

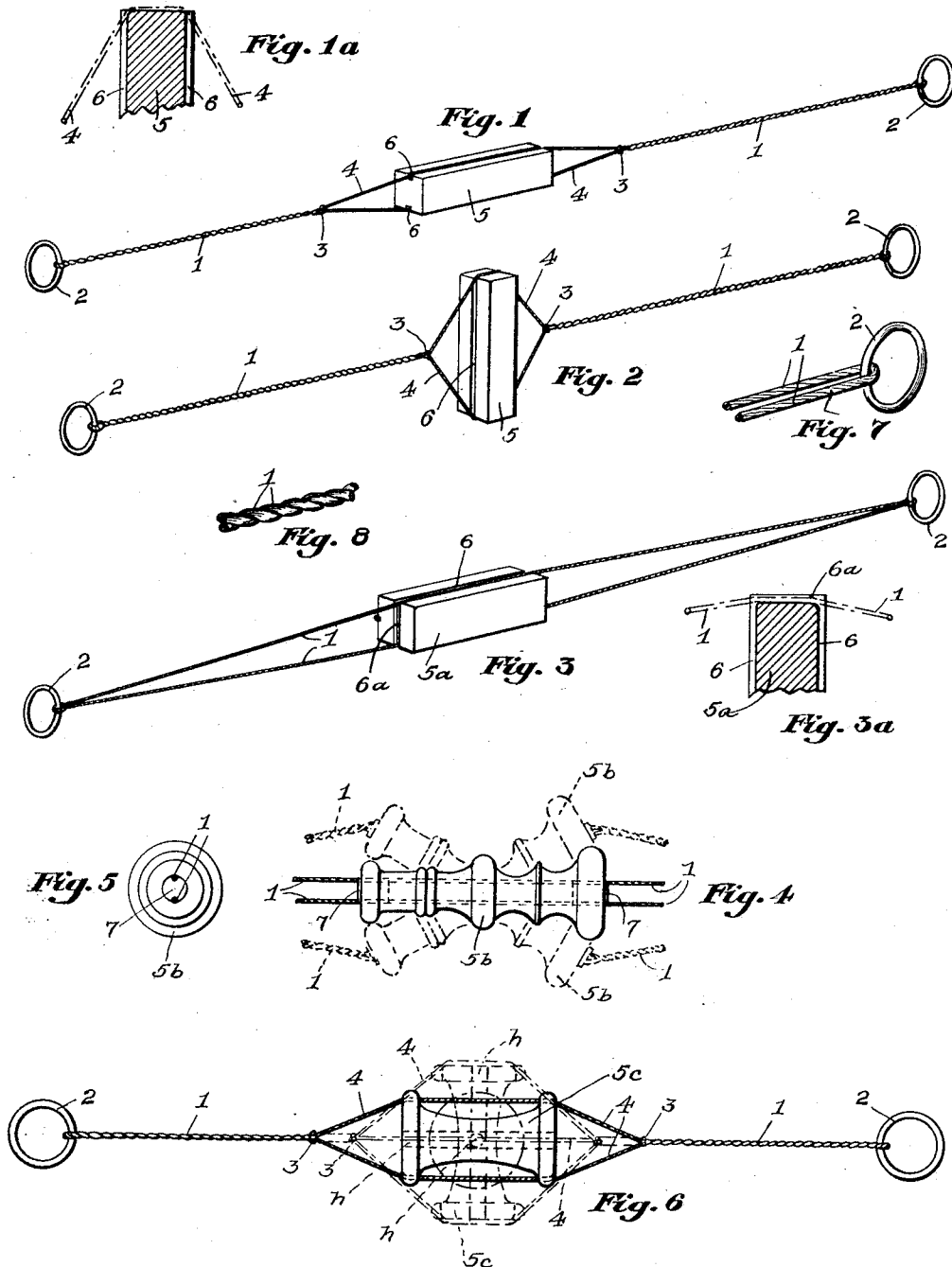
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L. H. HUTCHINSON

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WHIRLING TOY

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INVENTOR.

Lewis H. Hutchinson

BY Henry L. Cheney

ATTORNEY.

UNITED STATES PATENT OFFICE

LEWIS H. HUTCHINSON, OF SOUTH PORTLAND, MAINE

WHIRLING TOY

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The invention hereinafter to be described relates to toys and deals particularly with improvements in the well known whirling toy which as usually constructed comprises a button or disc mounted on two strands of twine in such a manner that rapid rotation of the disc—first in one direction and then in the other—is procured, the movement being effected by alternately twisting and untwisting the two strands, brought about by successively applying and releasing tensional strain on the twine.

In the conventional type of whirling toy the disc, or the main rotating element, ordinarily has two holes equally spaced from its axis and on diametrically opposite sides thereof and through these holes pass the two strands of twine. The disc is comparatively thin but of considerable diametrical measurement and for this reason the disc will, when whirled, assume a substantially constant and uniform shape with respect to its contour as visualized while under rapid rotation.

In my present invention I have departed from this conventional construction and employ a revoluble element having excessive length as compared with its transverse measurement, in other words, its axial dimension largely exceeds its diameter. As a consequence, the revoluble element, through the influence of centrifugal force, tends continually to change its position relative to the strands while it is under rotation and the optical effect is such that a much more interesting toy is evolved than is the case with the ordinary type of this amusement device.

Another advantage residing in my invention is the auxiliary loop formed midway the length of the two strands within which the revoluble element operates either while its axis is disposed in substantial parallelism with the outer end portions of the two strands or tilted therefrom at various angles, or in fact, swung so that the element assumes a position with its axis presented normal, or at a right angle, to its original location.

And a further object concerns the strand-engaging grooves made on opposite sides of the revoluble element and constituting retaining means for the latter within the auxiliary

loop. By means of these grooves various different shapes of revoluble elements may be employed and any one of them quickly mounted on the toy.

Changing the relative position of the element while it is revolving with the loop gives a somewhat kaleidoscopic effect as at each different position another outline or profile of it is presented to the eye.

The character of the invention may best be understood by reference to the description found in the following specification when taken in connection with the accompanying drawings in which a preferred embodiment of the device is illustratively disclosed.

In the drawings, in which similar reference characters are employed to identify like parts,—

Fig. 1 is a perspective view of my whirling toy showing the revoluble element in axial alignment with the outer end portions of the two twisted strands;

Fig. 1a is a fragmentary sectional elevation of the revoluble element shown in Fig. 1;

Fig. 2 is the same as Fig. 1, except that the revoluble element is shown in a position normal to that shown in the preceding Fig. 1;

Figs. 3, 4 and 6 represent modified forms of the device;

Fig. 3a is a fragmentary sectional elevation of the revoluble element shown in Fig. 3;

Fig. 5 is an end view of Fig. 4;

Fig. 7 shows a fragmentary end portion of the two strands of string with a finger ring in the loop, and

Fig. 8 shows on an enlarged scale the twisted strands.

Referring to the drawings, 1 represents a double strand of twine or cord the outer ends of which are rove through a finger ring 2 which, although not absolutely essential is nevertheless convenient in operating the toy.

As I prefer to construct the actuating portion of the toy the strands 1 are tied or knotted together at 3, forming a midway or auxiliary loop 4 which encompasses the revoluble element 5, the two strands of the loop lying, respectively, in the two grooves 6 made in opposite sides of the element.

It will be observed, by reference to Fig. 1, that when the strands 1 are taut, the engagement of the two portions of the loop with the oppositely disposed grooves in the revolving element prevents displacement of the latter from the loop.

When the rotary element assumes the position shown in Fig. 2 a comparatively small relative contact between the strands of the loop and the grooves obtains, but as the loop is somewhat contracted when the two elements are in this relation this contact suffices to insure retention of the block within the loop during periods of rotation.

A modification of this arrangement is shown in Fig. 3 in which the auxiliary loop is dispensed with. In this case the grooves 6 are continued across the ends of the block 5a, providing an end groove 6a which better serves to retain the element when placed with its longitudinal axis normal to the strands—illustratively disclosed in Fig. 3a.

In Fig. 4 is shown a revoluble element, 5b, of irregular form with the strands 1 passing through the central aperture in the element and held in relative spaced relation therein by the plugs 7. With this arrangement no auxiliary loop is required, but it will be observed that a rotary element constructed as is this one is not so conveniently or readily replaced by others of different form as is one forming a part of the structure illustrated in Fig. 1.

The Fig. 4 arrangement, however, is such that the rotary element is susceptible of considerable change of position while in rotation, as shown in dot and dash lines, centrifugal action causing the block to be thrown out of alignment with the horizontal to a limited degree and producing an effect on the observer's eyes quite different in form from that of the true contour of the revolving member.

The most interesting example among the various forms of rotatable elements in my invention is illustrated in Fig. 6 of the drawings. Here is shown a simple spool, adapted, of course, to a wide range of embellishment if desired, with a hole h, which of itself has no function to perform other than the visual effect produced when the spool is transversely positioned, passing axially through its whole length.

The heads, or ends of the spool, have longitudinal grooves and the loop 4 is adapted to engage the grooves in a manner similar to the example shown in Fig. 1. When the spool arranges itself, when rotating, in the position shown in dot and dash lines, Fig. 6, the hole h appears as a fixed aperture in the revolving body whereas, as a matter of fact, it is but the fraction of a second during which the hole aligns with the observer's eye. The illusion however, is quite pronounced.

In operating the toy the strands 1 at the

start are straight, as shown in Fig. 7, but with the fore fingers of one's two hands inserted in the finger rings 2 and the whole affair subjected to a swinging, sweeping movement the strands are twisted, substantially as shown in Fig. 1. Now, by an outward tensional strain on the twisted cord by outward pressure on the rings the strands will begin to unwind, causing the rotatable element to revolve. Just previously to the strands returning to their straight, untwisted condition, the tensional strain is slightly relaxed allowing the momentum or inertia of the revolving body to re-wind the strands in the opposite direction.

The rotary element will revolve, first in one direction and then in the opposite so long as this tensioning and relaxing action is continued. More or less skill, however, is required of the operator to correctly "time" the relaxing of the tension on the cord and continue this until the element, by its momentum, has had the required opportunity to re-wind the cords. This is the only "trick" which the operator is required to learn in order to successfully actuate the toy.

To get the most out of the toy in the way of amusement the relaxing of the tension on the cords should be carried to such an extent that the loop is opened sufficiently to permit of the rotary element changing its position with respect to the twisted cords. When the rotary movement is started the element revolves on its longitudinal axis but the cords may be so actuated that the element revolves on other axes—even to one disposed directly at a right angle to its starting one.

Changing from one axis of rotation to another makes the rotating element seem to change its form or contour, and in this respect the amusement feature of the toy is greatly enhanced.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

A whirling toy comprising a revoluble block having a greater axial than transverse measurement, longitudinal grooves disposed, respectively, on opposite sides of said block, a cord loop encompassing said block, two opposite portions of said loop engaging, respectively, the said grooves, a cord loop secured to and at each end of said first mentioned loop, and a finger ring on the outer ends of each of said last mentioned loops providing facilities whereby all of said loops may be brought under a tensional strain.

In testimony whereof I affix my signature.

LEWIS H. HUTCHINSON.