

G. A. MARSH.

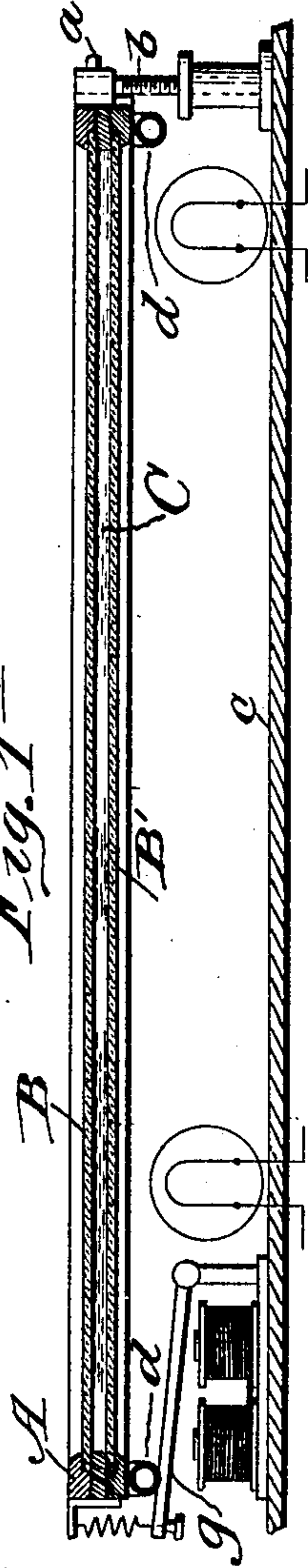
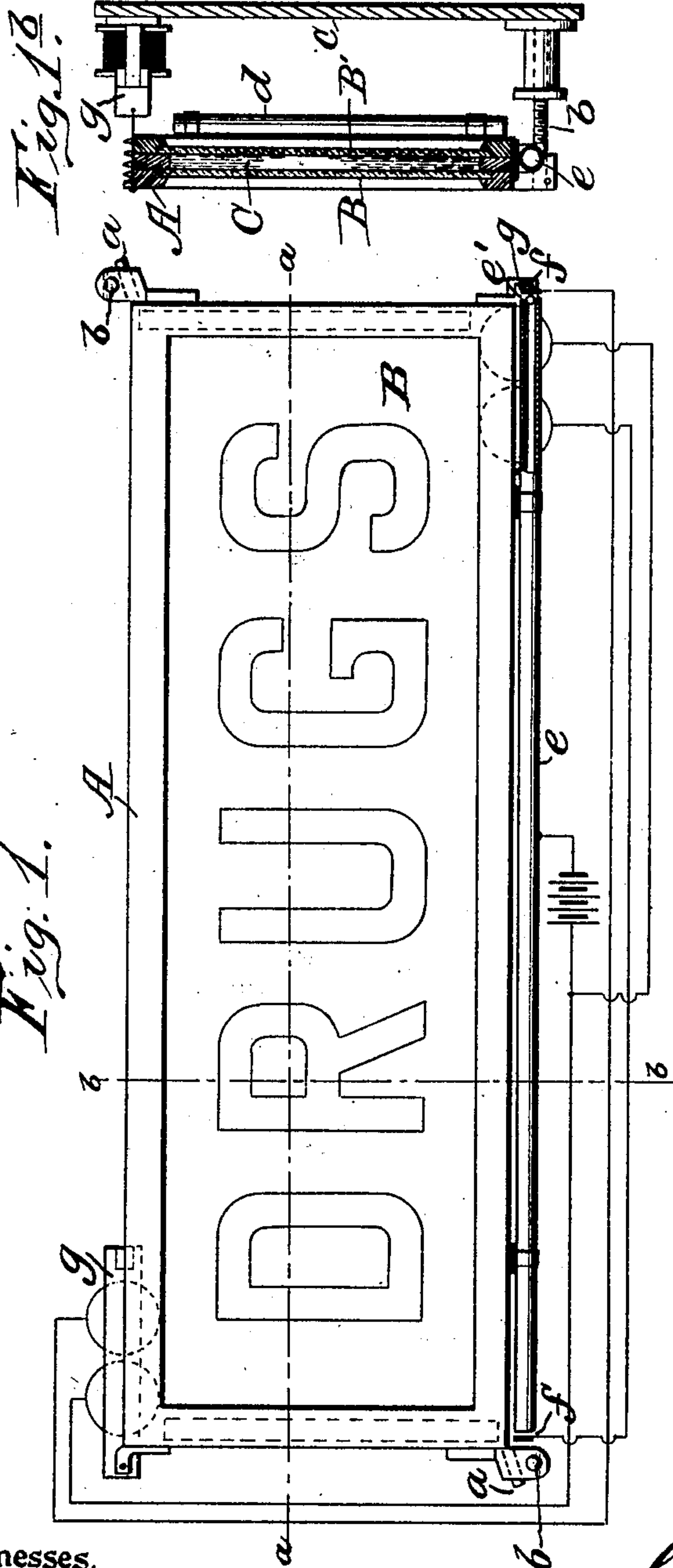
SIGN.

APPLICATION FILED MAR. 5, 1908.

913,022.

Patented Feb. 23, 1909.

2 SHEETS—SHEET 1.



Witnesses
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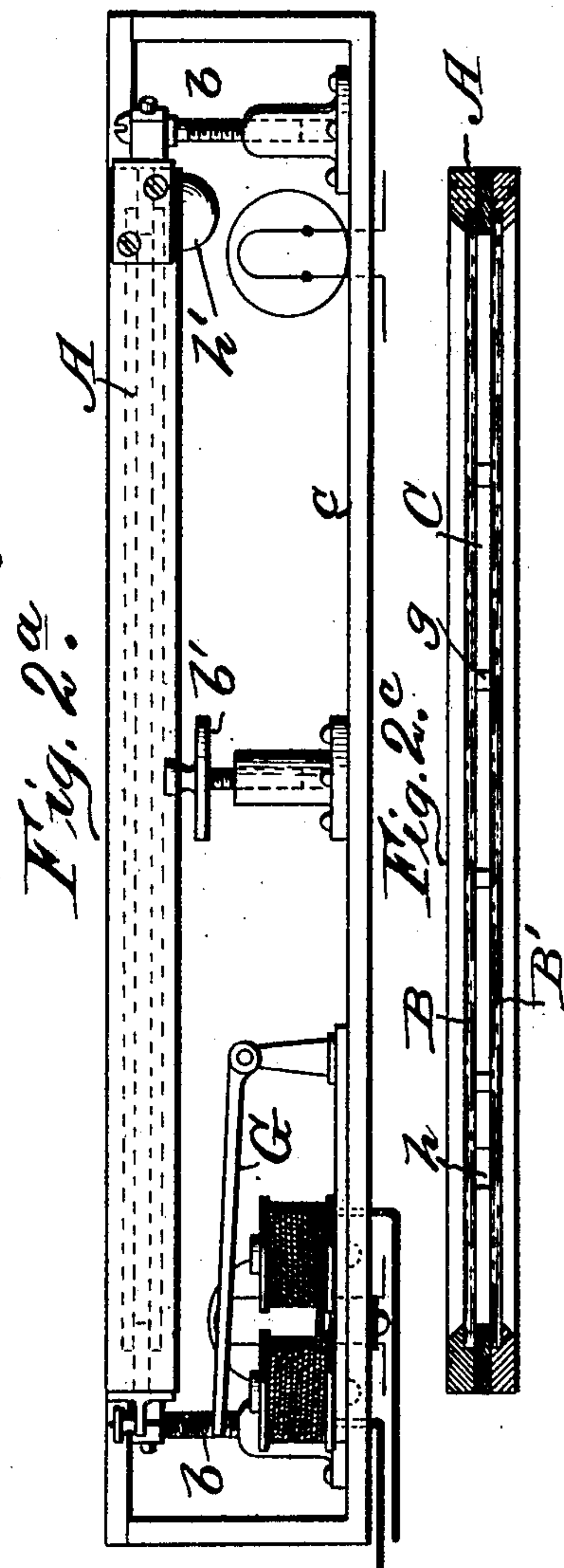
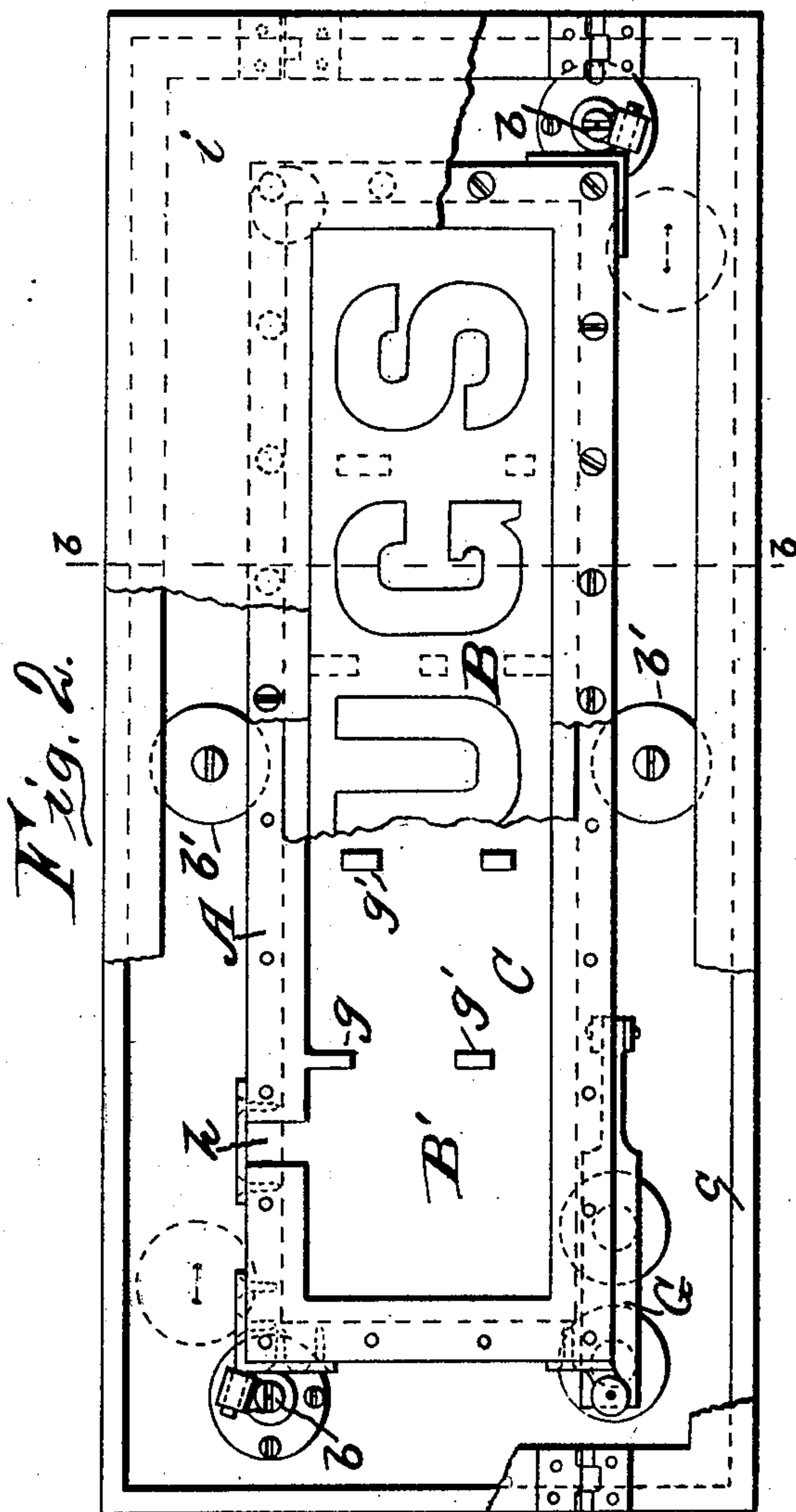
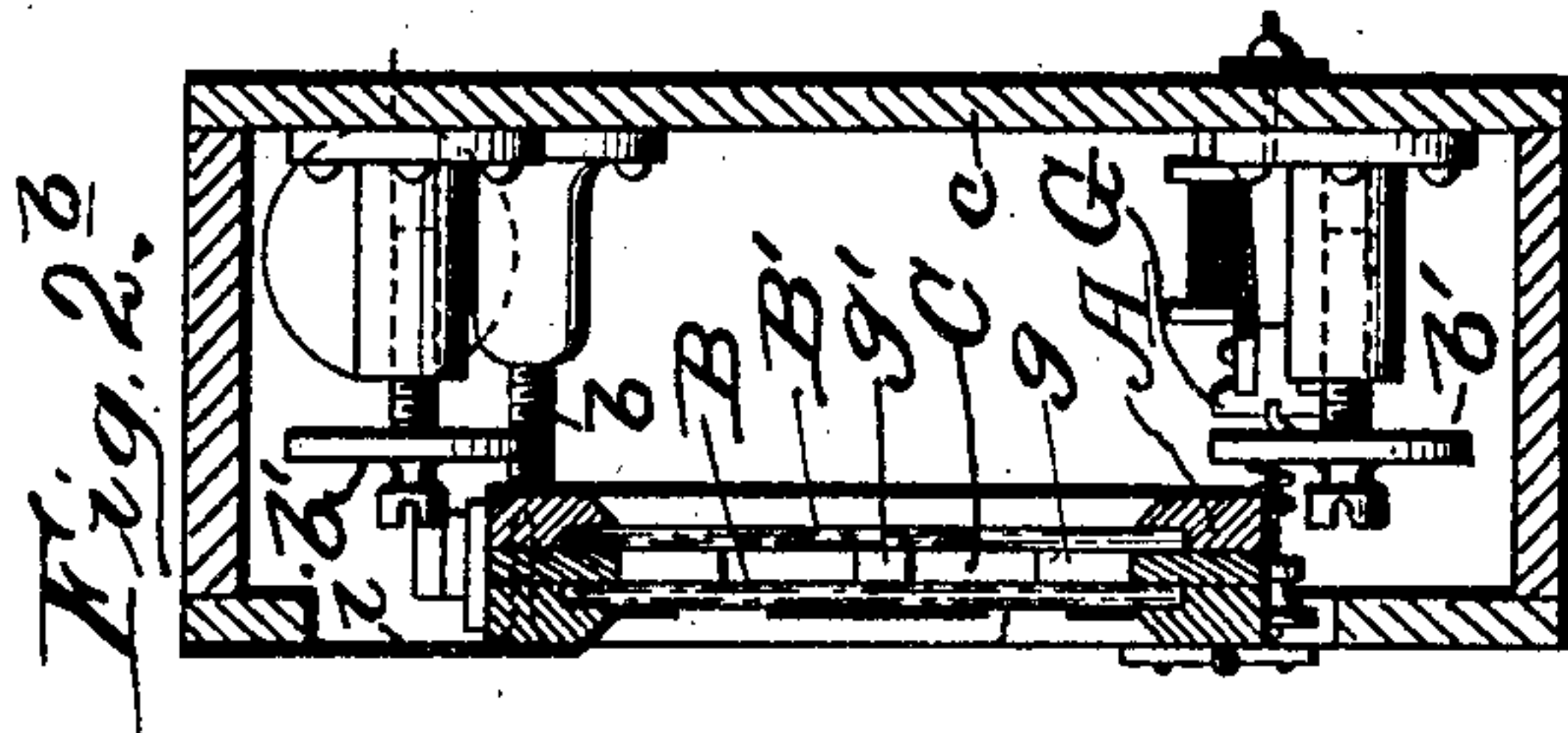
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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE A. MARSH, OF WASHINGTON, DISTRICT OF COLUMBIA.

SIGN.

No. 913,022.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed March 5, 1908. Serial No. 419,349.

To all whom it may concern:

Be it known that I, GEORGE A. MARSH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Signs, of which the following is a specification.

This invention relates to improvements in signs, the purpose being to provide a sign with a transparent or translucent field for characters or symbols, such field consisting in part of a fluid to which movement is imparted for the purpose of providing a changeable background for the characters or symbols, or to vary the appearance of the characters or symbols when constructed to admit fluid thereto.

In carrying my invention into use I preferably employ a frame that is made up to carry glass plates mounted or attached to the frame to provide a chamber for the reception of fluid or liquid, means being connected to such frame for effecting movement or circulation of the fluid, and thus vary the appearance of the sign, as will be hereinafter set forth.

In the accompanying drawings which illustrate my invention, Figure 1, is a plan view of a sign made in accord with my invention. Fig. 1^a, is a longitudinal section on the line *a—b*. Fig. 1^b, a transverse section on the line *b—b*. Fig. 2, is a plan view partly broken away, of a modified form of sign-support. Fig. 2^a is a side elevation with one side of the casing removed. Fig. 2^b, is a section on the line *b—b* and Fig. 2^c, is a longitudinal section of the frame.

Referring generally to the drawings, A, represents a substantially horizontally maintained frame made up to carry glass plates B B', said plates being maintained parallel to provide between them a chamber C, which is adapted to receive fluid, or a liquid mixed with a coloring matter, or a combination of liquids differently colored and of such character that they will not intermix.

Generally speaking, letters, characters or symbols may be painted upon, or attached to the plate B, and said plate may be either transparent or translucent, and it is within the purview of my invention to etch, or otherwise form characters upon the plate B. The characters instead of being attached or formed on the outer glass plate B,

may be placed within the chamber C, and when so placed will serve as baffles, obstructing the flow of the fluid in the chamber C.

Referring particularly to Fig. 1, of the drawings, the frame A, is provided with pins *a—b*, that engage suitable supports *b*, which may be adjustably connected to a base *c*. With the particular construction shown the frame carries tubes *d*, for the reception of quicksilver, and there is also present a longitudinal tube *e*, of metal, that receives a metal ball *e'*, and adjacent to the end of the tube *e*, are contacts *f f*.

As indicated the tube *e*, is connected with a battery, a line wire extending to electromagnets opposite the pivotal points of the frame, another line extending to other magnets so that when the metal ball *e'*, is in contact with one of the terminals *f*, the circuit will be closed and the armature *g*, which is connected to the frame by suitable spring will be drawn down to tilt the frame, and move it from a horizontal to an incline position.

In practice the chamber C, may be partially filled with a colored liquid which will flow or seek its level, and as this liquid moves comparatively slowly, the mercury in the tubes acting quickly will serve as a counter-balance for the frame, and the means shown, cause a constant oscillation of the frame and consequent movement of the fluid. In operation, when the armature opposite one of the pivots is drawn down, or energized by the closing of the circuit, the mercury in the tube *d*, flows quickly to the lower side of the frame, and such movement of the quicksilver or mercury is followed at a less rate of speed by the fluid, the change of position of the frame causing the circuit-maker *e'*, to travel from its initial position to the opposite end of the tube, and in this way the direction of the current is changed so that the armature connected to the diagonal opposite corner of the frame will be energized to tilt the frame from the position that it previously occupied.

Beneath the frame may be placed incandescent lamps or other means for illuminating the space beneath the sign.

In the modification shown by Fig. 2, of the drawing, the frame A, is carried by suitable supports, and such frame between the glass

plates B B', is provided with a plurality of baffles or blocks, $g-g'$, positioned within the chamber C, the chamber being partially filled with liquid introduced through the opening h . In addition to the supports b , the casing has stops b' , to limit the oscillation of the frame. The frame is oscillated by an armature G, that is moved by magnets, said magnets when energized drawing the armature to move the frame down against the weight h' attached to the underside of the frame A. The electric circuit is controlled by a suitable circuit-maker and breaker located at a distant point and operated by clock work or otherwise.

With the form of construction, shown by Sheet 2, the casing c , may be provided with a covering of textile fabric i , attached to the frame and to the top of the casing, so that the operating mechanism and supports for the frame will be entirely concealed, the letters in this form of construction being carried by or attached to the substantially horizontal upper plate B.

With the construction shown, I may incorporate or mix with the liquid non-transparent or colored material, which will contrast with the liquid to produce when the same is circulated a varying or constantly changing background or field for the letters.

The invention may be further modified by making the outer plate B of opaque material, and having transparent or translucent letters, and a compartment behind the frame may be illuminated by gas-jets or electric lights, as indicated upon Fig. 1^a and Fig. 2^a of the drawings.

In carrying out my invention the leading idea is to provide an attractive sign which embodies in its construction, a chamber for a liquid or combination of liquids, or of a liquid carrying non-soluble particles which may be either flock, iridescent material, or some sparking medium used in connection with means for agitating the fluid either by changing the position of the frame, or by force applied directly to the fluid.

Having thus set forth my invention, what I claim as new and desire to secure by Letters-Patent, is—

1. A sign consisting of a frame having glass plates maintained in parallel relation to provide a chamber for liquid, characters or symbols carried by one of the plates, and means for changing the position of the frame to impart movement to a liquid in the chamber, the flow of liquid producing a varying field for the characters or symbols.

2. A sign comprising a frame having fixed glass plates maintained in parallel relation one to the other to provide between such plates a chamber for a fluid, means operatively connected with the frame to effect movement of the same to cause the fluid to flow between the plates and thus provide a

variable or changeable background for characters or symbols constituting a part of the sign.

3. In a sign, a frame made up of a transparent outer plate, a plate parallel thereto and a border providing a chamber for a fluid, a quantity of fluid less than the capacity of the chamber inclosed by the frame, characters or symbols carried by one of the plates, and means for moving the frame to cause the fluid to circulate in the chamber, for the purpose set forth.

4. In a sign, an oscillatory supported frame having parallel plates fixedly attached thereto to provide between the plates a chamber for fluid characters or symbols constituting a part of the sign, means for moving the frame to effect movement of the fluid in said chamber to provide a variable background or field for the characters or symbols which are carried by or are visible through the front plate of the chamber.

5. In a sign, a frame constructed to maintain two parallel plates which with the frame form a chamber for liquid, such liquid providing a variable field for characters or symbols, and means for effecting an irregular flow of the liquid in the chamber, substantially as and for the purpose set forth.

6. In a sign, a frame comprising parallel maintained plates, one of said plates being transparent, such frame constituting a liquid containing chamber, characters or symbols attached to one of the plates, a quantity of fluid sufficient to partially fill the chamber, and means for effecting movement of the fluid in the partially filled chamber; to provide a variable background or field for the characters or symbols.

7. In a sign having characters or symbols, a chamber of non-variable capacity having a transparent front plate, a liquid confined in said chamber the quantity thereof being less than the capacity of the chamber, and means for effecting an irregular movement of the liquid in the chamber, for the purpose set forth.

8. A sign, constituting a frame having a chamber for fluid that is encompassed by a margin and parallel plates one of the plates being transparent, characters or symbols attached to one of the plates, baffles between the plates, and a quantity of fluid that partially fills the chamber, and means for imparting movement to the fluid, for the purpose set forth.

9. A sign comprising a frame having a transparent plate and a plate maintained in parallel relation thereto, baffles between the plates, a quantity of fluid within the chamber which is less than the capacity of the chamber, means for changing the position of the frame to cause a flow of the fluid between the plates, substantially as shown.

10. In a sign, a frame carrying characters

or symbols and provided with a transparent plate and parallel therewith with a second plate to form with the border a comparatively thin chamber, a baffle between the
5 plates, a quantity of fluid less than sufficient to fill the chamber within the chamber, and means for effecting movement of the

fluid and air within the chamber to provide a changeable background or field for the characters or symbols, substantially as shown.

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