A. J. SMITH, DEC'D.

L. F. SMITH, ADMINISTRATRIX.

SHOOTING GALLERY.

APPLICATION FILED JUNE 23, 1913.

1,121,945. Patented Dec. 22, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

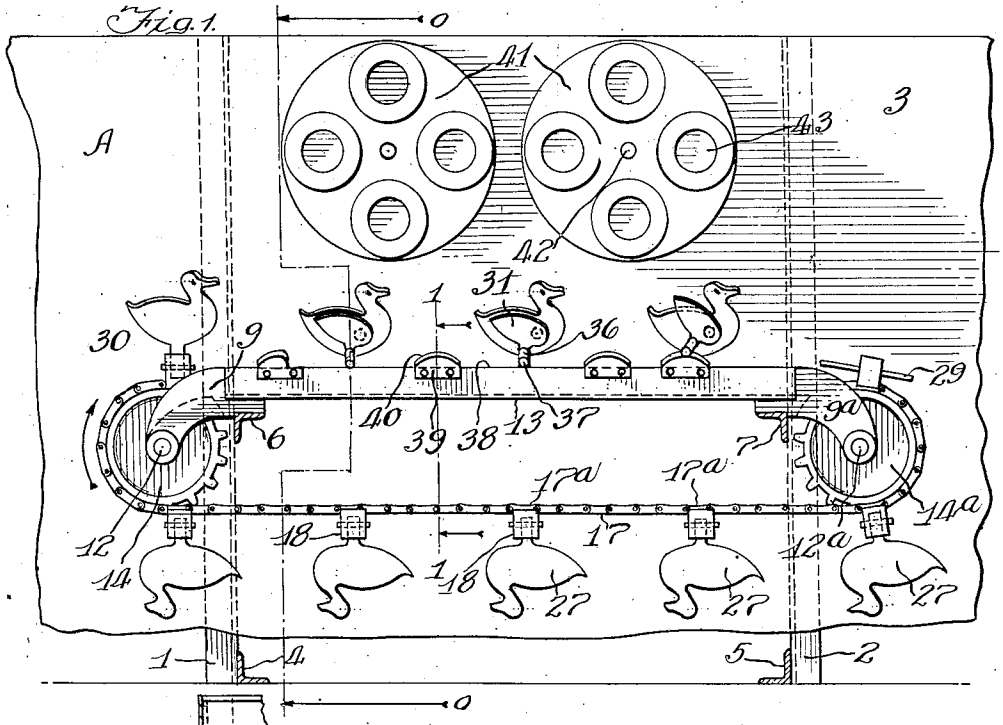


Fig. 2.

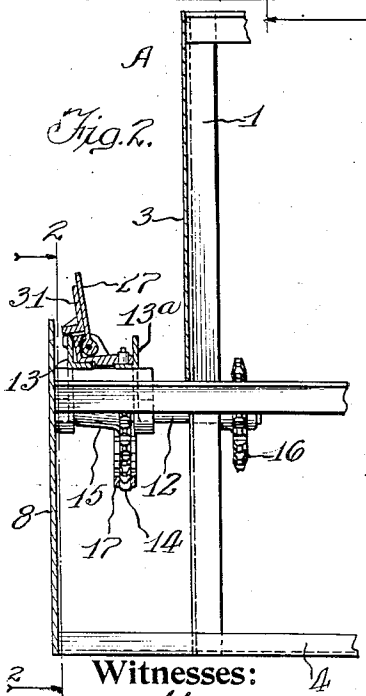


Fig. 3.

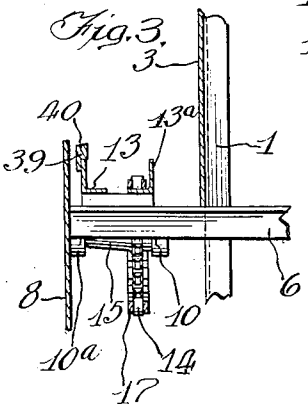


Fig. 4.

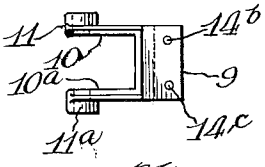
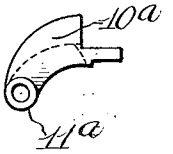


Fig. 5



Witnesses:

R. Burkhardt.

Herbert L. Halm.

Inventor:

Alfred Jay Smith

By Michael Stark & Sons

Attorneys

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2 SHEETS—SHEET 2.

Fig. 6.

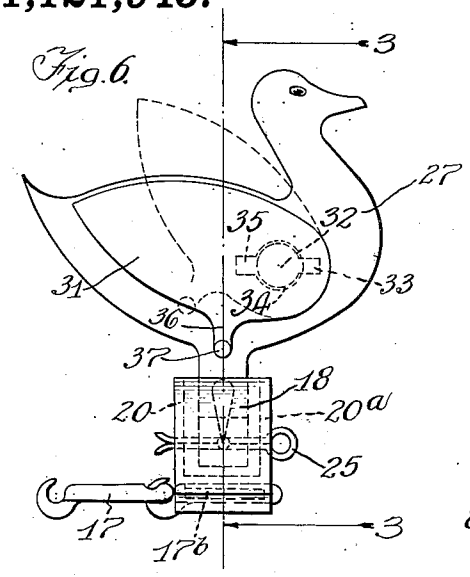


Fig. 7.

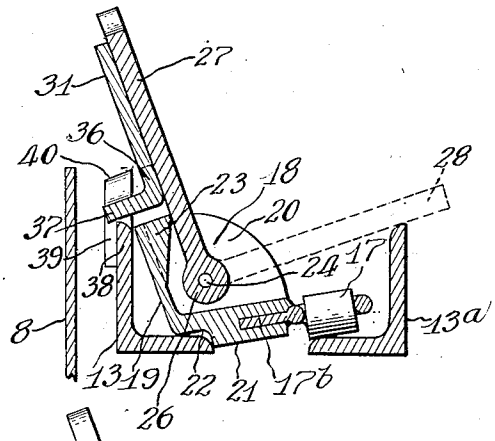


Fig. 8.

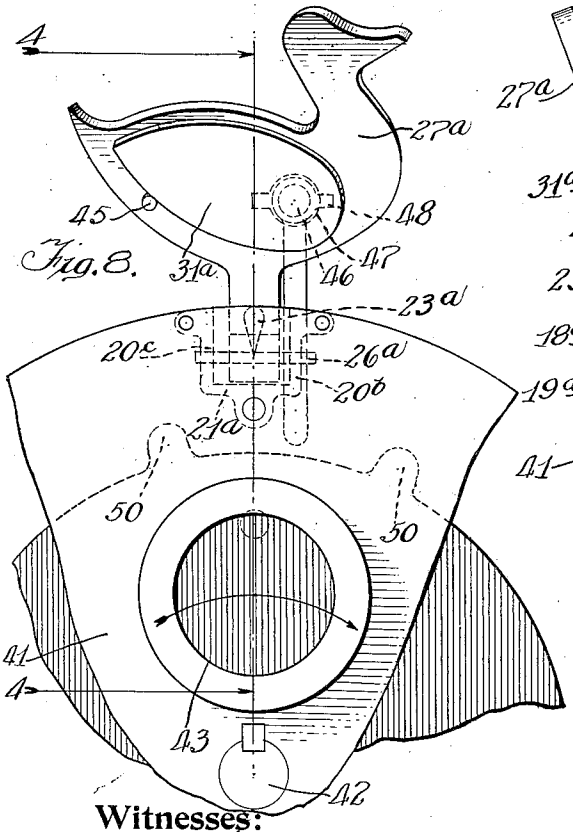
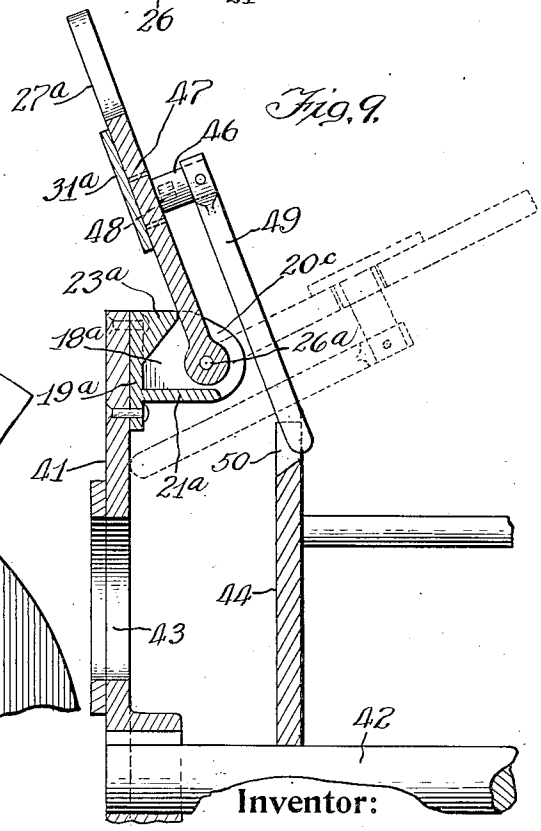


Fig. 9.



Witnesses:

R. Burkhardt.

Herbert Halm

Inventor:

Alfred Jay Smith

By Michael J. Starr & Sons

Attorneys

UNITED STATES PATENT OFFICE.

ALFRED JAY SMITH, OF CHICAGO, ILLINOIS; LILLIAN FLORENCE SMITH, ADMINISTRATRIX OF SAID ALFRED JAY SMITH, DECEASED, ASSIGNOR TO A. J. SMITH MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SHOOTING-GALLERY.

1,121,945. Specification of Letters Patent. Patented Dec. 22, 1914.

Application filed June 23, 1913. Serial No. 775,259.

To all whom it may concern:

Be it known that I, ALFRED JAY SMITH, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Shooting-Galleries; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheets of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates generally to improvements in shooting galleries, and it consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described and then pointed out in the claims.

In the drawings already referred to, which serve to illustrate my said invention more fully, Figure 1 is a front elevation of my improved shooting gallery with the lower front guard removed, the parts shown in section being taken in line 2 2 of Fig. 2. Fig. 2 is a vertical, transverse section in line O O of Fig. 1. Fig. 3 is a similar section of a fragment of my device in line 1 1 of Fig. 1. Fig. 4 is a plan of a detail of construction and Fig. 5 a side elevation thereof. Fig. 6 is an elevation of one of the targets and a portion of its propelling chain. Fig. 7 is a vertical, transverse section in line 3 3 of Fig. 6, said section also showing the guide members of my invention and the front guard thereof; both in section. Fig. 8 is an elevation of one of my improved targets as applied to a rotating disk, and Fig. 9, a section in line 4 4 of Fig. 8.

Like parts are designated by corresponding characters and symbols of reference in all the figures of the drawings.

A shooting gallery, to be popular, must be so constructed as to include targets which are in constant motion and capable of being toppled over by a well aimed shot. Such galleries as now constructed require an attendant to operate certain trip devices to right these toppled over targets, thereby adding to the expense of operation.

One of the aims of my invention, therefore, is the production of a gallery wherein moving targets traversing an endless path, whether actuated by an endless chain belt to which the targets are affixed, or mounted upon a rotating disk, will automatically right themselves before coming within the range of the shooter after having been toppled over.

My invention contemplates the attachment of knockdown targets to an endless chain belt or a rotating disk or a plurality of one or the other or both, which targets are shaped in imitation of fowl of the air or beasts of the field. And, another aim of my device is the provision of targets in which a simulation of life is imparted to them, as for instance, if targets representing ducks are employed, provision is made for the flapping of the wings thereof at predetermined intervals; if of horses, a switching of the tails; elephants, the nodding of heads, and the like.

To better understand my invention, I now refer to the drawings, in which—

A indicates the gallery as a whole, the frame work of which comprises essentially upright members 1 and 2, a metallic background 3 attached thereto, horizontal floor angles 4 and 5, horizontally disposed, transverse supporting members 6 and 7, and a vertical sheet metallic front guard 8, which guard is fastened to the frame work at the front end of the members 4, 5, 6, and 7 in any suitable manner, said guard being adapted to be painted on the face thereof in imitation of a woodland scene and the like, at the fancy of the designer.

Upon the upper, outer faces of the members 6 and 7, disposed parallel to the back ground 3, and arranged in alinement to each other, there are journal brackets 9 and 9^a. These brackets are possessed of spaced apart depending arms 10 and 10^a, which arms have axially bored hubs 11 and 11^a for the reception of shafts 12 and 12^a. Connecting these brackets are a pair of parallel angles or guide members 13 and 13^a, said angles being fastened to said brackets by means of suitable flush headed bolts passing through openings 14^b and 14^c and through similar holes in the horizontal legs of the angles or supporting members 6 and 7.

Between the arms 10 and 10^a of the brackets 9 and 9^a, on the shafts 12 and 12^a, are fastened sprocket wheels 14 and 14^a. These

sprocket wheels are located directly adjacent the arms 10 and are provided with long hubs 15 on one side to occupy the space on said shafts 12 and 12a, between the face of said sprocket wheels and the arms 10a, as seen in Figs. 2 and 3. Shaft 12 passes through the background 3 to the rear thereof, and is there provided with a sprocket wheel, belt wheel, or crank handle 16, whereby said shaft may be rotated. Trained over sprockets 14 and 14a and adapted to travel along the horizontal leg of angle or guide member 13a is an endless chain or link belt 17.

It will now be seen that only one line of chain is employed; that traveling along angle 13a, and, at predetermined intervals, individual links 17a of this chain are provided with horizontal, laterally extending lips 17b, Figs. 6 and 7. Over these lips are produced in the process of casting, so called target boxes 18. These boxes extend forwardly and rest upon angle or guide member 13, and are each composed of an upwardly and forwardly inclined front wall 19, side walls 20 and 20a, and a bottom 21. In the front, lower edge of this bottom is produced a rabbet 22, so that when said box rests upon the horizontal leg of the angle 13, it will be pitched forwardly and downwardly, as clearly seen in Fig. 7, with chain 17 assuming a "canted" position and riding upon the rounded edge of the horizontal leg of the angle 13a. On the upper, inner edge of front 19 of the target box 18, there is formed a nose 23 for purposes hereinafter described, and, through the side walls 20 and 20a thereof, there is drilled an aperture 24 for the reception of a cotter or split pin 25.

Loosely embracing split pin 25 is a shank 26 of a figure target 27, said target shank contacting with the nose 23 to limit the forward pitch of the target. It will now be observed that the target 27 is inclined considerably forwardly of the perpendicular, thereby requiring considerable shock, such as the impact of a projectile, to topple the same over into the reclining position shown at 28, in dotted lines, in Fig. 7, or as at 29 in Fig. 1. As the sprocket wheel 14 is rotated in the direction of the arrow pointer in Fig. 1, the chain 17 and the targets 27 are caused to travel toward the right while within the range of vision of the shooter, and all targets toppled over remain in their reclining positions until the chain links 17a carrying those targets pass over the sprocket 14a, when, by force of gravity, said targets assume a perpendicular, but inverted, position on the return travel of the chain. This travel is out of sight of the shooter, the said return movement of the chain and targets being hidden by the front guard 8. It is now pointed out that during the return travel of the chain the same is unsupported between the sprockets 14 and 14a. The target boxes 18 and the targets 27 being located laterally and exteriorly of the chain, the overhanging weight thereof will cause the chain and target boxes to assume a downwardly "canted" position, while the targets, being hinged, will be maintained perpendicular though inverted. This canted or deflected, or downwardly pitched disposition of the chain will be maintained as the chain travels around the lower ninety degrees of upward revolution of the sprocket, after which, as the chain ascends to the top of the sprocket 14, it will again pitch downwardly due to the overhanging weight of the target boxes and targets, thereby throwing the targets forwardly of the perpendicular as seen in Fig. 7. In this manner the targets are automatically and positively righted and impelled to a position beyond the perpendicular without the assistance of any righting guards or other mechanism.

In the drawings I have shown the targets shaped to represent ducks or other fowl, and in order to impart a lifelike individual motion to the same, I provide each of these targets with a wing 31. This wing has a circular boss 32 on its back, which boss has a projecting lug 33. An opening 34 having a notch 35, both somewhat larger than the boss 32 and lug 33, are formed through the body of the target 27 for the reception of the said boss and lug, which are adapted to be passed therethrough and the wing given a half turn, when the lug 33 engaging the back of the target, will prevent the withdrawal of the wing, yet permit the same to be freely oscillated. Depending from the wing 31 is a stem 36, terminating in an outwardly pointing nose 37. This nose normally slides along the upper edge of the perpendicular leg 38 of the angle or guide member 13. But, in the path of this nose, fixed along the upper edge of the angle 13, are a plurality of obstructions 39, having convex upper surfaces 40, over which the said nose is compelled to ride in its forward travel, thereby imparting an oscillatory motion to the wings in an imitation of the flapping of wings of a fowl. These obstructions may be so placed that the wings of all the targets in sight may be flapped simultaneously, in sequence, in alternation, or in any rotation desired.

While above I have described my targets as representing fowl with flapping wings, I wish it understood that I may employ any shape of figures desired, as elephants with nodding heads, donkeys with flapping ears, lions or tigers with switching tails; or, I may use figures with a plurality of moving parts as donkeys with flapping ears and kicking heels and the like. In fact, in actual practice, I build my shooting galleries

in a plurality of tiers, the first containing a moving row of fowl, the next, a little above and slightly to the rear, of animals and the like; often incorporating of from three to six tiers of moving devices. And, above these, bracketed to the background 3, I arrange one or more rotating disk targets 41, mounted upon shafts 42, which extend through and to the rear of said background, and there revolved by the same means by which the shaft 12 is operated. These disk targets are possessed of openings 43, through which a projectile may pass, striking a stationary metallic disk 44, which disk will give forth a resonant sound upon being struck. In many cases I provide the rotating disk 41 with similar knockdown figures 27^a, in which case I affix to the back of the said disk, at or near the periphery thereof, a plurality of target boxes 18^a, each of which has a front wall 19^a, side walls 20^b and 20^c, and a bottom 21^a. Target 27^a is hinged in the same manner as targets 27, over a pin 26^a passing through the walls 20^b and 20^c, and rests, in a forwardly inclined position, against a nose 23^a on the front wall 19^a. Said target 27^a is possessed of a like hinged wing 31^a, the downward movement of which is limited by a stop 45. This wing has a rearwardly projecting round shank 46, passing through an opening 47 in the body of the target, a lug 48 being provided on said shank to retain the wing in position, yet permitting the oscillation thereof. On the inner end of this shank is fixed a depending arm 49, the lower end of which is adapted to engage projections 50 located on the periphery of the stationary disk 44. It will readily be seen that when disk 41 is rotated, the free end of the arm 49 coming in contact with any of the projections 50, will cause an upward movement of the wing 31^a, and, when this projection has been passed, the wing will drop by gravity, the whole motion being the same as that secured by the wings of the targets 27 on the link belt 17.

While herein I have disclosed the preferred mode of practising my invention, I wish it understood that I may make changes in the details thereof without departing from the spirit or scope of the invention.

I wish to state that I may attach my target box 18 or 18^a to a stationary member extending longitudinally of the gallery, above or below the moving figures, thereby presenting a plurality of stationary targets to the constant view of the shooter.

Having thus fully described my invention, I claim as new and desire to secure to myself by Letters Patent of the United States:—

1. In a shooting gallery, a suitable frame work having endless traveling means thereon, knockdown targets connected to said means, the weight of which targets overhangs said means and imparts a deflection thereto, causing a righting of said targets at a predetermined point.

2. In a shooting gallery, a suitable frame work having an endless traveling belt thereon, knockdown targets connected to said belt, the weight of which targets overhangs said belt and imparts a deflection thereto, causing a righting of said targets at a predetermined point.

3. In a shooting gallery, a framework and a pair of sprockets therein mounted on horizontal shafts and alined to each other, an endless belt traversing said sprockets, target holding means connected to said belt, the weight of which means overhangs said belt, and targets hinged in said means.

4. A shooting gallery including a suitable frame work, a plurality of knockdown targets adapted to traverse an endless path on said frame work, movable members on said targets, and means for imparting individual motion to said members at predetermined points in the travel of said targets.

5. A shooting gallery including a suitable frame work, a pair of parallel guide members on said frame work, a sprocket wheel at each end of one of said members, an endless chain trained over said sprocket wheels and along one of said members, target boxes located laterally of and attached to said chain, and targets hinged in said target boxes, said target boxes being adapted to slide along the other of said guide members.

6. A shooting gallery including a suitable frame work, a pair of parallel guide members on said frame, a sprocket wheel at each end of one of said members, means for rotating one of said sprocket wheels, an endless link belt trained over said sprockets and along one of said guide members, target boxes located laterally of and attached to said chain and adapted to slide along the other of said guide members, targets hinged in said target boxes, movable members on said targets, and obstructions along said last named guide member adapted to engage said movable members on said targets.

7. A shooting gallery including a suitable frame work, a pair of parallel guide members on said frame work, a plurality of connected knockdown targets adapted to travel along said guide members, closely adjacent one of said members, movable members on said targets, a plurality of convexed obstructions on said last named guide member, and a nose on each of said movable members adapted to successively engage said obstructions, whereby as said targets are moved past said obstructions, an oscillatory motion is imparted to said movable members.

8. In a shooting gallery, a framework and a pair of sprockets therein mounted on hori-

zontal shafts and alined to each other, an endless belt traversing said sprockets, target attaching means connected to but extending laterally of said belt, entirely exteriorly thereof, and targets hinged to said means.

9. In a shooting gallery, a chain belt comprising a plurality of connected links, target boxes fixedly connected to certain of said links, disposed laterally thereto and entirely exteriorly thereof, and targets hinged in said boxes, the weight of which boxes and targets overhangs said chain.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALFRED JAY SMITH.

In the presence of—
R. G. BADEAUX,
W. O. STARK.