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(54) A wind powered toy wheel.

(57) A toy wheel or disk is disclosed which is adapted to be propelled along by air movement. The wheel or disk has an outer edge (2) for rolling over a surface and opposite faces from which a plurality of flanges (3) extend outwardly to each side. The flanges are shaped to catch air draughts so that the wheel or disk may be propelled in rolling motion on its outer edge by wind force acting on the flanges.

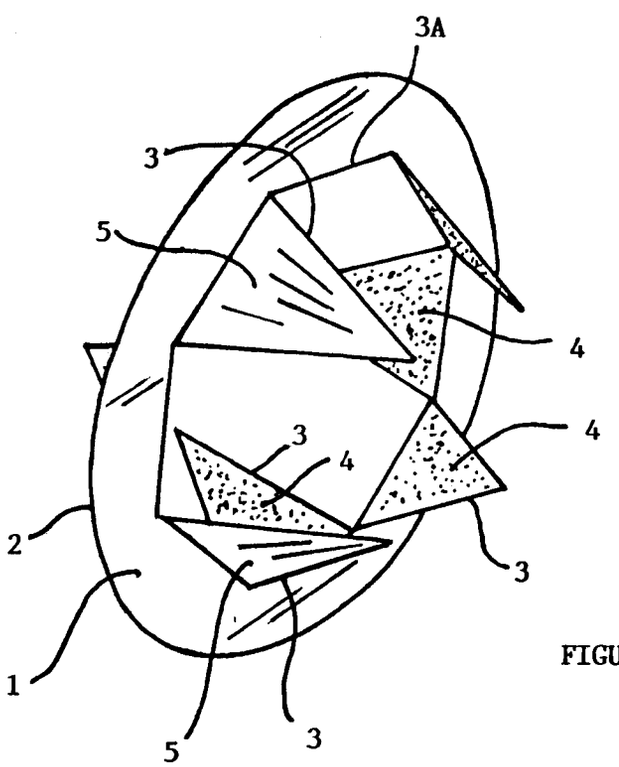

FIGURE 1

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This invention relates to toys or novelty items and more particularly although not exclusively to a wind powered toy wheel.

A variety of rolling toy hoops and wheels have been known for many years. These have typically been propelled by means of the child running along beside and periodically pushing it either with the hand or foot or perhaps a stick.

It is an object of this invention to provide an improved toy wheel or disk which is propelled along without any effort by the user, the wheel or disk having an outer edge adapted for rolling over a surface and opposite faces from which a plurality of flanges extend outwardly to each side, said flanges being adapted to catch air draughts whereby in use said wheel or disk may be propelled in rolling motion on its outer edge by wind force acting on said flanges.

In another aspect this invention also discloses a piece of sheet material or packaging having marked thereon a plurality of lines arranged so that a user may form the aforementioned toy wheel or disk by folding and severing along said lines.

Preferably said flanges are spaced from the centre of the wheel or disk, are substantially flat and are positioned at about 90 degrees to a radius of said wheel or disk.

The currently preferred form of this invention will now be described with reference to the attached illustrations in which:

Figures 1 and 2	are prespective views of a toy wheel according to this invention from each side,
Figure 3	is a side elevation view of the wheel of figure 1,
Figure 4	is an edge view of the wheel of figure 1, and
Figure 5	shows the manner in which the wheel of figure 1 may be formed from a piece of sheet material such as packaging cardboard.

Referring first to figures 1 to 4 the wheel may comprise a plane sided rim 1 with an outer edge 2 adapted for rolling over a substantially flat surface 2A. A plurality of flanges or wings 3 extend from an inner edge 3A of this rim. These flanges are arranged to protrude alternately to each side of the wheel. With this particular embodiment there are four such flanges on each side. They are substantially flat with inner faces 4 turned towards the centre of the wheel and outer faces 5 directed away towards the periphery or outer edge 2. It will be noted that these inner and outer faces 4 and 5 when orientated perpendicular to the ground surface (as at A and B) form draught catching areas which serve to propel the wheel along with the direction of a horizontal wind force C. As the wheel rotates while it rolls each flange in turn presents its full area to catch this wind force. Indeed it has been found that a wheel constructed in this manner from a light and relatively stiff material such as cardboard or plastic rolls along at a remarkable speed with only light winds and provides a continual source of amusement especially for children.

A wheel according to this invention may be formed from a piece of sheet material 6 such as cardboard (see figure 5). Indeed it is envisaged that suitably marked patterns may be printed on the sides of packaging as promotional items. As shown the edge of the wheel is defined by a circular cutting line 7. Equally spaced radial cutting lines 8 are made through the centre of the wheel to form the edges of the aforementioned flanges 3. These lines 8 are of equal length and stop a predetermined distance from the edge of the wheel. With this embodiment each cutting line extends about 75% of the radial distance out to the edge of the wheel. The extremities of these cutting lines 9 then define a series of folding lines 10 by which the flanges are directed outwardly to the sides of the wheel as described earlier.

It will thus be appreciated that this invention at least in the form of the example disclosed comprises a novel and unique form of toy. Clearly however the example described is only the currently preferred form of the invention and a wide variety of modifications may be made which would be apparent to a person skilled in the art. For example the shape, configuration and number of flanges may be varied according to design preference. Also it may be of advantage to mould the device from a wide variety of materials other than cardboard. In the case of plastic for example the outer ends of the flanges may be rounded or surmounted with smaller secondary rings which are parallel with and concentric to the wheel.

Claims

1. A wheel or disk for use as a toy which is adapted to be propelled along by air movement, said wheel or disk having an outer edge adapted for rolling over a surface and opposite faces from which a plurality of flanges extend outwardly to each side, said flanges being adapted to catch air draughts whereby in use said wheel or disk may be propelled in rolling motion on its outer edge by wind force acting on said flanges.

2. The wheel or disk as claimed in claim 1 wherein said flanges have inner faces turned substantially towards

the centre of the wheel or disk and outer faces substantially directed towards the periphery or outer edge.

3. The wheel or disk as claimed in claim 2 and further comprising a plane sided rim which defines said outer edge and said plurality of flanges extend from an inner edge of said rim.

4. The wheel or disk as claimed in claim 3 wherein said flanges are arranged to protrude alternately to each side of the wheel.

5. The wheel or disk as claimed in claim 4 wherein the faces of said flanges are substantially flat.

6. The wheel or disk as claimed in claim 5 wherein said faces are generally triangular in shape.

7. A piece of sheet material for forming the wheel or disk as claimed in claim 1, said sheet having marked thereon a circular cutting line defining the edge of said wheel, spaced radial cutting lines along directions through the centre defined by said circular cutting line to form the edges of said flanges, said radial cutting lines terminating a predetermined distance from said circular cutting line whereby the extremities of adjacent ones of said radial cutting lines define between them folding lines whereby said flanges may be turned outwardly to each side of said wheel.

8. The piece of sheet material as claimed in claim 7 whereby said predetermined distance is about 25% of the radius of the wheel defined by said circular cutting edge.

9. A wheel or disk substantially as described herein with reference to figures 1 to 3.

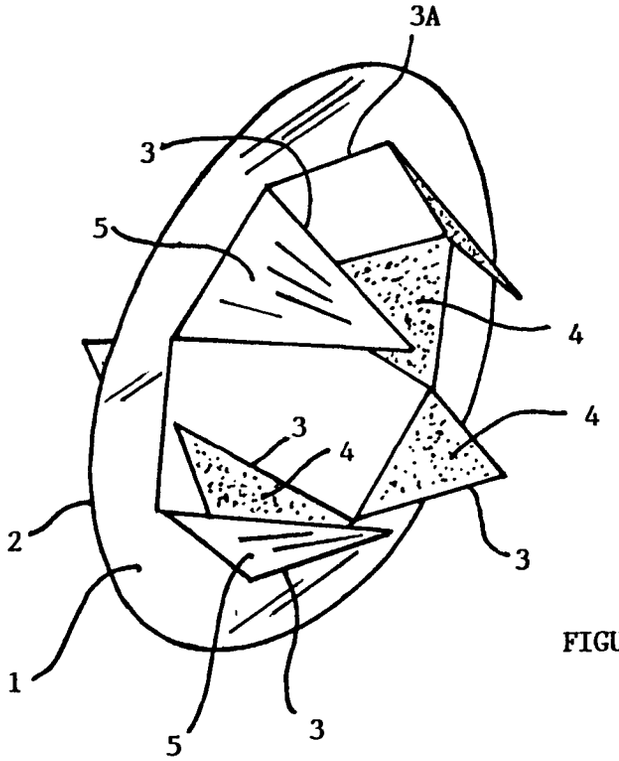

FIGURE 1

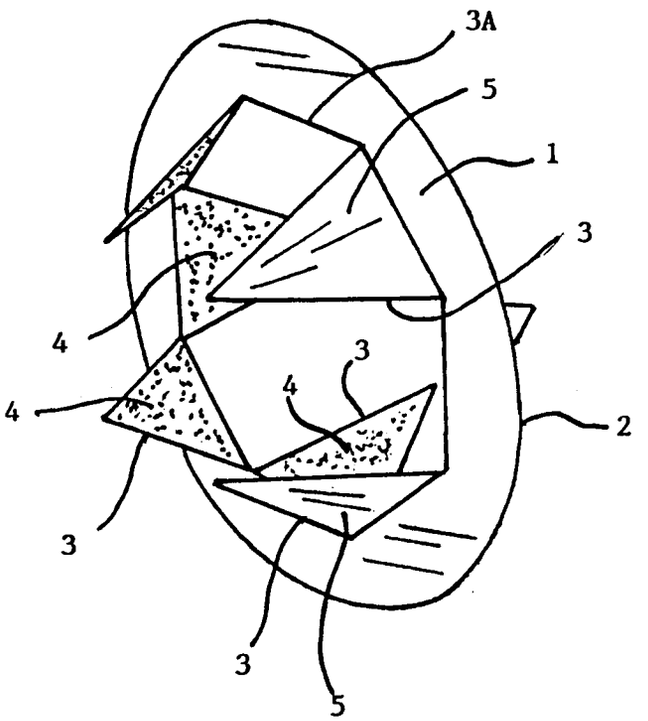

FIGURE 2

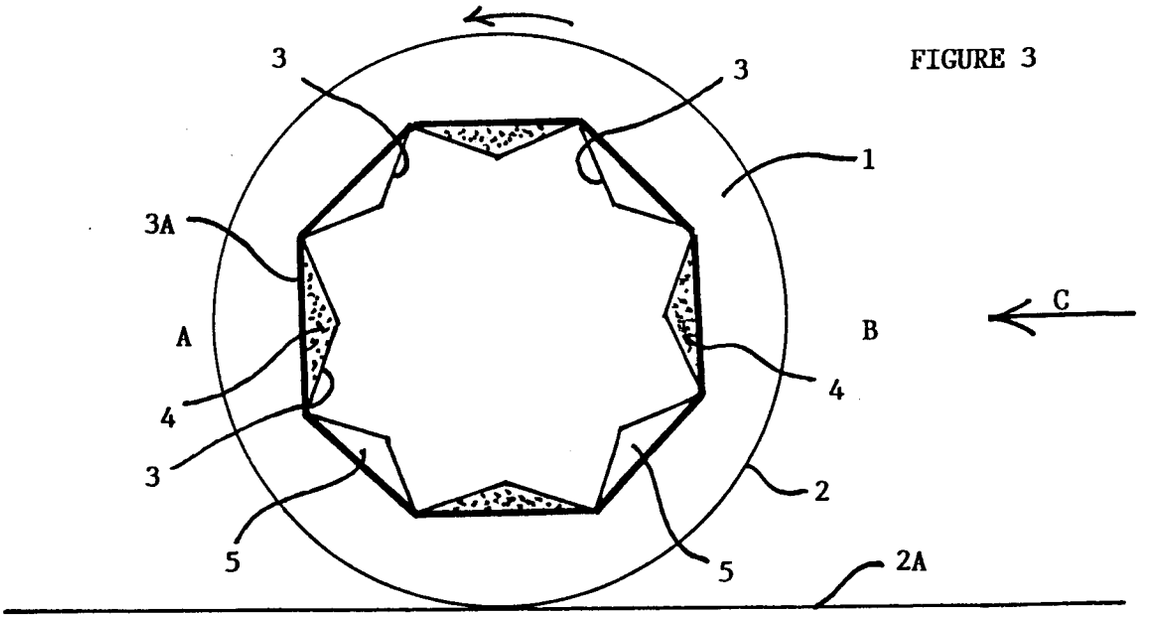

FIGURE 3

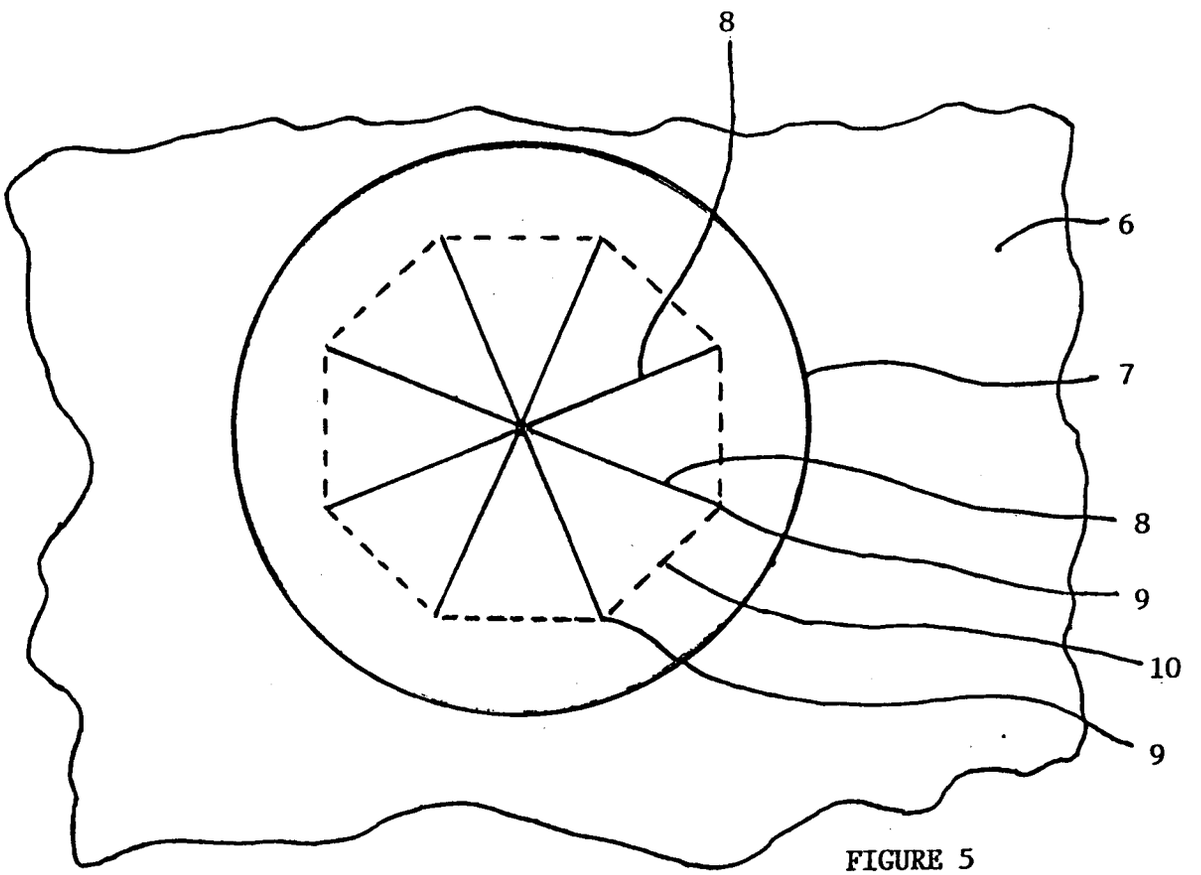

FIGURE 5

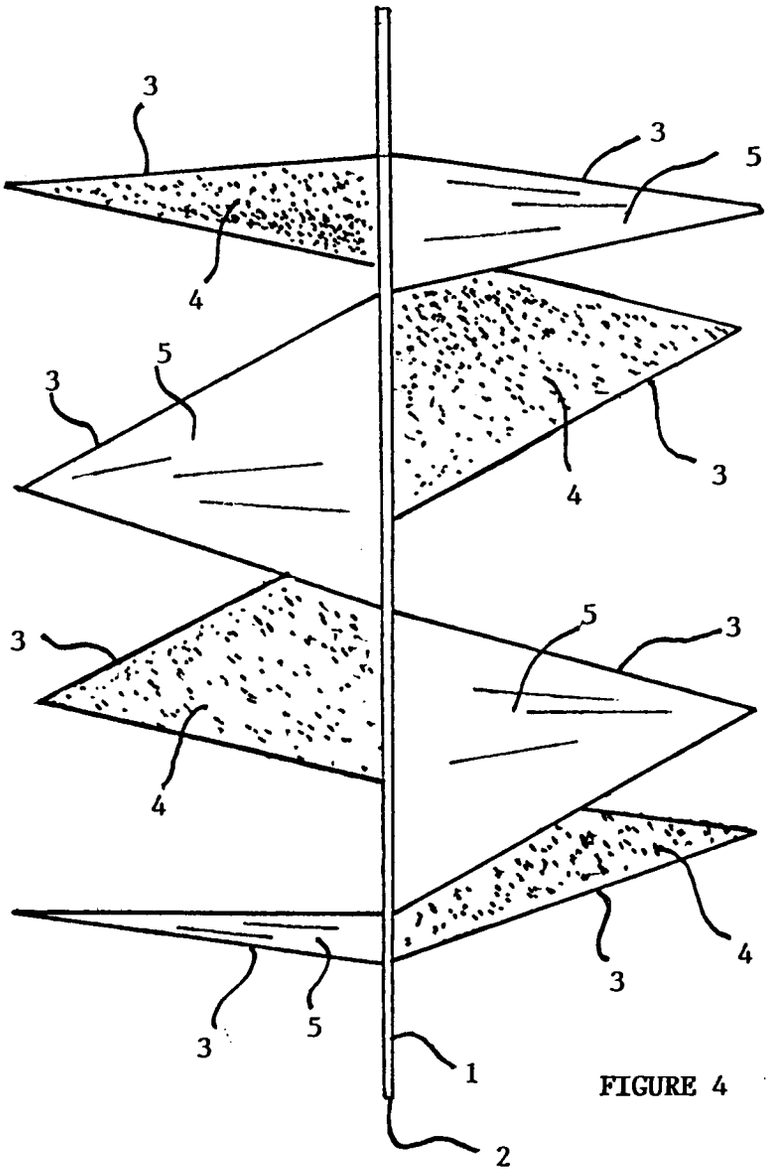

FIGURE 4

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EUROPEAN SEARCH REPORT

Application Number
EP 94 30 2747

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	GB-A-1 249 920 (LEW-WAYS LTD) * page 1, line 56 - line 73; figures 1,2 * -----	1-8	A63H33/40

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A63H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	29 August 1994	Papa, E

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
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