

No. 614,800.

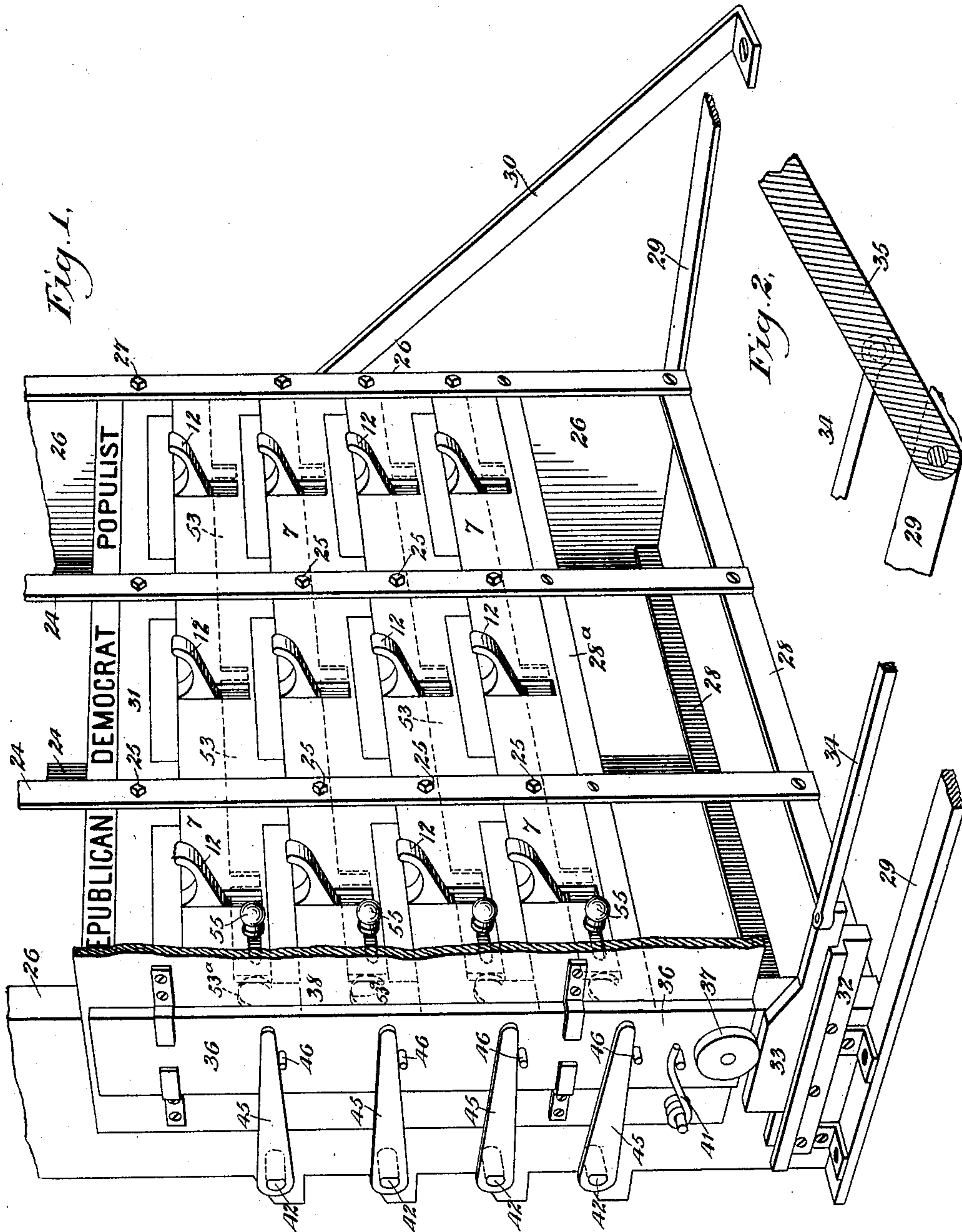
Patented Nov. 22, 1898.

W. M. DOUGHERTY.
BALLOTING MACHINE.

(Application filed Sept. 1, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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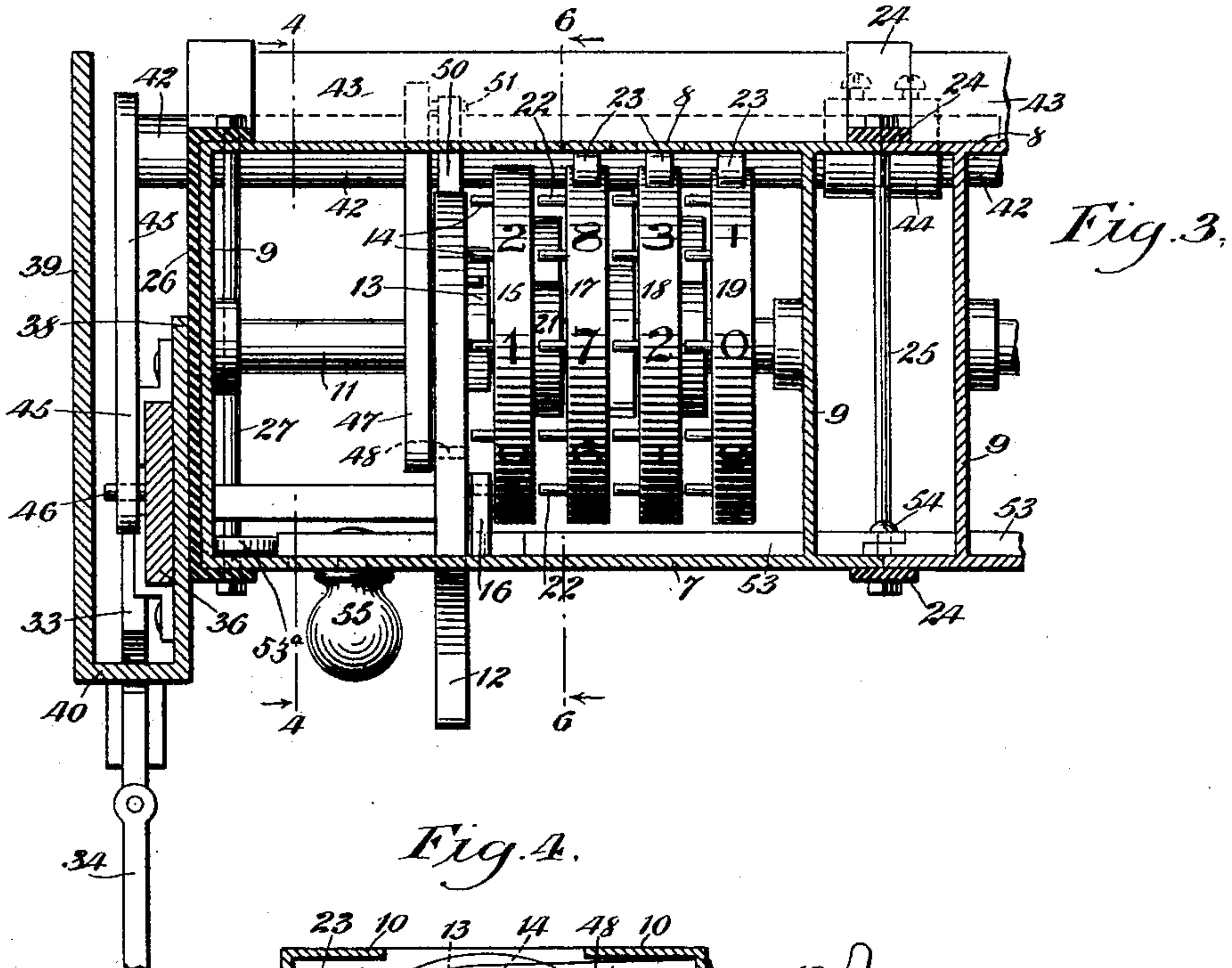


Fig. 4.

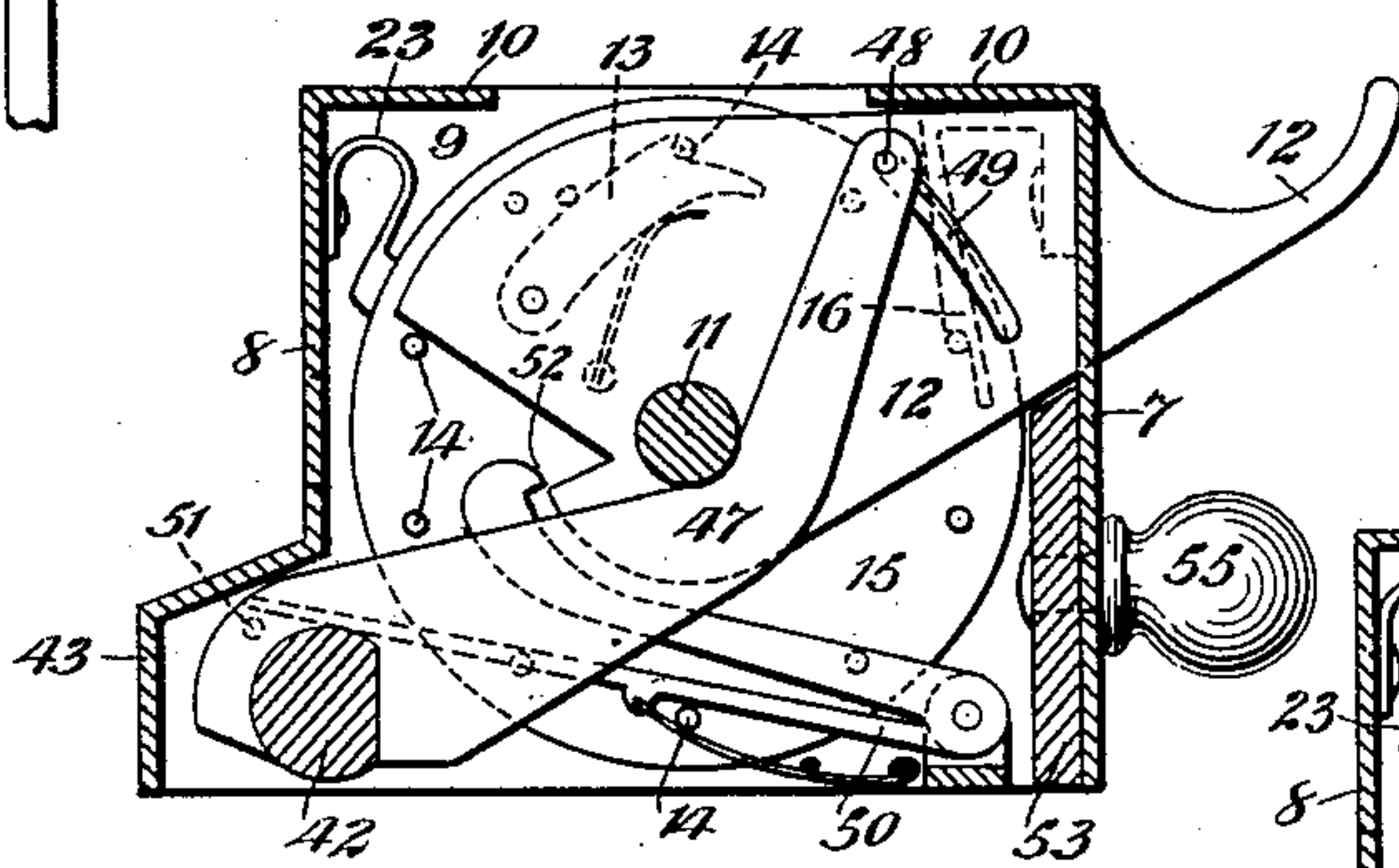


Fig. 5.

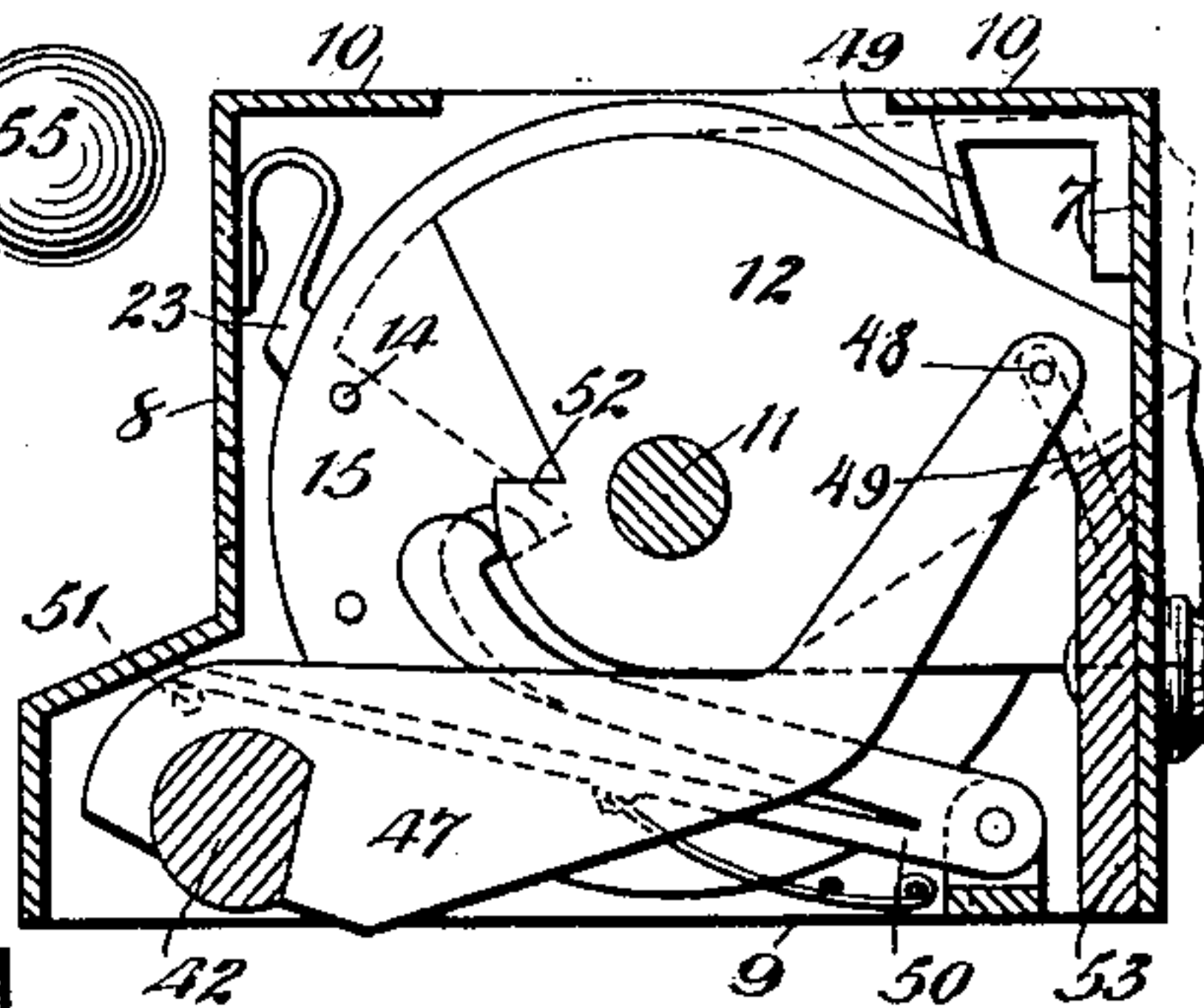


Fig. 7.

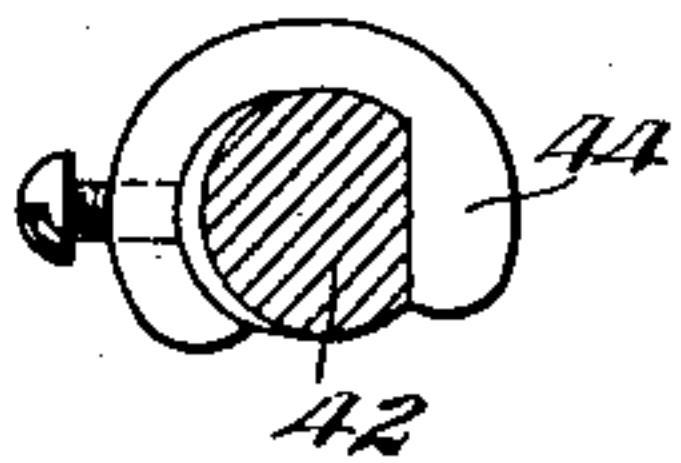
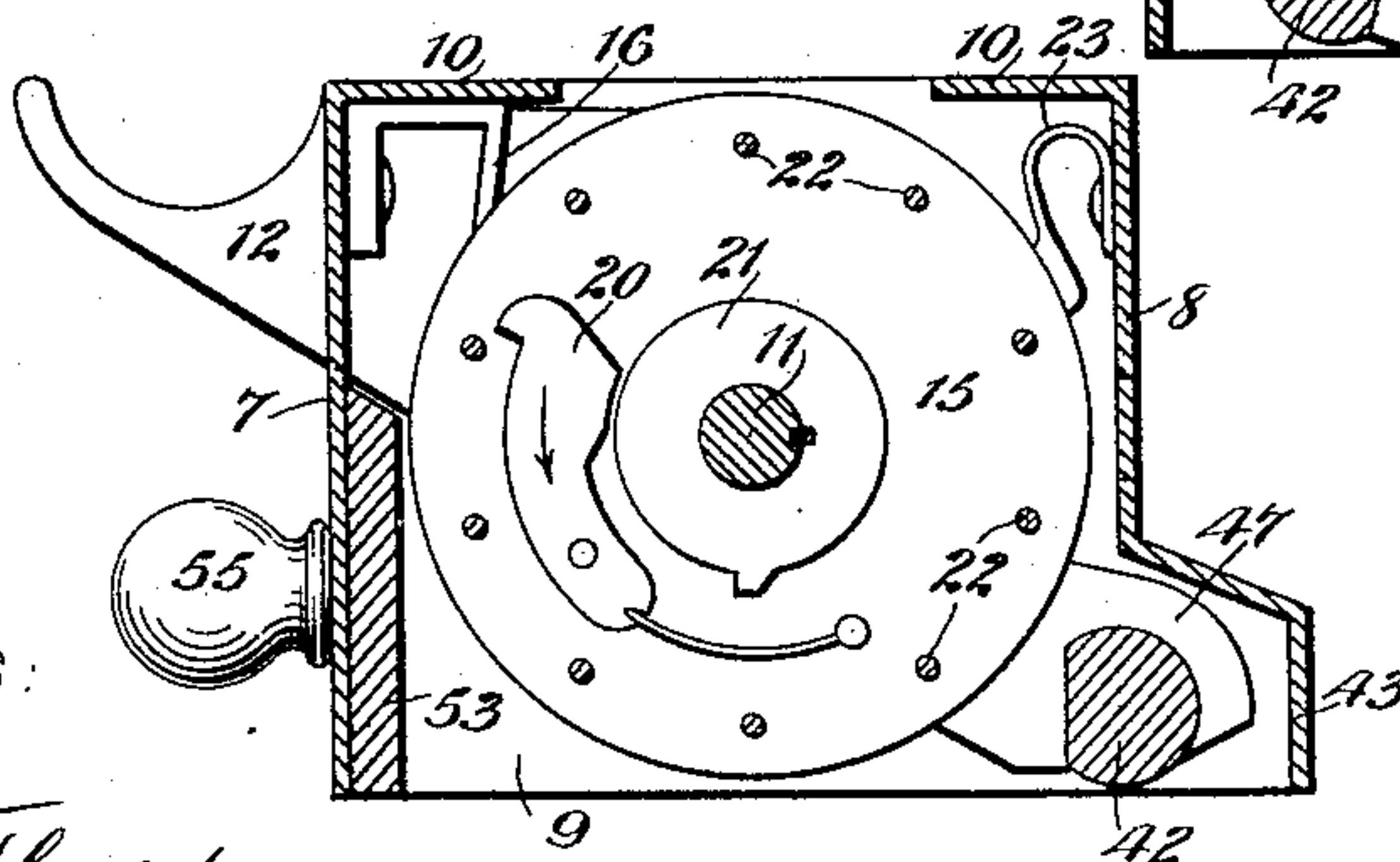


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM M. DOUGHERTY, OF ST. JOSEPH, MISSOURI.

BALLOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 614,800, dated November 22, 1898.

Application filed September 1, 1897. Serial No. 650,257. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. DOUGHERTY, of St. Joseph, in the county of Buchanan and State of Missouri, have invented a new and
5 useful Improvement in Balloting-Machines, of which the following is a full, clear, and exact description.

This invention is a balloting-machine having for each candidate a numbering apparatus operative by an arm projecting through
10 the casing of the machine, the numbering apparatus being in connection with the door of the voting-booth, so as to be operated by the movement of the door.

15 This specification is the disclosure of one form of the invention, while the claims define the actual scope of the conception.

Reference is to be had to the accompanying drawings, forming a part of this specification,
20 in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the invention. Fig. 2 is a detail section of the means for transmitting movement from the door.
25 Fig. 3 is a fragmentary section looking down upon one of the numbering apparatuses. Fig. 4 is a sectional view on the line 4 4 of Fig. 3. Fig. 5 is a similar view showing the parts in a different position. Fig. 6 is a sectional
30 view on the line 6 6 of Fig. 3, and Fig. 7 is a detail section illustrating the coupling for the shafts.

The numbering device or counter for each candidate is inclosed in a box or casing.
35 These boxes or casings are separate from each other and in the operative machine are held in proximity by fastening devices. When the candidates for an election are determined, the necessary counters are assembled to form
40 the complete machine, arrangement being made for the candidates of each party and for other questions that are to be decided by the election. This enables the machine to be adapted to elections presenting great varie-
45 ties of questions.

The box or casing of each counter has a front wall 7 and a rear wall 8, rigidly joined to each other by end walls 9. The upper
50 edges of the walls 7 and 8 have inwardly-running ledges 10, forming an open top. This open top and the side and end walls, without

the bottom wall, form a compact casing for the mechanism of the counter.

Fixed in the casing of each counter and running between the end walls 9 thereof is a shaft 11. Mounted to rock on the shaft 11 is
55 an arm 12, that has its free portion projected through a vertically-elongated slot in the front wall 7 of the casing, so that the arm may be engaged by the voter to draw the arm down-
60 ward. The arm 12 has a spring-pressed pawl 13 pivoted thereto. This pawl engages pins 14, fixed on a disk 15, carried loosely on the shaft 11, the pins 14 being arranged in a cir-
65 cular line, so that by rocking the arm 12 the disk 15 will be turned a fraction of a revolution, such fraction being equal to the distance between the pins 14. The pins 14 of the disk
15 are pressed by a spring-pawl 16, which serves to hold the disk 15 from idle move-
70 ment. Mounted loosely on the shaft 11 and alongside the disk 15 are three additional disks 17, 18, and 19.

On the side of the disk 15, opposite the side having the pins 14, a spring-pressed pawl 20
75 is mounted. This pawl is juxtaposed to a cam 21, that is keyed on the shaft 11 close alongside of the disk 15. The disk 17, such being the disk contiguous to the disk 15, has a series of circularly-arranged pins 22 pro-
80 jecting from its left-hand face, so that as the disk 15 turns the pawl 20 around the stationary shaft 11 the pawl 20, on being thrown by the action of the cam 21, will engage one of
85 the pins 22 and impart a turning movement to the disk 17, such movement continuing until the cam 21 permits the pawl 20 to move back to its normal position. The cam is ar-
90 ranged to throw the pawl 20 into engagement with one of the pins 22 once for every revolution of the disk 15. Consequently when one revolution of the disk 15 is effected the
disk 17 is moved one fraction of a revolution. The disks 18 and 19 are provided with devices
95 similar to the pawl 20, the cam 21, and the pins 22, whereby one revolution of the disk 17 turns the disk 18 a fraction of a revolution, and one revolution of the disk 18 turns the
disk 19 a fraction of a revolution. The per-
100 ipheries of the disks 15, 17, 18, and 19 being provided with numbers, as shown in Fig. 3, serve to form a device recording the number

of times that the arm 12 is drawn down, which is to say the number of ballots cast for the candidate to whom the arm 12 is devoted. The aggregate of ballots may be read from the disks 15, 17, 18, and 19 at any desired point—for example, through openings in the rear walls 8. Spring-pressed brakes 23 bear upon the peripheries of the disks 17, 18, and 19 to prevent idle movement thereof.

The counters, as shown in Figs. 1 and 3, are arranged when the machine is assembled in vertical tiers representing the parties involved in the election. The vertical meeting edges of the casings are held together by strips 24, arranged at front and rear. Between the corresponding front and rear strips 24 tie-bolts 25 pass, whereby the parts of the machine are held rigidly together. The end walls of the assembled casings are embraced by channel-plates 26, rigidly held in place by tie-bolts 27. The strips 24 and the channel-plates 26 are rigidly joined at their lower ends by cross-pieces 28, and the machine is supported rigidly on a suitable base through the medium of bars 29 and braces 30, one of which is shown in Fig. 1. The bottom row of casings rests upon two string-pieces 28^a, rigidly attached to the plates 26 and strips 24 and extending horizontally a short distance above the string-pieces 28. Only one of the string-pieces 28^a is shown in Fig. 1. The strips 24 and plates 26 are represented as broken at their upper ends in Fig. 1. This is intended to show that the counters may be increased to any number and that these parts 24 and 26 may have any desired length. Also the machine may be widened by increasing the length of the string-pieces 28 and 28^a and increasing the number of the front and rear strips 24. Above the counters is held a suitable crown-plate 31, bearing the names and, if necessary, the emblems of the parties involved in the election.

Sliding in a way 32, rigidly secured to one of the channel-plates 26, is a cam-plate 33, to which is pivoted a link 34. This link 34, as shown in Fig. 2, may have connection directly with the door 35 of the voting-booth or indirectly by any means that may be desired, so that as the door of the booth is opened the cam-plate 33 will be drawn forward in the way 32, so as to raise a vertically-sliding plate 36, movement between the two parts being transmitted through the medium of an anti-friction-wheel 37. Then as the door is closed the cam-plate 33 returns and the plate 36 is dropped. The plate 36 is held suitably guided on a frame having an inner side 38, as shown in Fig. 1, and an outer side 39, joined to the side 38 by a front wall 40, as shown in Fig. 3. The side wall 38 is rigidly secured to the left-hand channel-plate 26. A spring 41 presses downward the plate 36.

The casing of each counter has rockably mounted therein a shaft 42, such shafts being located in offset portions 43, formed in the rear walls 8 of the casings of the counters.

When the several counters are assembled, the shafts 42 in each horizontal tier of counters are coupled so as to form one rigid structure by means of couplings 44. The couplings 44 consist in clips embracing the contiguous ends of the shafts 42 and provided with set-screws, by which pressure may be applied. When the machine is assembled, therefore, the several shafts 42, that are horizontally alined, form contiguous shafts rockably mounted one above the other. The shafts 42 at the left of the machine project through the adjacent channel-plate 26 and are provided with rigidly-attached arms 45. These arms 45 bear down upon pins 46, secured to the plate 36. Consequently as the plate 36 is raised by the cam 33 the arms 45 are lifted and the shafts 42 are rocked.

Each shaft 42 is provided with a fixed arm 47, curved to extend forward beneath the corresponding shaft 11 and then upward above the same. A pin 48, carried by the free end of each arm 47, is movable through a slot 49, formed in the corresponding arm 12. When the arms 47 are in their uppermost position, they engage with the upper end wall of the slot 49, so as to hold the arm 12 in the uppermost position thereof. A spring-pressed fork 50 is pivotally mounted in the casing of each counter. The lower arm of each fork 50 bears upon a pin 51, secured to a portion of the corresponding arm 47, which portion projects past the shaft 42, oppositely to the main portion of the arm, so that as the main portion of the arm is thrown downward the pins 51 will be lifted and the fork 50 raised to throw the hook-shaped end of the upper member of the fork in engagement with a spur 52, formed on the arm 12. When one arm 12 is thrown down, the arm 47 thereof will be drawn down also. This rocks the shafts 42, that are coupled with the primarily-moved arm 47. As the arms 47 move down the spring-forks 50 are raised, so that the upper arms thereof will be moved into engagement with the spurs 52, so as to lock the arms 12. This action takes place with reference to all the arms 12 in the horizontal line, excepting the arm which has been moved manually. This arm moves past the hook on the fork 50 just before said fork is affected by the coacting pin 51. Therefore the voter may draw down one arm 12 in casting his legitimate ballot; but the other arms of this horizontal line are locked, so that he cannot cast any of the other ballots in this horizontal line, and should he attempt to effect a second movement of the arm 12, which he first operated, such arm on being raised will have its spur 52 immediately locked with the coacting fork 50. The voter next proceeds to the remaining horizontal tiers of arms 12 and casts the desired ballots by repeating the above-described operation. As the first voter opens the door of the booth on entering the plate 36 is raised by the action of the cam 33, and all of the shafts 42 are rocked, so as to raise all of the arms 47 and

return all parts to their normal position. Then as the door of the booth is closed when the voter enters the plate 36 drops and the arms 45 are left out of contact with the pins 5 46, so that the necessary operations may be performed. The same operation described as taking place when the first operator opens the door to enter the booth takes place when he opens the door to leave it after voting and 10 takes place thereafter as the other voters leave it. The shafts 42 are friction-tight in their bearings, so that loose movement of the shafts will not occur. Mounted to slide along the inner face of the front wall 7 of each casing is a lock-plate 53, held in its locking position by a spring 53^a. When the counters 15 are assembled to form the operative machine, the horizontally-aligned lock-plates 53 are coupled to each other by means of screws 54. (Shown in Fig. 3.) This provides a rigid lock-plate for each horizontal tier of counters. The left-hand counter of each horizontal tier is provided with a horizontal slot in its front wall 7, through which the stem of a knob 55 25 projects. The knobs 55 are connected, respectively, with the horizontal lines of lock-plates 53. The lock-plates being each held by a spring normally bear under the arms 12 to prevent the arms 12 from being moved down. Each lock-plate 53 has a notch corresponding to one of the arms 12 in the adjacent horizontal line of arms, the notches being arranged so that only one notch at a time may register with the arms upon the sliding 35 of the lock-plate. Consequently it is impossible to operate two arms 12 in a horizontal line simultaneously. These lock-plates are operated manually and are independent of the automatic locking effected by the parts 40 47 and 50. By such means the absence of fraud is insured.

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

45 1. The combination of a shaft, arms mounted to swing thereon and having slots therein, a second shaft, arms fixed to said second shaft and respectively having connections with the slots of the first-named arms, and pivotally- 50 mounted forks engaged by the second-named arms and capable of being moved upon the movement of said arms.

2. The combination of swinging arms having slots therein and having each a spur, additional arms having each a pin respectively 55 movable in the slots of the first-named arms, and pivotally-mounted spring-forks, one arm of each of which is engaged by one of the said additional arms, and the second arm of each 60 of which has a hook respectively capable of locking with the spurs of the first-named arms.

3. The combination of a shaft, arms swinging thereon and having each a slot, a pawl carried by each arm, disks mounted on the

shaft and engaged respectively by the pawls 65 whereby to turn the disks upon the movement of the arms, a second shaft, swinging arms mounted thereon and having each a pin respectively engaging the slots of the first-named arms, and pivotally-mounted forks re- 70 spectively engaged by the second arms and movable upon the movement of said second arms.

4. In a voting apparatus, the combination of counters, swinging arms respectively transmitting movement thereto, additional swinging arms respectively having connection with the first arms, and pivotally-mounted hooks 75 respectively engaged by the said additional swinging arms and movable by said arms. 80

5. The combination, with a casing, of counters mounted therein, swinging arms mounted in the casing and respectively transmitting movement to the indicating apparatus, additional swinging arms mounted in the casing 85 respectively adjacent to the first swinging arms and having connection therewith, and forks pivotally mounted in the casing and respectively engaged by the said additional swinging arms so as to be moved by said arms. 90

6. The combination with a casing, of counters each comprising a shaft mounted therein, a plurality of disks mounted on the shaft, each disk having a series of pins, a pawl pivotally mounted on one of the disks and capable 95 of engaging the pins of the other disk, a spring pressing the pawl, and a cam fixed to the shaft and periodically throwing the pawl, arms respectively mounted to swing adjacent to the disks having the pawls, pawls respectively carried by the arms and capable of engaging the pins on said disks with the pawls, additional arms swinging in the casing, and pivoted forks carried in the casing and engaged by the said additional arms and thrown 105 thereby.

7. In a balloting apparatus, the combination of arms adapted to register votes, additional arms respectively movably mounted adjacent to the first arms and having connections therewith, and forks pivotally mounted adjacent to the arms and respectively engaged by the said additional arms and moved thereby. 110

8. In a balloting apparatus, the combination 115 of a ballot-counter, means for transmitting movement thereto by which to record a ballot, a lock for said means, a rock-shaft, an arm attached to the rock-shaft and coacting with said means, a second arm attached to 120 the rock-shaft, a sliding plate having connection with the second arm, and a cam slidable transversely to the plate and adapted to move the same.

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Witnesses:

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R. H. JORDAN.