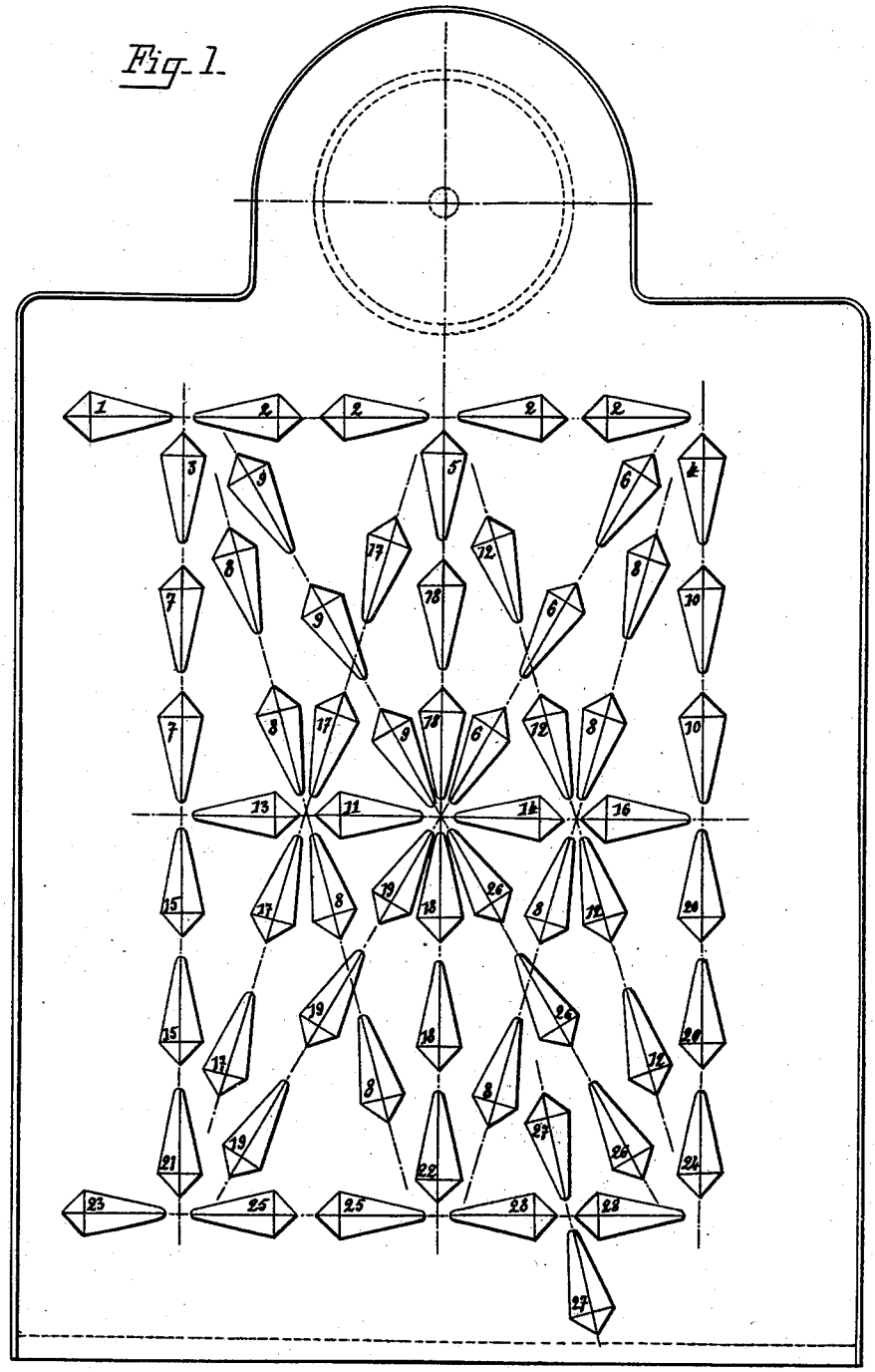
No. 671,538. Patented Apr. 9, 1901.

J. T. F. CONTI.

LUMINOUS ADVERTISING OR DISPLAYING DEVICE.

(No Model.) (Application filed Dec. 11, 1900.) 8 Sheets—Sheet 1.

Fig. 1.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(Application filed Dec. 11, 1900.)

(No Model.) 8 Sheets—Sheet 2.

Fig. 2.

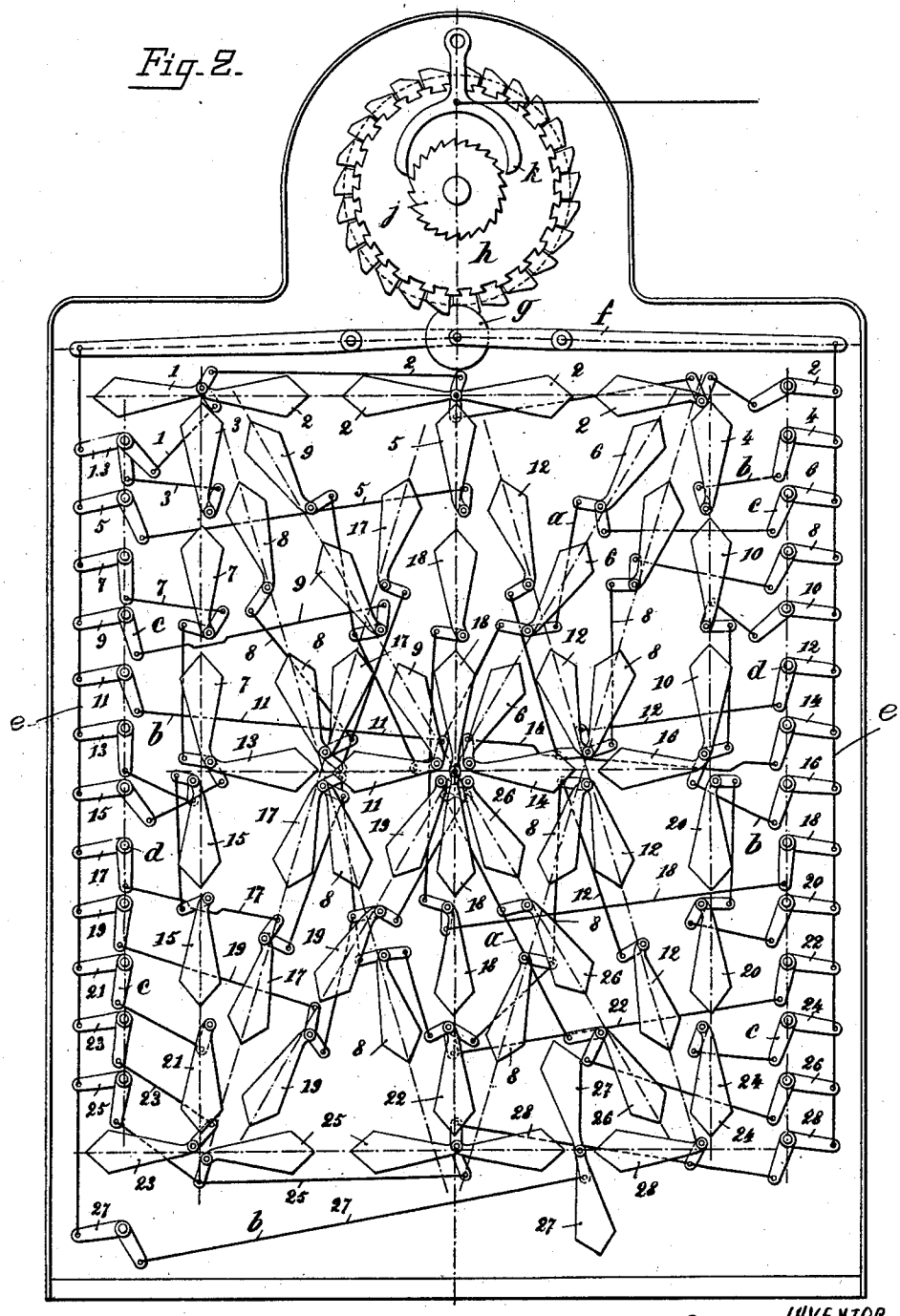

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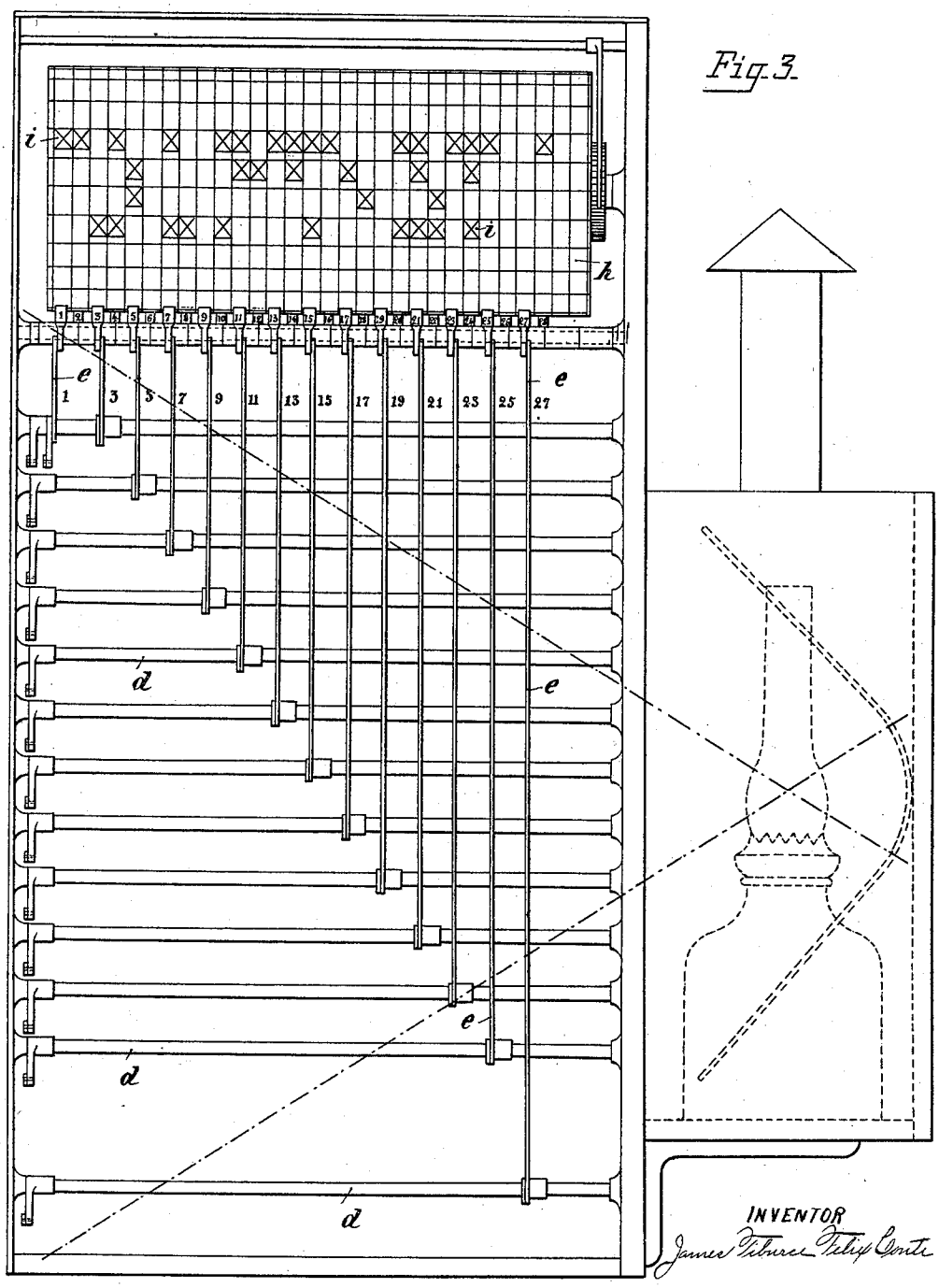
Fig. 3.

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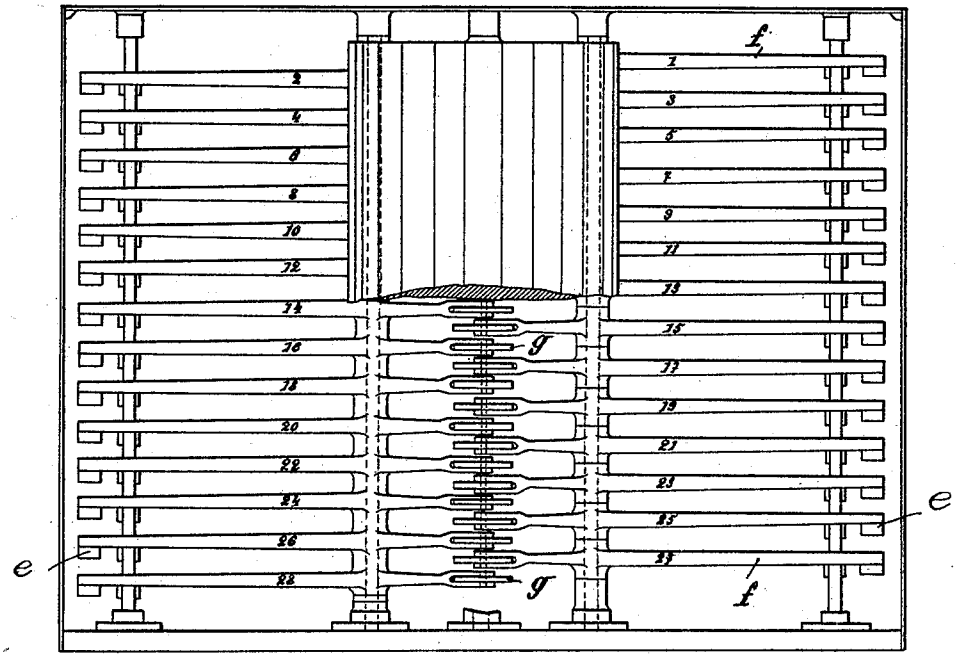
LUMINOUS ADVERTISING OR DISPLAYING DEVICE.

(Application filed Dec. 11, 1900.)

(No Model.) 8 Sheets—Sheet 4.

Fig. 4.

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LUMINOUS ADVERTISING OR DISPLAYING DEVICE.

(Application filed Dec. 11, 1900.)

(No Model.) 8 Sheets—Sheet 5.

Fig. 5.

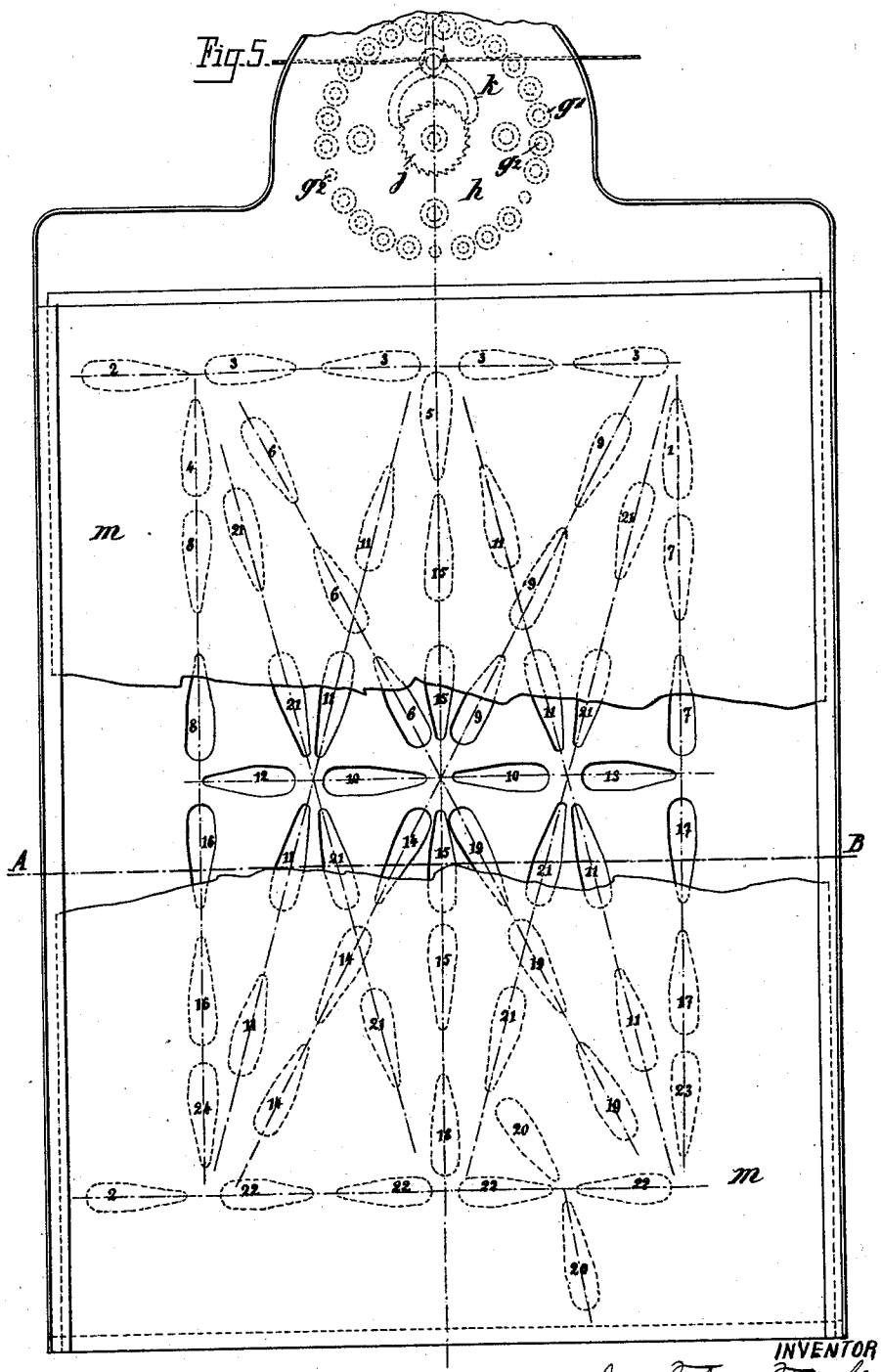


Fig. 9.

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LUMINOUS ADVERTISING OR DISPLAYING DEVICE.

(No Model.) (Application filed Dec. 11, 1900.)

8 Sheets—Sheet 6.

Fig. 6.

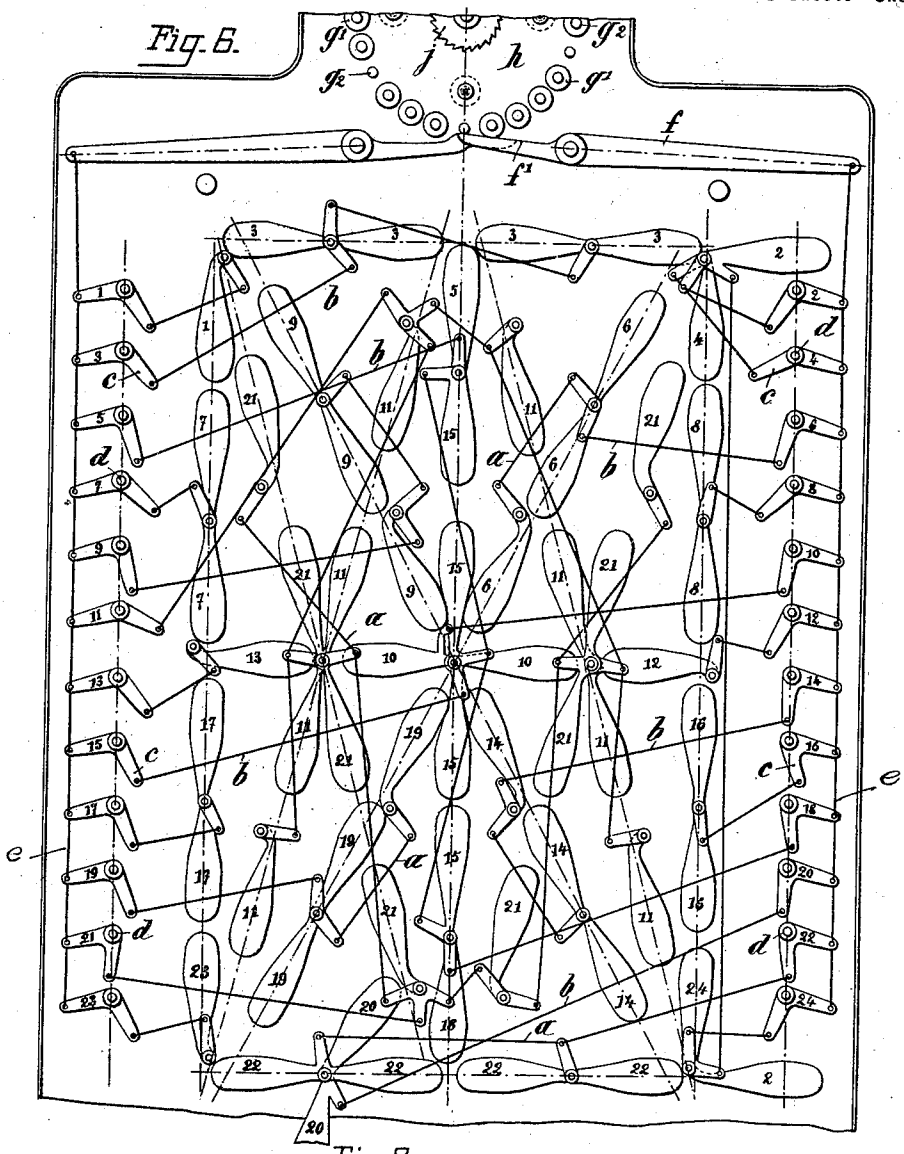
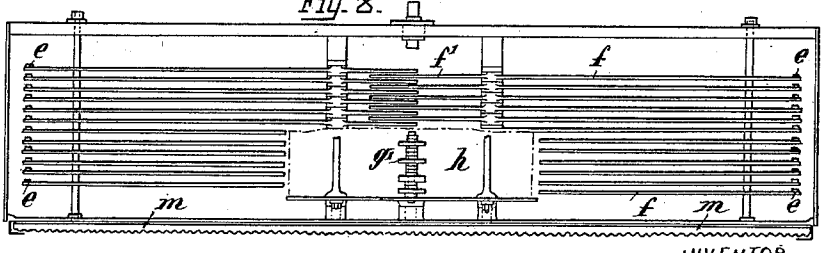



Fig. 8.

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LUMINOUS ADVERTISING OR DISPLAYING DEVICE.

(No Model.) (Application filed Dec. 11, 1900.) 8 Sheets—Sheet 7.

Fig. 7.

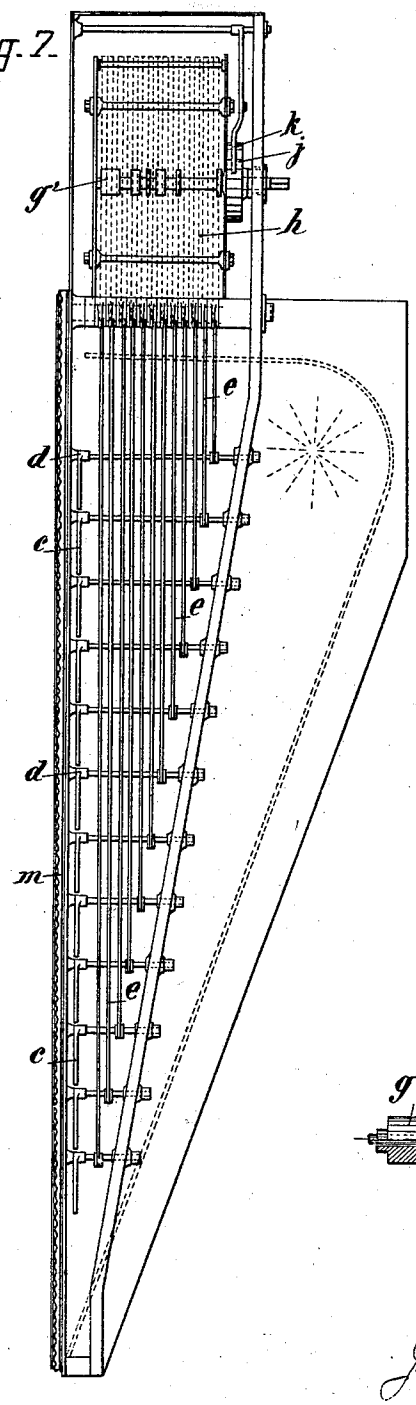


Fig. 10.

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LUMINOUS ADVERTISING OR DISPLAYING DEVICE.

(Application filed Dec. 11, 1900.)

(No Model.) 8 Sheets—Sheet 8.

Fig. 11.

| | |
|---|---|
| A | 5_10_11_23_24. |
| B | 1_2_3_4_7_8_10_12_13_16_17_22_23_24. |
| C | 1_3_4_8_16_22_23_24. |
| D | 1_2_3_4_7_8_16_17_22_23_24. |
| E | 1_2_3_4_8_10_12_16_22_23_24. |
| F | 1_2_3_4_8_10_12_16_24. |
| G | 1_3_4_8_13_16_17_22_23_24. |
| H | 1_4_7_8_10_12_13_16_17_23_24. |
| I | 5_15_18. |
| J | 1_7_16_17_22_23_24. |
| K | 4_8_9_10_12_16_19_24. |
| L | 2_4_8_16_22_23_24. |
| M | 1_4_7_8_16_17_18_21_23_24. |
| N | 1_4_6_7_8_16_17_19_23_24. |
| O | 1_3_4_7_8_16_17_22_23_24. |
| P | 1_2_3_4_7_8_10_12_13_16_24. |
| Q | 1_3_4_7_8_16_17_20_22_23_24 |
| R | 1_2_3_4_7_8_10_12_13_16_19_23_24 |
| S | 1_3_4_8_10_12_13_17_22_23_24. |
| T | 1_3_4_5_15_18. |
| U | 1_4_7_8_16_17_22_23_24. |
| V | 1_4_18_21. |
| W | 1_4_5_7_8_11_17_18_23_24. |
| X | 1_4_6_9_14_19_23_24. |
| Y | 1_4_6_9_14_24. |
| Z | 3_4_9_14_22_23. |
| | |
| 1 | 5_15_18. |
| 2 | 3_4_9_14_22_23. |
| 3 | 3_4_9_10_13_17_22_23_24. |
| 4 | 9_14_20_22. |
| 5 | 3_4_8_10_12_13_17_22_23_24. |
| 6 | 1_3_4_8_10_12_13_17_22_23_24. |
| 7 | 3_4_9_10_14. |
| 8 | 3_6_9_14_19_22. |
| 9 | 1_3_4_7_8_10_12_13_17_22_23_24. |
| 0 | 1_3_4_7_8_16_17_22_23_24. |

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# UNITED STATES PATENT OFFICE.

JAMES TIBURCE FELIX CONTI, OF PARIS, FRANCE.

## LUMINOUS ADVERTISING OR DISPLAYING DEVICE.

SPECIFICATION forming part of Letters Patent No. 671,538, dated April 9, 1901.

Application filed December 11, 1900. Serial No. 39,497. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES TIBURCE FELIX CONTI, engineer, of 37 Rue des Acacias, in the city of Paris, Republic of France, have invented Improvements in Luminous Advertising or Displaying Devices, of which the following is a full, clear, and exact description.

This invention relates to improvements in luminous advertising devices, enabling to display a series of luminous advertising matters at will and at a given place. It is well known that the essential principle of this kind of advertising devices consists of momentarily rendering luminous certain determined points of a panel or board, such points being to vary at will. The several means used heretofore in order to vary the position of the points which are to be rendered momentarily luminous on the board are all based upon the use of a kind of electrical station in which all the wires end which cause luminous points of the board or panel to be displayed. Said station comprises a great number of switches, all operated in different ways, according to the several systems. Such an arrangement is of course very complicated, and the difficulty encountered is very great when the installation is to be transferred from one place to the other. On the contrary, in my improved luminous advertiser every board or panel has its own operating device, the latter comprising a cylinder similar to that used in musical appliances and divided into a certain number of generating-lines provided each with projections whose respective positions may be varied at will. An escapement, operated either by hand or automatically, enables to successively direct all the cylinder generating-lines before the ends of a series of levers arranged on a straight line, in the same manner as the comb-teeth of a musical appliance. The projections, which are suitably arranged upon each of the generating-lines of the cylinder, act upon the levers either for shifting the same, as in the example which will now be described, or for establishing an electrical contact.

In my improved luminous advertiser the luminous points may be constituted by orifices arranged upon a board or panel which is lighted from behind or by electric lamps.

In order to much decrease the number of operating devices, I have decomposed every letter or figure into a certain number of common elements, and the displaying of luminous points corresponding to the same element are operated by a single device placed under the control of my improved above-described operating device, the same consisting of an oscillating lever or an electrical contact.

In order that my invention may be better understood, I will now describe the same as being applied to luminous advertising or displaying devices having boards or panels provided with elongated slots or orifices externally covered with prisms of crystal, or, conveniently, cut glass, such orifices being shut internally by means of shutters mechanically operated, as above specified. Behind every board or panel a powerful supply of light will direct the rays of light against the glass prisms whose shutters are momentarily open. This device is shown in the accompanying drawings, in which—

Figure 1 is an outer view of the board or panel. Fig. 2 shows the arrangement of shutters and the way in which they are operated, the panel being supposed to be removed. Figs. 3 and 4 are a side and a plan view of said device. Figs. 5 to 11 show a modification of my device. Fig. 5 is an external view of the board or panel. Fig. 6 is an internal view showing the arrangement of the shutters and their operating device. Fig. 7 is a side view. Fig. 8 is a plan. Fig. 9 is a horizontal section of the panel made according to line A B of Fig. 5. Fig. 10 is a detail view, on a larger scale, showing, half in elevation and half in section, a part adapted to act upon the operating-levers of the shutters corresponding to a given letter. Fig. 11 shows the board of combinations, giving the letters of the alphabet and the figures.

In the several figures the same letters of reference denote like parts.

As shown in the drawings, my improved device is composed of a kind of lantern whose forward face comprises a panel with orifices of elongated shape, in order to have the character constituted by elements looking like straight lines, of which it is intended to give the illusion, every orifice being covered by a transparent sheet or by a transparent prism

of crystal or glass, as shown in Fig. 1. I arrange behind each of such orifices a shutter, Fig. 2, consisting, for example, of a slide oscillating around a pivot secured to the board or panel, at right angles to the latter.

The supply of light consists of a lighting apparatus of any system provided with a reflector of parabolic shape in order that all the luminous rays will be parallelly reflected upon the several orifices. As previously specified, the several combinations corresponding to the several characters will be formed by uncovering a certain number of such orifices.

In order to avoid the necessity to operate every shutter by a special operating device, I have devised to decompose every character (letters or figures) into a certain number of elements, so that by means of different combinations of such elements I may obtain upon the same board or panel all the required characters, and to operate by a single device all the shutters corresponding to the same element. Figs. 1 and 2 show the way in which the elements are divided, the orifices and operating devices bearing the same figures of reference corresponding to the same element. According to this mode of dividing, the several letters of the alphabet and figures will be constituted by following combinations:

A... 5, 11, 12, 14, 17, 21, 24.
B... 1, 2, 3, 4, 7, 10, 11, 13, 14, 15, 16, 20, 21, 23, 24, 25, 28.
C... 2, 3, 4, 7, 15, 21, 24, 25, 28.
D... 1, 2, 3, 4, 7, 10, 15, 20, 21, 23, 24, 25, 28.
E... 1, 2, 3, 4, 7, 11, 13, 15, 21, 23, 24, 25, 28.
F... 1, 2, 3, 4, 7, 11, 13, 15, 21.
G... 2, 3, 4, 7, 14, 15, 16, 20, 21, 24, 25, 28.
H... 3, 4, 7, 10, 11, 13, 14, 15, 16, 20, 21, 24.
I... 5, 18, 22.
J... 5, 15, 18, 21, 22, 25.
K... 3, 6, 7, 11, 13, 15, 21, 26.
L... 3, 7, 15, 21, 24, 25, 28.
M... 3, 4, 7, 8, 10, 15, 20, 21, 22, 24.
N... 3, 4, 7, 9, 10, 15, 20, 21, 24, 26.
O... 2, 3, 4, 7, 10, 15, 20, 21, 24, 25, 28.
P... 1, 2, 3, 4, 7, 10, 11, 13, 14, 15, 16, 21.
Q... 2, 3, 4, 7, 10, 15, 20, 21, 24, 25, 27, 28.
R... 1, 2, 3, 4, 7, 10, 11, 13, 14, 15, 16, 21, 26.
S... 2, 3, 4, 7, 11, 13, 14, 16, 20, 21, 24, 25, 28.
T... 2, 3, 4, 5, 18, 22.
U... 3, 4, 7, 10, 15, 20, 21, 24, 25, 28.
V... 3, 4, 8, 22.
W... 3, 4, 5, 7, 10, 12, 15, 17, 20, 21, 24.
X... 3, 4, 6, 9, 19, 21, 24, 26.
Y... 3, 4, 6, 9, 19, 21.
Z... 2, 3, 6, 19, 24, 25, 28.

1... 5, 18, 22.
2... 2, 3, 6, 19, 25, 28.
3... 2, 3, 6, 14, 16, 20, 21, 24, 25, 28.
4... 6, 19, 25, 27, 28.
5... 2, 3, 7, 11, 13, 14, 16, 20, 21, 24, 25, 28.
6... 2, 3, 4, 7, 11, 13, 14, 15, 16, 20, 21, 24, 25, 28.
7... 2, 3, 6, 11, 14, 19.
8... 2, 6, 9, 19, 25, 26, 28.
9... 2, 3, 4, 7, 10, 11, 13, 14, 16, 20, 24, 25, 28.
0... 2, 3, 4, 7, 10, 15, 20, 21, 24, 25, 28.

Supposing the board or panel to possess sixty-two luminous points, all the characters can then be formed by the several combinations of twenty-eight elements. The shutters are thus divided into twenty-eight groups, and the shutters of a same group can be connected together, so that the number of the operating devices required for operating the shutters and forming all the characters is reduced to twenty-eight. Under these conditions the shutters may be operated mechanically. The different shutters of a same group corresponding to an element are connected together by means of rods *a*, and the whole of the shutters are operated by a rod *b*, which is connected by a hinge *c* to a horizontal shaft *d*, arranged out of line of the lantern. Each of the horizontal shafts *d* is shifted through an angle, at the time required, by means of a vertical rod *e*, pivoted to a horizontal lever *f*, provided with a roller *g*. The twenty-eight rollers *g* corresponding to the twenty-eight operating devices are all on the same generating-line of a cylinder *h*, and in order to produce any character it will only be necessary to arrange upon said line, in any suitable order, a set of projections *i*, adapted to lower the levers *f* corresponding to the elements which are to be uncovered.

In order to easily substitute a character for another the generating-lines of the cylinder *h* are constituted by dovetailed slabs embedded in the cylinder, so as to be able to be readily replaced. It is obvious that these slabs can be arranged in any convenient manner. A spiral spring or a counterweight or any other suitable device constantly tends to turn the cylinder *h*, and the angular motions of said cylinder are regulated by a ratchet-wheel *j*, placed under the action of an anchor-escapement *k*. Therefore it is only necessary to pull the lever operating the escapement of the ratchet in order to substitute a generating-line for the other, and consequently substitute a character for another, such substitution being instantaneously carried out.

When the projection of a generating-line passes off an operating-lever, the several corresponding shutters return to their starting positions.

The line on which the several characters composing the luminous advertisement are to be displayed being composed of similar lanterns, all the escapements *k* can be operated by the same part, driven either by hand or mechanically—through a clockwork, for instance. My apparatus thus enables to automatically display a succession of luminous advertising matters corresponding to series of generating-lines which successively come in front of the levers regulating the operation of the shutters to uncover the constitutive parts of the several characters which are to be displayed. The advertising or displaying matters may furthermore be changed at will while the apparatus is in motion, as when an advertisement has been displayed the generating-lines corresponding to the same may be changed while the other generating-lines come to act upon the operating-levers.

Figs. 5 and 6 show a modification of the way in which the orifices of the board or panel are distributed, such arrangement enabling to decrease the number of oscillating axes of the shutters and to render the mechanical operation more simple. With such a distribution the letters and figures are obtained by the combinations indicated on the board of Fig. 11.

In order that the shutters cannot interfere the one with the other, I have mounted the

same upon raised portion *l*, arranged on two different planes, as indicated in Fig. 9. In this modification the levers *f* are terminated by arms *f'*, upon which the rollers *g'* act at the required moment, said rollers being mounted upon axes $g^2$, constituting the generating-lines of the cylinder *h*, Figs. 6, 7, and 8. For every letter said rollers are mounted on their axes respectively in front of levers *f*, which are to be lowered by them in order to constitute that letter.

The several rollers of a same letter can be made in one and constitute a single spindle, as shown in Fig. 10. Said rollers may also be independent and be kept apart the one from the other by means of tubular spools.

In front of each panel provided with elongated orifices I arrange a sheet of fluted glass *m*, and preferably a sheet of the so-called "cathedral" glass of St. Gobain. Said glass plate may present in front of every uncovered orifice or slot a certain number of small glass projections forming lenses, and which serve to uniformly distribute the light upon the whole surface of the lighted parts of the panel, said projections or studs being thus luminous points which are very brilliant and possess the same intensity whatever may be their position on the plate. Said glass plate can be easily removed and replaced by other plates of various shades. The color of advertising matters can also be varied by passing colored papers or fabrics in front of every panel.

The shutters adapted to uncover the orifices of the boards or panels can be of any convenient system. I have previously described an oscillating shutter, but I can also employ any other device—such as, for example, shutters of soft material and in the shape of fans. I can also employ any operating device. The shutter may be equally operated, for example, by a pneumatic device. The operating device of each element would then be constituted by a small tube containing air and terminated at one end by an india-rubber pear, which is compressed each time the same meets a projection of the generating-line. I branch on said tube connections each ending in a pear and in connection with the several shutters of the element.

The form and sizes of my apparatus may of course vary, as well as the accessory arrangements, according to the several applications.

In order to display luminous advertising matters in different colors it is only necessary to bring colored glasses before the supply of light.

I claim—

1. In combination in a luminous advertising or display device, a board having a plurality of openings therein, said openings having such relative location that a plurality of unitary designs are outlined thereby, means for throwing a light through said openings, a plurality of pivoted devices corresponding in number to the number of said openings for closing said openings and mechanical selecting and operating means for moving predetermined devices to expose a certain number of openings located so that a desired unitary design is formed by the light from the said lamp shining through the said openings.

2. An improved device for displaying luminous advertising matter, in which the luminous points are constituted by elongated slots, formed on a panel and arranged according different elements of straight lines corresponding to the several constituting elements of the characters which it is intended to form, said orifices being closed by mechanically-operated shutters, a fluted glass plate being arranged in front of the panel, said glass plate being provided in front of each orifice with a great number of small bosses or studs like lenses and serving to uniformly reflect the rays of light upon the whole surface of the lighted parts of the panel.

The foregoing specification of improvements in luminous advertising or displaying devices signed by me this 30th day of November, 1900.

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