

G. A. SVANBERG.  
MAGAZINE.

APPLICATION FILED JULY 24, 1909.

969,574.

Patented Sept. 6, 1910.

Fig. 1.

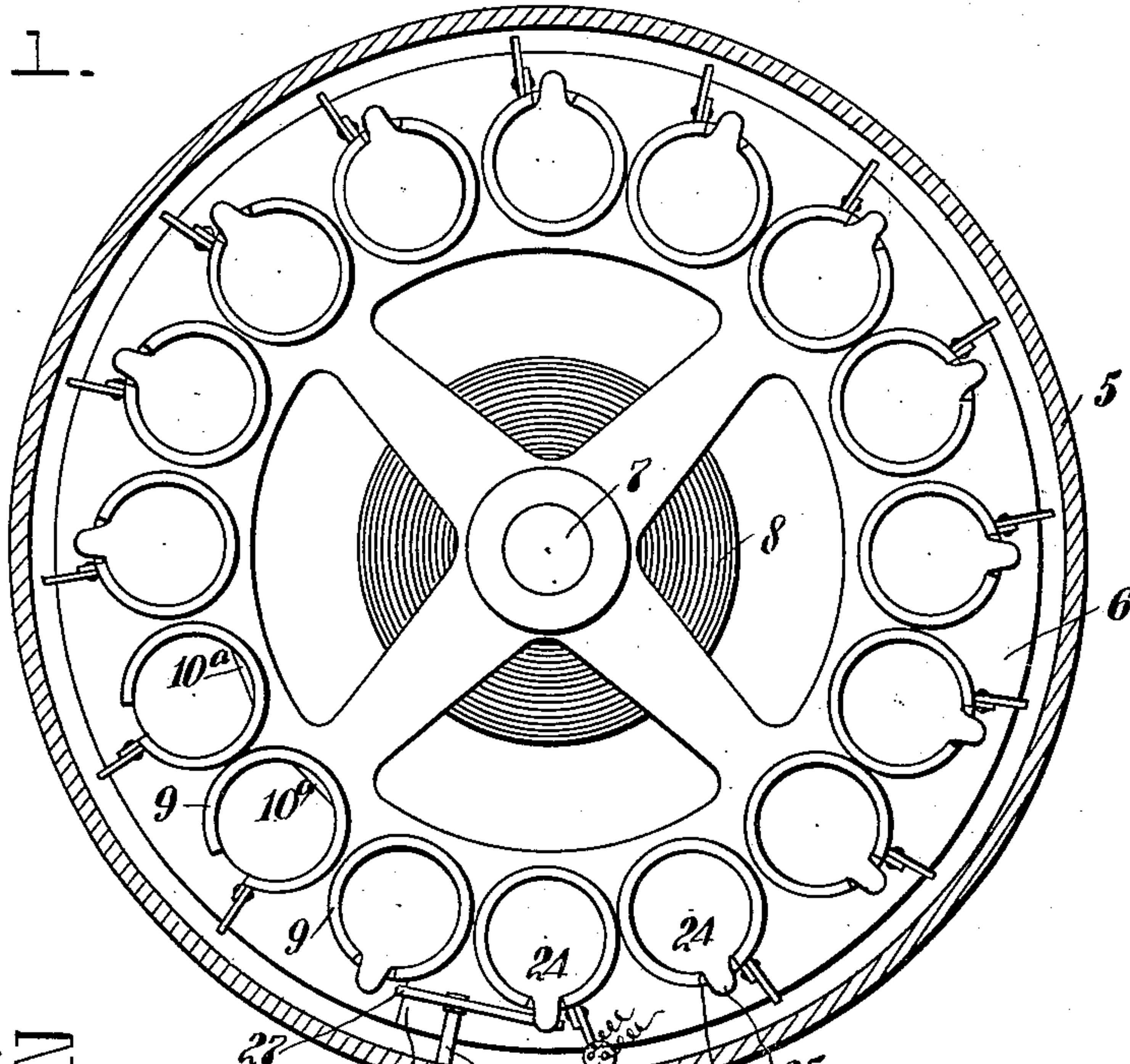


Fig. 2.

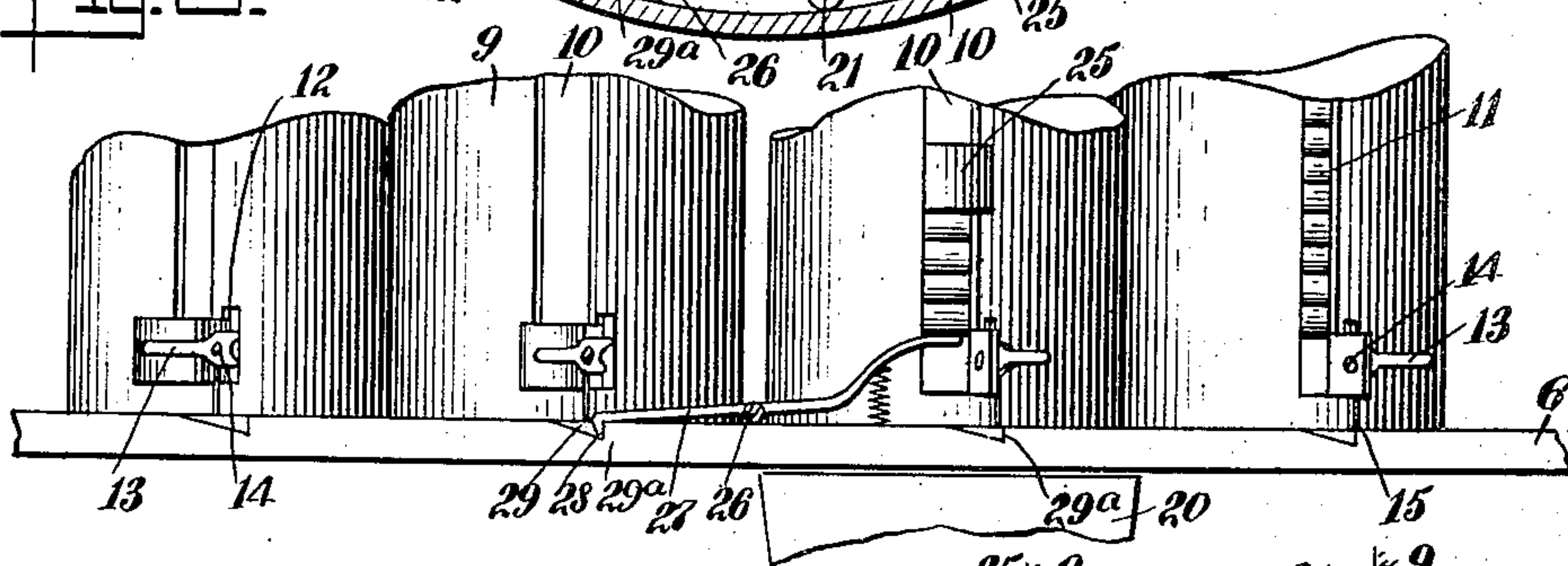
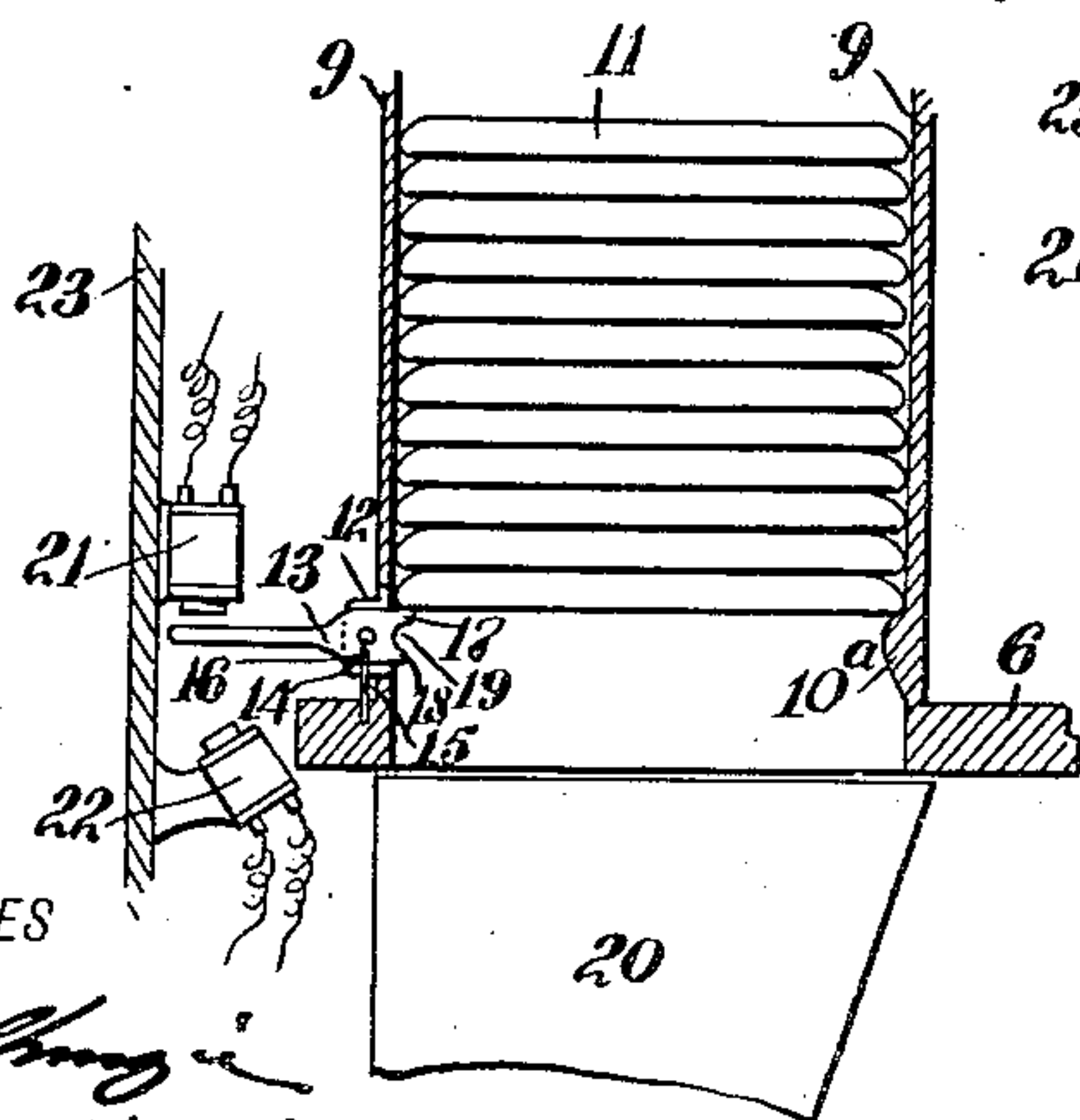


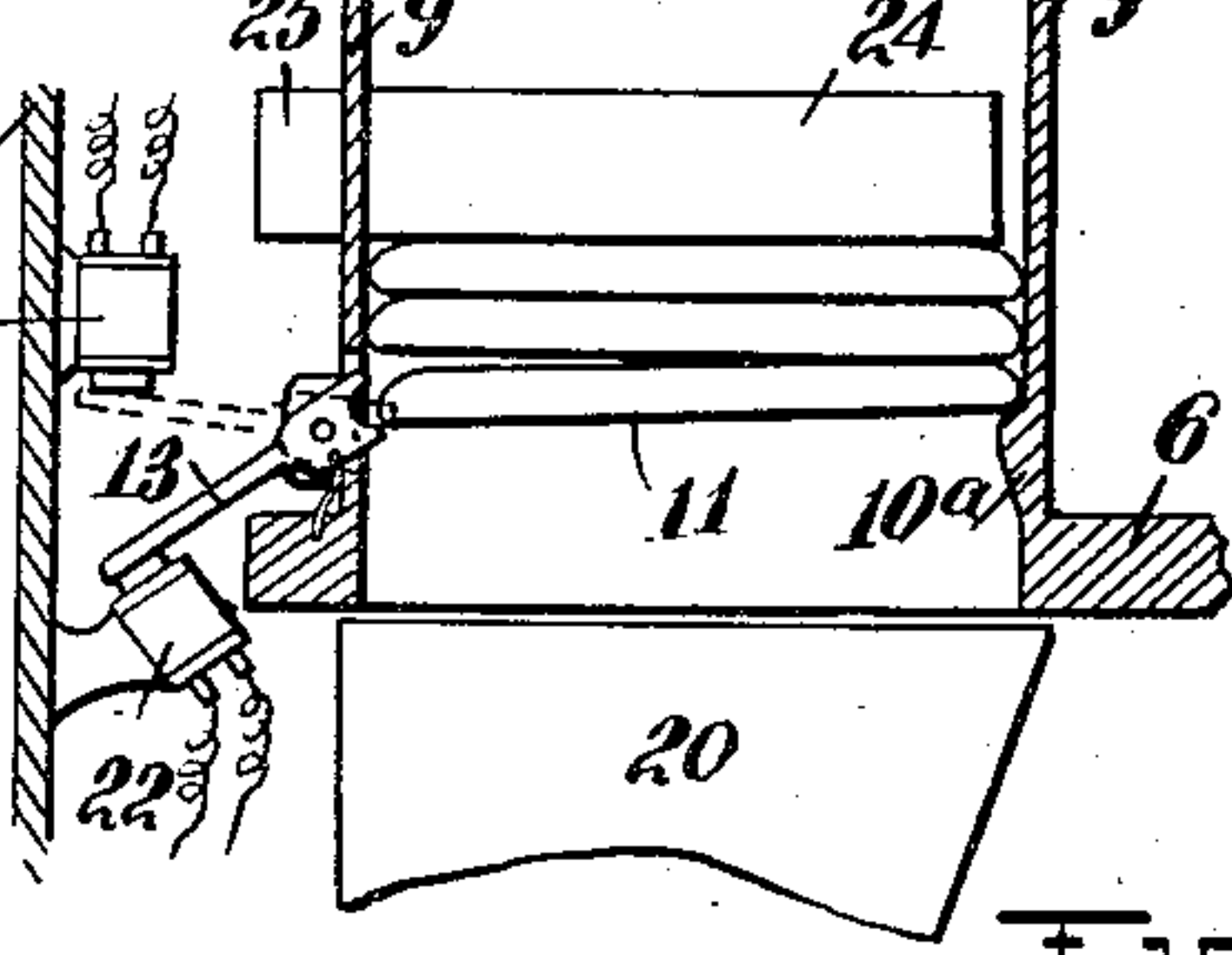
Fig. 3.



WITNESSES

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Fig. 4.



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# UNITED STATES PATENT OFFICE.

GUSTAF A. SVANBERG, OF FORT LEE, NEW JERSEY.

MAGAZINE.

969,574.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed July 24, 1909. Serial No. 509,389.

*To all whom it may concern:*

Be it known that I, GUSTAF A. SVANBERG, a subject of the King of Sweden, and a resident of Fort Lee, in the county of Bergen and State of New Jersey, have invented a new and Improved Magazine, of which the following is a full, clear, and exact description.

My invention relates to magazines, and more particularly to magazines employed in connection with coin controlled photographic machines.

Generally stated, the purpose of my invention is to provide a magazine containing a large number of photographic plates adapted to be released one at a time and exposed for the purpose of forming pictures, the mechanism being so arranged that after a predetermined number of plates have been thus used, the magazine, by a slight rotary movement, substitutes another column in place of the one just finished.

My invention further comprehends improved mechanism for discharging plates one at a time, said mechanism being operated electrically.

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

Figure 1 is a view, partly in plan and partly in section, showing my improved magazine cylinder, which is stationary and contains a turn-table carrying a number of tubular holders for storing the plates to be used one at a time, this view also showing a number of weights resting upon the different columns of plates; Fig. 2 is an enlarged fragmentary elevation showing a number of the tubular holders carried by the turn-table; Fig. 3 is a fragmentary section showing the discharging mechanism for dislodging the plates one at a time, the parts here represented being in their respective normal positions, and Fig. 4 is a view somewhat similar to Fig. 3, but showing, in dotted and full lines, the electrically-operated ejecting lever used for dislodging the plates.

A stationary cylinder 5 serves as a casing for the various tube holders and plates. Revolvably mounted within this cylinder is a turn-table 6, and connected with the latter is a revoluble shaft 7 turning by a spring 8. By the action of the spring the turn-table 6 tends normally to rotate within the casing

5. Mounted rigidly upon the turn-table 6 are a number of tubular holders 9, each provided with a slot 10, the tubes and slots being vertical. Each tube 9 is provided inwardly, near its bottom, with a lug 10<sup>a</sup>, as will be understood from Fig. 1. This lug offers a firm but somewhat precarious support for a number of plates 11 disposed in the form of a column. Each tube 9 is provided, near its bottom and opposite the lug 10<sup>a</sup>, with a slot 12, and extending through this slot is an ejecting lever 13. This ejecting lever is mounted upon a pivot 14 and is adapted to rock. A leaf spring 15 is mounted below each ejecting lever 13 and is secured rigidly in the turn-table, projecting upwardly from there into a notch 16 in the ejecting lever. The action of the spring 15 is such that the ejecting lever normally tends to extend straight outward, as indicated in Fig. 3, having thus a definite normal position, from which, however, it can be moved within proper limits, as indicated, for instance, by dotted and full lines in Fig. 4. The ejecting lever 13 is made of magnetic material, preferably soft iron, and is provided with lugs 17, 18, separated by a notch 19.

When the ejecting lever 13 occupies its normal position as indicated in Fig. 3, the plates 11 may be placed in a particular tube associated with the ejecting lever and will rest partly upon the lug 10<sup>a</sup> and partly upon the lug 17. When the outer or free ends of the ejecting lever are moved downwardly, as indicated by full lines in Fig. 4, the lowermost plate 11 tilts slightly, as indicated in Fig. 4, and lodges with its edge in the notch 19. If, now, the ejecting lever be rocked in the contrary direction, as indicated by dotted lines in Fig. 4, the lowermost plate 11 is dislodged.

A chute 20, having generally the form of a hollow wedge, is disposed at a convenient point relatively to the turn-table 6. Two electro-magnets 21, 22, are mounted upon a wall 23 adjacent to the chute 20 and are so positioned that when the ejecting lever 13 occupies its normal position, as indicated in Fig. 3, the outer or free ends of the latter can pass intermediate the magnets if the magazine be turned. If, however, the turn-table be stopped in such a position that a particular ejecting lever 13 is intermediate the stationary magnets 21, 22, and these magnets be energized alternately, the eject-



ing lever is moved, as indicated by dotted and full lines in Fig. 4, thereby dislodging one or more of the photographic plates 11. A number of weights 24, made preferably of metal, are each provided with a lip 25 which may extend outwardly through the slot 10 associated with the weight. The weights 24 serve to keep the plates 11 perfectly flat and even, and also serve a distinct purpose hereinafter more completely set forth.

Mounted upon the wall 23 is a pivot pin 26 (see Fig. 2) and mounted upon the latter is a dog 27 provided with a hook portion 28 and adapted to rock slightly. This dog, aside from its slight rocking movement, is stationary because of its mounting upon the wall 23. The normal position of the dog is indicated in Fig. 2, that is to say, it automatically assumes this position when not otherwise disturbed.

The turn-table 6 is provided with a number of notches 29 spaced equi-distant, there being as many notches 29 as there are tubular holders 9, and one notch being disposed adjacent to the center of each of these tubular holders. Each notch 29 is bounded upon one side by a wall 29<sup>a</sup>, against which the hook portion 28 may lodge, as indicated in Fig. 2, so as to prevent further rotation of the turn-table. The spacing of the notches 29 and tubular holders 9 is such that when the hook portion 28 of the dog 27 is in engagement with any wall 29<sup>a</sup>, as indicated in Fig. 2, the uppermost portion of the dog is in alinement with the lip 25 of one of the weights 24, the particular weight in question being directly above the chute 20.

The operation of my device is as follows:  
The various mechanical parts being in the positions above described, a number of the plates 11 are placed in the tubular holders 9 and stacked therein in the form of columns, as indicated in Figs. 2 and 3, the weights 24 being spaced upon the various columns and so arranged that the lips 25 extend radially outward through the slots 10. In charging, the turn-table is rotated in a counter-clockwise direction according to Fig. 1, the columns of photographic plates being formed one at a time, and the turn-table being rotated after each column is placed in it, a distance represented by the distance between consecutive notches 29. The magazine being loaded, is now ready for service. The hook portion 28 of the dog 27 now engages one of the walls 29<sup>a</sup>, as will be understood from Fig. 2, and consequently one of the tubular holders 9 is directly over the chute 20, one of the ejecting levers 13 of magnetic material being, as above described, intermediate the fixed magnets 21, 22. The magnet 22 is now energized and rocks the ejecting lever 13 into the position indicated by the full lines in Fig. 4. The

magnet 22 is now deenergized and the magnet 21 is energized, which, attracting the ejecting lever 13, shifts it into the position indicated by dotted lines in Fig. 4. The magnet 21 being now deenergized, the ejecting lever 13 returns to its normal position, indicated in Fig. 3. In executing these movements, the lowermost plate 11, (see Fig. 4) is dislodged as above described, and is dropped downwardly into the chute 20. The magnets 22, 21 are again energized in the same order of succession, another plate 11 is dislodged, and this continues until all of the plates 11 in forming a particular column and occupying a particular tubular holder, are discharged one at a time. As the last plate in the column (that is, the top plate) is discharged, the weight 24 is lowered to such an extent that the lip 25 comes into engagement with the uppermost portion of the dog 27, as will be understood from Fig. 2. This actuates the dog, and withdraws the hook portion 28 from engagement with the particular wall 29<sup>a</sup> which happens to be adjacent to it. The dog 27 being thus rocked, the turn-table 6 is immediately released and begins to turn as above explained, by the tension of the spring 8. The rotation of the turn-table, however, releases the dog 27, for the reason that the lip 25 engaging the upper end of this dog, is shifted by the rotary movement so that the dog 27 is disengaged and of course, assumes its normal position. As soon, however, as the rotation of the turn-table 6 brings the latter into such a position that another wall 29<sup>a</sup> lodges against the hook portion 28 of the dog, the turn-table is stopped and held in a new position. While in this new position, a new column of plates 11 is over the chute 20, and if the magnets 22, 21, be energized repeatedly as above indicated, the plates 11 in this particular column over the chute, are dislodged one at a time and when the last plate, (that is, the top plate) is dislodged, the turn-table makes another rotary movement, being stopped as before, and the process being continued indefinitely, or until all of the photographic plates are exhausted.

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

1. In a magazine, the combination of a turn-table provided with means for supporting a number of plates arranged in columns, a projecting lever for each column, a dog provided with means for locking said turn-table periodically so as to bring said columns successively into a predetermined position, and weights to be rested upon said columns, each weight descending by its own gravity as the plates are removed from beneath it, each weight being provided with a portion projecting therefrom for engaging said dog and actuating the latter.



2. In a magazine, the combination of a turn-table provided with an opening through which plates may be ejected one at a time, a lever provided with a notch for engaging the edges of said plates in order to eject said plates, said lever being provided with a portion serving as an armature, and magnetic members disposed upon opposite sides of said armature for the purpose of actuating the same.

3. In a magazine, the combination of a turn-table adapted to support a number of photographic plates, a lever pivotally mounted upon said turn-table and mounted to rock in a plane crossing the general plane of said plates, said lever being provided with a notch for engaging said plates directly, said lever being further provided with a portion serving as an armature, and magnetic mechanism for actuating said armature.

4. In a magazine, the combination of a turn-table provided with an opening and with a lug disposed within said opening for

the purpose of partially supporting a column of photographic plates, a lever pivotally mounted upon said turn-table and extending into said opening, said lever being provided with a notch for engaging the edges of said plates, and electrically-operated mechanism for actuating said lever.

5. In a magazine, the combination of a turn-table provided with a tube, said tube being open at its bottom for the purpose of discharging plates directly downward therefrom, and a lever journaled upon said tube and extending partly thereinto, said lever being provided with a notch for engaging the edges of said plates, and electrically-operated mechanism for actuating said lever.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAF A. SVANBERG.

Witnesses:

F. A. HOSTER,

PHILIP D. ROLLHAUS.