

B. H. WINTERS.
ELECTRIC EXHIBITOR.
APPLICATION FILED DEC. 17, 1907.

905,824.

Patented Dec. 1, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

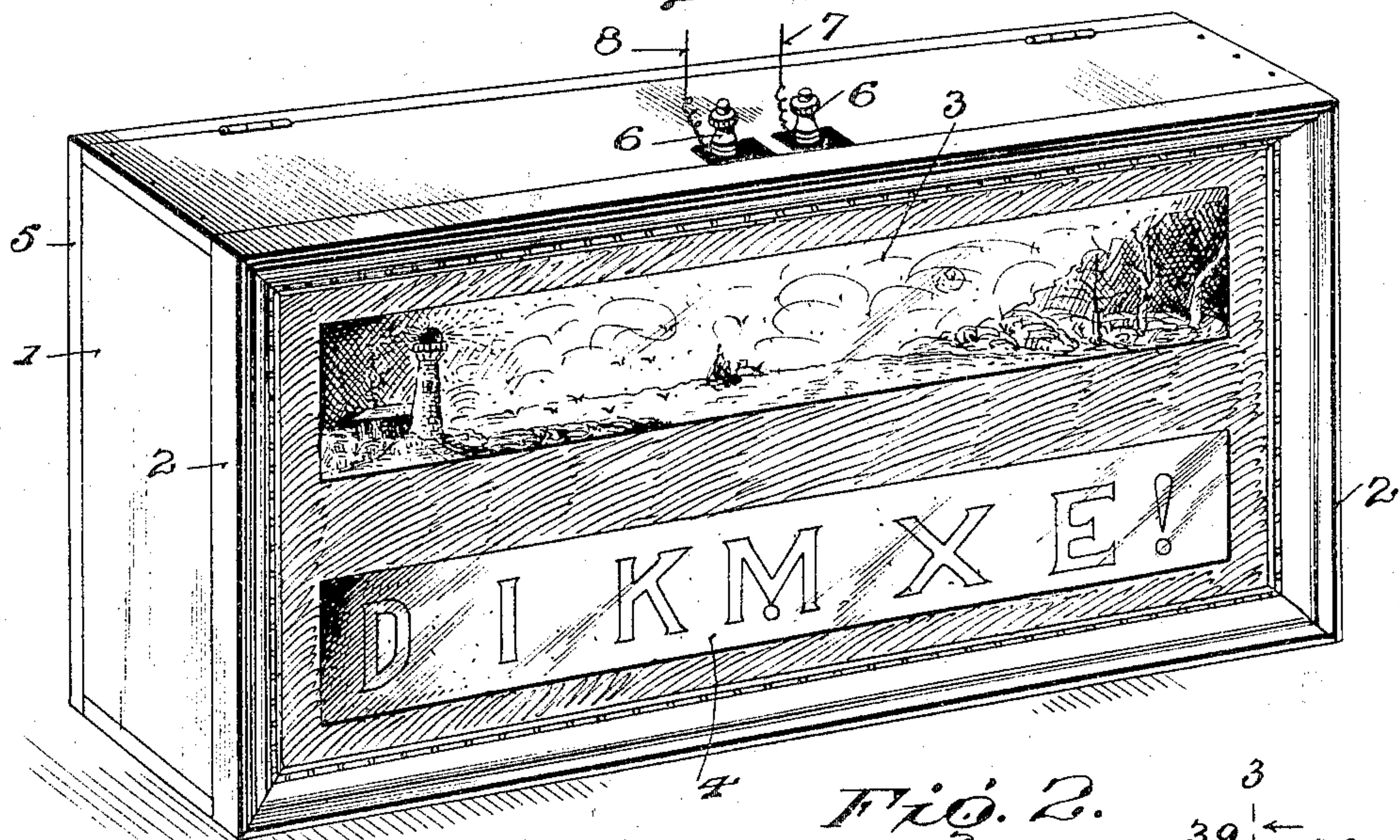
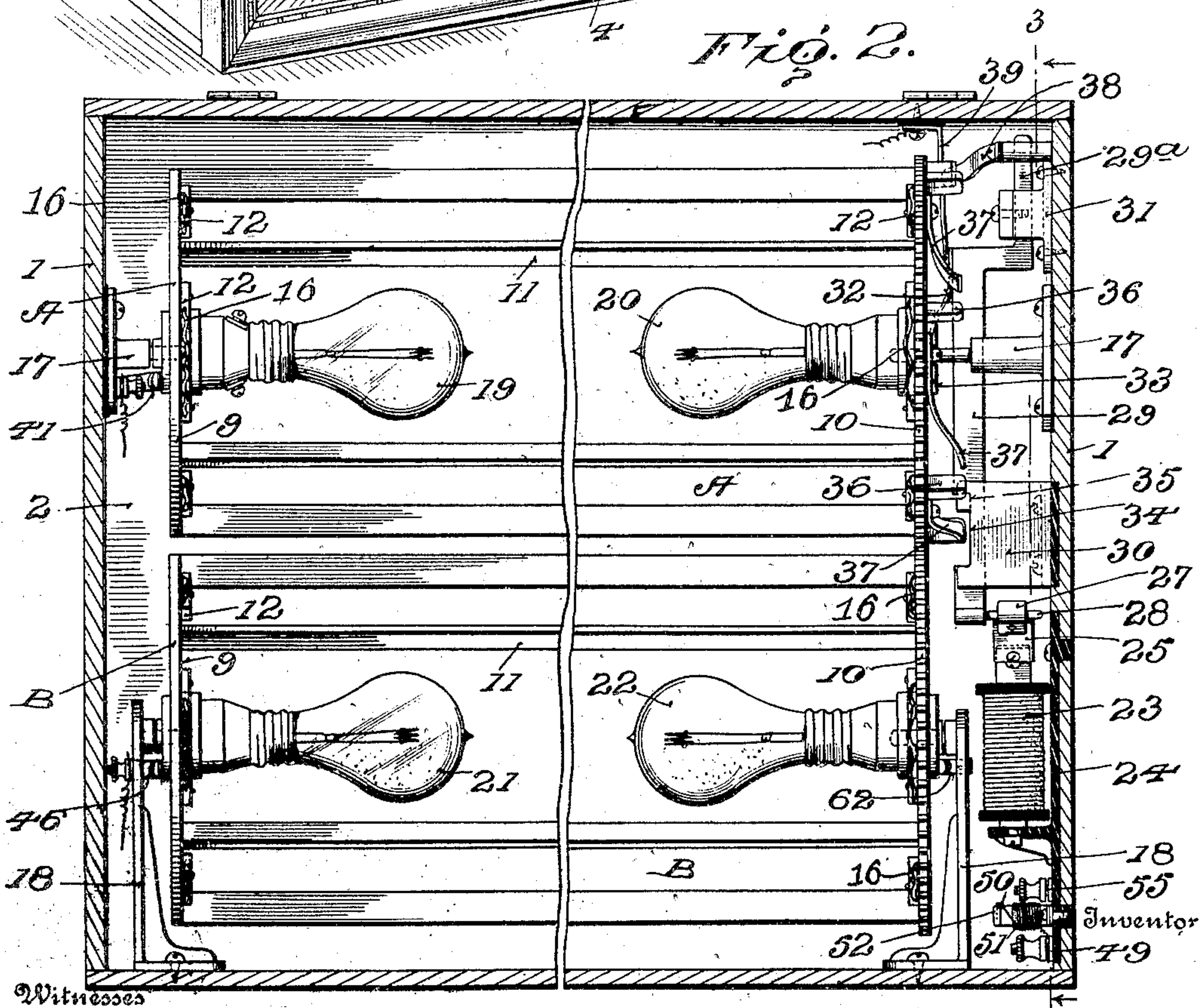


Fig. 2.



Witnesses

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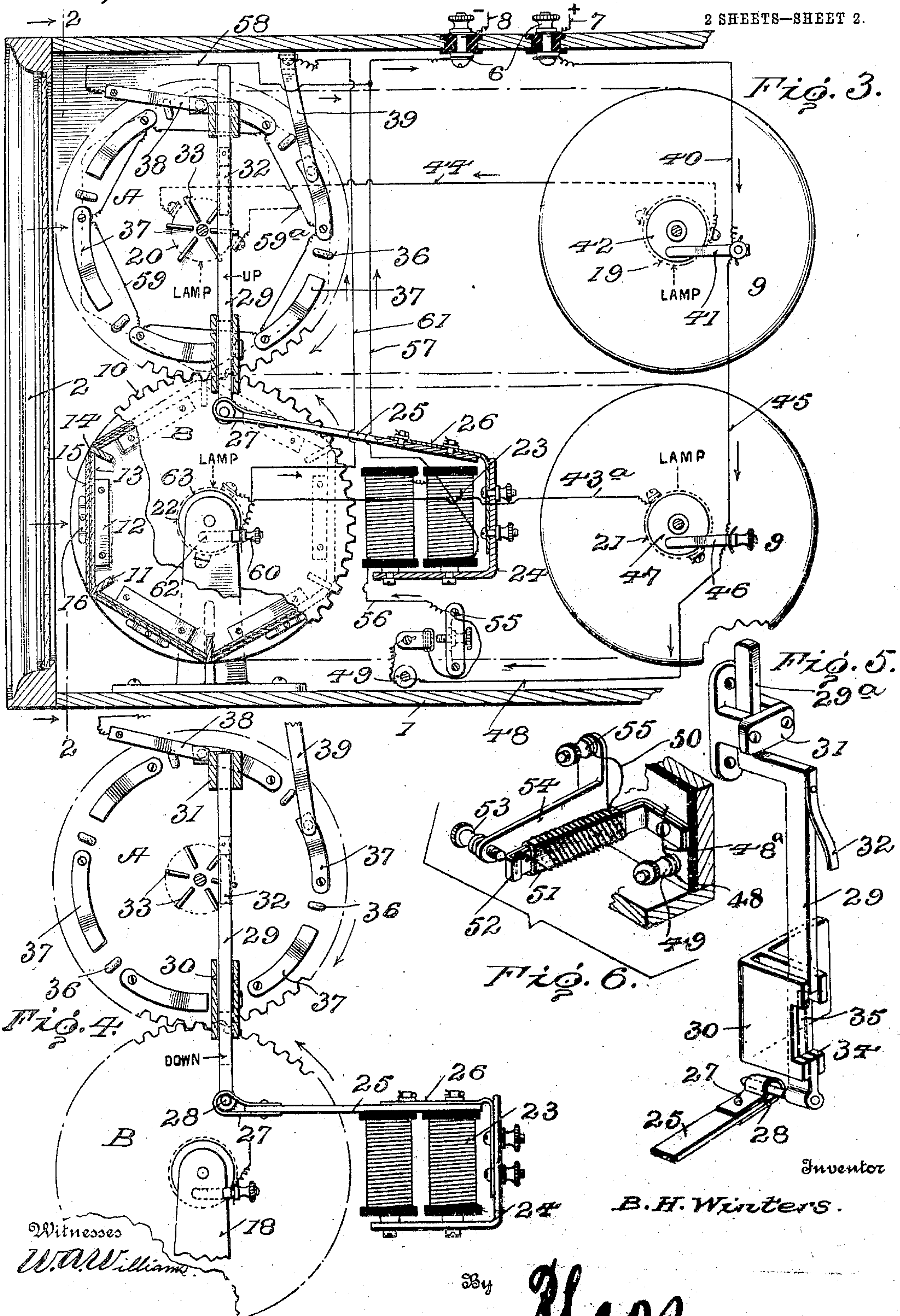
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

BERT H. WINTERS, OF ANNAPOLIS, MARYLAND.

ELECTRIC EXHIBITOR.

No. 905,824.

Specification of Letters Patent.

Patented Dec. 1, 1908.

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To all whom it may concern:

Be it known that I, BERT H. WINTERS, a citizen of the United States, residing at Annapolis, in the county of Anne Arundel and State of Maryland, have invented certain new and useful Improvements in Electric Exhibitors, of which the following is a specification.

This invention comprehends certain new and useful improvements in electrically actuated exhibitors designed to display either pictorial or advertising matter, or both intermittently and successively at predetermined intervals, such intervals being controlled by any automatic devices, an electric flasher switch being employed for this purpose in the present instance.

The invention has for its object a simple and efficient construction of apparatus of this character which will be composed of comparatively few parts that may be readily assembled and that will not be liable to get out of order or require any attention for the purposes of adjustment, and the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and then point out the novel features in the appended claims.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of an electrically actuated exhibiting apparatus constructed in accordance with the principles of my invention, and illustrating one application thereof, that is, the simultaneous display of a picture and an advertisement; Fig. 2 is a sectional view on the line 2—2 of Fig. 3, broken away at the middle for the conventional purpose of indicating that the apparatus is preferably wider than indicated in such view; Fig. 3 is a view in the nature of an electrical and mechanical diagram for the especial purpose of illustrating the wiring in addition to the mechanical features of construction, both ends of the revoluble drums being shown, and the view being substantially a section on the line 3—3 of Fig. 2 so far as the mechanical features are concerned; Fig. 4 is a detail view illustrating the actuating parts in a different position from that illustrated in Fig. 3; Fig. 5 is a detail perspective view of the drum actuating plunger and a portion of the armature

of an electro magnet secured to said plunger; and, Fig. 6 is a detail perspective view of the flasher switch employed for effecting the intermittent closing of the circuit and the energization of the actuating magnets.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The casing 1 of the apparatus may be of any desired size, shape and construction and may be provided with a relatively stationary front 2 with upper and lower sight openings 3 and 4, a hinged back 5 being secured to the top of the casing so that ready access may be had to the interior parts.

6 designates the service terminals for the leads from any suitable source of electrical supply (not shown) and 7 and 8 designate such leads, respectively.

In the present embodiment of the invention, as a preferred form, I have shown upper and lower revoluble drums A and B journaled within the casing 1. Each of these drums may comprise circular heads 9 and 10 of fiber or similar insulating material, the heads 10 being provided with gear teeth that intermesh, as shown best in Fig. 2, and a series of cross bars 11 also of fiber or the like secured to the said heads, and dividing the drums into a series of longitudinally extending compartments, peripherally considered. Ledges 12 are secured to or formed on the inner faces of the heads 9 and 10; and preferably panes of glass 13 rest against the respective ledges, the transparent or translucent cards 14 displaying the advertisements, or pictorial matter, or both being laid against the said panes and being retained in place by outer panes 15 secured by spring catches 16 or the like. The upper drum A is mounted to turn on gudgeons projecting inwardly from oppositely facing brackets 17 secured to the ends of the casing 1, while the lower drum B is mounted to turn in suitable bearings provided on the upper ends of posts or standards 18 secured to the bottom of the casing. The interior of the respective drums is lighted at intervals by means of incandescent lamps 19 and 20 in the upper drum A, and 21 and 22 in the lower drum B, as best seen in Fig. 2.

As has been stated, my improved exhibiting apparatus is electrically actuated, and I have provided in the present instance for this purpose an electro magnet 23 mounted

on an insulating bracket 24 secured within the casing 1. The armature 25 of the magnet is carried by a spring member 26, the tension of which is to draw the armature away from the pole of the magnet. This armature is extended beyond the magnet as best seen in Figs. 3 and 4 and is provided at its free end with a stirrup or loop 27 through which a pin 28 extends. This pin 28 is secured to and projects laterally from the lower end of a vertically-movable plunger 29, mounted to slide in lower and upper brackets 30 and 31 secured to one end of the casing. Preferably the upper end of the plunger is offset as indicated at 29^a to work through the upper bracket. This plunger 29 carries a preferably spring tappet 32 which projects outwardly and downwardly and which is designed for engagement with lugs or radially extending ribs 33 secured to the outer face of the head 9 of the upper drum A, so that every movement downward of the plunger will cause the engagement of the tappet 32 with one of the lugs, and consequently effect the turning of both of the drums.

It is to be particularly noted, as best seen in Fig. 5, that the lower bracket 30 is formed with a clearance slot or recess 34. The plunger 29 is formed with a corresponding, but preferably longer recess 35 designed, in the upper position of the plunger to register with the clearance slot 34. The head 10 of the upper drum A is provided with a plurality of outwardly projecting abutments 36 that are arranged to move through the slots 34 and 35, and to bring up successively against the plunger 29 when the latter has moved downwardly to its lowermost position, so as to prevent the over-running of the drums and insure the accurate movement thereof. It is of course to be understood that the parts are arranged to permit one abutment 36 to pass through the slots 34 and 35 as the plunger 29 moves downwardly to turn the drums, before the solid portion of the plunger shall have closed the clearance slot 34 against the passage of the succeeding abutment.

I shall now describe particularly the electrical features of the apparatus: The head 10 of the upper drum A is provided with a circular series of metallic contact brushes 37, preferably of spring metal secured thereto at one end and with the other end free and projecting outwardly from the face of the head. A switch arm 38 of the spring wiping type is secured to one end of the casing, as best seen in Figs. 2 and 3 and is designed for intermittent and successive engagement with the respective brushes 37, to close the lighting circuit for the upper drum. The lighting circuit for the lower drum includes a corresponding switch arm 39 which may be secured to the top of the casing and

which is designed to also engage with the brushes 37, as best seen in Fig. 3.

The circuits of the apparatus include a service lead 40 secured to one of the terminals or binding posts 6 (see Fig. 2) extending to a contact finger 41 bearing upon a disk 42 secured to the head 9 of the drum A, said disk being in electrical connection with the binding posts of the lamp 19. This lamp is also connected by the lead 44 to the binding post of the opposite lamp 20. From the contact finger 41 the service lead 45 extends to a corresponding finger 46 in engagement with the contact disk 47 of the lower lamp 21 secured to the head 9 of the lower drum B and this lamp is connected by the lead 43^a to the binding post of the opposite lamp 22. From the finger 46 a lead 48 extends and is connected to a binding post 49 (see Fig. 6). The binding post 49 is electrically connected as at 48^a to one of the blades 52 of a flasher switch, said blade being composed of two metallic parts which have relatively different co-efficients of expansion and being designed to be in contact with a terminal screw 53 adjustably secured in the other switch blade 54. The switch blade 54 is connected to a binding post 55, and a lead 56 extends from said binding post to the electro magnets 23.

An asbestos sheet 51 is wrapped around the blade 52 of the flasher switch and a German silver or other fine resistance wire 50 is wound around the asbestos and electrically connects the blade 52 with the binding post 55. The resistance of the wire 50 chokes the current flowing through the lead 48 and prevents it from energizing the electro magnets 23 so long as the blade 52 is out of direct contact with the terminal screw 53. This manifestly heats the blade 52 and the consequent expansion thereof causes the blade to come into direct contact with the screw 53 so as to short circuit the resistance circuit and permit the full current to flow freely through the blades 52 and 54 and electro magnets to energize the same. As soon, however, as the blade 52 cools off, it will contact and assume its normal position in spaced relation to the screw 53 so as to break the full circuit through the electro magnets, thereby deenergizing the same, the current again flowing through the resistance wire and the operation being repeated. The lead 57 connects the electro magnets 23 to the opposite service terminal 6 whereby to complete the service circuit. The service circuit just described is tapped by a lead 58 connected to the switch arm 38 of the lighting circuit for the upper drum, and the brushes 37 are all connected together electrically. The lead 44 of the circuit for the lamps 19 and 20 is connected to the main circuit by tapping one of the wires 59, as indicated at 59^a. The switch arm 39 is

connected to the binding post 60 by the lead 61 and said binding post has connected to it a contact finger 62 in frictional engagement with the contact disk 63 on the head 10 of the lower drum B.

In the practical operation of my improved electrical exhibiting apparatus, after the service leads 7 and 8 are connected to the source of supply, it is manifest that the current flowing through the resistance wire 50 will so heat the contact blade 51 as to cause the expansion thereof and the consequent contact between the blades 52 and 54. This will close the circuit within the apparatus and the consequent energization of the electro-magnets 23 will cause the downward movement of the armature 25. The downward movement of the armature will effect a corresponding movement of the plunger to engage with one of the radial ribs or lugs 33 and will turn the two drums simultaneously so as to effect a shifting of the display matter at the sight openings 3 and 4. One of the abutments 36 comes up against the side of the plunger 29, and the parts are thus held stationary with the plunger in the downward position until the flasher shall have had a chance to cool off and break the circuit, whereupon, manifestly, the spring 26 will carry the armature 25 and the plunger 29 upwardly in readiness for a succeeding operation. So long as the magnets 23 are energized and the plunger held in the down position with the drum stationary, the switch arm 38 will be in electrical contact with one of the brushes 37, and the circuit for the lamps of the upper drum will be maintained closed so as to light the interior of said drum while the lower drum will be correspondingly lighted by the contact of the switch arm 39 with another of the brushes 37, the lighting circuit of the lower drum being supplied with its current directly from the upper drum. Obviously, the lights of both lamps and circuits will go out as soon as the drums begin to move, owing to the breaking of the circuits between the brushes 37 and the switch arms 38 and 39.

When the main service circuit is closed, the current will flow from the lead 7 through the leads 40 and 45, as indicated by the darts in Fig. 3, thence from the lead 48 to and through the electric magnets 23, and out through the lead 57, thereby energizing the magnet. For the lighting circuit of the lamps 19 and 20 of the upper drum A, the current from the lead 40 flows through the finger 41 and the disk 42, thence through the lead 44 to the opposite lamp and out through one of the wires 59 and contact member 38 and lead 58 which taps the main lead 57. For the lower pair of lamps, it will be understood that the current will pass into the finger 46, and thence to the disk 47, by the lead 43^a to the opposite lamp 22, and the

circuit will be returned through the wires 61, the contact member 39, the brushes 37, wires 59, contact member 38 and the lead 58.

From the foregoing description, in connection with the accompanying drawings, it will be seen that I have provided an improved exhibiting apparatus of this type which will be positive or sure in its action and which will not be liable to get out of order or require undue attention. While I have shown in Fig. 1 the device as displaying an advertisement and a scene at the different sight openings, it is obvious that my invention is not limited to such arrangement, but that both of the sight openings may display advertisement or pictorial matter, and that my invention also is not limited to the employment of two or any plural number of drums.

Having thus described the invention, what is claimed as new is:

1. In an apparatus of the character described, the combination of a casing provided with a sight opening, a revoluble drum mounted in said casing and adapted to bring display matter in registry with said sight opening, an electro-magnet mounted in the casing, a service circuit in which said magnet is included, means for automatically and intermittently energizing said magnet, the magnet being provided with an armature, and a plunger operatively connected to said armature, and arranged upon actuation to turn the drum, the drum being provided with abutments adapted to engage the plunger subsequent to the actuation of the drum by the plunger, as and for the purpose set forth.

2. In an apparatus of the character described, the combination of a casing provided with a sight opening, a revoluble drum mounted in said casing and adapted to present display matter at said opening, an electro-magnet mounted in the casing, an armature therefor, means for intermittently energizing said magnet, a source of supply for the magnet energizing means, a plunger, guides in the casing for said plunger, one of said guides being provided with a slot, and the plunger being provided with a slot adapted to register with the slot of the guide, an operative connection between the plunger and the armature, and means for turning the drum by and upon the movement of the plunger in one direction, the drum being provided with abutments designed to pass through the slots of the guide and plunger in one position of the latter, and to bring up against the plunger in the other position of the latter, as and for the purpose set forth.

3. In an apparatus of the character described, the combination with a casing provided with a sight opening, a revoluble drum mounted in said casing and adapted to present display matter at said sight opening,

said drum being translucent, one or more lamps within said drum, a circuit for said lamps, the drum being provided at one end with a circular series of brushes all of which are electrically connected, an electro-magnet within the casing, a service circuit in which said magnet is included, means for intermittently energizing said magnet, an armature for said magnet, a plunger mounted within the casing and operatively connected to said armature, the plunger being provided with a clearance slot, means for feeding the current to the lighting circuit through the brushes of the drum, the drum being provided with a series of abutments arranged between the several brushes and the brushes and abutments being in registry with the clearance slot of the plunger with the latter in one position, and means whereby the movement of the plunger to another position will effect the turning of the drum and the engagement of the abutment with the plunger.

4. In an apparatus of the character described, the combination of a casing provided with a sight opening, a movable element mounted in said casing and adapted to prevent display matter at said opening, an electro magnet mounted in the casing, an armature therefor, means for intermittently energizing said magnet, a plunger mounted in the casing, guides therefor, said plunger being provided with a slot, and means for actuating the movable element by and upon the movement of the plunger in one direction, said element being provided with abutments designed to pass through the slot of the plunger in one position of the latter, and to bring up against the plunger in the other position of the latter.

5. In an apparatus of the character described, the combination of a casing provided with a sight opening, a revoluble drum mounted in said casing and adapted to present display matter at said sight opening, the drum being formed at one end with a circular series of brushes, all of which are electrically connected, an electro magnet within the casing, a service circuit in which said magnet is included, means for intermittently energizing said magnet, an armature for said magnet, a plunger mounted in said casing, and operatively connected to said armature, one or more lamps within said drum, a circuit for said lamps, means for feeding the current to the lighting circuit through the brushes of the drum, means for turning said drum by and upon the movement of the plunger in one direction, and a switch arm adapted to engage said brushes successively, said switch arm being included in the service circuit.

6. An apparatus of the character described, comprising a casing provided with a sight opening, a revoluble drum mounted

in said casing and adapted to present display matter at said sight opening, an electro magnet mounted in the casing, an armature therefor, provided at one end with a loop, means for energizing said magnet intermittently, a plunger, guides in the casing for said plunger, one of said guides being formed with a slot and the plunger being provided with a slot adapted to register with the slot of the guide, the plunger being also provided with a pin fitting in said loop, and means for turning the drum by and upon the movement of the plunger in one direction, the drum being provided with abutments designed to pass through the slots of the guide and plunger, in one position of the latter, and to bring up against the plunger in the other position of the latter.

7. An apparatus of the character described, comprising a casing provided with a sight opening a revoluble drum mounted in said casing and adapted to present display matter at said opening, a plunger mounted in the casing, means for intermittently actuating said plunger, said plunger being provided with a slot, and means for turning the drum by and upon the movement of the plunger in one direction, the drum being provided with abutments designed to pass through the slot of the plunger in one position of the latter and to bring up against the plunger in the other position of the latter.

8. In an apparatus of the character described, the combination of a casing provided with sight openings, a plurality of revoluble drums mounted in said casing and adapted to present display matter at said openings, a driving connection from one drum to the other, electrically controlled means for imparting an intermittent movement to one of said drums and indirectly to the other, lighting circuits for both drums, a service circuit for the electrical moving means for the drums, one of said drums being provided at one end with a circular series of brushes electrically connected together, a connection between the brushes and one of the leads of the service circuit and a switch arm adapted for intermittent engagement with such brushes and connected to the opposite or complementary lead of said service circuit, and a connection between the lighting circuit of the other drum and one of the leads of the service circuit and the said brushes.

9. In an apparatus of the character described, a translucent drum comprising heads, a series of cross bars secured to said heads and dividing the drum into a series of longitudinally extending compartments, the heads being provided at their inner faces with ledges, transparent panes resting against the ledges, translucent cards lying against said panes, the outer panes lying

against the cards, and spring catches adapted to secure said last named panes in position.

10. An apparatus of the character described, comprising a casing provided with a sight opening, a revoluble drum adapted to present display matter at said opening, said drum being provided at one end, near its hub, with a series of radial ribs, a plunger provided with a spring tappet adapted to successively engage said ribs, supports in which said plunger is mounted to reciprocate, the plunger being provided with a

clearance slot, and means for reciprocating said plunger, the drum being provided with 15 a circular series of abutments designed to pass through the slot of the plunger in one position of the same, and to bring up against the plunger in the other position thereof.

In testimony whereof I affix my signature 20 in presence of two witnesses.

BERT H. WINTERS. [L. s.]

Witnesses:

FREDERICK S. STITT,
W. N. WOODSON.