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DECORATION FOR CHRISTMAS TREES

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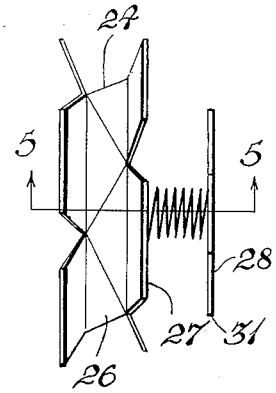


FIG 4

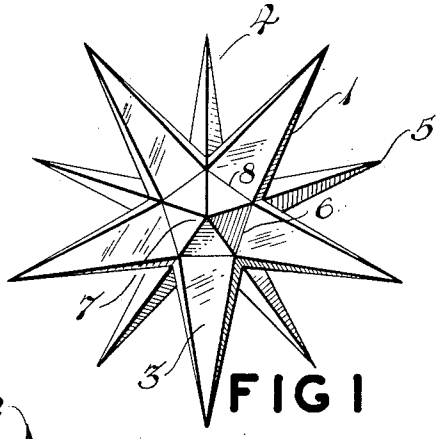


FIG 1

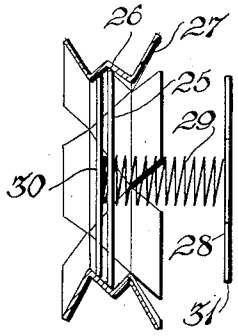


FIG 5

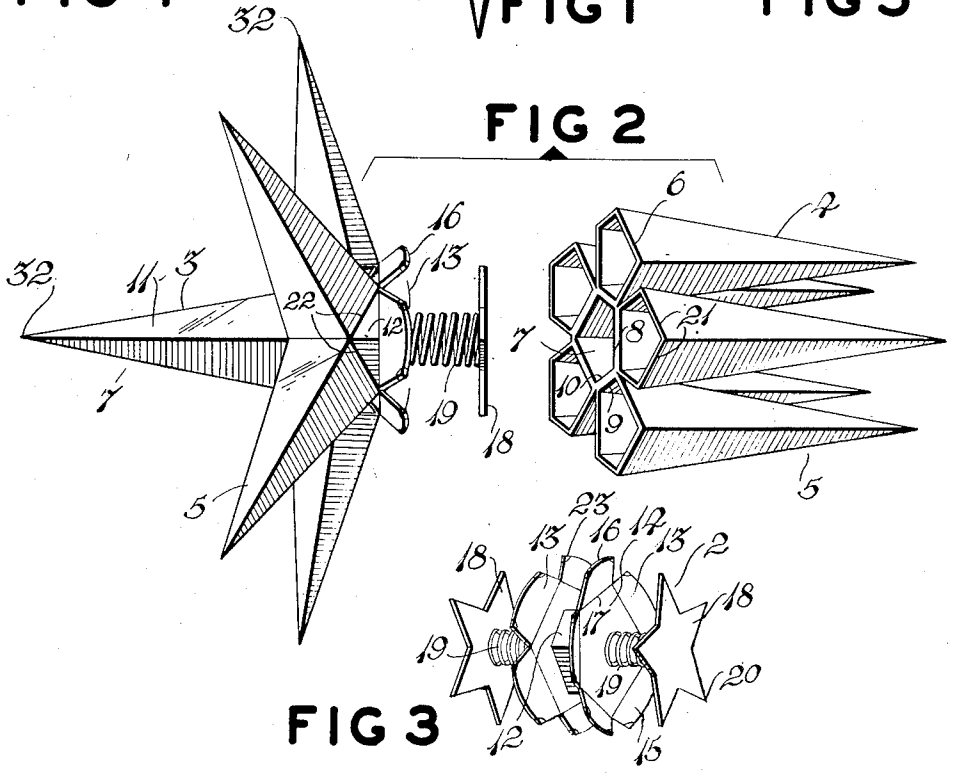


FIG 2

FIG 3

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DECORATION FOR CHRISTMAS TREES

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5 Claims. (Cl. 41—11)

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My invention relates to new and useful improvements in decorations particularly suitable for use as Christmas tree decorations or in advertising display, an object of my invention being to provide a device of the character herewithin described taking the form of a multi-dimensional star or the like which may readily be assembled or disassembled as desired.

A further object of my invention is to provide a device of the character herewithin described which does not require a relatively large box or container thereby facilitating storage, shipping and the like.

Another object of my invention, in conjunction with the foregoing object, is to provide a device of the character herewithin described in which the decoration is protected from damage during transit and storage.

A still further object of my invention is to provide a device of the character herewithin described in which the components are designed to nest one within the other by which means a plurality of components may be packaged together each one protecting the other.

Yet another object of my invention is to provide a device of the character herewithin described in which the spring tensioning of the connecting and holding assembly maintains the individual points rigid and in position when assembled.

A yet further object of my invention is to provide a device of the character herewithin described which may readily be adapted to produce multi-dimensional star or the like having four, six, eight, twelve or twenty points as will hereinafter be described.

A still further object of my invention is to provide a device of the character herewithin described which, when assembled, is fully interlocked giving the appearance of a solid structure.

A yet further object of my invention is to provide a device of the character herewithin described which may be manufactured from paper foil or the like, the points being hollow thereby making the assembled device relatively light in weight.

Yet another object of my invention is to provide a device of the character herewithin described which is economical in manufacture, simple in construction, and otherwise well suited for the purpose for which it is designed.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

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Fig. 1 is a perspective view of my device in the assembled condition.

Fig. 2 is a perspective side elevation of my device showing one component assembled on to the connecting-and-holding assembly, the other component being in position for assembly.

Fig. 3 is a perspective view of my connecting-and-holding assembly per se.

Fig. 4 is a side elevation of an alternative form of connecting-and-holding assembly with one tensioning disc extended, the other being retracted.

Fig. 5 is a section along the line 5—5 of Fig. 4.

In the drawings like characters of reference indicate corresponding parts in the different figures.

Due to the extreme fragility of multi-pointed, hollow, decorative stars, considerable difficulty is experienced in packaging same either for storage or transportation and, even under favourable conditions, the points or extremities of the decorations usually become damaged readily thereby spoiling the appearance of the decoration.

In order to overcome these disadvantages, I have designed a decoration hereinafter to be described which is readily assembled or disassembled as desired and which furthermore, permits the individual components to nest one within the other, thereby offering protection to the points thereof.

Proceeding now to describe my invention in detail, it will be seen upon reference to the accompanying drawing that I have illustrated a twelve-pointed star 1 comprising a connecting-and-holding assembly collectively designated 2 and a pair of multi-membered components 3 and 4. The components 3 and 4 comprise, in this embodiment, six hollow polyhedrons or pentagonal pyramids 5 being open ended at the polygonal bases 6 thereof. In this embodiment, the pyramid specifically designated 7 has been designated the primary member or pyramid, the remaining five members being hingedly secured around the base thereof specifically designated 8.

Reference to Fig. 2 of the accompanying drawings will show that each member 5 is hinged by one side 9 of the base 6 thereof to the sides 10 of the aforementioned base 8 of the primary member 7. In this connection I desire to mention that the hinge connection between the members 5 and the primary member 7 may comprise a cellulose tape or other similar material permitting

the members 5 to be folded back against the sides 11 of the pyramids 7 as shown in the right hand portion of Fig. 2 or to be opened out as shown in the left hand portion of Fig. 2.

The components 3 and 4 are maintained in the assembled position by means of the connecting-and-holding assembly 2. In the embodiment of this assembly shown in Fig. 3, a spacer or distance piece 12 is flanked by a pair of parallel member-engaging flange-discs 13 each consisting of a central portion 14 secured to the distance piece 12 and having a series of out-turned flanges 15 formed around the perimeter thereof. The flanges 15 are of elongated rhomboid configuration, the outer edges 16 thereof being shorter than the bases 17 thereof.

A tensioning disc 18, which in this embodiment, takes the form of a five-pointed star, is secured centrally to the aforementioned flange discs 13 by means of a relatively light coil spring 19 as clearly shown in Fig. 3.

To assemble the decoration, the primary member 7 of the component 3 is held, the surrounding members 5 inclining backwardly towards this member as shown in the right-hand section of Fig. 2. The star-shaped tensioning disc 18 is placed upon the base 8 of the primary member 7, the points 20 of the disc 18 each overlapping a side 10 of the base 8 of the primary member 7.

The primary member 7 is now urged towards the centre of the connecting-and-holding assembly thereby compressing spring 19 and at the same time permitting the surrounding members 5 to be opened outwardly and engage over the flanges 15 each one of which will enter the hollow members 5.

When the flanges are engaged within the interiors of the members 5, pressure is relaxed thereby permitting the spring 19 to extend slightly and exert a pressure against the primary member 7. However, due to the angle at which the flanges 15 are situated within the surrounding members 5, the component is held firmly in place as shown in the left-hand section of Fig. 2. In this connection it is to be noted that the corners 23 of the flanges 15 engage adjacent outer sides 6 of the components 5, and that with the spring 19 exerting pressure between the base of the primary member 7 and the inner surfaces of the outer sides 6 of the members 5, the component 3 is held locked onto the assembly 2. The foregoing procedure is now repeated with the right-hand component 4 and it will be observed from Fig. 3 that the flange discs 13 are staggered radially with relation to one another thereby permitting the members 5 of the component 4 to interlock around the corresponding bases of the members 5 upon the components 3. In other words, the junction between two adjacent sides specifically designated 21 of one of the members 5 will be coterminous with the obtuse angled aperture formed between the sides 22 of the bases of the surrounding members 5 of the components 3. It will be obvious that, if desired, the bases of the members may be solid in which case an elongated slot may be provided for the engagement and retention of the flanges but it is considered that this method of construction would offer considerable more difficulty than the one hereinbefore described.

When fully assembled, it will be appreciated that the bases 6 of all the members 5 enclose or form a dodecahedron or regular polyhedron, and that the connecting-and-holding assembly 2 is fully enclosed and surrounded thereby.

In this connection it will be appreciated that if desired, the structure may be adapted to form any regular polyhedron having four, six, eight, twelve or twenty sides. However, under these conditions it may be necessary to have more than one primary member around which the remaining members may be hingedly secured substantially as hereinabove described.

When it is desired to dissassemble the decoration, the two primary members 7 should be urged towards one another thereby compressing springs 19 and permitting the surrounding members 5 to be disengaged from the holding-and-connecting member 2.

In order to assist in the frictional adhesion between the flanges 15 and the interior of the members 5, I have tipped the engaging corners 23 thereof with rubber solution or the like which substantially increases the holding qualities of the assembly.

Figs. 4 and 5 describe an alternative connecting-and-holding assembly collectively designated 24 which functions in a similar manner to the assembly 2 hereinabove described. The assembly depicted in Figs. 4 and 5 comprises a diaphragm 25 having an acutely angulated rim portion 26 which acts in a similar capacity to the aforementioned spacer 12 in the previous embodiment. Flanges 27 extend from this rim and function in a similar manner to the flanges 15.

The tensioning disc 28 attached to the diaphragm by means of the coil spring 29 is designed to be stored within the acutely angulated rim 26 during transit or the like and in Fig. 5 this diaphragm is shown in the retracted position by the reference character 30. In this connection it will be appreciated that the points 31 of the disc 28 are turned to align with the angle formed between adjacent flanges 27 whereupon it may be entered within the rim 26, a partial turn then locking same behind the rim until required.

In conclusion I desire to mention that storage and transportation of these decorations is facilitated by the ability of the components 3 and 4 to be nested one within the other. Reference to the right-hand section of Fig. 2 will show the component 4 in a position to receive component 3 when folded similarly and reversed so that the points 32 of the members 5 and 7 will enter the corresponding members of component 4. By this means several such components may be nested together each one protecting the point of the one that it encloses.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

1. A multi-dimensional decoration comprising in combination a connecting-and-holding assembly, a pair of multimembered components detachably secured thereto, said connecting-and-holding assembly comprising a distance piece, a pair of parallel member-engaging flange-discs secured thereto, one on each side thereof, and a spring loaded tensioning disc secured to each of said member-engaging flange-discs, each of said pair of components including at least one primary member having a polygonal base, and a plurality of members having bases similar to said polygonal base, each hingedly secured by

one edge thereof to adjacent edges of the polygonal base of said primary member, said components being adapted to be detachably secured to said connecting-and-holding assembly so that in situ the members of said components substantially surround and enclose said connecting-and-holding assembly and extend therefrom in symmetrical array, each of said primary members being positioned against each of said tensioning discs and compressing same against said flange discs, a pair of adjacent sides of each of said other members engaging over the edge of said flange discs and being held thereby under tension exerted by said spring loaded tensioning discs.

2. The decoration according to claim 1 in which said connecting-and-holding assembly comprises a central distance piece, a member-engaging flange-disc secured to each side of said distance piece, out-turned flanges around the perimeter of each disc, and a spring loaded tensioning disc secured to and extending from each of said flange-discs.

3. The decoration according to claim 1 in which said connecting-and-holding assembly includes a distance piece comprising a centrally disposed diaphragm, an acutely angulated rim portion extending around the perimeter of said diaphragm, out-turned flanges secured around the perimeters of said rim portion, and spring loaded tensioning discs secured to and extending from each side of said diaphragm.

4. The decoration according to claim 1 in which said connecting-and-holding assembly comprises a centrally disposed distance piece, a

flange-disc secured to each side of said distance piece, said flange-discs being in parallel relationship, a series of out-turned flanges spaced around the perimeters of each of said flange discs, frictional adhesion means on said flanges, spring means secured centrally to each of said flange-discs and extending upwardly therefrom, and polygonal tensioning discs attached to the extremities of said spring means.

5. The decoration according to claim 1 in which said connecting-and-holding assembly comprises a centrally disposed diaphragm, an acutely angulated rim portion around the perimeter thereof and extending upon each side thereof, out-turned flanges spaced around the perimeters of said rim portion, frictional adhesion means upon said flanges, spring means extending centrally from each side of said diaphragm, and polygonal tensioning discs secured to the extremities of said spring means, said tensioning discs being capable of partial rotation within said rim portion when in the retracted position and adapted to be held thereby.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,407,237	Thompson	Feb. 21, 1922
1,472,520	Grimm	Oct. 30, 1923
1,620,640	Friedrich	Mar. 20, 1927
1,734,954	Arvidson	Nov. 12, 1929
2,067,241	Neidinger	Jan. 12, 1937