July 10, 1923. 1,461,047

J. L. RAY

ADVERTISING SIGN

Filed May 25, 1920

Fig. 1.

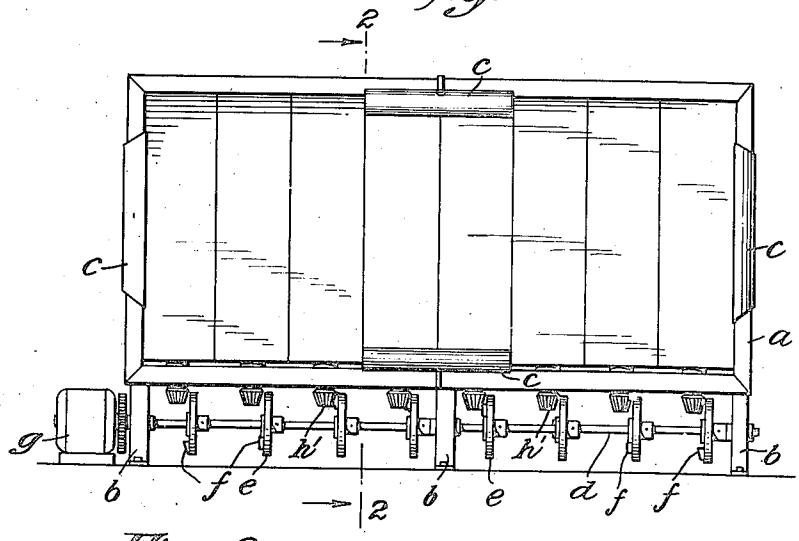


Fig. 2.

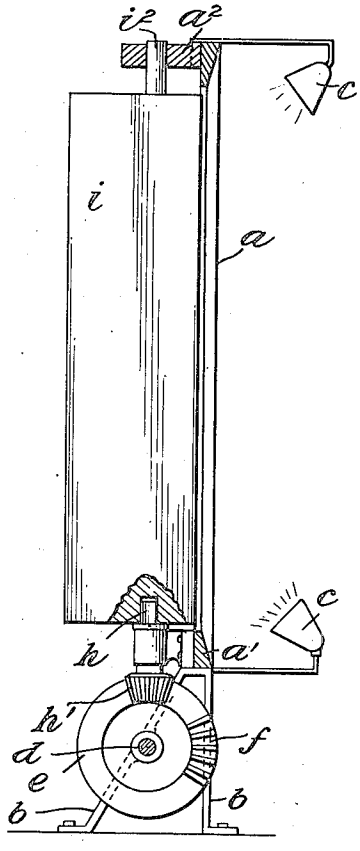


Fig. 3.

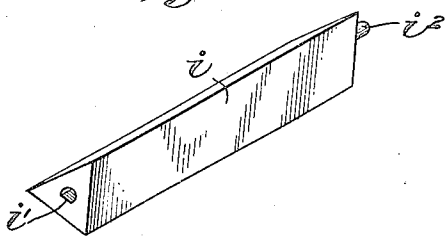
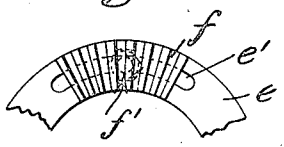


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH L. RAY, OF SOUTH ORANGE, NEW JERSEY.

ADVERTISING SIGN.

Application filed May 25, 1920. Serial No. 384,103.

To all whom it may concern:

Be it known that I, JOSEPH L. RAY, a citizen of the United States, residing in the town of South Orange, in the State of New Jersey, have invented certain new and useful Improvements in Advertising Signs, of which the following is a specification, reference being had to the accompanying drawing, forming a part hereof.

Advertising signs, as developed to date are generally of one of two types. The most usual type, of course, is the billboard, the surface of which carries a poster or is painted. More recent developments in advertising signs have led to the electric sign which is made up of many bulbs, usually adapted to be flashed on or off selectively to attract the eye of the observer. Both of these usual types of signs are permanent in the sense that the posted or painted matter, put on at great expense, is intended to remain in place until entirely and permanently obliterated and new matter applied to the board by a sign poster or painter. The electric sign is also of a permanent character in the sense that the electric connections and controls for the various bulbs are so coordinated as to carry the desired message and when once so co-ordinated, carry the repeated message until a complete rearrangement of connections and controls is established by a skilled electrician. The billboard system of advertising is open to the objection of initial expense with no latitude for change until such expense is duplicated by a posting or painting of new matter. It is open to the further objection that, being stationary, it does not catch the eye of the casual observer as do the "animated" or moving signs. Again, the message carried is limited by the available space and the necessary size of the lettering.

Electric signs as developed to date are open to the objection of great initial cost by reason of the skill required in properly installing and connecting the electrical units in proper co-ordination to the controller, and to the further objection that when once so wired up, they are intended to remain of a permanent character repeating the same message indefinitely until a further great expense is gone to in entirely changing the installation according to the new advertisement to be presented. Again, electric signs have this disadvantage as compared to a billboard sign, that they will not catch the eye in daylight since the advertising matter is intended to be entirely delineated by illuminated bulbs.

The present invention has for its principal object to provide in practical form an advertising sign which shall have embodied therein all of the advantages of billboard and electric signs without having any of the limitations thereof. A further object is to provide an advertising sign which shall be made up of a series of movable units which can be readily mounted in a permanent frame constructed to receive them and readily removed from that frame for the purpose of replacement by other units carrying other advertising matter. A new method of changing advertising signs is provided for in accordance with the invention in that a permanent frame with all of the actuating elements may be erected at a desired point and a multi-face sign provided therein by the insertion of the several component prismatic units. By the rotation of these units three solid faced display boards may be created. The method goes further and provides for advertising service in the changing of the advertising matter in any given frame by the ready removal and replacement of one set of component units by another set. A further object is to provide a sign of the character described which shall include a plurality of units movable in any desired sequence to build up or to move, before the eye, the advertisement to be displayed. Still another object is to associate with such sign a prime mover adapted to be connected operatively at time intervals with the component units of the sign and in predetermined sequence for the purpose of actuating said units in such a manner as to bring before the eye successively a series of advertisements.

There is illustrated in the accompanying drawing, in somewhat schematic form, a simple but practical embodiment of the invention. In the drawing—

Figure 1 is a view in front elevation of the improved sign.

Figure 2 is a view in vertical section through the sign shown in Figure 1, taken along the plane indicated by the line 2—2, and looking in the direction of the arrows.

Figure 3 is a detail view in perspective of one of the component units of the sign.

Figure 4 is a fragmentary detail view of

the adjustable interrupted driving gear for the component units.

In the preferred embodiment it is proposed to erect, at any point where an advertising sign is desired, a permanent frame indicated at *a*, supported on suitable standards *b* and preferably carrying at suitable points illuminating devices *c* of any approved character. In the supporting standards *b* for the frame, or in any other desired relation thereto, is supported a rotatable shaft *d* on which may be keyed a series of gear wheels *e* on each of which is bolted a gear segment *f*. The segment *f* may be carried by a bolt *f'* adapted to be moved adjustably in a segmental slot *e'* cut in each of the wheels *e*. The shaft *d* is geared operatively to a prime mover *g* by which rotation is imparted to each of the gear wheels *e*.

In one of the rail members of the frame *a* (in the illustrated embodiment the lower rail *a'*) there are journaled a plurality of stub shafts *h*, the lower ends of each of which have keyed thereon bevel pinions *h'*. The upper ends of each of the shafts *h* extends above the upper edge of the rail member *a'* and is of irregular cross-sectional form as indicated in section in Figure 3.

In the proposed sign it is contemplated, according to the illustrated embodiment, to set up all of the parts thus far described in substantially the relationship pointed out and then mount removably within the frame a plurality of revoluble prismatoidal sections *i* on the three faces of each of which will be displayed a portion of the advertisements. The invention is not to be limited to the particular construction of such section, but as shown in Figures 2 and 3 it will be convenient to form in one end thereof a recess *i'* to receive the upper end of the stub shaft *h*, this recess being of the same irregular cross-sectional form as the shaft so as to bring the section *i* into driving relation thereto when the shaft is within the recess. The other end of the section *i* may carry thereon a trunnion i^2 which may pass through a bearing piece a^2 carried with the frame *a* when the section *i* is mounted within the frame.

The description thus far given has been of the illustrated form only and has been made with some brevity, but it is to be understood that the invention is in no sense limited to the particular construction and relation of the parts described. A description of the character of the sign when in use will serve to emphasize the degree of latitude possible in the construction of the elements without losing the effects to be produced by carrying out the inventive thought. It is proposed that a series of sections *i* of prismatic form and preferably of convenient size for shipping and handling, will be painted or posted on their three faces with such matter as will carry the desired message when the proper faces of such a group of sections are exposed to view. Such a group of sections will be mounted in a frame, such as *a*, by passing each of the trunnions i^2 through the bearing piece a^2 and then dropping the recess *i'* of each section on to the corresponding stub shaft *h* provided for it. When a co-related group are thus brought together it is proposed that their exposed faces will lie in the same plane and the matter thereon will bring to view one complete message. The sections are so mounted on the shafts *h* that when the exposed faces are in this relation the edges of the sections will be in close proximity so as to give the appearance of an unbroken billboard. With the parts in this relation the segmental rack *f* of each of the wheels *e* will be adjusted angularly on the wheel so as to engage the corresponding bevel pinion *h'* on the corresponding stub shaft *h* at the desired instant upon rotation of the shaft *d* and thereby rotate the engaged pinion *h'* to the desired extent and revolve its section *i* through a predetermined number of degrees, a movement of 120° serving to bring another face of the section into display position. If desired, the racks *f* may be so adjusted on all of the wheels *e* as to rotate all of the sections simultaneously, thereby bringing new faces of the sections into display position simultaneously and changing the display sign from one message to another. On the other hand, if desired, the racks *f* on the different wheels *e* may be adjusted so as to engage the respective bevel pinions *h'* in any desired sequence, so as to revolve the different sections *i* in predetermined sequence and give a "fade-away" effect in dissolving one message and building up another message before the eyes of the observer.

From the description given it will be evident that the improved sign has all of the advantages of an ordinary billboard sign in that it is effective both day and night. It also has greater advantages than the electric sign in that it gives animated or moving effects not only in the night when illuminated, but in the day as well. It is more satisfactory than either of these types of sign in that the component sections can be readily removed and replaced by other sections thereby permitting the advertising matter to be changed readily with great frequency and at little expense. The method proposed enables advertising service to be furnished for billboard signs through the ready replacement in a permanent frame of one set of units with another set of units having different advertising matter thereon. It also has the advantages of an electric sign in that it becomes possible to display in a given area a series of different messages

the changing of which will, of course, attract the eye.

So far as concerns the mechanical details it will be evident that the sections *i* which are mounted in parallel relationship may be either disposed vertically or horizontally. It is also evident that other means, not only mechanical but electrical as well, might be employed to bring about the desired sequential rotation of the prismatic sections and presenting them in a flat surface over the entire sign.

The scope of the invention will appear from the appended claims.

I claim as my invention:

1. An advertising sign comprising a plurality of parallel rotatable prismatic sections, means to support the sections with one set of faces lying in a plane and the proximate edges of such faces in juxtaposition, means to rotate said sections periodically in predetermined sequence with respect to each other to bring another set of faces into said plane, and means to vary the sequential rotation of said sections to produce a fade-away effect.

2. As an article of manufacture, a display unit of prismatic form having three rectangular display faces each one of which constitutes a component part of a complete advertising sign and carries display matter, the faces of the unit being all of substantially the same area, and means carried on the opposite ends of the unit to support it removably in driving engagement with a shaft.

This specification signed this 21st day of May, A. D. 1920.

JOSEPH L. RAY.