

W. S. RYAN.
ELECTRIC ADVERTISING AND SIGNALING DEVICE.
APPLICATION FILED JULY 11, 1911.

1,017,172.

Patented Feb. 13, 1912.

Fig. 1.

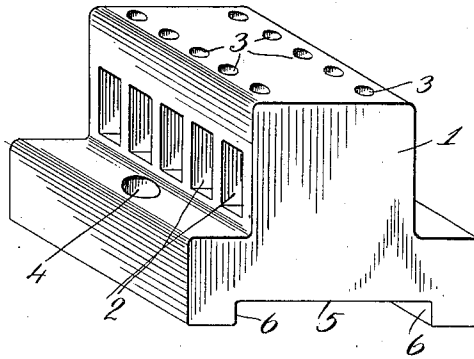


Fig. 2.

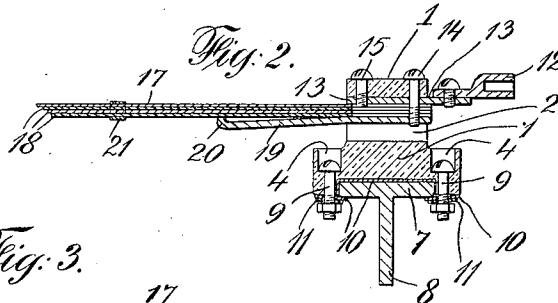


Fig. 3.

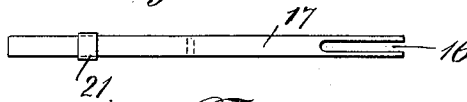
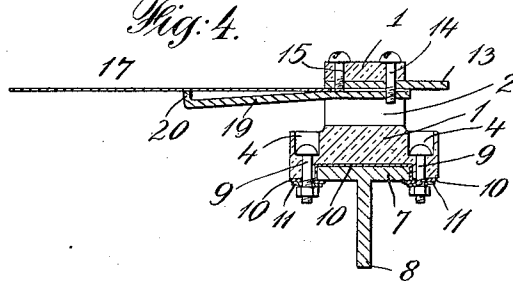


Fig. 4.



Witnesses:
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By his Attorney
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UNITED STATES PATENT OFFICE.

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ELECTRIC ADVERTISING AND SIGNALING DEVICE.

1,017,172.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER S. RYAN, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented a new and useful Improvement in Electric Advertising and Signaling Devices, of which the following is a specification, reference being had to the accompanying drawings.

Apparatus of the class referred to has heretofore been made in a great variety of forms. In some of them the parts are extremely clumsy and heavy, consequently expensive in the first instance and difficult to install, particularly since in many, perhaps most instances, the installation has to be on the outside of buildings and at a high elevation, so that the installation is not only difficult, but dangerous. Also, in many, if not all prior constructions, the apparatus is composed of large numbers of parts all of which have to be properly adjusted to each other, necessitating a multitude of screws, bolts, or similar devices, all of which increase the cost in the first instance and the time required in installation. Also in no prior construction known to me has there ever been what may be called standardizing of the parts, not only relative to their size, but also relative to their number, so that if a unit be composed of say five parts, *i. e.*, five brushes, five cut-outs, five circuits, etc., that then the apparatus can be made twice as large by simply applying two units side by side, three times as large by applying three units side by side and so on indefinitely. In other words the same unit may be multiplied indefinitely.

It is the purpose of my invention to so construct apparatus of the class stated that the following advantages shall be realized: (a) reduction in weight; (b) reduction in cost; (c) reduction in difficulty and danger of installation; (d) simplification and ease in estimating cost of installation; (f) certain minor details of improvement which will be readily appreciated from the following description.

In the drawings, Figure 1 illustrates a perspective view of what may be called a unit brush holder adapted to hold five brushes; Fig. 2 illustrates a vertical sec-

tional view of my preferred form of brush and coating parts adapted to carry a heavy load; Fig. 3 illustrates a plan view of my preferred form of phosphor bronze or other similar reinforcing back plate for the brush; Fig. 4 illustrates a vertical sectional view of a form of brush in which the phosphor bronze back plate alone is used as the contacting brush.

Referring to the drawings, 1 represents the brush holder or insulator. It is or may be molded from porcelain or other suitable non-conducting material and is provided with a series of chambers 2 (there are five in the present instance) separated from each other by insulating walls as shown. It also has holes 3 extending from the upper surface and connecting with each of the chambers 2. It likewise has larger openings 4 adapted to receive bolts, whereby the structure is rigidly held to the supporting frame about to be described. On its under side the insulator is preferably rabbeted as at 5 so as to have laterally extending shoulders 6. The width of the rabbet 5 is slightly larger than that of the upper member 7 of a T-iron 8 shown in Fig. 2. This T-iron constitutes the base or foundation upon which the other parts of the apparatus or most of them are supported. Owing to its shape it has great stiffness and strength and yet is quite light in construction and very inexpensive.

In Fig. 2 the insulating block 1 is shown as mounted upon the T-iron which, as stated above, rests within the rabbet 5 in its under side and the insulator is held in place by threaded screws or bolts 9 provided with nuts and washers on their lower ends as shown and also with a suitable piece of cushioning material 10 which may be felt, blotting paper, rubber, leather, or any equivalent material, and this same or similar cushioning material 10 is likewise preferably placed in the rabbet between the upper member of the T-iron and the insulator block. The bolts are provided with washers 11 of such diameter that they shall lap over and take a bearing upon the under side of the upper member of the T-iron as illustrated in Figs. 2 and 4, so as to afford suitable clamping action. The purpose of the cushioning material 10 is to avoid liability of fracture of the porcelain by reason

of screwing up the nuts on the ends of the bolts 9 too rigidly which might occasion fracture of the insulator, particularly if it be composed of porcelain or similar frangible material.

Referring now to my preferred construction of the brushes, reference being had to Fig. 2, 12 is a device for the reception of one of the circuit wires. I show it in this instance as made in the form of a socket. Any other form may be used. It is fastened by a screw or otherwise to a plate 13 which has a hole bored through it through which a screw or bolt 14 passes and another threaded hole in which a shorter screw 15 threads. These screws 14 and 15 pass through the front and rear holes 3, 3, made through the upper surface of the insulator, as shown in Fig. 1 and the screw 14 also passes through a slot 16 made in the rear end of the reinforcing back plate 17, shown best in Fig. 3, and likewise through similar slots made in the rear end of each of the copper leaves 18 (see Fig. 2) of the brush, and threads into the rear end of a plate 19 which preferably has its end 20 turned up as shown. The purpose of providing the two plates 13 and 19 is that they may act as clamping surfaces between which the reinforcing back plate and the several leaves of the brushes may be clamped. It will be seen that by screwing up the screw 15 tightly, the plate 13, to which the terminal 12 is attached, will be rigidly clamped to the insulator and that it will be prevented from lateral movement not only because it fits the chamber 2 in the insulator within which it lies with considerable accuracy, but also because the screw 14 passes through the hole in it and that the plate 19 will be drawn forcibly upward and clamp the brushes and the back plate rigidly between itself and the plate 13 when the screw 14 is turned up hard. I prefer to turn the forward end of the plate 19 upwardly as shown at 20, so that it may act as a support for the leaves of the brush as they break contact with the revolving make and break circuit device. This feature is not essential, but it is desirable since it avoids unnecessary movement or rebound on the part of the brush leaves and hence extends their life, for reasons which are well known in this art.

21 is a strap which I prefer to employ. I prefer to rigidly connect it with the reinforcing back plate 17 as shown in Fig. 3 and I so construct it that it incloses all of the other leaves of the brush yet does not bind them tightly, so that they have perfect freedom of movement in the operation of the apparatus. If the load, in other words, the current, passed through the brushes, or through some of them in any particular apparatus, be not a heavy one, it will of course, as is well understood, not be necessary to

have many copper leaves in such brushes. Indeed in some cases a single plate only will carry all the current necessary and be sufficiently permanent, but since a copper brush, if not reinforced, is very likely to become distorted, I prefer, where a single leaf or plate only is necessary, to use the phosphor bronze back plate 17 as shown in Fig. 4. It will be understood, however, that this single plate or leaf may be made of copper or such other metal, as preferred, and also that there may be a full complement of separate leaves in the brushes, or any number in excess of one, as occasion requires. The illustration in Fig. 4 shows an extreme instance only.

The construction and arrangement of the parts which I have above described and illustrated in the drawings hereof, as will be at once appreciated by those familiar with this art, constitute one method or form only of many in which the invention may be embodied, and such persons will also at once realize that the unit may embody a greater or a less number of individual brushes as the special apparatus or occasion of its use may require. I therefore do not limit myself in the above respects.

I call attention to a specially advantageous feature resulting from the employment of the parts above described, that is to say, my units may, as stated above, embody as many brushes as desired and are all adapted by reason of the recess made in their lower surface to fit upon the T-iron support or foundation which extends throughout the apparatus. Because of these features I can, with advantages both of cost and time which have never heretofore been realized, make any desired combination to suit the requirements of any special advertising, spectacular or signaling apparatus, and further an owner of such apparatus having once paid for the same can, at slight additional cost, procure additional parts and units and can change the position or relation of them all and thus at relatively trifling cost produce an apparatus which will give altogether different presentations from those for which it was originally arranged, and these changes can from time to time be made almost indefinitely, thus greatly increasing the desirability of the apparatus and its value to the advertising public.

I claim:

1. In apparatus of the class stated the combination of an insulator containing a plurality of separate chambers, brushes adapted to enter said chambers, means to clamp the brushes in said chambers and means to support the insulator.

2. In apparatus of the class stated the combination of an insulator containing a plurality of separate chambers having a recess on its under surface adapted to engage with the support thereof, brushes adapted to

enter said chambers, means to clamp the brushes in said chambers and a support adapted to enter the recess in the insulator.

3. In apparatus of the class stated the
5 combination of a T-iron, an insulator containing a chamber for the reception of a brush and having also a recess in its under part adapted to engage with the T-iron, a
10 brush adapted to enter said chamber, means to clamp the brush within the chamber and other means to clamp the insulator to the T-iron.

4. In apparatus of the class stated the combination of a support for the insulators,
15 insulators adapted to be movably adjusted upon the support, means to attach the insulators as adjusted to the support and other means whereby brushes may be rigidly held to the insulators.

20 5. In apparatus of the class stated the combination of an insulator containing a chamber for the reception of a brush and having openings for the passage of screws through its upper part, a brush adapted to
25 enter said chamber, clamp plates adapted to be received within the chamber and to clamp the brush between them and means extending through the openings in the upper part of the insulator and engaging with the
30 plates whereby they may be caused to clamp the brush.

6. In apparatus of the class stated the combination of an insulator containing a
35 chamber for the reception of a brush and having openings for the passage of screws through its upper part and having also a cavity or recess in its lower part, a brush adapted to enter said chamber, clamp plates adapted to be received within the chamber
40 and to clamp the brush between them, means, such as screws, extending through the openings in the upper part of the insulator and engaging with the plates whereby they may be caused to clamp the brush,

a T-iron for the support of the insulator 45 and co-acting parts, the upper member of which is adapted to enter the recess in the lower part of the insulator and means for clamping the insulator to the upper member of the T-iron.

7. In apparatus of the class stated an insulating support for a brush having a chamber in which the rear of the brush is received, a brush the rear end of which is adapted to enter the chamber, two clamping 55 plates, one above the brush and the other below it, and means for forcibly drawing the plates toward one another, thus clamping the brush between them.

8. In apparatus of the class stated a 60 brush, clamp plates, one above, the other below the brush, for clamping the same, an insulator for supporting the brush and the clamps therefor, means to clamp the upper plate to the insulator and other means for 65 forcibly drawing the lower plate toward the upper plate, thus clamping the brush between them.

9. In apparatus of the class stated the combination of an insulator provided with 70 a chamber adapted to receive the rear end of the brush, an upper and a lower plate adapted to rest within said chamber, a brush the leaves whereof are slotted at their rear end and which are adapted to enter the 75 chamber, means adapted to clamp the upper plate against the insulator and other means adapted to pass through the slot in the rear end of the leaves of the brush and to engage with the lower plate and force it toward 80 the upper plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER S. RYAN.

Witnesses:

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EDWIN F. VALENTINE.