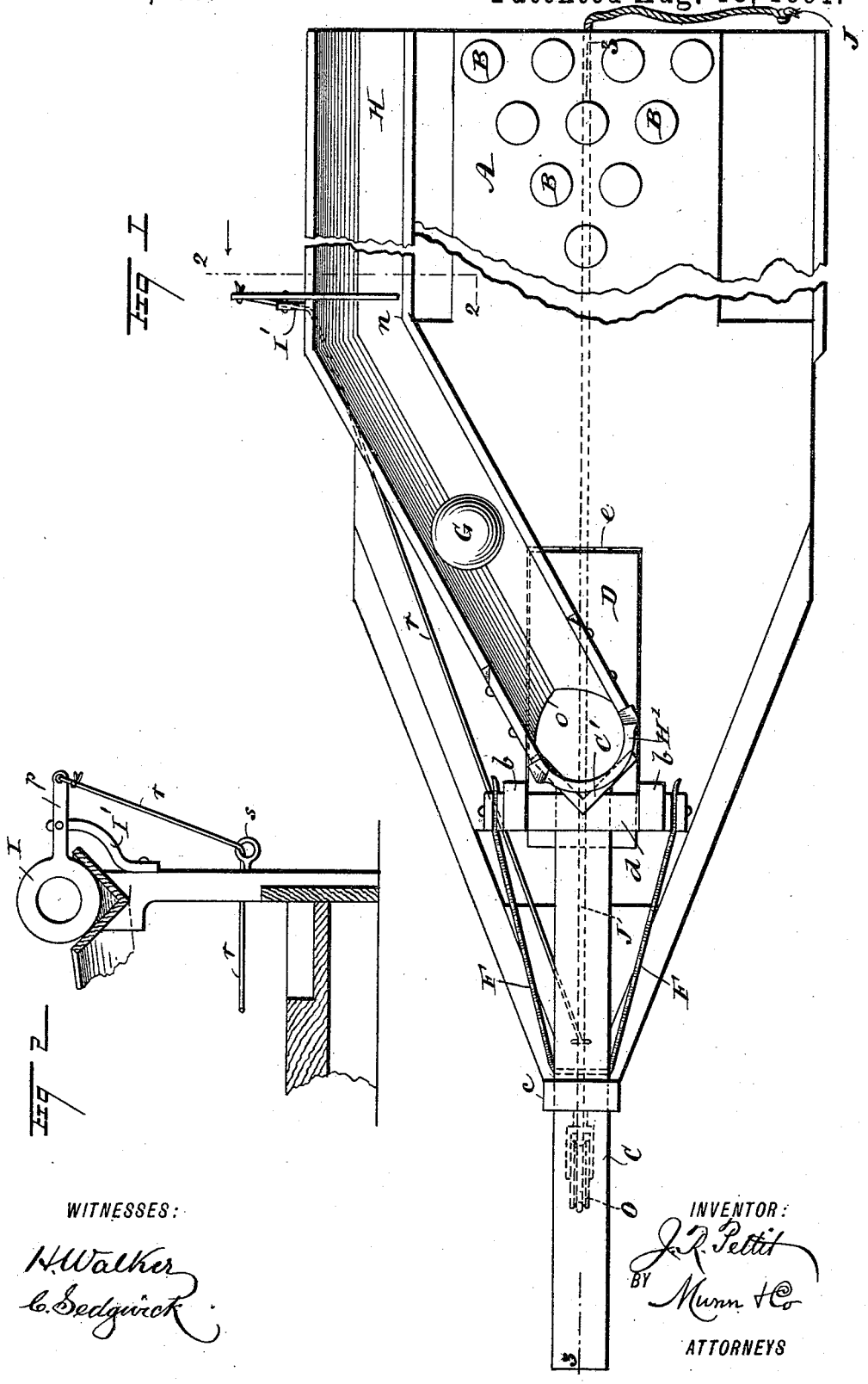
(No Model.) 2 Sheets—Sheet 1

J. R. PETTIT.

TOY BOWLING ALLEY.

No. 458,066. Patented Aug. 18, 1891.



WITNESSES:

H. Walker

C. Sedgwick

INVENTOR:

J. R. Pettit

BY Munn & Co

ATTORNEYS

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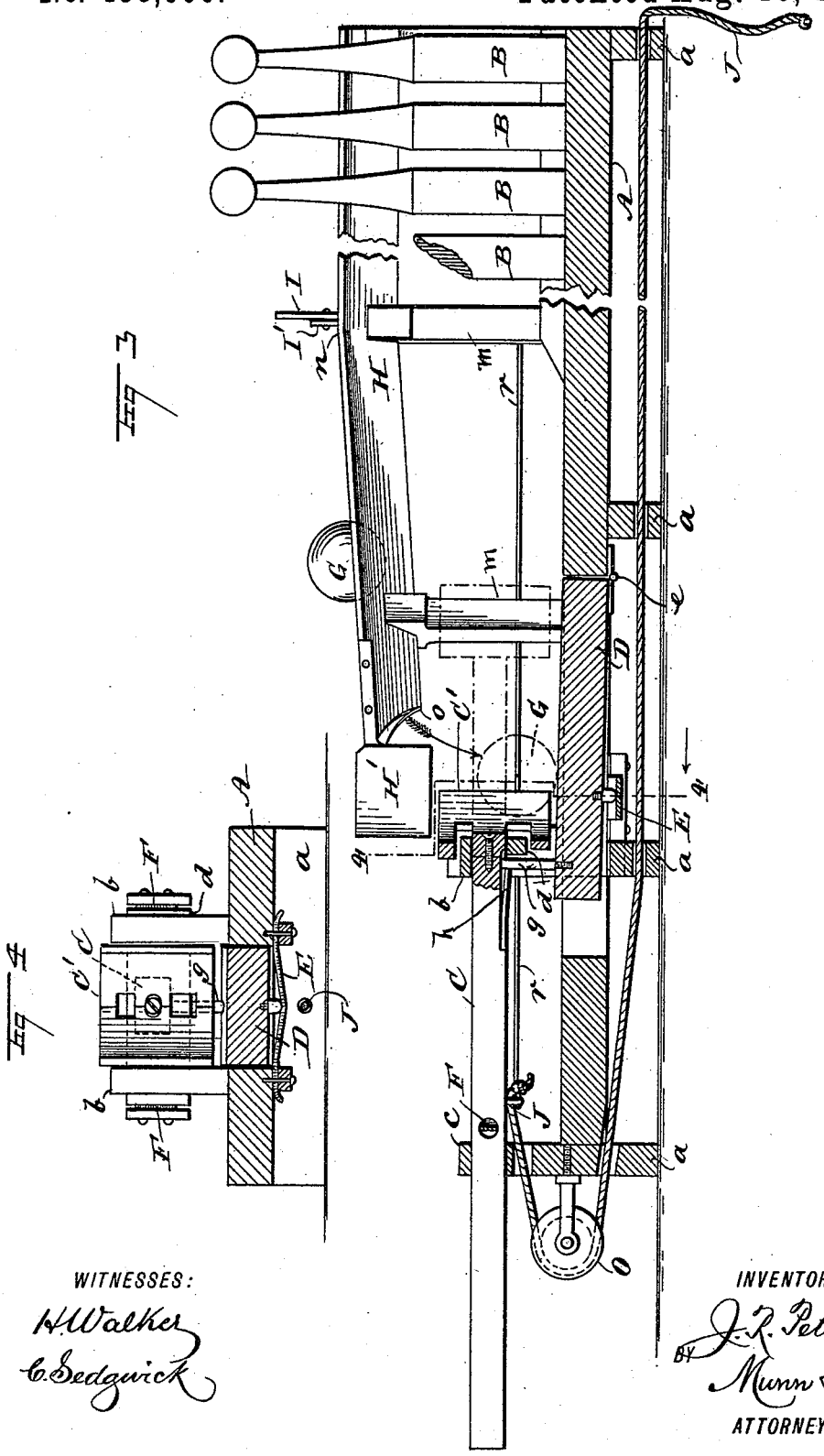

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UNITED STATES PATENT OFFICE.

JOHN R. PETTIT, OF NEW YORK, N. Y.

TOY BOWLING-ALLEY.

SPECIFICATION forming part of Letters Patent No. 458,066, dated August 18, 1891.

Application filed January 6, 1891. Serial No. 376,867. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. PETTIT, of New York city, in the county and State of New York, have invented a new and useful Toy Bowling-Alley, of which the following is a full, clear, and exact description.

The objects of this invention are to provide a simple inexpensive miniature bowling-alley which will be adapted to mechanically project the ball toward the pins when the latter are in position on the alley, and that will also contain means for arresting the ball if it is dispatched toward the projecting mechanism before the pins are set up or the projector is adjusted to drive the ball.

To these ends my invention consists in the construction and combination of parts which are hereinafter described and claimed.

Reference is to be made to the accompanying drawings, forming a portion of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the device with the alley shown broken. Fig. 2 is a transverse section of a portion of the device indicated by the line 2 2 in Fig. 1 and in direction of an arrow in said figure. Fig. 3 is a longitudinal section of the parts shown in Fig. 1, taken on the line 3 3 in said figure; and Fig. 4 is a transverse section on the line 4 4 in Fig. 3, viewed in the direction of an arrow.

The alley A is made preferably of hard wood that will not warp or split, and in length is proportioned to adapt it for convenient portage and use indoors as well as upon a porch or lawn. The board of which the alley A is constructed may be stiffened by several cross-bars *a*, which, if secured upon its lower surface at proper intervals transversely, will render it substantial and afford a base therefor.

At the end of the alley A which is nearest the players when in use the ten-pins B are set up in the order represented in Fig. 1, and at the opposite end the propelling device for the ball that strikes the pins is located. Preferably the alley-board A is cut away on the edges to slope them toward a center point at the terminal of the board which supports the ball-driver mentioned, which mechanism consists of a pusher-bar C and means to actuate it at a proper time. The pusher-bar C is supported above the alley A and parallel to it, aligning with its transverse center by the posts *b b* and *c*. As indicated in Figs. 1 and 4, the posts *b* are located on each side of the median line of the alley A and equally removed from said line, the rear side of each of the posts named being notched at an equal distance from the surface of the alley on which they are erected to receive a cross-bar *d*, which projects slightly at each end and is secured in place by any suitable means. The cross-bar *d* is apertured at a point central between the posts *b* to receive and loosely support the pusher-bar C. The post *c*, that is located at the rear terminal of the alley A in alignment with the aperture in the cross-bar *d*, is similarly apertured to receive and sustain the pusher-bar. The front end of the pusher-bar C is provided with a head-piece C′, that is constructed so as to have two divergent wings, which join at the center of the bar and serve to center the ball when it is deposited in front of said wings and engaged by them, as will be further explained.

A slot is cut in the alley-board A of a proper width and length to receive the trap-board D, that is hinged at *e* on its lower side and forward end to the edge of the hole, wherein the trap-board is loosely supported, the rear end of which board is spring-supported slightly above the upper surface of the alley-board A by a transverse gum-band spring E or other spring appliance which will be adapted to sustain the trap-board and allow it to yield in a downward direction when impinged upon by weight falling on its upper surface. The free rear end of the trap-board D extends beyond the cross-bar *d* a short distance, and from its upper surface near said end a transversely central and upright trigger-rod *g* is erected, which rod is designed to have a slight interlocking contact with a latch-plate *h*, that is secured on the lower surface of the pusher-bar C near the wings of its head-piece C′, the length of the rod being so proportioned as to permit such a latching contact when the pusher-bar is slid rearward, as represented in Fig. 3.

There is a gum-band spring F preferably provided to forcibly slide the pusher-bar C forwardly in its supports, and thus adapt it to

project the ball toward the pins. To this end the band-spring is secured near its extremities to the ends of the cross-bar *d*, as indicated in Figs. 1 and 4, by clamps or other means, and is inserted through the pusher-bar or attached thereto, its length being so proportioned that it will be considerably stretched when the pusher-bar is slid rearwardly to interlock its latch-plate *h* with the trigger-rod *g*.

Upon one side of the alley A a trough H is supported on the posts *m* or by equivalent means, which trough extends from the front end of the alley to a point *n* near the posts *b* parallel with the side edges of the alley and downwardly inclined a sufficient degree to insure the rapid rolling of the ball G toward the point named. From *n* the trough H is projected inwardly and downwardly to locate its end *o* above and near to the head-piece C′ of the pusher-bar C, so that the ball G will drop on the trap-board D directly in front of the head-piece, if placed in the trough at its front end, and allowed to roll in it without obstruction.

To prevent an improper delivery of the ball G, a guard-piece H′ is secured at the terminal end of the trough H, which is curved, as shown in Fig. 1, so that the progressive movement of the ball is arrested at a proper point to allow it to drop vertically upon the trap-board, as before stated.

At the point *n*, where the trough H is deflected laterally, a gate I is located, which is pivoted by its lateral arm *p* upon a bracket-arm I′, the outer end of the arm having a tripping-line *r* secured to it, which is extended downwardly to loosely engage the screw-eye *s*, and thence rearwardly to have its other end attached to the pusher-bar C. There is an adjusting-cord J secured by one end to the lower side of the pusher-bar C near to the point of connection of the line *r*, and from this point is extended rearwardly to engage the periphery of the bracket-supported pulley O, and thence extend forwardly through holes in the cross-bars *a* to the front end of the alley, thus affording means to draw the pusher-bar C back until the trigger-rod *g* is in contact with the latch-plate *h*, when the device will be adjusted ready for the reception of the ball G. The gate I is designed to arrest a ball if rolled down the trough before the device is in adjustment to receive it, or before the pins B are properly arranged on the alley. The rearward movement of the pusher-bar C to set it for a propulsion of the ball G is not effected until the ten-pins B are properly placed, when the forward draft of the adjusting-cord J will simultaneously elevate the gate I for the free passage of the ball from the front end of the trough H till it falls therefrom on the trap-board D, as shown by dotted lines in Fig. 3, which will depress the trap-board and release the pusher-bar, which will drive the ball forciby against the pins B, the operation being repeated as often as desired to furnish amusement for children or persons of more mature age.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with an alley-board, an inclined trough, a pusher-bar supported to slide above the alley-board near the lower terminal of the trough, and a propelling-spring therefor, of a trap-board hinged by one end to the alley-board in a slot therein, a spring which supports the free end of the trap-board, a trigger-post on the trap-board at the free end, a latch-plate on the lower side of the pusher-bar which will engage the upper end of the trigger-post when the pusher-bar is retracted, means to retract the pusher-bar, and a ball which when dropped from the trough onto the trap-board will detach the pusher-bar to drive the ball, substantially as described.

2. The combination, with an alley-board, pins on the board at one end, a trough, a vertically-adjustable stop-gate thereon, and a ball, of a hinged trap-board at the other end of the alley, a trigger-post on the free end of the trap-board, a pusher-bar longitudinally supported to slide above the trap-board, a latch-plate engaging a trigger-rod with its free end, a spring for the pusher-bar, and an adjusting-cord connected to the pusher-bar and leading forwardly, substantially as set forth.

3. The combination, with an alley-board, pins thereon, a trough along the side of the alley which is extended laterally near one end of the board to drop a ball on a trap-board vibrating in a slot in the alley-board, and a ball, of a hinged trap-board, a trigger-rod upright on the free end of the trap-board, a sliding pusher-bar having a winged head-piece, a latch-plate on the pusher-bar that will interlock with the upper end of the trigger-rod, a gum-band spring adapted to slide the pusher-bar forwardly, and an adjusting-cord leading to the front end of the alley and adapted to retract the pusher-bar when pulled forwardly, substantially as set forth.

JOHN R. PETTIT.

Witnesses:
WM. P. PATTON,
E. M. CLARK.