

Aug. 1, 1961

M. J. LALICK

2,994,252

CONSTRUCTION OF ARTIFICIAL TREE

Filed July 20, 1959

3 Sheets-Sheet 1

FIG. 1.

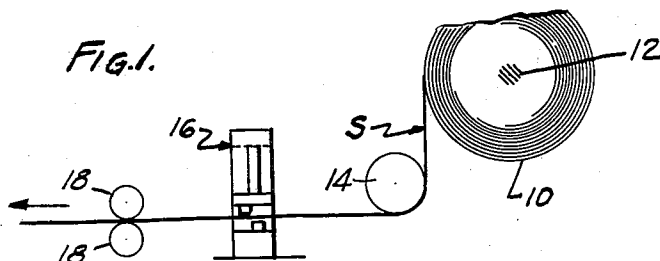


FIG. 2.

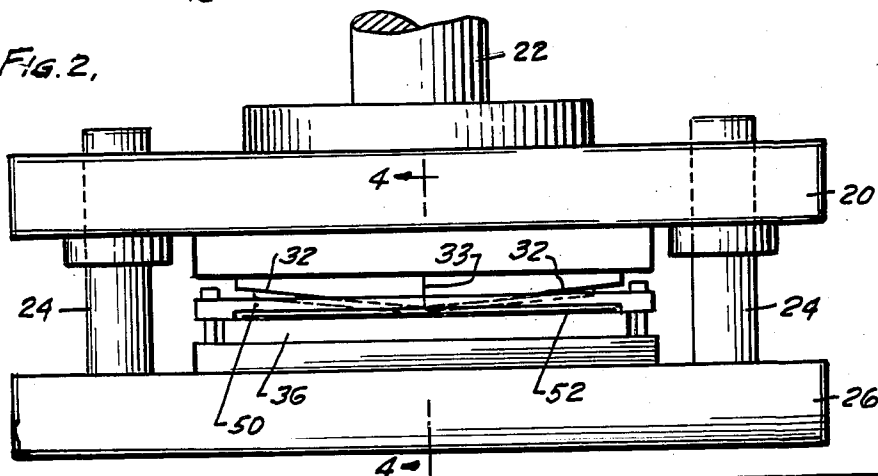


FIG. 4

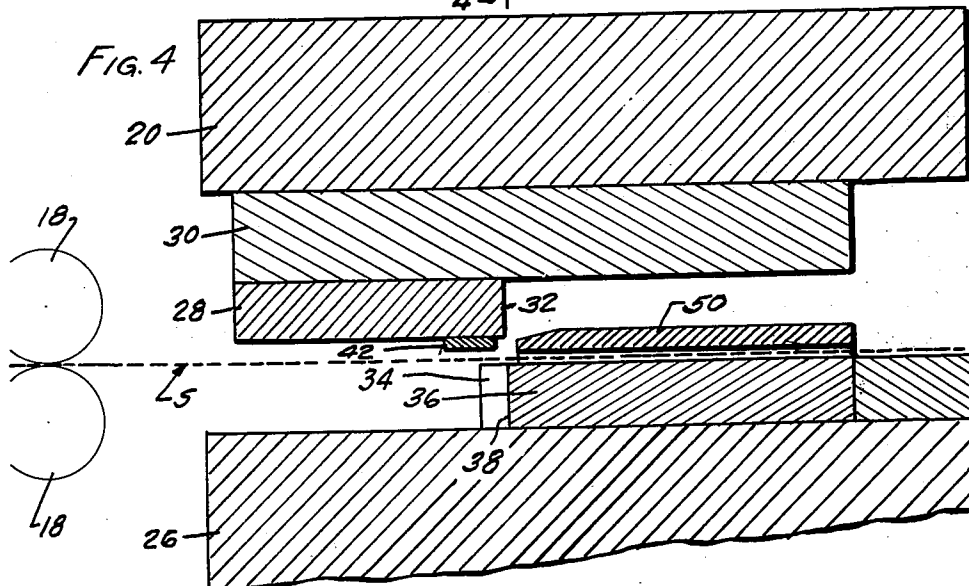


FIG. 4-A.

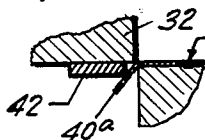


FIG. 4-C

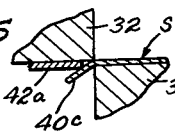
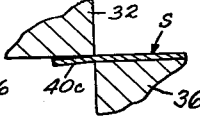


FIG. 4-D



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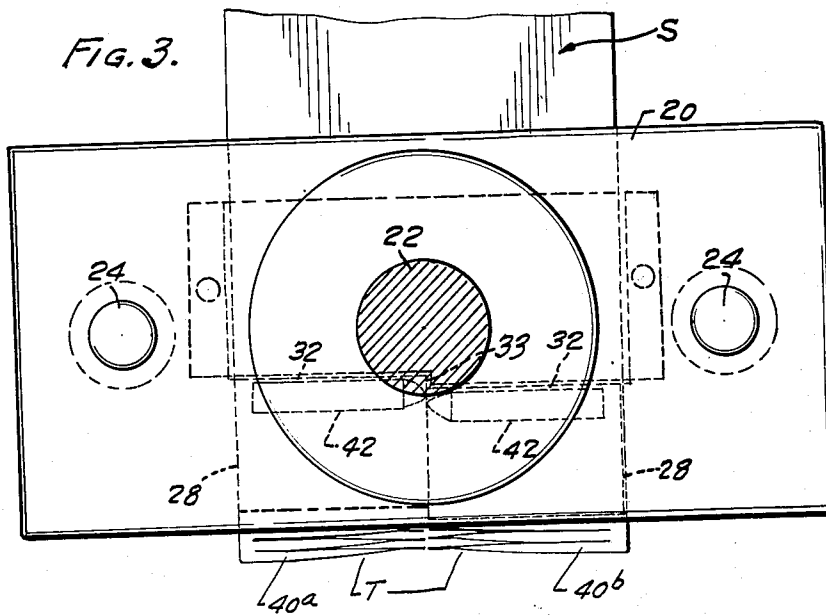


FIG. 5.

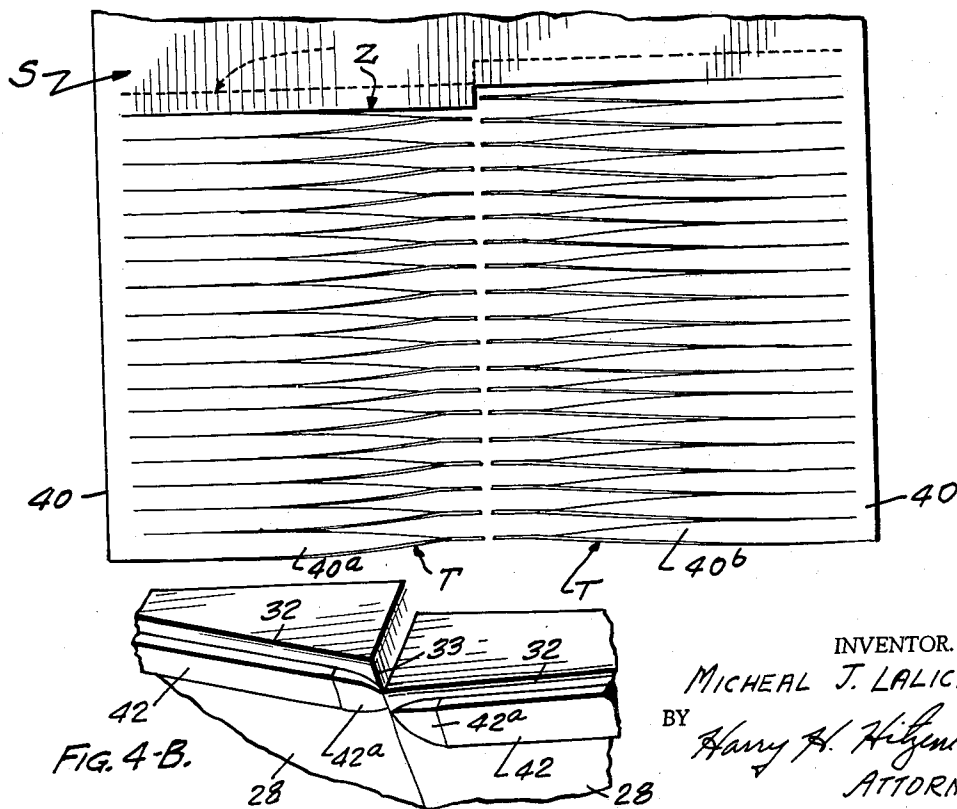


FIG. 4-B.

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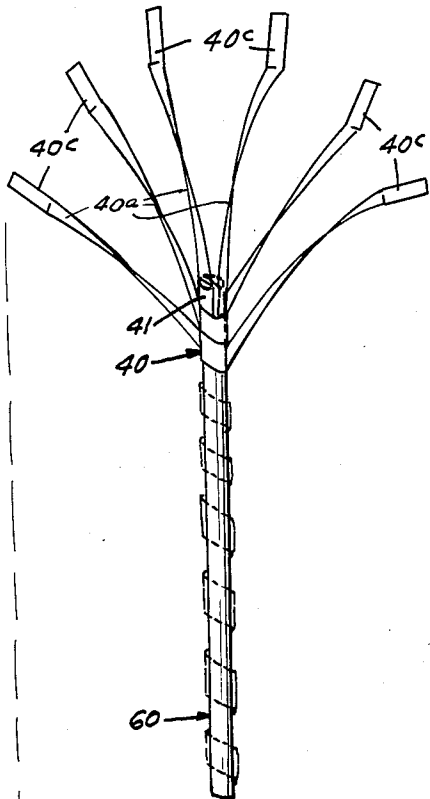


FIG. 7.

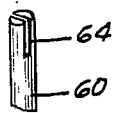


FIG. 8.

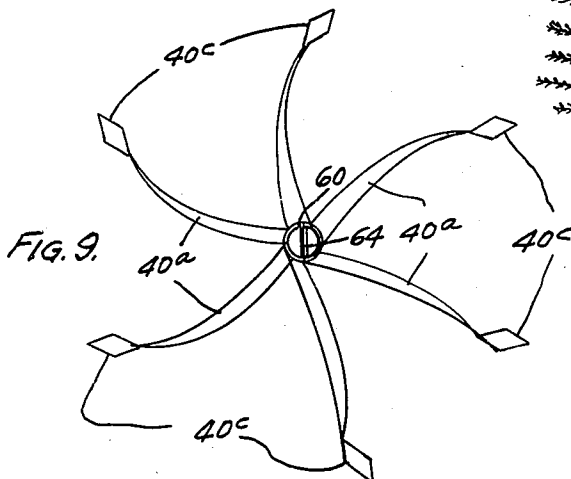


FIG. 9.

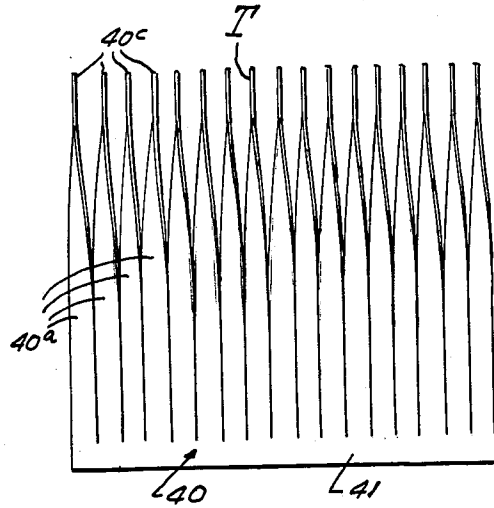


FIG. 6.

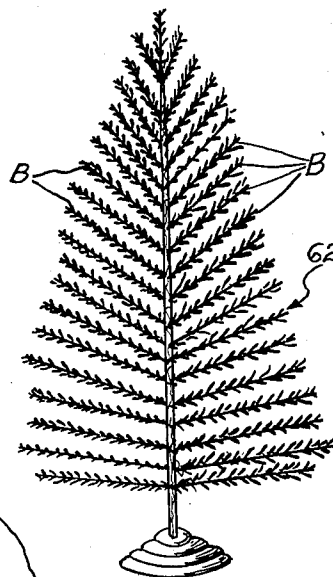


FIG. 10.

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CONSTRUCTION OF ARTIFICIAL TREE

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3 Claims. (Cl. 93-1)

My invention relates to improvements in the construction of artificial trees.

My invention relates more particularly to the construction of the branches of these trees.

Artificial trees have been in use for some time for interior decorating, window displays and for other purposes. In recent years such trees have been made with a central trunk having rows of holes therein for receiving removable branches which are fixed in the openings to build up a tree of desired size. The branches are metal rods which usually have a ribbon of slitted metal foil wound on the same to produce a dense appearing artificial foliage.

The principal object of my invention is to provide an improved type of artificial branch and an improved method of making the same.

A further object of the invention is to provide an improved method of cutting and slitting a strip of metal foil to make the fingered strips that are spirally wound on the metal rods to simulate branches.

A further object of the invention is to provide improved mechanism for receiving a strip of metal foil and cutting and curling the same to provide two rows of fingered foil simultaneously so that the manufacture of the same can be rapidly done and the cost of this operation greatly reduced.

A further object of the invention is to provide slots in the extended ends of the rods of which the branches are made for receiving one end of the fingered strip so it can be wound spirally about the rod and the other end fastened near the end of the rod to be secured in the trunk.

Other objects and advantages will be more apparent from the following description wherein reference is had to the accompanying drawings, upon which:

FIG. 1 is a side elevational view of mechanism for making a double row of foil strips, slitting and cutting the fingered strips which are wound on the rod to make the branches;

FIG. 2 is a front view thereof;

FIG. 3 is a plan sectional view taken generally on the line 3-3 of FIG. 2;

FIG. 4 is a cross-sectional view taken on the line 4-4 of FIG. 3;

FIG. 4-A is a fragmentary changed position view of the shearing knives shown in FIG. 4;

FIG. 4-B is a fragmentary perspective view of the three (3) intersecting knives;

FIGS. 4C and 4D are shearing position views similar to FIG. 4A.

FIG. 5 is a fragmentary plan view of a strip of foil that has been cut as it is being fed through the cutting mechanism;

FIG. 6 is a fragmentary plan view of the slitted strip with spirally fingers which is ready to be applied to a branch rod;

FIG. 7 is a perspective view of the slitted strip of FIG. 6, being spirally fastened on the branch rod;

FIG. 8 is a fragmentary view of the top end of the rod;

FIG. 9 is a plan view of the completed branch of FIG. 7; and

FIG. 10 is a front elevational view of an artificial tree constructed with branches that are made in accordance

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with the process of this invention and the mechanism that is used.

In the embodiment of the invention which I have chosen to illustrate and describe the same, I have shown somewhat diagrammatically in FIG. 1, mechanism for producing metal foil strips having a continuous longitudinal edge and finger-like fringe extending therefrom. As hereinbefore stated, the mechanism not only cuts or slits the strip, but also curls the same simultaneously so that the branches have a fuller appearance when complete.

A roll 10 of strip metal foil S of desired width may be mounted on a supporting shaft 12 from which it extends to and passes under guide roller 14 through the die-cutting unit 16 and through pull rollers 18, driven at the desired speed to produce fingers of a determined width.

The die-cutting mechanism may include a reciprocating die-holder 20 which is actuated by a centrally disposed operating rod 22 fastened to the top of the die-holder. The die-holder is guided in its up and down movement on a pair of guide-posts 24 which are mounted on the stationary die-block 26.

The reciprocating die-holder 20 has a pair of shearing knives 28 fastened to a backing plate 30, the cutting edges 32 of the two (2) knives being in parallel alignment, but staggered or separated to provide the cross-cutting edge 33 (FIG. 4-B).

The stationary die-block 26 has a shear block 36 fixedly mounted thereon, the shear block having the shear edges 38 aligned with the cutting edges 32 of the knives 28 and a cross-wall 34 aligned with the cross-cutting edge 33 of the shear.

With this construction, when the strip S is passed through the cutting dies, a Z-shaped cut Z (FIG. 5) is made in the strip so that as the strip moves forward the cut is made and alternate right and left fingers 40^a and 40^b are cut, this making in a single operation two (2) pieces or strips 40, of slitted foil.

Each of the knives 28 has an elongated bar 42 adjacent its cutting edge 32 which acts on the fingers as they are cut to twist the finger in an axis about its longitudinal plane approximately 90°. This bar, plus the fact that the knife edges 32 are on a taper sloping away from the center curls the finger from its tip inwardly to the base of the fingers, resulting in the twist T shown in FIG. 5.

I have found, however, that by making an end portion of each finger flat, the ends of the strips when helically wound on a rod so that the fingers form spirals, have a light reflecting quality similar to the facets of brilliant stones. Thus, properly illuminated, a tree with thousands of these reflecting "flats" gives the appearance of a tree covered with diamonds.

The ends 40^c of the fingers are kept from turning during the curving action because they are held against curling by the flattened extensions 42^a of the blocks 42. This is illustrated by additional views FIGS. 4C and 4D which show how the angle of the cut fingers straightens out when there is no shoulder or block 42. I have found by experimentation that if blocks 42 end without the sloping extensions 42^a, the cut results in forming a nick or notch at this point ahead of the flattened end. Therefore as shown in FIG. 4B, I have added the tails or sloping ends 42^a extending forward from the ends of the blocks 42. The entire strip is lubricated by a thin film of de-odorized kerosene during the die-cutting action and is also held against raising with the cutting edge 32 by the stripper bar 50 which is over and spaced from the stationary shear 36. It defines an elongated flat opening 52 through which the strip passes.

The strips 40 may now be applied to an elongated rod 60 and wound around the same to provide the branch B of the artificial tree 62. It is necessary to attach the

end of the strip 40 to the end of the rod 60. For this purpose, I provide a slot 64 in the end of rod 60. The binding edge 41 of the strip is inserted in the slot 64 and by turning the rod 60 the strip is wound around the end a complete turn and then started to helically wind around the length of the rod to a point adjacent its other end where it may be glued, welded or otherwise adhered to the rod. This end of the rod, or the branch which has now been formed by this combination may now be inserted into a hole in the vertical trunk of the tree and by repeating this process, an artificial tree such as shown in FIG. 10 is made.

By the process described, and with the improved mechanism shown, the fringe strips described are quickly and economically made. By the use of a construction which includes the flats or facets on the ends of each finger, a greater brilliance is noted in the appearance of trees made by my process.

I contemplate that changes and modifications may be made in the steps described or in the structure of the mechanism shown and I do not wish to be limited in any particular; rather what I desire to secure and protect by Letters Patent of the United States is:

1. The method of making two slitted metal foil ribbons simultaneously, which comprises moving a strip of metal foil forward between male and female cutting dies, said dies arranged with each impression to make a transverse cut medial of said strip from the center line of the strip out to a point adjacent the side edge, a short cut in alignment with said strip, and then an extension of said transverse cut to a point adjacent the opposite side edge of said strip simultaneously, thereby forming a double row of ribbons, each having a continuous row of transverse fingers extending from one edge of the same with no space between the fingers.

2. The method of slitting a strip of metal foil which comprises running the ribbon of metal foil between male and female cutting dies and with said cutting dies making

simultaneously a transverse cut from a point near one side edge of said strip to the longitudinal center of said strip, a short cut at this point in alignment with said ribbon and a transverse cut from one end of said short cut to a point adjacent the opposite side edge of said strip, thereby forming two foil strips each having an uncut edge and a row of spaced fingers extending transversely therefrom with no space between the fingers, a portion of each finger to be curled about its own axis approximately 90°.

3. The method of slitting a strip of metal foil which comprises running the strip of metal foil between male and female cutting dies and with said cutting dies making simultaneously a transverse cut from a point near one side edge of the strip to the longitudinal center of said strip, a short cut at this point in alignment with said strip and a transverse cut from one end of said short cut to a point adjacent the opposite side of said strip, thereby forming two foil strips each having an uncut edge and a row of spaced fingers extending transversely therefrom, said dies also causing a portion of each finger to be curled around its own axis 90° to a point near its end and also causing the portion of said finger from there to its end to be flat and uncurled.

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