

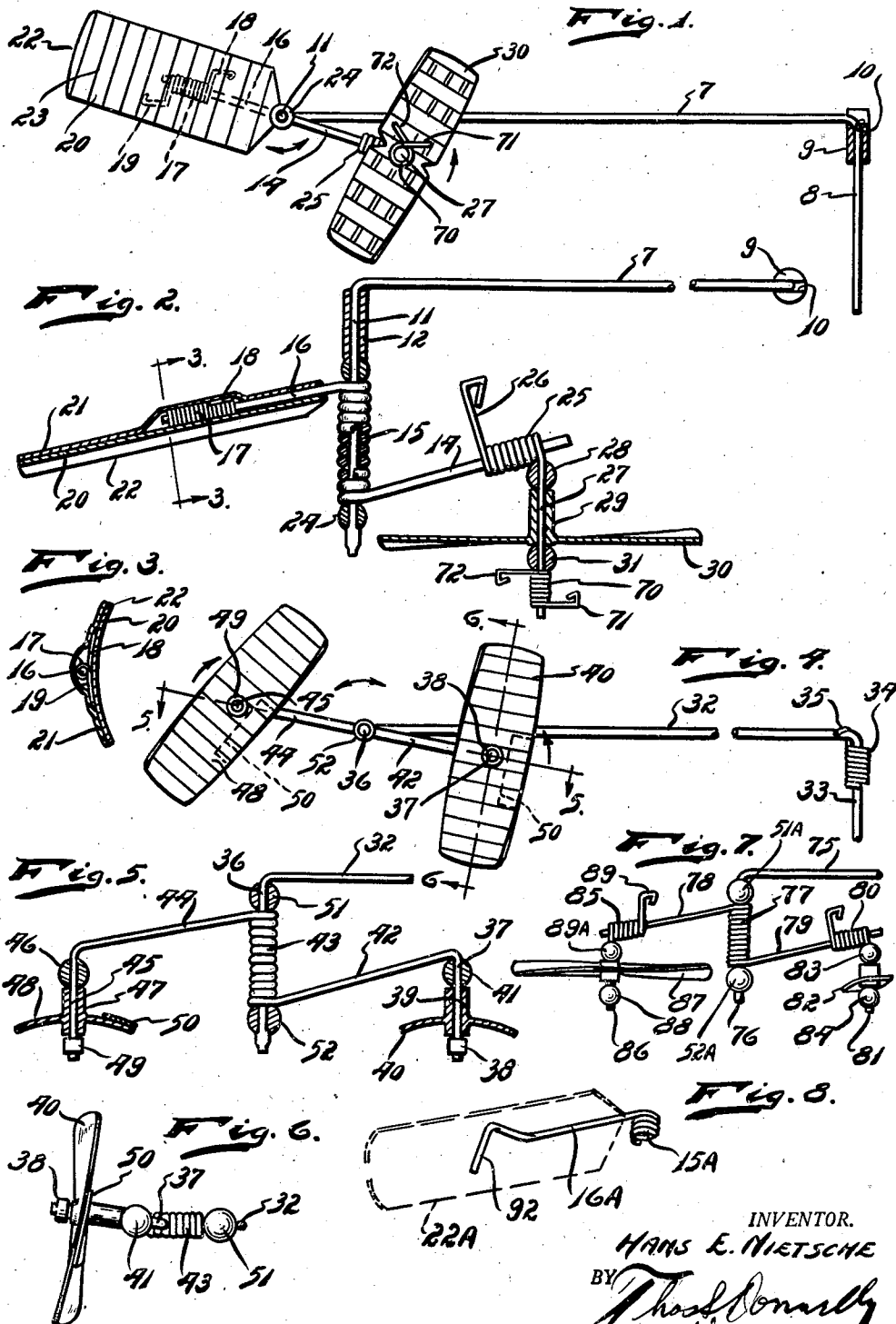
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TOY

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TOY

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My invention relates to a new and useful improvement in a toy of which the following is a specification. The toy is generally of that class which is known as wind wheel embodying a handle and rotatable vanes which will be set in rotation through re-action of the wind either by being swung on the handle or being placed in the path of a draft of wind.

It is an object of the present invention to provide a toy of this class embodying vanes adapted to rotate on an axis on a suitable support and adjustable to various angles relatively to the support.

Another object of the invention is the provision of a toy having rotatable vanes rotating on an axis and adjustable to a support and having a support which is also adjustable.

Another object of the invention is the provision in a toy of this class of rotatable vanes adjustably mounted so as to be movable inwardly and outwardly of the support.

Another object of the invention is the provision of a toy of this class having rotatable vanes mounted on a rotatable support and adjustable relatively to the support.

Another object of the invention is the provision of a toy of this class which will be durable, compact and extremely light.

Another object of the invention is the provision of a toy having vanes so arranged that when rotating on their own axes and when the supports on which they are mounted are rotating various designs may be produced from the coloring on the face of the vanes.

Other objects will appear hereinafter.

It is recognized that various modifications and changes may be made in the detail of structure illustrated and it is intended that such shall be embraced within the scope of the claims which form a part hereof.

Forming a part of this specification are drawings in which,

Fig. 1 is a side elevational view of the invention, Fig. 2 is an enlarged view taken at right angles to Fig. 1 showing parts in section,

Fig. 3 is a sectional view taken on line 3-3 of Fig. 2,

Fig. 4 is a side elevational view of another form of the invention,

Fig. 5 is a sectional view taken on line 5-5 of Fig. 4,

Fig. 6 is a sectional view taken on line 6-6 of Fig. 4,

Fig. 7 is a side view of another form of the invention,

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Fig. 8 is a fragmentary view of a further modified form of the invention.

In the toy I use a supporting member 7 formed from a piece of wire and having the angularly turned handle-forming end 8 on which is mounted a thumb-piece 9 formed from plastic, wood, rubber or the like and having a notch 10 so that the member 9 can not rotate relatively to the angularly turned handle-forming end 8. The member 7 has its opposite end angularly turned to provide the supporting portion 11 on which is mounted a spacing sleeve 12. A wire 14 is coiled into the coil 15 through which the portion 11 projects so that the coil 15 is rotatably mounted on the portion 11 and retained in position by the abutment ball 24. The opposite end of the coil 15 extends outwardly to provide the supporting rod 16 which projects through a coil of wire 17 having the ends 18 and 19 projecting outwardly in opposite directions. A vane or blade which is generally designated by the numeral 22 is provided with the layers 21 and 20 between which the angularly turned end 16 projects and between which lie the coil 17 and its ends 18 and 19. This coil 17 serves as a means for mounting the vane or blade 22 on the wire end 16. The mounting is such however, that the blade 22 may be rotated on the axis 16 when the rotating thrust is directed against the ends 18 and 19 in one direction the coil 17 being a snug fit on the wire end 16 and ordinarily preventing rotation of the vane or blade 22 on its support.

The wire 14 projects through a wire coil 25 projecting outwardly from which are the ends 26 and 27 of the wire. The wire 27 serves as a support for the hub 29 of the vane or blade 30 which is rotatably mounted on the portion 27 and which is held against limited axial movement on the portion 27 by the balls 28 and 31 which are mounted on the portion 27. The assembly comprising vane 30, balls 28 and 31 are locked on wire 27 by coil 70 having ends 71 and 72. The mounting is such that moving the ends 71 and 72 against the winding of the coil will relax the tension of the coil permitting its removal. Similar mounting of the coil 25 on the wire 14 is such that when the ends 26 and 27 are pressed in one direction the coil 25 may be rotated on the wire 14 this pressing is against the winding of the coil 25 so that it relaxes the tension of the coil on the member 14. When this rotating thrust which has a tendency to un-wind the coil 25 or relax the tension thereof is released the coil will securely grip the portion 14 so that further rotation can not be effected.

Indicia 23 is on the face of the blade 22 and similar indicia or painting is portrayed on the face of the blade 30. It is preferred that these faces of the blades be vari-colored and preferably in bright colors. The construction is such that when the user holds the handle-forming portion 8 in the hand with the thumb on the thumb-piece 9 the member 7 may be rotated with the portion 8 as an axis the index finger and the thumb-piece engaging the portion 9 to facilitate this rotation. When the blades 22 and 30 are at the proper angle a rotation of the member 7 with the portion 8 as an axis will effect a rotation of the coil 15. The blade 30 will also rotate on its axis so that one of the blades is rotating on an axis which is supported on a rotatable support and the other is carried directly on the support and rotating about the axis 11. With one of the blades carried by a rotating support as shown in Fig. 1 and stationary on its own axis with the other blade carried by the same rotatable support and rotating on its axis a pattern is developed as the speed of rotation of the two blades varies. This pattern will of course change depending upon the speed of rotation. Many patterns will develop and they change instantaneously with a sort of kaleidoscopic effect. The formation of these various patterns renders the toy quite interesting to a child and even to adults.

By rotating the blade 22 on the wire 15 the speed of rotation of the coil 15 about the wire 11 may be varied and the direction of rotation may be varied. This also makes it possible to vary the pattern which may be formed. By rotating the coil 25 on the wire 14 or the blade 22 on the wire 16, the direction of rotation of the coil 15 may be varied and the speed of rotation may be varied. This adjustment of the blades 22 and 30 will also effect the speed of rotation and the direction of rotation on the coil 15. This variation in speed and direction of rotation will of course vary the pattern which is developed by the rotating blades and adds considerable to the desirability of the toy.

In Fig. 4, I have shown a slightly different form of construction in which the supporting member 32 corresponds to the supporting member 7 of Fig. 1. This member 32 is preferably made from wire or other light material and has the angularly turned handle-forming end 33 on which a coil 34 is mounted as a thumb-piece, the end 35 of the coil being locked about the member 32. The wire member 32 also has the angularly turned end 36 which projects through the wire coil 43 so that the coil 43 is rotatably mounted on the portion 36 and abuts at its ends with the members 51 and 52. The end 42 of this wire coil has the angularly turned end 37 on which is mounted the hub 39 of a blade or vane 40. Abutment members 38 and 41 are mounted on the wire portion 37. The opposite end of the coil has the outwardly projecting portion 44 which is angularly turned to provide the axle-forming portion 45 on which is mounted rotatably the vane or blade 48 held in position by the abutment members 46 and 49 which may engage opposite ends of the hub 47 of the vane or blade 48. The ends 37 and 45 are each angularly inclined from the axis 36. Abutment members 51 and 52 are mounted on the wire portion 36 to engage opposite ends of the coil 43. Extending along one edge of the blade 48 is a layer 50 of suitable material such as paste, paint or the like which will un-balance the blade 48 transversely and permits one blade to remain stationary on its axis as the other blade increases its

speed of rotation, the unbalanced blade 48 cramping on the wire portion 45. This cramping of the blade hub on the wire in response to the tilting pressure exerted by the member 50 will cause a frictional engagement against the member 45 sufficient to prevent the movement of the blade 48 until a rotation of the coil 43 reaches a pre-determined speed whereupon the blade 48 will, in response to centrifugal force operating upon it straighten out and thus begin to rotate. In the meantime however the blade 40 which does not carry the weight will be rotating at a higher speed. After the blade 48 begins to rotate however its speed will surpass the speed of the blade 40 and when the device is permitted to come to rest the blade 48 will continue to rotate after the blade 40 has come to rest.

The faces of the blades 40 and 48 are suitably colored with various designs and preferably in bright colors so that the pattern forming referred to will be obtained by the form shown in Fig. 4. When rotating the member 32 on the handle-forming portion 33 as an axis the supporting arms 42 and 44 will rotate on the part 36 as an axis and the blades 40 and 48 will rotate on their own axis. It will be noted that the arms 42 and 44 are oppositely inclined so that the abutment members 41 and 46 are in alignment with each other, this alignment being a horizontal alignment when the member 32 is in a horizontal position. This is to provide the necessary balance so that a free and easy rotation of the coil 43 will be effected.

It is desired that the wire from which the coil 43 is made shall be real thin so that the parts 37 and 45 may be bent to extend at different angles to the arms 42 and 44 in this way the adjustment possible in the structure shown in Fig. 1 may also be effected by bending or slightly tilting the parts 37 and 45 relatively to the supporting arms from which they project. This makes it possible to vary the speed of rotation, the direction of rotation and consequently, vary the pattern which is formed.

In Fig. 7 I have shown a further modified form of construction in which the supporting member 75 corresponds to the supporting member 7 or 32 of Fig. 1 or 4. This member 75 is preferably made from wire or other light material and has an angularly turned end 76 which projects through a wire coil 77 so that the coil 77 is rotatably mounted on the portion 76. The ends 78 and 79 of the coil 77 extend outwardly in opposite directions and are inclined so that the tips of ends 78 and 79 are in alignment. Frictionally secured on end 79 is coil 80 having axle forming portion 81 extending coaxially with end 76. A blade or vane 82 is rotatably mounted on axle forming portion 81 and secured thereon by balls 83 and 84. Similarly a coil 85 is frictionally held on end 78 having an axle forming portion 86 extending co-axially with end 76 and mounted rotatably thereon is a vane or blade 87. The vane or blade 87 is held by balls 88 and 89A on axle forming portion 86. Each of the coils 80 and 85 are formed with extending arms 89 to permit pressing the arm 89 against the direction of winding of the coil to relax the tension of the coil on a respective end to permit adjusting the vane or blade on the arm or permit its removal.

In Fig. 8, I have shown a slightly different form of construction from that shown in Fig. 1. The arm 16A, as arm 16 in Fig. 1, extends from coil 15A and is provided with bent portion 92 adjacent its end. The portion 92 is bent so as to extend

angularly across the width of vane or blade 22A to provide rigidity to the vane or blade 22A.

When the handle forming portion, such as the part 8, in Fig. 1, is held in the hand, the member 7 may be caused to rotate with the part 8 as an axis by a pressure of the thumb and index finger on the thumb piece 10, the thumb rolling off of the piece 10, and then returned to repeat this action. This may be used to continue the rotation or it may be resorted to to initiate the rotation which may then be continued by a slight swinging movement of the hand which is holding the part 8. A toy constructed in this manner has proven most efficient and highly attractive and entertaining to children. The various adjusting features are such as to make it possible to add novelty to the toy from time to time because of the variation in pattern formations which are accomplished by the adjustments.

What I claim as new is:

1. A toy of the class described comprising a supporting member; an angularly turned handle forming end on said member; a thumb-piece on said angularly turned end engaging the end of said member and non-rotatable relatively to said angularly turned end; an angularly turned portion on the opposite end of said member; a blade supporting member rotatably mounted on said second mentioned angularly turned end; and a plurality of rotatable blades carried by said blade supporting member.

2. A toy of the class described comprising a supporting member formed from wire and having an angularly turned handle-forming portion at one end; a thumb-piece on said angularly turned portion and engaging the member and non-rotatable on said angularly turned portion; an angularly turned portion at the opposite end of said member extending in a plane substantially at right angles to the direction of turning of the opposite end; a supporting member rotatably mounted on said second mentioned angularly turned end; supporting arms projecting outwardly from said second mentioned supporting member; a blade mounted on each of said arms; and means for mounting the blade on the arm for rotation about the arm and for retaining the blade in fixed relation to the arm.

3. In a toy of the class described, a supporting member formed from wire; an angularly turned portion on one end of said member; a tubular member rotatably mounted on said angularly turned end; a supporting arm projecting outwardly from said tubular member and movable in unison therewith; a blade; and a coil spring connected to said blade and mounted on said arm and normally in fixed relation thereto and adapted upon releasing pressure exerted thereon for rotating thereabout and for being moved longitudinally thereof.

4. In a toy of the class described a wire supporting member; an angularly turned end portion

on said member; a wire coil rotatably mounted on said end portion; an outwardly projecting arm at one end of said coil and inclined longitudinally thereof and having its end angularly turned to extend parallel to the axis of said coil; an outwardly projecting arm on the opposite end of said coil and inclined relatively thereto in the direction opposite to the inclination of said first mentioned arm; an angularly turned portion on said second mentioned arm extending parallel to the axis of said coil; and a rotatable blade mounted on the angularly turned portion of each of said arms, said blades lying in the same plane.

5. In a toy of the class described a wire supporting member; an angularly turned end portion on said member; a wire coil rotatably mounted on said end portion; an outwardly projecting arm at one end of said coil and inclined longitudinally thereof and having its end angularly turned to extend parallel to the axis of said coil; an outwardly projecting arm on the opposite end of said coil and inclined relatively thereto in the direction opposite to the inclination of said first mentioned arm; an angularly turned portion on said second mentioned arm extending parallel to the axis of said coil; and a rotatable blade mounted on the angularly turned portion of each of said arms, said blades lying in the same plane, the angularly turned portions of said arms being bendable to extend at different inclinations relatively to said arms.

6. A toy of the class described comprising a supporting member; an angularly turned handle-forming end on said member; a thumb-piece on said angularly turned end engaging the end of said member and non-rotatable relatively to said angularly turned end; an angularly turned portion on the opposite end of said member; a blade supporting member rotatably mounted on said second mentioned angularly turned end; a plurality of rotatable blades carried by said blade supporting member and one of said blades provided with weights along one edge thereof to vary the relative speed of rotation of said blades.

7. In a toy of the class described a wire supporting member; an angularly turned end portion on said member; a wire coil rotatably mounted on said end portion; an outwardly projecting arm at one end of said coil and inclined longitudinally thereof; an outwardly projecting arm on the opposite end of said coil and inclined relatively thereto in the direction opposite to the inclination of said first mentioned arm, each of said outwardly projecting arms embraced by a respective wire coil, each of said wire coils being movable longitudinally thereof upon the release of the tension of the same and rotatable thereabout, each of said wire coils having an end portion projecting outwardly to provide axles; and vanes rotatably mounted on said axles.

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No references cited.