

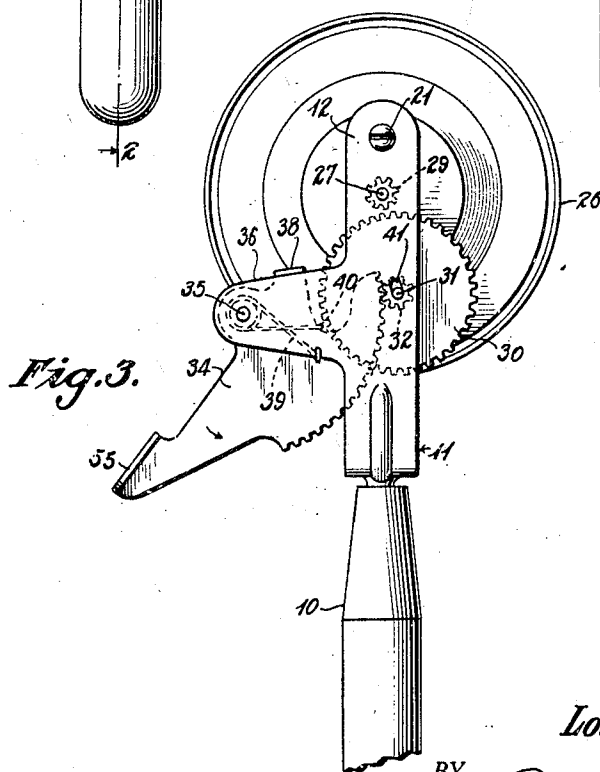
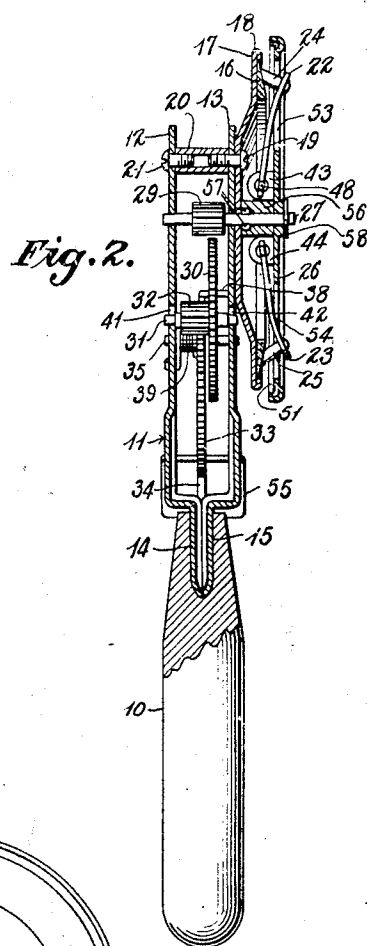
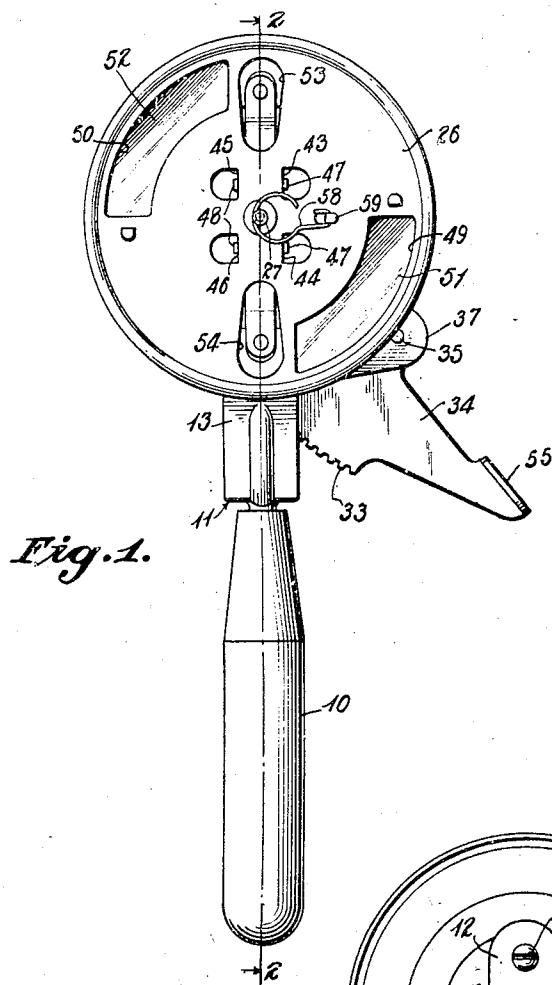
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SPARKING TOY

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SPARKING TOY.

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The invention relates to a sparking toy and has as an object the provision of a revolvable member carrying means to produce sparks adapted to be rotated by an improved form of drive.

It is a further object of the invention to provide a sparking toy in which the revolvable member revolves freely, being engaged by the driving member only when driving force is being applied thereto.

It is a further object of the invention to provide a sparking toy in which the spark causing elements are brought into operative position by centrifugal force when the revolvable member is caused to turn.

It is a further object of the invention to improve details of this class of toys.

Further objects of the invention will appear from the following description, when read in connection with the accompanying drawing showing an illustrative embodiment thereof, and wherein

Figure 1 is a side elevation,

Fig. 2 is a central vertical section on line 2-2 of Fig. 1, and,

Fig. 3 is a rear elevation.

As shown the device comprises a handle member 10 supporting a frame member 11 formed of parallel portions 12, 13, the lower ends of which are brought together at 14, 15 and inserted in the handle member 10.

To carry an annular abradant surfaced material 16, a disk 17 is shown, having its edges crimped about the member 16 as at 18, and secured upon the member 13 by means of screw 19 taking into a sleeve 20 which in turn is secured to the member 12 as by means of a screw 21. Sleeve 20 serves to hold the frame members 12, 13 in properly spaced relation.

To carry the pyrophoric element supporting means 22, 23 and to revolve the pyrophoric elements 24, 25 adjacent the member 16, there is shown a revolving disk 26 carried by shaft 27 projecting through the disk 17 and being journaled in frame members 12, 13.

The disk 26 is shown as carrying a hub 56 provided with recesses to fit freely over projections 57 carried by shaft 27 whereby the disk is caused to revolve with the shaft. To provide for ready removal of the disk for the purpose of renewing the pyrophoric elements, the end of the shaft is shown as formed with a notch to receive a spring 58 secured to the disk as at 59. By lifting the

spring 58 out of the notch the disk may freely be removed.

To drive the shaft 27, there is shown a pinion 29 rigidly fixed to the shaft, which pinion may be driven by a gear 30 mounted upon shaft 31, which shaft also carries pinion 32 rigidly fixed thereto. Drive of pinion 32 and gear 30 is provided by means of a rack 33 in the form of a sector carried by lever 34 pivoted upon a shaft 35 in ears 36, 37 projecting from the frame members 12, 13. The lever 34 is shown as formed with an ear 38 turned at an angle and overlying the projection 37.

To hold the lever 34 in its normally retracted position, there is shown a spring 39 anchored to the projection 36, coiled about the shaft 35, and having its other end anchored at 40 upon the lever 34.

To permit movement of the gear 30 into and out of mesh with the gear 29, the shaft 31 of the gear 30 is journaled in slots 41, 42 in the frame members.

To pivotally support the pyrophoric element carrying members 22, 23 upon disk 26, said disk is formed with ears 43, 44, 45, 46, formed from the material of the disk and turned inwardly. The ears are provided with openings into which projections formed from the material of the members 22, 23 project as shown at 47, 48.

To permit a display of sparks caused by the action of the pyrophoric elements against the abradant surface, the disk 26 is formed with openings 49, 50 which are desirably covered with transparent or translucent members 51, 52 which are desirably formed of colored material. The ends of the members 22, 23 are shown as bent upwardly and projecting through openings 53, 54 in the disk 26. The operation of the device is as follows:

When the thumb member 55 carried by the lever 34 is pressed upon by the user, the initial pressure causes gear 30 to be forced into mesh with the pinion 29, the shaft 31 riding up in the slots 41, 42 with consequent revolution of the disk 26. When the disk 26 is thus set into revolution, centrifugal force tending to cause the members 22, 23 to assume a position perpendicular to the axis of the shaft 27 will press the pyrophoric elements 24, 25 against the abradant surface causing sparks to be emitted, the light of which will shine through the material 51, 52 in the opening 49, 50. As soon as pres-

sure upon lever 34 is relaxed, the gear 30 will immediately drop out of mesh with the pinion 29, permitting the disk 26 to spin freely without dragging therewith the gear 30, resulting in a free revolution of the disk 26, retarded only by friction of the pyrophoric elements.

Minor changes in the physical embodiment of the invention may be made without departing from the spirit thereof within the scope of the appended claims.

I claim:

1. A sparking toy comprising, in combination, a frame, a disk mounted on said frame, a second disk mounted on said frame for rotation adjacent said first named disk, a pinion for driving said revoluble disk, a gear for driving said pinion mounted upon a shaft bodily movable with relation to said pinion, means for simultaneously causing revolution of said gear and for moving the same into mesh with the said pinion, means for withdrawing said gear from engagement with said pinion when driving force is removed, coacting sparking means carried by said disks to emit sparks when one of said disks is set into revolution.

2. A sparking toy comprising, in combination, a frame, a disk rigidly mounted on said frame, an annular abradant surfaced member carried by said stationary disk, a disk revolubly mounted on said frame to revolve closely adjacent said stationary disk, pyrophoric element carrying means freely pivoted upon said revoluble disk, pyrophoric elements carried by said means pressed against said abradant surface by centrifugal force upon revolution of said revoluble disk and means carried by the frame for causing revolution of said revoluble disk.

3. A sparking toy comprising, in combination, a frame, a disk rigidly mounted on said frame, an annular abradant surfaced member carried by said disk, a disk revolubly mounted in said frame for rotation adjacent said annular member, ears struck from the material of said last named disk, pyrophoric element carrying means pivoted upon said ears and having their ends projecting through openings in said disk, said members each normally projecting at angles other than right angles to the axis of said disk, pyrophoric elements carried by said means adapted to be pressed against said annular member by centrifugal force upon rotation of said revoluble disk and means carried by the frame to cause revolution of the revoluble disk.

4. A sparking toy comprising, in combination, a frame, illumination causing means journaled in said frame upon a shaft, a pinion rigidly carried by said shaft, a gear fixedly mounted upon a shaft journaled in arcuate slots in said frame whereby said gear is movable into and out of mesh

with said pinion, a pinion fixedly mounted on said movable shaft, a geared sector meshing with said last named pinion and pivoted upon said frame, means to cause retraction of said sector and means to apply pressure upon said sector to overcome said retracting means to bring said first named pinion and said gear into mesh to cause revolution of said illuminating means and to withdraw said gear from such engagement to permit free spinning of said illuminating means.

5. A sparking toy comprising, in combination, a stationary disk, a revoluble shaft projecting therethrough having a notch adjacent its free end, and a projection on its surface, a revoluble disk having a hub seating over said shaft, said hub having a recess to seat over said projection to cause the last named disk to revolve with the shaft, means carried by the last named disk engaging the notch in said shaft to retain the disk thereon, an abradant surface carried by one disk and a pyrophoric element carried by the remaining disk adapted to press against the surface and means to cause revolution of said shaft.

6. A sparking toy comprising, in combination, a stationary member, a revoluble member having a pinion rigid therewith, a gear capable of meshing with said pinion for driving said revoluble member, means permitting disengagement of said driving means from said pinion when driving force is absent, an abradant surface carried by one of said members, a pyrophoric element carried by the other of said members whereby sparks are produced upon revolution of the revoluble member.

7. A sparking toy comprising, in combination, a frame, a pair of members mounted for relative rotation thereon, means to produce illumination upon such relative motion of revolution, a driving means to cause such relative motion comprising a gear member, a second gear member, means mounting the second gear member for movement into and out of mesh with the first gear member, and means operable to move the second gear member into mesh with the first gear member and apply driving force to the first gear member, the last mentioned means permitting automatic movement of the second gear member out of mesh with the first gear member in the absence of driving force.

8. A sparking toy comprising, in combination, a stationary member, a revoluble member having a pinion rigid therewith, a gear capable of meshing with said pinion for driving said revoluble member, a pinion rigid with said gear, an arcuate driving rack pivoted for engagement with said last named pinion, means permitting disengagement of said gear from said first named pinion when driving force is absent, and coacting sparking means carried by said members.

9. A sparking toy comprising, in combination, a frame, a disk mounted on said frame, a second disk mounted on said frame for rotation adjacent said first named disk, 5 a pinion for driving said revoluble disk, a gear for driving said pinion mounted on a shaft bodily movable with relation to said pinion, pivoted means for simultaneously causing revolution of said gear and for moving the same into mesh with said pinion, 10 means permitting withdrawal of said gear from engagement with said pinion when driving force is removed, and coacting sparking means carried by said disks to emit sparks when said revoluble disk is set in 15 motion.

10. A sparking toy comprising, in combination, a pair of spaced standards having

arms projecting laterally therefrom in spaced relation, said standards formed with 20 arcuate slots, a shaft movably and revolubly mounted in said slots, a pinion and a gear rigidly mounted on said shaft, an arcuate rack journaled between said arms and meshing with said pinion, a shaft journaled on 25 a fixed axis in said standards and rigidly carrying a pinion meshable with said gear, coacting sparking members carried by said shaft and by one of said standards respectively, and means for manual operation of 30 said rack to move said first named shaft in said slots whereby to bring said gear into mesh with said second named pinion and to cause revolution of the latter.

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