

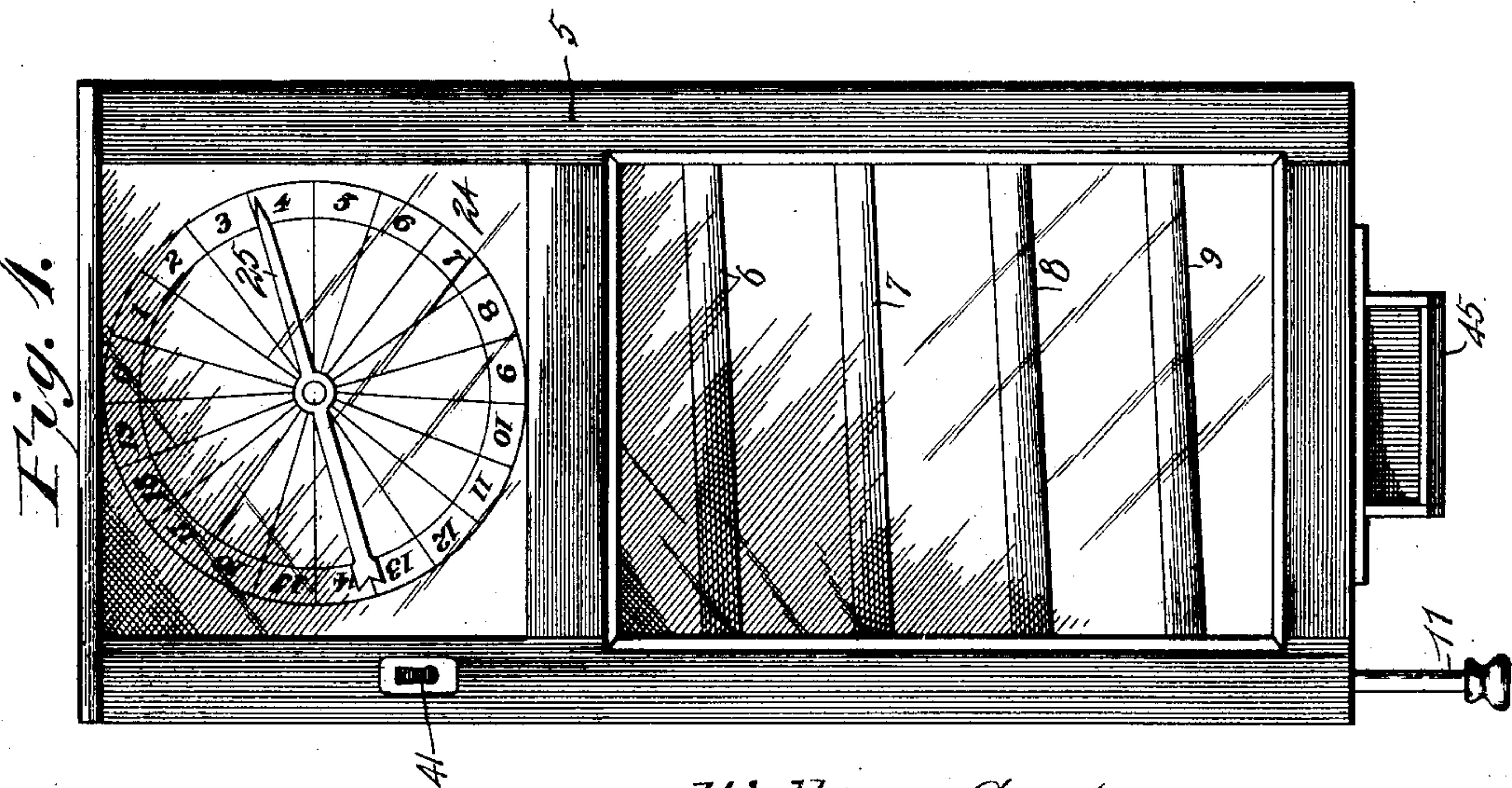
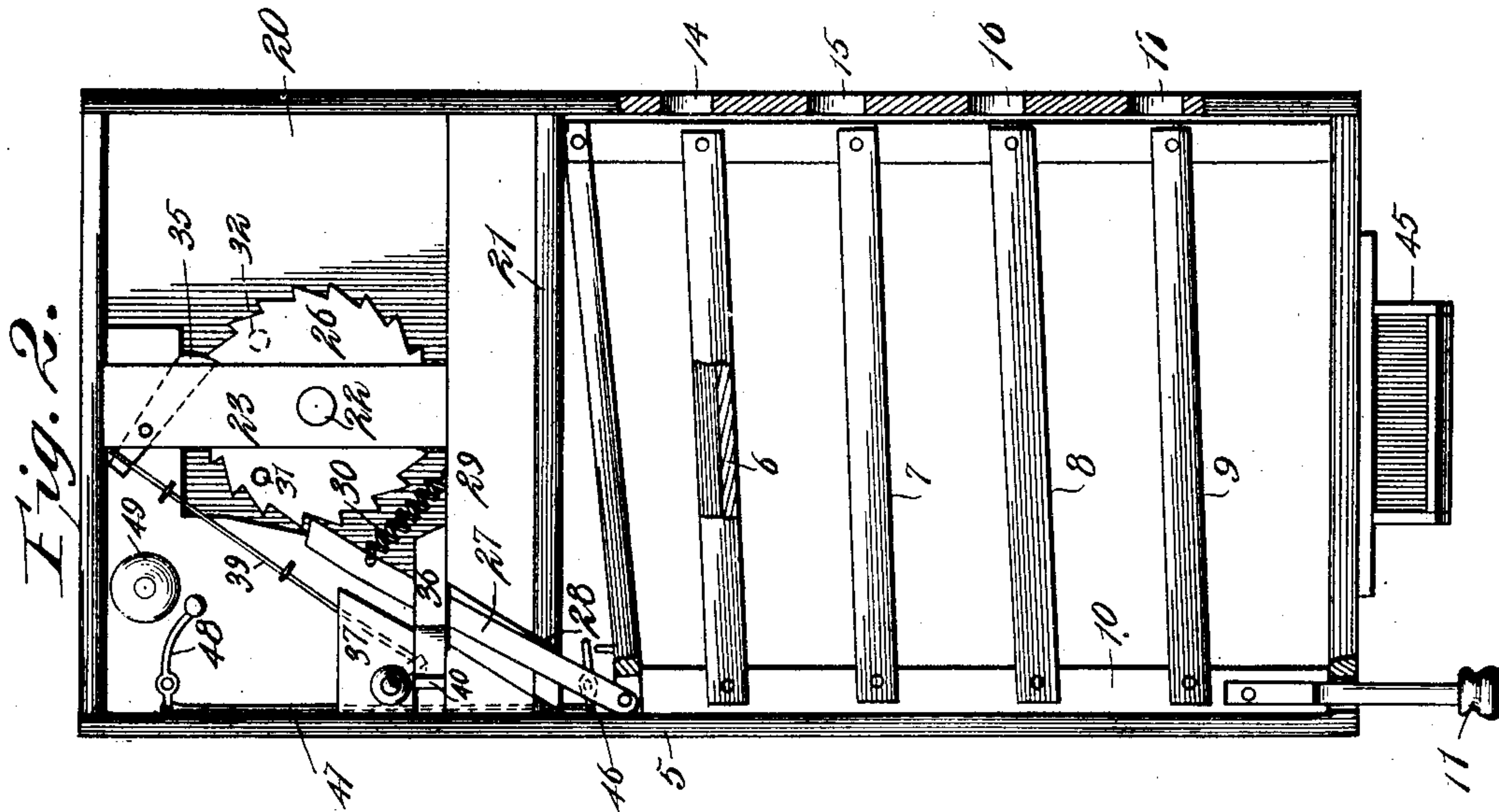
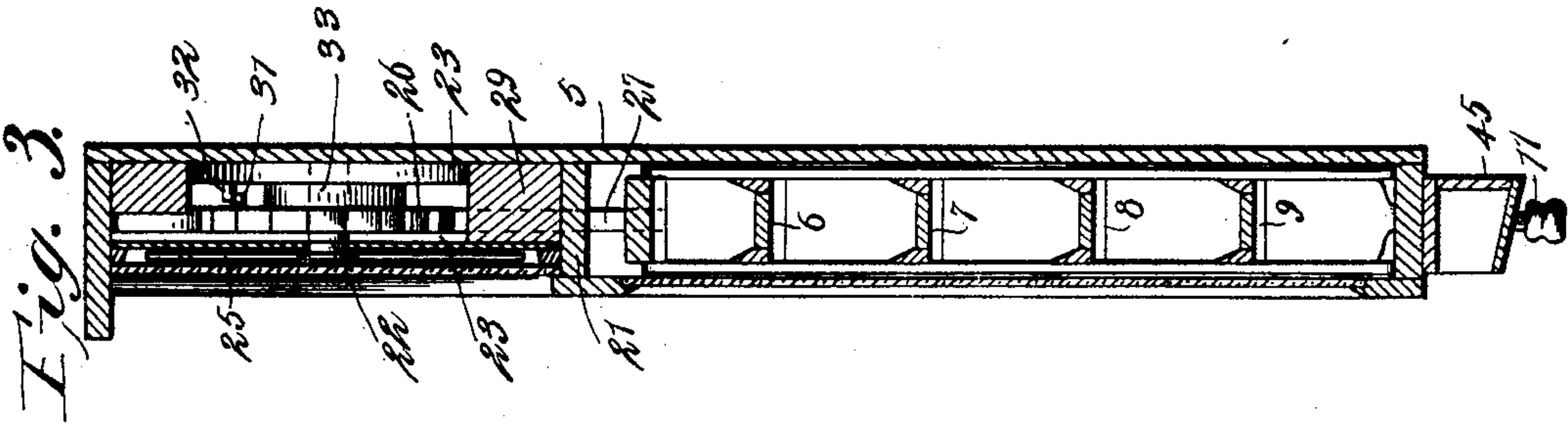
No. 665,429.

Patented Jan. 8, 1901.

W. GRAHAM.  
GAME REGISTER.

(Application filed Aug. 25, 1900.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM GRAHAM, OF DANBURY, IOWA.

## GAME-REGISTER.

SPECIFICATION forming part of Letters Patent No. 665,429, dated January 8, 1901.

Application filed August 25, 1900. Serial No. 28,063. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GRAHAM, a citizen of the United States, residing at Danbury, in the county of Woodbury and State of Iowa, have invented a new and useful Game-Register, of which the following is a specification.

This invention relates to game-registers in general, and more particularly to that class used for registering the number of games of pool played, the object of the invention being to provide a register in the form of a ball-rack wherein after the balls are placed therein they cannot be removed without such manipulation of the apparatus as will effect a registration of a game.

Further objects and advantages of the invention will be evident from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a front elevation showing the complete register with the balls removed therefrom, the dial being in a position to indicate that the register has been operated four times and that correspondingly four games have been played. Fig. 2 is a view, partly in section and partly in elevation, showing the front of the register with the dial removed to show the index-operating mechanism. Fig. 3 is a vertical central section of the apparatus, parts of the index-operating mechanism being shown in elevation.

Referring now to the drawings, the register is in the form of a rack including a casing 5, in which are disposed a number of grooved shelves 6, 7, 8, and 9, which are adapted to receive the pool-balls. Each of these shelves is pivoted at one end, while its opposite end is connected with a reciprocatory connecting-rod 10, having a handle 11 at its lower end, which projects through an opening in the bottom of the casing and is provided with a terminal knob.

In the side 13 of the casing, adjacent to the pivoted ends of the shelves, are formed openings 14, 15, 16, and 17, which lead to the shelves, respectively, and through which the balls are passed to the shelves. When the shelves are moved to one limit of their pivotal movement, the balls introduced through the openings

will run along the shelves to the lower ends thereof and will be held by the shelves. When the shelves are tilted in an opposite direction, the balls roll from the shelves and are discharged through the openings in the side of the casing. Thus after each game the shelves must be tilted, and by connecting suitable mechanism with the shelves the number of times the shelves are tilted and therewith the number of games played may be registered. This registering mechanism is located in a compartment 20 above a transverse partition 21 in the casing above the shelves and comprises a shaft 22, which is rotatably mounted in bearings in upright 23 and plate 23', said shaft being passed through a central opening in a dial-plate 24, which is disposed to cover the compartment in which the registering mechanism is located. The dial-plate is marked with a dial, as shown, which may represent any desired number of games, and the shaft 22 has an index 25 fixed thereon and adapted to traverse the dial with a step-by-step movement.

Fixed upon the shaft 22 in the rear of the dial-plate is a ratchet-wheel 26, and coöperating therewith is a pawl 27, which is slidably disposed in a slot 28 in the partition 21 and in the transverse sill 29, resting on the partition, the upper end of this pawl being disposed in coöperative relation to the ratchet-wheel, while its lower end is pivotally connected with the upper end of the connecting-rod 10. The pawl is held normally and yieldably in engagement with the ratchet-wheel by means of a helical spring 30, which is attached at one end thereto, while its opposite end is connected with the sill 29, as shown. The teeth upon the ratchet-wheel are equal in number to the numerals on the dial, and thus as the pawl is operated each upward movement of the shelves has a corresponding movement of the index one step.

To prevent continuous rotation of the ratchet-wheel and therewith of the index and a consequent repetition, a pin 31 is fixed to the back of the ratchet-wheel, while a second pin 32 is fixed in the path of the pin 31, so that when the ratchet-wheel has made one complete rotation it will be stopped from further movement, and no further registrations can be made until after the index has



been returned to zero. To return the index to zero, a spiral spring 33 is disposed against the back of the ratchet-wheel and has one end attached to said wheel, while its opposite end is attached to the back of the casing or to any other suitable support, as will be readily understood. As the ratchet is rotated to advance the index this spring is wound up, and thus if the pawl be withdrawn from the ratchet to release it the spring will act to return the ratchet and therewith the index. A second pawl 35 is, however, disposed in operative relation to the ratchet-wheel and is pivoted to upright 23, this pawl 35 acting to hold the ratchet from return movement when the pawl 27 is drawn downwardly for engagement with a second tooth of the ratchet, and it is of course necessary to raise this pawl 35 also from the ratchet-wheel before the latter may be returned under the influence of the spiral spring.

To provide for withdrawing both pawls from the ratchet to release the latter and permit it to turn to return the index, a block 36 is slidably disposed upon the sill 29 and between it and the block 37, disposed thereabove, this block 36 having a slot therein, through which the pawl 27 is passed, whereby when the block is moved rearwardly the pawl will be raised from the ratchet-wheel. The second pawl 35, above referred to, is pivoted at a point between its ends, and connected therewith is a rod 39, which is attached at its opposite end to the slidable block 36, whereby when said block is operated to release pawl 27 from the ratchet the pawl 35 will be likewise and simultaneously released from the ratchet. The slidable block 36 has a projection 40 on one face and is adapted for engagement by a key when inserted in a keyhole 41 in the front of the casing of the register, said block being held yieldably in position to maintain engagement of the pawl 35 with the ratchet-wheel by means of the spring 30. Thus after the whole number of games has been played the only way in which the shelves can be titled to discharge the balls is by first releasing the pawls to allow the index to return to zero. When the shelves are then raised to discharge the balls, the ratchet is operated to register one game. Thus it will be seen that a strict tally may be kept on the number of games played and that the register cannot be operated in any such manner as will hold the index from indicating when the balls are discharged.

A supplemental casing 45 is attached to the bottom of the casing 5 to receive extra balls.

It will of course be understood that in practice various modifications of the specific construction shown may be made and that any suitable materials and proportions may be used for the various parts of the construction without departing from the spirit of the invention.

In connection with this apparatus there is employed an alarm comprising a bell 49, hav-

ing a pivoted tapper 48, to one end of which is connected a rod 47, attached at its lower end to a lever 46. This lever 46 is pivotally mounted with its free end in the path of upward movement of a finger 50 upon the cross-piece 51, which is pivoted in the same manner as the shelves and has a similar movement. Thus when the shelves are raised to discharge the balls the clapper 48 is operated to strike the bell and sound an alarm or signal.

What is claimed is—

1. A registering device comprising a plurality of pivoted shelves, a dial, an index disposed to traverse the dial, a ratchet connected with the index, a shift-bar connected with the shelves for tilting them, a pawl connected with the shift-bar and engaged with the ratchet for operating it when the shift-bar is operated, a retaining-pawl engaged with the ratchet to prevent return movement thereof, means for returning the ratchet and therewith the index when the pawls are disengaged from the ratchet, and a slide connected with both pawls for moving them from the ratchet, said slide being adapted for engagement of a key therewith to operate it.

2. A registering device comprising a plurality of pivoted shelves pivotally mounted at one end and lying normally inclined toward their pivots, a shifting bar connected with the opposite ends of the shelves, a dial, an index disposed to traverse the dial, a ratchet connected with the index, a pawl in operative relation to the ratchet and pivoted to the shift-bar for operation thereby to move the ratchet and operate the index, means for returning the index, and means for moving the pawl from the ratchet to permit the returning means to operate.

3. A registering device comprising a plurality of movable shelves adapted to receive balls and to discharge them, a dial, an index disposed to traverse the dial, a ratchet connected with the index, a pawl in operative relation to the ratchet and connected with the shelves for operation thereby to operate the index, means for limiting the movement of the index, a second pawl in operative relation to the ratchet to hold the latter from return movement normally, a slide connected with the pawls for moving the pawls from the ratchet, means for returning the ratchet when released by the pawls, and a spring connected with the first pawl for holding both pawls yieldably in engagement with the ratchet.

4. A registering device comprising shelves mutually connected and adapted to receive balls, said shelves being mounted for movement to discharge the balls therefrom, a dial, an index disposed to traverse the dial, a ratchet connected with the index, a pawl for rotating the ratchet and connected with the shelves for operation thereby, a retaining-pawl in operative relation to the ratchet, a slide connected with the pawls and adapted for engagement by a key to move it to disen-



gage the pawls from the ratchet, means for returning the ratchet when released by the pawls, and a spring connected with the first pawl for holding both pawls normally and yieldably in engagement with the ratchet.

5 5. A registering device comprising a plurality of pivoted shelves, a dial, an index disposed to traverse the dial, a ratchet connected with the index, a shift-bar connected with  
10 the shelves for moving them pivotally, a pawl connected with the shift-bar and engaged with the ratchet for operating it when the shift-bar is operated, an alarm connected with the shift-bar for operation when the  
15 ratchet is operated, a retaining-pawl engaged

with the ratchet to prevent return movement thereof when the first pawl is retracted by the shift-bar, means for returning the ratchet and therewith the index when the pawls are disengaged from the ratchet, and a key-oper- 20  
ated device connected with both pawls for retracting them to permit return movement of the ratchet and index.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 25  
the presence of two witnesses.

WILLIAM GRAHAM.

Witnesses:

LOUIS LARSON,  
W. HAND.