No. 816,154. PATENTED MAR. 27, 1906.

F. M. D'ARSI.

ILLUMINATED DISPLAY APPARATUS.

APPLICATION FILED APR. 4, 1904.

Fig. 1

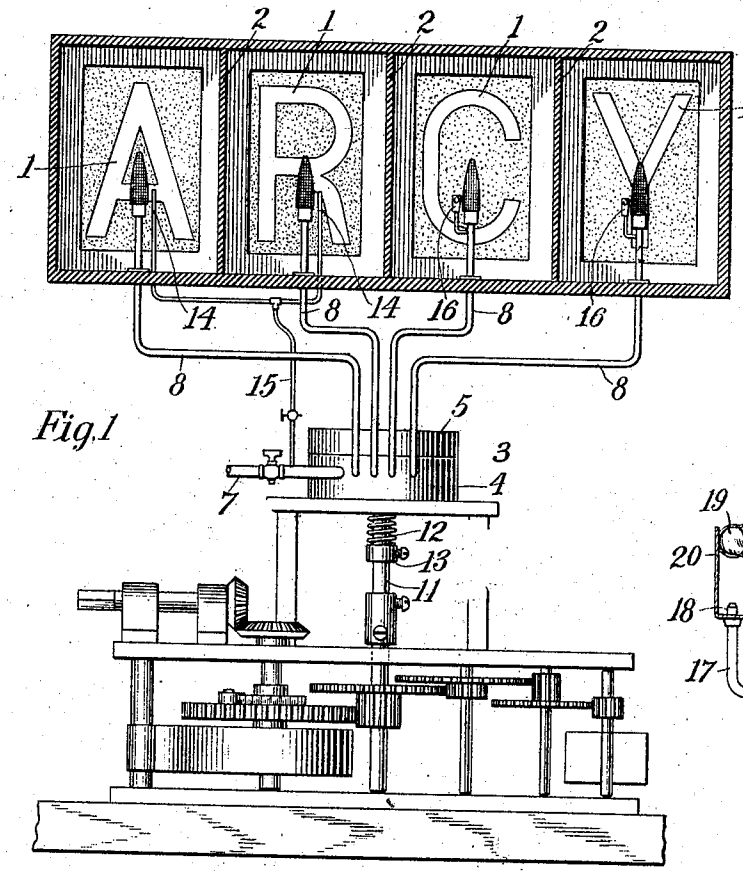


Fig. 2

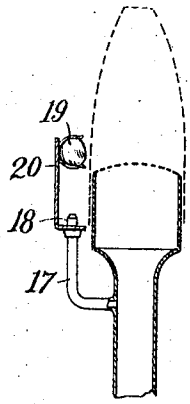


Fig. 3

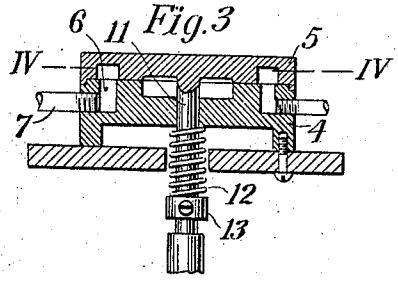


Fig. 5

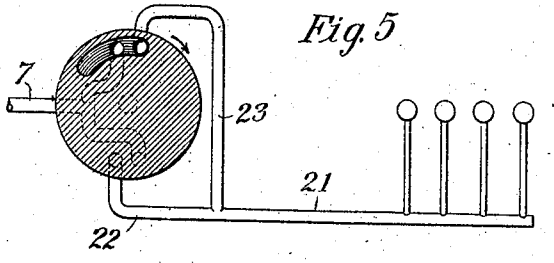


Fig. 4

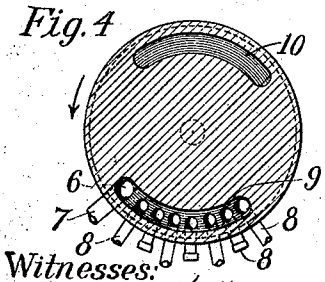
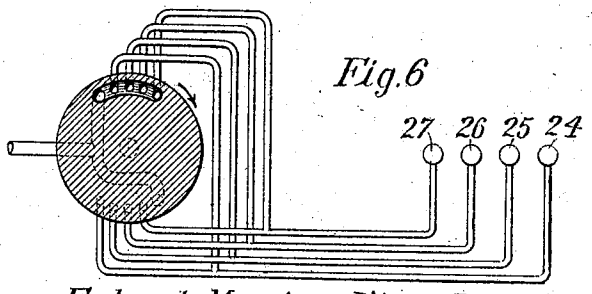


Fig. 6



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UNITED STATES PATENT OFFICE.

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ILLUMINATED DISPLAY APPARATUS.

No. 816,154. Specification of Letters Patent. Patented March 27, 1906.

Application filed April 4, 1904. Serial No. 201,472.

To all whom it may concern:

Be it known that I, FORTUNATO MARCIANO D'ARSI, a subject of the King of Italy, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Illuminated Display Apparatus, of which the following is a specification, reference being had to the drawings accompanying and forming part of the same.

My invention relates to illuminated display apparatus for advertising or other purposes; and its chief object is to provide such an apparatus which shall be simple in construction and efficient and economical in operation.

To such ends the invention consists in the novel features, combinations of elements, and arrangements of parts described hereinafter and more particularly set forth in the claims.

A convenient embodiment of the invention is illustrated in the drawings, in which—

Figure 1 is a view showing the apparatus in rear elevation. Fig. 2 is a view of a convenient means for lighting the gas-burners. Fig. 3 is a vertical section of the distributer which controls the supply of gas to the various burners. Fig. 4 is a section on line IV IV, Fig. 3. Figs. 5 and 6 are diagrams showing two modifications of the apparatus.

The embodiment of the invention which I have selected for illustration herein is an "illuminated sign" of the kind in which the letters forming the word or words are made of transparent or translucent material and arranged independently of each other, so as to be illuminated independently, if desired. These letters are indicated by 1, Fig. 1, suitable partitions 2 being provided between the same. The precise construction of this part of the apparatus is, however, immaterial.

Behind each letter is a gas-burner, preferably one of the Welsbach type, connected by suitable pipes with a distributer 3. The latter is so constructed and operated that gas will be delivered to the burners in succession, and means for igniting the gas being provided the burners will be lighted in the same order until all are lighted, after which all are extinguished simultaneously, restoring the apparatus to its original condition for repeating the operation. The construction of a distributer for performing the functions just mentioned is shown in Figs. 3 and 4. It consists of a stationary circular base 4 and a rotating valve member 5. In the former is a passage 6, opening on the upper plane surface of the device, to which is connected a gas-supply pipe 7. Following this passage is a series of other channels, each connected by a suitable pipe, as 8, with its respective burner. In Fig. 1 only four burners are shown, though in Fig. 4 pipes are provided for seven burners. The number of burners is of course immaterial. The upper or rotating member of the distributer is a circular disk, accurately fitted to form a gas-tight joint with the base. It is provided with one or more channels or grooves 9 10, so located with reference to the periphery that when the parts are assembled each groove may be brought into register with the openings in the base, as the channel 9 in Fig. 4. The operation of the device is as follows: Supposing the upper disk to be in a position in which neither groove is in communication with the gas-passages, rotation in the direction of the arrow will first bring the end of the nearest channel over the gas-inlet 6. As the disk turns farther, the channel will next pass over the first burner-passage, thereby putting the same in communication with the gas-supply pipe and causing gas to be delivered to the burner, as will be readily understood. This burner will then be lighted. Continued rotation will open the outlet-ports in succession, causing the remaining burners to be lighted in the same order until the channel is in the position of 9, Fig. 4, when all the burners are in operation. As the disk turns farther the channel will pass off the inlet 6, thereby cutting off the gas from all the burners simultaneously. The apparatus will then be unilluminated and will continue so until the movement of the disk brings the channel (or a second channel, as 10) into operation again, whereupon the same operation will be repeated.

Any convenient means may be employed to actuate the distributer. In the present form the upper disk is provided with a stem or shaft 11, to which it is rigidly secured, extending through an opening in the base and connected by suitable gearing to a motor, as the clockwork shown in Fig. 1. On the shaft 11 is a spring 12, bearing against the base 4, and a stop 13, fixed to the shaft, holding the parts in firm but yielding engagement.

Various means may be employed for lighting the burners, two methods being shown in Fig. 1. A constantly-burning pilot-flame

may be maintained adjacent each main burner, as at 14 14, fed through a pipe 15, connected with the gas-supply 7. The main burner will then be ignited by the pilot-flame, or each main burner may have a pilot-burner connected with it, which is ignited automatically whenever the main burner is supplied with gas. Such a device is shown at 16 16, Fig. 1, and in detail in Fig. 2. Branching from the main burner is a small tube 17, having an apertured tip 18, from which gas will issue when the main burner is supplied. In the path of the gas from the pilot is a mass of catalytic material 19, (supported in any suitable way, as by an arm 20,) which will ignite the gas in the well-known way. The main burner will then be lighted by the pilot-flame, as before. When the operation of the distributer cuts off the gas from the main burner, the pilot will be extinguished along with the former.

The distributer above described causes the burners to be ignited singly and in regular succession from left to right, as viewed in Fig. 1. They may be ignited simultaneously, however, if desired, or in other orders. In Fig. 5 I show a distributer in a section corresponding to that of Fig. 4, which effects the former operation twice in each revolution of the upper disk, as will be readily seen. In this case all the burners are connected to a common supply-pipe 21, branched at 22 23 and connected with the base of the distributer on opposite sides. The gas-supply pipe 7 is also branched, as shown, the branches terminating adjacent the branches of the burner-pipe. The channel in the upper disk will usually be made of sufficient length to permit the burners to remain in operation an appreciable time. In Fig. 6 the burners are first lighted in successsion from left to right or right to left, then extinguished, and relighted in the reverse order. Here each burner has a branched supply-pipe, the branches being connected in reverse order on opposite sides of the base. As will be seen, the burners 24 25 26 27 will be lighted in numerical order until the disk is in the position shown, when all are in operation. The gas is then cut off until the channel reaches the opposite openings, whereupon the gas is delivered to the burners in reverse order, 27 26 25 24, as will be seen. Further movement of the disk will cut off the gas-supply and extinguish all the burners simultaneously, restoring the apparatus to its first condition. Numerous other arrangements of the distributer-passages can be made; but the same are of course clearly within the scope of my invention. The color of the transparent material in the letters or configuration is also immaterial, and any color may be used, as desired.

The apparatus herein shown I have found to be efficient and economical in use; but it may be varied greatly within the spirit of my invention, and I therefore am not limited strictly thereto.

What I claim is—

1. In an apparatus for distributing gas to a plurality of burners in succession, the combination of a base, a supply-pipe, said base having a plurality of passages near its periphery, the supply-pipe being in communication with one of the said passages, outlet-pipes connected to the other passages, a rotary disk on the base having a channel or groove in its contiguous surface adapted to register with the passages in the base, and means for rotating the disk, as set forth.

2. In an apparatus for distributing gas to a plurality of burners in succession, the combination of a circular base, having a plurality of passages near its periphery, an inlet-pipe connected to one of said passages, outlet-pipes connected to the other passages, a rotary disk on the base, having a channel or groove in its contiguous surface adapted to register with the passages in the base, a shaft for the disk, and a motor to rotate the shaft, as set forth.

3. In an apparatus for distributing gas to a plurality of burners in succession, the combination with a circular base having a plurality of passages near its periphery, an inlet-pipe connected to one of the passages, outlet-pipes connected to the other passages, a rotary disk on the base having an arc-shaped groove or channel in its contiguous surface adapted to register with the passages in the base, and means for rotating the disk, whereby said channel or groove will put the inlet-pipe in communication with the outlet-pipes in succession, as set forth.

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