J. F. SHARRETTS.

TOY.

APPLICATION FILED SEPT. 20, 1920.

1,413,294. Patented Apr. 18, 1922.

Fig. 1.

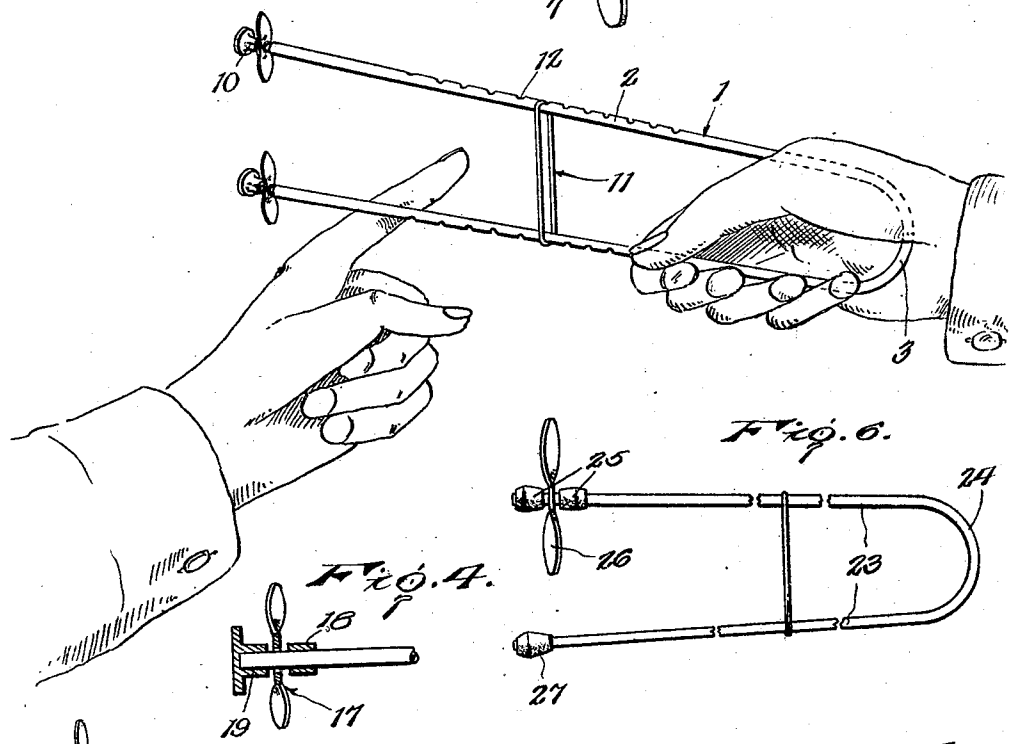


Fig. 2.

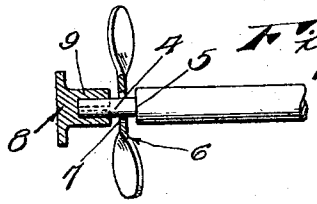


Fig. 6.

Fig. 4.

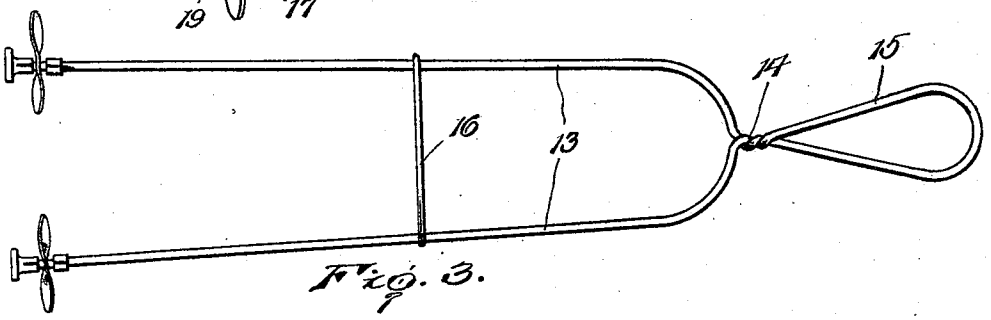


Fig. 3.

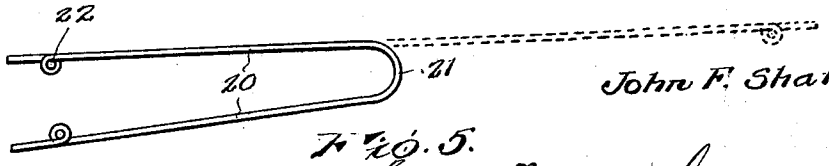


Fig. 5.

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UNITED STATES PATENT OFFICE.

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TOY.

1,413,294. Specification of Letters Patent. Patented Apr. 18, 1922.

Application filed September 20, 1920. Serial No. 411,386.

To all whom it may concern:

Be it known that I, JOHN F. SHARRETTS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Toys, of which the following is a specification.

This invention relates to toys and has as its general object to provide a toy which may be manufactured at a comparatively low cost, which will be interesting and amusing, and which, if desired, may be employed as an advertising medium or game.

The toy is of that type comprising a resilient member which is adapted to be vibrated and the impulses of which will be transmitted to a member rotatably mounted thereon so as to effect rotation of the last-mentioned member, and one of the more specific objects of the invention is to provide a novel form of vibratory member so constructed as to be most effective in its operation of imparting rotary motion to the member or members mounted thereon.

Another object of the invention is to provide novel means whereby the amplitude of the vibrations of the vibratory member may be varied in a simple and yet positive manner.

Another object of the invention is to so construct the vibratory member that the member which is rotatably mounted thereon may be readily removed whenever desired and another member, for example, of a different design, substituted therefor so that where rotatable members of various designs and variously colored are provided, one may be substituted for another so as to produce different effects pleasing to the eye.

In the accompanying drawing:

Figure 1 is a perspective view illustrating one embodiment of the invention and the manner of using the same;

Figure 2 is a detail vertical longitudinal sectional view through the outer end of one of the vibratory arms of the device shown in Figure 1;

Figure 3 is a side elevation illustrating a modified form of the invention;

Figure 4 is a view similar to Figure 2 illustrating a modified means for mounting the rotatable member of the device;

Figure 5 is a side elevation illustrating a further modification of the vibratory member;

Figure 6 is a similar view illustrating another modification of the invention.

In all forms of the invention the vibratory member consists essentially of a pair of spaced resilient arms upon one or both of which is mounted a member which is to be rotated through vibration of the respective arm. In that form of the invention shown in Figures 1 and 2 of the drawings, the vibratory member is preferably formed from a single length of resilient wire which is bent upon itself at a point midway between its ends to provide spaced arms 2 and a resilient connecting portion 3. Structurally therefore the vibratory member somewhat resembles a tuning fork and it follows that if either arm of the member is struck against an object or by an object the two arms will be set in vibration. In this form of the invention the outer end of each arm is reduced in diameter to provide a spindle portion 4 and a shoulder 5, and mounted for free rotation upon the spindle portion 4 of each arm is a rotary member indicated in general by the numeral 6, the member having a perforation 7 receiving the spindle portion 4 and of a diameter sufficiently larger than that of the said spindle to allow for free rotation as stated. This member is retained upon the spindle portion 4 by means of a cap 8 which has a tubular neck 9 split longitudinally as at 10, and fitted frictionally onto the end of the spindle portion 4. When the cap is fitted onto the spindle portion, the extremity of its neck will be spaced from the shoulder 5 a distance somewhat greater than the thickness of the intermediate portion of the rotatable member 6 so that while the said member 6 will be retained upon the end of the respective arm 2 of the vibratory member, its free rotation will not be interfered with.

The member 6 may assume various forms. It may be formed to resemble a propeller as illustrated in Figures 1 and 2 of the drawings and have its blade portion twisted to resemble a propeller, or its blade portions may occupy a common plane, and they may furthermore be of any desired shape and size. Also while the member comprises two blade portions, as illustrated in the said fig-

ures of the drawings, it may consist of three or more such portions or may be of any desired geometric or fanciful design. Also it will be understood that the blade portions of the member 6 may be variously colored or ornamented so as to produce various pleasing effects upon the eye in the rotation of the member.

It will now be understood that when the vibratory member 1 is held for example in one hand and one of the arms 2 thereof is struck against a finger of the other hand, or the arm is struck against any other object, or any other object is struck against either arm, the arms will be set in vibration, and the impulses will be imparted to the members 6 causing these members to more or less rapidly rotate.

In order that the amplitude of the vibrations of the arms 2 may be varied at the will of the user of the toy, there is provided in connection with the vibratory member an interrupter which is indicated in general by the numeral 11. This interrupter is preferably in the form of an elongated wire loop which is slidably disposed upon the arms 2 of the said member 1 and it will be understood that when the interrupter is shifted to a position adjacent the connecting portion 3 between the arms, the amplitude of the vibrations will be considerably greater than when the interrupter is shifted to a position more remote from the connecting portion and nearer the extremities of the arms. In order that the interrupter may be held at adjustment when shifted to various points in the lengths of the arms 2, said arms are preferably provided in their outer sides with series of notches 12 in which the bights or ends of the loops 11 may be engaged in the manner clearly shown in Figure 1 of the drawings.

The form of the invention illustrated in Figures 3 and 4 of the drawings is very similar to that above described and comprises spaced arms 13 which are twisted together at a point forwardly of their connecting bend, as indicated by the numeral 14, so as to provide a well-defined handle 15 by which the vibratory member may be held in the hand. The interrupter in this form of the invention is indicated by the numeral 16 and is slidably mounted upon the vibrator member in the same manner as the interrupter 11 previously described, and the arms 13 may be provided with notches corresponding to the notches 12, or these notches may be omitted and the interrupter held in positions of adjustment by frictional engagement with the arms of the vibrator member. The vibratory member in this form of the invention may be formed from wire of a smaller gage than that employed in the production of the corresponding member in the first described form of the invention and under these conditions it will be advisable to mount the rotary members which in Figures 3 and 4 are indicated by the numeral 17, in a manner slightly different from that employed in the first described form. Thus instead of reducing the extremities of the arms 13 of the vibrator member as previously described, a split collar 18 is frictionally fitted onto the outer end portion of each arm 13 and performs the same function as the shoulder 5, the rotary member 17 being confined between this collar and a cap 19 which corresponds structurally and in function to the cap 8.

Figure 5 of the drawings illustrates a modified form of vibrator member which may be manufactured at a very low cost and which is so constructed as to obviate either the formation of the shoulder 5 or the provision of the frictional collar 18. This modified member is formed from a single length of wire bent to provide spaced arms 20 and a resilient connecting portion 21, the arms 20 near their extremities being bent helically to provide stops 22 for the rotatable members employed in connection with the arms and therefore serving the same purpose as the shoulder 5 and the collar 18. It will be understood by reference to the dotted line showing of this figures that the wire from which the member is formed may initially be straight and of the required length and while in straightened condition may be formed with the bends 22 after which the wire may be bent upon itself at its intermediate portion so as to complete the vibratory member.

That form of the invention illustrated in Figure 6 of the drawings somewhat resembles the form shown in Figures 1 and 2, the vibratory member comprising spaces arms 23 connected by a resilient portion or bend 24. Fitted frictionally upon the end portion of one of the arms 23 are spaced collars 25 between which the rotatable member of the device, indicated by the numeral 26, is confined. The other arm, in this form of the invention, does not support one of the rotatable members 26 but is employed merely as a impact arm and is therefore preferably provided with a buffer head 27 at its extremity, which head may be of rubber or other yieldable material which will not injure or mar the surface against which it is struck. Thus in this form of the device the buffer head 27 may be struck against any object whereupon vibration will be set up in the arm which supports the rotatable member to effect rotation thereof.

While in Figures 1, 3 and 6 of the drawings I have illustrated the use of an interrupter in connection with the vibratory members of these several forms of the invention, it will be understood that the interrupter may be dispensed with if desired, sac-

rificing of course any advantages which its use may present.

Having thus described the invention, what is claimed as new is:

1. A toy comprising a substantially U-shaped member having spaced resiliently connected arms, one of which will be vibrated when the other is struck against or by an object, and a member rotatably mounted upon the first-mentioned arm and rotatable through vibration of said arm.

2. A toy comprising a substantially U-shaped member having spaced resiliently connected arms, one of which will be vibrated when the other is struck against or by an object, and a member rotatably mounted upon one of the arms and rotatable through vibration of the respective arm.

3. A toy comprising spaced resiliently connected arms, one of which will be vibrated when subjected to impact with an object, a member rotatably mounted upon one of the arms and rotatable through vibration of the respective arm, and means carried by and adjustable longitudinally of said arms for varying the amplitude of vibration thereof.

4. A toy comprising a resilient vibratory arm having a handle portion, a member rotatably mounted on said arm and rotatable through vibration thereof, and means engaging the arm in advance of the handle portion for varying the amplitude of vibration of the arm.

5. A toy comprising spaced resiliently connected arms subject to vibration when struck by or against an object, a rotatable member mounted upon each arm and rotatable through vibration of the respective arm, and a member extending between the arms and engaged therewith and shiftable longitudinally of the arms whereby to vary the amplitude of vibration of the arms.

6. A toy comprising spaced resiliently connected arms subject to vibration when struck by or against an object, a rotatable member mounted upon each arm and rotatable through vibration of the respective arm, and a member extending between the arms and engaged therewith and shiftable longitudinally of the arms whereby to vary the amplitude of vibration of the arms, the said arms being provided with notches receiving the engaging portions of the said member whereby to retain the member in positions of adjustment.

7. A toy comprising a resilient vibratory arm having a handle portion, a member rotatably mounted upon the end of the arm and rotatable through vibration thereof, means engaging the arm in advance of the handle portion thereof for varying the amplitude of vibration of the arm, and a retaining element for the said member removably fitted onto the end of the arm.

8. A toy comprising a resilient vibratory arm, a member frictionally fitted onto the arm inwardly of the extremity thereof, a member frictionally removably fitted onto the extremity of the arm and spaced from the first-mentioned member, and a member rotatably mounted upon the arm between the first and second mentioned members and rotatable through vibration of the said arm.

In testimony whereof I affix my signature.

JOHN F. SHARRETTS. [L. S.]