

No. 820,367.

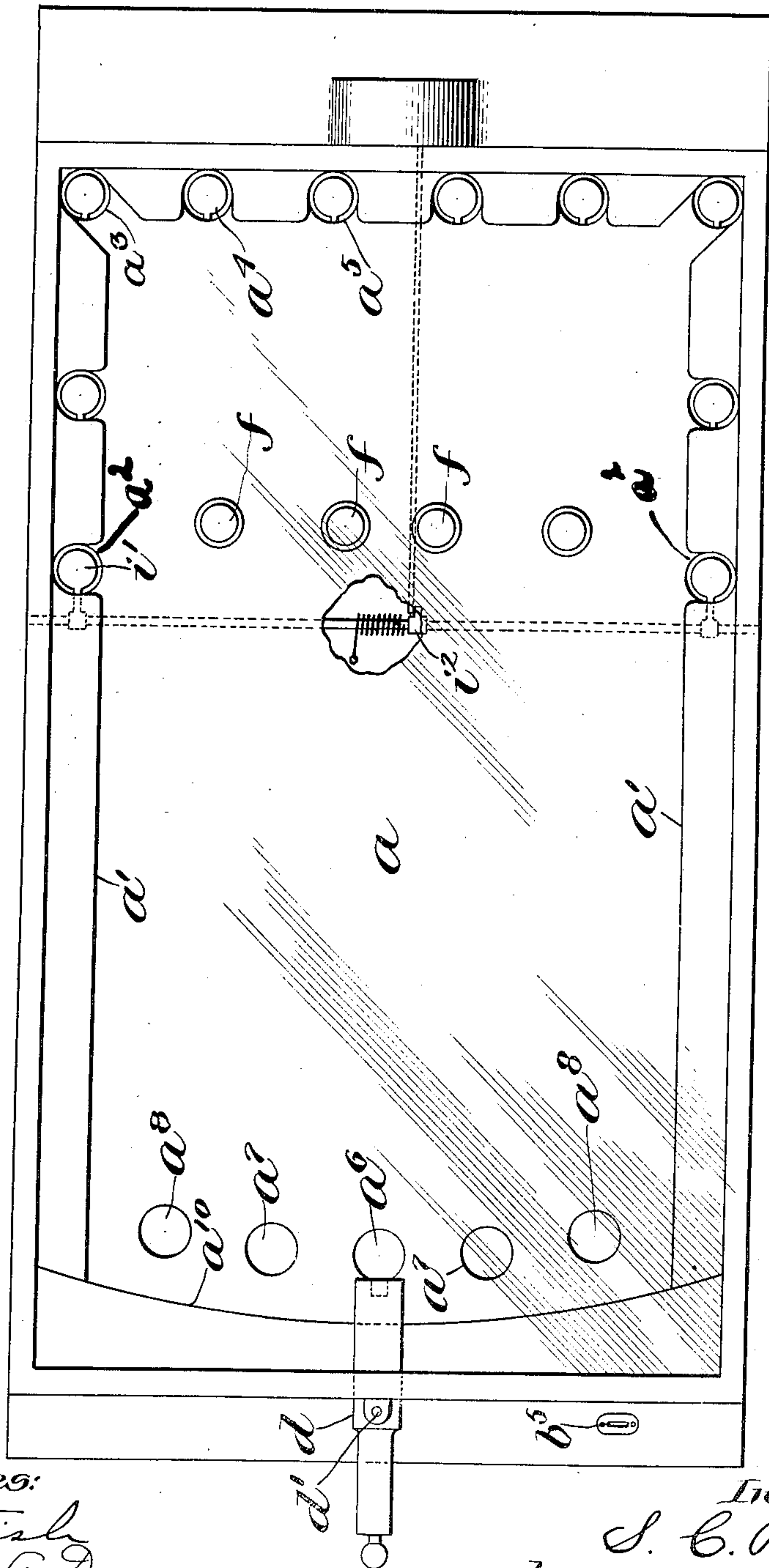
PATENTED MAY 8, 1906.

S. C. ROBERTS.
GAME TABLE.

APPLICATION FILED DEC. 30, 1903.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Ira L. Fish
Katherine A. Dugan

Inventor:

S. C. Roberts
by Geo. N. Goddard
Attorney.

No. 820,367.

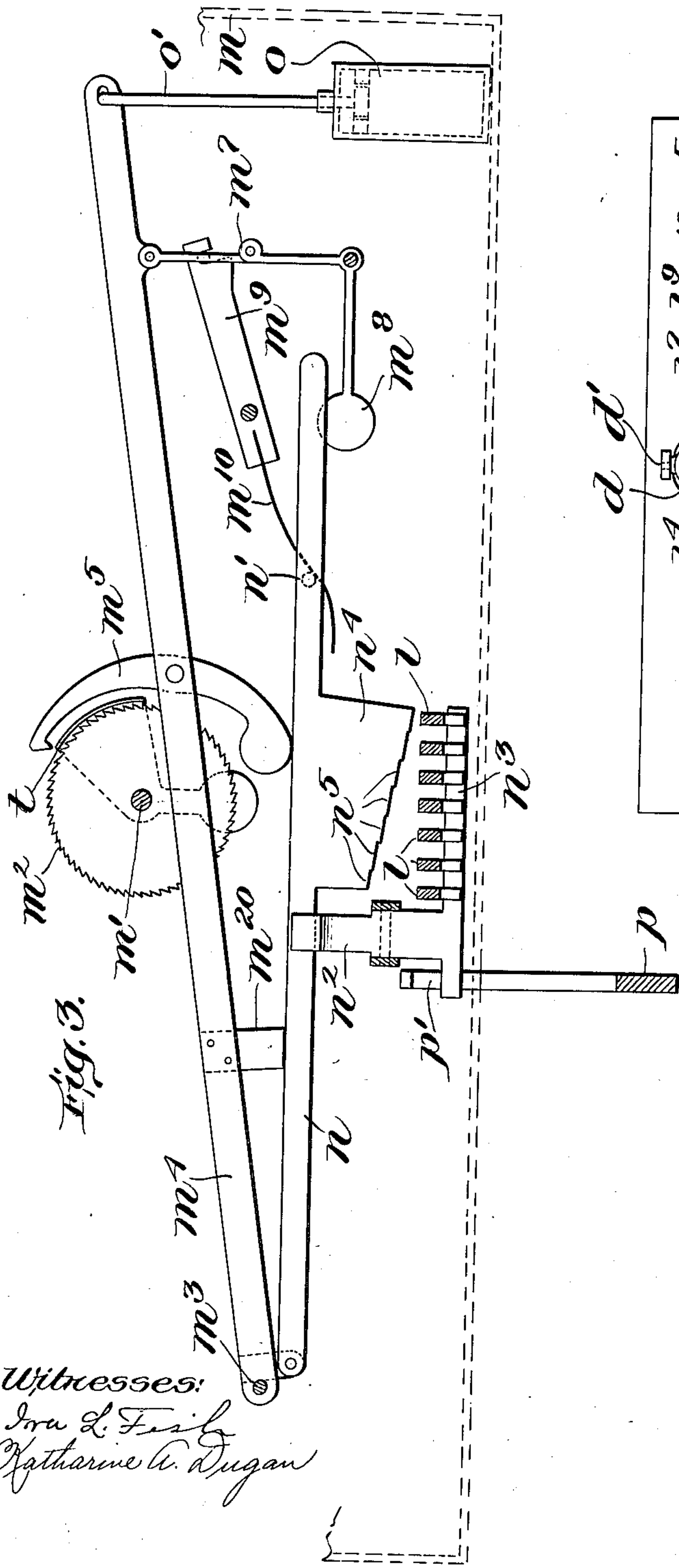
PATENTED MAY 8, 1906.

S. C. ROBERTS.

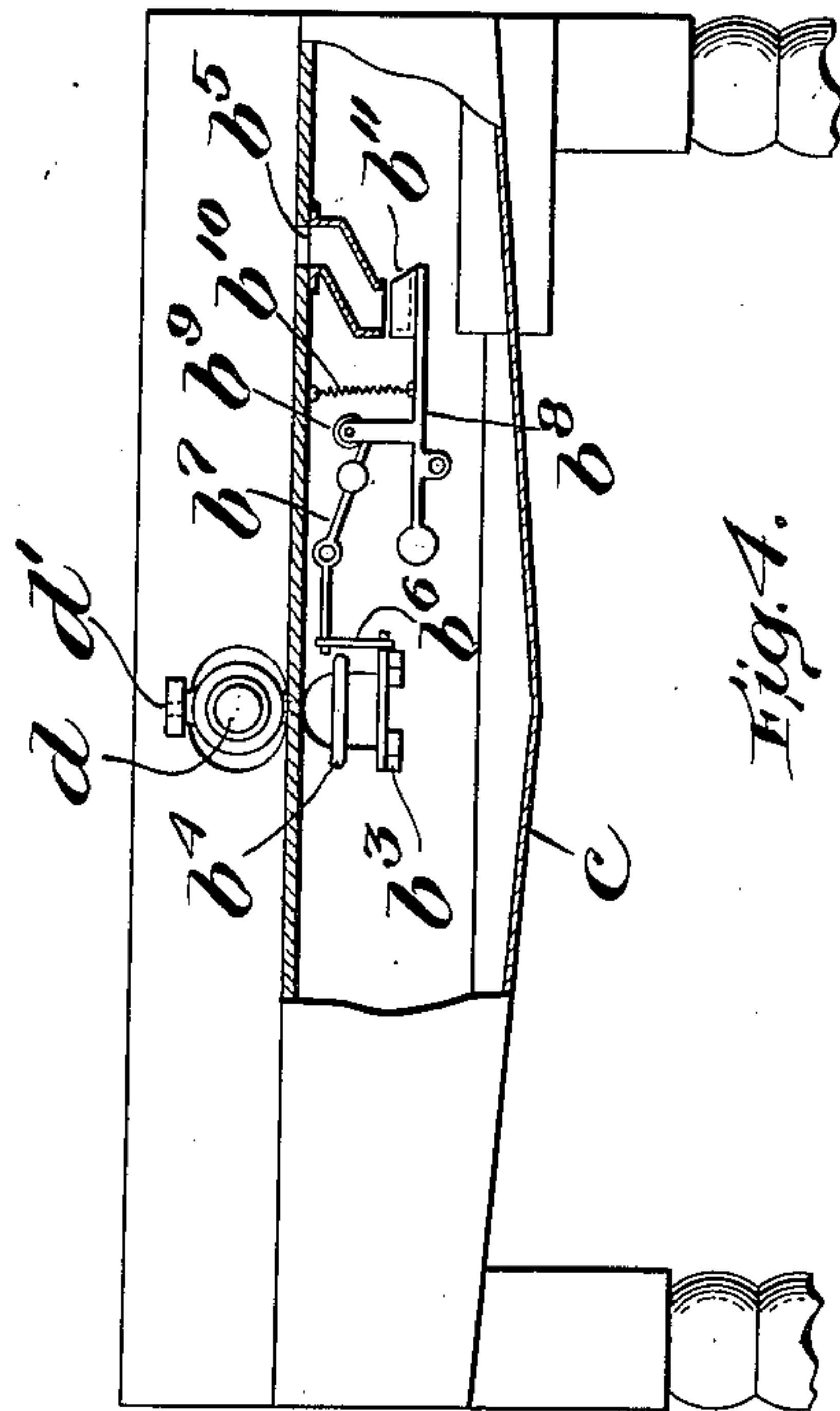
GAME TABLE.

APPLICATION FILED DEC. 30, 1903.

3 SHEETS—SHEET 3.



Witnesses:
Ira L. Fisher
Katharine A. Dugan



Inventor:
S. C. Roberts
by Geo. N. Goldard
Attorney.

UNITED STATES PATENT OFFICE.

SAMUEL C. ROBERTS, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO
AUTOMATIC GAME TABLE COMPANY, OF SPRINGFIELD, MASSACHU-
SETTS, A CORPORATION OF MAINE.

GAME-TABLE.

No. 820,367.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed December 30, 1903. Serial No. 187,148.

To all whom it may concern:

Be it known that I, SAMUEL C. ROBERTS, a citizen of the United States, and a resident of Springfield, Hampden county, Massachusetts, have invented certain new and useful Improvements in Game-Tables, of which the following is a specification.

This invention relates to game-tables, and has for its object to provide a device of this kind for affording amusement and tests of skill to those operating it.

Among the principal features which characterize the present invention is the combination of a table provided with pockets adapted to receive a ball impelled by the operator, the table being so arranged that when the ball enters the pocket to score it is returned to a position where it can be used again; but in case it does not score by entering the pocket it is returned to an inoperative position, from which it must be dislodged by depositing a coin for actuating releasing mechanism.

Another feature of the invention consists in the combination, with a table of this character having its bed and pockets inclosed, so as to be inaccessible to the operator, with movable means for actuating the ball to impel it into any of the pockets of the table for the purpose of scoring on an automatic indicating device.

Still another feature is the combination of a table of this class having a series of pockets with pins arranged to obstruct the direct entrance of the ball to the pocket, so that a bank or cushion shot must be made to permit the ball to enter the pocket.

These and other novel features characterizing the invention will be explained in detail in the following specification and will be particularly pointed out and defined in the claims hereto annexed.

Referring now to the drawings, Figure 1 is a plan view of the table complete. Fig. 2 is a longitudinal central sectional view of the same, showing the different mechanism connected with the table. Fig. 3 is a side elevation, partly in section, showing the mechanism for actuating the automatic indicator for registering the score. Fig. 4 is an end elevation of the table, partly broken away, to show the coin-controlled mechanism by which the

ball is released to pass to a position where it may be used in the game.

Generally speaking, the game-table as herein shown embraces a table or floor slightly inclined from the horizontal, around the sides and upper end of which are arranged suitable banks or cushions which are cut away at proper intervals to form pockets for the entrance of the ball. The ball is impelled from the lower end of the table and upon entering into the pocket actuates suitable mechanism for registering the score or number which is adopted as the value of each pocket upon any suitable automatic indicating device. In case the ball rolls back to the lower end of the table without entering a pocket no score is made, the indicator is not affected, and the ball is locked in a position from which it can be released only by dropping a coin in the slot.

It will be readily understood that in carrying out the principles of this invention many changes may be made in the form, construction, and arrangement of the parts and in the details of construction of the various mechanism which perform their respective functions. The form of device herein shown is therefore to be considered as illustrative of the principles which characterize the essential invention and will now be described in detail.

The bed *a* of the table is mounted in a suitable framework provided with legs, so as to slightly raise one end of the table above the level of the other end. It is surrounded on the two sides and on the upper end by elastic banks or cushions *a'*, provided with suitable side pockets, as indicated at *a²*, corner-pockets *a³*, and end pockets *a⁴ a⁵*, the construction being somewhat similar in principle to the ordinary pool-table.

At the lower ends of the table are formed a series of openings or pockets *a⁶ a⁷ a⁸*. Instead of providing the lower end of the table or bed with an elastic bank it terminates, as indicated at *a¹⁰*, without any obstruction whatever, so that the ball can roll into a shallow trough formed just beyond and below this lower end, as indicated at *b*. This trough *b* extends across the lower end of the table and has its end portions sloping downwardly toward the middle portion, so that

the ball upon rolling into the trough will by its own weight roll to the middle of the trough. At the middle portion of the trough, as indicated at Figs. 2 and 4, there is an opening large enough to allow the passage of the ball, as indicated at b' . Upon rolling through this opening b' the ball rests upon a small drop table or plate b^3 , which is normally held in position by locking mechanism adapted to be released by a coin. To prevent the ball from rolling off the table, a small U-shaped piece of wire b^4 is arranged above the plane of the table, which acts as a keeper to hold the ball in place until the table or plate b^3 is dropped.

To the lower edge of the frame of the table is tacked or secured a piece of canvas or flexible material, (indicated at c .) This is allowed to sag through the middle portion and at the lower end, so that all portions of it converge to the lowest point, at which is formed an aperture c' . As this flexible sheet c extends beneath all the pockets and openings formed in the table proper, it forms a rollway by which the ball will be caused to roll toward this opening c' into whatever pocket it is dropped. The use of this concavo-convex sheet-piece for this purpose is deemed an important feature of the invention, as it provides a simple and effective device for returning the ball from all points to one place, which is not liable to get out of order and is certain, simple, and efficient in its action.

The top of the table is closed in or covered over, preferably by a large sheet of glass a^{12} , through which the action of the ball may be seen, thereby preventing the operator from interfering in any way with the ball or getting possession of it. The sides and ends of the table-frame are also inclosed with suitable casing to prevent access to the interior. At the middle of this lower end of the table a small aperture is provided through which projects the barrel of a spring-gun d , which is preferably hung upon vertical pivots d' , so as to swing in an approximately horizontal plane to vary the angle of the gun with relation to the pockets.

As the operator has no access to the interior of the table, means are provided for feeding the ball to the gun in order that the game may be played. The means herein shown for that purpose comprise a suitable lever e , at whose top is arranged a small pivoted cup e' , having a rearwardly-projecting lip e^2 , so arranged that when the lever e is swung upward through the opening c' , formed in the false bottom c of the table will the lip e^2 , engage the forward end of the barrel of the gun and will be dropped, so as to throw the hollow cup e' containing the ball into a vertical position to permit the ball to roll back into the barrel of the gun in position to be impelled over the table.

In order to make the game a test of skill, I provide a series of large pins or obstructions f , arranged in suitable relation to the pockets, so that the ball cannot be shot directly into any of the pockets from the gun, but must be first impelled against the banks or cushions, by which it may be deflected into any of the pockets.

If the ball is in the position shown in Fig. 2 on the drop-plate b^3 , it becomes necessary to release it by depositing a coin in the coin slot or passage b^5 . Any suitable coin-controlled mechanism may be employed for supporting the drop-plate b^3 in its normal position or at least of preventing it from dropping. In this case I have shown a small link b^6 , secured to the edge of the drop-plate at its lower end, the upper end of the link being secured to the end of a pivoted lever b^7 , which is counterbalanced to normally support the drop-plate when empty, the counterbalancing being insufficient, however, to support the drop-plate b^3 when the ball is upon it. In order that the lever b^7 may be held against movement when the ball rolls upon the drop-plate b^3 , I provide a pivoted lever or detent b^8 , provided with a projecting antifriction-roller b^9 and normally drawn up to the horizontal position by means of a retractile spring b^{10} to pass over and engage the weighted end of the lever b^7 , all as indicated in Fig. 4. At one end of the detent-lever b^8 is arranged a small coin-cup b^{11} in position to receive the coin from the slot or runway b^5 . When the coin is deposited in the coin-slot b^5 , it drops into the coin-cup b^{11} , its weight being sufficient to depress the lever b^8 , so as to swing the antifriction-roller b^9 out of engagement with the cooperating end of the lever b^7 . This permits the lever b^7 to swing on its pivot under the influence of the weight of the ball resting upon the drop-plate b^3 . The plate b^3 therefore drops, allowing the ball to pass down to the bottom of the casing and roll into the concave cup c' , by which it may be once more fed back to the spring-gun in the manner already described.

It will be understood that I do not confine myself to a spring-gun or a spring-actuated piston for giving impulse to the ball to shoot it toward the pockets, as any suitable device may be used for this purpose.

I will now describe the means by which the scoring of the ball is indicated on a suitable dial or indicator. Mounted in suitable bearings below the bed a of the table and adjacent to the respective pockets are a series of rockshafts i , to which are secured small plates i' , arranged below the respective pockets, so that each plate will be caused to drop by the weight of the ball falling upon it as it enters the pocket. We will suppose that the two end pockets a^5 are given a value of one hundred, the end pockets a^4 a value of eighty, the

corner-pockets a value of seventy, the side pockets a value of sixty and fifty, respectively, in counting or scoring. As these pockets are arranged in pairs, but a single
 5 rock-shaft need be employed for each pair of pockets, each rock-shaft being provided at each end with the drop-plates i' , arranged to project beneath their respective pockets. At the upper end of the table is arranged in a
 10 suitable casing m the indicating or registering mechanism, which is normally held from action by means of a suitable detent, to be hereinafter explained, which detent is released by means of a series of spring-actuated
 15 bolts or plungers l , which are arranged to slide lengthwise of the table. These spring-actuated plungers l are normally held out of engagement by means of a series of detents or pawls l' , which normally form a locking
 20 engagement with the respective plungers. Each pawl is connected, by means of a connecting wire or rod l^2 , with a projecting arm i^2 , secured to its appropriate rock-shaft. When the ball enters the pocket a^2 , for example, it depresses the plate i' , arranged be-
 25 neath it, actuates the rock-shaft, which through the medium of the arm i^2 and the connecting-rod l^2 disengages the pawl l' from one of the spring-pressed levers l , which is
 30 thereupon allowed to move forward under the tension of its controlling-spring l^3 to set in motion a suitable registering mechanism.

The registering mechanism herein shown is mounted in a box-like casing m , extending
 35 across the upper end of the table. About the middle portion of this table is mounted a rotatable shaft m' , to which is secured a ratchet-wheel m^2 . At one end of the casing, as indicated at m^3 , is pivotally mounted a lever
 40 m^4 , which carries a pivoted pawl m^5 , counterbalanced or weighted, so that it normally tends to engage the teeth of the ratchet-wheel m^2 . Obviously the falling of the lever
 45 m^4 when the pawl m^5 is in engagement with the ratchet-wheel will pull the ratchet-wheel around on its axis until the lever stops falling, thus causing a partial rotation of the shaft
 50 m' . The shaft m' may be connected by suitable gearing with a dial or indicator, as shown at m^6 , upon which are placed figures corresponding to the number of teeth in the ratchet-wheel. The lever m^4 when raised to its uppermost position is supported against dropping by means of a toggle or hinged support
 55 m^7 , which is provided with a counterweighted arm m^8 , which tends to cause it to buckle or flex. The flexing of this hinge or toggle m^7 , which supports the lever against dropping, is normally prevented by means of
 60 a pivoted dog m^9 , provided at its forward end with a projection for engaging a pin or other portion on the hinge m^7 . At its rear end back of the pivotal point this dog m^9 is provided with a projecting wire or finger m^{10} ,
 65 which engages a pin n' , secured to the sup-

plemental lever n , which is pivotally mounted beneath the lever m^4 . Obviously the dropping of the supplemental lever n will depress the finger m^{10} , thus raising the forward end of the lever m^9 and allowing the counter-
 70 weight m^8 to act to buckle the hinge m^7 , so as to allow the lever m^4 to drop of its own weight. As the lever m^4 and its supporting parts must be made fairly heavy to secure positive action, it would naturally accelerate its speed
 75 as it drops, and thus give a momentum to the ratchet-wheel which would carry it beyond the exact point at which the lever m^4 was stopped. To prevent this, I provide a fluid dash-pot, as shown at o , which is provided
 80 with a suitable piston whose piston-rod o' is pivotally connected with the outer end of the lever m^4 . This acts to gradually check the movement, so as to counteract the momentum of the ratchet-wheel after it has begun
 85 to move.

It will be seen that before the lever m^4 can drop in order to actuate the ratchet-wheel it is necessary that the supplemental lever n should first be released. This lever n is nor-
 90 mally held in place by a small pivoted detent n^2 , arranged on the side of the casing, this lever n^2 having at its lower end a projecting arm or finger n^3 , arranged to lie in the path of the plungers l . Now it is obvious that by ar-
 95 resting the fall of the lever m^4 at different points we can cause it to rotate the ratchet m^2 through an arc corresponding to one tooth of the ratchet or to any desired number of teeth on the ratchet. In this case instead of
 100 applying the differential stop mechanism directly to the lever m^4 we have applied it to act directly upon lever n and have provided lever m^4 with a stop m^{20} , arranged in the path of the lever n , so that as soon as the stop m^{20}
 105 rests upon the lever n the downward movement of the lever m^4 is arrested.

It will be seen that if each ratchet-tooth is given a value of ten on the dial or indicator which the ratchet actuates, the pawl m^5 in
 110 order to correctly register the score for the the pockets a^5 , having a value of one hundred, should be allowed to move the ratchet-wheel m^2 through an arc equal to ten ratchet-teeth. On the other hand, if the ball drops into the
 115 lower side pocket, having a value of fifty, it will be necessary in order to correctly register the score to permit the lever to move the ratchet through an arc of only five teeth.

Various forms of stop mechanism may be
 120 employed for accomplishing the arresting of the drop of the levers n and m^4 at the proper point to turn the ratchet-wheel through the requisite number of degrees. I have herein shown a simple contrivance for this purpose
 125 consisting of a series of plungers l , each one of which is actuated by mechanism already explained through the agency of the drop-plate and rock-shafts $i i'$ and which are combined with a stepped stop-piece n^4 , secured to
 130

the lever n . Normally all of the plungers l are out of the path of movement of the stop-piece n^4 , provided with the graduated surface stops or steps n^5 , so that the dropping of the lever would not be interfered with by any of the plungers. When any plunger is released, however, it moves forward, so that its front end projects beneath the plane of movement of the stop-piece n^4 , so as to arrest its movement when the particular step n^5 , corresponding to that plunger, rests upon the end of the plunger.

Referring to Fig. 3, it will be seen that if the right-hand plunger l is moved forward its corresponding step n^5 will rest upon it after the lever has moved through the smallest arc. If, however, the extreme left-hand plunger be released so as to move forward, its corresponding step n^5 will not engage its projecting end until the lever n has moved through an arc that is relatively much greater than in the former case. These steps are so graduated with reference to each other that the difference in distance of the fall of the lever which they permit will correspond to the movement of the levers through an arc equal to one ratchet-tooth. The plungers l , however, serve a two-fold purpose. They not only form a series of stops to arrest the downward movement of the levers at different points, but they also form a means for releasing the detent n^2 , which normally holds the supplemental or supporting lever n against dropping. This is accomplished by providing each plunger l with a small projection l^{10} , arranged to engage the arm n^3 on the pivoted stop n^2 , so that as the lever moves forward it swings the pivoted stop or detent n^2 out of engagement with the supplemental lever n , thus allowing the supplemental lever n to drop through the medium of the pin n' , actuates the detent m^9 so as to permit the hinge m^7 to buckle, and allows the main lever m^4 to drop, carrying the pawl with it. The arc through which the lever falls will then depend upon which one of the slide bars or plungers l has been moved forward to arrest the lever n , this fact being in turn determined according to the particular pocket into which the ball falls. After the ball has passed through the pocket and registered the score it is then necessary to return the lever to its highest position, where it will be locked in place, and also to return the slide-bar to its normal position. This may be accomplished by means of the pivoted lever p , which is carried by any suitable support beneath the table and whose handle projects beyond the lower end of the table in position to be grasped by the operator, while its forward end is formed with a bent arm which projects up through the casing m , so that its extreme end may engage the bottom face of the lever n to raise the whole recording mechanism to its

inoperative position, from which it may be released to actuate the dial-indicator in the manner already described. This same lever p is constructed with an incline or cam face p' , arranged so that when the upper end of the lever is raised this face will engage the arm n^3 of the detent n^2 and throw it inward, carrying with it whichever one of the plungers has been released, thus returning the plunger to its inoperative position, where it may be again locked against movement by means of its locking-pawl l' . This checking-pawl is shown as a gravity-pawl, but of course may be assisted in its locking action by any suitably-arranged spring. The ratchet-actuating pawl m^5 is weighted, so as to normally swing into engagement with the ratchet, which action may be further aided by a small tension-spring. The lower end of the pawl m^5 is arranged to strike upon the supplemental stop-lever n just before the stop m^{20} descends upon the lever n , so as to disengage the pawl from the ratchet. In order to prevent the operator from improperly scoring on the register by moving the lever p so as to repeatedly engage the pawl m^5 with the ratchet without raising it to the position in which it is automatically locked, I provide a guard t , which is pivoted on the shaft m' and is provided with a peripheral flange covering the teeth of the ratchet, the guard being arranged to prevent the engagement of the pawl except when the pawl is raised to its highest point, at which point the mechanism is locked by the detents and cannot be actuated except by the arms adjacent to the pockets, which actuate the detent n^2 . The lever p may also be provided with a link connection p^3 , by means of which it may be caused to actuate the lever e , which carries the ball-retaining cup e' upward in position to be fed into the gun for use a second time. While for convenience I have shown the rock-shafts and their attached arms or plates i' applied only to the pockets at the upper end and sides of the table, it is obvious that openings or pockets may be formed in the table a or surface over which the ball is rolled, as indicated at a^6 a^7 a^8 , and that the principle of this mechanism for setting in motion the register may be applied to these pockets or openings for the ball wherever they are placed. The trough or receptacle c , which forms the bottom or runway, will obviously always return the ball to the same place at which is located the receiving-cup c' .

It is obvious that the details of the registering mechanism and of other mechanism attached to the table may be greatly varied without in any way departing from the spirit of the invention.

Without attempting to set forth all the changes in form, construction, and arrangement that may be made in the practice of my

invention or all the modes of its use, what I claim is—

1. A game-board embracing in its construction, a table provided with a series of 5 pockets for receiving the ball, a dial-indicator adapted to register the score for the various pockets, locking means for holding the dial-indicator mechanism against movement, means adapted to be actuated by the ball 10 after it enters a pocket for releasing said locking means in order to permit the dial-indicator to register, substantially as described.

2. A game-board embracing in its construction, a table provided with a series of 15 pockets, an indicator-dial for registering the score when the ball enters the respective pockets, a series of spring-actuated slide-bars arranged to set the indicator mechanism in operation, a series of detents for said slide- 20 bars to hold them normally against movement, and movable members adjacent to the respective pockets adapted to be actuated by the ball passing through the pocket to release said detents, substantially as described.

3. A game-board provided with a series of 25 pockets, movable ball-actuated members adjacent thereto, a series of independent slide-bars connected with the ball-actuated members of the respective pockets, a register for 30 recording the scores, a detent for preventing the action of said register, each of said slide-bars being arranged to release said detent and to arrest the movement of the register at a predetermined point, substantially as de- 35 scribed.

4. A game-board embracing in its construction, a table provided with pockets the receptacle arranged beneath the table by

which the ball may be returned to a uniform position from all the pockets, said table being 40 provided at its lower end with a passage-way through which communication may be had with said receptacle beneath the table, means for retaining said ball to prevent it from roll- 45 ing through said passage-way, and mechanism for releasing said retaining means, substantially as described.

5. A game-board embracing in its construction, a table, a ball-impelling device ar- 50 ranged to impel the ball over the table, a cup or holder arranged below the ball-impelling device, means for conducting the ball to the cup after it has rolled over the table, an actu- 55 ating-lever for lifting said cup to the level of the ball-impelling device, said cup being pivotally mounted upon said lever so that it may be tipped up to deposit the ball in the ball-impelling device, substantially as described.

6. A game-board embracing in its construction, a table provided with a series of 60 pockets adapted to receive a ball, an impelling device for rolling a ball across the table, an indicating device for registering the scores assigned to the various pockets, means adja- 65 cent to said pockets for setting in motion said indicating device, a lever arranged to reset said indicating device, and mechanism connected with said lever for depositing the ball in operative position to be again impelled 70 across the table, substantially as described.

In witness whereof I have hereunto set my hand this 21st day of December, 1903.

SAMUEL C. ROBERTS.

In presence of—

JOHN L. RICE,
S. M. JONES.