

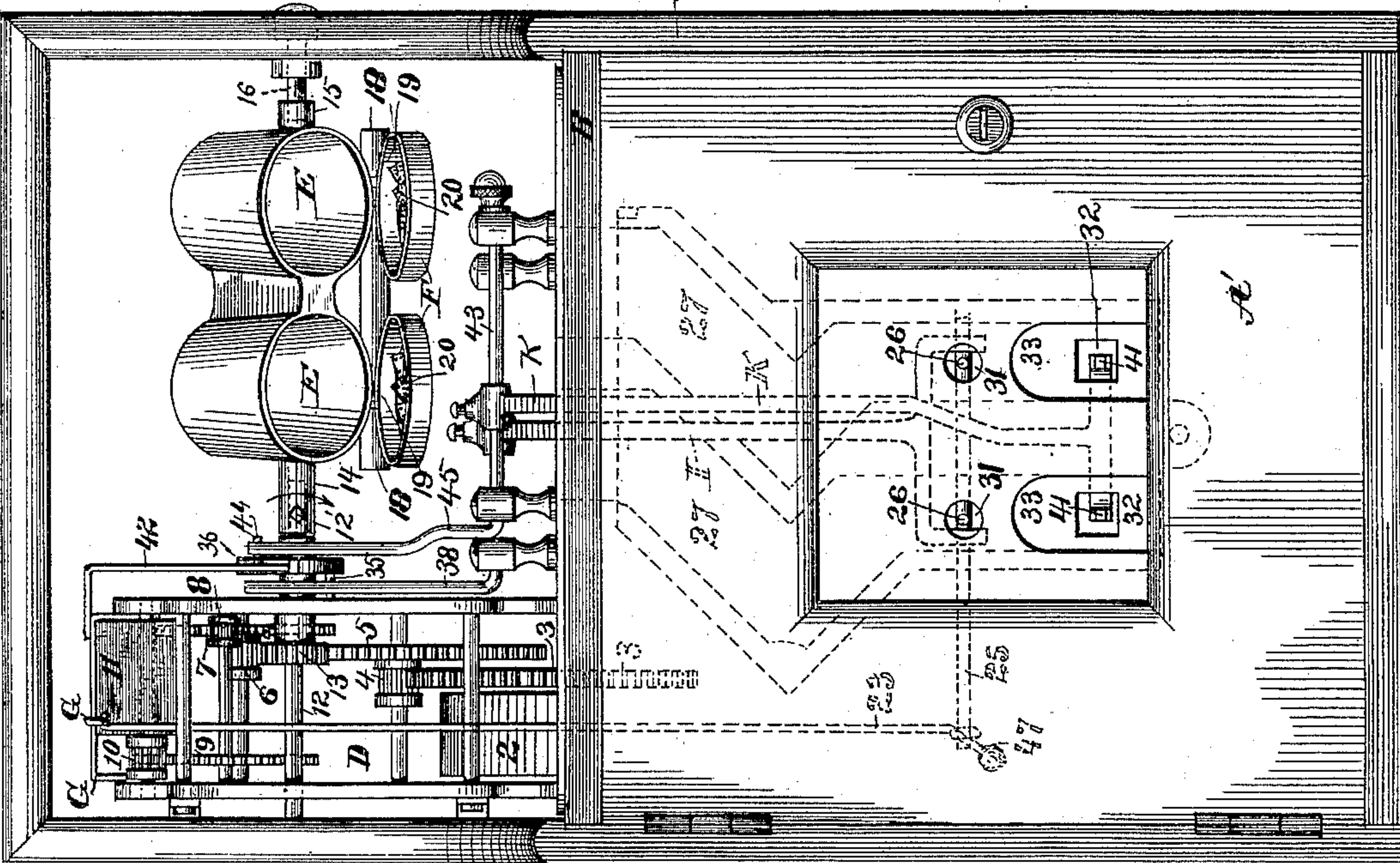
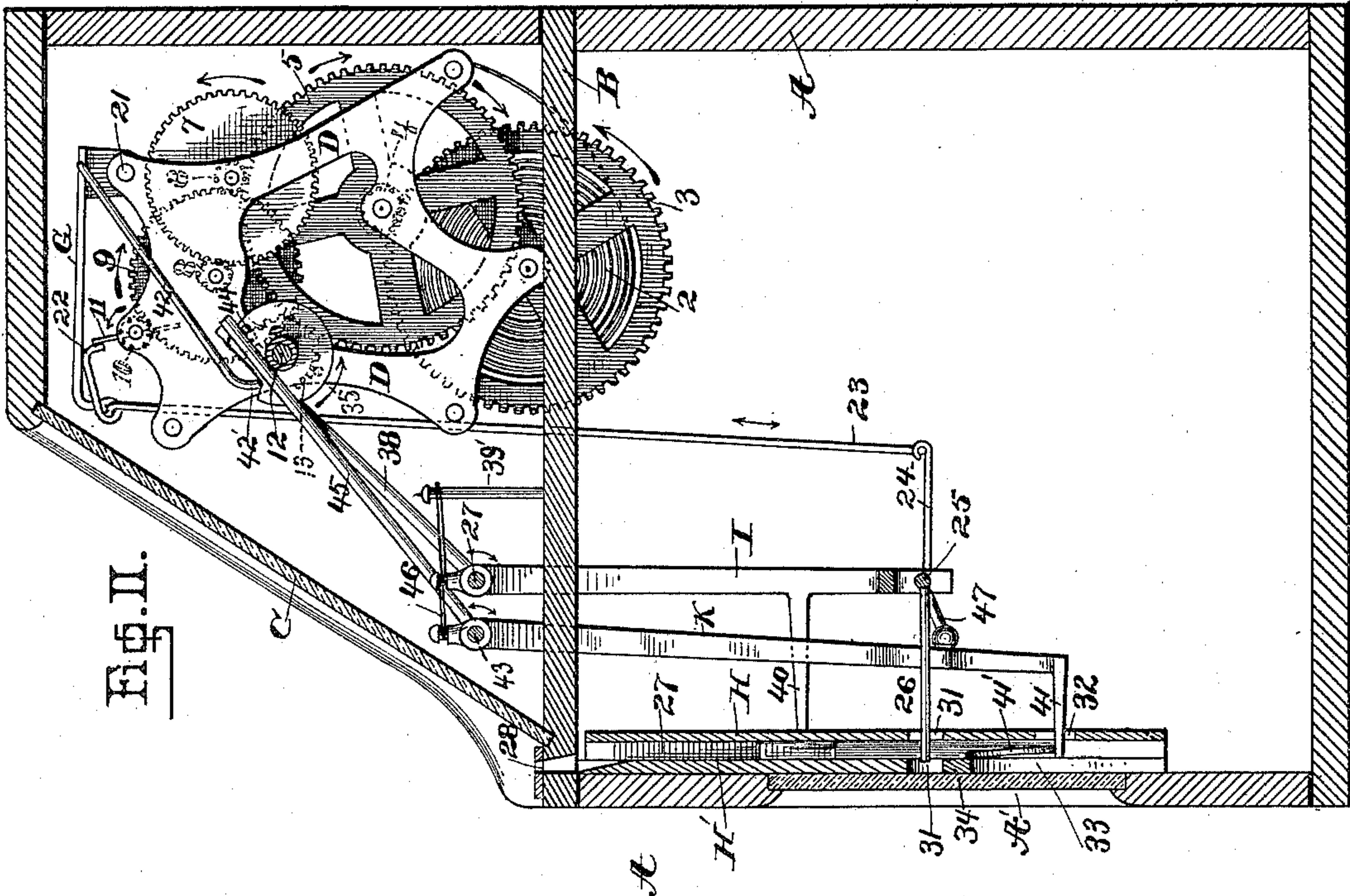
(No Model.)

2 Sheets—Sheet 1.

C. C. CLAWSON.
COIN CONTROLLED DICE THROWER.

No. 488,328.

Patented Dec. 20, 1892.



Witnesses:
E. Walker
M. Henry

Fig. I.

Inventor:
Clement Colridge Clawson
by Chas. J. Hedrick
his attorney

(No Model.)

2 Sheets—Sheet 2.

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Fig. III.

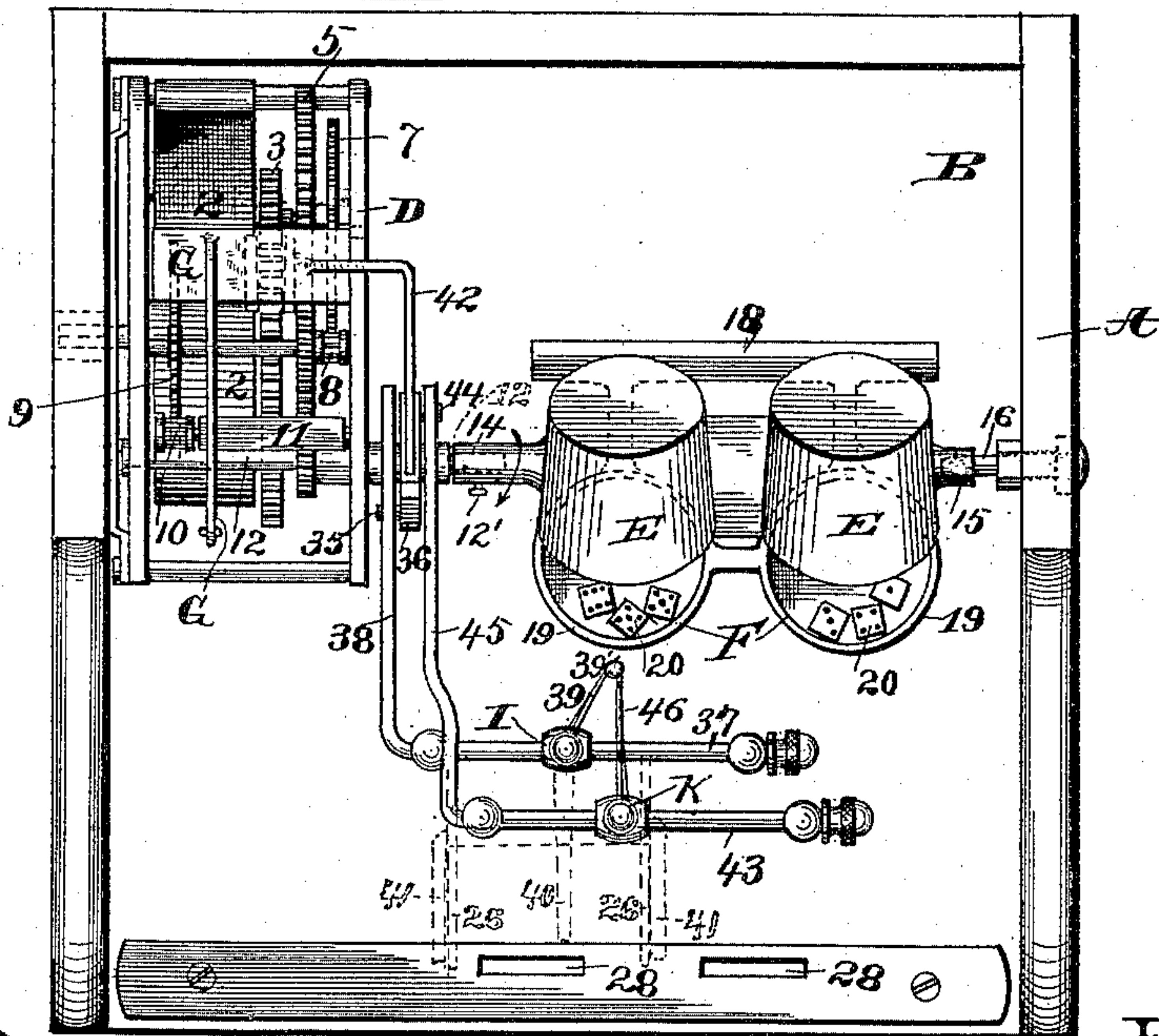


Fig. IV.

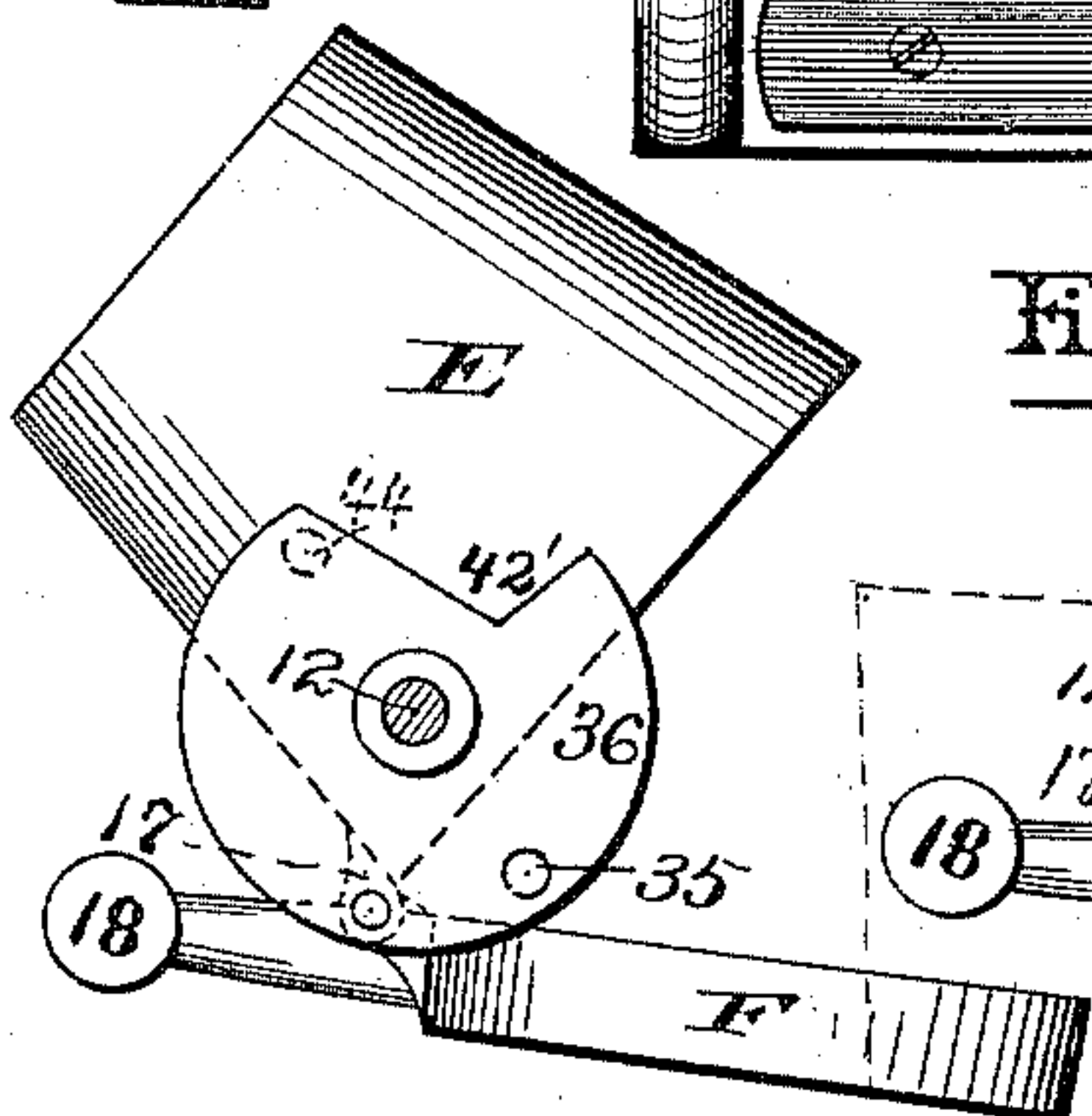


Fig. V.

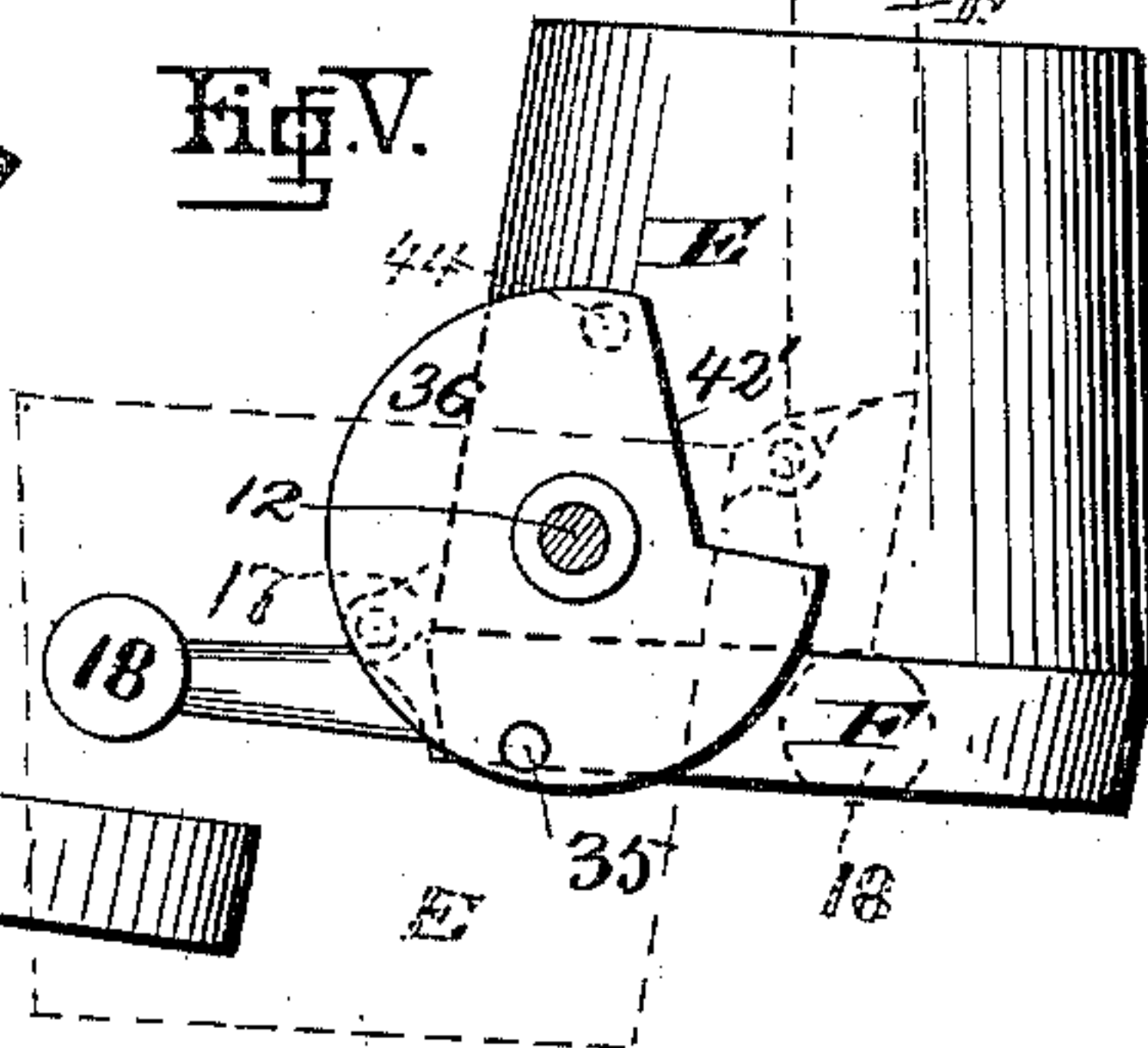


Fig. VI.

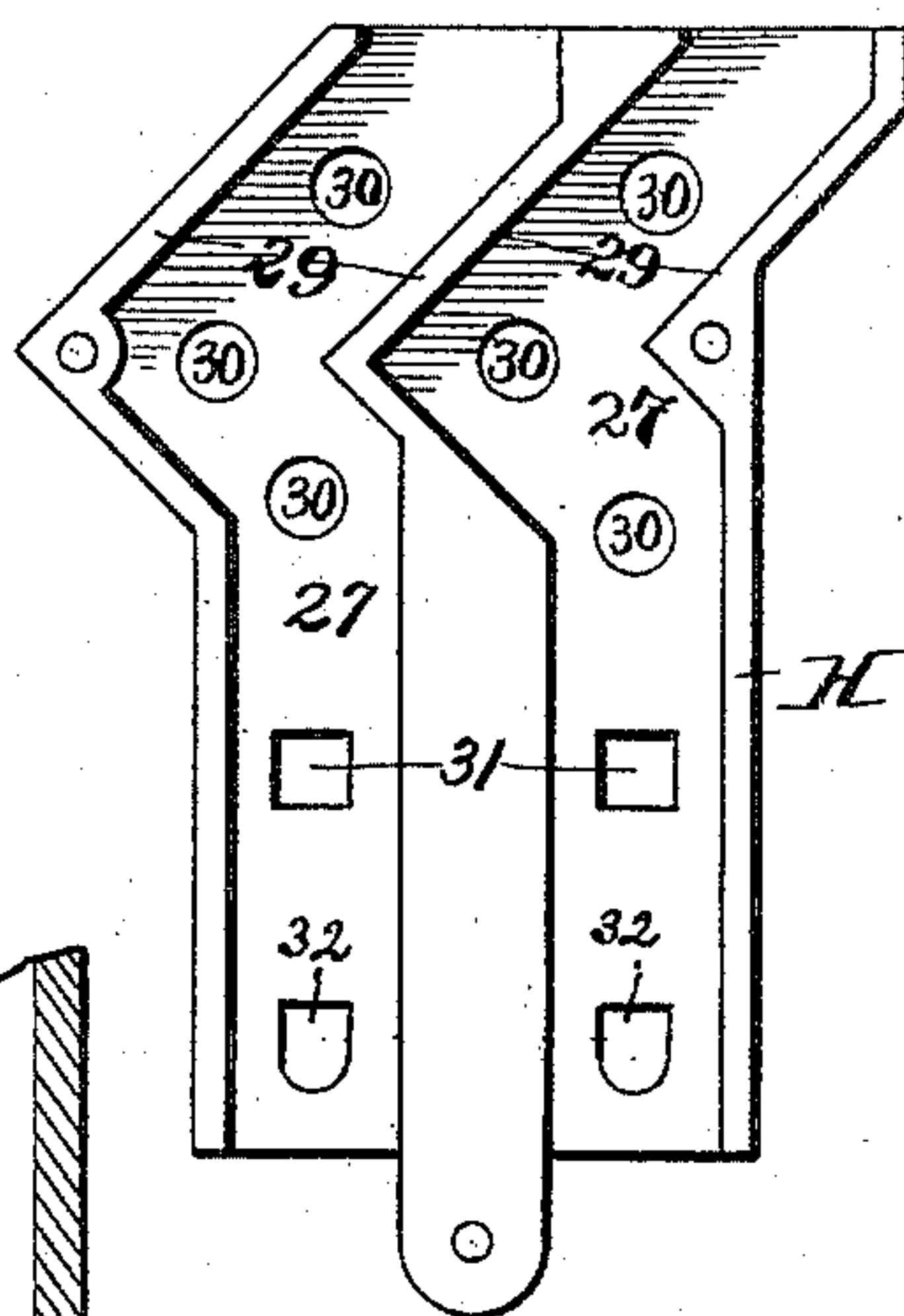
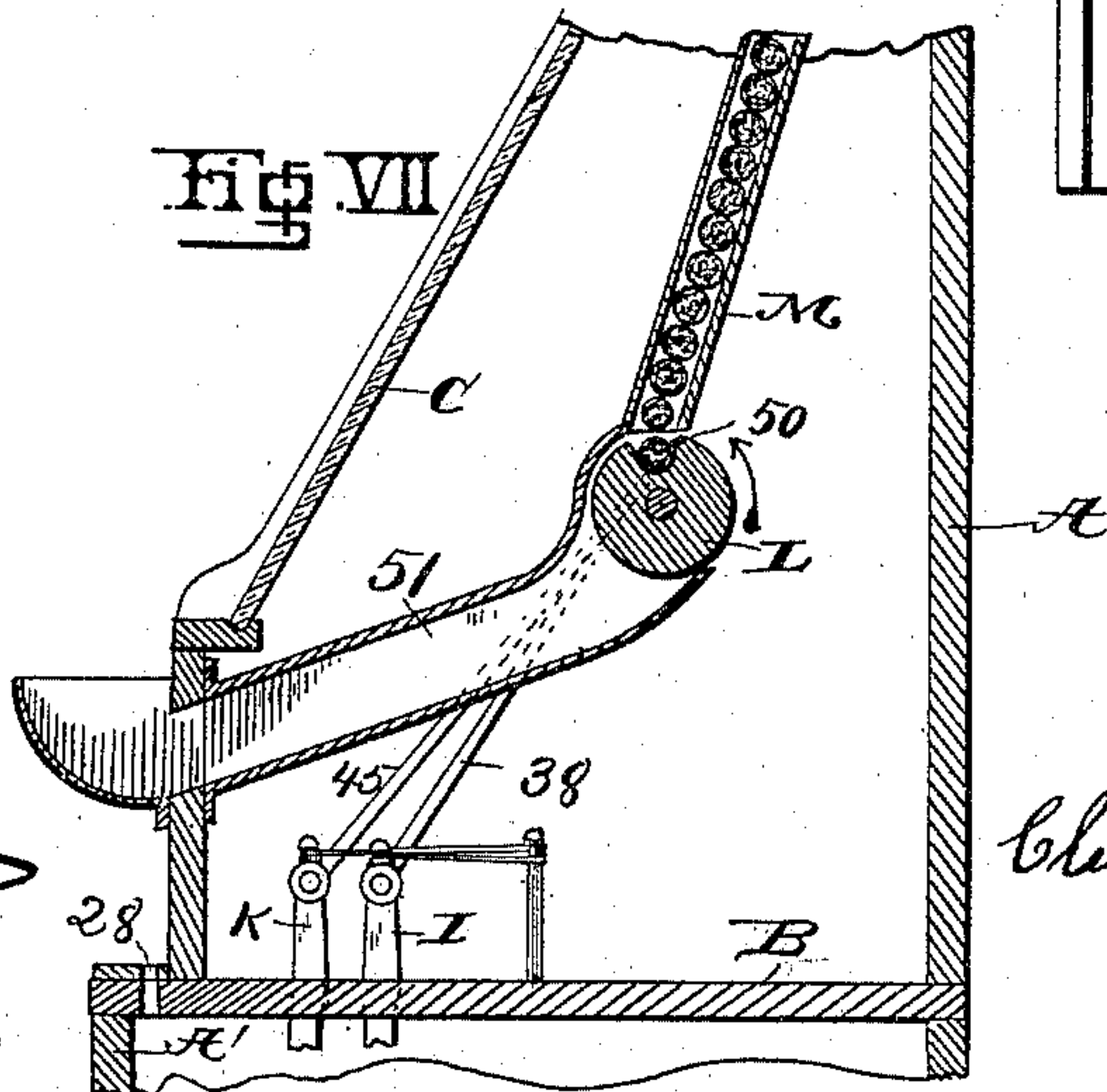


Fig. VII.



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E. Walker
M. Stearns

Inventor:
Clement C. Clawson
by
Chas. J. Hedrick
his attorney

UNITED STATES PATENT OFFICE.

CLEMENT COLERIDGE CLAWSON, OF NEWARK, NEW JERSEY.

COIN-CONTROLLED DICE-THROWER.

SPECIFICATION forming part of Letters Patent No. 488,328, dated December 20, 1892.

Application filed August 16, 1890. Serial No. 362,176. (No model.)

To all whom it may concern:

Be it known that I, CLEMENT COLERIDGE CLAWSON, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Automatic and Coin-Controlled Dice-Throwers, of which the following specification is a full, clear, and exact description.

10 This invention relates more particularly to a dice shaker and thrower which is operated by a motor or clockwork and is controlled by the introduction of coins or tokens; but the several improvements constituting the same
15 are included for all the uses to which they may severally be adapted.

It consists in a dice box provided with a table or tray which receives the dice when these are thrown, and which is afterward applied automatically to the box to return the
20 dice into the same, to be again brought into position to receive the dice when these are thrown again. This new or improved dice box with an automatic dice receiving and re-
25 turning tray, is included generally in the invention and may be made in various ways. It is or may be connected with a motor of any suitable description, operated by a weight, spring or other power, but preferably a clock
30 work, in such a way that the operation of said motor places the dice in the box by applying the tray to the mouth thereof, and afterward discharges them onto the tray (or discharges and then returns the dice) impart-
35 ing during the operation an appropriate movement to shift the position of the dice. The motor or clockwork, is combined with a coin controlling mechanism therefor. The invention, however, extends to the combination of
40 the new or improved dice box, as above explained, with a motor in general for operating the same automatically as well as with a coin controlled motor, and also generally to a coin controlled dice box of the said new or
45 improved description.

The invention also contemplates certain special constructions of the dice box and the coin controlled motor. Thus the dice box practically employed consists of one or more
50 cups mounted to turn about a transverse axis which is arranged horizontally, and the dice receiving and returning tray is hinged

to the cups on a parallel axis so as to be carried around with the cups and to be applied and removed from the mouth of said
55 cups by the turning of the same. This turning might take place back and forth, like a vibration or oscillation, but preferably takes place in one direction as a complete rotation; preferably also the aforesaid tray is balanced
60 on its hinge so as to hang horizontally or nearly so when the cup is in such position that said tray is free to place itself under the influence of gravity.

The invention also comprises certain addi-
65 tional features which can most conveniently be described in connection with the accompanying drawings, which form part of this specification.

Figure I is a front elevation of an automatic
70 coin controlled dice box constructed in accordance with the invention; Fig. II is a vertical section of the same; Fig. III is a plan view with the top of the instrument case and its glass front removed; Figs. IV, V, and VI
75 are detail views, and Fig. VII is a sectional view illustrating the application of the coin controlled motor to a vending apparatus.

The case A of the instrument is divided into an upper and a lower compartment by the
80 shelf B, the upper compartment being provided with a glass front C so that the works therein are visible.

The clockwork or motor D is composed of the motor spring 2, train 3, 4, 5, 6, 7, 8, 9, 10, and
85 fly 11.

The arbor 12 which rotates the dice box is connected by the wheel 13 with the gear 5 of the train. The end of this arbor 12 is fixed by means of a set screw 12' in the hub 14 on
90 the cups E of the dice box, the hub 15 on the opposite side of said cups E turning freely upon the journal pin 16 fastened to the case A. The cups E are preferably cast with their
95 hubs 14 and 15 in one piece of metal. The set screw 12' enables their position relatively to the driving arbor to be adjusted, so as to have a greater or less inclination when the said arbor is arrested as will be hereinafter explained.

The tilting table or dice receiving and re-
100 turning tray F, which as shown is made double like the dice box E, is hinged to ears 17 (Figs. IV and V.) on the cups E and is bal-

anced by the counterweight 18 so that the table or tray, when free to do so, assumes naturally a horizontal or nearly horizontal position. The tray is made hollow or provided with a rim 19 so as to insure the retention of the dice 20 when thrown. Assuming the normal condition to be as shown in Figs. I, II, III and IV, (which it preferably is) the operation at each rotation of the arbor 12 in the direction of the arrow, is as follows:—The rotation of the cups E first brings their mouths against the tray F as shown in full lines in Fig. V, thus inclosing the dice 20. During the next semi-revolution (or thereabout) the cups E are reversed. The tray F being carried in front of the cups remains against the mouths of said cups. During this time the dice fall to the bottom of the cups or dice box. As soon, however, as the rotation of the arbor 12, cups E and tray F, has brought the center of gravity of said tray beyond the axis of its hinge, gravity turns said tray on its hinge opening it as shown in dotted lines in Fig. V. During the remainder of the revolution of the arbor 12 the tray F hangs open, and the cups E are returned to their discharging position, as shown in Fig. IV. When the cups have been turned over to a sufficient angle, the dice 20 roll or slide out of them on to the tray which holds them so that their faces can be seen.

The clockwork or spring motor D is normally arrested by means of the latch G which is supported at its end by and turns loosely upon the cross bar 21 of the clockwork. The end 22 of the latch which engages the fly 11 is so arranged as to be nearer the axis of the latch's motion (or center of cross bar 21 as shown) than is that outer edge of the fly wing, which is engaged by said latch and consequently when the latch is lifted to release the fly it is obliged to impart a retrograde movement to the fly. Owing to the arrangement of the gears, the torsional stress on the fly is small and not sufficient to resist the lifting of the latch by the coin or token. The latch is connected by the link 23 with the arm 24 of a rock shaft 25 provided with arms 26 to be acted upon by the coins. These arms (of which two are shown, although one would suffice) project each across a zigzag coin passage 27 leading from a slot 28. There are two of these passages and slots shown although one would suffice. Two have the advantage that either could be used; thus if one becomes choked so that it cannot be used the other is available for use. These passages 27 are formed by ribs 29 (Fig. VI) cast on the front of the plate H, which is held against the plate H' on the door A' of the case A. A number of holes 30 are formed in the plate H so that the passages can be inspected. In both plates H H' are holes 31 for receiving the ends of the arms 26 (see Fig. II). In the plate H are also holes 32, and in the plate H' are openings 33, the purpose of which holes and openings will be explained below. At 34 is a glass plate set in an open-

ing of the door A'. The arms 26 are shown as placed each in the middle of its coin passage 27, so that almost any coin or token which the slot 28 will receive will strike said arm; but if desired the said arms could be forked or otherwise constructed and arranged so as to allow smaller coins to pass without engaging the said arms, as well understood in coin controlled mechanisms.

On the introduction of a proper coin or token into either of the slots 28 it falls through the passage 27 on to the arm 26 which lies in its path, depresses the same and rests thereon holding it depressed. This depression turns the rock shaft 25 and raises the arm 24, link 23 and end 22 of latch G, thus taking the said end 22 out of the path of the fly 11 and releasing the clockwork D which thereupon rotates the dice box E and tray F. The rotation continues so long as the coin or token remains on the arms 26. To effect their release the rock shaft 25 is mounted on a carrier I, which is movable so as to withdraw the arms 26 out of the holes 31 and its movements are controlled by a cam or eccentric pin 35 on the disk 36 which is fixed to the arbor 12. The carrier as shown is in the form of a lever arm fixed to and depending from the rock shaft 27, which is provided with an arm 38, in the path of said pin 35. A spring 39, which may be an elastic rubber band as shown, extending between the stationary pin 39' and the top of carrier I, tends to hold the carrier I in the position shown. A projection 40 on the carrier makes contact with the plate H and limits the forward motion so that the ends of the arms 26 will be free and not pressed against the glass which would be apt to make undesirable friction. When therefore the clockwork D is released, and rotates the dice box, the pin 35 soon acts against the arm 38 to move the carrier I inward and withdraw the arm 26 from under the coin or token which thereupon drops down onto one of the fingers 41, as shown at 41' in Fig. II. When in this position the corresponding opening 33 (which is provided for that purpose) enables the coin or token to be seen. As soon as the arms 26 are relieved of the weight of the coin or token, the latch G would naturally fall back into the path of the fly 11 and arrest the clock, the center of gravity being so arranged that the tendency of the latch when free is to settle back into the position of arrest. To prevent a premature stoppage the latch G has an arm 42 which projects over the disk 36 and is so arranged that when it rests on the periphery of said disk it holds up the latch G, out of engagement with the fly. At a suitable point on the periphery is a notch 42' which allows the arm 42 and latch G to fall when it passes under said arm 42. The fingers 41 project through the holes 32 (which are provided to receive them) and are formed on a carrier K which is shown in the form of a lever arm depending from the rock shaft 43 which is actuated in the direction to withdraw the fingers 41

by means of the cam or eccentric pin 44 on disk 36 acting against the arm 45 of said rock shaft and in the direction to return said fingers by means of the spring 46.

5 In order to make the latch and its actuating parts 23, 24, 25, 26, and 42 as light as possible they are formed of wire or wire and thin sheet metal. The object of making them light is to diminish their inertia, so that if the case
10 A be jarred their momentum will be insufficient to lift the latch clear of the fly 11 against the pressure of said fly, and the gravity of the latch and its said actuating parts, which as before stated tends to retain the latch in or
15 bring it into the position of arrest. Should the latch be lifted partially by a jar the fly and the gravity of the latch will return it to its lowermost position.

In order to enable the center and force of gravity of the latch to be adjusted with greater facility the rock shaft 25 is provided with a counterbalance arm 47 which is loaded with sufficient solder or other soft metal, to create an excess of weight on that side and which is
25 then clipped off until just the right adjustment of weight is secured.

In order that the clockwork may not operate unless the arms 26 are held down for some time, the notch 42' in disk 36 is preferably made longer (as shown) so that the said disk will have to turn through a considerable angle before it supports the latch G out of the path of the fly 11. Owing to the zigzag character of the coin passages any continuing
35 pressure of a wire against either of the arms 26 is almost impossible and if any contact of a wire with such arm should accidentally occur, it probably would release the latch almost as soon as it lifted it, and since the disk 36
40 would not be in position to support the latch, the latter would at once reengage the fly.

Instead of the operation of the dice box by the controlled clockwork, a vending appliance or other suitable appliance, such as heretofore used in coin controlled machinery for
45 various purposes may be moved by the same.

In Fig. VII, a vending appliance is shown by way of illustration. It consists of a cylinder L placed under a hopper M and provided
50 with a recess 50 for receiving one at a time, the articles (cigars, for example) in the hopper, and arranged when rotated by the clockwork to discharge the article down a spout 51 which carries it out of the case.

55 The parts marked with reference characters used in the former figures are identical with or correspond with those similarly marked in said former figures.

The operation of the machine or instrument
60 is as follows: The parts being in the positions shown in Figs. I, II, III, IV, (or in the case of the vending apparatus in the position shown in Fig. VII) a coin introduced through one of the slots 28 falls through one of the passages
65 27 on to one of the arms 26 turning the rock shaft 25 and lifting the arm 24 link 23 and latch G, so as to release the fly 11 and allow

the clock work D to rotate the dice box E and tray F (or the cylinder L in the vending apparatus). The rotation of the arbor 12 soon
70 brings the pin 44 against the lever-arm 45, turning the rock shaft 43 and withdrawing the carrier K and fingers 41, so that if there is any coin in the position indicated at 41' in Fig. II it drops to the bottom of the case. The
75 pin 44 then retires and the spring 46 returns the carrier K so as to bring the fingers 41 in position for one of them to catch the coin when it shall be released by the arm 26. After the fingers 41 have been returned the pin 35 acts
80 against the lever arm 38 turning the rock shaft 27 and withdrawing the carrier I and coin supporting arms 26 so that the coin drops on to the finger 41 below, where it remains exposed to view through the opening 33 in
85 plate H' until the next operation of the machine. Before the pin 35 withdraws the carrier I, the notch 42' in the disk 36 has passed from under the arm 42 which therefore rests
90 upon the periphery of said disk and holds up the latch G when the arm 26 is relieved of the weight of the coin. After the carrier I and arms 26 have been returned by the spring 39 and the arbor 12 has completed a revolution,
95 the arm 42 drops into the notch 42' and allows the latch G to fall and engage the fly 11. During this rotation of the arbor 12 the tray F is applied to the mouth of the dice box or cups E, is carried around with the latter so as
100 to dump the dice 20 into said cups, flies open while the cups are mouth up and receives the dice again as the cups are turned mouth down. In the case of the vending apparatus the cylinder L, carries out the cigar and discharges
105 it down the spout 51 and returns into position to receive a new cigar.

I claim as my invention or discovery:—

1. An automatic dice box comprising a tilting table or dice receiving and returning tray, and one or more cups which alternately occupy a position above and below said table or tray, substantially as described. 110

2. The combination with a tilting table or dice receiving and returning tray, and a dice box which alternately occupies a position
115 above and below said table or tray, of a motor connected with said table or tray and dice box, for operating the same, substantially as described.

3. A coin controlled automatic dice box, provided with a tilting table or dice receiving and returning tray and one or more cups which occupy positions alternately above and below said table or tray, and also with a coin controlled mechanism for said box, substantially
125 as described.

4. The combination of a tilting table or dice receiving and returning tray, a dice box which alternately occupies a position above and below said table or tray, and a coin controlled
130 motor connected with said box and tray, substantially as described.

5. In combination with a dice box, a dice receiving and returning tray provided with a

rim for retaining the dice, and means whereby said tray is applied to said box to place the dice therein and is automatically returned into position to receive them again when
5 thrown, substantially as described.

6. A dice box comprising one or more cups mounted to turn about a transverse horizontal axis, and a tray hinged to the cups on a parallel axis, substantially as described.

10 7. The dice box comprising one or more cups mounted to turn about a transverse horizontal axis, and a tray hinged to said cups on a parallel axis, in combination with a motor, such as a clock work, operating said cups and
15 tray, substantially as described.

8. The dice box comprising one or more cups mounted to turn about a transverse horizontal axis and a tray hinged to said cups on a parallel axis, in combination with a coin
20 controlled mechanism, substantially as described.

9. The dice box comprising one or more cups mounted to turn about a transverse horizontal axis, and a tray hinged to said cups on a parallel axis, in combination with a coin
25 controlled motor or clockwork for operating the said cups and tray, substantially as described.

10. The dice box comprising one or more cups mounted to turn about a transverse horizontal axis and a counterbalanced tray hinged to said cups on a parallel axis, substantially
30 as described.

11. The dice box comprising one or more cups mounted to turn about a transverse horizontal axis and a counterbalanced rimmed tray hinged to said cups on a parallel axis, substantially as described.

12. The dice box comprising one or more cups mounted to turn about a transverse horizontal axis and a rimmed tray hinged to said cups on a parallel axis, substantially as described.

13. The combination with the clockwork or motor, of the latch, latch releasing means comprising one or more arms projected across one or more coin-passages, carrier for said latch releasing means, and means for moving the said carrier, substantially as described.

50 14. The combination with a coin passage, of latch releasing means comprising an arm arranged relatively to said passage so as to be acted upon by the coins or tokens, and a movable carrier for said releasing means,
55 substantially as described.

15. The combination with a coin passage formed by and between plates provided with holes for the reception of the arm to be acted

upon by the coins, of latch releasing means comprising an arm which enter said holes, a
60 movable carrier for said releasing means, and a stop for limiting the forward motion of said carrier so that the end of said arm is left free, substantially as described.

16. The combination with a clockwork or motor, and its latch, of latch releasing means comprising an arm or arms arranged relatively to one or more coin passages so as to be acted upon by the coins, a movable carrier for said releasing means, carrier operating means driven by said clockwork, and means for temporarily holding up the latch after the carrier has been drawn back, substantially as described.

17. The combination with the clockwork and its latch, of the two carriers, the latch releasing means on one carrier, the coin supporting fingers on the other, and means for operating said carriers, substantially as described.

18. The combination with the clockwork or motor and its latch, of the two carriers, the latch releasing means on one carrier, the coin supporting fingers on the other carrier, the arm on said latch for temporarily uphold-
85 ing the same when released by the coin, and the notched disks and pins moved by said clockwork or motor, substantially as described.

19. The plates provided with one or more zigzag coin passages between them, and with an upper and a lower set of holes or openings at the lower part of said plates, in combination with the two carriers, the latch releasing means on one carrier with arms at the height
95 of the upper set of holes, and the fingers on the other carrier at the height of the lower set of holes, substantially as described.

20. A coin controlled instrument or apparatus, comprising the clockwork or motor, and the devices driven thereby, in combination with the latch engaging the fly and arranged to impart first a retrograde motion in releasing the same, the two carriers, the latch releasing means on one carrier, the coin supporting fingers on the other carrier, and the means for upholding the latch when the coin is discharged from said latch releasing means, substantially as described.

In testimony whereof I have signed this specification in the presence of two witnesses.

CLEMENT COLERIDGE CLAWSON.

Witnesses:

ABRAHAM MANNERS,
GEO. WOOD.