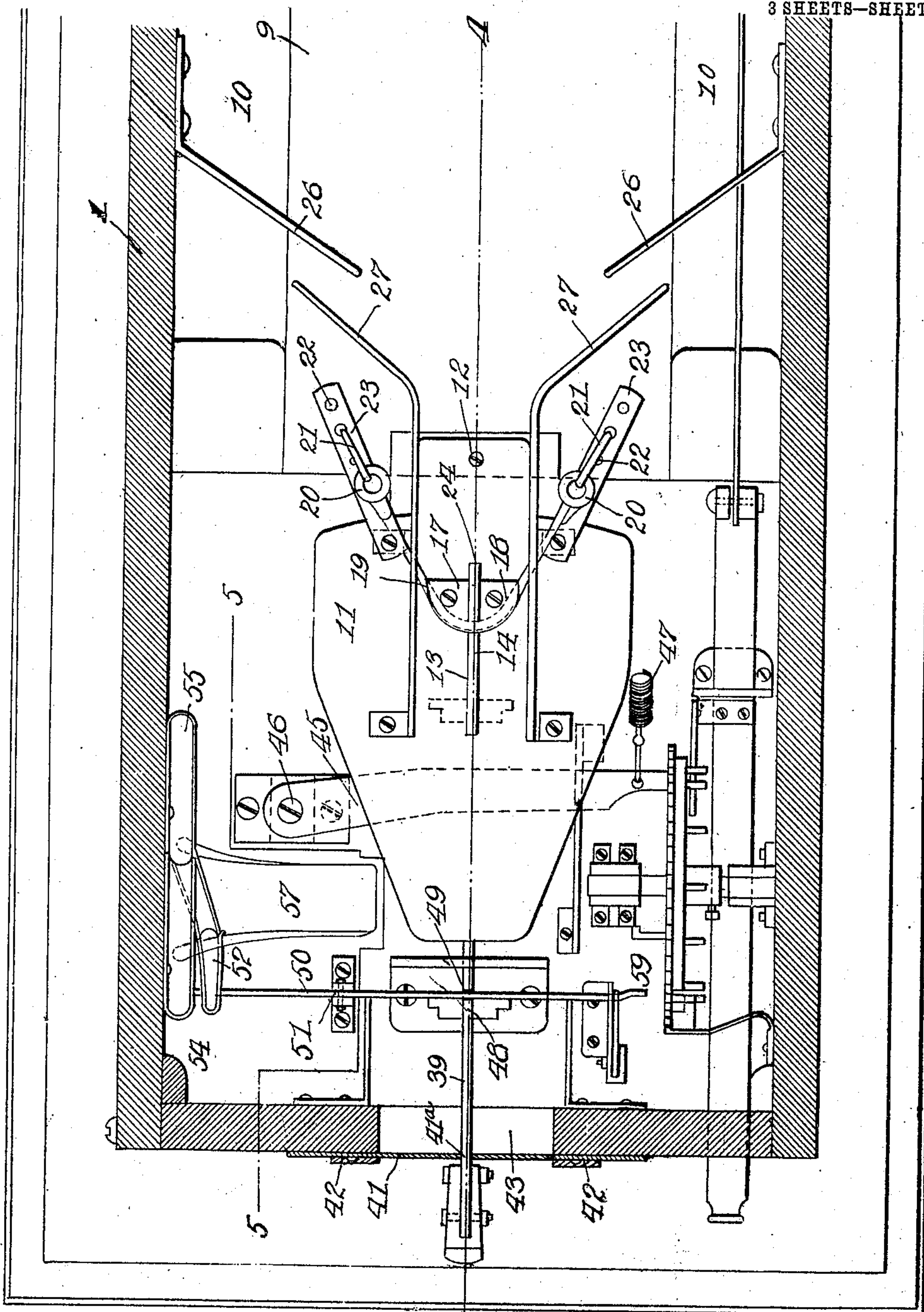


No. 785,667.

PATENTED MAR. 21, 1905.

A. FERLAND.  
SLING MECHANISM FOR TENPIN GAMES.  
APPLICATION FILED NOV. 20, 1903.

3 SHEETS—SHEET 1.



Witnesses:

*J. D. Ammen*  
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FIG. 1.

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Attorneys



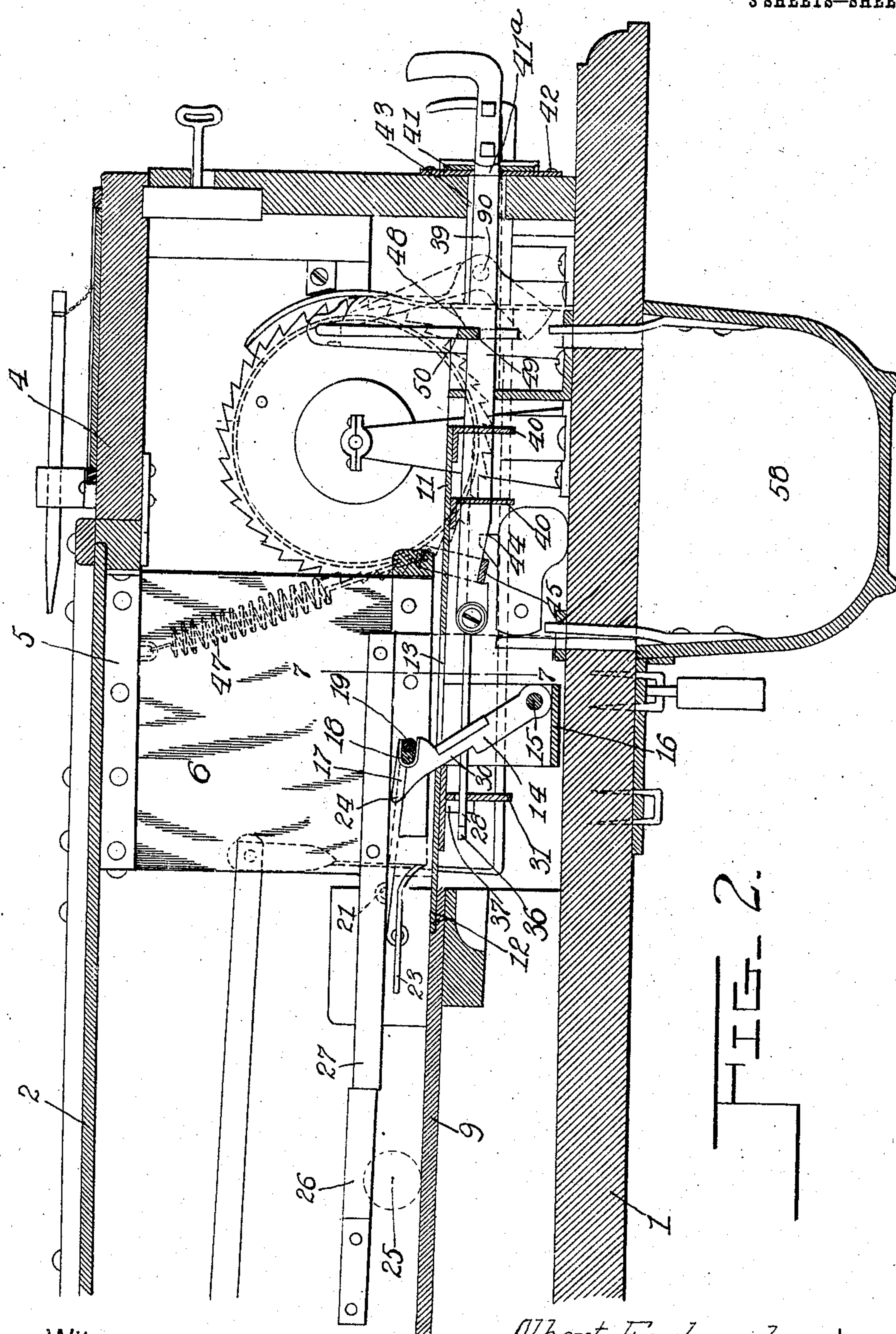
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3 SHEETS—SHEET 2.



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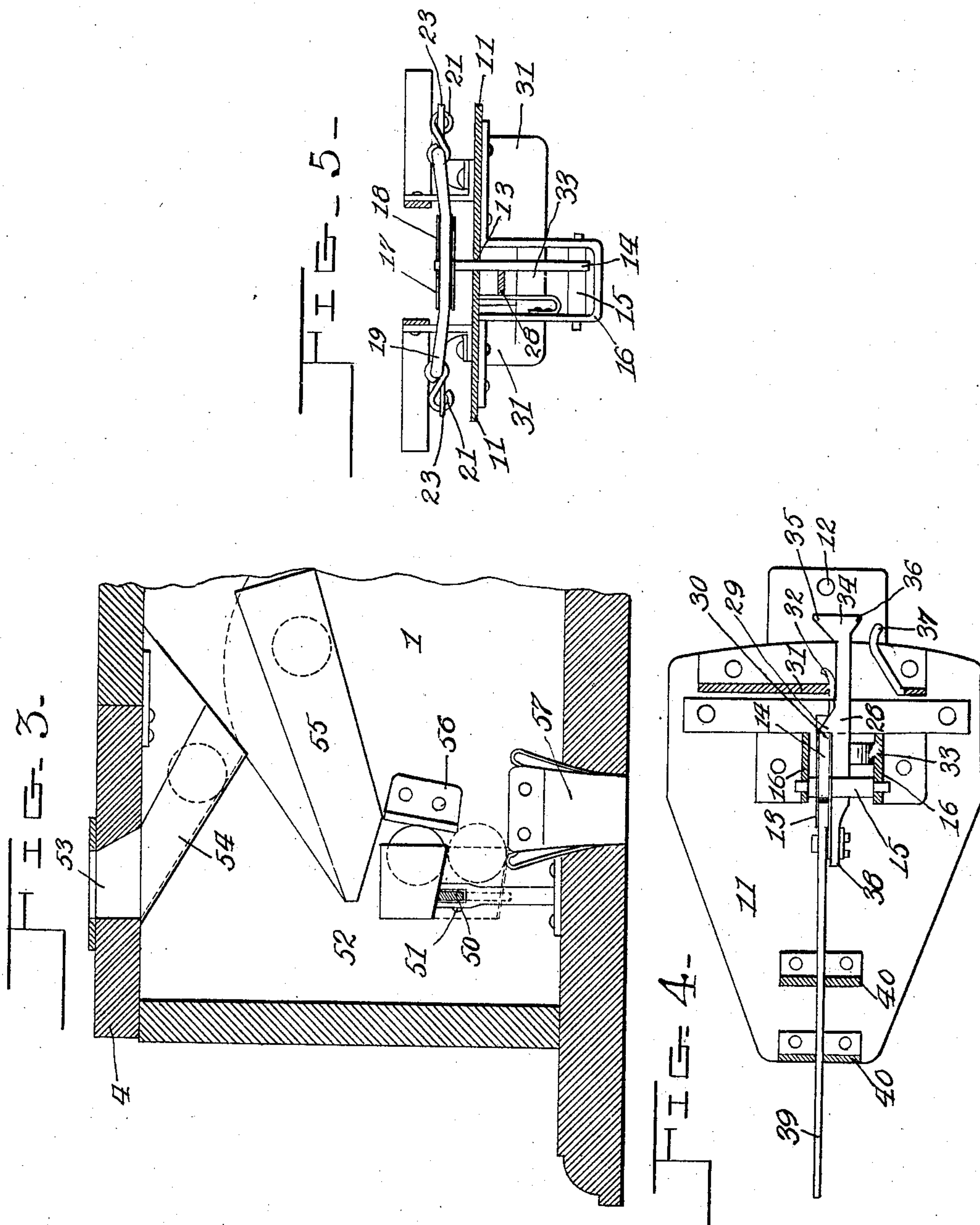
By *Marion Marion*  
Attorneys

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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

ALBERT FERLAND, OF LAWRENCE, MASSACHUSETTS.

## SLING MECHANISM FOR TENPIN GAMES.

SPECIFICATION forming part of Letters Patent No. 785,667, dated March 21, 1905.

Original application filed November 10, 1902, Serial No. 130,683. Divided and this application filed November 20, 1903. Serial No. 181,935.

*To all whom it may concern:*

Be it known that I, ALBERT FERLAND, a citizen of the United States, residing at Lawrence, county of Essex, State of Massachusetts, have  
 5 invented certain new and useful Improvements in Sling Mechanism for Tenpin Games; and I do hereby declare that the following is a full, clear, and exact description of the invention,  
 10 such as will enable others skilled in the art to which it appertains to make and use the same.

This application is a division of an application for a tenpin game, Serial No. 130,683, filed November 10, 1902.

My invention relates to apparatus for playing  
 15 tenpins or bowling in a miniature bowling-alley.

The alley to which my invention is especially applicable comprises an elongated body, along the floor of which a ball may be projected, and miniature tenpins set up at the remote end of the alley in imitation of the real  
 20 or standard game of bowling.

The object of this invention is to provide improved mechanism for projecting a ball  
 25 down the alley at the pins and to enable the ball to be accurately aimed before firing.

In its general construction the invention comprises a sling-plate which is pivotally mounted and which carries sling mechanism  
 30 adapted to receive the ball and project same along the alley.

The invention consists in a certain construction and combination of parts, to be more fully described hereinafter and definitely set forth  
 35 in the claims.

In the drawings, Figure 1 is a sectional plan through the alley above the sling mechanism and exposing the other mechanism contiguous to it. Fig. 2 is a vertical section taken substantially on the line 4 4 of Fig. 1. Fig. 3 is  
 40 another vertical section taken substantially on the line 5 5 of Fig. 1. Fig. 4 is a bottom plan of a sling-plate used in connection with my invention, some parts being shown in section, as will appear. Fig. 5 is a vertical section, showing a portion of the apparatus and taken substantially on the line 7 7 of Fig. 2.

Throughout the drawings and specification the same numerals of reference denote like  
 50 parts.

Referring to the parts by numerals, 1 represents the body of the alley, which consists of a substantially rectangular box which is open above and covered with a sheet of glass 2. At the head of the alley or its near extremity there is provided a cover-plate or  
 55 board 4, at the forward edge of which there is formed a deep and wide notch 5, which notch is located just above the sling mechanism, so that the same is clearly visible through the  
 60 glass covering 2, a suitable cloth screen 6 being arranged at this point for hiding the unsightly mechanism beneath the plate 4. The body of the alley comprises a false bottom or main floor 9, which inclines upwardly slightly  
 65 from the player's position toward the rear, wherefrom the ball will be returned to the player's position down either of the inclined runways 10 upon either side of the main floor 9 of the alley.

The sling mechanism comprises a substantially horizontal sling-plate 11, shaped substantially as shown in Fig. 1 and pivoted at 12, so that it may be given a limited rotation in a horizontal plane. It is provided with a  
 75 longitudinal slot 13, through which passes a trigger or lever 14, which is pivoted at 15 to a bracket 16, carried by the lower side of the plate 11. This trigger is formed above into a head 17, having a semicylindrical groove 18,  
 80 which receives an elastic cord or spring 19, the extremities of which cord diverge, as indicated, and connect with rings 20, which rings in turn attach to hooks 21, and these hooks may be held in any one of a plurality  
 85 of openings 22, formed in the forwardly-projecting horns 23. The trigger 14 terminates above in a tip 24, which is adapted to rest against the ball 25, and it should appear that if the trigger 14 were drawn back and released  
 90 it would operate to project the ball down the alley. For the purpose of guiding the ball back into the sling when it returns the side of the alley is provided with inclined guide-brackets 26, behind which are arranged diverging  
 95 guide-brackets 27, which latter are attached to the sling-plate 11. For operating the sling a catch 28 is provided, which is substantially horizontal and provided with a laterally-projecting tooth 29, which tooth  
 100



normally engages with the forward edge 30 of the trigger 14. This catch 28 passes through a guide-bracket 31, secured to the lower side of plate 11, and one side of the catch is normally pressed against the inclined lip 32 by a suitable spring 33. The catch 28 is provided with a head 34, having an inclined face 35, which as the catch is drawn rearwardly engages with the lip 32, displacing the catch 28 laterally, so that the tooth 29 becomes disengaged from the trigger 14. When the catch 28 is returned, as it is automatically, the heel 36 engages the lip 38, which replaces it in its normal position. It should be observed that sufficient play should be allowed at the point 38 to effect these movements. At this point a suitable bar 39 is attached, which passes through guide-brackets 40 and through an opening 41<sup>a</sup> in a plate 41, which is slidably mounted upon the front of the alley in suitable brackets 32. A long opening 43 is provided in the front of the alley, so as to permit the pull-bar 39 to be moved laterally in order to rotate the sling-plate about its pivot 12 for the purpose of aiming before firing. The pull-bar 39 is provided on its lower edge with an inclined notch 44, which receives a tongue or lever 45, pivoted at 46 and which projects transversely of the alley and to which is attached near its extremity a spring 47, which operates to maintain the said pull-bar 39 normally in its innermost position. This lever 45 has certain functions in connection with counting mechanism 59. The upper edge of the pull-bar 39 is provided with a projection 48, which constitutes a stop to limit its rearward movement, and there is also provided in the upper edge a notch 49, which notch is normally in engagement with a locking-bar 50, which extends transversely of the alley. The locking-bar 50 is adapted to be moved in a simple manner in order to release the pull-bar 39. To this end, beyond the pivot-point 51 thereof, the said bar 50 is provided with a pocket 52, which is adapted to receive a coin which may be inserted in the slot 53, the said coin being directed to the pocket by means of inclined chutes 54 and 55. It should be understood that when a coin is inserted in the slot in the manner suggested it operates by reason of its weight to elevate the locking-bar 50 in such a manner as to release the pull-bar 39. As the pocket 52 descends the coin passes downwardly under the edge of a release-plate 56 and falls into a chute 57, which delivers the coin to a coin-cup 58 disposed therebelow, as shown. Whenever the locking-bar 50 has been thrown up in the manner suggested, evidently the game may continue until its return, and it will be eventually returned by means of certain registering mechanism, which is controlled to a certain extent through the lever 45, referred to above.

No claim is made herein to the broad com-

bination of the projecting device, locking mechanism, and counting mechanism, as the same is claimed in my application, Serial No. 181,936, filed November 20, 1903.

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make all such modifications as are included within the scope of the following claims or of mechanical equivalents to the structures set forth.

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

1. In a tenpin-game apparatus, in combination, an alley, depressed runways at the sides thereof adapted to return the ball, inclined guides at the end of said alley and adapted to deflect said ball toward the center of said alley, a movable plate, ball-projecting mechanism carried thereby, and inclined guides carried by said plate and adapted to guide the ball into said ball-projecting mechanism.

2. In a tenpin-game apparatus, a sling comprising a pivoted plate having a longitudinal slot, a trigger pivotally supported by and beneath said plate and extended upward through said slot and adapted to engage a projectile, means for constraining said trigger, a catch adapted to engage said trigger so as to draw back the same, and a member adapted to deflect said catch to release said trigger.

3. In a tenpin-game apparatus, a sling comprising a pivoted plate having a longitudinal slot, a trigger pivotally supported by and beneath said plate and projected upward through said slot, means for constraining said trigger to throw a projectile, a catch adapted to engage said trigger to draw the same back, said catch having an inclined face, and a member adapted to engage said inclined face to deflect said catch and release said trigger.

4. In a tenpin-game apparatus, a sling comprising a pivoted plate, a trigger pivotally supported thereby, a catch adjacent to said trigger and having a tooth adapted to engage therewith, means for constraining said trigger to throw a projectile, a bracket constituting a guide for said catch and having inclined faces, said catch also having inclined faces cooperating therewith to deflect said catch laterally.

5. In a tenpin-game apparatus, a sling comprising a plate adapted to move about a substantially vertical pivot, a trigger supported by said plate and adapted to move about a substantially horizontal pivot, means for constraining said trigger to throw a projectile, a pull-bar, means for guiding said pull-bar upon said plate, a catch pivotally carried by said



pull-bar and adapted to engage said trigger, and means for deflecting said catch in its path of movement.

5 6. In a tenpin game, in combination, an alley-body having an opening through the wall thereof, pivoted sling mechanism, a reciprocatory pull-rod operatively connected with said mechanism, and guide-brackets for the pull-rod movable with the sling mechanism, said  
0 body having an elongated opening through which said pull-rod passes and which permits of its lateral movements.

7. In a tenpin game, in combination, pivoted sling mechanism, an alley-body having an

elongated opening therethrough, a pull-rod 15 operatively connected with said sling mechanism and laterally movable in said opening, a plate slidably mounted upon the outer side of said body at said opening, said plate having an opening through which said pull-rod 20 passes.

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

ALBERT FERLAND.

Witnesses:

FELIX ROBIDOUX,  
JOSEPH LANDRY.