F. W. MATTHEWS.

TOY.

APPLICATION FILED JAN. 18, 1915.

1,210,666. Patented Jan. 2, 1917.

Fig. 1.

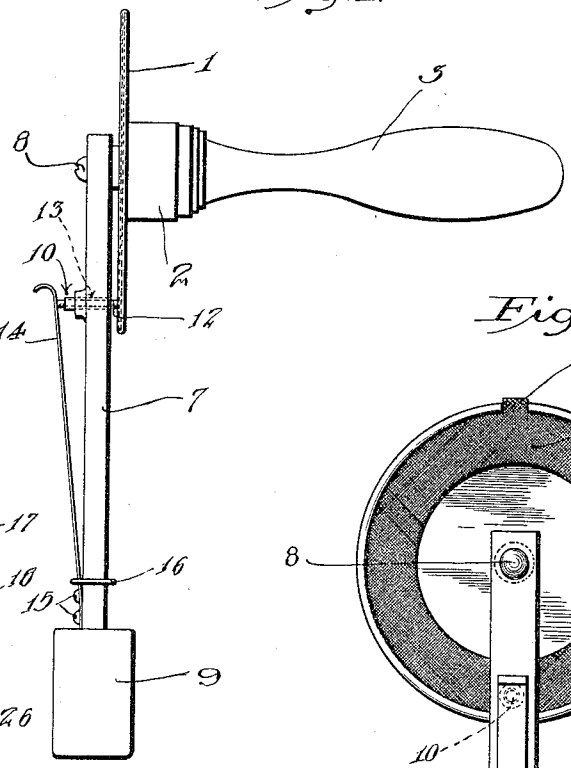


Fig. 4.

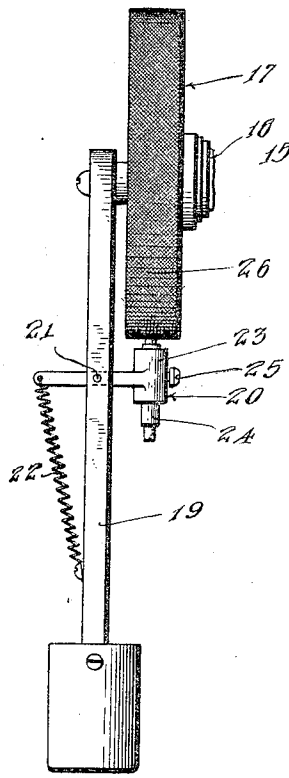


Fig. 2.

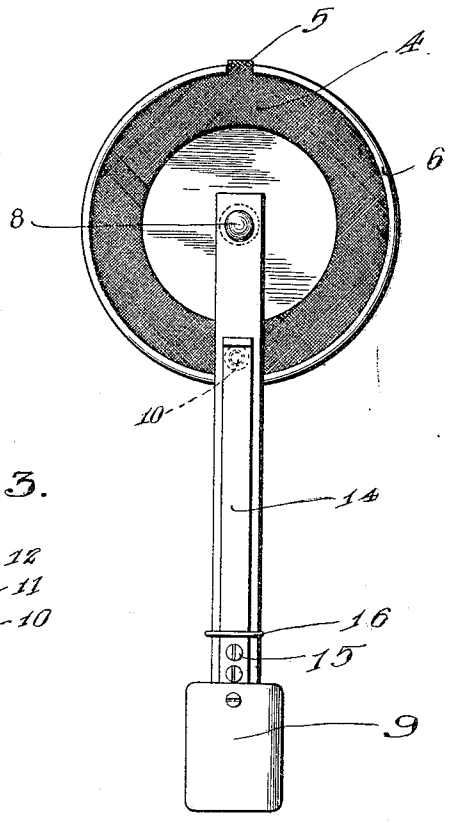
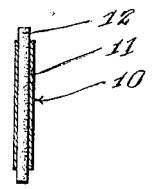


Fig. 3.



Witnesses:

Sully Russo.

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UNITED STATES PATENT OFFICE.

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TOY.

1,210,666. Specification of Letters Patent. Patented Jan. 2, 1917.

Application filed January 18, 1915. Serial No. 2,822.

To all whom it may concern.

Be it known that I, FREDERICK W. MATTHEWS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Toy, of which the following is a specification.

The primary object of this invention is to provide a toy or amusement device which, when operated, will emit sparks and flashes of light.

Another and more specific object of the invention is to provide a toy having a pyrophoric element movable relative to an abrasive surface whereby the pyrophoric element is worn away to produce sparks.

The invention also aims to provide a toy of this nature which shall be very simple, practical and durable.

With this and other objects in view, the invention consists in certain novel features of construction, combination and arrangement of parts, as will be hereinafter fully described, illustrated and claimed.

In the drawings: Figure 1 is a side elevation of the toy; Fig. 2 is a front elevation; Fig. 3 is a detail sectional view of the cartridge; and Fig. 4 is a side elevation showing a slightly modified form of the toy.

Referring in detail to the drawings by numerals, 1 designates a preferably metallic disk or base forming the relatively stationary portion of the toy, and this disk is provided with a socket 2 into which is fitted a handle 3. The disk is adapted to hold removably, an abrasive or grating element 4, here shown in the form of an annulus having a lip or tongue 5 projecting from its periphery. The annulus or grater is preferably formed of emery paper and is held in position by the over-turned edge 6 of the disk 1, said edge being notched to accommodate the tongue 5 whereby the grating element is locked against rotation relative to the disk. When the element 4 becomes worn, it may be easily sprung from engagement with the disk 1 and another unworn element positioned by simply slipping its edges under the flange or overturned edge 6.

An arm 7 is pivotally secured at one end to the handle 3 by a screw 8 and this arm is provided with a weight 9 at its outer terminal so that when the toy is swung by a person grasping the handle 3 the arm will turn about its pivot. The cartridge 10 comprises a sleeve or casing 11 and a pyrophoric element 12, the latter being preferably composed of 60 per cent. cerium and 40 per cent. iron. This cartridge slides loosely through an opening 13 formed in the arm 7 and its inner end is held forcibly in engagement with the grating element 4 by a flat metal spring 14. This spring may be secured at its outer end to the arm 7 in any preferred manner, such, for example, by means of the screw 15, and the inner end of the arm bears against the outer end of the cartridge, as is clearly shown in Fig. 1.

I find that as the grating element wears away and becomes smooth the cartridge must be forced into engagement therewith with a greater pressure, and to accomplish this I provide a tensioning band 16 which encircles the arm and the spring. By sliding the band inwardly the spring is drawn toward the arm and thereby exerts an increased pressure against the outer end of the cartridge. When the pyrophoric element protruding from one end of the shell 11 wears away the cartridge may be removed from the arm 7 and turned end for end so as to bring the pyrophoric element projecting from the other end of the shell into opposed relation with the grating element 4.

In Fig. 4 I have shown a modified form of toy wherein a relatively thick disk 17 is rigidly secured to a handle 18 and pivotally connected to a weighted arm 19. A cartridge holder 20 is pivotally secured intermediate its ends to the arm 19, as indicated at 21, and is connected at one end to a contractile helical spring 22. The other end of the spring is connected to the handle and the power of the spring tends to throw the head 23 of the cartridge holder toward the periphery of the disk 17. The head 23 is tubular and receives the cartridge 24 similar to the cartridge 10 previously described, and said cartridge 24 is locked against movement relative to the head 23 by a set screw 25. In this form of my invention, the abrasive element 26 encircles the periphery of the disk so as to engage the inner end of the cartridge.

The toy in either of its forms is operated by a person grasping the handle and swinging the device so that the weighted arm will revolve about its pivot point and move the pyrophoric portion of the cartridge over the grating element so as to cause the former to emit sparks.

While I have shown and described the

preferred embodiment of my invention, it will be understood that minor changes of construction and arrangement of parts may be made without departing from the scope and spirit of the invention as claimed.

What I claim is:

1. A toy comprising a relatively stationary member, a handle connected to the relatively stationary member, an abrasive element carried by the relatively stationary member, a pyrophoric element, and means carrying the pyrophoric element to cause it to travel over the abrasive element when the toy is swung in an arc.

2. A toy comprising a base, a handle mounted on said base, an abrasive element carried by the base, a weighted arm pivotally supported on the base and opposed to the abrasive element, a cartridge slidable through the arm to contact the abrasive element, and spring means engaging the cartridge to force the same toward the abrasive element.

3. A toy comprising a disk, an abrasive element carried on the periphery of said disk, an arm pivoted centrally of the disk, and a spring-pressed cartridge holder pivoted on the arm and adapted to support a cartridge in contact with the abrasive element.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 13th day of January, 1915.

FREDERICK W. MATTHEWS.

In presence of—

RODNEY M. SMITH,
LORA M. BOWERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."