E. H. BICKLEY.

CONTROLLER FOR ELECTRIC SIGNS.

APPLICATION FILED JULY 15, 1911.

1,050,203. Patented Jan. 14, 1913.

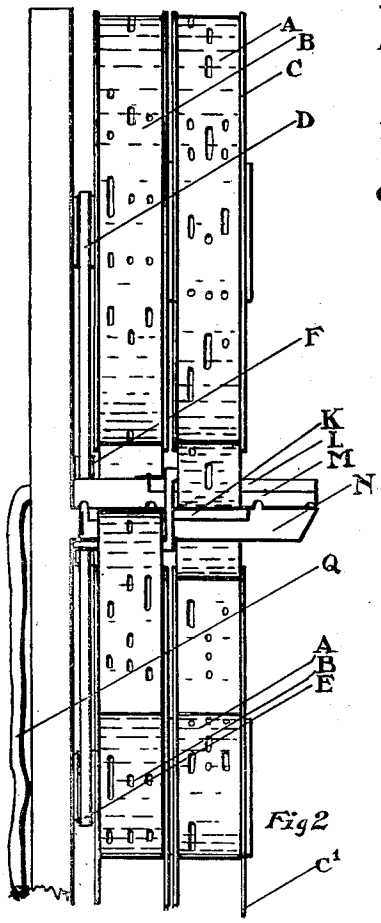

Fig 2

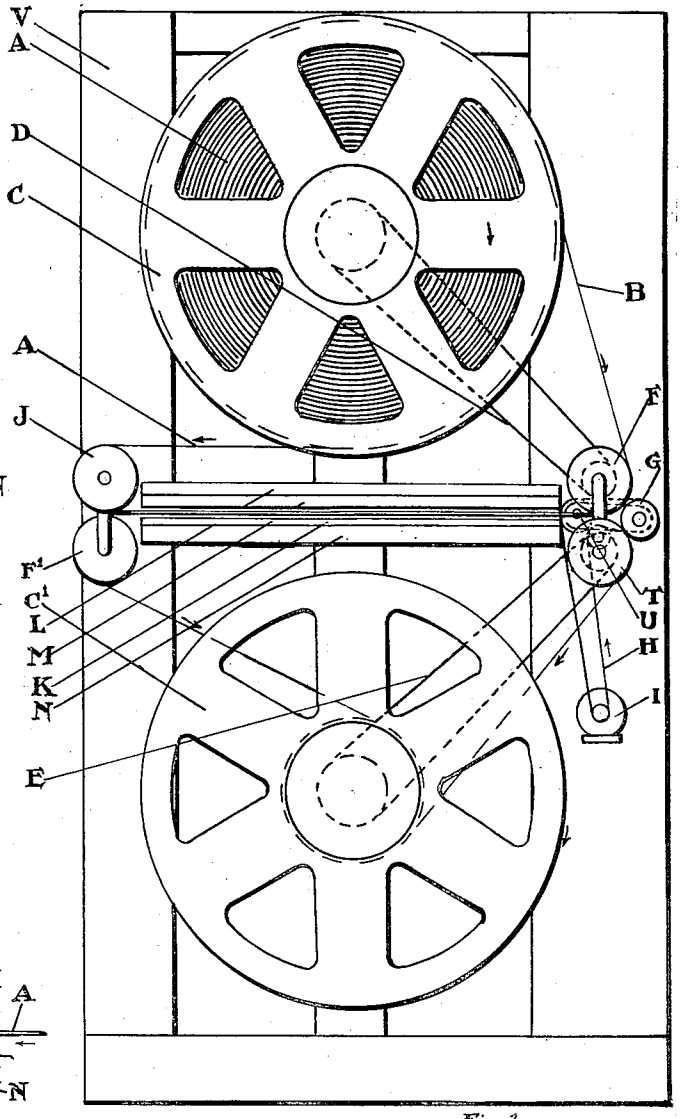

Fig. 1.

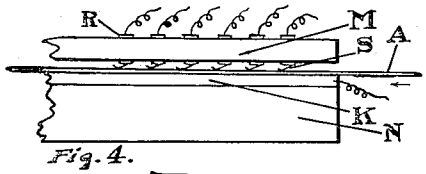

Fig. 4.

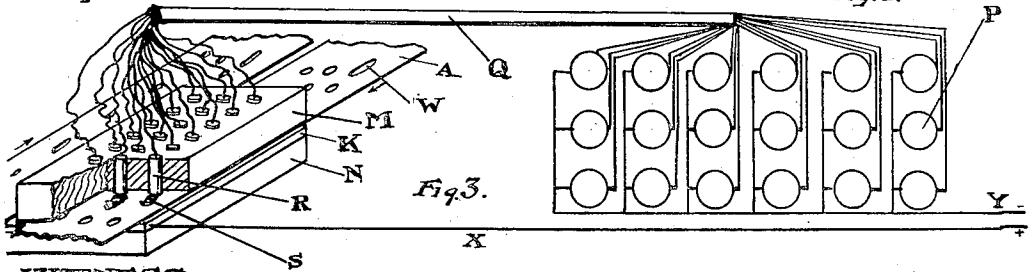

Fig. 3.

WITNESS

Virginia C. Spratt.

W. [illegible]

INVENTOR

Emmett H. Bickley.

UNITED STATES PATENT OFFICE.

EVERETT H. BICKLEY, OF DETROIT, MICHIGAN.

CONTROLLER FOR ELECTRIC SIGNS.

1,050,203. Specification of Letters Patent. Patented Jan. 14, 1913.

Application filed July 15, 1911. Serial No. 638,624.

To all whom it may concern:

Be it known that I, EVERETT H. BICKLEY, citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Controllers for Electric Signs, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to controllers for electric signs, and has for its object an improved controlling mechanism by means of which the lights used for signs and other special illumination are controlled.

In the drawings:—Figure 1, is a front elevation. Fig. 2, is a side elevation. Fig. 3, is a perspective showing the wire connections to the contact plates and the lines leading therefrom to the electric lights. Fig. 4, is a detail showing the contacts.

The main frame V carries the reels and driving mechanism of the entire device. A ribbon of perforated insulating material A mounted on a storage reel C is arranged to be transferred therefrom across a contact plate K to a second storage reel C^1. A second ribbon of perforated insulating material B is simultaneously transferred from a storage reel on shaft with C to a storage reel on the same shaft with the storage reel C^1. The ribbons of perforated insulating material B and A pass over guide rolls F and F^1 and J and T, the ribbon B passing under the roll F and over the roll F^1 to the reel C^1, and the ribbon A passing around and under the roll J and over the roll T to the reel on shaft with the reel C^1. The ribbons are driven in their movement by friction wheel G which is adapted to shift about a center U to engage at the will of the operator with the roll T or with the roll F and is itself driven by belt H from motor I. An insulating block M carrying a large number of contacts R, uniformly studded over the block is arranged to engage over a contact block K with the perforated ribbon of insulating material interposed and driven between the block M and the contact plate K; the contact plate K rests on an insulating block N. Spring brushes S, by which the block N is studded terminate the lower ends of the pins R and complete the circuit through the holes W in the insulating ribbon closing the circuit between any one of the wires which are gathered into the cable Q and the contact plate K which is the terminal for the main lead wire X. The wires in the cable Q lead to the lights P and thence to the return wire Y. The electric circuit being completed through an opening in the insulating ribbon A causes the lighting up of that one of the lights which is in immediate connection with that one of the pins R that is above the opening through the insulating ribbon and consequently the lights P are controlled by the insulating ribbon passing under the block M and above the plate K.

The display board (shown diagrammatically in Fig. 3) has a plurality of lines of lights P, each light P having a separate connection with one of the contacts or terminals R. The display board is uniformly studded with the lights P, so as to form a large field of electric lights.

At the completion of the unwinding of the ribbon from the upper reels the entire system of pins in the block M are shifted to engage over the insulating ribbon B and the motion of the reels is reversed by reversing the direction of motion of the motor I and shifting the friction wheel G to contact the wheel F instead of the wheel T and the control is continued during the rewinding of the ribbon on the reel C. The action of the controller is practically continuous as the shifting of the contact plate requires only the fraction of a minute to complete. A belt D is arranged to be drawn by the roller F and takes up slack in the upper set of reels: A belt E is arranged to be drawn from roller, G is arranged to take up slack of lower reels C^1 both belts are loose so as to easily slip and not put undue strain on the ribbon. A guard lid L is placed over the ends of the wires where they spread from the cable to the contact pins R.

In operation a single perforation acts to control successive contacts a point of light will travel the length of the group of lights; if the perforation be made long, or repeated at proper intervals there will be a line of lights, which may travel along the sign or may be made to appear stationary so also groups of lights forming letters or pictures may be made to appear to travel along the sign many of the regularly moving effects may be produced by properly disposing the holes in the ribbon.

What I claim is:—

1. A display apparatus, having in combination, a display board provided with a plurality of electric light bulbs, electric terminals and connections with each of said bulbs, a slotted ribbon having a slot registerable with said terminals and thereby adapted to display a symbol on the board, a second slotted ribbon adapted for the same operation as said first mentioned ribbon, means for interchanging the ribbons with respect to the field of the terminals, and means for drawing into storage preparatory for operation, one of the ribbons, while the other ribbon is being taken from such storage, substantially as described.

2. A display apparatus, having in combination, a display board provided with a plurality of electric light bulbs, a shiftable field of electric terminals and connections with each of said bulbs, a slotted ribbon having a slot registerable with said terminals and thereby adapted to display a symbol on the board, a second slotted ribbon adapted for the same purposes and means for drawing into storage preparatory for operation of one ribbon, while the other ribbon is being taken from such storage, the said terminals being shiftable from the operative range of one ribbon to the other ribbon, substantially as described.

3. A display apparatus, having in combination, a display board provided with a plurality of electric light bulbs, electric terminals and connections with each of said bulbs, a slotted ribbon having a slot registerable with said terminals and thereby adapted to display a symbol on the board, a pair of storage rolls for said ribbon, a second slotted ribbon similarly adapted as the first ribbon, a pair of storage rolls for the same, the said terminals and connections being shiftable to be brought within the operative range of one or the other ribbon, and means for reversing the operation of said storage rolls, substantially as described.

4. A display apparatus, having in combination, a display board comprising a field studded with electric light bulbs, a field studded with yielding electric terminals or brushes, each brush or terminal connecting with an electric light bulb on the display board, a contact block arranged opposite the field of yielding brushes or terminals so as to close the circuit through the bulbs when contacted by the yielding terminals or brushes, an insulating ribbon provided with slots representing various symbols, all the slots when they cross the field of yielding terminals or brushes, being simultaneously registerable with yielding terminals or brushes, and said slots controlling bulbs on the display board whose arrangement is that of the given symbol at that time crossing the field of yielding terminals or brushes and means for continuously propelling said ribbon between the field of yielding terminals or brushes and the contact block, whereby each representation of a comparatively long line of symbols on the ribbon moves across the field of yielding terminals or brushes and across the contact block and thereby allows moving electrical connections of bulbs arranged to show the symbol on the display board and whereby a comparatively long line of symbols on the ribbon appear in a prescribed order upon the display board and move thereacross in readable form, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

EVERETT H. BICKLEY.

Witnesses:
CHARLES F. BURTON,
VIRGINIA C. SPRATT.