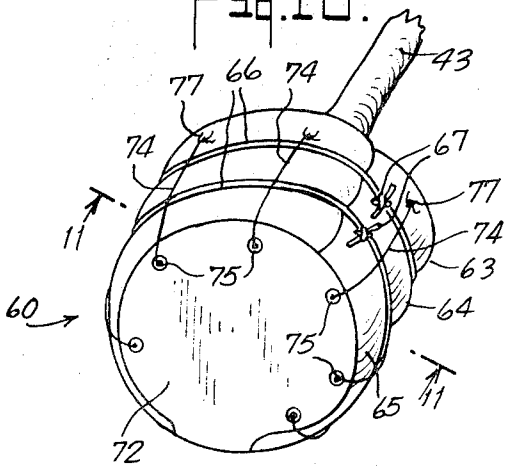
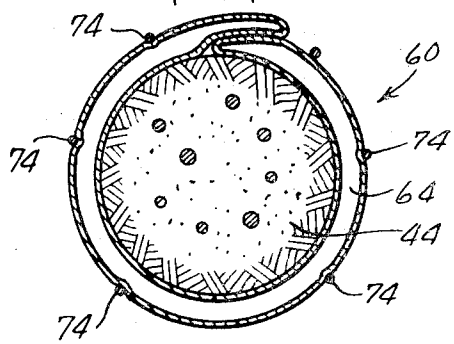
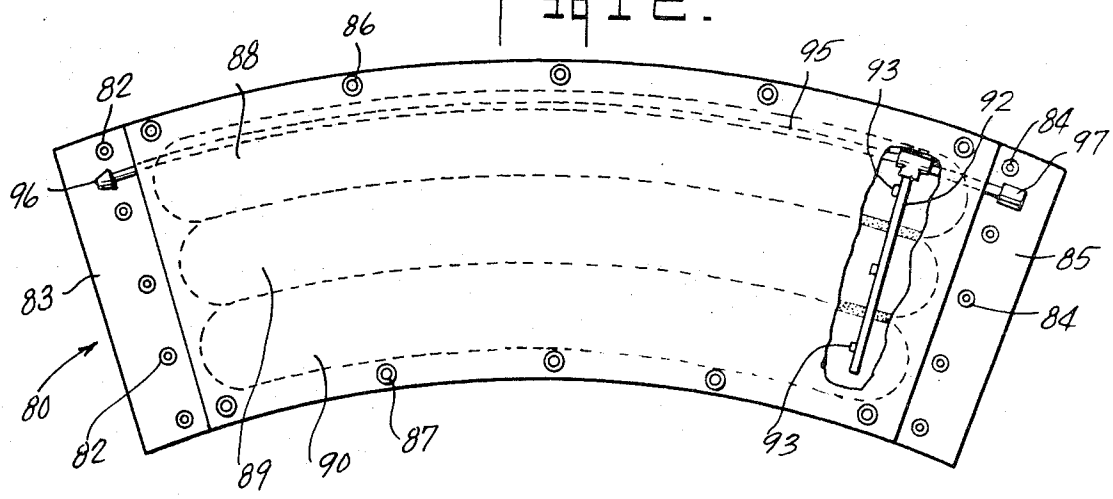


Fig. 11.



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Fig 12.



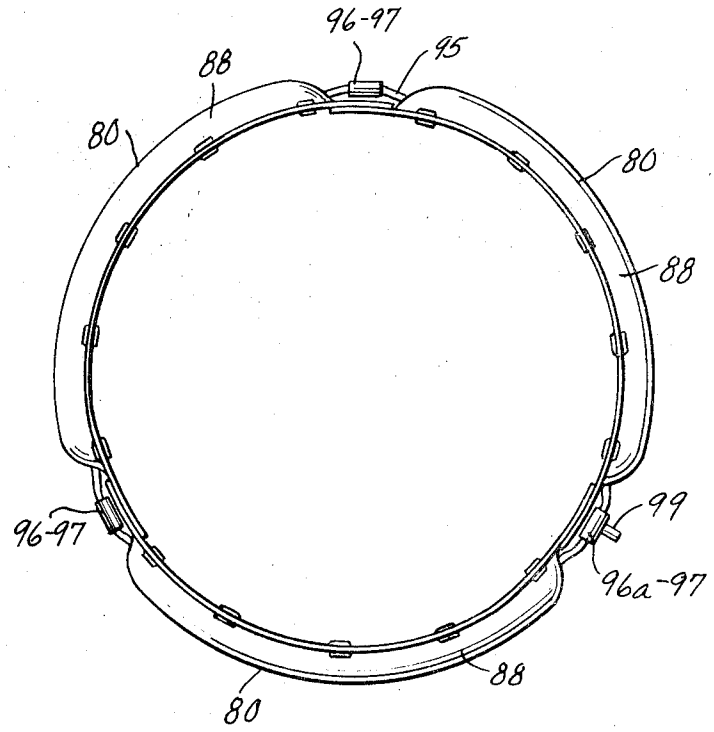
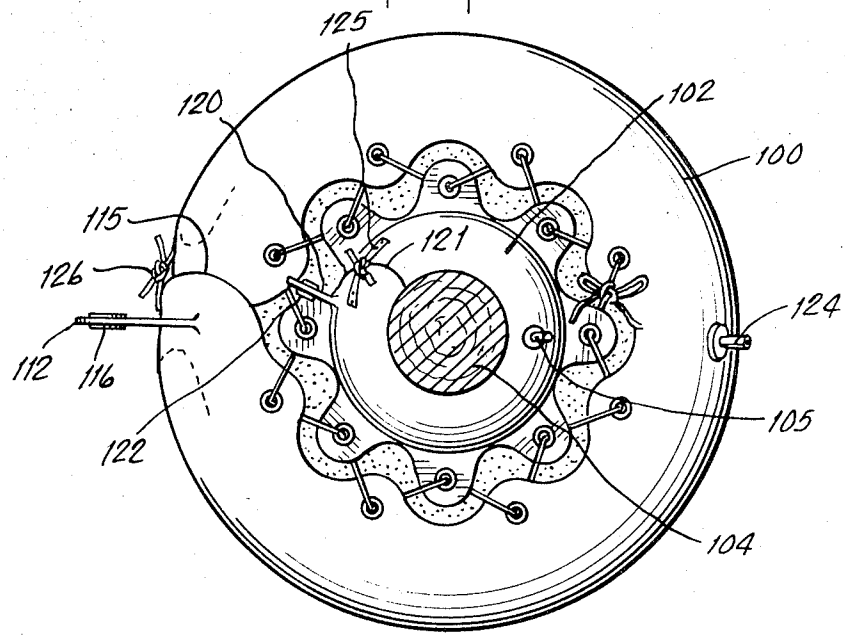


Fig. 13.

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Fig. 14.



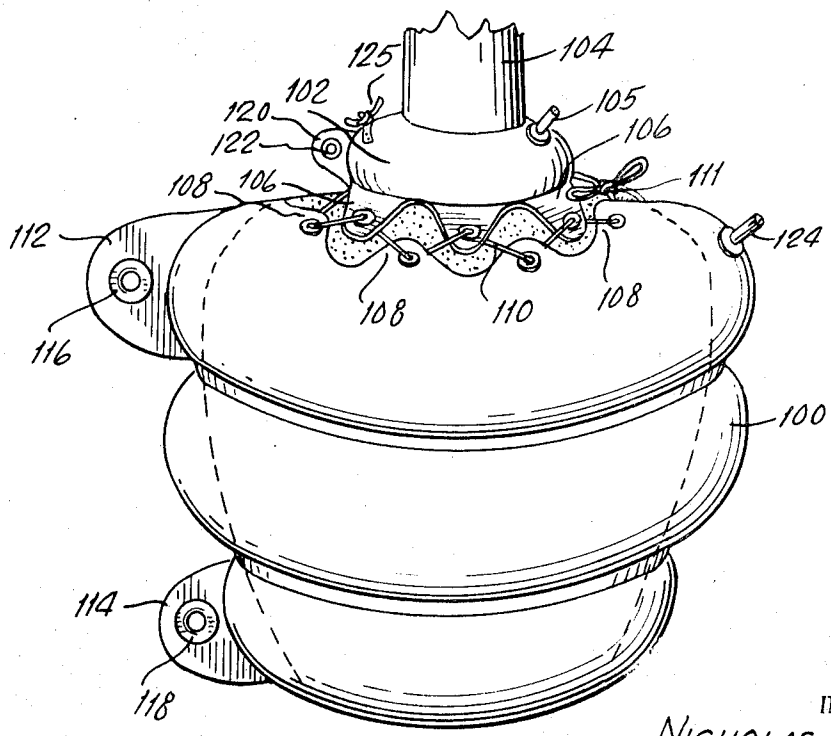


Fig. 15.

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WRAPPING FOR TREE ROOT BALLS

BACKGROUND OF THE INVENTION

This invention relates to the wrapping or encasing of root balls of trees or the like and is more particularly directed to apparatus or devices, and methods involved therewith, to provide a tightly secured wrapping around the root ball of a tree that is being or has been removed from its place of growth.

In conventional nursery and like practice, trees and similar articles such as large shrubs are removed, transported or otherwise handled by digging the tree out in such way that a large mass of earth, conveniently called a ball, remains compacted around the roots or root structure. When the tree is replanted, this ball is embedded in the ground at the desired locality, and if the ball has been relatively undisturbed, the tree, with appropriate care, continues to live and grow as if it had not been displaced.

Usual practice in excavating the earth ball involves maintaining it in as complete and compacted condition as possible, by applying a suitable wrapping, usually of burlap or similar fabric, which is arranged to cover the sides, bottom and at least part of the top of the earth mass. The wrapping is secured in place with suitable cord, roper or wire bound around the burlap wrapping and fastened as tightly as possible. This is often a cumbersome and difficult operation, especially with an earth ball of large dimensions as required for a correspondingly large tree.

Even when such a wrapping has been applied with due skill, trouble may be encountered and damage to or substantial breakup of the root ball may result. The tied wrapping tends to loosen as the balled tree is moved about or as it is carried in a truck or as the earth composing the ball may dry out and crumble. Any impairment of the compacted and cohering nature of the ball induces loosening of the wrapping, and this in turn aggravates the effect of any blow or mechanical disarrangement, in such fashion that progressive deterioration of the ball takes place. Successful replanting of the tree or shrub, however, often depends on keeping the root ball essentially intact; if the earth is badly loosened away from the complex root structure, it is frequently impossible to plant the tree properly, or for it to survive in its new locality.

Accordingly the present invention is designed to provide an improved wrapping for root balls of the character described, which is relatively simple to apply and affords an unusually snug encasing of the earth mass, so as to keep it in firm, compacted condition, over long periods and despite the usual or even relatively rough handling to which the removed tree and its ball may be subjected. Other objects include the provision of a novel apparatus or structure for wrapping root balls, which may be used many times, as well as to afford expedited procedure forgetting the root ball into wrapped state, and likewise for removing the wrapping, advantageously at the latest possible time in the course of replanting the tree or shrub. Still further objects and advantages are set forth or apparent hereinbelow in connection with the described embodiments of the invention.

SUMMARY OF THE INVENTION

To the foregoing and other ends, the improved apparatus or device of the invention comprises inflatable wrapping means for the root ball of a tree or the like, dimensioned and arranged so that when it is wrapped and secured around such ball and is suitably inflated by air or other appropriate gas under pressure, the root-containing mass is not only protectively encased, but is maintained in firm, more or less compacted condition. In particularly advantageous embodiments of the invention, the wrapping means comprises an inflatable belt, of durable and sufficiently impermeable sheet material, such as an impregnated fibrous fabric or reinforced, flexible plastic, which is shaped and dimensioned to be wrapped around the root ball, i.e., circumferentially about the peripheral vertical surface in a manner coaxial with the trunk or the like of the tree, the structure also having or utilizing appropriate means for securing the belt in this wrapped relation. The structure is thus such that with the surrounding belt secured in place, by the fastening means, inflation of the enclosed region or regions of the belt structure compresses the wrapping in place against the surface of the ball of earth or the like, so that the mass is much more firmly held against any tendency to disintegrate or come apart than is normally possible with conventional wrappings of burlap or like material.

Advantageously the belt or like structure may have integral flaps or similar parts which can be carried across the bottom of the ball and also brought over at least the outer portions of the uppermost surface area, again preferably with suitable straps, cords or like securing means so as to coact in covering and indeed tightly encasing these regions as well. In a presently contemplated, preferred embodiment, the belt or wrapping comprises one or preferably a plurality of elongated, enclosed regions, i.e., bounded by pliant and advantageously somewhat elastic material, to provide the inflatable character, these regions or cavities being dimensioned so that they approximately completely surround the root ball or body in wrapped state of the belt.

In accordance with notably effective procedure of the invention, the belt in deflated condition is wrapped around the sides of the ball, the strap, cords or other fastening means are secured to hold it tightly in place, and from an appropriate source or other means, air under pressure is supplied to the enclosed areas, thereby firmly inflating the belt so that upon completion, with the air retained by suitable valve structure, a snug and rugged wrapping is effectuated, compressibly and conformably engaging the earth mass. With the end coverings secured, preferably before inflation or before completion of inflation, the tree is in satisfactory condition for handling, removal, transportation, storage and/or ultimate disposition for replanting.

The wrapping not only covers the ball and root structure in normal protective manner, but in effect positively engages or compresses the earth surfaces and also, by reason of the inherent elasticity of the inflated regions, absorbs impacts or other shocks or forces that are practically unavoidable in normal handling. When the tree is to be replanted, the wrapped ball is disposed in the required excavated region and the wrapping is readily removed, with deflation if necessary, leaving the earth ball in sufficiently self-sustaining condition so that the usual backfilling is facilitated and replanting is completed without damage to the integrity of the root structure or its earth-supporting situation. The disadvantages and difficulties of conventional wrapping procedures are thus overcome and not only is the entire operation facilitated but loss of trees upon replanting, due to root damage, is obviated or greatly minimized.

As will be understood, reference to trees herein is intended to include, unless otherwise specified, like articles such as shrubs and bushes for which a root-containing ball is provided to permit transplanting, i.e., an earth or like mass that requires to be held in firm and protective condition. Moreover, while the described root-supporting masses of earth or the like are conventionally called root balls or earth balls, their shape need not be truly or closely spherical, but may be somewhat cylindrical or oblate, or often at their sides tapering in a conical manner from a large upper diameter, where the trunk or branches protrude, to a lesser diameter at the bottom. Indeed the belt or other wrapping may desirably be preshaped to accommodate, roughly, a preferred configuration of the so-called ball. Further features and characteristics of the invention are set forth in connection with particular embodiments thereof, e.g., as shown in the drawings and described hereinbelow.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a wrapping belt pursuant to the invention;

FIGS. 2 and 3 are respectively vertical sections on lines 2—2 and 3—3 of FIG. 1;

FIG. 4 is a simplified perspective view showing the manner of applying the wrapping of FIG. 1 to a root ball of a tree;

FIG. 5 is a simplified perspective view of the ball wrapped with the belt of FIGS. 1 to 4, after securing and inflation;

FIGS. 6 and 7 are respectively horizontal and vertical sections of the wrapped ball of FIG. 5, on lines 6—6 and 7—7;

FIGS. 8 and 9 are respectively top plan and bottom views of the wrapped ball of FIG. 5;

FIG. 10 is a simplified perspective view, taken from the bottom, of another embodiment;

FIG. 11 is a section on line 11—11 of FIG. 10;

FIGS. 12 and 13 illustrate an embodiment using sections, of which one appears in plan in FIG. 12 and an inflated assembly in FIG. 13; and

FIGS. 14 and 15 are views corresponding to FIGS. 8 and 4, showing certain supplemental features.

DETAILED DESCRIPTION

Referring first to FIGS. 1 to 9 inclusive, the illustrated embodiment of the new wrapping means comprises an elongated flexible sheet body 20, designed to be wrapped as a completely encircling and encasing belt around a root ball and constructed to have an enclosed space 22 which is preferably substantially coextensive with the vertical peripheral surface of the ball and which is designed to be inflated. Although this enclosed space or region 22 may be of a simple, large, unitary character along and across the belt, or may be divided into compartments in a variety of other ways, vertically or horizontally, it is shown as constituted by a plurality of lengthwise extending pockets or cavities 23, 24, 25 opening into a central communicating region 26, for better distribution and uniformity of inflation. Three such elongated spaces are shown, but it will be understood that greater or lesser numbers may be employed, depending in part on the dimensions of the wrapping. A suitable nipple or inflating tube 28 opens into and projects outwardly from the enclosed space system, having a valve and connecting fitting 29, which may be of a conventional type for inflatable devices, so that a tube from a pump or other source of gas under pressure can be connected, and the device will retain the admitted air or other gas by check valve action, the valve being releasable when desired, one suitable structure being an automobile tire valve.

The belt body 20 advantageously includes an upper, integral section 30, preferably in the nature of a flap extending along the top surface as shown, designed to overlap areas at the top of the root ball. Flap means are also very preferably provided at the bottom, including for example a large central flap 32, of the flexible material, which may be of circular configuration but attached to the body at one side 33, for covering the bottom of the ball. Various means may be included for holding such bottom covering in place, one example comprising longitudinal flaps 34, 35 along the bottom of the body, e.g., at regions respectively extending from near the center to the ends when the flap 32 is attached at a central region.

As indicated, the body 20 with its several, preferably integral flap portions is made of pliant sheet material, i.e., a flexible fabric which may be basically either a fibrous, e.g., woven material, suitably impregnated, or a plastic sheet, preferably reinforced by embedded particulate or fibrous substances, in all cases the sheet body being of a tough and rugged nature, yet sufficiently flexible and elastic to at least a limited degree for the described conforming, compressive fit after being secured and inflated. For instance, suitably woven Nylon (polyamide fiber) fabric, which is impregnated or otherwise treated to be gas impermeable, is available for inflatable structures and appears well suited for articles of the present invention, but a variety of flexible sheet fabrics, of tough and pliant character are also known; in general any of various such materials, selected for properties of strength and ruggedness may be used, as heretofore employed for such articles as inflatable mattresses, rafts, and the like.

As shown in FIGS. 2 and 3 the cavity or pocket regions 23, 24, 25 and 26 are constituted by separated walls of the flexible fabric, the partitions between adjacent regions, as at 37, 38 being formed by heat sealing or otherwise appropriate joining of the plastic content or body of the fabric sheets, again in a manner known for other inflatable articles. The flap elements 30, 32, 34 and 35 may preferably be single thicknesses of the selected sheet material or alternatively constituted by extensions of the two layers which are separated at the cavities and at the flap localities are joined in suitable face-to-face relation.

The wrapping means 20 is shaped and dimensioned for approximate conformity with the shape and size of root ball to be encased. Thus in practice, wrappings of the present novel character may be manufactured in a series of sizes, appropriate for corresponding root ball dimensions, it being then feasible in practice for nurserymen utilizing the devices to form or excavate root balls for various sizes of trees in ready conformity with a suitably selected one of the available wrapping dimensions. While ball masses of roughly spherical or cylindrical shape can be employed, and the boundary contour of the wrapping belt 20 correspondingly designed to fit, the presently convenient practice is that the root ball have conical, i.e., generally frustoconical, shape, tapering to a somewhat smaller diameter near the bottom. In consequence the illustrated belt 20 is shown with a convexly curved upper edge along the flap 30 and concavely curved bottom edge along the flaps 34–35, with appropriate downwardly inclined terminal edges 40, 41 at the sides, i.e., such that when the belt is wrapped into the form of a curved surface of revolution, with the edges 40, 41 overlapping, it will naturally constitute a complete segment of a conical surface. The flap means for the bottom, here principally constituted by the single, large flap 32, are shaped and dimensioned to cover the lower part of the ball, e.g., the somewhat bulging, under surface of the earth mass.

As will now be seen, the wrapping structure, of which the outer side is shown in FIG. 1, is very easily applied around a formed root ball in suitable manner, for instance as shown in FIG. 4. Here a tree 42 having a trunk 43 has been prepared with a root-supporting earth ball 44, by appropriate excavation of a considerably larger cavity 45 in the ground surrounding the tree. The elongated beltlike sheet structure 20 is then directly wrapped around the more or less compacted ball mass, in which has been somewhat conically shaped as explained above, so that the edge 41 substantially overlaps the edge 40 ad the side regions of the ball, which can be conveniently considered its peripheral vertical surface, directly underlie the elongated inflatable cavities 23, 24 and 25 of the wrapping. As more fully explained below, the upper flap structure 30 is brought over at least the outer part areas at the top of the ball, while in initial phase of the wrapping process, the lower flap means is not fully positioned, the bottom flap 32 being temporarily left to protrude at one side. With the belt in place around the ball, it is secured by suitable fastening means, in relatively tight condition and very desirably at a plurality of vertically spaced regions, e.g., at several levels extending circumferentially around the mass. The securing means may be embodied in various ways, i.e., as straps, tapes, cords, chains or other flexible elements, including suitable provision for fastening, whether by buckles, friction fasteners or simple tying, a notably advantageous arrangement in most cases being some attachment or like association of the securing means with the belt itself for simplicity of utilization. Simply for illustration of one of various appropriate embodiments, the device of FIG. 1 includes a plurality of strong tapes or straplike members 46 fastened at spaced localities along one vertical end 41 of the wrapping belt, such tapes being designed to coact with loops, hooks or other fastening means adjacent the opposite end of the belt, here exemplified by a similarly spaced set of flexible loops 48 secured to the outer face of the sheet material, both the loops and the straps being, for instance, of tough webbing, cord or the like. Advantageously the fastening means are disposed near the top and bottom of the array of inflatable cavities and also at intermediate localities as for instance aligned with the longitudinal center line of each inflatable region.

Thus for example, when the wrapping belt is pulled tightly around the root ball as shown in FIG. 4, the tapes 46 are respectively secured to the corresponding loops 48 and fastened in place as by tying a firm knot in each tape. The tied relation, not yet completed in FIG. 4, is shown by the several knots 49 in FIG. 5 and other views. Although in some cases the wrapping belt may be preinflated, i.e., before the wrapping and fastening operation, special advantage and convenience appears to reside in first securing the belt in place in a deflated state (FIG. 4), and fastening it firmly about the earth mass of the ball, before inflating the interior of the belt. Inflation may be accomplished in any appropriate manner as by connection from compressed air tanks or containers or cartridges of other compressed gas such as carbon dioxide or with the aid of a motor-driven pump or compressor. Simply for illustration, FIG. 4 shows a manually operated air pump 50 having a delivery hose 51 which is connected to the inlet valve 29, whereupon the belt is pumped up by the device 50. Effective inflation of the wrapping is usually to be expected with the attainment of no more than moderate pressure, although it is apparent that the actual degree of pressure to be reached is readily judged by the firm state of the inflated regions 23, 24 and 25, indicating desirably compressive contact of the wrapping against the earth surface of the ball. The inflating means is then removed and the wrapping is suitably completed at top and bottom of the ball as desired.

At the top of the wrapping, suitable securing means may be provided to draw together the overlapped portions of the flap 30. Again, for example, such means may include a series of grommets spaced along the flap 30, so that a heavy cord 53 or the like may be passed back and forth between substantially opposite grommets as at 54, 54, 54, the cord being drawn tight and fastened as shown at the knob 55. An arrangement of this sort readily accommodates the trunk 43 or other vertically protruding branch structure, while securing the upper part of the wrapping.

The peripherally wrapped ball can then be tipped over or elevated and removed, i.e., into a position (not shown) exposing the bottom, so that the lower flap means can be secured in place across the latter. For instance, as shown in FIGS. 7 and 9, the narrow flaps 34, 35 are brought over the edges of the bottom surface, while the main covering flap 32 is pulled across the entire bottom and tucked under the flaps 34, 35 Again, suitable securing means are utilized, shown simply for example as a series of grommets 56 along the flaps 34, 35 and a tape loop 57 or the like at the attached side of the flap 32. Thus a stout cord 58 is carried back and forth between opposite grommets and between the latter and the loop 57, being ultimately drawn tight and secured with a knot, so that the bottom covering is thus laced firmly in position. As indicated, the bottom of the ball can be shaped to bulge downward, whereby the covering assembly including particularly the flap 32 is held in relatively firm engagement. Although it is presently contemplated that inflation of the cavities 23, 24 and 25 can be completed before securing the top and bottom end flaps, it may in some cases be convenient to fasten the latter before pumping up the belt. Alternatively the inflation may be partially finished, sufficient to hold the ball while the assembly is gently turned on its side, whereupon the bottom fastening is effected. The top fastening also being achieved, inflation is completed to final pressure very firmly tightening the entire assembly against the earth surface of the ball.

As apparent, FIGS. 5 to 9 inclusive illustrate the completely wrapped and inflated condition of the structure, with the cavities 23, 24 and 25, and likewise the vertical connecting cavity 26, well expanded and the entire assembly in firm and indeed preferably compressive engagement with the earth mass. As is intended to be shown in FIGS. 6 and 7, the inflated wrapping thus in fact conforms tightly with essentially the entire peripheral surface of the ball, and does so preferably with some compression, especially at all regions laterally of the axis of the tree 42 or its trunk 43. Thus the ball, which is originally shaped to have the natural coherence of a more or less moist earth mass, firmly retaining the relation of the earth to the growing and in considerable part delicate root structure indicated at 60, is snugly held in its desired shape, and is in fact supported, essentially all over its surface, against mechanical derangement, cracking or breaking away. At the same time the elastic nature of the inflated regions of wrapping affords substantial shock-absorbing function, thus further and very significantly protecting the root package. With the ball so wrapped and held, the tree can be very easily handled, transported by truck or other carrier, and stored for periods as necessary. It may be very easily deposited in the necessary excavation at a new site, i.e., for replanting, whereupon the several securing means are simply unfastened, at sides, top and bottom, and the entire wrapping removed as a unit. Since the ball has been kept compressed, it tends to retain its shape and integrity when uncovered, thus simplifying completion of the task with necessary backfill. The desired objects of the invention are therefore fully achieved, facilitating the handling and transporting of trees and their root balls, with elimination or minimization of damage to or loss of trees.

As will be noted from FIGS. 4, 5 and 6, the wrapping belt 20 and the root ball are mutually dimensioned, in this preferred embodiment, so that the inflated regions, such as the cavity 24, in effect completely surround the ball in fitting relation without substantial overlap. In such situation, it is believed that maximum protection for the ball surface is attained. As previously indicated, the wrapping means can be manufactured in a number of predetermined sizes, appropriate for root balls of corresponding diameter, it being readily feasible to adjust the actual diameter of a given ball in minor extent, to suit a chosen, nominal size for which the wrapping has been selected to correspond. It will also be noted that the wrapping means or apparatus can be built to accommodate even extremely large and heavy root balls, especially in that the method of wrapping is relatively simple to perform and the inflated nature of the final condition can be amply sufficient for firm retention of the ball in the belt.

Certain modifications are illustrated in FIGS. 10 and 11, as for example in that the belt 60 may in some cases be made sufficiently long so that the inflated bands 63, 64 and 65 may even substantially overlap in a circumferential relation. While this arrangement may depart from complete conformity in small measure, fewer sizes of wrapping belt may be required for variation in root ball dimension. The securing means, as indicated above, may also embody different forms, e.g., as here simply indicated by straps 66 completely surrounding the belt, with appropriately tightened fastenings 67.

In FIG. 10, the complete bottom flap 72 is shown as positioned at the exterior, overlying the edge flaps of the wrapping (not here shown) and as being secured by a plurality of cords or straps 74, carried from grommets 75 around the flap 72 up along the sides of the wrapping to be tied or otherwise retained at upper localities 77 of the assembly. The wrapping of FIGS. 10 and 11 is applied in essentially the same way as that of FIGS. 1 to 9, for similar attainment of a securely encased root ball.

FIGS. 12 and 13 shown an embodiment where the wrapping belt is made in sections 80, designed to be connected endwise so that the complete wrapping around a tree ball consists of two or more such sections in circumferential succession. This arrangement is particularly suitable for very large earth balls, FIG. 13 showing a wrapped and inflated band consisting of three sections 80, illustration of the earth ball itself being omitted for simplicity.

As before, any of various tying or wrapping means may be employed but by way of further example the belt section 80 in FIG. 12 simply has a row of grommets 82, 84 along its corresponding end flaps 83, 85, and grommets 86, 87 along the upper and lower flap regions respectively. As will be understood, suitable lacing or tying means are employed, for mutual attachment of successive end flaps and for holding the belt across the top and bottom of the tree ball, such means being omitted from FIG. 13, for clarity. Each section 80 is inflatable, in the same manner and for the same purpose as the

embodiments described above, and may thus include three longitudinal pockets **88**, **89** and **90**, to which air under pressure is supplied by a branch hose section **92** having openings as at **93** into the respective cavities. The branch **92** extends from a distributing section **95** of hose or like tubing which extends the length of the belt section, for example near the top as shown. The ends of the hose element **95** have coupling members **96**, **97** respectively designed for connection with corresponding members of the hose lengths in adjacent sections.

Thus as assembled around a tree ball and with the three sections **80** tied together, the hose portions **95** are successively coupled as at **96–97**, coupling a conduit around the wrapping and including as at the coupling **96***a***–97** a suitable nipple or inflating tube **99** for attachment to a source of air or equivalent gas under pressure.

The device of FIGS. **12** and **13** is employed in essentially the same way as the other embodiments except that the belt comprises a plurality of sections, which may indeed be of uniform design, so that some range of tree balls may be accommodated as by using various numbers of sections. Air introduced into the nipple **99** is conducted through the connected hose or pipe sections **95** and serves to inflate the pockets **88–90** in each belt portion, by means of the branch hose lines **92**. As will be appreciated, accommodation to minor dimensional variations of the earth masses is attainable by varying overlap of the end flaps **83**, **85**, the hose elements **95** being of sufficient flexibility so that at their coupled regions they may bow outward more or less as needed to account for the actual circumference. Alternatively, the sections **80** may be constructed to be separately inflated, exactly as the section **20** of FIG. **1**, thereby dispensing with the continuing hose or conduit arrangement.

Some additional features are illustrated in FIGS. **14** an **15** where the main wrapping belt **100** is basically identical with the belt **20** of FIG. **1**, although it may, of course, be constructed in sections in the manner of FIGS. **12** and **13**. There is provided, however, a separate, inflatable collar **102** which is designed to surround the tree trunk **104** at its base, immediately above the earth ball. This collar may comprise a single belt-shaped element of an impregnated fabric or the like, i.e., identical with the main belt, and including a single inflatable cavity which has a suitable nipple **105** for a supply of air under pressure. The lower edge of the collar has a flap structure, here shown as of a scalloped shape, providing outward tabs **106** to abut the top of the earth ball.

The upper flap of the belt **100** may likewise embody tabs **108**, the tabs in both wrappings being provided with grommets so that the assembly can be laced together and tightened, by a cord **110**, tied at **111**.

In this instance, the main belt **100** is provided with supplemental attaching or hauling means consisting of upper and lower tabs **112**, **114**, attached to or integral with the belt and made of suitably heavy fabric so that they project radially outward from the wrapping, as shown. Conveniently these are located at or near one end **115** of the wrapping. The tabs **112** and **114** have corresponding large grommets **116**, **118**, appropriate for attaching heavy rope, cable or the like. A similar, projecting tab **120** is arranged on the collar **102**, e.g., near the end flap **121**, and has a like, relatively large grommet **122**. As will be appreciated, grommeted tabs of this kind may be employed with any or all of the belt structures of the invention, for like purposes.

The main belt **100** of FIGS. **14** and **15** is applied in the manner previously explained, being appropriately inflated, through the nipple **124**, for tight, compressive engagement with the underlying tree ball. The collar **102** is also wrapped around the trunk, and tied in place as shown, being likewise inflated for holding conformity with the trunk. The collar thus aids in securing the complete wrapping around the ball and in proper place relative to the trunk, while further retaining the latter against sidewise displacement, either so as to loosen the roots in the ball or so as to rock the ball within the wrapping. The better protection and housing of the tree ball and its associated trunk, afforded by this supplemental structure, is desirable in many cases, depending on the size and nature of tree and of its root configuration.

The several, projecting tab elements **112**, **114** and **120** afford improved means for positioning and lifting the packaged tree, as for instance by a line connected to the lower grommet **118**, running to a suitable winch for moving the assembly more or less laterally. The upper grommet **116**, together with the grommet **122** if desired, may serve a similar function, and can be particularly effective in lifting the tree, to remove the latter from its original location and to deposit it in a new place, as with a line or lines running from the grommets to a hoist.

Reverting to the structure of the collar **102**, it includes, of course, suitable means, as in part indicated at **125**, for tying or otherwise securing it in place against inflation. The means for securing the main belt **100** is likewise in part indicated at **126**.

It is to be understood that the invention is not limited to the specific structures and operations herein shown and described but may be carried out in other ways without departure from its spirit.

I claim:

1. In a transplanting balling device that comprises a belt of fabric which has free ends and is shaped and dimensioned to be wrapped around the peripheral vertical surface of the ball of earth and roots, and which is provided with securing means for tightening the belt about the ball: the structure, in combination in said device, which comprises inflatable, fabric-walled cavity means in said belt, extending substantially throughout the belt and disposed for snug, compressive engagement of the wrapped belt against said peripheral ball surface when the cavity means is in inflated condition, said belt having fabric portions which are connected thereto at the top and bottom regions thereof for at least partially overlapping the top and bottom surfaces of the ball and which are provided with means for holding said portions in said overlapping positions when the belt is wrapped around the ball.

2. A device as defined in claim **1**, in which the fabric connected with said belt at the lower portion thereof includes flap means for substantially covering the bottom areas of the ball, said flap means having means for securing same over said areas when the belt is secured about the ball.

3. A device as defined in claim **1**, in which the inflatable cavity means comprises a plurality of inflatable cavities extending lengthwise in the belt and collectively arranged for substantially covering said peripheral ball surface.

4. A device as defined in claim **3**, in which the securing means comprises means attached to the belt for drawing it, before inflation, firmly about said peripheral ball surface at a plurality of vertically spaced circumferential regions, for snug engagement of the belt substantially throughout said surface, upon inflation.

5. A device as defined in claim **4**, in which said fabric connected at the bottom region of the belt includes flap means attached to and extending from the belt and shaped to cover the entirety of the bottom area of the ball.

6. A device as defined in claim **1**, for a root ball of approximately frustoconical shape with the bottom smaller than the top, in which the belt has a boundary configuration, including arcuate upper and lower edges, for conformity with said frustoconical ball shape when wrapped around the ball.

7. A device as defined in claim **6**, in which said inflatable cavity means comprises a plurality of elongated inflatable cavities arranged to extend, parallel with each other, around the periphery of the ball in wrapped condition, each of said cavities being substantially coextensive with the circumference of the ball at the locality thereof which it engages.

8. A device as defined in claim **1**, in which the inflatable belt comprises a plurality of inflatable belt sections each having inflatable, fabric-walled cavity means and having means for endwise connection and shaped to cover successive circumferential portions of said vertical ball surface when held by said securing means in circumferentially disposed relation.

9. A device as defined in claim 8, in which each of the inflatable sections includes a flexible air conduit having provision for directing air into said section for inflation thereof, the conduit of each section having coupling means at its ends for connection to a conduit of an adjacent section, to provide inflation of the entire belt upon introduction of air into the conduit means.

10. A device as defined in claim 1, which includes means connected to and projecting from the belt and comprising a connecting element which can be engaged by connecting means for moving and positioning the wrapped ball.

11. A method of wrapping a root ball of a tree or the like, comprising wrapping around the vertical periphery of the ball an elongated flexible sheet body having enclosed space which is to be inflated and substantially covers the surface of said periphery, securing said body in wrapped position, and inflating said space for compressive, conforming engagement of the wrapped body with said surface.

12. A method as defined in claim 11, which includes securing in place against and over the bottom of the ball, a flap of sheet material which extends from a lower part of said sheet body.

13. A method as defined in claim 11 which includes

wrapping and tightly securing around the trunk of the tree adjacent to the ball a collar having enclosed space for inflation, and securing said collar to the aforesaid wrapping around the ball, said method including inflating the collar so that in secured position it is in compressive, conforming engagement with the trunk.

14. A method of wrapping a root ball of a tree or the like, comprising wrapping around the vertical periphery of the ball a belt of fabric which covers the surface of said periphery and has free ends which are overlapped in said wrapping, said belt including inflatable, fabric-walled cavities which collectively extend substantially throughout the belt, and securing said belt tightly around the ball in wrapped position, said method including inflating said cavity means of the belt for compressive, conforming engagement of the wrapped belt with said surface.

15. A method as defined in claim 14 in which the step of inflating said cavity means comprises inflating said means under pressure sufficient to effect said compressive engagement, after the belt has been wrapped and secured tightly around the ball.

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