April 7, 1953 W. J. SHAPIRO 2,634,127

TOY BOMB DROPPING AIRPLANE

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Fig. 1.

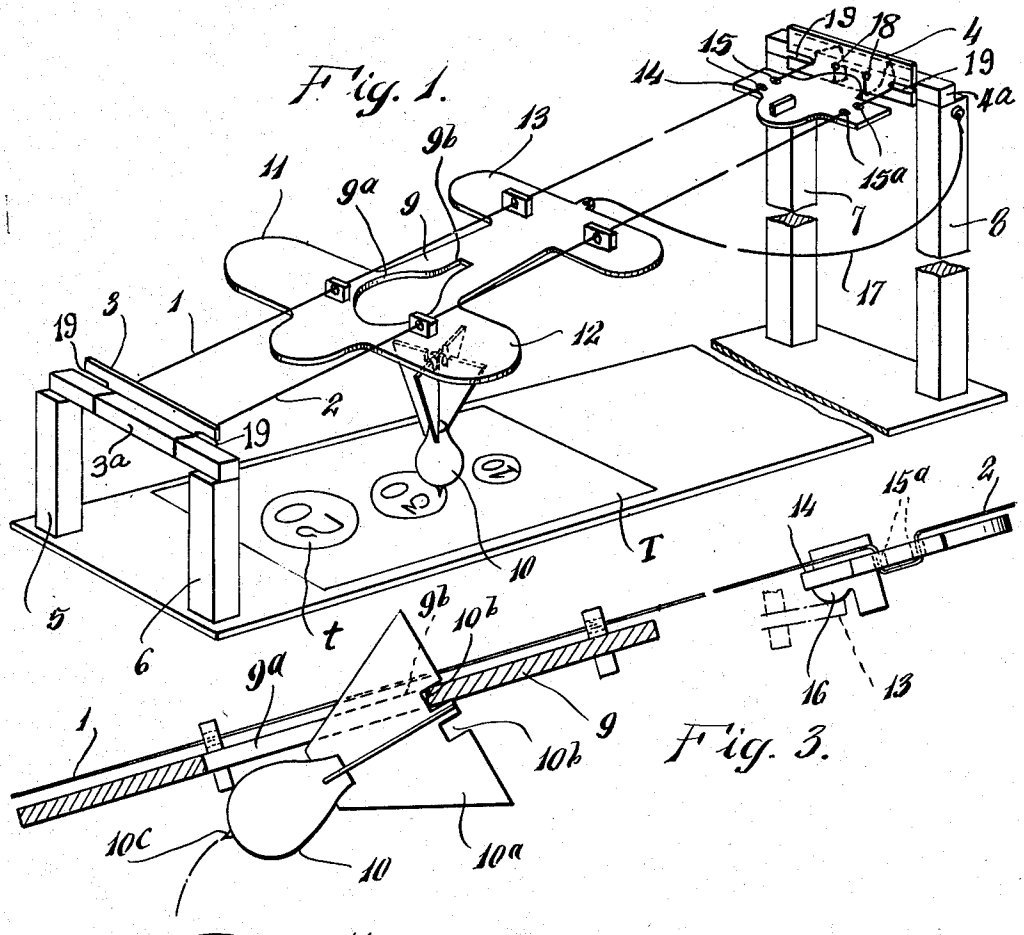
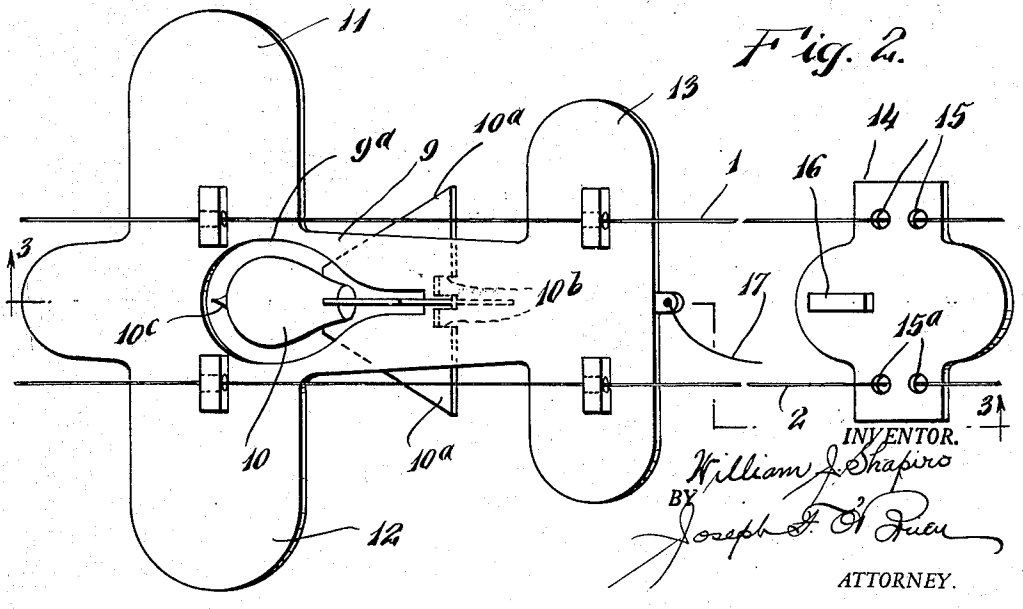


Fig. 3.

Fig. 2.



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TOY BOMB DROPPING AIRPLANE

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16 Claims. (Cl. 273—95)

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This invention relates to improvements in toy or game apparatus.

One of the objects of this invention is to provide a game in which the players utilize a vehicle, preferably comprising a toy airplane made of cardboard or similar material, mounted and preferably suspended beneath a pair of flexible tracks, such as parallel cords, arranged in a suitable fixed inclined position to provide a track on which the toy airplane or other carrier vehicle is adapted to run or "fly" by gravity from an upper terminal to a lower terminal, combined with a load, such as a toy bomb, releasably mounted on the vehicle, the parts being arranged so that the vehicle may, during its movement, be retarded or jolted by remote control through manipulation of the flexible tracks.

Another object of my invention is to arrange a target beneath a flexible track of the type specified and to combine with a toy running on such flexible track, a bomb adapted upon retardation or jolting of the plane between the terminals of movement, preferably by manipulation of the tracks, to automatically release the load or bomb upon said target whereby an operator may, by the exercise of suitable skill, cause the bomb to drop and fall on the target, which is preferably provided with suitable numeric indications adapted to designate point values for different places on the target, so that competitive scoring is made possible.

Another object of my invention is to provide an amusing toy vehicle for children comprising the provision of a pair of parallel cords, the mounting and preferably the suspension of the vehicle on these parallel cords, and the provision of means whereby one or both of such parallel cords may be utilized to act as a frictional brake for the vehicle and thus to retard or stop the movement thereof at any position along the track.

Another object of my invention is to combine with such a vehicle a load so mounted on the vehicle as to be released and dropped upon operation of the cords or strings.

Another object of my invention is to utilize a vehicle of the type specified mounted upon flexible cords or strings and to provide, in combination therewith, an operating member adapted by a mere touching, pulling or tapping of the same to manipulate one or both of the cords to cause a braking or jolting of the vehicle by remote control at any point between the starting and stopping terminals, whereby a load carried by the vehicle and loosely mounted thereon will be released.

Another object of my invention is to provide,

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in a device of the character specified, means for retaining the opposite ends of the track in spaced relationship and preferably for fastening the ends of the track in such properly spaced relationship to suitably fixed elements disposed at suitable positions whereby the tracks are retained in spaced relationship during placing in inclined position to cause the vehicle to move by gravity from the starting to the stopping terminal.

Another object of my invention is to use a vehicle comprising a toy airplane composed of cardboard provided with a suitable centrally-disposed notch preferably arranged between the tracks, in combination with a bomb having a cooperating notch fitting over the edge of the airplane notch to provide a loose mounting of the bomb on the airplane vehicle and to enable the bomb member to be released by the retardation or jolting of the plane at any point during its movement from the upper to the lower terminal.

Another object of the invention is to provide a vehicle of the type specified mounted upon or adapted to be mounted upon a flexible track, the vehicle having a load retaining edge and a load having spaced clamping edges such as provided by a notch to loosely receive and clamp the load retaining edge for releasing the load from the vehicle by manipulation of the track.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to coact and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in which:

Fig. 1 is a view in perspective of apparatus embodying my invention;

Fig. 2 is a view in plan of a novel airplane toy suitable for use in my game apparatus; and

Fig. 3 is a section on the line 3—3 of Fig. 2 looking in the direction of the arrow.

Referring now to these drawings, which illustrate a preferred embodiment of my invention, a pair of flexible track members, such as cords 1 and 2, are connected at opposite ends to suitable terminal members which, as illustrated in Fig. 1, comprise track-fastening and spacing members 3 and 4 connected to supporting cross members 3^a, 4^a amounted, as shown, and extending between pairs of supporting posts 5 and 6 and 7 and 8, respectively. These supporting members 3^a—4^a, 5, 6, 7 and 8 may obviously comprise any

suitable supporting elements or means positioned in proper relation to each other.

The track cords 1 and 2 are positioned at a suitable incline to provide a track on which a toy airplane 9 or other carrier vehicle, or vehicle member, which is preferably composed of cardboard, is adapted to move by gravity from the upper terminal or position to the lower terminal or position of the track. As illustrated, the toy airplane 9 is provided with a centrally located key-shaped aperture 9^a, the rear end of which is contracted and terminates in a suitable notch 9^b and a toy bomb 10 or load member preferably has a body formed of wood or other material, and also is provided with conventional wings or vanes 10^a, one and preferably all of which are provided with notches 10^b adapted to slip over the edge of the notch portion 9^b of the key-shaped aperture 9^a. When one of the notches 10^b of a wing is slipped over the edge 10^c of the notch of the key slot 9^a, the spaced faces of the notch 10^b in the bomb, clamp the edge 10^c of the aeroplane by the cocking action of the weight of the bomb member whereby a releasable connection for the mounting of the bomb on the airplane is produced and the bomb may be readily and easily suspended beneath the centrally located key slot in the airplane.

The edge of the notch of the key slot 9^a is a clamping edge carried by one of the members of the combination, namely the vehicle member or aeroplane and the bomb member, and the other member carries spaced faces formed by the spaced edges which form the notch 10^b. These spaced faces or edges are spaced apart a little greater distance than the thickness of the edge so that the weight of the bomb member in cocked position clamps the same to the aeroplane with a releasable connection whereby a jolt or retardation effected such as on the track means remotely from the vehicle member releases the connection and the bomb member drops away.

In the embodiment of my invention shown, the airplane is provided with wings 11—12 and a tail member 13 and said wings and tail members are provided with runner elements adapted to be mounted on the track cords and, as shown, these runner elements comprise four perforated cardboard tabs positioned in pairs on the wings and on the tail piece with the members of each pair arranged at opposite sides of the center of the airplane 9 and being adapted to permit the passage of the cords through the perforations therein for the purpose of mounting the airplane on the track cords 1 and 2.

In the preferred embodiment shown, I mount at the upper end of the track a combined starting and retaining element 14 also preferably made of cardboard and provided with suitable pairs of holes 15, 15^a through which the track cords pass before connection to the fastening members 3 and 4. This operating and retaining member is preferably provided at its lower end with a retaining member 16 adapted to engage the tail-end 13 of the airplane in its upper position and to frictionally hold the same in such upper position. The positioning of the pairs of mounting holes of this member enables it to be tilted by pressure at the opposite end thereof in order to raise the engaging or retaining member 16 and to release the airplane to permit its downward movement or flight along the cords 1 and 2.

When playing a game with this apparatus, the

airplane is moved to its upper position. This may be accomplished by the retrieving cord 17 and the tail 13 of the plane 9 is brought beneath the engaging member 16 which holds it frictionally in its uppermost position. The operator then by pressure at the opposite end of the releasing and operating member 14 tilts the said member to raise the engaging member 16 and release the airplane for its downward movement or flight by gravity in which, of course, it will carry the bomb in releasably-suspended position. The airplane on such downward movement would normally strike against the opposite lower terminal and unload the bomb by collision with such lower terminal. In order, however, to provide an amusing game with the device, I provide between the terminals a target T which is preferably provided with suitable indications *t* to designate positions and show point values for varying objectives so that means providing for a competitive scoring may be produced. In this game, the tracks 1 and 2 are composed of flexible members of the type hereinabove specified, which are adapted by manipulation of the operator either to retard the movement of the plane or to jolt the bomb through the cords during its movement or flight by remote control, and thus to release the bomb during the movement or flight of the plane from the upper track terminal to the lower track terminal.

In the preferred embodiment of my invention the release element 14 is utilized to retard or jolt the movement of the plane during its flight, as aforesaid, whereupon the bomb or load member is released. Perhaps partly due to the phenomena of inertia, the momentum of the bomb carried by the plane will continue to move forwardly, or perhaps the jolt alone releases the clamping action between the faces of the notch and the clamped edge 10^b, or perhaps a combination of both actions and the bomb will thus be released from the releasable connection hereinabove described between the notches in the bomb wings and the notch of the centrally located key aperture in the plane.

It will be obvious that an operator by selecting the time at which the plane is above a certain point in the target may drop the bomb on this point. However, the selection of the exact moment will depend upon the skill or luck of the operator in order to enable the bomb, first, to strike the target at all and, second, to strike the target at a point most favorable or more difficult.

It will be seen that I have provided a device in which a bomb may be released from a moving airplane by track members which enable remote or distant control of the dropping of the bomb.

In the preferred embodiment of my invention illustrated the bomb 10 has, at one end opposite to the wings a conventional point 10^c and this point is adapted, upon the dropping of the bomb, to engage and stick into the target 18 and thus to determine the precise position on such target of the point or competitive scoring area thereon which is most favorable.

Another method of operation is, instead of utilizing the operating element hereinabove specified, to move the track members toward each other or to separate and expand the same.

A similar result may be obtained also by the application of any sudden pressure to the tracks, such as the pulling or jerking of one or both of the cords, but I prefer the application of such

pressure by a quick tapping of the operating releasing member 14.

The airplane mounting simulates flight and normal bomb dropping by an airplane and by my invention such bombs may be dropped at any point during such flight. The airplane, glider or vehicle mounting is illustrative of flexible supporting means for supporting the vehicle for movement simulating more or less the movement of a plane and the runner elements or tabs are means for receiving the supporting means used.

As shown, the track fastening and spacing members 3 and 4 comprise identical flat elements, each having a pair of holes 18 through which a continuous cord passes to connect the member thereto. The cord portions or strands then pass around one of the supporting cross members 3^a—4^a and then pass through the pairs of kerfs 19 at opposite ends of said members 3. These kerfs 19 thus separate the continuous cord into the spaced track cords 1 and 2.

This invention is presented to fill a need for improvements in a toy or game apparatus. It is understood that various modifications in structure, as well as changes in mode of operation, assembly and manner of use, may and often do occur to those skilled in the art, especially after benefiting from the teachings of an invention. Hence, it will be understood that this disclosure is illustrative of preferred means of embodying the invention in useful form by explaining the construction, operation and advantages thereof.

Having described my invention, I claim:

1. A game apparatus embodying, in combination, a pair of flexible track members arranged in inclined position, a substantially flat vehicle mounted on said flexible track members and movable by gravity thereon, means on the vehicle for releasably mounting a suitable load whereby manipulation of the flexible track members is adapted to release the load and to discharge the same by remote control during the movement of the vehicle between the terminals, said vehicle having two pairs of runner members connected with said flexible track members and said releasable connection comprising a centrally-located rearwardly-disposed notch in the vehicle and the load also has a forwardly-disposed notch adapted to cooperate with the notch in the vehicle to provide a releasable-mounting of the load thereon, an operating member arranged near the upper terminal of the flexible track members and being adapted upon finger pressure to manipulate the flexible track members and by remote control to cause the discharge of the load.

2. A game apparatus in accordance with claim 1 in which the operating member is also provided at its forward end with engaging means to releasably engage the vehicle in its uppermost position.

3. A game apparatus embodying, in combination, a track composed of a pair of flexible members disposed in parallel relationship, fastened at opposite ends and tautly stretched in inclined position between fixed terminals at an angle adapted to provide gravity-inducing ways for a vehicle, a vehicle mounted on said flexible track and movable by gravity thereon, a load, and load release means comprising a rearwardly disposed notch in an edge of the vehicle and a forwardly disposed notch in the load adapted to cooperate with the notch in the vehicle to provide a releasable mounting of the load thereon, whereby transmissions to said vehicle of an impulse through said track is adapted to release the load and to discharge the same by remote control during a movement of the vehicle between the terminals.

4. A game apparatus adapted to be used with a flexible track fastened at each end thereof which track may be inclined to provide a gravity-induced way comprising in combination a vehicle member, means carried by the vehicle member for retaining the latter upon the track for movement thereon, a load member, and means carried by the vehicle member and by the load member adjacent an end thereof to releasably retain the load member upon the vehicle member including a load retaining edge carried by one of said members, fixed clamping faces carried by the other member providing edges spaced a distance apart greater than the thickness of the load retaining edge to loosely receive and clamp the load retaining edge by the weight of the load member and releasable by manipulation of the track.

5. A game apparatus comprising, in combination, a flexible track adapted to be fastened at each end thereof with the track inclined to provide a gravity-induced way, a vehicle member, means carried by the vehicle member for retaining the latter upon the track for movement thereon, a load member, and means carried by the vehicle member and by the load member adjacent an end thereof to releasably retain the load member upon the vehicle member including a load retaining edge carried by one of said members, fixed clamping faces carried by the other member providing edges spaced a distance apart greater than the thickness of the load retaining edge to loosely receive and clamp the load retaining edge by the weight of the load member and releasable by manipulation of the track.

6. A game apparatus as in claim 5 including an operating member carried by the flexible track adjacent an end thereof manipulation of which releases the load from the vehicle member.

7. A game apparatus as in claim 6 in which one of the members including the vehicle member and the operating member carries engaging means engaging the other member to releasably retain the vehicle member at the upper end of the track.

8. A game apparatus adapted to be used with a flexible track fastened at each end thereof with the track inclined to provide a gravity-induced way comprising a vehicle having a load retaining edge, means carried by the vehicle for retaining the latter upon the track for movement thereon, a releasable load, and fixed clamping edges carried by the load adjacent an end thereof and spaced apart a distance greater than the thickness of the load retaining edge to loosely receive the load retaining edge upon the vehicle and releasably clamp the same thereon by the weight of the load and releasable by manipulation of the track.

9. A game apparatus comprising in combination a flexible track adapted to be fastened at each end thereof with the track inclined to provide a gravity-induced way for a vehicle, a vehicle having a load retaining edge, means carried by the vehicle for retaining the latter upon the track for movement thereon, a releasable load, and fixed clamping edges carried by the load adjacent an end thereof and spaced apart a distance greater than the thickness of the load retaining edge to loosely receive the load retaining edge upon the vehicle and clamp the load

thereto by the weight of the load and releasable by manipulation of the track.

10. A game apparatus comprising in combination a flexible track adapted to be fastened at each end thereof with the track inclined to provide a gravity-induced way for a vehicle member, a vehicle member having a load retaining edge, means carried by the vehicle member for retaining the latter upon the track for movement thereon, a releasable load, and a notch carried by the load adjacent an end thereof and having a width to loosely receive the load retaining edge upon the vehicle member and clamp the load thereto by the weight of the load and releasable by manipulation of the track.

11. A game apparatus as in claim 10 including an operating member carried by the flexible track adjacent an end thereof manipulation of which releases the load from the vehicle member.

12. A game apparatus as in claim 11 in which one of the members carries engaging means engaging the other member to releasably retain the vehicle member at the upper end of the track.

13. A game apparatus adapted to be used with a flexible supporting means which supports the vehicle for movement comprising in combination a vehicle member, means carried by the vehicle member for receiving the supporting means which supports the vehicle for movement, a load member, and means carried by the load member adjacent an end thereof and by the vehicle member to releasably retain the load member upon the vehicle member including a load retaining edge carried by one of said members, fixed clamping faces carried by the other member providing edges spaced a distance apart to loosely receive

and clamp the load retaining edge by the weight of the load member and releasable by manipulation of the track.

14. A releasable load adapted to releasably clamp an edge upon a vehicle comprising a body having a center of gravity and portions spaced from the center of gravity, fixed spaced clamping faces carried by the load at a portion thereof, spaced from the center of gravity and the spacing of the clamping faces being a little greater than the thickness of the clamped edge on the vehicle to grip the same by cocking of the clamping faces with respect to the clamped edge.

15. A releasable load as in claim 14 in which the fixed spaced clamping faces are adjacent each other forming a notch.

16. A releasable load as in claim 14 including vanes carried at the rear portion of the bomb and the fixed spaced clamping faces being a notch in at least one vane.

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