

July 28, 1936.

I. BAYER

2,048,915

PROJECTOR FOR SURFACE PROJECTILES

Filed Feb. 16, 1934

Fig. 1.

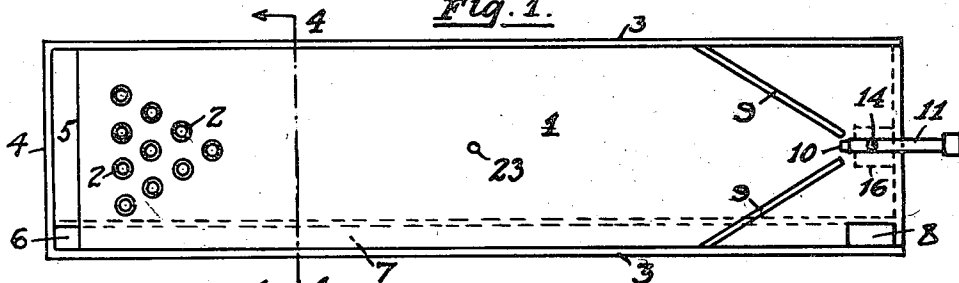


Fig. 2.

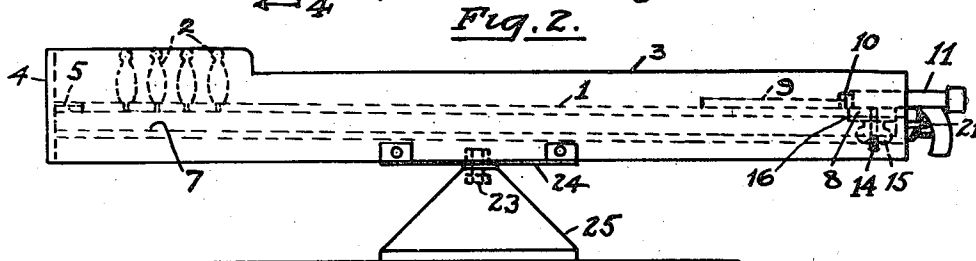


Fig. 3.

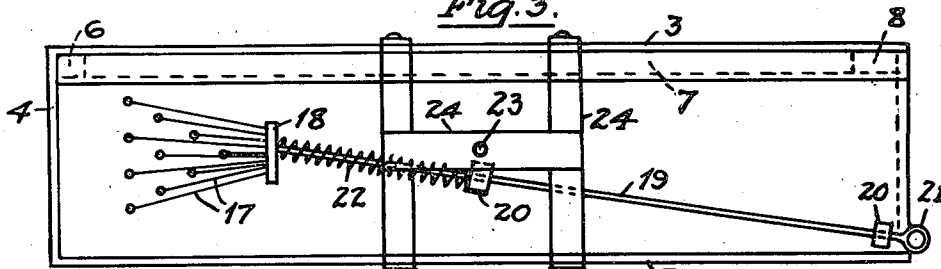


Fig. 4.

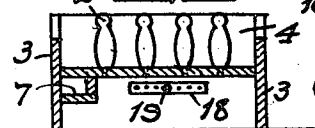


Fig. 5.

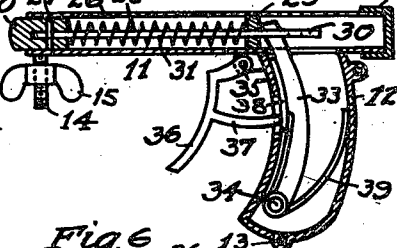


Fig. 7.

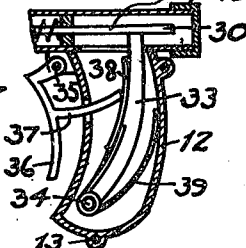


Fig. 6.

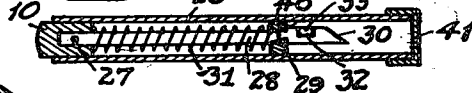
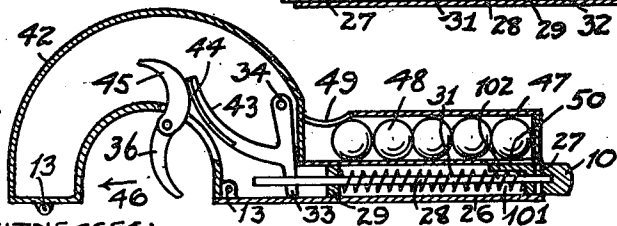


Fig. 8.



WITNESSES:-

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UNITED STATES PATENT OFFICE

2,048,915

PROJECTOR FOR SURFACE PROJECTILES

Ignatz Bayer, Detroit, Mich.; John Bayer administrator of said Ignatz Bayer, deceased

Application February 16, 1934, Serial No. 711,527

3 Claims. (Cl. 273—129)

My invention relates to games of the kind in which a number of movable members or pins are set up in a certain manner upon the surface of a floor or other substantially horizontal support and are then knocked down by a ball or other projectile discharged from a gun or pistol.

One object of my said invention is to provide improved means for discharging the projectile and directing the same so as to knock down the pins as aforesaid.

Another object of my said invention is to provide means whereby the projectile is automatically returned to the player after having accomplished its work.

Another object of my said invention is to provide means whereby the pins, after being knocked down, may be easily and quickly set up again in readiness for another game, without the necessity of touching them with the hands.

A further object of my said invention is to provide a game of the character referred to in which the working parts are simple in construction and easy to manufacture, and in which the apparatus as a whole is so mounted as to be rotatable about a fixed support so that it may be placed in the center of a table, whereby it may be easily and quickly moved into a position convenient for any one of a number of persons seated therearound.

With these and other objects in view, the invention consists in the improved construction, arrangement, and combination of parts which will be hereinafter fully described as applied to the game of "Ten-pins", reference being had to the accompanying drawing which illustrates a preferred embodiment thereof, in which drawing—

Figure 1 is a plan view of the complete apparatus.

Figure 2 is a side elevation of the same.

Figure 3 is an under-side view of the same.

Figure 4 is a transverse section on line 4—4 of Figure 1.

Figure 5 is a longitudinal section of one form of pistol to be employed for discharging the projectile.

Figure 6 is a section on line 6—6 of Figure 5.

Figure 7 is a fragmentary view corresponding to Figure 5 but showing the parts in different positions, and

Figure 8 is a longitudinal section of a modified form of pistol.

Like characters designate corresponding parts throughout the several views.

1 is the main floor upon which the game is to be played and 2 are the pins as set up in the playing position. 3 are a pair of longitudinal

side walls which project to a suitable distance above the floor level, while 4 designates a rear wall which is preferably of a greater height than the side walls. Adjacent the end wall 4 and parallel thereto is a depressed inclined trackway 5 which slopes downwards towards the opening 6, the said opening communicating with an inclined track-way 7 which extends forward to the front end of the floor and beneath the same in such manner that a ball which is projected beyond the pins 2 will roll down the track-way 5, passing through the opening 6, and then roll down the inclined track-way 7 to the front end where it may be recovered manually through an opening 8 in the floor 1 and then placed in proper position for being used over again.

The main floor 1 is also inclined downwards from the rear end to the front end and is provided with a pair of angularly disposed guides 9 which are so arranged that a projectile which does not reach the transverse track-way 5 will roll downwards to the front end and take up a position adjacent the hammer member 10 of the pistol 11, as indicated in full lines in Figure 1.

The pistol 11 consists essentially of a main frame or casing 12 in two halves stamped from sheet metal and secured together by rivets 13, the pistol as a whole being swivelly mounted upon the pin 14 which passes down through a hole in the floor 1 and is secured in position by a nut 15, there being a metal re-enforcing plate 16 upon the under-side of the floor whereby the rigidity of the structure is insured.

In order to set up the pins after they have been knocked down, there are provided upon the under-side of the floor 1 a series of cords or flexible members 17, corresponding to the number of pins employed. One end of each of the said cords passes upwards through a suitable opening and is connected to the base of its respective pin, while the other end is connected to a transverse member 18, and to this member is connected a rod 19 supported in guides 20 and terminating in a ring 21. Surrounding the rod 19 is a helical compression spring 22, one end of which presses against the member 18 while the other end reacts against the adjacent guide 20, the arrangement being such that by pulling upon the rod 21, the rod 19, together with the transverse member 18, is pulled forwards so as to tighten the flexible members 17, which are normally in a loose condition so as not to interfere with the overturning of the pins 2, and by so tightening the

said flexible members the pins are brought into a vertical position, as will be understood.

The apparatus as a whole is so mounted as to swivel in a horizontal plane around the pivot 23 which presses through the transverse member 24, attached to the side walls 3, and is secured to the upper surface of a base 25 adapted to rest upon a table or other support.

The pistol 11 will now be described with particular reference to Figures 5, 6, and 7 of the drawing. 10 is the hammer member, of rubber or other resilient material, adapted to slide within the tubular barrel 26 formed integral with the casing 12. To the inner end of the member 10 is connected, by means of the pin 27, a plunger 28 of rectangular cross section slidably supported near its rear end in the fixed guide 29 and terminating in a latch 30. Surrounding the plunger 28 is the helical compression spring 31, one end of which bears upon the inner surface of the hammer 10 while the other end re-acts against the fixed guide 29. Forward of the latch 30 is a notch 32 in which engages the upper end of a lever 33 pivoted at 34. Pivoted to the frame at 35 is a trigger 36 provided with an extension 37 which projects through a slot in the frame and is adapted to bear against a flange 38 integral with the lever 33, the arrangement being such that when the parts are in the position shown in Figure 5 and the trigger 36 is pulled rearwardly, the end of the extension 37 travels over the surface of the flange 38 and, by a cam-like action, pushes the lever 33 rearwardly until it occupies the position shown in Figure 7, at which point the upper end of the said lever becomes disengaged from the notch 32 and allows the plunger 28 to be impelled forward at great speed under the action of the spring 31, which has in the meantime been compressed. The trigger 36 being then released, the lever 33 is returned to the original position, as shown in Figure 5, by the spring 39 which is supported upon the pivot 34, one end of the said spring bearing against the flange 38 while the other end re-acts against the rear portion of the frame 12. In order to facilitate the re-entrance of the end of the lever 33 into the notch 32, the spring 39 is bent laterally in such a manner as to normally urge the said end towards the latch, while at the same time the said lever is loosely mounted upon the supporting pivot. By this arrangement the end of the lever 33 can slide upwards along the inclined surface of the latch and will then fall into the notch, as will be understood by those skilled in the art. In order to further facilitate the movement just described, there is provided upon the plunger 28 an inclined notch 40 which allows the latch end of the plunger 28 to move slightly away from the end of the lever 33 against the action of the spring 31 which, due to the fact that its ends are flattened, as shown in Figure 6, tends to maintain the plunger as a whole in a central position, as shown. The rear end of the barrel 26 is closed by means of a cap 41.

It will be observed that a pistol of the construction above described must be arranged to overhang the edge of the floor 1 in order that it may swing freely in a horizontal direction, but in the modification shown in Figure 8 the pistol is so arranged that no part of it projects below the supporting floor surface. This is accomplished by providing an upwardly-turned arcuate handle 42 in place of the handle previously shown.

This necessitates a re-arrangement of the parts as follows:

The lever 33, pivoted at 34, is provided with a rearward extension 43 upon which is an up-standing flange 44, and the trigger 36, instead of being formed as above described, is provided with a cam member 45 which, when the trigger is moved rearwardly in the direction of the arrow 46, acts upon the flange 44 so as to move the extension 43 forwards and re-tract the plunger 28 in the same manner as above described, the construction of the latch and associated elements being also similar. In this modification, however, there is provided, above the barrel 26, a magazine 47 adapted to contain a plurality of projectiles 48 which are fed in through the opening 49 and which will escape one by one into the forward end of the barrel 26 through the opening 50 when the said opening is uncovered by retraction of the plunger 28 in the position shown in broken lines in the drawing. In this manner a number of projectiles may be fired one after another in quick succession.

It will be noted that, in order to obtain a sufficient length of the spring 31 without requiring a barrel of inordinate length, the lower portion of the hammer member 10 is cut away at 101, leaving merely a curved upper portion 102 which is necessary to provide a proper closure for the opening 50 and prevent the projectiles from getting behind the hammer when the same is in the extreme forward position.

While I have herein described and shown a preferred embodiment of my invention, it will be readily understood by those skilled in the art that the same may be modified in various ways to meet any particular or peculiar requirement, without departing from the spirit of my invention. For example, in some cases the apparatus, instead of being of open construction as herein shown and described, may be enclosed by means of a glass or other transparent cover, and access to the pistol or to the projectiles may be obtained through any well known form of pre-payment mechanism.

Having thus described my said invention, what I claim and desire to secure by Letters Patent of the United States is:

1. A pistol comprising a barrel; a spring-impelled member slidably mounted within said barrel; a handle upon said barrel bent upwardly and downwardly in arcuate form and terminating substantially in alinement with the lower surface of said barrel, and trigger means within said handle adapted to retract said member against the action of the spring and to release the same to discharge a projectile.

2. A pistol comprising a barrel; a spring-impelled member slidably mounted within said barrel; a handle upon said barrel bent upwardly and downwardly in arcuate form and terminating substantially in alinement with the lower surface of said barrel, and trigger means within said handle adapted to retract said member against the action of its spring and to release the same to discharge a projectile, said means including a flat rod connected to said member having a lateral notch proximate to its free end and having its end beveled; a lever pivoted within said handle to the rear of said barrel and adapted to slide over said beveled end and to engage said notch, and having a rearwardly extending, arcuate extension thereupon; a spring acting upon said lever to normally urge the same into engage-

ment with said notch; a cam member pivoted within said handle and arranged in co-operative relation with said extension; and a lever upon said cam member projecting into the bight of said handle whereby said lever may be manually operated to move said rod rearwardly against the action of its spring and then to release the same.

3. A pistol comprising a barrel; a spring-impelled member slidably mounted within said barrel; trigger means adapted to retract said member against the action of its spring and to

release the same to discharge a projectile; a magazine above said barrel and parallel thereto for containing a plurality of projectiles; an aperture connecting said barrel and said magazine; and a valve member extending rearwardly upon said member and adapted to control said aperture, whereby a single projectile is discharged into said barrel upon each retraction of said member.

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