

J. M. CURRIER.
 SUBSTITUTE FOR PINS IN BOWLING ALLEYS.

No. 33,695.

Patented Nov. 12, 1861.

Fig. 1

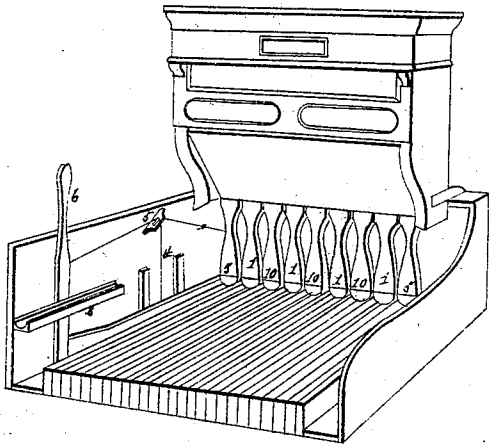


Fig. 2

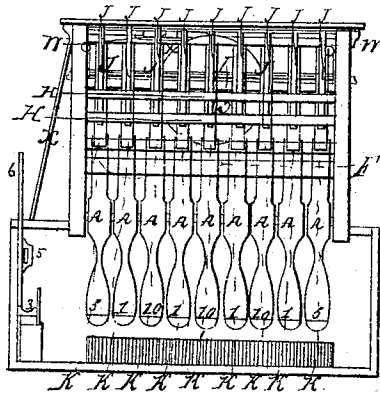


Fig. 3

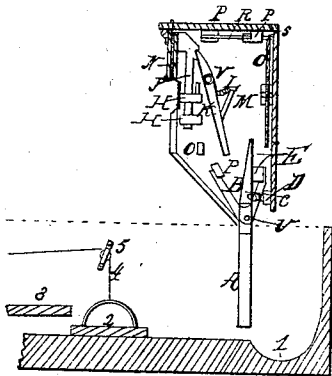


Fig. 4

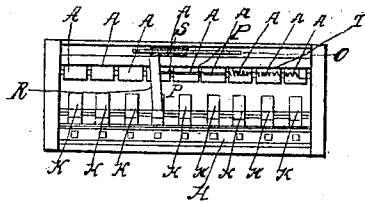
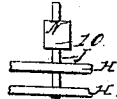


Fig. 5



Witnesses:
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 Edwin F. Welch.

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UNITED STATES PATENT OFFICE,

JAMES M. CURRIER, OF NEWBURYPORT, MASSACHUSETTS.

SUBSTITUTE FOR PINS IN BOWLING-ALLEYS.

Specification forming part of Letters Patent No. 33,695, dated November 12, 1861.

To all whom it may concern:

Be it known that I, JAMES M. CURRIER, of Newburyport, in the county of Essex and Commonwealth of Massachusetts, have invented a new Machine to Take the Place of Pins as Used in Bowling-Alleys in the Game of Bowls; and I do hereby declare that the following is a full and exact description of the same.

The nature of my invention is to provide a means of answering the purpose of bowls and at the same time to dispense with the attendance necessary to set up pins and return the balls and thereby save expense and annoyance.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operations.

The machine is composed of nine upright pedals, each numbered and hung on an iron rod a little above the center; nine ratchets, one at the top of each pedal, hung on an iron rod running through the machine; nine number-rods with numbers attached corresponding with numbers on the pedals; two padded bars which run through the machine for the pedals to strike against, and one bar running through the machine above the padded pedal-bar for the ratchets to strike against. Two bars run through the machine above the ratchet-bar with nine holes in each for the number-rods to slide in. On the top bar is a sliding bar, which is moved by line or wire and throws the numbers up after being sprung by pedals and ratchets. A dial may be affixed to the back of the machine or other position for the purpose of keeping the number of games played. This dial-plate is notched on the outer edge and is numbered on the face. The plate is moved by a ratchet, which is thrown by a lever, to which is affixed a cord or wire attached to that employed to raise the number-bar and thus exposes the correct number. Two bars run through the top of the machine to hold the dial ratchet-bar. At the back of the machine is an inclined groove to conduct the balls to a trough. The trough is hoisted by a line passing over a pulley and discharges the balls on an inclined conductor, on which they roll to the head of the alley. The lines to hoist the ball-trough, raise the number-bar, and move the

dial-lever are all attached to a lever at the head of the alley, all of which machine and ball apparatus is shown in the drawings accompanying, which make a part of this specification, and are particularly described by letters and figures below.

Figure 1 is a perspective view of the machine and apparatus for depositing, hoisting, and returning the balls. Fig. 2 is a longitudinal elevation of the interior of the machine. Fig. 3 is a transverse sectional view of a part of the interior of the machine with trough and groove. Fig. 4 is a horizontal sectional view of the interior of the machine, showing the position of the pedals, ratchets, &c. Fig. 5 is a view of one of the number-plates, showing a portion of the rods and portions of bars described below.

Letters A A A in Figs. 2, 3, and 4 designate the pedals, which are padded on the lower end and numbered.

Letter B in Fig. 3 designates an iron brace through which the pedal-rod passes, running from the two padded bars to support and stiffen the pedal-rod U.

Letter C in Fig. 3 designates a spiral spring attached to pedal A and bar D to bring the pedal against bar E after being sprung by the ball, and to form a rest for said pedal.

Letter D in Fig. 3 is a bar running through the machine, to which the spiral springs C are attached.

Letter E in Fig. 3 designates a padded bar running through the machine to keep the pedals A A A in an upright position.

Letters F F in Figs. 2 and 3 designate a padded bar running through the machine in front of the pedals A A A to stop them as the ball passes under.

Letters G G in Figs. 2 and 3 designate a bar running through the machine to stop the ratchets K K K after being struck by the pedals A A A.

Letters H H H in Figs. 2, 3, and 5, designate two bars running through the machine with nine holes in each for the number-rods J J J to play in.

Letters I I in Figs. 2 and 3 designate a sliding bar, to which is attached a line at each end to raise the rod J and numbers N when they are down.

Letters J J J in Figs. 2, 3, and 5 designate

rods in which are notches to receive ratchets K K K and to form a rest for bar I. Said rod has a projection on the top to which the number-plates N are fastened.

Letters K K K in Figs. 2, 3, and 4 designate ratchets operated by the pedals A A A and spiral spring L, designed to hold up number-plates when raised by bar I.

Letter L in Fig. 3 designates a spiral spring to draw back the ratchets K K K when touched by the pedals A A A.

Letter M in Fig. 3 designates a beveled bar running through the machine back of the ratchets K K K, to which the spiral springs L are attached. The lower edge of the bar forms a rest for the ratchet.

Letters N N in Figs. 3 and 5 designate the plates upon which are numbers denoting the game.

Letters O O O in Figs. 2, 3, and 4 designate the dial-plate to keep and show the number of games played.

Letters P P P in Figs. 3 and 4 designate two bars running at the top of the machine, affixed to which is the lever R to operate the ratchet S, and to one of which is fastened the spiral spring T.

Letters R R in Figs. 3 and 4 designate the lever to which the ratchet S is attached.

Letters S S in Figs. 3 and 4 designate the ratchet which moves the dial-plate.

Letter T in Fig. 4 designates the spiral spring to throw back the lever R.

Letter U in Fig. 3 designates the iron rod on which the pedals A A A swing.

Letter V in Fig. 3 designates the iron rod on which the ratchets K K K swing.

Letters W W in Fig. 2 designate pulleys for line X to pass over.

Letter X in Fig. 2 designates a line attached to bar I to raise the numbers, and to which is attached the line to move the lever R.

1 in Fig. 3 designates an inclined circular groove placed behind the machine to receive the balls.

2 in Fig. 3 designates a box or trough for the balls to pass into from the groove 1.

3 3 in Figs. 2 and 3 designate the groove-conductor to convey the balls to the place where the player stands.

4 in Fig. 3 designates the line to raise the trough or box to deposit the balls on the conductor.

5 in Fig. 3 designates the pulley over which the cord 4 passes.

6 in Fig. 2 designates a lever placed at the head of the alley where the player stands, to which lever is affixed the lines 4 and X to raise the ball-trough 2, the bar I I, and to move the lever R, all in one motion.

The machine is operated by the balls striking the pedals A A A at the lower end, swinging them so that the top end comes in contact with the ratchets K K K, throwing the top end of the ratchet out of the notch on figure-rods J J J, which drops from under the top panel of the case the figure-plates N and exposes them to view on the front of the machine, exhibiting numbers corresponding with the number on the pedals A A A, which are struck. The balls pass under the pedals A A A into the circular groove 1, and from thence roll into trough 2. When three balls have been rolled and have passed into trough 2, a movement of the lever 6, to which the lines described are attached, raises the trough 2, deposits the balls on conductor 3, draws up the numbers N, which have been dropped, and moves the lever R, which also moves dial-plate O. This dial-plate is marked by lines and figures corresponding with notches, and may be placed on different parts of the machine or dispensed with altogether.

The machine may be constructed in different styles and sizes, adapted to all alleys, and may be set thereon in different ways.

What I claim as my invention, and desire to secure by Letters Patent, is, first, the suspended pedals A A A; second, the arrangement consisting of the devices 1, 2, 4, and 5 for elevating the balls and depositing them on the inclined plane 3; third, the devices for raising, adjusting, and operating the number-plates N N N; fourth, the devices for raising the number-plates, elevating and depositing the balls, and recording the number of games played, all by a single operation, as described; fifth, the dial O for recording the games, as arranged and described, in combination with a bowling-alley; sixth, a bowling-alley comprising the above devices, constructed and arranged as fully shown and described in the foregoing specification and the drawings accompanying the same.

JAS. M. CURRIER.

Witnesses:

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EDWIN F. WELCH.