No. 832,445. PATENTED OCT. 2, 1906.

W. R. F. AVERY & H. J. PEARCE.

SIGN AND ADVERTISING DEVICE.

APPLICATION FILED DEC. 12, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

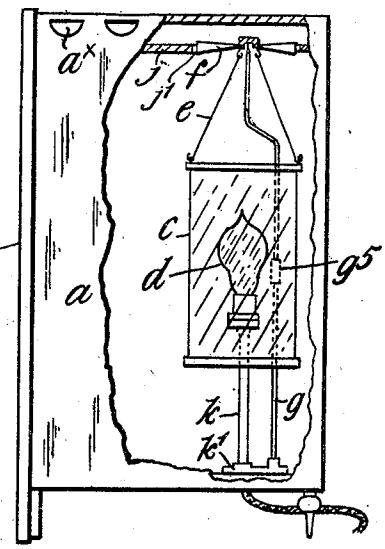


Fig. 2.

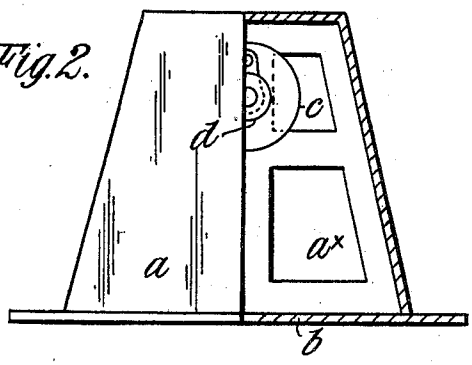
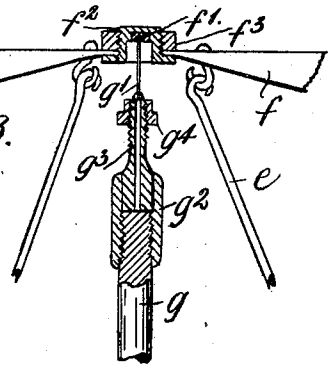


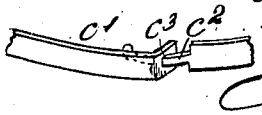
Fig. 3.



Witnesses:

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Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 4.

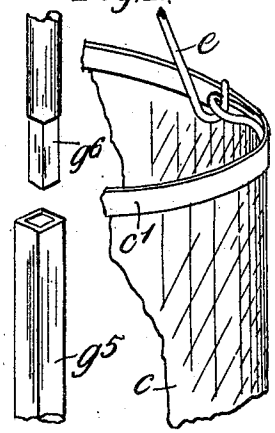


Fig. 7

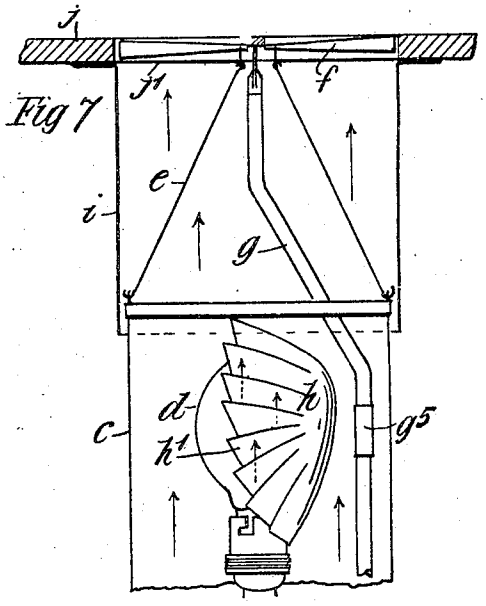
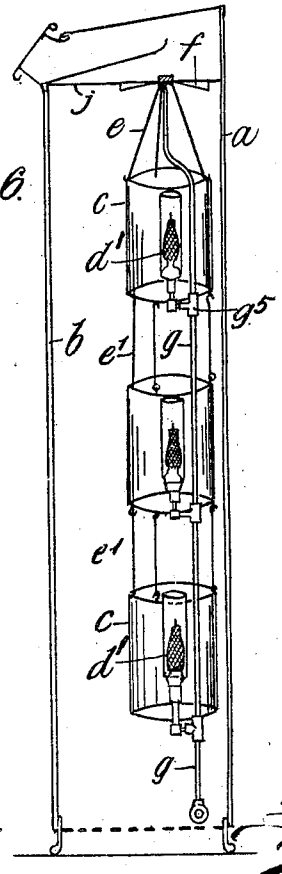


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM ROBERT FREDERICK AVERY AND HENRY JAMES PEARCE, OF LONDON, ENGLAND, ASSIGNORS OF ONE-HALF TO CHAMELEON SIGNS LIMITED, OF LONDON, ENGLAND, AND ONE-HALF TO DYSON WESTON.

SIGN AND ADVERTISING DEVICE.

No. 832,445. Specification of Letters Patent. Patented Oct. 2, 1906.

Application filed December 12, 1905. Serial No. 291,466.

To all whom it may concern:

Be it known that we, WILLIAM ROBERT FREDERICK AVERY, merchant, residing at 318 Dashwood House, New Broad street, E. C., and HENRY JAMES PEARCE, sign manufacturer, residing at 116 Devonshire Road, Forest Hill, S. E., in the county of London, England, subjects of the King of Great Britain, have invented certain new and useful Improvements in Signs and Advertising Devices, of which the following is a specification.

These improvements relate to signs and advertising apparatus in which a revolving colored lantern or cylinder is rotated by means of a horizontal fan or vane actuated by a current of warm air rising from the illuminant.

The present invention has reference to means for obtaining a better rotative effect with the extremely small power available, especially where an electric lamp is the illuminant.

To this end the invention has reference to the combination of an improved construction of jewel-and-needle suspension device, bearing, or pivot with the revolving part of the apparatus whereby the latter turns on a very fine needle-point, so that it can be more easily operated by an extremely light current of warm air than in the previous arrangement, a feature being that the said bearing can be easily taken to pieces for clearing or adjustment, or for replacing either the needle or the jewel in case of wear.

The invention further has reference to means for increasing the power or rotary efficiency of the current of air by concentrating it upon the fan or vane device.

The invention also relates to the manufacture of the revolving part in such a way that it is extremely light, and therefore requires less power for driving it.

In order that the invention may be more clearly understood and readily carried into effect, we will proceed to describe the same more in detail by aid of the accompanying drawings, in which—

Figure 1 is a general side view or elevation of an advertising lamp or sign constructed in accordance therewith, showing the general arrangement of the main parts. Fig. 2 is a plan view of the same, partly in horizontal section. Fig. 3 is an enlarged detail view of the improved jewel and needle bearing or pivot. Fig. 4 is a similar view of part of the lantern or screen together with the socket or joint for the supporting arm or pillar. Fig. 5 illustrates the expansion arrangement. Fig. 6 illustrates the arrangement applied to a series of superposed lanterns or revolving screens. Fig. 7 illustrates to a larger scale the means for increasing the power of rotation, these not being shown in Fig. 1 for the sake of clearness.

Referring more particularly to Figs. 1 and 2, it will be seen that the advertising device comprises an outer inclosing casing *a*, forming a protection against wind or drafts and having ventilation-holes $a^{\times}$ at its top and bottom.

b is a semitransparent or translucent front or luminous advertising surface on which color effects are thrown by a revolving lantern or screen *c*, within which is an electric lamp *d* or other suitable illuminant. The said lantern or screen is made of gelatin or the like and is only just large enough to conveniently inclose the lamp, so that it is very small, approximating to the size of the lamp, and it is thus very light and requires only the slightest force to turn it when provided with the suspension device referred to herein. It is suspended, say, by converging wires *e* from a fan or propeller *f*, worked by the hot air ascending from the lamp *d* and having its pivot at the top of the arm or stem *g*. The aforesaid suspension device, bearing, or pivot for the fan *f* is provided with a jewel *f'*, (see, Fig. 3,) preferably set in a metal cap or collar f^2, screwing into the center or hub f^3 of the revolving fan. This jewel rests upon a needle or the like *g'*, supported as follows: The tip of the arm or stem *g* is removable and fits in a screw-socket g^2, in which is inserted a split ring-holder or pin-vise g^3, gripping the said needle or spindle, which latter is of hardeend steel or other metal and is preferably an ordinary sewing-needle. The device g^3 can be tightened or loosened by a nut g^4 to permit of the ready adjustment or replacement of the needle or spindle to compensate for wear. The arrangement acts very efficiently in reducing friction and providing a light and delicate bearing on which the parts can turn freely.

To facilitate the taking to pieces and putting together of the arrangement, the arm or supporting rod or stem *g* is divided, Figs. 1

and 4, into, say, two parts or sections which can be fitted together by any suitable means, such as a socket g^5 on one part receiving a square or pin g^6 on the other part. When the hooks or hooked wires e are detached, the revolving screen or lantern c can be lowered to the bottom of the casing, and the upper section or part of the rod or stem above the socket g can then be taken off, thus leaving a clear space through which the revolving part or cylinder can next be removed sidewise after being lifted up again. This is to enable the apparatus to be taken apart or put together from or through the sides of the casing without requiring the top to be lifted off.

It will be readily understood that in many places where these signs are fitted it is difficult or impossible to take off the top to remove the revolving lantern or screen; but the arrangement above described enables this to be overcome, and the screen can be easily lifted off or replaced even if the frame be only very little higher than the rod or stem.

The use of a light material, such as gelatin, for the revolving screen necessitates the employment at each end thereof of a ring or frame c', in which the edges of the colored medium forming the screen are placed or from which the same can be hung. As such light material is very liable to expand or contract, each ring has a loose or sliding expansion-joint or any other suitable arrangement to permit of its responding to the expansion or contraction of the gelatin. The form shown is a simple plan consisting of a tail-piece c^2 on one end of the ring working in an aperture c^3, formed in the other end thereof, so that it can move in and out freely without allowing the ends to become actually disconnected.

When applying the invention to long vertical signs in which it may be necessary to place several lamps or lights superposed above one another, the screens or lanterns c are suspended from one another with connecting pieces or wires e', and the stem g is made up of several sections, as in Fig. 6. The uppermost lantern or screen is suspended from a single fan, just as in Fig. 1, and this fan upon revolving actuates the whole of the screens at any speed to which it may be set. In the example illustrated in Fig. 6 the sign is illuminated by incandescent gas-lamps d', carried by and supplied with gas from the stem g, which in this case is hollow or tubular.

In order to increase the rotative efficiency of the fan, the top of the casing a or a suitable inner or false top j is closed except at the part where the fan is situated, at which part it has a special aperture j', forming the warm-air outlet and just large enough to accommodate the said fan. In this way also the ascending air-current is concentrated on the fan, and more power is obtained. In some cases, especially where the illuminant is an incandescent electric lamp or lamps, we also provide a radiator consisting of a metallic shell or shield h, resembling in shape and size an ordinary metal reflector. This may be iron or other suitable material and is slit or cut radially into sections, vanes, or wings h', which may be enameled or otherwise blackened.

To further increase the power for driving the fan and to minimize the effect of high winds and currents of air on exposed signs, we place a cylinder of metal i above the revolving screen, thus forming a chimney, as it were, the bottom of the cylinder slightly overlapping the top of the screen and the top of the cylinder being level with or carried upward above the fan, if desired.

It will be seen that the gas-barrel or other support k for the illuminant, together with the arm g, carrying the revolving screen, are arranged on one and the same pedestal k', preferably of metal, which is so arranged and constructed that upon lifting it the entire apparatus can be removed intact and another substituted for it.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. In an advertising apparatus of the character described, a fan having a socket, a jewel within said socket forming a bearing, a lantern formed of transparent material suspended freely from said fan, a needle-point having engagement with the jeweled bearing, an adjustable holder for said needle, and a transparent inclosure for the lantern.

2. In an advertising apparatus, the combination of a fan, a jeweled bearing, a lantern suspended from said fan, having expansion-joints at its upper and lower edges, and a removable needle-point on which the parts revolve, substantially as described.

3. In an advertising apparatus of the class described, a casing having a revoluble fan mounted therein, said fan provided with a socket and a jeweled bearing, a lantern having expansion-joints suspended from said fan, an adjustable needle having contact with the jeweled socket for supporting the fan and the lantern, and means for supplying a luminosity to the lantern.

In testimony whereof we have hereunto set our hands, in presence of two subscribing witnesses, this 1st day of December, 1905.

WILLIAM ROBERT FREDERICK AVERY.
HENRY JAMES PEARCE.

Witnesses:
O. P. MACFARLANE,
C. BARNARD BURDON.