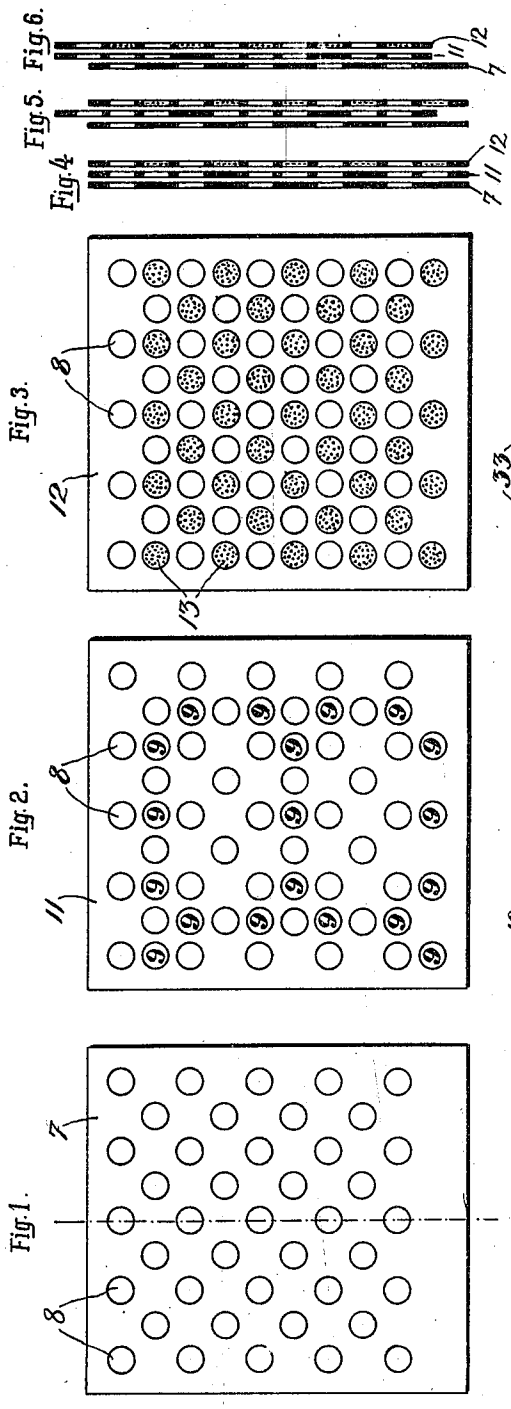
R. B. CHAUVET.

CHANGEABLE SIGN.

1,322,542. APPLICATION FILED JAN. 15, 1918. Patented Nov. 25, 1919

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 10.

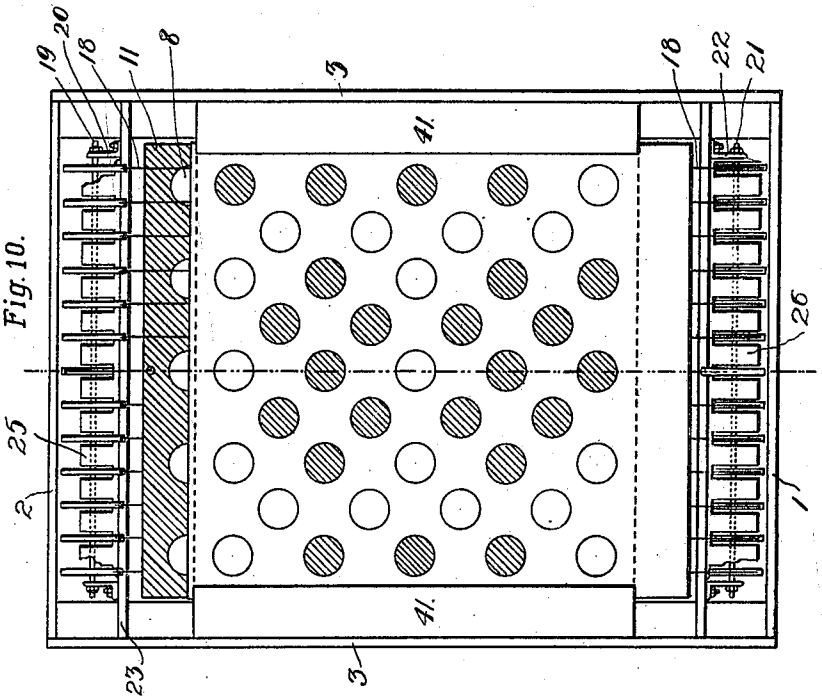
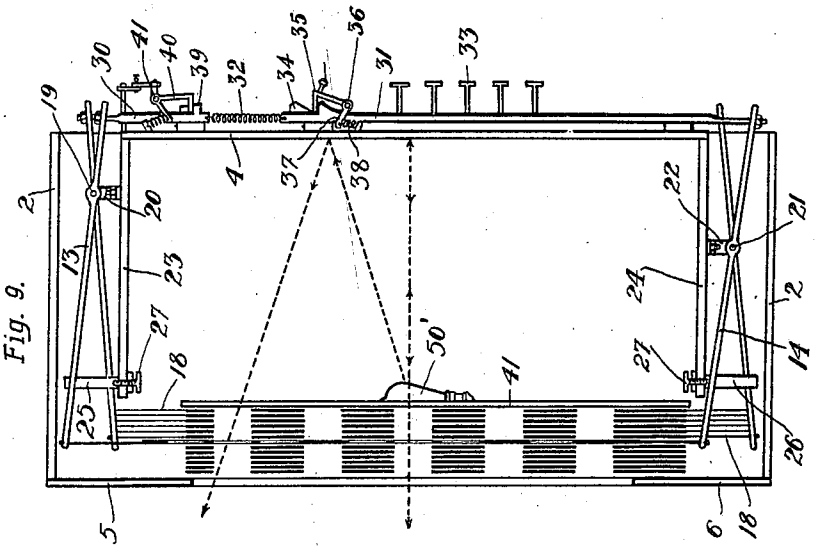


Fig. 9.



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3 SHEETS—SHEET 3.

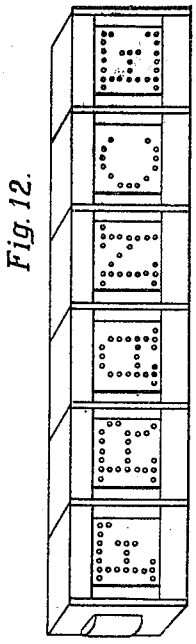


Fig. 12.

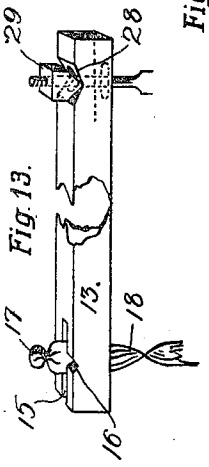


Fig. 13.

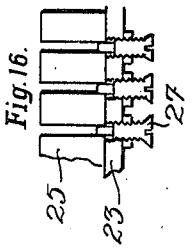


Fig. 16.

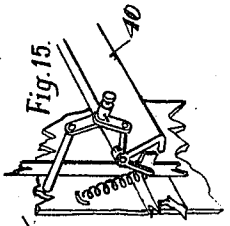


Fig. 15.

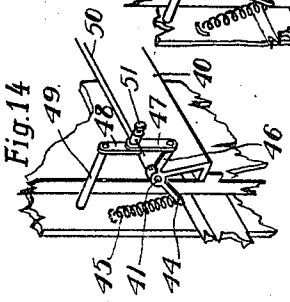


Fig. 14.

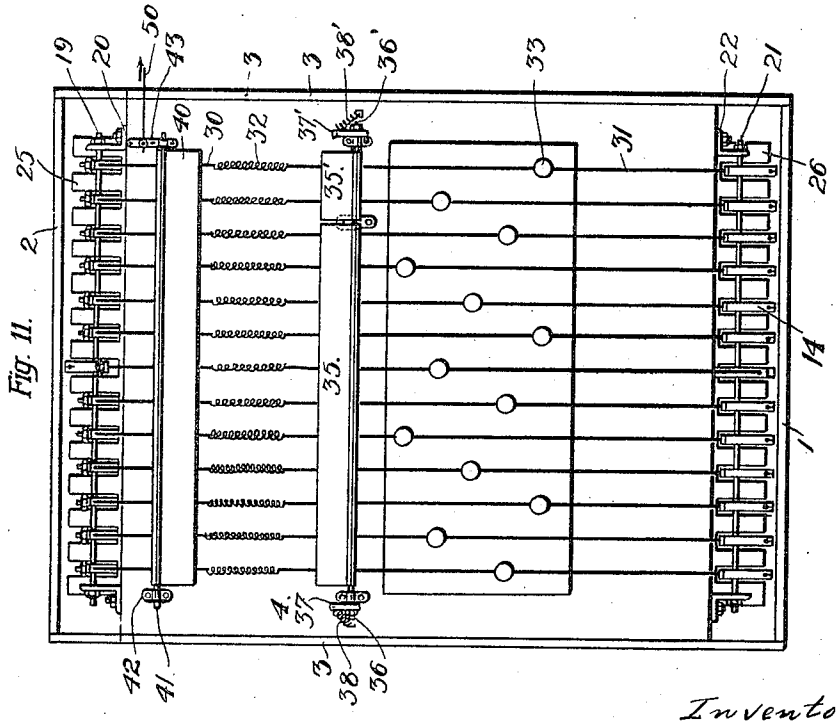


Fig. 11.

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UNITED STATES PATENT OFFICE.

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CHANGEABLE SIGN.

1,322,542. Specification of Letters Patent. Patented Nov. 25, 1919.

Application filed January 15, 1918. Serial No. 211,928.

To all whom it may concern:

Be it known that I, RENÉ BIARD CHAUVET, citizen of the French Republic, residing at Mexico city, Federal District, Mexico, have invented certain new and useful Improvements in Changeable Signs, of which the following is a specification.

This invention relates to changeable signs, and has for its object to facilitate a series of sign boxes, from the inside of which light is projected through a multiplicity of systematically arranged corresponding general perforations, performed in a number of sheets.

Some of the sheets have extra perforations representing a sign, and these sign perforations are so disposed that they will all coincide with some of the general perforations, by moving the sign sheet one space equal to the distance between the centers of a general perforation and its adjacent sign perforation. Other sheets, for coloring the signs, have besides the general perforations another set of coloring general perforations, which is covered by a colored transparent material.

These coloring sheets are movable like the sign sheets, and thus when resting inoperative permit the light to freely pass through its general perforations. The apparatus comprises elements whereby it is possible to readily move any of the sign sheets the exact distance, that will make the sign perforations thereof coincide with the general perforations of all the other sheets and at the same time obturate the non-coinciding general perforation.

Similar elements are provided for moving the coloring sheets.

Another object of my invention is to facilitate means, whereby the sheets are held in raised position and a release device for simultaneously or selectively returning all the sheets of a number of contiguous sign boxes, to their resting position.

In the accompanying drawings:

Figure 1 is a plan view of the front sheet with general perforations;

Fig. 2 a plan view of a sign sheet;

Fig. 3 a plan view of a coloring sheet;

Fig. 4 a cross section of the front sheet, sign sheet and coloring sheet in resting position;

Fig. 5 a cross section of said sheets, of which the sign sheet is raised for display.

Fig. 6 a cross section of said sheets, of which both the sign and the coloring sheets have been raised for exhibiting the colored sign "B";

Fig. 7 a top view of the sign box, showing the sheet supporting upper levers, of different length;

Fig. 8 a horizontal cross section of the contiguous sign boxes;

Fig. 9 a vertical cross section of a sign box;

Fig. 10 a front view of a sign box, from which the upper and lower boards are removed, in order to show the interior;

Fig. 11 a back view of the apparatus;

Fig. 12 a perspective view of contiguous sign boxes;

Fig. 13 a detail view of a sheet supporting lever;

Fig. 14 a detail view of the release device keeping a sheet raised;

Fig. 15 a detail view of the same, when the box is released and the sheet returned to resting position;

Fig. 16 a detail view of the lever guide with movement adjusting screws.

Now referring to the drawings (1) is the bottom, (2) the top, (3) the sides, (4) the back, (5) the upper front board, (6) the lower front board of the sign box, in which the front sheet (7) provided with the general perforations (8) is suspended behind the glass plate (10).

The sign sheets (11) also provided with general perforations (8) have furthermore the sign perforations (9), as for instance those forming the letter "B" in Fig. 2, and the coloring sheets (12) are provided with general perforations (8), and corresponding general coloring perforations (13), over which any transparent and colored material is extended.

In order to portray the characters of the alphabet, I provide a sheet (11) for every letter, having both general perforations (8) and (9), the former admitting the light to pass when the sheet is resting, and the latter only when the sheet is raised. For every color I provide a sheet (12). Both the sheets (11) and (12) are suspended and stretched between the upper and lower levers (13) and (14) respectively, which in one extremity are split at (15) and notched at (16) to seat the knot (17) of the tensioned ribbon (18), fastened to the upper and lower edges of the sheets. The levers (13) turn on the shaft (19) diagonally

mounted on the angle irons (20), and the lower levers (14) are fulcrumed on the shaft (21) diagonally fixed in the angle irons (22). Both the top and bottom shelves (23) and (24) carry the guiding combs (25) and (26) with adjustable set screws (27).

The outer ends of the levers (13) and (14) are perforated and transversally notched at (28) to receive the wedge shaped nut (29) (Fig. 13), whereby the tension is regulated of the elastic connection obtained by the steel bands (30) and (31), connected by the spiral springs (32).

The rounded ends of the bands (31) may slide outwardly through the ends of the levers (14).

Each band (31) has a key (33) and a projecting ratchet (34), engageable by the extended pawl iron (35), which turns on the shaft (36), from which the arm (37) projects and being controlled by the spiral (38). The steel bands (30) are provided with ratchets (39) engageable by the extended pawl iron (40) which turns on the shaft (41) mounted in the bearings (42) and (43). The pawl iron (40) has an arm (44) attracted by the spring (45) and the outwardly projecting arm (46) articulated to the link (47) which is pivoted to the link (48) that swings on the pivot (49) fixed to the back of the sign box. A wire (50) is attached to the pins (51) of the links (47) and (48) of all the contiguous boxes. The details of Figs. 14 and 15 are not shown in Fig. 11.

Lamps (50′) are disposed at the sides (3) and project the rays as shown in Fig. 8, where the sides (3) are cut away from the vertical rails (41), in order to put two sign boxes together. In practice of course many sign boxes are placed in alinement so as to exhibit phrases.

The glass plate (10) is darkened except in front of the general perforations (8), where glass fractions or translucent crystals may be adhered, to form plano-convex illuminating fields, which are more distinctly seen at an angle than the plain glass illuminated fields.

The set of color sheets is charged independently of the sign sheets, by the separate pawl iron (35′) shaft (36′) and spring (38′) as well as arm (37′) exactly like the corresponding escapement described for the sign sheets.

Supposing that a line of sign boxes were formed of contiguous boxes, as in Fig. 8 and Fig. 12, that every box has a full set of sign sheets (11) each representing a letter of the alphabet, and a color sheet (12) for each color, then it is apparent that any phrase may be displayed formed by illuminated letters in any color or tone, simply by exerting downward pressure on the corresponding keys (33) in successive sign boxes, whereby sign sheets representing letters are raised and maintained by the pawl (35) until other keys are pulled down, while the pawl (35) would thereby release the ratchet, until then retained.

Having reference to Fig. 9, it is seen that a rhomboid is formed by the cross section of any sheet, its levers (13) and (14) and the elastic connection composed of the steel bands (30) and (31) and the springs (32) when the sheet is down, then owing to the different extensions of the levers (13) and (14) measured from their fulcrums (19) and (21) respectively, the spring (32) will normally keep the sheet pulled down, because the force by the spring is augmented by the longer extension of the lever (14) as compared with the shorter extension of the lever (13). The rhomboid figure referred to changes to an isosceles trapezium when the sheet is raised and held by the pawl (35). In Fig. 7, the inclined position of the shaft (19) compensates the difference in length of the levers (13), and a similar inclination is given to the lower shaft (21) for the same purpose.

I now pass on describing the simultaneous display of signs, in a series of contiguous boxes, for instance exhibiting a phrase.

First I insert the pawls (40) of all the boxes, whereby all the ratchets (39) rest in the pawls, then the keys (33) of the boxes are operated in a consecutive manner, so that a letter sign may be raised in every box, according to the spelling order of the phrase, and the ratchet (34) belonging to the letter sign will have entered the pawls (35), although the sheets are not yet raised, while the lower rounded end of the steel bands (31) have protruded the lower levers (14), without moving them.

Now, the signs forming the phrase are charged by the tension of the springs (32) and light passing through all the perforations (8), the wire (50) being pulled releases all the pawls (40) and the springs (32) immediately pull on the levers (13) raising the sign sheets. The color sheets of course may also be charged with the sign sheets as explained.

Having thus described my invention what I claim is:

1. A changeable sign composed of a series of internally illuminated sign boxes, each box comprising a plurality of obturating sheets, every sheet having systematically disposed registering general perforations and individually particular character perforations, a pair of levers individual to each sheet and mounted for see-saw motion, each sheet being stretched transversally between the ends of one of said pairs of levers, an elastic linking member between the opposite ends of said levers, a ratchet for limiting the movement of said levers in one

direction, and a ratchet for limiting the movement in the opposite direction.

2. A changeable sign composed of a series of internally illuminated sign boxes, each box comprising a plurality of obturating slidable sheets, a pair of levers individual to each sheet and mounted for see-saw motion, each sheet being stretched transversally between one of said pairs of levers, the relation between the corresponding extensions of said levers from their respective fulcrums being such that a tension element joining said extensions will cause said levers to rock, means on said tension element for keeping one of the levers temporarily stationary and means for transferring the entire tension of said tension element to said lever.

In testimony whereof I have affixed my signature.

RENÉ BIARD CHAUVET.