

[54] **ANIMATED DISPLAY TREE-FRAME**

[76] Inventor: **Frank Damiano**, 322 Washington St., Newburgh, N.Y. 12550

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[51] Int. Cl.² **G09F 19/02**

[58] Field of Search..... 40/106.25, 106.21, 28.1, 40/28.2; 272/15

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Primary Examiner—Robert W. Michell

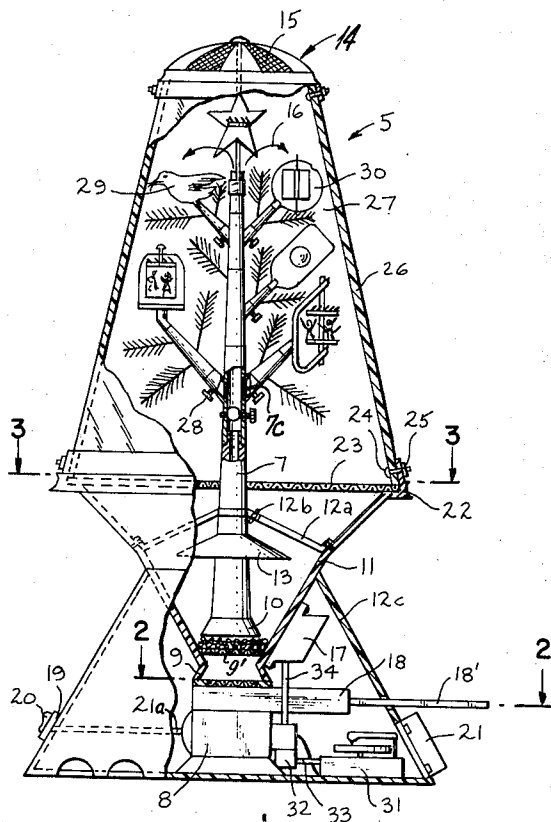
Assistant Examiner—John F. Pitrelli

[57] **ABSTRACT**

In a preferred embodiment of the invention, there is

provided a segmented tubular tree having tubular branches with passages communicating from an inlet port of the base of the tree trunk to the tips of the branches and to the top of the trunk, with obstructing screens which prevent particulate blown within the trunk passage from passing into the branch passages, and with a transparent plastic enclosure spaced both around and above the tree trunk and branches thereof, there being snow-like particulate within the enclosure for being blown upwardly through the tree trunk passage out through the tree trunk upper outlet port and the snow-like particulate being driftable downwardly in the nature of falling snow flakes, each of the branch tubes also having mounted in association with its outlet branch port air motors or air turbine motors having miniature animated structure(s) caused to move by air actuation of the motor(s) such as whistle(s) in the nature of bird(s), and/or as merry-go-rounds, spinning wheel(s), wind-tinkles or rattles or the like, associated therewith. The pump motor preferably includes gearing and an associated phonograph turntable and phonograph for the playing of records of prerecorded music and/or messages and/or advertisements.

5 Claims, 4 Drawing Figures



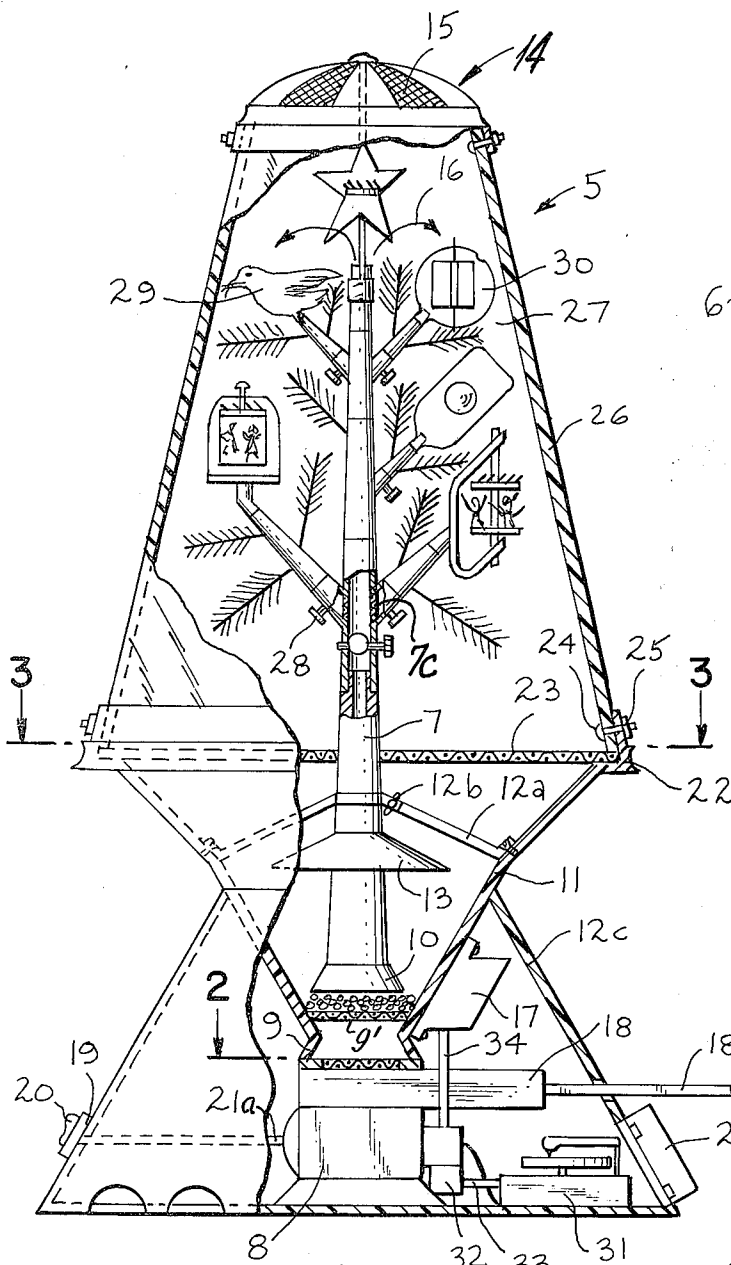


Fig. 1

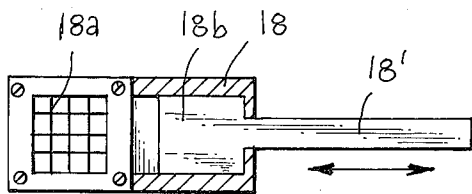


Fig. 2

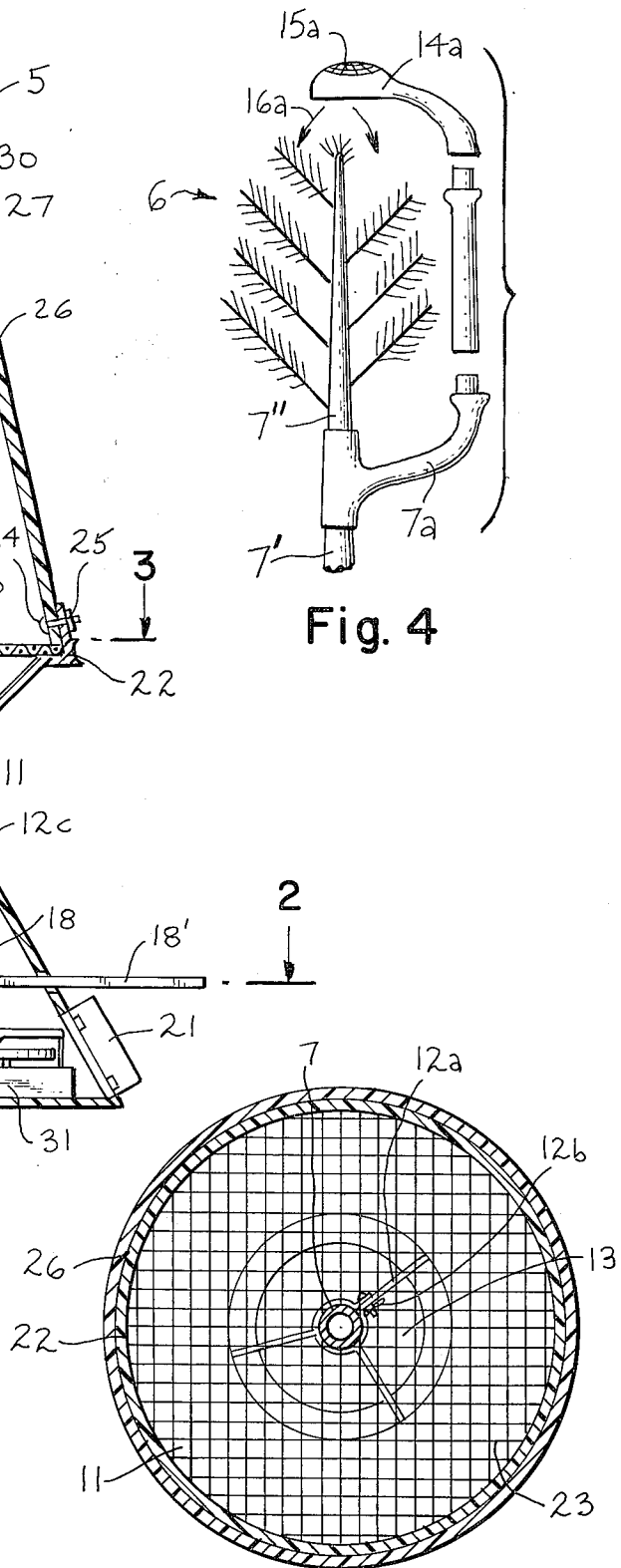


Fig. 3

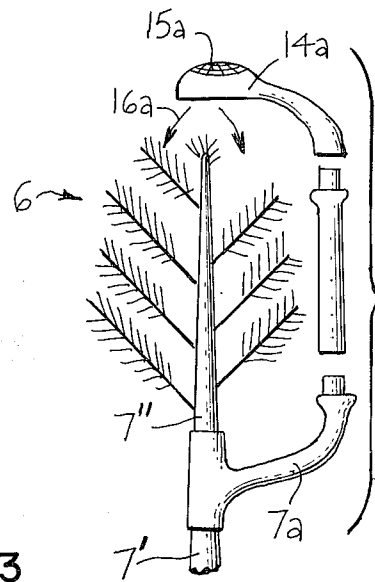


Fig. 4

ANIMATED DISPLAY TREE-FRAME

This invention relates to a display tree of an animated nature.

BACKGROUND TO THE INVENTION

Prior to the present invention, there have existed display tree frames of the general type to which the present invention is directed, including for example exhaust suction means for sucking-up artificial snow and causing it to flow around the tree. Although, therefore, the general concept is not new, there has not been — prior to the present invention — any practical display tree frame structure and mechanism thereof suitable for real life practical use either in the home or in store display windows or on store counters or the like because of problems and difficulties associated with prior devices. In particular, for example, suction employed by the prior devices is not nearly so effective as the present invention's mechanism's mechanism of circulating the particulate artificial snow. And with the prior devices, once the snow was caused to be dropped around the tree, the snow also became dropped everywhere else in the vicinity in addition to close to the tree, thereby generally fouling-up the tidiness and appearance of the surrounding environment. With such a prior system, it was also necessary to continuously replenish the supply of artificial snow being cause to fall, because no effective measure(s) existed for the automatic collecting and recovery and reuse of snow already distributed, by any systematic means of a cyclic nature. Also, prior to the present invention, the sole extent of animation was to cause snow to fall around the tree. The prior trees were also rigid and limited in size, weight, and adaptability.

SUMMARY OF THE INVENTION

Accordingly, objects of the present invention include the overcoming and/or avoiding of difficulties and problems of the types discussed above, including new and desirable results and structures, and advantages.

Another object is to obtain a self-contained system of cyclic recirculation of artificial snow or the like, associated with the tree frame display structure.

Another object is to obtain a display tree of animated nature including air-turbine motorized structures.

Another object is to obtain an improved more effective and more efficient particulate circulation mechanism for the display tree device.

Another object is to obtain sound effects to be associated with an animated display tree device.

Another object is to obtain an improved support structure for an animated tree frame.

Another object is to obtain a novel and improved structure of a tree frame display adaptable for varying sizes of spaces available for display thereof.

Other objects become apparent from the preceding and following disclosure.

One or more objects of the present invention are obtained by the invention as defined herein.

Broadly the invention may be described as an animated tubular tree trunk with branches preferably also tubular, with flow spaces extending therethrough extending from about a base of the tree trunk to upper portions of the tree and providing for the blowing of air or other fluid such as water or other gas as nitrogen for example, preferably with artificial snow or other artific-

ial particulate matter being introduced into the path of the fluid for the channeling of the snow-laden air to an upper portion of the tree structure at which point the particulate matter is permitted to lightly drift downwardly on and around the tree and any display(s) mounted thereunder and/or thereon. There preferably is provided beneath the branches, around the lower portion of the trunk of the tree, a perforated support such as a screen supportable of displays of any desired type such as small figurines or any other object or merchandise, but the particulate matter being siftable through the screen to a point again in the path of the pumped blown air being channeled into the trunk lower inlet, while the preferred communicating tubular passages of the branches preferably siphon-off a portion of the air being pumped from the trunk and preferably screening-out the particulate matter from passing into the branch passage(s), with the air channeled in the branch passages being emitted from branch outlet(s) such that the branch outlet air is empelled against air motors and/or turbines of various types such as whistles, rattles, reeds, merry-go-rounds, spinning wheels, artificial bird(s), bells to be blown, or other noise makers and/or animated air-motor objects, or the like, and all of the particulate matter preferably being retained within a transparent enclosing preferably plastic enclosure structure enveloping the tree and displayed objects. The enclosing material may be translucent or transparent, it merely being necessary that the transparency be sufficient for discernment of objects within, which objects become more visible when there are lights within the enclosure but not outside the enclosure — as for night displays. Preferably there is provided a channeling and/or funneling structure beneath the screen, preferably with an associated vibrator, for channeling the settling particulate matter back into the path of the blowing air. Preferably there is provided an outlet at the top of the enclosure structure for the escape of the blown air while an included screen mechanism diverts the particulate matter and retains the particulate matter within the enclosure to cause it to drift downwardly. It is to be understood that the particulate may optionally be of other and/or mixed colors than white, and the physical make-up may vary, such as confetti or anything of sufficiently low density and mass that it can be effectively blown upwardly with the air and drift downwardly thereafter. If the fluid is water, obviously the enclosure must be a water-tight enclosure plastic or glass. Typically the particulate matter is hollow and ppherical or oblong, but may be flakes or the like. It is also contemplated that in a preferred embodiment the air pump motor drive a photograph turntable having an associated turntable player and speaker for thereby playing recorded music and/or messages and/or advertisements, and similarly the vibrator may be either an air driven vibrator or alternately driven through gearing from the pump motor. The tree trunk preferably is of a segmented nature such that various segment may be taken from or added to the trunk to shorten or lengthen the trunk, thereby making the display tree adaptable to any of small or large display spaces and/or areas thus increasing the utility of the display tree. For example, a small tree might be used on a counter top whereas a larger tree might be used in a small display space of a store window, while a still larger tree might be desirable for an entire window display. Accordingly, also, there may be alternate trans-

parent plastic closure covers which may be used interchangeably to enclose the tree, depending upon the needed size of cover, including any desired and/or conventional fastening means such as hooks, snaps, buttons, zippers, or the like. A particular advantage is obtained by the present invention in the preferred utilization of an air pump to pump air forcefully through particulate typically through a screen onto which particulate has been channelled, such that the pumped air forcefully lifts the particulate matter into preferably a bell-bottom of the trunk inlet. Accordingly, the particulate matter is lifted forcefully. Also, the transparent plastic or the like serves to recycle the particulate matter such that a very small quantity of particulate matter is sufficient because of the efficient recycling thereof. Another advantage is the enclosure considered together with the escape port for the air at the enclosure top, such that the force of the air does not disturb the lightly falling snow or other particulate as would be the case in an enclosure where the forceful air were channelled downwardly for recycling also the air; such is contemplated as an embodiment, but is not preferred. Thus, with the air escape port, the snow falls gracefully independent of forced air, while nevertheless the forced air effectively lifted the snow particulate through the tree trunk, and the forceful air is of sufficient pressure as to drive the air devices associated with the ends of the tubular branches.

Preferably there is provided a speed control for the pump such as a rheostat for an electric motor and/or preferably also control valve(s) within the tubular trunk and/or within the tubular branches for regulating the needed or desired intensity of forced fluid for a particular air or other fluid motor or the like. Also, this makes possible the varying of the amount of pumped air as dependent upon the size of the tree and/or the number and size of air-driven devices associated with the tree branches.

The invention may be better understood by making reference to the following Figures.

THE FIGURES

FIG. 1 illustrates an elevation side partial cut-away view of a preferred embodiment of the present invention.

FIG. 2 illustrates a view in partial cross-section as taken along lines 2—2 of FIG. 1, illustrating a slide control valve for variably adjustably manually controlling the intensity of pressurized pumped air flow upwardly from the pump.

FIG. 3 illustrates a view in partial cross-section and partial elevation top view as taken along lines 3—3 of FIG. 1.

FIG. 4 is an in-part view in elevation side view of an alternate embodiment shown in exploded view.

DETAILED DESCRIPTION

In particular, FIGS. 1 through 3 illustrate a typical and preferred embodiment of the present invention, illustrating a display tree 5, while FIG. 4 illustrates an alternate embodiment display tree frame 6. In the FIG. 4 embodiment, the trunk 7' corresponds to the FIGS. 1-3 trunk 7, except in FIG. 4 the the particulate-carrying pumped air is pumped through bi-pass pipe 7a, while the upper portion of the trunk, identified as 7'' serves merely to support branches, with the main thrust of the air being channeled through screen while the

particulate snow drifts downwardly in directions 16. It should be apparent that the tube 7a could alternately extend upwardly as an inner tube within the trunk 7'' but would not be as picturesque.

As to the embodiment of FIGS. 1 through 3, the pump 8 pumps air upwardly through the flared converging structure 9 directing the forces air through the orifice screen into the flared receiving base 10 of the trunk 7. The trunk 7 is supported at least in part by the outer funnel frame 11 inside of which the particulate artificial snow is channeled downwardly onto the neck screen of flare 9, with the braces 12a, 12b, and 12c as better shown in FIG. 3 as viewed beneath the screen 23 serving jointly with the screen 23 to support the trunk 7. The flare deflector 13 serves to thwart the upward flow or draft of air from the pump as does also the flared base 10, while the deflector 13 is sufficiently slanted as to permit snow to slide off of it, particularly as the vibrator 17 vibrates sufficient to cause particulate artificial snow to sift downwardly off of the tree parts and off of the screen 23 and any displays mounted on the upper surface of the screen, such displays not being illustrated. The preferred vibrator 17 also would cause the limbs to move as in a breeze. The top structure 14 is supported on a narrow rod extending from the top of the trunk 7, and includes screens 15 to permit the passage of the forceful pumped air while restraining and causing to be diverted and fall or drift downwardly the artificial snow. Typically the bulk of the artificial snow will follow paths 16. The slide valve structure 18 includes valve 18b and the screen 18a in the main pump outlet port, the screen 18a being positioned to prevent any particulate snow from reaching the pump that may have slipped through the upper flare 9 screen. It will be noted that the arm 18' serves for manually pushing inwardly and outwardly the valve 18b to regulate the amount of air flow through the screen 18a. Note also that the structure 11 funnels the snow downwardly, particularly with the assistance of vibrator 17, into the path of the upwardly blown air into the base opening of base 10 upwardly through the trunk 7. The off and on and speed of the pump motor may be controlled by a preferred rheostat switch 19 by switch revolvable handle 20. Preferably there is provided a phonograph turntable 31 and speaker mechanism thereof, accessible through side door 21, driven preferably by gearing 32 connected to the pump motor and through shaft 33 rotatably drivable of the mechanism of the phonograph turntable 31. In like manner, preferably the vibrator is driven also by a rotatable or reciprocatable shaft 34 extending from the gearing box driven by the pump motor of pump 8. The pump off-on and speed are controlled through lever 21a. The screen 23 preferably rests on the shaped receiving structure 22 of support structure 11, and includes appropriate fasteners 25 (nut) and 24 (bolt) for attachably anchoring the bottom of the transparent plastic enclosing cover 26 enclosing inner space 27. The tubular limbs include air flow regulation valves 28 or the like to regulate the air flow passing through the screen 7c which screen filters-out particulate artificial snow. Thus, snow blown from screen 9' passes upwardly through the open top of the trunk 7, only air being preferably channeled out of the limbs, but it is within the scope of the invention if desired, to channel snow also from the limbs for special effects by removing the screens 7c. Mounted on the limbs in positions to be operatively utilizable of the

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limb-emitted outlet pumped air are noisemakers such as a bird having a whistle therein as bird 29, and spinable wheel such as device 30, and other illustrated devices typically.

Other variations and modifications and substitution of equivalents within ordinary skill are within the scope of the present invention.

I claim:

1. A display tree-frame device comprising in combination: a fluent light weight particulate; an upright tubular trunk means for providing trunk tubular structure including a trunk conduit structure and branch structures mounted on and extending from the trunk conduit structure, the branch structures having unobstructed passages in flow communication with the trunk conduit; the trunk conduit structure and the branch structures respectively, having outlet ports located at substantially distal upper ends thereof to the conduit structure and to the passages respectively, and having a base inlet port at a base of the trunk conduit structure, such that there is unobstructed fluid flow of fluid having the light weight particulate suspended therein through the trunk conduit and unobstructed passages serially respectively; enclosure means for substantially totally enclosing said upright tubular trunk means and branch structures, a major portion of the enclosure means being of substantially transparent sheet-like material through which upper portions of the upright tubular trunk means are visibly discernable; pump means for propelling a fluid composition as a carrier for the light-weight particulate into the inlet port and out of the outlet ports; and rotatable ornaments having fluid-drivable turbine motor means being mounted on at least one of the branch structures at the outlet port thereof such that flow of fluid from the outlet port thereof drives the turbine motor means.

2. A display tree-frame device of claim 1, including a fluid escape port defined within an upper portion of

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said enclosure means, and an inlet port defined in operative flow relationship with said pump means such that said fluid is pumpable by said pump means from space exterior to said enclosure means to and through the trunk means' tubular passage and through the escape port to an exterior space, said fluid composition being air, said escape port including screen means for obstructing escape of the light-weight particulate with escaping air through the escape port such that particulate will settle through the space within the enclosure means exterior to the trunk means and branch structures.

3. A display tree-frame device of claim 1, in which said trunk means includes tube segments for shortening or lengthening the tubular passage of the trunk means, and said enclosure means including a three-legged annular clamp means for supporting the trunk means.

4. A display tree-frame device of claim 3, in which the light-weight particulate being of predetermined small mass and density such that air pumped from said pump means serves as a carrier for the light-weight particulate through the trunk means' tubular passage, said enclosure means including a funneling-structure means for collecting and channeling said light-weight particulate as it settles, into a flow path of pumped air from the pump means into the inlet port of the pump means.

5. A display tree-frame device of claim 4, including a screen-like display support means mounted so as to extend substantially horizontally within space defined within the enclosure means exterior to the trunk means and to the branch structures, substantially above the funneling structure and substantially below the branch structures such that settling portions of said light-weight particulate are passable therethrough while the display support means is supportable of structural items to be displayed for viewing from exterior of the enclosure means.

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