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Puleo

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[54] **ARTIFICIAL CHRISTMAS TREE WITH SLANTED NEEDLES**

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[51] **Int. Cl.** **A47g 33/06**

[58] **Field of Search** ..... 161/22, 23, 24; 264/320; D29/1 A; 219/243; 425/174.6, 383, 803, DIG. 13

[56] **References Cited**

UNITED STATES PATENTS

3,343,357	9/1967	Goodridge	161/22
3,365,529	1/1968	Dieffenbach	161/22
3,384,689	5/1968	Logan	161/22
3,499,818	5/1970	Kent	161/24
3,513,063	5/1970	Sloane	161/22

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Attorney, Agent, or Firm—Clarence A. O'Brien; Harvey B. Jacobson

[57] **ABSTRACT**

The concept pertains to a decorative item such as an artificial Christmas tree, shrubbery, brushes or the like of a permanent or knockdown type. The branches or limbs are unique in that the imitation needles are obliquely angled and slanted toward the outward end of the stem-like core. Each branch comprises a core of intertwisted core wires and complemental pliant thermoplastic bristles which define imitation needles distributively arranged lengthwise of the core and having median portions nested and retentively clenched between the twisted convolutions of the wires and outwardly flaring half portions slanting away from the core and toward the outward end thereof. The branch or brush is formed with slanting bristles by insertion into a sleeve of lesser diameter than the brush to angle the bristles with the core wires then being heated to reset the thermoplastic plastic bristles so that the portions of the bristles outwardly of the core will be set at an oblique angle.

4 Claims, 3 Drawing Figures

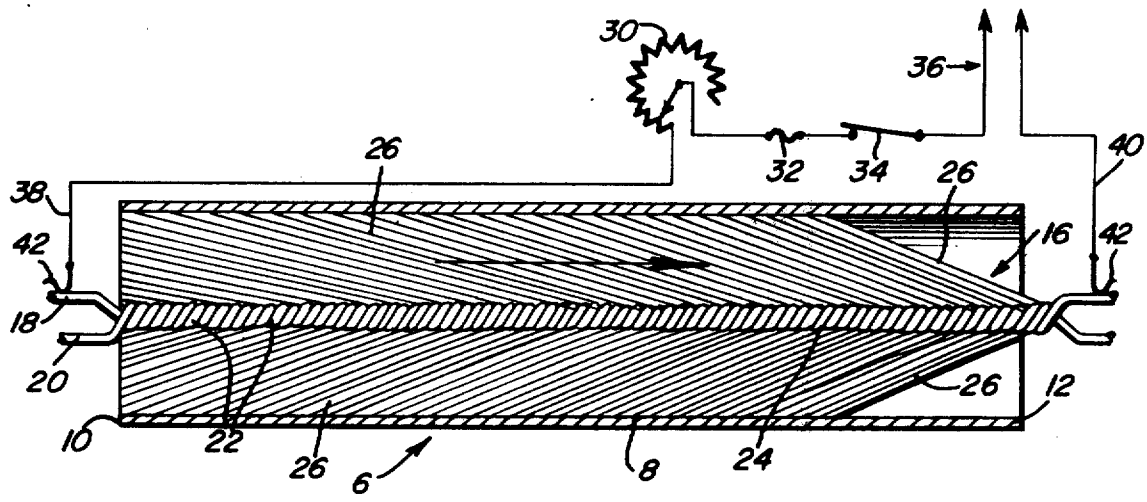


Fig. 1

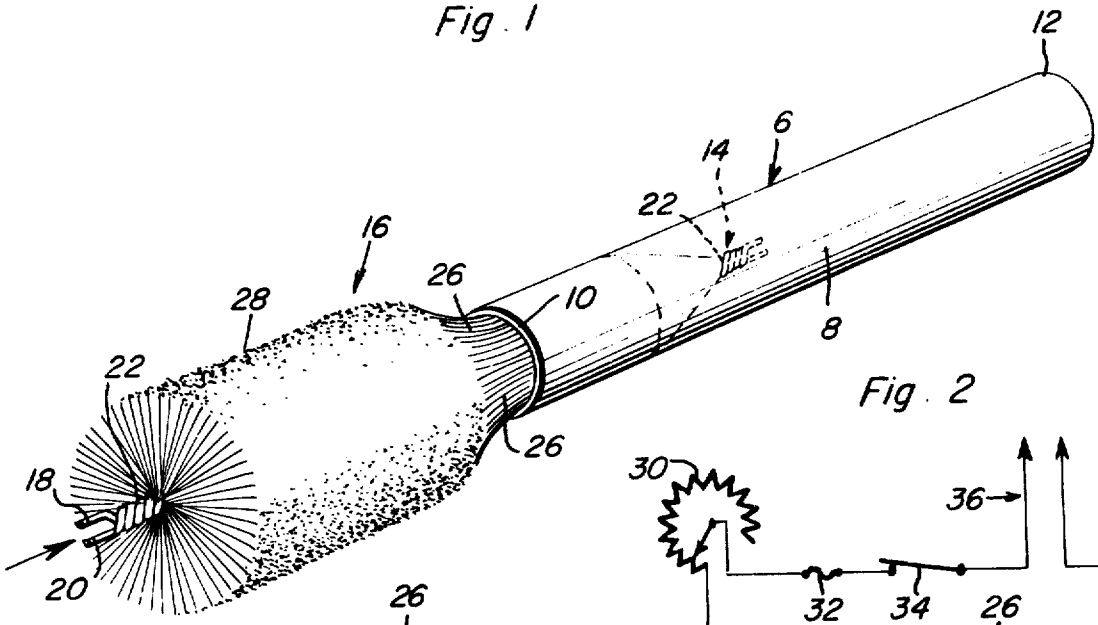


Fig. 2

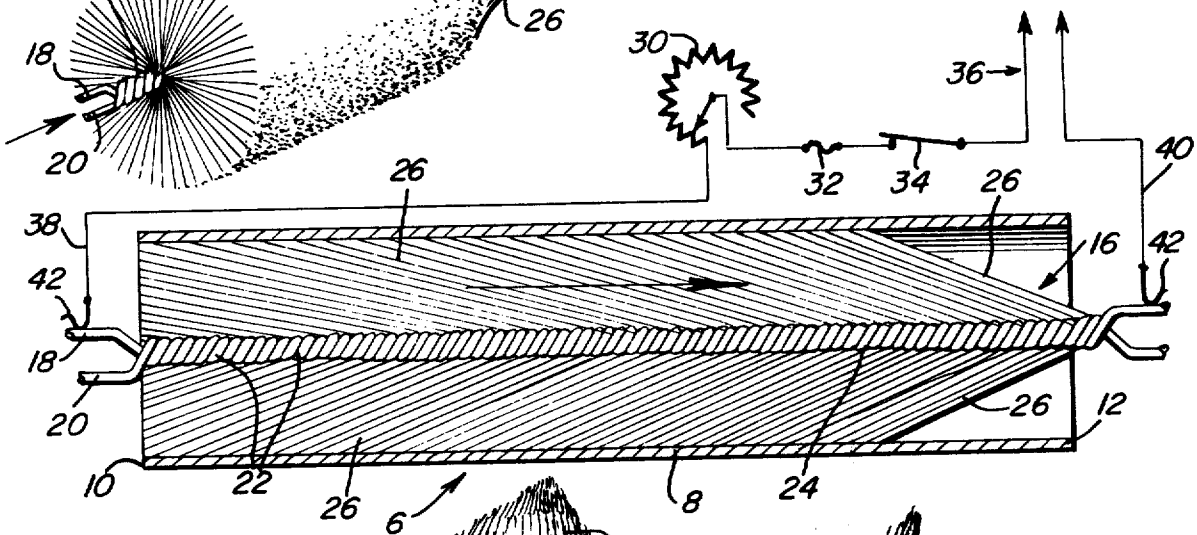
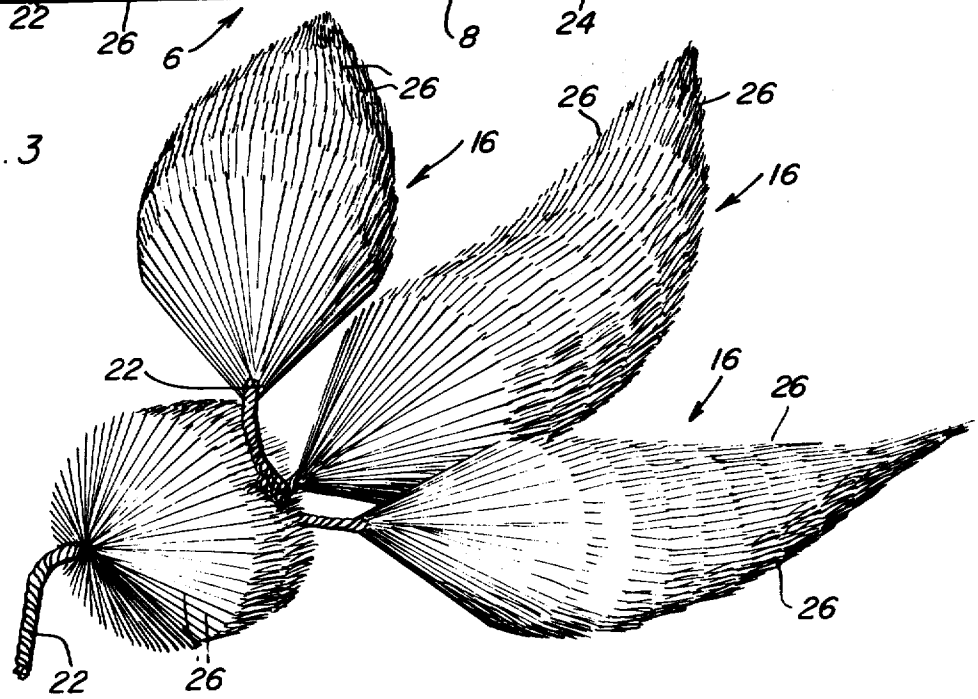


Fig. 3



ARTIFICIAL CHRISTMAS TREE WITH SLANTED NEEDLES

This invention relates to an improved artificial Christmas tree or the like but has to do, more specifically stated, with the individual limbs or branches and twigs which when assembled on a suitable coordinating trunk provide a ready-to-trim tree, and wherein the end product is an innovation in that the needles are comparably similar to the slanting needles of a natural pine tree branch.

Persons conversant with the art to which the invention relates are aware that it is broadly old to form and construct artificial tree branches and twigs by twisting two core wires together and plastic pliant needles having median portions thereof clenched between the convolutions and distributively arranged from an inner toward an outer end of the stem or core. For background purposes reference may be made to the composite branch disclosed in U.S. Pat. No. 3,499,818 granted to Stephen D. Kent here cited because it teaches the idea of slanting needles. Further and helpful information may well be had from U.S. Pat. No. 3,112,957 of Dec. 3, 1963, granted in A. Briglia and which while relating to a brush construction nevertheless has a bearing on the subject matter of the instant invention. Then too and because it pertains to bunching a mass of plastic fibers around the terminal end of a core rod and heat treating the fibers, attention is invited to U.S. Pat. No. 3,384,689 granted to Malcolm Logan.

Briefly, and as will be hereinafter more fully revealed, the present invention relates not only to a finished ready-to-use artificial tree branch of the aforementioned type but to an adaptation wherein the median or bight portions of the respective needles are not only clenched but are heat treated by passing electric current through the stem-like core and are effectually slanted for the reason that the branch is lodged and confined in a forming and shaping sleeve while being subjected to the manually controllable heat treating step.

Stated more explicitly and keeping in mind the combination aspect of the concept, novelty is predicated on a relatively stationary open-ended branch receiving, confining and heat applying sleeve of a predetermined length having a branch encompassing and confining bore of prescribed cross-sectional dimension. This sleeve, which may be supportively held in any suitable manner, accommodates the insertable and removable prefabricated self-contained artificial tree branch. The sleeve and branch are proportional in length with each other and the branch comprises, as suggested, an elongated stem-like core made up of intertwisted core wires, the clenched portions between twisted convolutions defining the flexible flaring half portions which project radially from the locale of the core. The branch is temporarily lodged within the sleeve so that leading and trailing end portions project beyond the respective inlet and discharge ends of the sleeve. Means, preferably electrical, is employed for sending a heating current through the stem or core and subjecting the clenched median portions of the needles to heat in a manner that causes the same to take a set and, in so doing, causes the half portions to slant and diverge away from the core and toward the outward or leading end thereof.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully

hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

FIG. 1 is a view in perspective showing the aforementioned confining and shaping and branch receiving sleeve or cylinder at the right and showing the leading end of the prefabricated branch being inserted for confinement and application of the heating and needle-setting step.

FIG. 2 is an enlarged view showing the sleeve and branch in section and elevation, the branch being lodged in the bore with contact elements on the ends of the current conducting wires engaging the projecting end portions of the core wires and how the bunching and heating steps are preferably achieved.

FIG. 3 is a view in perspective showing several finished slant-needle branches having cooperating core portions united to provide the clustered effect so often needed in erecting the completed tree (not shown).

It will be evident that the overall concept has to do not only with a Christmas tree or the like on which the attachable and detachable branches or limgs are susceptible of use but pertains to a single finished and ready-to-use branch and also the systematic and procedural phase of the invention characterized by the special purpose receiving and confining sleeve and the prefabricated slant-needle branch which is inserted, temporarily retained, heat treated and subsequently removed for such use as is desired.

With reference more particularly to FIGS. 1 and 2 and first with reference to FIG. 1 it will be evident that the broad aspect of the combination has to do with a cylindrical tube or sleeve 6 of appropriate rigid sheet material and which has open ends and a uniform cylindrical body portion. The body portion is denoted at 8 and the unobstructedly open intake end is denoted at 10 and the correspondingly open discharge end is denoted at 12. Any number of sleeves of varying length will be used depending on the length of the variously required limbs or branches. The cross-sectional dimension of the bore of the sleeve is predetermined in relation to the size and spread of the branch and, ordinarily, it can be assumed that the length of the branch will correspond with the length of the sleeve as brought out in FIG. 2 with certain end portions of the branch projecting for purposes to be described. It is reiterated that the sleeve is open-ended and relatively stationary and for purposes of the present disclosure can be assumed to be held in one's hand during use. In actual practice it may be supported (not shown) in some other suitable manner. In any event, the sleeve 6 is adapted to receive and confine the prefabricated branch for such interval of time as is required in subjecting the overall branch to the desired heat treatment step. FIG. 1 shows the leading end portion 14 lined up with and partially inserted to be moved slidingly in the direction of the arrows for confining and heat treating purposes.

The prefabricated artificial self-contained tree branch or limb, as suggested, is of a length proportional with the length of the sleeve and the branch is denoted generally by the numeral 16. It comprises an elongated stemlike core made up of a pair of like intertwisted core wires, denoted at the left in FIGS. 1 and 2 by the numerals 18 and 20. This is to say, one wire is denoted at 18 and the other one, sometimes referred to in the trade as a base wire, is denoted at 20. The twisted convolutions of the intertwisted wires are designated at 22.

It is between these convolutions that the median or bight portions of the plastic needles are clenched and securely anchored in place. The clenched portions of the needles are denoted, generally stated, at **24,** these anchored portions also being referred to as the bight or median portions of the respective distributively arranged plastic pliant needles. The outwardly flaring and radiating end portions or half portions of the needles are denoted at **26.** Certain of these needles are shown in FIG. **1** compressed and forcibly confined in the bore of the sleeve and the ordinary right angularly projecting needles are designated, generally stated, at the left in FIG. **1,** as at **28.**

After the branch **16** is lined up and forced into the bore of the sleeve it will be evident that it will be allowed to remain in place for an interval of time in order to subject the median bunched portions of the needles to the heat treating step. The means which achieves this end may vary in actual practice but is here shown as electrical and is characterized by a rheostat **30,** fuse **32,** switch **34** and source of electrical energy supply is designated at **36.** The free end portions of the wires, that is the portions **38** and **40** are so arranged and constructed that contact elements or clips **42** thereon can be and are electrically engaged with the exposed end portions of the stem or core with the result that when the current is turned on by way of the switch, the stem-like core becomes a momentary heating rod and achieves the set anchored and needle-slanting result desired and evident, it is believed from FIG. **2.**

When the confining and heat-treating step is completed it will be evident that the branch is bodily removed to make way for the next and succeeding branch (not shown).

It will be evident that FIG. **3** serves merely to exemplify the fact that the overall concept involves not only an individual slanted needle branch but a branch wherein auxiliary twigs are utilized, the twigs being constructed the same as the main branches.

A careful consideration of the views of the drawing, particularly FIGS. **1** and **2,** will enable the reader to obtain a clear and comprehensive understanding of the subject matter of the invention and certain of the features and advantages which are worthy of recognition. While the specific embodiment of the invention disclosed relates to a Christmas tree, it is pointed out that slanting needle arrangements may be used in connection with all types of decorative items such as shrubbery or the like and can be used in making brushes or the like. The specific temperature to which the wires are heated may be varied depending upon the dimensional and other characteristics of the thermoplastic bristles.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed is:

1. In combination, a tubular member having unobstructed inlet and outlet ends, an insertable and removable prefabricated self-contained brush, said brush comprising an elongated stem-like core made up of a pair of like intertwisted core wires and complemental pliant bristles of thermoplastic plastic material which have median portions nested and retentively clenched between the twisted convolutions of said core wires, the diameter of the tubular member being less than the brush whereby flexible bristle half-portions projecting radially from the locale of said core will be obliquely angled when the brush is inserted through the tubular member, and electric current conducting wires connected to the end portions of the core wires outwardly of the ends of the tubular member for heating said core wires and subjecting the clenched median portions of said bristles to heat and causing the same to be reset while obliquely angled and in so doing setting the half-portions with a slant from the core toward one end of said core.

2. The method of fabricating an artificial branch having a plurality of thermoplastic needles extending transversely to a twisted wire pair and held therebetween by frictional engagement which consists of the steps of deflecting the needles longitudinally of the wires, heating the wires by passing electric current therethrough to soften the needles held therebetween and maintaining the needles in deflected position while electric current passes through the wires and until the needles are cooled and reset in their deflected position.

3. The method as defined in claim **2** wherein the step of deflecting the needles includes the step of passing the twisted wire pair and needles through means to deflect said needles at a predetermined angle to the axis of said wires prior to passing electric current through the wires.

4. Apparatus for fabricating artificial branches consisting of a pair of central wires twisted together to frictionally hold a plurality of short thermoplastic needles positioned between said wires comprising means to bend said needles at a predetermined angle to said wires and means to heat said wires to sufficiently soften said needles by heat transfer from said wires to said needles, said heating means including electric conducting wires connected to the central wires at longitudinally spaced ends to pass electricity through the central wires for heating the central wires, said means to bend said needles including a tubular member having an unobstructed inlet end and an unobstructed outlet end at a substantially uniform internal bore of less diameter than the needles for deflecting the needles when the branch is inserted longitudinally through the tubular member, said electric wires being connected to the central wires outwardly of the inlet end and outlet end of the tubular member thereby requiring the needles to be bent to a predetermined angle prior to heating of the central wires and requiring disconnection of the electric conducting wires prior to removal of the branch from the tubular member.

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