

May 9, 1933.

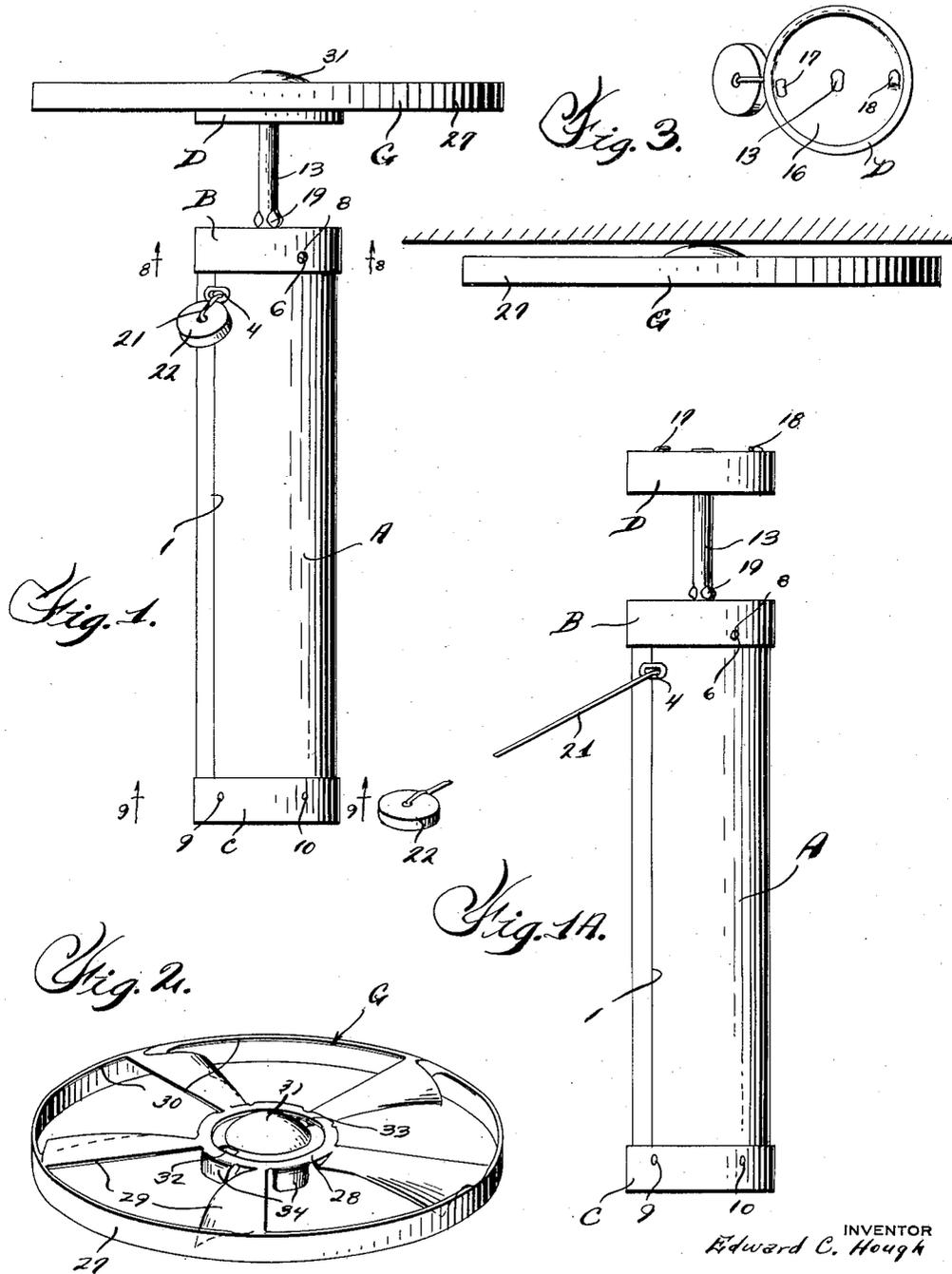
E. C. HOUGH

1,907,815

WHIRLIGIG

Filed Feb. 23, 1932

2 Sheets-Sheet, 1



INVENTOR
Edward C. Hough

BY

Whittum, Hicks, Whittum & Belknap

ATTORNEYS

May 9, 1933.

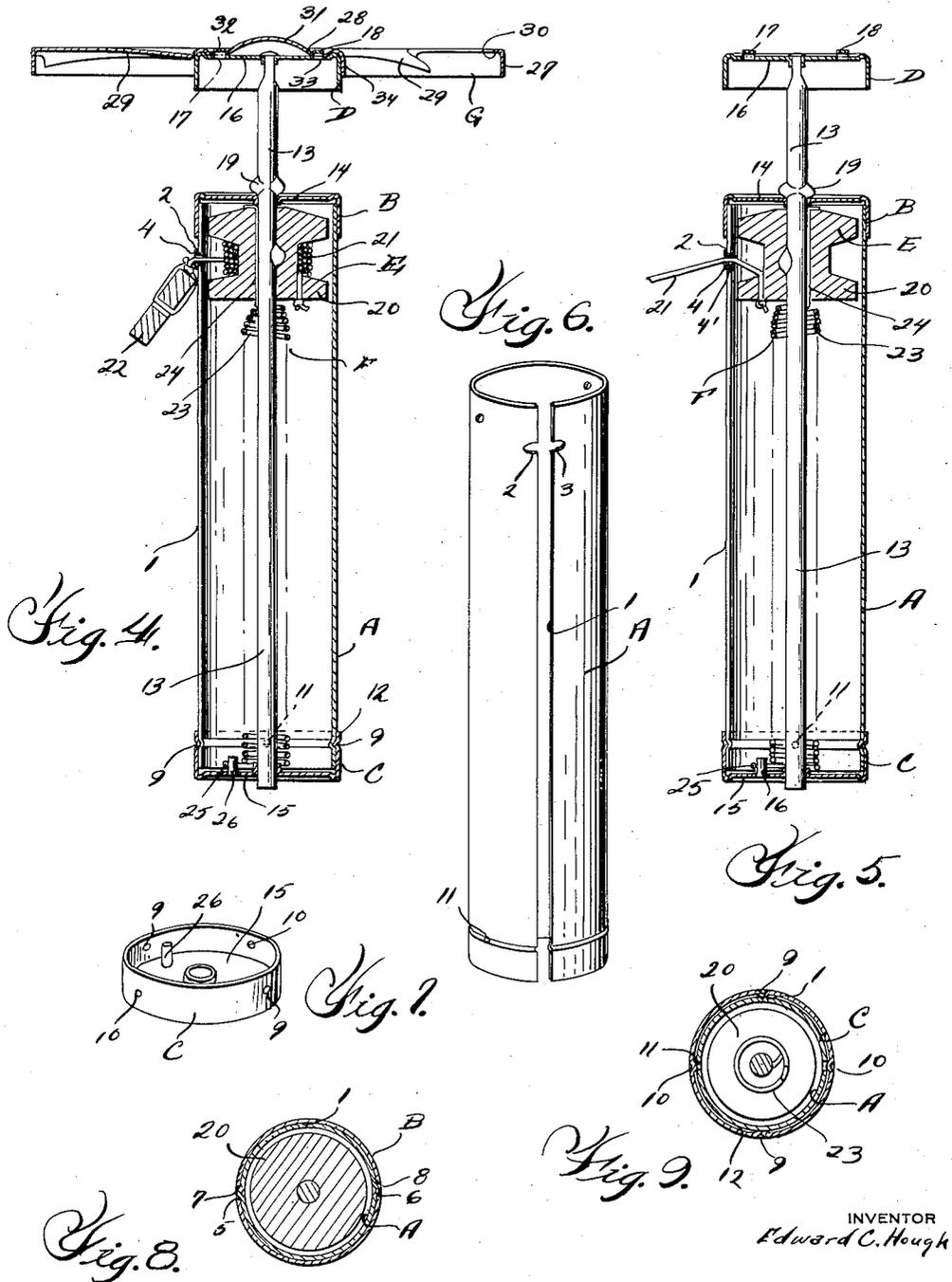
E. C. HOUGH

1,907,815

WHIRLIGIG

Filed Feb. 23, 1932

2 Sheets-Sheet 2



BY

Whittmore, Hulbert, Whittmore & Delaney

ATTORNEYS

INVENTOR
Edward C. Hough

UNITED STATES PATENT OFFICE

EDWARD C. HOUGH, OF PLYMOUTH, MICHIGAN, ASSIGNOR TO DAISY MANUFACTURING COMPANY, OF PLYMOUTH, MICHIGAN, A CORPORATION OF MICHIGAN

WHIRLIGIG

Application filed February 23, 1932. Serial No. 594,704.

This invention relates generally to toys and refers more particularly to whirligigs.

One of the essential objects of the invention is to provide a whirligig in which means for imparting rotation to the whirligig member is maintained in charged condition ready for use and is automatically recharged after being operated.

Another object is to provide a whirligig in which adjustable means is provided for taking up slack or looseness in the means aforesaid so that said means will be in proper charged position.

Another object is to provide a whirligig in which the whirligig member is formed of sheet metal and has a rounded bearing portion at the center whereby it may spin upon its contact with a ceiling during its flight.

Another object is to provide a whirligig that is simple in construction and that can be manufactured at a comparatively low cost.

Other objects, advantages and novel details of construction of this invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings, wherein:

Figure 1 is a side elevation of a whirligig embodying my invention and showing the parts in position to be operated;

Figure 1A is a view similar to Figure 1 and showing the parts after they have been operated;

Figure 2 is a detail view of the whirligig member;

Figure 3 is a top plan view of the whirligig projector;

Figure 4 is a vertical sectional view through the construction illustrated in Figure 1;

Figure 5 is a vertical sectional view through the construction illustrated in Figure 1A;

Figure 6 is a detail view of the casing without the closures and grommet;

Figure 7 is a detail view of one of the closures;

Figure 8 is a sectional view taken on the line 8—8 of Figure 1;

Figure 9 is a sectional view taken on the line 9—9 of Figure 1.

Referring now to the drawings, A is the casing; B and C respectively are closures for opposite ends of the casing; D is the propeller or projector; E and F respectively are propeller actuating means; and G is the whirligig member of a whirligig embodying my invention.

As shown, the casing A is tubular in form and is provided adjacent one end upon opposite sides of a longitudinal split 1 with registering semi-circular openings 2 and 3 respectively for the reception of an eyelet or grommet 4. Preferably this eyelet has a channel-shaped periphery 4' that receives the edges of said openings 2 and 3 and may be initially inserted into said opening by moving it longitudinally of the split 1 from the adjacent end of the casing before the closures B and C have been applied.

The closures B and C are cup-shaped in form and are sleeved upon the ends of the casing A. Preferably the closure B has circular openings 5 and 6 respectively at diametrically opposite sides thereof that receive lugs 7 and 8 respectively pressed outwardly from the casing, while the closure C is provided with two sets 9 and 10 respectively of diametrically opposed pressed lugs that are arranged equi-distantly apart and engage suitable openings 11 in the casing. In this instance, however, a circumferential groove 12 is provided in the casing for the lugs 9 and 10 that slide to and from the openings 11 when the closure is turned on the casing, as will be hereinafter more fully described.

The propeller D is likewise cup-shaped and is provided at the center thereof with a relatively long stem or shaft 13 that is journaled in the bases 14 and 15 of the cup-shaped closures B and C. Preferably the base 16 of the propeller is provided at diametrically opposite points with oppositely inclined struck-out lugs or prongs 17 and 18 respectively for engagement with the whirligig member G, as will be hereinafter more fully set forth, while the stem or shaft 13 is provided at the proper point with a flattened or swaged portion 19 constituting an abutment for the closure B.

The propeller actuating means E consists

of a spool 20 fixed upon the shaft 13 just inside the closure B, and a flexible element such as a string 21 wound upon the spool and extending outwardly through the grommet 4.

5 One end of the string 21 is fixed to the spool, while the other end is fixed to a tab or ring 22.

The means F comprises a coil spring 23 sleeved upon the shaft 13 within the casing A and having opposite end portions 24 and 10 25 respectively thereof offset and secured to the spool 20 and closure C. As shown, the end portion 24 extends longitudinally of the shaft 13 through the center of the spool 20 and is bent over the outer end of the latter, 15 while the end portion 25 is in the form of a laterally projecting eye that is sleeved upon a pin 26 secured to and projecting inwardly from the base 15 of the closure C in eccentric relation to the shaft 13.

The whirligig member G is formed from 20 a single sheet of light gage metal and comprises a ring 27, a hub 28 and intermediate radially extending blades or vanes 29. Preferably the ring 27 is relatively narrow and 25 is provided at one edge with a lateral flange 30. The hub 28 is circular and is provided at the center thereof with an outwardly projecting concavo-convex portion 31. At diametrically opposite sides of the portion 31 are 30 elongated slots 32 and 33 respectively for the reception of the struck-out lugs 17 and 18 of the propeller, while at the periphery of the hub 28 are a number of inturned lugs or flanges 34 that collectively define a ring for 35 the reception of the cup-shaped portion of the propeller D.

In use the spring 23 maintains the string 21 wound upon the spool 20 with the tab 22 abutting the casing B at the eyelet 4.

40 After placing the whirligig member G upon the propeller D so that the slots 32 and 33 receive the lugs 17 and 18 and the flanges 34 are upon the outer sides of the propeller, the casing B may be pointed upwardly where- 45 upon the tab 22 may be grasped and pulled away from the casing. As a result the string 21 will be unwound and the spool 20, shaft 13, propeller D and whirligig member G will be rotated rapidly. The inclined vanes 50 29 will cause the whirligig member G to rise and soar through the air. If the toy is used indoors the central convex portion 31 will abut the ceiling and will spin thereon. After the momentum decreases the whirligig member 55 will drop to the floor.

During the unwinding of the string the closure C to which the coil spring 23 is secured is stationary, consequently the spring will be twisted by the spool 20 about the shaft 60 13 and thereby placed under tension. When the tab 22 is released this spring 23 will then straighten out and in doing so will rewind the string on the spool to the original starting or charged position. After being used awhile 65 the string has a tendency to stretch, conse-

quently the spring will not return the tab to the eyelet 4. To compensate for this, however, the closure C may be given one or more quarter turns to the left on the lower end of the casing whereupon the spring will be tensioned and will cause the spool 20 and shaft 13 to turn accordingly with the result that the string will be fully wound upon the spool and the slack therein taken up. 70

What I claim as my invention is: 75

1. In a whirligig, a tubular casing split longitudinally and provided at opposite edges of the split with opposed openings, an eyelet in the openings, and closures for opposite ends of the casings holding the edges of the split 80 together so that the eyelet will be held in the opposed openings.

2. In a whirligig, a tubular casing, closures for opposite ends of the casing, one of said closures being rotatable relative to the casing, the said casing having a peripheral groove provided at spaced points with openings and the rotatable closure having embossed portions movable in the groove and adapted to be received in the openings. 90

3. In a whirligig, a rotary impeller including a shaft, and a substantially cup-shaped member opening toward the shaft and having the base of the cup fixed to said shaft at one end thereof, said base being 95 provided at its periphery with a rim or ridge and being provided inside said rim with a substantially flat depressed portion having struck-out lugs or tongues at substantially diametrically opposite points thereof for imparting rotary motion to a whirligig member, the free ends of said lugs or tongues being substantially in line with the rim or ridge aforesaid. 100

4. In a whirligig, a rotary shaft provided 105 at spaced points longitudinally thereof with laterally projecting flattened portions, an enclosure for one of said portions having a cover part between said portions and constituting a bearing for the shaft, and actuating means for the shaft including two members arranged end to end on the shaft within the enclosure, one of said members being actuable by a cord extending through the enclosure and mounted upon and held 115 against movement relative to the shaft by one of the flattened portions aforesaid, said member also being constructed and arranged in such a way that it cooperates with one of the flattened portions aforesaid outside the enclosure for preventing relative longitudinal movement between the enclosure cover part and shaft. 120

In testimony whereof I affix my signature.

EDWARD C. HOUGH. 125