July 28, 1953 W. RICHMOND 2,646,644

WIND-DRIVEN NOVELTY DEVICE

Filed Feb. 15, 1952

Fig. 1

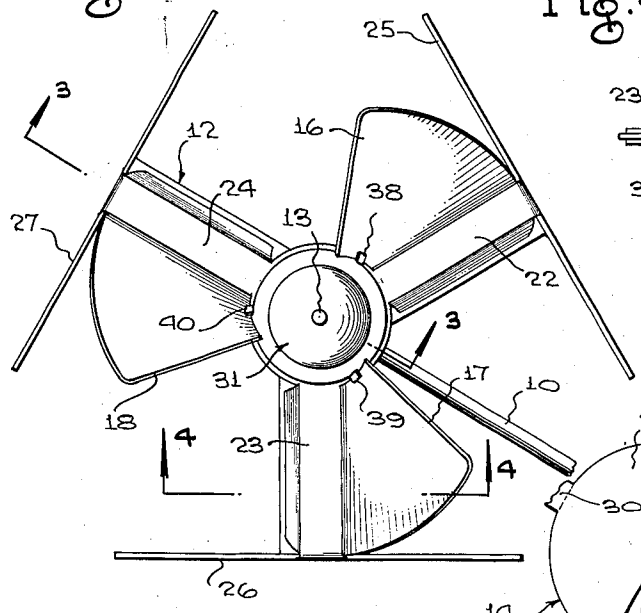
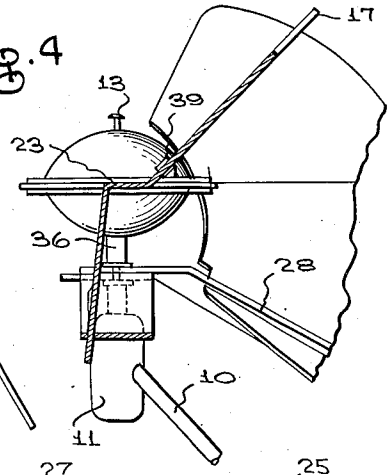


Fig. 4



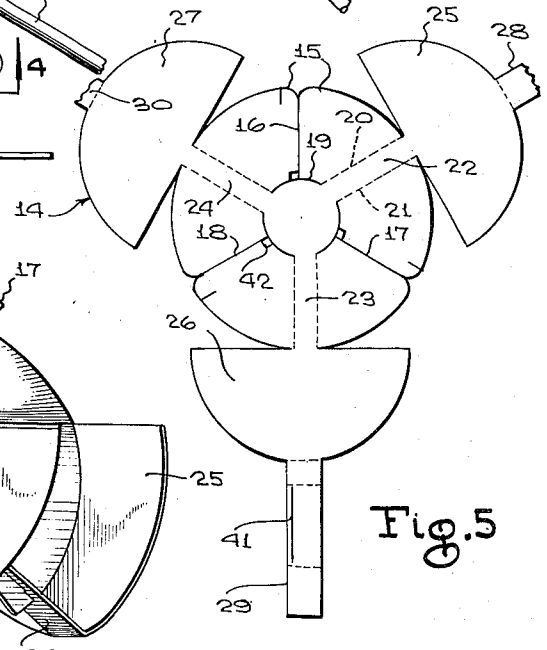
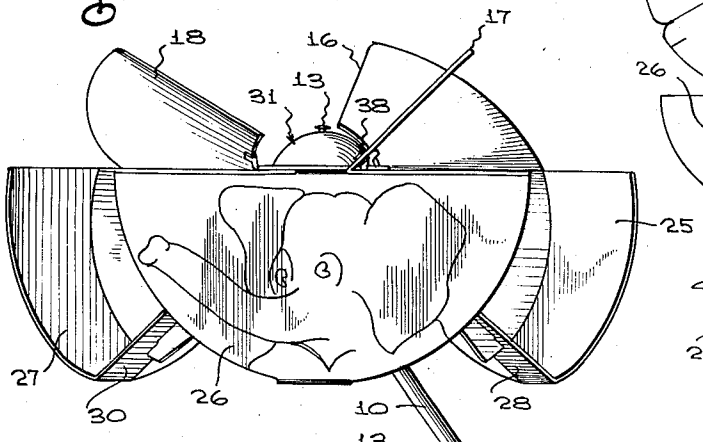


Fig. 5

Fig. 2



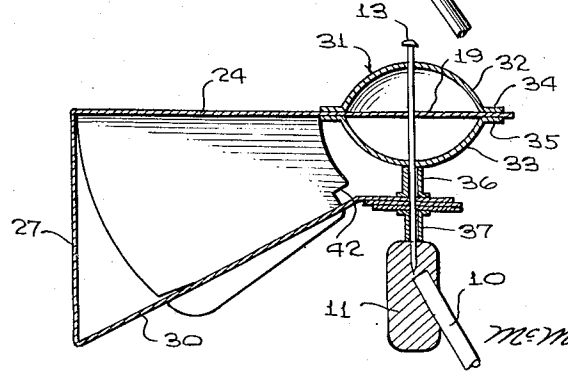


Fig. 3

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WIND-DRIVEN NOVELTY DEVICE

Warren Richmond, Brooklyn, N. Y.

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7 Claims. (Cl. 46—58)

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This invention relates to novelty devices and more particularly to rotatable, wind driven novelty devices and the manner of constructing the same.

It is among the objects of the invention to provide an improved novelty device of light weight and small size which can be easily carried in the hand; which includes a handle portion and a vaned rotor which rotates on the handle portion when subjected to a relative wind; which can be formed principally of an inexpensive and readily available sheet material, such as synthetic resin plastic, cellulose acetate or paper; which carries designs of an entertaining or advertising character; and which is simple and durable in construction, economical to manufacture, and ornamental and attractive in appearance.

Other objects and advantages will become apparent from a consideration of the following description and appended claims in conjunction with the accompanying drawing wherein:

Figure 1 is a top plan view of a novelty device illustrative of the invention;

Figure 2 is a side elevational view of the novelty device illustrated in Figure 1;

Figure 3 is a cross sectional view on the line 3—3 of Figure 1;

Figure 4 is a cross sectional view on the line 4—4 of Figure 1; and

Figure 5 is a plan view of a blank of sheet material from which the rotor of the device is formed.

With continued reference to the drawing, the device comprises a handle 10 in the form of an elongated stick or dowel having a small block 11, preferably of substantially cylindrical shape, secured on one end thereof and disposed at an angle thereto. The device further includes a rotor, generally indicated at 12, rotatably mounted on the block 11 by a pin 13 which extends through the center of the rotor and at one end into the block at the outer end of the latter.

The rotor is formed principally from a sheet material blank, as is particularly illustrated in Figure 5 and generally designated at 14.

The blank 14 comprises a central portion 15 of circular shape divided by radially disposed cuts, as indicated at 16, 17 and 18, into three sector shaped portions of substantially the same size and shape. The cuts 16, 17 and 18 terminate substantially the same distance short of the center of the blank to provide at the center of the blank an inner central portion 19 of circular shape.

Two fold lines or score marks, as indicated at 20 and 21 for the sector between the cuts 16 and 17 extend from the circumference of the inner

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circular portion 19 to the curved outer edge of the corresponding sector shaped portion and these lines are disposed substantially parallel to each other and equally spaced from a radius extending from the center of the blank and intersecting the curved outer edge of the corresponding sector at the center of such edge. The radially extending score or fold lines provide at the center of the several sector shaped portions of the blank spoke portions, as indicated at 22, 23 and 24 which radiate from the inner portion 19 of the blank to the circumference of the central portion 15 and are spaced apart at substantially equal angular intervals.

Tabs, as indicated at 25, 26 and 27 are disposed at the outer ends of the spoke portions 22, 23 and 24 respectively and straps 28, 29 and 30 extend outwardly from the outer edges of the tabs 25, 26 and 27 respectively with their longitudinal center lines substantially in longitudinal alignment with the longitudinal center lines of the corresponding spoke portions 22, 23 and 24.

In the arrangement illustrated the tabs 25, 26 and 27 are of semicircular shape having their straight edges disposed adjacent the circumferential edge of the center portion 15 of the blank and perpendicularly bisected by the longitudinal center lines of the corresponding spoke portions 22, 23 and 24, and the straps 28, 29 and 30 project outwardly from the curved outer edges of the corresponding tabs.

As illustrated in Figure 2, each of the tabs 25, 26 and 27 has on its outer surface a design in the form of a pictured elephant head but it is to be understood that the designs on the tabs may be varied as may be desired and the tabs themselves may be shaped to conform to the outlines of the designs provided thereon or may be given other shapes, as may be desired.

In forming the rotor from the blank 14, a hub, generally indicated at 31 is secured to the blank at the center thereof and in covering relationship to the inner circular portion 19 of the blank. This hub includes two dome shaped members 32 and 33 of suitable rigid sheet material disposed one at each opposite side of the blank with their concave faces adjacent the central portion of the blank. These members 32 and 33 have outwardly projecting annular flanges 34 and 35 respectively extending around their open ends which flanges are secured to the blank by a suitable means, such as by being cemented thereto or by having struck out tongues extending through the material of the blank. The members 32 and 33 are provided with centrally located apertures

receiving the pin 13 and the blank is also provided at its center with a pin receiving aperture. The hub 31 is held in position spaced outwardly from the adjacent end of the block 11 by spacer sleeves 36 and 37 which receive the pin 13 between the hub 31 and the adjacent end of the block 11 and are disposed in end to end relationship to each other.

After the hub has been attached to the blank the parts of each of the sector shaped portions of the central part 15 of the blank are bent along the corresponding fold lines, as indicated at 20 and 21, so that the part of a sector shaped portion at one side of the corresponding spoke portions extends to one side of the blank at an angle to the plane of the spoke portion and the part of the sector at the other side of the spoke portion extends to the other side of the blank, also at an angle to the plane of the spoke portion, as is particularly illustrated in Figure 4. The parts of the sectors which will extend upwardly or outwardly of the rotor when the device is completed are secured at their inner edges to the flanges of the hub by suitable clips, as indicated at 38, 39 and 40 in Figure 1, these clips being preferably formed from T-shaped blanks of thin sheet metal with the stem of each T-shaped blank secured between the flanges 34 and 35 of the hub and the ends of the cross portion bent together to clasp the adjacent inner edge of the corresponding part of the blank therebetween.

These parts of the sectors which extend from the opposite sides of the blank constitute vanes for rotating the blank when they are subjected to a relative wind.

After the vanes have been formed, as explained above, the tabs 25, 26 and 27 are bent until they extend to the same side of the blank and are disposed substantially perpendicularly to the corresponding spoke portions 22, 23 and 24. The straps 28, 29 and 30 are then folded or bent inwardly at their ends attached to the corresponding tabs and engaged with the edges of the vanes extending to the same side of the blank. It will be noted that each of the straps has a longitudinally extending slit, as indicated at 41 for the strap 29 in Figure 5, and disposed intermediate the length of the strap and that the corresponding vanes are provided at their inner corners with notches 42 of rectangular shape. After the straps are folded inwardly from the corresponding tabs the edges of the corresponding vanes are inserted through the slits in the straps and the straps then hold these vanes in position while the clips 38, 39 and 40, hold the complementary vanes extending to the other side of the blank in angular position relative to the plane of the spoke portions.

The ends of the straps 28, 29 and 30 remote from the corresponding tabs are overlapped at the center of the blank and disposed between the adjacent ends of the spacing sleeves 36 and 37, as illustrated in Figure 3, and the pin 13 is inserted through the overlapped end portions of the straps to hold these straps in position.

The various parts of the blank are carefully dimensioned to provide a structure of the character indicated above, the tabs 25, 26 and 27 particularly, having a width such that they will pass freely over the handle stick 10 when the rotator rotates about the pin 13.

It is contemplated that the rotor will be suitably colored to give a pin-wheel effect in addition to the effect produced by the designs on the outer surfaces of the tabs, a particularly attractive effect being provided by coloring the different radial sections of the rotor in different contrasting colors.

With this construction, when the handle stick 10 is held in either an upright or a horizontal position or in any position between a vertical and a horizontal position, and the device moved through the air with the rotor at the front end of the handle, the action of air on the vanes will cause the rotor to rotate. Rotation of the rotor will also be caused when the device is held stationary with the rotor facing into a wind or breeze.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims, are, therefore, intended to be embraced therein.

What is claimed is:

1. A novelty device comprising an elongated handle, a rotor, and means mounting said rotor on said handle at one end of the latter for rotation about an axis inclined relative to the longitudinal center line of said handle, said rotor comprising a body of sheet material including a center portion of circular shape, spoke portions extending radially from said center portion at substantially equal angular intervals therearound and disposed substantially in a common plane, vane portions extending one along each side edge of each spoke portion with the two vanes associated with each spoke portion extending to respectively opposite sides of the plane of said spoke portions and inclined relative to said plane, tabs disposed one at the outer end of each spoke portion and extending to the same side of said plane substantially perpendicular to the latter, straps extending one from each of said tabs at the edges of the latter remote from the corresponding spoke portions and extending inwardly of said tabs with their ends remote from said tabs overlapping at the center of said rotor, and a hub structure mounted on said center portion, and said means mounting said rotor on said handle comprising a block secured to said handle, a pin extending through said hub structure and the center portion of said rotor and through the overlapped end portions of said straps and having one end inserted into said block, and spacing sleeves receiving said pin between said block and said hub structure and disposed one at each side of the overlapped end portions of said straps.

2. A novelty device comprising an elongated handle, a rotor, and means mounting said rotor on said handle at one end of the latter for rotation about an axis inclined relative to the longitudinal center line of said handle, said rotor comprising a body of sheet material including a center portion of circular shape, spoke portions extending radially from said center portion at substantially equal angular intervals therearound and disposed substantially in a common plane, vane portions extending one along each side edge of each spoke portion with the two vanes associated with each spoke portion extending to respectively opposite sides of the plane of said spoke portions and inclined relative to said plane, tabs disposed one at the outer end of each spoke portion and extending to the same side of said plane substantially perpendic-

ular to the latter, straps extending one from each of said tabs at the edges of the latter remote from the corresponding spoke portions and extending inwardly of said tabs with their ends remote from said tabs overlapping at the center of said rotor, and a hub structure mounted on said center portion, and said means mounting said rotor on said handle comprising a block secured to said handle, a pin extending through said hub structure and the center portion of said rotor and through the overlapped end portions of said straps and having one end inserted into said block, and spacing sleeves receiving said pin between said block and said hub structure and disposed one at each side of the overlapped end portions of said straps, each of said straps having a longitudinally extending slit therein receiving the outer edge of the adjacent vane at the corresponding side of the plane of said spoke portions and said hub structure having clips thereon engaging the vanes at the other side of said plane.

3. A novelty device comprising an elongated handle, a rotor, and means mounting said rotor on said handle at one end of the latter for rotation about an axis inclined relative to the longitudinal center line of said handle, said rotor comprising a center portion, spoke portions extending radially from said center portion at substantially equal angular intervals therearound and disposed substantially in a common plane, vanes extending one along each edge of each spoke portion with the vanes associated with each spoke portion extending to respectively opposite sides of said plane and inclined relative thereto, tabs extending one from the outer end of each spoke portion to the same side of said plane and disposed substantially perpendicular to the longitudinal center lines of the corresponding spoke portions, a hub structure mounted on said center portion, and means connected to said hub structure supporting said vanes and tabs in position.

4. A novelty device comprising an elongated handle, a rotor, and means mounting said rotor on said handle at one end of the latter for rotation about an axis inclined relative to the longitudinal center line of said handle, said rotor comprising a center portion, spoke portions extending radially from said center portion at substantially equal angular intervals therearound and disposed substantially in a common plane, vanes extending one along each edge of each spoke portion with the vanes associated with each spoke portion extending to respectively opposite sides of said plane and inclined relative thereto, tabs extending one from the outer end of each spoke portion to the same side of said plane and disposed substantially perpendicular to the longitudinal center lines of the corresponding spoke portions, a hub structure mounted on said center portion, and means connected to said hub structure supporting said vanes and tabs in position, each of said spoke portions and the vanes associated therewith constituting a sector shaped portion of said rotor.

5. A novelty device comprising an elongated handle, a rotor, and means mounting said rotor on said handle at one end of the latter for rotation about an axis inclined relative to the longitudinal center line of said handle, said rotor comprising a center portion, spoke portions extending radially from said center portion at substantially equal angular intervals therearound

and disposed substantially in a common plane, vanes extending one along each edge of each spoke portion with the vanes associated with each spoke portion extending to respectively opposite sides of said plane and inclined relative thereto, tabs extending one from the outer end of each spoke portion to the same side of said plane and disposed substantially perpendicular to the longitudinal center lines of the corresponding spoke portions, a hub structure mounted on said center portion, and means connected to said hub structure supporting said vanes and tabs in position, each of said tabs being of a size and shape to carry a selected design on its outer surface.

6. An article of manufacture comprising a sheet material blank including a center portion of circular shape having radially disposed cuts extending inwardly from its outer edge to locations spaced from its center at equally spaced angular intervals therearound dividing said center portion into sector shaped parts each of which is provided with a pair of parallel fold lines extending along opposite sides of the central radius of the sector-shaped parts, the material between adjacent fold lines constituting spoke portions extending radially from the center of said blank at substantially equal angular intervals around said center and the material at the opposite sides of said spoke portions constituting vanes, tabs extending outwardly one from the outer end of each spoke portion and beyond the opposite sides of the latter, and straps extending one from each tab at the ends of the latter remote from said center portion with its longitudinal center line substantially in alignment with the longitudinal center line of the corresponding spoke portion.

7. An article of manufacture comprising a sheet material blank including a center portion of circular shape having radially disposed cuts extending inwardly from its outer edge to locations spaced from its center at equally spaced angular intervals therearound dividing said center portion into sector shaped parts each of which is provided with a pair of parallel fold lines extending along opposite sides of the central radius of the sector-shaped parts, the material between adjacent fold lines constituting spoke portions extending radially from the center of said blank at substantially equal angular intervals around said center and the material at the opposite sides of said spoke portions constituting vanes, tabs extending outwardly one from the outer end of each spoke portion and beyond the opposite sides of the latter, and straps extending one from each tab at the ends of the latter remote from said center portion with its longitudinal center line substantially in alignment with the longitudinal center line of the corresponding spoke portion, said straps having a length greater than the length of said spoke portions and each having a longitudinally extending slit therein.

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