Jan. 12, 1960 T. O. BRITT 2,920,418

AMUSEMENT DEVICES

Filed Feb. 24, 1958

Fig. 1.

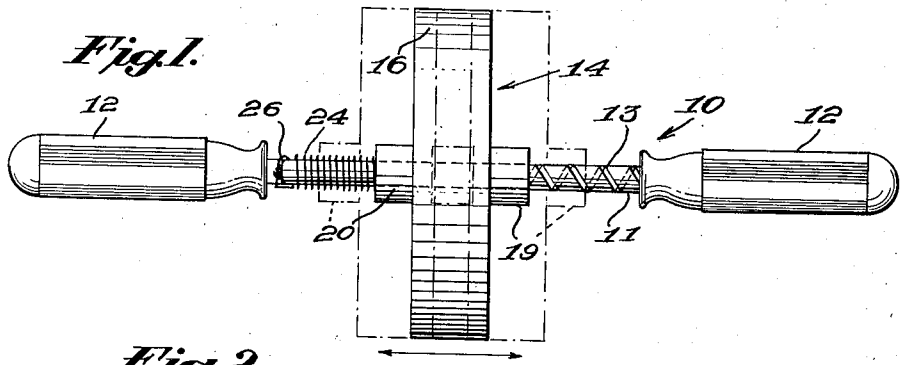


Fig. 2.

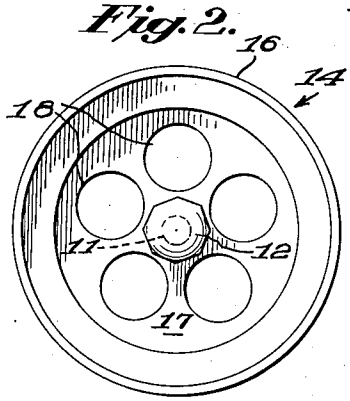
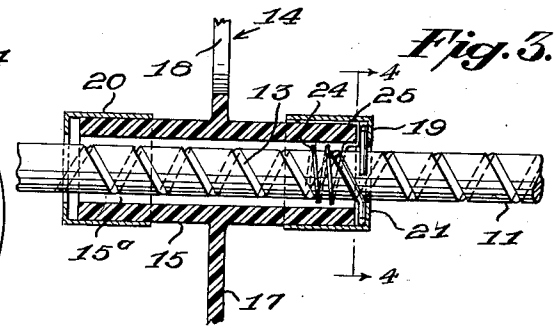


Fig. 3.



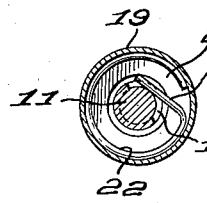
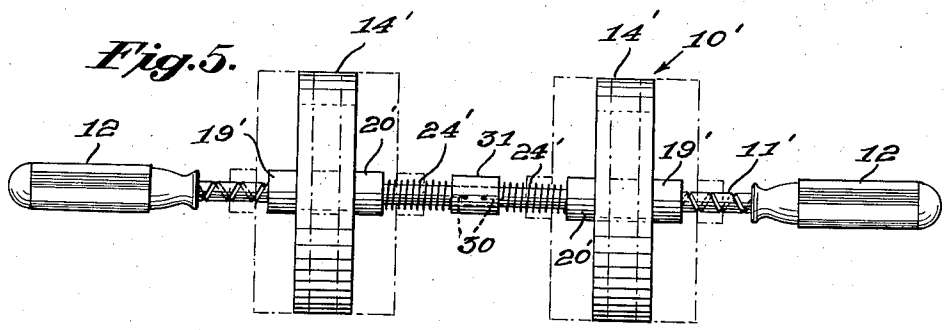


Fig. 4.

Fig. 5.



INVENTOR

Thomas O. Britt.

BY Stone & Mack,

ATTORNEYS.

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AMUSEMENT DEVICES

Thomas O. Britt, Raleigh, N.C.

Application February 24, 1958, Serial No. 717,241

1 Claim. (Cl. 46—47)

This invention relates to an amusement device.

The invention is more particularly concerned with a toy or a pastime amusement device which is highly fascinating in use and which is operable by the thumb and index finger of both hands thereby providing a convenient and desirable exercising device for the thumb and index finger.

A primary feature of the invention is the provision of an amusement device embodying a shaft oscillatable by thumb and index finger on which is supported a wheel for rotation in opposite directions. The wheel also has simultaneous movement axially of the shaft together with means for effecting said movements of the wheel relative to the shaft.

A further feature of the invention is the provision of an amusement device of the above noted general character wherein a pair of wheels are mounted on the shaft for rotation in opposite directions and for simultaneous movement axially of the shaft and with a variable spacing of the wheels axially of the shaft.

Other features and advantages of the invention will become apparent in the course of the following detailed description, taken in connection with the accompanying drawing, wherein:

Fig. 1 is a side elevational view of the improved device in accordance with one convenient structural embodiment thereof;

Fig. 2 is an end elevational view of the device illustrated in Fig. 1;

Fig. 3 is a fragmental axial sectional view on a substantially enlarged scale;

Fig. 4 is a transverse sectional view substantially in the plane of line 4—4 on Fig. 3;

Fig. 5 is a side elevational view of a modified embodiment of the device and being shown on a reduced scale.

Referring now in detail to the drawing and first to Figs. 1 to 4 thereof, the improved amusement device **10** will be seen to comprise an elongated cylindrical shaft **11** whose opposite ends are suitably rigidly secured in adjacent ends of a pair of handles **12** which, as is more clearly shown in Fig. 2, are preferably of polygonal form in cross section to facilitate rolling of same between the thumbs and fingers of a person as will hereinafter more fully appear. The handles **12** may be of any desired material but which are preferably of plastic.

The shaft **11** is provided with a spiral groove **13** which extends from one handle for a substantial distance toward the other handle or the groove may in fact extend throughout the length of the shaft.

Supported on the shaft **11** for rotation about the axis thereof and for limited movement along the axis is a wheel **14** preferably of plastic material and which embodies an elongated hub **15**, a relatively wide cylindrical rim **16** and a centrally disposed web **17** connecting the hub and the rim. The web **17** is as shown preferably provided with a plurality of apertures **18**.

Metal caps **19** and **20** are frictionally supported on

opposite ends of the hub **15**, the former of which in particular is provided with an inwardly extending end flange **21**.

Supported in the outer flanged end of the hub cap **19** is a substantially circular resilient wire member **22** which is normally of greater diameter than the inner diameter of cap **19** whereby when same is operatively positioned as in Fig. 4 the cylindrical wall of the cap is tightly gripped thereby for retention of the wire member **22** in the cap. The wire member **22** is provided with an angularly disposed finger **23** which rides in the spiral groove **13** for effecting axial movement of the wheel **14** simultaneously with rotation thereof.

A substantially light gauge coil spring **24** encircles the shaft **11** intermediate the cap **19** and the adjacent end of the opposed handle **12**, the spring extending throughout the length of the bore **15a** of the hub. One end of the spring **24** is provided with a portion **25** which overlies the hub **15** and which is frictionally gripped and retained in position by the hub cap **19** as is clearly indicated in Fig. 3. The opposite end of the spring **24** is suitably soldered or welded to the shaft **11** as at **26**.

In operation of the improved device, each handle **12** is engaged by the thumb and index finger of a respective hand of a person and upon rolling the ends of the thumbs and fingers on the surfaces of the handles **12**, the same, together with the shaft **11**, are oscillated about the common axis thereof.

At this point it is to be observed that the tension in the springs **24** is such that the wheel **14** is normally disposed intermediate the adjacent ends of the handles **12**.

Upon oscillation of the shaft **11** however, the finger **23** riding in the spiral groove **13** will impart rotation to the wheel **14** in opposite directions corresponding to those of oscillation of the shaft **11** while the wheel will also move axially of the shaft and upon predetermined tension in the spring **24** the wheel **14** will be constrained to move axially of the shaft in a direction toward the fixed end of the spring.

The structure is in fact such that the wheel will rotate in opposite directions while moving axially of the shaft and as indicated by dot-and-dash lines in Fig. 1, the extreme movements of the wheel axially of the shaft will be substantially equal relative to the opposed handles **12**.

The device is relatively simple in construction, is durable in use and is one which provides convenient pastime amusement.

The embodiment **10'** of the invention disclosed in Fig. 5 is similar to that of Figs. 1 to 4 but same embodies a pair of wheels **14'** and in view of which a longer shaft **11'** is used.

In this modified embodiment of the invention, the springs **24'** have adjacent ends thereof secured to the shaft **11'** intermediate the two wheels **14'** as indicated at **30** and a sleeve **31** is frictionally engaged with the shaft and conceals the spring connections **30** to the shaft **11'**.

Each wheel **14'** is provided with a hub as in Figs. 1 to 4 and each hub is provided with a cap **19'**, **20'**, in the former of which are disposed the wire drive members **22** and which caps also retain the opposite ends of the springs **24'**.

The structure disclosed in Fig. 5 operates similarly to that of Figs. 1 to 4 but is more attractive due to the movements of two wheels instead of one and which wheels move axially of the shaft as indicated by the dot-and-dash lines.

I claim:

An amusement device comprising an elongated cylindrical shaft, a thumb and finger grippable handle on each end of said shaft, said shaft having a spiral groove in

the periphery thereof, a pair of wheels freely disposed on said shaft, a sleeve frictionally engaged over said shaft at a position between said wheels, a pair of coil springs encircling said shaft, adjacent ends of said springs being connected to said shaft at positions within said sleeve, the opposite ends of said springs being connected with said wheels, said springs normally holding said wheels on said shaft at positions intermediate said sleeve and said handles, and means supported by said wheels and cooperating with said spiral groove for effecting movement of said wheels axially of said shaft upon rotation of the wheels and against the action of said springs.

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