

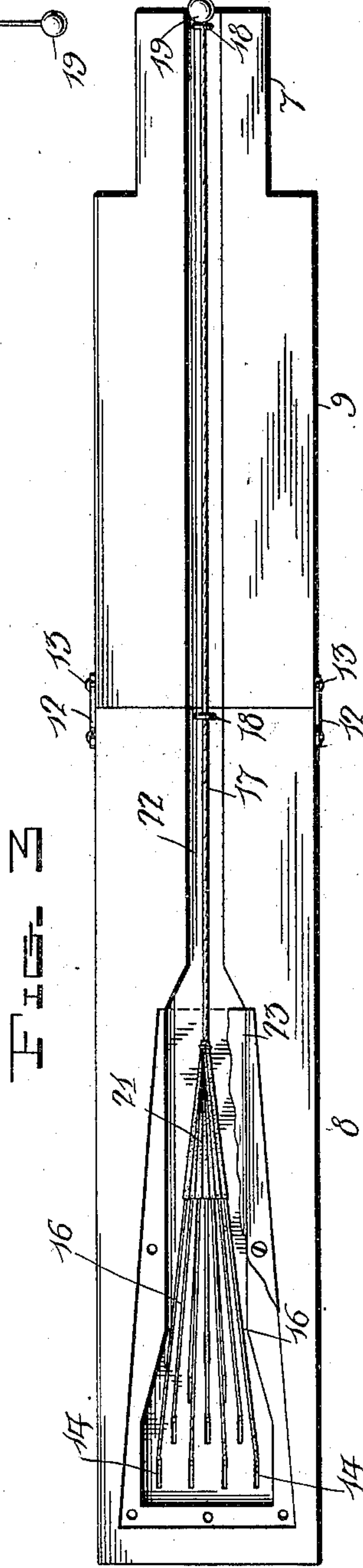
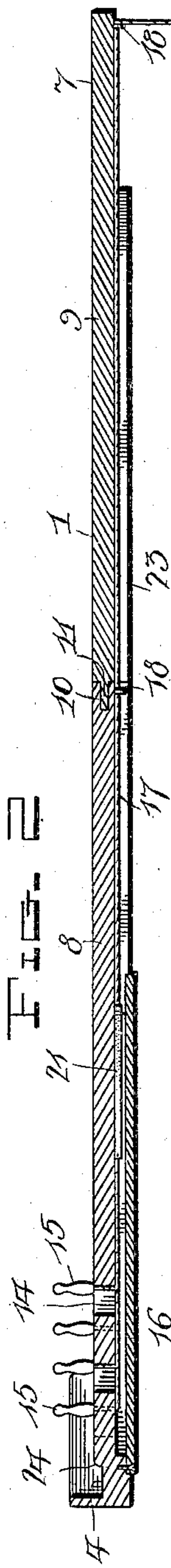
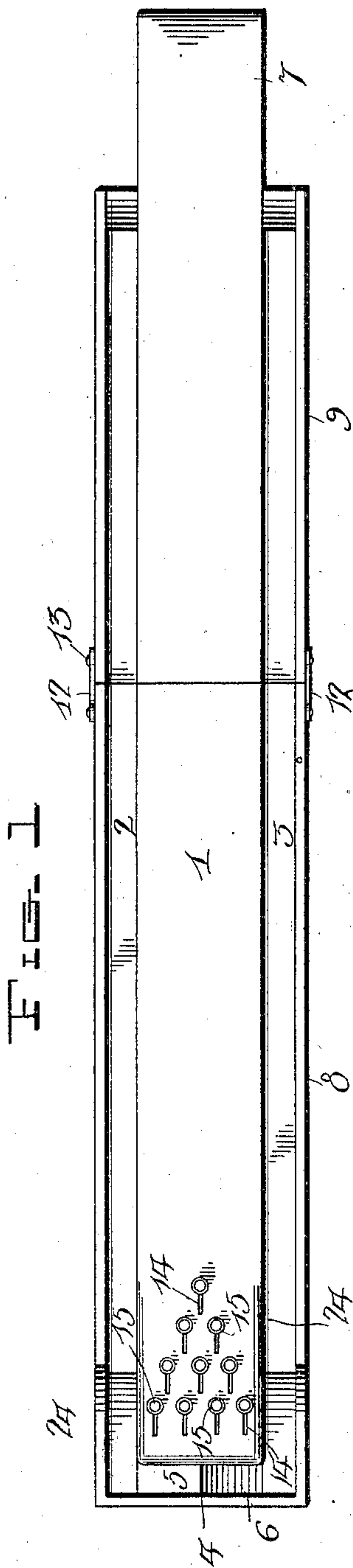
No. 709,802.

Patented Sept. 23, 1902.

H. J. SHIPHAM.
BOWLING ALLEY.

(Application filed July 3, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

HENRY J. SHIPHAM, OF BROOKLYN, NEW YORK.

BOWLING-ALLEY.

SPECIFICATION forming part of Letters Patent No. 709,802, dated September 23, 1902.

Application filed July 3, 1902. Serial No. 114,261. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. SHIPHAM, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bowling-Alleys; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in bowling-alleys of that class in which the pins are connected by strings to a common operating device, whereby they may be simultaneously set up. One objection to prior bowling-alleys of this kind is that in course of time the strings attached to the pins are apt to stretch, so that if compensating means are not provided the movement of the operating device will set up some but not all of the pins. It has been sought to obviate this objection by the use of individual adjusting-screws, one for each string, designed to be adjusted when necessary to independently take up the slack in the strings. This construction is comparatively costly, particularly when applied to toy bowling-alleys, where cheapness of construction is a desideratum and important factor; and one object of my invention is to provide simple and effective means for setting up the pins and automatically compensating for variations in the length of the cords, such means preferably consisting of elastic cords, whereby the use of auxiliary adjusting devices is avoided and cheapness of construction insured.

A further object is to provide means to prevent the cords from binding and stopping the pins from falling when struck by the bowling-balls.

A still further object is to provide a bowling-alley which may be readily set up for use and taken down, so as to occupy but little space when put away or stored, and which may be conveniently packed for transportation.

With the above and other objects in view, which will readily appear as the nature of the invention is better understood, said invention consists in certain novel features of construction and combination and arrangement of parts, which will be hereinafter fully described

and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a bowling-alley embodying my invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a bottom plan view, the shield being broken away, showing in full and broken lines the compensating action of the strings.

The drawings show the invention as constructed in miniature for home or parlor use, in which the alley is rested upon a table or suitable support; but it will be understood that the essential features thereof may be used in full-sized bowling-alleys and that the alley may be made of any size and of any material adapting it for either indoor or outdoor use.

Referring now more particularly to the drawings, the numeral 1 represents the floor of the alley, upon the opposite sides of which are arranged gutters or channels 2 and 3, leading from one end of the alley to the opposite end thereof, said gutters being inclined downwardly from the inner end of the alley or the point where the pins are located to the outer end of the alley, where the player stands, in order to adapt the bowling-balls to roll back by gravity to the player. At the inner end of the alley the two channels 2 and 3 are connected by a transverse channel 4, having inclines 5 and 6 leading to said channels, so as to conduct the balls thereto. At the outer end the alley is provided with an extension 7, forming a runway, along which the player may run in a full-sized alley prior to throwing the ball or along which the hand may slide when the alley is used as a parlor-game apparatus for a similar purpose in order to allow the ball to be propelled with the desired force.

In constructing the alley for parlor use I preferably form the same of two or more sections in order to enable it to be put up and taken down with facility and put away or packed in close compass. In the present instance I have shown the alley as constructed of two parts or sections 8 and 9, the floor of one of which is provided at one end with a transverse groove or recess 10 to receive a tongue or dowel-strip 11 on the meeting end of the other section. The tongue when fitted in the groove serves to hold the parts from

upward or downward displacement. The two sections of the alley may be secured against longitudinal displacement by fastenings of any preferred kind, the form of fastening shown in the present instance consisting of hooks 12 upon one section engaging pins 13 upon the other section. By releasing the hooks from engagement with the pins the two sections may be readily disengaged and laid one upon the other, so as to be conveniently stored or packed in a box of comparatively small size.

The floor 1 is provided at its inner end with a series of elongated slots 14 equal in number to the pins 15, each of which is provided with a flat base to stand vertically upon said floor when set up for use. To the pins are connected cords 16, which extend downward through the slot and are connected beneath the floor to a common operating-cord 17, passing through guides 18 on the under side of the alley and provided at its outer or free end with a knob or handpiece 19, by which it may be grasped and drawn outward to pull upon the cords 16 to set up the pins.

In the playing of the game when the pins are knocked down by impact from a ball it is found that where the cords connected to the pins extend upward through comparatively small vertical slots or openings the tendency of the cords when the pins are knocked back is to bind against the walls of the openings, thus preventing or deterring some of the pins from dropping. This objection is, in the present instance, obviated by the use of the slots 14, which when a pin is struck by a ball rolling along the floor 1 allow the cord 16 to move freely inwardly or backwardly without binding, so that a slight impact from a rolling ball is sufficient to cause the pin to drop.

Heretofore it has been customary to make the cords 16, connected to the pins, inelastic, an objection to which is that in the course of time the strings are apt to stretch, and if compensating means are not provided the movement of the operating device will set up some but not all of the pins. In order to obviate this difficulty, it has been proposed to employ separate adjusting-screws for the several strings, which screws are designed to be operated when necessary to independently take up the slack in the strings. This construction is necessarily somewhat expensive and is not desirable when applied to toy bowling-alleys, where cheapness of construction is an important factor. In order to obviate these objections and at the same time provide a construction which is simple, cheap, and effective, I either make the strings 16 as a whole of elastic material or provide them, as shown in the present instance, with elastic sections 21, the latter construction being deemed preferable, as when the operating-cord is loosed after having been drawn outwardly to set up the pins the reactionary tendency is reduced and

not sufficient to jar the alley and tend to cause the pins to fall. By thus providing the cords 16 with the elastic sections 21 variation in the length of the strings is automatically compensated for, as should one of the strings in time stretch to a greater extent than the others and the operating-cord be drawn upon to set up the pins the other strings when drawn to the desired tautness to set up their pins will stretch to a further degree until the longer string is drawn upon to set up the pin connected thereto. By this means the necessity of employing independent devices for compensating for the unequal stretching of the strings is avoided, and the operation of compensating for variations in the length of the strings is performed by the yielding action of the strings themselves. The under side of the alley is preferably formed with a longitudinal groove or channel 22 to receive the cords and allow them to lie above the surface of the table or support on which the alley is rested. In addition a shield plate or board 23 may be arranged below this groove adjacent to the slots in the alley to prevent the strings 16 from dropping down below the grooves and becoming caught and preventing the operation of the pins when the operating-cord is drawn upon. The edges of the floor are beveled or rounded off, as indicated at 24, adjacent to the slots, so as to do away with any angular surfaces liable to obstruct the free setting up of the pins when the operating-cord is drawn upon.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, mode of operation, and advantages of my improved bowling-alley will be readily apparent without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a bowling-alley, the combination of a playing-floor provided with longitudinal slots, pins upon the upper surface of the floor, an operating device extending beneath the floor, and cords extending through the slots and connecting the pins with the operating device, said cords having free movement in the slots when the pins are forced back under the impact of a ball, substantially as described.

2. In a bowling-alley, the combination of a playing-floor provided with longitudinal slots, pins upon the upper surface of the floor, an operating device extending beneath the floor, and elastic cords extending through the slots and connecting the pins with the operating device, substantially as specified.

3. In a bowling-alley, the combination of a playing-floor provided with longitudinal slots,

pins upon the upper surface of the floor, an
operating device extending beneath the floor,
and cords extending through the slots and
connecting the pins with the operating de-
5 vice and having elastic sections, substantially
as set forth.

In testimony whereof I have hereunto set

my hand in presence of two subscribing wit-
nesses.

HENRY J. SHIPHAM.

Witnesses:

BERTHA M. SHIPHAM,
LULU J. BECKER.