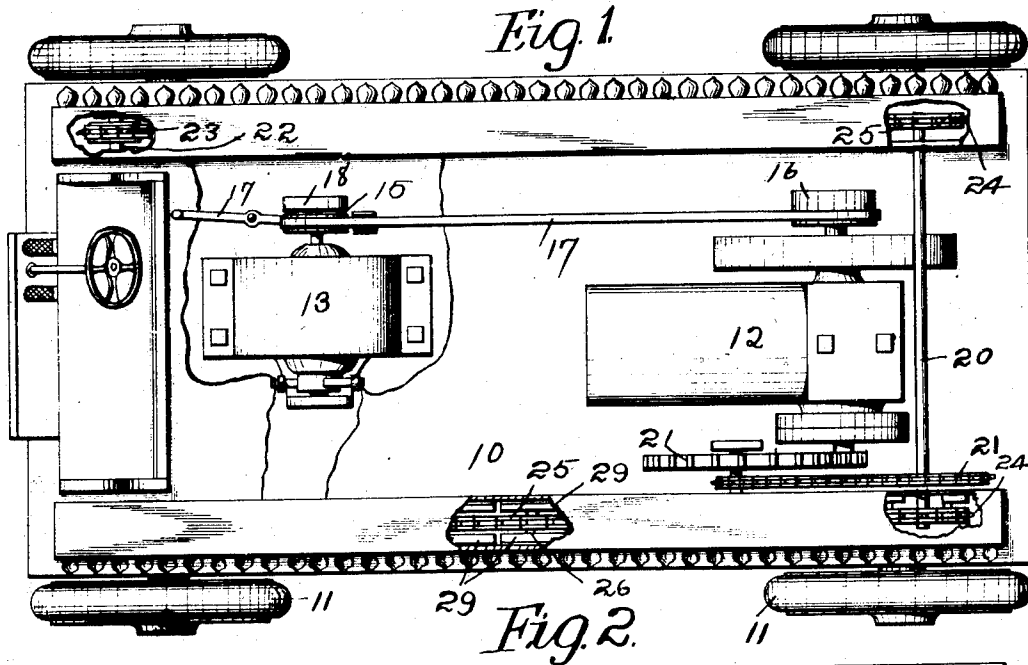


Patented Mar. 24, 1914.

1,090,989.

2 SHEETS-SHEET 1.



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ELECTRIC SIGN.

APPLICATION FILED JULY 30, 1908.

Patented Mar. 24, 1914.

2 SHEETS-SHEET 2.

1,090,989.

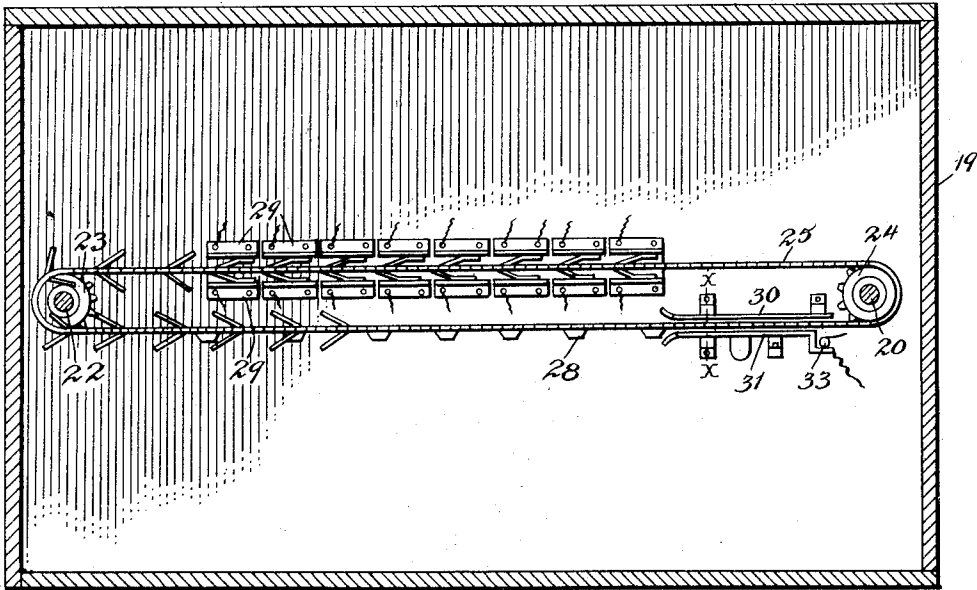


Fig. 3.

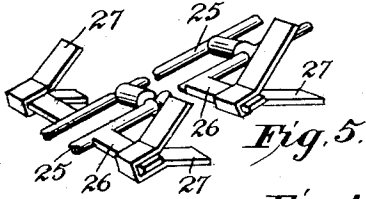


Fig. 5.

Fig. 4.

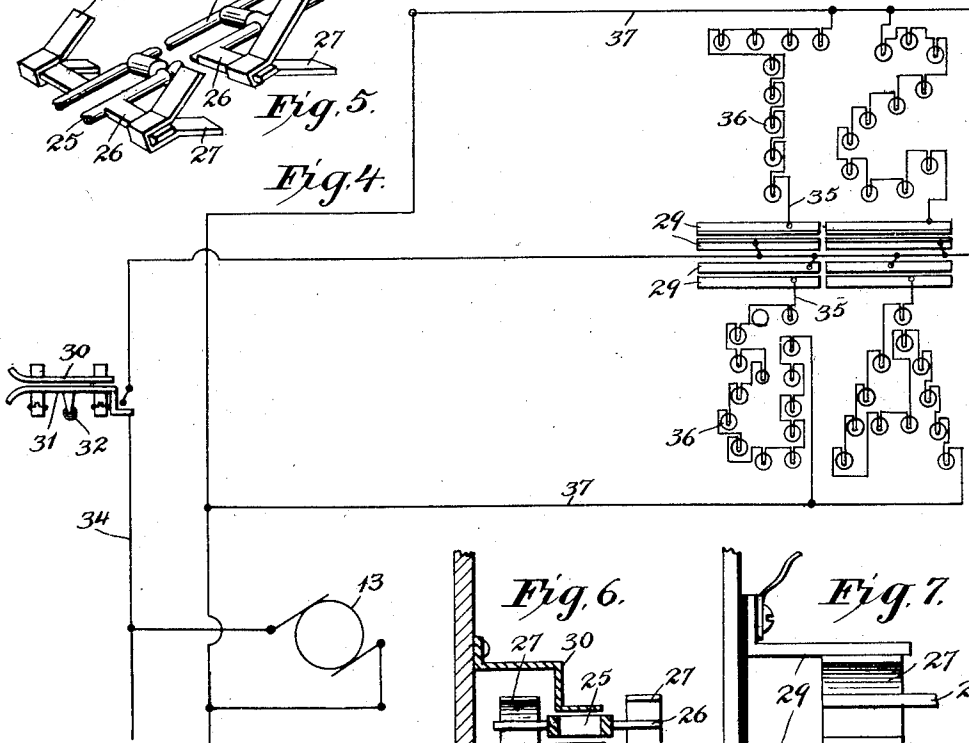
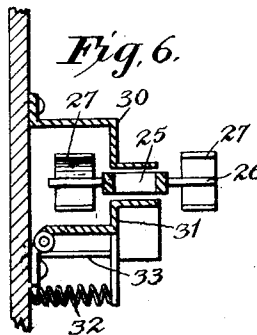
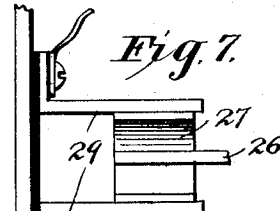


Fig. 6.

Fig. 7.



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ELECTRIC SIGN.

1,090,989.

Specification of Letters Patent.

Patented Mar. 24, 1914.

Application filed July 30, 1908. Serial No. 446,194.

To all whom it may concern:

Be it known that I, GEORGE T. KELLY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Electric Sign, of which the following is a specification.

The object of my invention is to provide an electric sign of simple, durable and inexpensive construction, in which the letters of the advertisement are formed by incandescent lamps and which are so arranged that the individual letters at one side of the sign will each be illuminated first, then the other letters in succession will be illuminated until the entire sign is illuminated, after which the current is automatically cut off from all of the letters for a short period of time.

A further object is to provide a device of this kind in which the same mechanism may be used in connection with signs containing different numbers of letters, the change of the mechanism necessary to accomplish this purpose being quickly and easily accomplished.

My invention consists in the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a top or plan view of a vehicle provided with my improved illuminated signs. Fig. 2 shows a side elevation of same. Fig. 3 shows a vertical sectional view through one of the signs, illustrating the contact devices for establishing and breaking the electric circuit. Fig. 4 illustrates diagrammatically the arrangement of the electrical parts of my invention. Fig. 5 shows a detail perspective view of a part of the chain containing the electric contact plates. Fig. 6 shows an enlarged detail sectional view on line *x-x* of Fig. 3 illustrating the means for shutting off the entire current during part of the movement of the chains, and Fig. 7 shows an enlarged detail view illustrating the stationary contact points for establishing a current through the incandescent lamps of each letter of the sign with one of the contact devices carried by the chain in engagement therewith.

Referring to the accompanying drawings, I have used the reference numeral 10 to indi-

cate a vehicle frame mounted on supporting wheels 11. Carried by the frame is a motor 12 which may be an internal combustion engine or other suitable motive power. Mounted upon the vehicle frame is a dynamo 13 connected with the motor 12 by the belt 14 and pulleys 15 and 16. A lever 17 is provided for shifting the belt 14 from the pulley 15 of the dynamo to an idler 18 for thereby quickly and easily controlling the movement of the dynamo. On each side of the vehicle frame, I have erected a sign, each sign comprising a frame 19 having extended through its central portion a shaft 20. This shaft 20 is connected by gearing devices 21 with the motor 12 as clearly shown in Fig. 1. At the forward end of the frame 19 is a second shaft 22 provided with a sprocket wheel 23, which sprocket wheel is driven by means of a sprocket wheel 24 on the shaft 20 and a sprocket chain 25 passed around said sprocket wheels. Connected with this chain 25 at suitable intervals are the laterally extended arms 26, and secured on each arm is a spring contact plate 27 having yielding divergent arms. These arms 26 and their contact plates may extend from one or both sides of the chain links as exigencies require, both forms being illustrated in Fig. 5. Certain other links of the chain 25 are provided with lugs 28 for purposes herein-after made clear.

Fixed in stationary positions on both the outer and inner sides of the frame 19, I have arranged a number of contact plates 29. These plates are arranged in pairs, one above the other and are so positioned that as the chain 25 passes between them, the contact plates 27 thereof will engage both of the contact plates 29. The set of plates 29 on the front of the sign will be engaged by the contact plates 27 on one side of the chain, while the corresponding set of plates 29 on the rear of the frame 19 will be engaged by the contact plates 27 on the other side of the chain. I provide one pair of contact plates 29 for each letter on the upper row of the illuminated sign, and a second pair of contact plates 29 for each letter on the lower row. In addition to the devices before described, I provide a stationary contact plate 30 above the lower portion of the chain 25 and a hinged contact plate 31 below the lower portion of said chain. This hinged contact plate 31 is yieldingly held by a spring 32 at

its forward limit of movement slightly spaced apart from the plate 30.

Fixed to the frame 19 adjacent to one end of the plate 31 is an electric contact pin 33, so positioned that the plate 31 will be in contact with it when in its elevated position and will be moved out of contact with it when in its lowered position. The lugs 28 on the chain 25 are so arranged that when the chain is passing through between the plates 30 and 31, said lugs will hold the lower plate 31 in position where it will not be in contact with the pin 33.

The electrical arrangement of my invention is clearly illustrated in the diagram shown in Fig. 4 in which the dynamo is indicated by the numeral 13. Connected with the dynamo is a service wire 34 and this service wire is connected with one of the plates 29 of each pair. The other plate of each pair is connected to a wire 35 which wire is connected in series with each of the incandescent lamps 36 of one of the letters, which said lamps are arranged to form. The other end of the wire 35 is connected to a return wire 37 which leads to the dynamo. The circuit breaking device comprising the plates 30 and 31 is connected to the service wire 34, hence, whenever said plate 31 is lowered all of the current will be cut off and when it is elevated all of the lamps will be illuminated on those letters in which the contact plates 29 are electrically connected with each other by means of the contact plates 27.

In practical use and assuming that the first pair of contact plates 29 to the right are electrically connected with the incandescent lamps that form the first letters to the left of the advertising sign, then when the first pair of contact plates 27 engage the contact plates 29, the first letters to the left of the sign will be illuminated. As the chain 25 continues to move, each pair of letters to the right of those first illuminated will in turn be illuminated. In the event that there are more letters in one line than in the other, then a link is placed in the chain containing only one of the contact plates 27, as shown in Fig. 5. I provide on the chain 25, enough of the contact plates 27 to keep the first letters to the left illuminated until such time as all of the other letters have been illuminated, hence, for a short time all of the letters in the sign will be illuminated. I arrange the contact plates 30 and 31 so that a short time after all of the letters in the sign have been illuminated, one of the lugs 28 thereon will engage the plate 31 and force it downwardly and thereby shut off the current. This will continue as long as any of the lugs 28 are in position between the plates 30 and 31.

One of the important advantages in connection with the use of my invention is that

the chain 25 may be made with detachable links and a number of links having two pairs of contact plates 27 may be provided, a number of links having one pair of contact plates 27 may also be provided and a number of links having lugs 28 may be provided. With this arrangement it is obvious that signs may be made containing any desired number of letters and then links may be used in the chain for the purpose of successively illuminating said letters in the manner before described, so that the only change to the electrical apparatus necessary in adapting the device for signs having different numbers of letters is the placing of proper links in proper positions upon the chain. All of the other parts may be permanently connected and need not be changed.

I claim as my invention:

1. In a device of the class described, the combination of a frame, a number of sets of incandescent electric lamps on the frame, a source of electrical supply and a return circuit, a pair of stationary contact plates for each set of lamps, one of said plates being electrically connected with the source of supply, and the other being connected through said lamps to the return circuit, an endless chain, means for advancing said chain between said pairs of stationary contact plates, and a number of pairs of contact plates carried by the chain and designed, when passing between the pairs of stationary contact plates, to electrically connect the stationary contact plates and thus establish a circuit between them.

2. In a device of the class described, the combination of a frame, a number of sets of incandescent electric lamps on the frame, a source of electrical supply and a return circuit, a pair of stationary contact plates for each set of lamps, one of said plates being electrically connected with the source of supply, and the other being connected through said lamps to the return circuit, an endless chain, means for advancing said chain between said pairs of stationary contact plates, and a number of pairs of contact plates carried by the chain and designed, when passing between the pairs of stationary contact plates, to electrically connect the stationary contact plates and thus establish a circuit between them, said contact plates on the chain being detachable.

3. In a device of the class described, the combination of a frame, a number of sets of incandescent electric lamps on the frame, a source of electrical supply and a return circuit, a pair of stationary contact plates for each set of lamps, one of said plates being electrically connected with the source of supply, and the other being connected through said lamps to the return circuit, an endless chain, means for advancing said chain between said pairs of stationary con-

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tact plates, and a number of pairs of contact plates carried by the chain and designed, when passing between the pairs of stationary contact plates, to electrically connect the stationary contact plates and thus establish a circuit between them, and means actuated by the chain for interrupting the circuit from the source of electrical supply.

4. In a device of the class described, the combination of a frame, a number of sets of incandescent electric lamps on the frame, a source of electrical supply and a return circuit, a pair of stationary contact plates for each set of lamps, one of said plates being electrically connected with the source of supply, and the other being connected through said lamps to the return circuit, an endless chain, means for advancing said chain between said pairs of stationary contact plates, and a number of pairs of contact plates carried by the chain and designed, when passing between the pairs of stationary contact plates, to electrically connect the stationary contact plates and thus establish a circuit between them, and means actuated by the chain for interrupting the circuit from the source of electrical supply, said means comprising a stationary plate above the chain, a hinged plate below it, the latter plate being connected to form a terminal of the circuit, a pin in position to be engaged by said plate when the latter is elevated said pin being connected to form the other terminal of the circuit and a lug carried by said chain and designed to engage the hinged plate and force it out of contact with the pin, for the purposes stated.

5. In a device of the class described, the combination of a frame, a number of sets of incandescent electric lamps on the frame, a source of electrical supply and a return circuit, a pair of stationary contact plates for each set of lamps, one of said plates being electrically connected with the source of supply, and the other being connected through said lamps to the open circuit, an endless chain, means for advancing said chain between said pairs of stationary contact plates, and a number of pairs of contact plates carried by the chain and designed, when passing between the pairs of stationary contact plates, to electrically connect the stationary contact plates and thus establish a circuit between them, and means actuated by the chain for interrupting the circuit from the source of electrical supply, said means comprising a stationary plate above the chain, a hinged plate below it, the latter plate being connected to form a terminal of the circuit, a pin in position to be engaged by said plate when the latter is elevated, said pin being connected to form the other terminal of the circuit, and a lug carried by said chain and designed to engage the hinged plate and force it out of

contact with the pin, and a spring for yieldingly holding the hinged plate in position adjacent to the chain.

6. In a device of the class described, the combination of a frame, an endless chain arranged to travel longitudinally of the frame, a series of pairs of stationary contact plates supported by said frame on each side of said chain, a series of incandescent electric lamps for each pair of contact plates, means for electrically connecting one of the plates of each pair of contact plates with one of the series of incandescent lamps, a number of spring contact plates carried by the chain and designed to engage with the stationary contact plates at one side thereof, a number of similar contact plates carried by the chain and arranged to engage with the contact plates at the other side thereof, and means actuated by the chain for automatically interrupting the electric circuit.

7. In a device of the class described, the combination of a frame, an endless chain arranged to travel longitudinally of the frame, a series of pairs of stationary contact plates supported by said frame on each side of said chain, a series of incandescent electric lamps for each pair of contact plates, means for electrically connecting one of the plates of each pair of contact plates with one of the series of incandescent lamps, a number of spring contact plates carried by the chain and designed to engage with the stationary contact plates at one side thereof, a number of similar contact plates carried by the chain and arranged to engage with the contact plates at the other side thereof, and means actuated by the chain for automatically interrupting the electric circuit, said means comprising a hinged plate adjacent to the chain and connected to form a terminal of the circuit, a spring for yieldingly holding said plate toward the chain, a lug carried by the chain for forcing the hinged plate away from the chain, a stationary contact point connected to form the other terminal of the circuit and designed to be engaged by said hinged plate when the latter is in position adjacent to the chain and to be disconnected therewith when the hinged plate is moved away from the chain.

8. In a device of the class described, a frame, a number of sets of electric lamps on the frame, a source of electrical supply, a pair of stationary contact plates for each set of lamps, the said plates being in the circuit between the lamps and the source of supply, an endless chain, means for advancing said chain between said pairs of contacts, a plurality of pairs of contacts carried by certain links of the chain, and single pairs of contacts carried by other links of the chain, all of the contacts being designed, when passing between pairs of the contact plates, to electrically connect the same.

9. In a device of the class described, a frame, a number of sets of electric lamps on the frame, a source of electrical supply, a pair of stationary contact plates for each set of lamps, the said plates being in the circuit between the lamps and the source of supply, an endless chain, means for advancing said chain between the pairs of stationary contact plates, the links of the chain being capable of disconnection, a plurality of pairs of contacts carried by certain of the links, and single pairs of contacts carried by other links of the chain, all of the contacts being designed, when passing between pairs of the contact plates, to electrically connect the same.

Des Moines, Iowa, July 16, 1908.

GEORGE T. KELLY.

Witnesses:

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E. CARROLL KELLY.