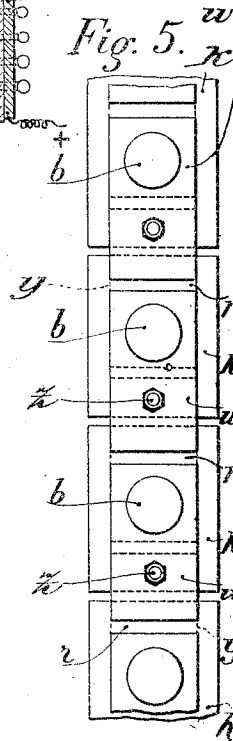
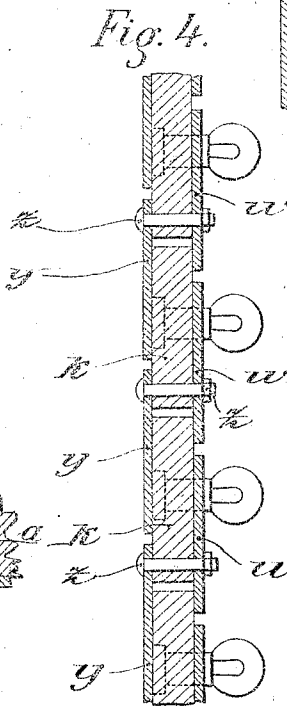
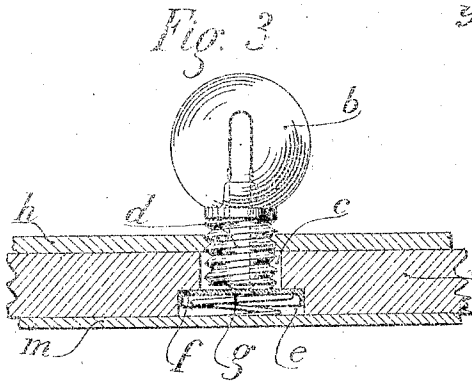
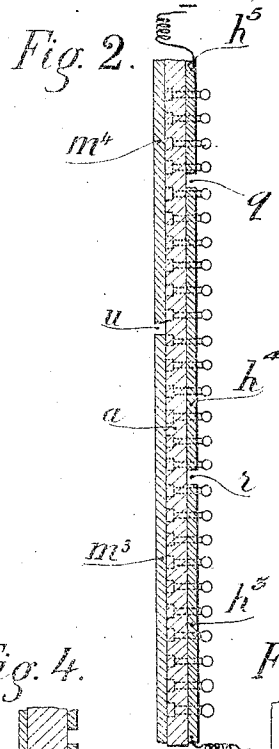
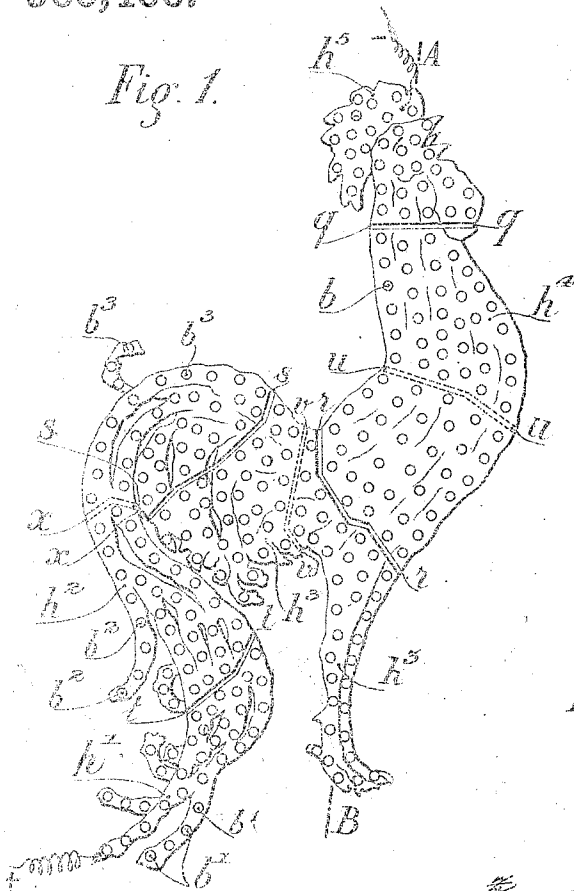


APPLICATION FILED JAN. 8, 1909.

960,466.

Patented June 7, 1910.



Wednesday
Pudoe
April 1891

- Inventor: Gustave Moen
by Frederick M. Hall
Attorney

UNITED STATES PATENT OFFICE.

GUSTAVE WEISSMANN, OF PARIS, FRANCE.

ILLUMINATING-BODY.

960,466.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed January 8, 1909. Serial No. 471,330.

To all whom it may concern:

Be it known that I, GUSTAVE WEISSMANN, a citizen of the French Republic, and resident of Paris, France, have invented certain new and useful Improvements in Illuminating-Bodies, of which the following is a specification.

The present invention relates to an improved device for the construction of electric illuminating bodies, such as signs, letters, words, figures, ornaments and the like, for the purpose of obtaining at little expense very elegant illuminating bodies comprising a very great number of lamps of low voltage and adapted to work with the ordinary current. The electric connections are arranged so that the extinction of any one of the lamps does not interfere with the proper working of the other lamps.

In the accompanying drawings a luminous sign, constructed according to the present invention is shown by way of example.

Figure 1 is a front view of the same; Fig. 2 is a section drawn on a larger scale on line A—B of Fig. 1; Fig. 3 is a cross section on a larger scale; Fig. 4 represents a modification; Fig. 5 is a front view of Fig. 4.

The sign, ornament, letter, figure, etc., to be represented, is cut out of a plate of insulating material and said plate *a* has as many holes *c* as there are lamps *b* required; the cap *d* of each lamp being fixed in its hole *c*. The holes *c* are enlarged at the rear ends and in said enlarged parts *e* caps *f* with spiral springs *g* are located.

According to the voltage *E* of the line and to the voltage *e* of the lamps which are used, said lamps are divided into $\frac{E}{e}$ groups,

the lamps being connected in each group in shunt and the groups being connected in series upon plate *a*. If *N* represents the total number of lamps *a* which have to constitute the luminous sign, each group will comprise $N \frac{e}{E}$ lamps.

In the example shown the current of the line is supposed to be of 112 volts and the lamps *a* of the normal voltage of 14 volts. The sign comprising 280 lamps, said lamps will be divided into 8 groups of 35 lamps each. To put said groups in series, a certain number of conducting plates *h'*, *h''* to *hⁿ* are mounted upon the upper face of plate *a*, said plates being separated by insulating spaces *t*, *s*, *r*, *q*. Each plate *h* serves to

carry the lamps of two groups, or 70 lamps *b*, for which purpose the plate has holes which correspond to the holes *c* and are threaded corresponding to the thread of the lamp-caps. The two end plates *h'* and *hⁿ* carry only the lamps of one group, or 35 lamps. Upon the lower surface of insulating plate *a* other conducting plates *m'* to *mⁿ* are arranged which are separated by insulating spaces *x*, *v*, *u* and which serve as supports for spiral springs *g* which through the intermediary of cups *f* insure the electric connection of each lamp *b'*. (See Fig. 3.)

The plates *m* serve each for 70 lamps and they are arranged so that the insulating spaces *i* and *n* of plates *h* and *m* do not coincide but alternate in such a manner that there are never more than 35 lamps between two consecutive insulating spaces (see Fig. 1). The current arrives, for example, by the lower end plate *h'*, flows through the first group of lamps *b'*, and so on, carried by said plate, to be conducted by means of the first of the plates *m* designated *m'* into the lamps *b''* of the second group, to flow through the plate *h''* to the lamps *b'''* of the third group and so on to flow out of the apparatus through the last strip *hⁿ*. Thus, if the current gets into one group of lamps by means of a plate *h* it will get into the two adjacent groups of lamps by means of plate *m*.

If a signboard is to be constructed, the sign to be formed can either be cut out of a plate of insulating material or it can be composed of several parts, said parts being connected in a convenient manner to form one insulating plate showing the shape of the sign to be represented.

For certain purposes it will be advantageous to be able to easily take to pieces the illuminating body, particularly if the same forms long rods; in this case the rod will be composed of a variable number of elements in each of which the lamps are connected in shunt. As shown in Figs. 4 and 5, the insulating plate *k* is composed of sections and the plates *w* and *y* of conducting material are equally made in sections, said sections being however slightly longer than those of the plate *k*. The conducting plates will be mounted so that, if plate *w* projects beyond one end of insulating plate *k*, plate *y* will project beyond the opposite end. Thus a rod or bar of any length can be formed by connecting the required number of elements. The elements will preferably

be connected by means of screw bolts z which are screwed through one section of insulating plate k and into one of the plates w or y belonging to said section of insulating plate k and into the section of the plate y or w respectively of the adjacent element. If the screw bolts z be thus arranged, the different elements will be connected in series.

It is evident that with the improved illuminating body letters, signboards, or very artistic luminous devices can be constructed; by using lamps of low voltage (14 or 10 volts for example) and of one candle-power there will be obtained without any practical inconvenience, an extreme division of the luminous intensity which is at the same time very economical and very advantageous with regard to the artistic effect.

I claim:—

- 20 Illuminating body comprising in combination a plate of insulating material which has the shape of the sign to be represented having a certain number of holes enlarged toward the rear end, the lamps fixed with
- 25 their caps in the holes of said plate of insulating material; plates of conducting ma-

terial upon the front surface of said plate of insulating material for connecting a certain number of lamps, so that all the lamps are divided into $\frac{E}{e}$ groups, plates of conducting material upon the rear face of the plate of insulating material for connecting the same number of lamps which are connected by the front plates, said rear plates being placed with regard to the front plates so that they connect two groups of lamps which, on the other hand, are connected by means of two adjacent front plates, a metal cup and a metal spring in each of the enlargements of the holes of the plate of insulating material for securely connecting the cup of the corresponding lamp with the rear plate of conducting material, substantially as described and for the purpose set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

GUSTAVE WEISSMANN.

Witnesses:

ALFRED FREY,
H. C. COXE.