

A. S. GIBBS.
ELECTRICAL FLASHER.
APPLICATION FILED DEC. 21, 1908.

977,294.

Patented Nov. 29, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

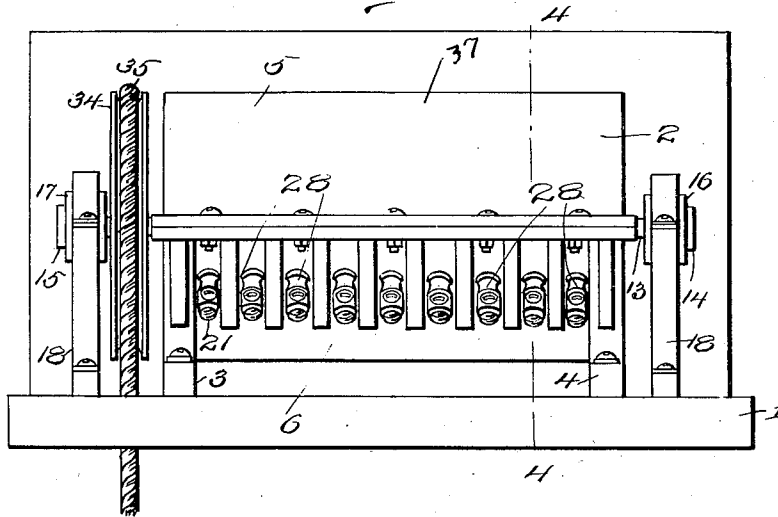
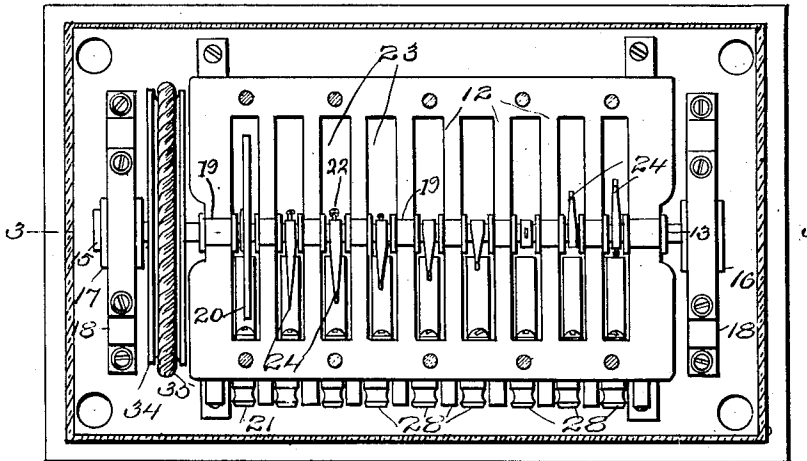


Fig. 2.



Inventor

Witnesses
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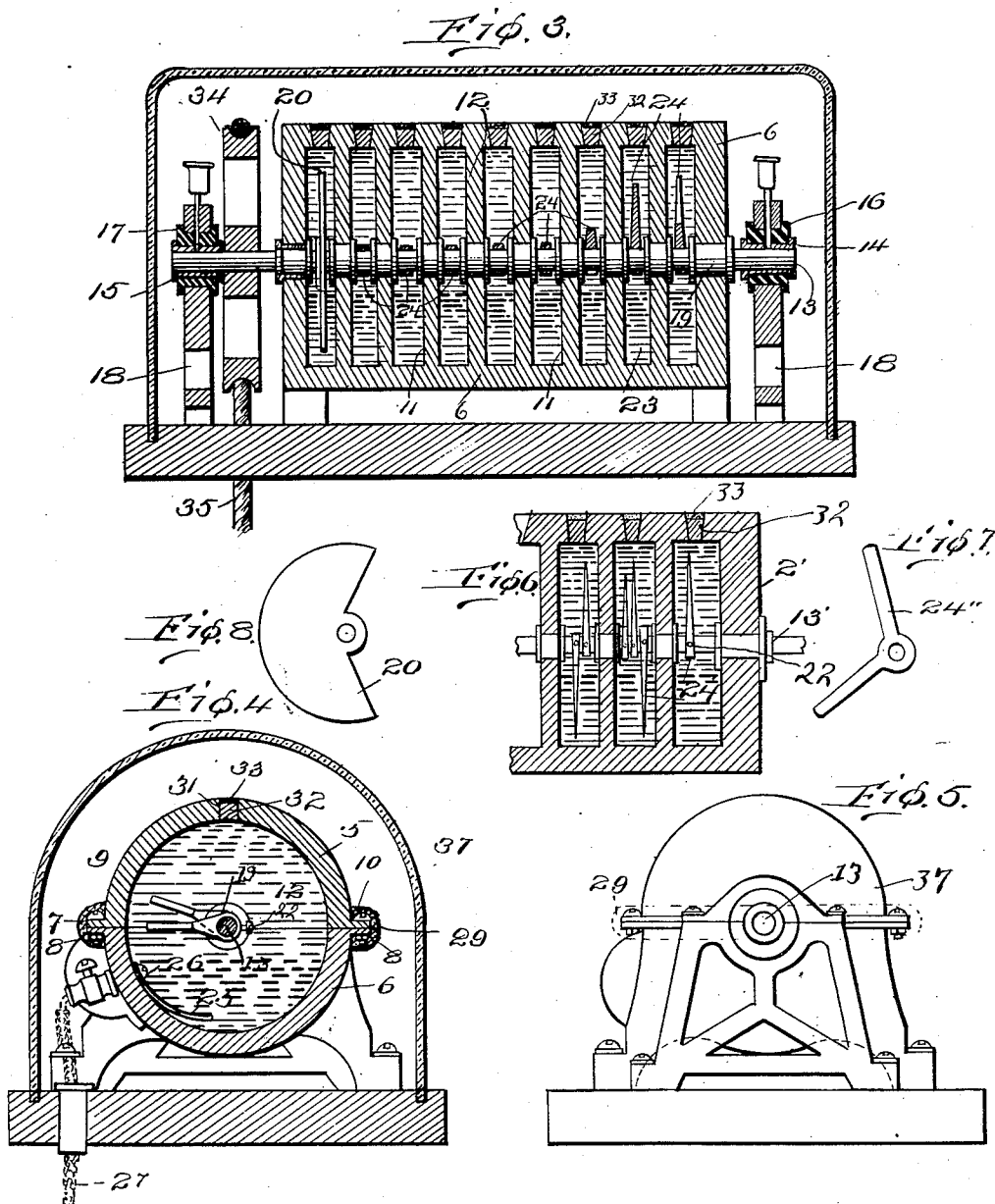
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By Messrs. Farnick & Lawrence
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UNITED STATES PATENT OFFICE.

ARTHUR SYLVESTER GIBBS, OF SCRANTON, PENNSYLVANIA.

ELECTRICAL FLASHER.

977,294.

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Application filed December 21, 1908. Serial No. 468,593.

To all whom it may concern:

Be it known that I, ARTHUR SYLVESTER GIBBS, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Electrical Flashers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in means for automatically lighting and extinguishing electric lamps, and relates particularly to improved means for lighting and extinguishing electric lamps in signs so as to give any desired effect to the signs.

The object in view is the provision of means that is in effect an electrical switch which is so formed as to turn on and off the lamps in an electrical sign altogether or at various times in any desired order as may be desired.

Another object in view is the provision of an electric switching arrangement known as a flasher having a housing through which a shaft is passed that has adjustably secured thereto a plurality of points of contacts for completing an electrical circuit when brought to a predetermined position, the shaft and the contact points being insulated so as to cause current to flow only when the contact points are properly manipulated.

A further object in view is the provision of a switching device arranged with a cylindrical housing adapted to contain a liquid metal, as mercury, and to accommodate a plurality of points arranged to engage the mercury when rotated for completing a circuit, the contact points being connected to one side of the circuit and the mercury to the other side so that the circuit will be complete upon the contact of the contacts and mercury.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a side elevation of a complete machine, the wire connections and the power for rotating the moving parts of the machine being removed. Fig. 2 is a top plan view of the structure shown in Fig. 1, partly in section,

with the upper portion of the housing removed. Fig. 3 is a longitudinal section through Fig. 2 approximately on line 3—3. Fig. 4 is a section through Fig. 1 approximately on line 4—4. Fig. 5 is an end view of the machine with the housing removed. Fig. 6 is a detail fragmentary sectional view of a slightly modified form of contact points. Fig. 7 is a detail view of another modified form of contact point. Fig. 8 is a further modified form of contact point.

In order that the invention may be more clearly understood an embodiment of the same is shown in the accompanying drawings in which—

1 indicates a base plate preferably of slate upon which is mounted a cylindrical member or housing 2 that is provided with feet 3 and 4. The feet 3 and 4 are secured to base 1 by any desired means as for instance screws or bolts so as always to be firmly held in position regardless of the position of the base plate. The housing 2 is preferably formed in two parts 5 and 6, part 5 being formed with flanges 7—7 and part 6 being formed with flanges 8—8 that are secured together by any desired means, as for instance bolts 9 and 10. The housing 2 is formed of some good insulating material that will not readily deteriorate, preferably of porcelain or glass molded into proper shape, the various parts being all molded in one continuous piece, that is part 6 and associated details being molded in one piece and part 5 and associated details in one piece, and the two pieces secured together as set forth. Within part 6 are a plurality of division-plates or partitions 11 and within part 5 are a plurality of division plates or partitions 12 the partitions registering as clearly seen in Fig. 3 so as to form a plurality of chambers within housing 2. Passing through housing 2 centrally thereof is a metallic shaft 13 which rests in metallic bearings 14 and 15. The bearings 14 and 15 are supported by insulating bushings 16 and 17 that are made from any desired insulating material, preferably some good quality of fiber. The bushings 16 and 17 are supported by standards 18—18 which may be made from any desired material. The shaft 13 extends centrally through housing 2 but does not come in contact therewith as the same is provided with a plurality of spool shaped bearings 19 that engage the ends of parts 5 and 6 and also engage each of the partitions 11 and 12. The engage-

ment between the spool shaped bearings 19 and the parts 5 and 6 is such as to provide a tight joint. The shaft 13 passes through these spools and fits the same snugly but sufficiently loose for easy rotation. Connected with shaft 13, preferably near one end thereof, is a contact member 20 that is formed in the shape of a disk which is formed to act as a continuous contact with the circuit connected with binding post 21. The shaft 13 has secured thereto in each chamber one or more contacts 24 that are secured in position by adjustable means such as screws 22 and may be adjusted so as to contact with mercury 23 positioned in the respective chambers in housing 2 all at one time, successively, or in any predetermined sequence. As will be evident the contacts 24 mounted in the chambers or housing 2 may be adjusted for contacting with mercury 23 in any desired sequence but contact 20 will be in contact with mercury 23 in the particular chamber in which that contact is located at all times. The mercury 23 is arranged at any desired depth in the various chambers and may be arranged at the same depth in all the chambers or various depths as occasion may require for permitting the contacts 24 to engage the same sooner or later. By the provision of partitions 11 the mercury in the various chambers is separated and consequently act independently. In each of the chambers is provided a spring contact 25 that stands out a short distance from the bottom of the chamber for permitting the mercury to engage both sides of the same and this increases the contact. Spring contacts 25 are connected by a screw 26 to a binding post on the outside of part 6 of housing 2. To each of the binding posts is secured a wire 27 that extends or is connected with one side of one or more lamps that are to be controlled while the opposite side of the lamp is connected with binding post 21 and contact 20. From this it will be observed that all of the lamps are connected with binding post 21 on one side, and each of the binding posts 28 are connected to the opposite side of independent lamps so that when any of the contacts 24 are in engagement with the mercury current will flow from a source of power through binding post 28, contact 24, shaft 13, contact 20, binding post 21, through the circuit including the lamp, and from thence back to the source of power.

In assembling the flasher the standards 18—18 are secured to base 1 by any desired means, as for instance bolts. After all the contacts have been placed in position and spools 19, the two parts 5 and 6 are secured together and then mercury is passed into the respective chambers through openings 31 that are preferably conical in shape until the various chambers are filled to the de-

sired extent, none of the same being filled sufficiently full to come in contact with any of the spools 19. After the mercury has been placed in the respective chambers oil is then introduced into the respective chambers until the same are substantially if not entirely full, and suitable stoppers 32 placed in openings 31, the beveled or conical shaped construction of the openings preventing the passage of the stoppers entirely through the openings. However, the stoppers 32 are sufficiently far into the openings to permit the application of a quantity of sealing material, preferably wax 33 above the stopper so as to prevent escape of the mercury. After the housing 2 and connected parts have been thus assembled a pulley 34 of insulating material, preferably fiber is secured to shaft 13, and then shaft 13 is mounted upon standards 18—18. Suitable oil cups are provided for keeping the shaft 13 lubricated at the point of contact with bearings 14 and 15, while the oil in the housing will keep the various spools 19 lubricated so that there will be substantially no friction during the operation of the device. Pulley 34 is connected by a belt or cable 35 to any desired kind of power not shown for rotating shaft 13. If desired, of course, the shaft 13 could be geared or connected directly with the power. In such instance, however, one of the gearing or the direct coupling must be made from insulating material so as to insulate shaft 13 from possible short circuiting.

In Fig. 6 will be observed a housing 2' similar in all respects to housing 2, and will therefore need no further description. In this housing is arranged a shaft 13' to which is secured a plurality of contacts 24'. The contacts 24' are arranged either singly in the chambers or in groups of two or more so as to maintain in a lighted condition any of the particular lamps for a greater or less amount of time. When a single contact is used the lamp is lit only during the time that the particular contact is in engagement with the mercury. When there are two or more contacts used in the same chamber the same may be arranged so that when one contact is about to leave the mercury bath the other contact will be entering, and in this way cause the circuit to remain closed for a longer time than if only one contact were used. By using a plurality of contacts in the chamber the same may be arranged for varying the time that the lamps are lighted and by the adjustment of the various contacts the sequence or succession in which the lamps are lighted may be varied to suit various occasions. In connection with using a plurality of contacts for continuing the lamp lighted for a greater length of time than one contact would cause the same to remain lighted, a double armed con-

tact 24'' may be used or a parti-disk shaped contact 20' may be used. In connection with these contacts and also the contacts 24 of the preferred structure it will be observed
 5 that the same are small bars or lugs and do not make contact by the ordinary frictional pressure of one metal against the other, but depend upon contact with a liquid adapted to carry a current for completing the cir-
 10 cuit.

In arranging the flasher the contacts may be arranged in any desired way as occasion may require for giving to the sign various effects as, simply flashing the lights on and
 15 off or causing the lights to be flashed on and off in such a manner as to give the effect of a snake moving over the sign, spelling words, or the like. In arranging the binding posts 28 and 21 the same are separated by extensions
 20 36 which are formed integral with part 6, and by their position thoroughly insulate and separate the respective binding posts from each other. In mounting the flasher the same may be positioned on the wall,
 25 floor, or other place as may be desired, and by the cylindrical construction, together with the arrangement of contacts and associated parts, will perform its functions without any change. A covering 37 preferably
 30 of glass is used for permitting free inspection or view of the flasher, and yet protect-

ing the same against water, and also from any foreign matter coming in contact with the parts carrying the current.

What I claim is:

In an electrical flasher, a base, a housing
 35 connected with said base and divided into parts along a central line parallel with the base, means for securing the parts of said housing together, a shaft passing through
 40 said housing in the plane of said central line, a plurality of partitions arranged in said housing for forming a plurality of chambers, a mercury bath for each of said chambers,
 45 a contact member secured to said shaft in one of said chambers and arranged to continuously contact with the mercury therein, contacts secured to said shaft and positioned
 50 in each of the remaining chambers and designed to be brought into contact with the mercury bath in the respective chambers when said shaft is rotated, a contact member
 55 for each of said chambers contacting with the respective mercury baths and extending through said housing and means for rotating said shaft.

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

ARTHUR SYLVESTER GIBBS.

Witnesses:

JOSEPH GIBBS,

HERBERT L. WILLIAMS.