No. 755,272. PATENTED MAR. 22, 1904.

G. E. BURNHAM.

CHANGEABLE SIGN.

APPLICATION FILED OCT. 8, 1903.

NO MODEL.

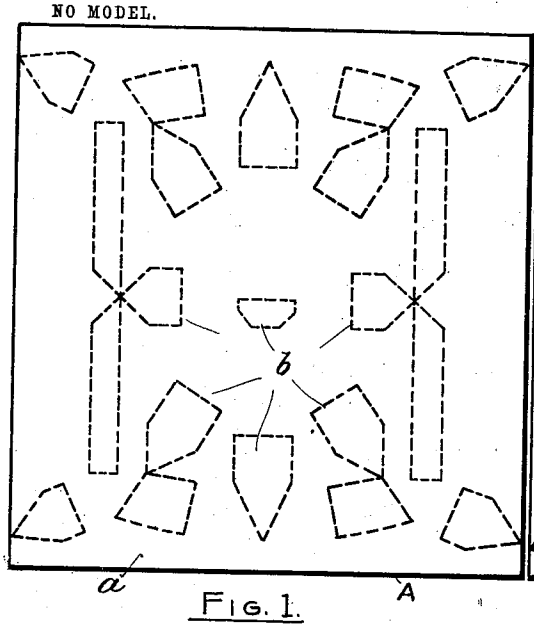

FIG. 1.

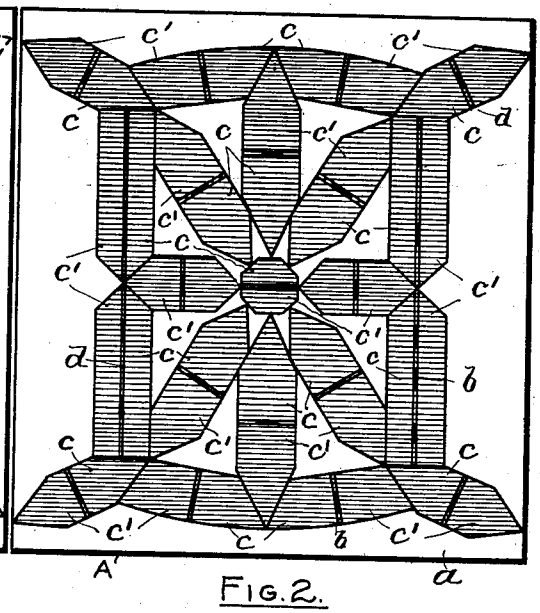

FIG. 2.

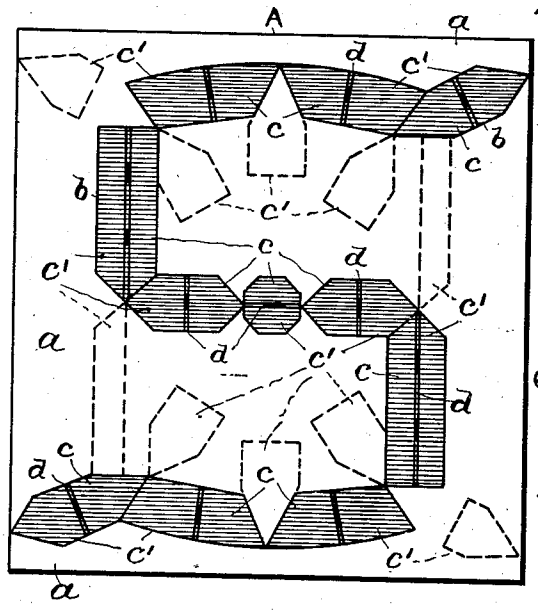

FIG. 3.

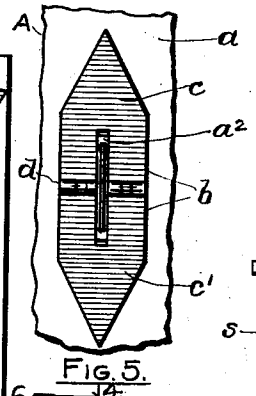

FIG. 5.

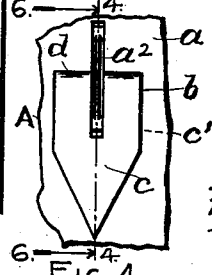

FIG. 4.

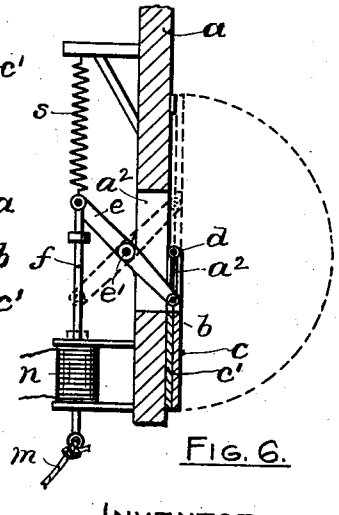

FIG. 6.

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No. 755,272. Patented March 22, 1904.

UNITED STATES PATENT OFFICE.

GEORGE E. BURNHAM, OF CENTRAL FALLS, RHODE ISLAND.

CHANGEABLE SIGN.

SPECIFICATION forming part of Letters Patent No. 755,272, dated March 22, 1904.

Application filed October 8, 1903. Serial No. 176,229. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. BURNHAM, a citizen of the United States of America, and a resident of Central Falls, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Changeable Signs, of which the following is a specification.

My invention relates to novel improvements in mechanically-changeable signs—that is, signs in which the letters or characters employed are composed of a series or number of movable elements or units capable of being actuated or controlled by suitable means, as desired.

I am aware that prior to my present improvement designs or monograms of a complex character have been employed, the same consisting of a number of fixed or stationary independent members or elements, each capable of being electrically lighted or electrically energized, and therefore I disclaim such former signs or devices.

The object I have in view is primarily to produce a mechanical or changeable sign or single design or monogram in which the arrangement of the movable members thereof are such that they may be independently manipulated or actuated so as to form, say, any letter of the alphabet.

To that end my invention consists, essentially, of a sign having a suitable background or base, the front face of which is or may be uniform in color throughout and provided with a plurality of suitably-disposed mechanically-actuated flat plates hinged thereto, adapted when all are normally folded or closed flatwise against said face to present a substantially blank exposed surface not easily distinguishable therefrom, but when the plates are properly unfolded or opened to produce the desired letter or design, the thus-exposed surfaces being, say, of a different color, are readily distinguishable from the normal front, thereby producing a marked contrast between them, all as will be more fully hereinafter set forth and claimed.

In the accompanying sheet of drawings, Figure 1 is a front elevation of a sign or monogram embodying my improvement, some of the minor details being omitted, all the plates or elements constituting the design or monogram being represented as normally folded or closed down against the face of the sign's base and being indicated by dotted lines. Fig. 2 is a similar view. In this figure all the plates are shown as open or swung rearwardly, thereby fully disclosing by the shading the monogram or design. Fig. 3 shows some of the plates or elements unfolded to produce a representation of the letter "S," all the other plates of the monogram being in the normal or folded position. Fig. 4 is a front view, in enlarged scale, of one of the hinged plates folded or closed against the base. Fig. 5 is a similar view showing the plate unfolded or open; and Fig. 6 is a transverse section taken on line 4 4 of Fig. 4, showing means for manipulating or actuating the plate.

The following is a more detailed description of the invention and the manner of operating the same:

A, again referring to the drawings, designates my improved changeable sign as a whole. To the face or front of the base or background *a* thereof (made, preferably, of wood) are hinged a number or series of pairs of plates, units, or elements *b*, made, say, of flat thin sheet metal, arranged or disposed so as to form any suitable design or character—as, for example, a complete monogram, as represented in Fig. 2, capable of being changed, so as to produce all the letters of the alphabet. Each of said elements *b* consists of a plate member *c'*, adapted to be rigidly secured to the base *a*, and a movable plate member *c*, hinged or jointed thereto, the same being or forming a counterpart or complement to the member *c'*. The joint or hinge *d* is located centrally or on the median line of each element *b*, so that when the plate *c* is closed (see Fig. 4) the area of the exposed surface will be but one-half that which is exposed when the plate is unfolded or open, as in use. (See Fig. 5.)

I prefer to make the upper or exposed surface of the fixed plate *c'*, by painting or otherwise, readily distinguishable from the face of the base *a* and having the adjacent surface of the fellow plate *c* of the same color and blending therewith when the latter is opened flat-

wise. (See Fig. 5.) The opposite or reverse side of plate *c* is painted or otherwise adapted to correspond or blend with the face of the base *a*, so that when folded down onto the plate *c'* the then-exposed surface completely conceals the latter, as clearly shown in Fig. 4.

In order to provide means or mechanism for actuating the movable plates *c*, each of the latter, as well as the fellow plate *c'* and base *a*, may have a short narrow opening a^2 formed therethrough centrally of and perpendicular to the axis of the hinge *d*. A suitable link or lever *e* is pivoted at *e'* to the back of base *a*. One arm of the said link *e* extends through the opening and is jointed to the pivoted movable plate *c*, the arrangement being such that the joint-pin of the lever is capable of sliding in the slotted opening a^2 of the plate while the latter is swung to the dotted position, Fig. 6. The other arm of the link is jointed to a movable rod or connection *f*. The latter may have a suitable spring or counterweight *s*, arranged to automatically return the plate *c* to the normal or closed position. (Shown in Figs. 4 and 6.)

The movable member *c* may be swung rearwardly or unfolded—say one hundred and eighty degrees—by means of force applied to the connection *f*—that is to say, the latter may be drawn downwardly by a direct pull upon a suitably-arranged cord *m*, or a solenoid *n* may be employed, the latter when energized attracting the core or central rod *f* in a well-known manner.

Assuming now that all the members or elements *b* of my improved sign A are folded or closed, as in the normal position (shown in Figs. 1 and 4) and that it is desired to present the letter "S" to view, the operator next manipulates or actuates the rods connected with the proper elements, (as may be ascertained by following a suitably-prepared key or diagram,) thereby swinging open the corresponding plates *c* and exposing the colored surfaces, as indicated in Fig. 3.

By placing a number of the signs A together in a row it is obvious that they may be then manipulated so as to construct and expose words and sentences.

I claim as my invention and desire to secure by United States Letters Patent—

1. In a changeable sign, the combination of a base, a plurality of pairs of plates, one plate of each pair being fixed to said base, the other plate of each pair being hinged to the first-named plates, the plates of the respective pairs being slotted at points adjacent their pivotal connections, and means extending through said slots and being connected to the movable plates for operating the same.

2. In a sign of the type set forth, a base, a plurality of pairs of hinged plates, said plates being arranged in pairs with one plate of each pair fixed to the base, said plates being slotted at points adjacent their hinged connections, said base formed with slots registering with the slots of the said plates, levers projecting through the slots of said base and having their inner ends connected to the movable plates of said pairs, and means for actuating said levers.

3. In a sign of the type set forth, a fixed plate, and a second plate hinged thereto, both of said plates being slotted at their connected ends, the side walls of the slot of said movable plate being formed with grooves, a lever projecting through said slots, and a pin carried by said lever engaging the grooves of said slot.

Signed at Providence, Rhode Island, this 5th day of October, 1903.

GEORGE E. BURNHAM.

Witnesses:
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CALVIN H. BROWN.