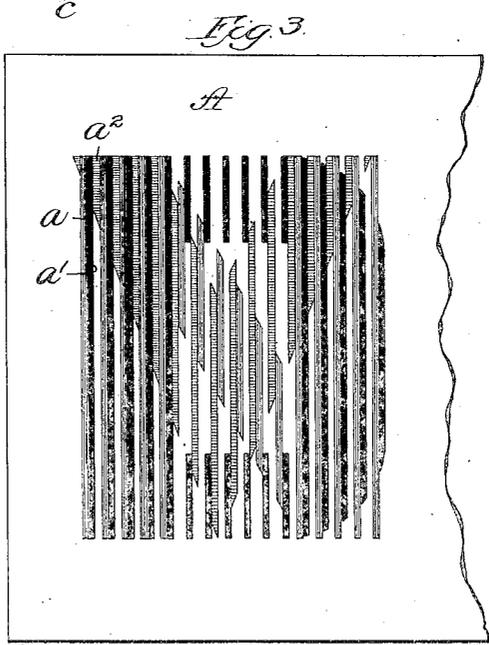
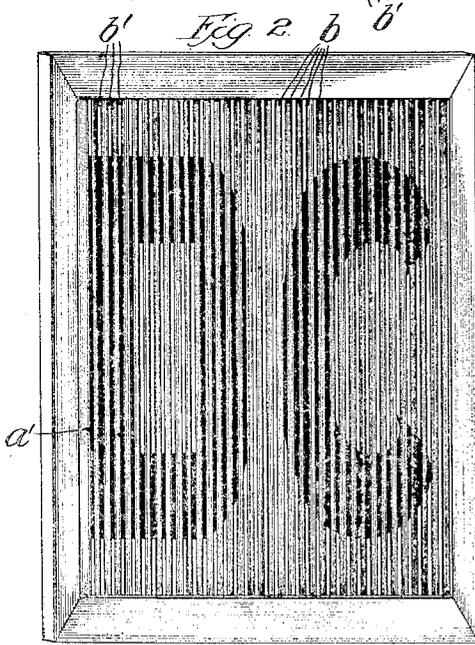
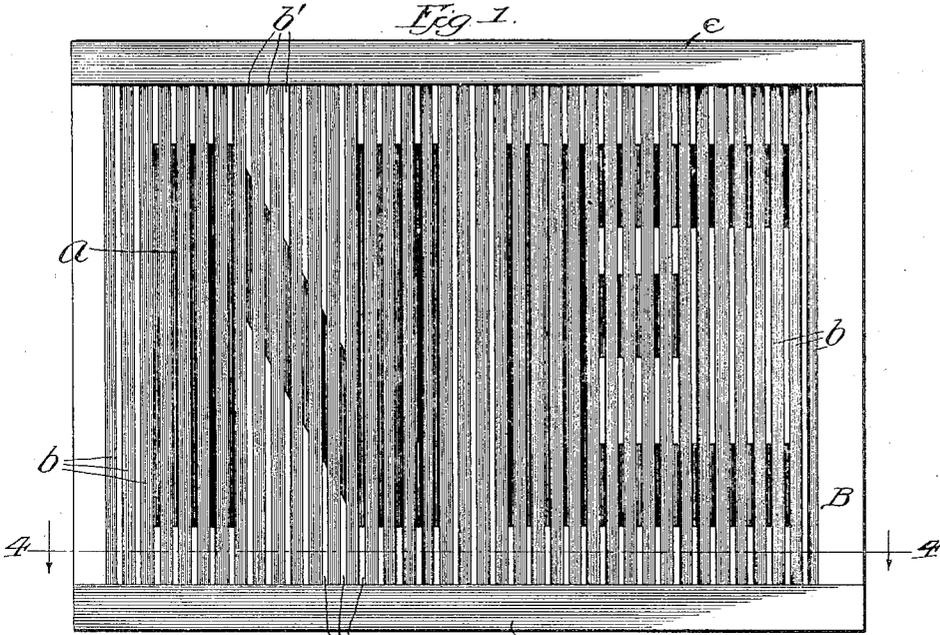


A. S. SPIEGEL.
DISPLAY DEVICE.

APPLICATION FILED NOV. 29, 1905.



Witnesses:
Geo. E. Folk.
Geo. E. Folk.

Fig. 5
c b a a' c
A
c b a b B

Inventor:
Alexander S. Spiegel,
By Barton & Shurt
Atty's.

UNITED STATES PATENT OFFICE.

ALEXANDER S. SPIEGEL, OF CHICAGO, ILLINOIS.

DISPLAY DEVICE.

No. 829,492.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed November 29, 1905. Serial No. 289,567.

To all whom it may concern:

Be it known that I, ALEXANDER S. SPIEGEL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Display Devices, of which the following is a full, clear, concise, and exact description.

My invention relates to display devices and is readily adapted for use in display advertising or as a sign or for other similar purposes.

The object of my invention is to provide a device of the character indicated in which the visible design is changeable.

My invention contemplates a device in which a plurality of designs, each composed of parts alternating with the parts of the other design or designs and screened in such manner that by varying the relation of the screening member to the line of vision the visual effect is varied. Such change in the relative position of the screen may be effected by making the designs and the screen movable with relation to each other and is preferably accomplished by imparting a positive motion to said screen while the plate remains fixed, or vice versa.

I will describe my invention more particularly in connection with the accompanying drawings, in which—

Figure 1 is a front elevation of a device embodying my invention. Fig. 2 is a perspective view of the sign shown in Fig. 1, slightly modified in that the screening member is shown fixedly mounted, the change in the visible design being produced by a change in the position of the observer. Fig. 3 is a fragmentary front elevation of the device with the screening member removed. Fig. 4 is a cross-section on the line 4 4 of Fig. 1, and Fig. 5 is an enlarged cross-section showing a portion of the design diagrammatically.

Similar letters of reference designate similar parts throughout the several views.

For purpose of illustration I have shown my invention embodied in a sign. A plate A has a plurality of designs painted or otherwise affixed to its front face. The arrangement of these designs is clearly shown in Fig. 3, in which the letter "N," shown in vertical shading, the letter "D," in solid black, and the letter "V," in horizontal shading, constitute the designs. While I have shown

but three letters, it is obvious that any number within reasonable limits may be used. The effect, moreover, may be varied by the use of different colors. A screening member, here shown as a transparent plate B, having a series of parallel non-transparent strips *b*, is placed over said designs, whereby from the same point of vision only a single design at a time is visible through the transparent portions between said strips.

With the plate A and the screening member B fixed with relation to each other, as shown in Fig. 2, when viewed directly from the front, the letters "N" and "E" are visible, the other of the designs being concealed by the non-transparent strips *b*. When viewed from the left, the letters "D" and "C" are alone visible. When viewed from the right, the letter "V" would replace the letters "N" and "D." The transparent plate B, which may be of glass, celluloid, or other suitable material, serves as a spacing member to raise the strips *b* above the design, as clearly shown in Figs. 4 and 5.

In the drawings I have shown the strips *b* separated from each other by a space approximately one-half the width of said strips. This provides a suitable screen where three entirely distinct visual effects are to be produced by a relative change of the screen with respect to the line of vision.

In Fig. 5 I have shown diagrammatically how a change in the position of the observer produces a change in the design visible to him. When directly in front of the sign, the part *a*, representing a portion of the letter "N," is visible through the transparent opening *b'*, the parts *a'* and *a''*, representing letters "D" and "V," respectively, being concealed. When the eye is in the position shown at the left, *a'* alone is visible, *a* and *a''* being concealed. It is obvious that the extent of the visible face of the plate A varies with the width of the opening *b'* and the distance the strips *b* are separated from the surface of said plate. The number of different changes in the visible sign is not limited, therefore, to three, but a much larger number is possible.

In Fig. 1 I have shown the plate B held in contact with the plate A by guide-strips *c c* at the top and bottom of the device, thus rendering the plate B movable with respect to plate A. Obviously such movement of the plate back and forth would produce sub-

stantially the same effect on the visible sign as the movement of the observer when the plates are fixed. A change in the position of the non-transparent strips *b* with respect
 5 to the line of vision produces the change in the visible design. It is furthermore obvious that the change in the visible design may be made more or less gradual. The stage of the changes from one to the other
 10 may be so gradual as to be practically imperceptible, thus rendering a moving-picture effect possible where such effect is desirable.

Having thus described my invention, I claim—

15 1. In a display device, the combination with a plurality of designs each composed of parts alternating with those of the other design or designs, of a transparent plate overlying said designs, said plate having a screen
 20 upon its front surface through which said designs are successively visible upon a relative change of said screen with the line of vision, said transparent plate constituting a spacing

member for accurately spacing apart the design and the screen.

25 2. In a display device, the combination with a rear plate having a plurality of designs upon its face each composed of parts alternating with those of the other design or designs, of a transparent front plate mounted
 30 to have a reciprocating motion with respect to said rear plate, said transparent plate having a screen upon its front surface through which said designs are successively visible
 35 upon the relative movement of said plates, said transparent plate constituting a spacing member for accurately spacing apart the design and the screen.

In witness whereof I hereunto subscribe my name this 27th day of November, A. D. 40 1905.

ALEXANDER S. SPIEGEL.

Witnesses:

GEORGE E. FOLK,
 ALFRED H. MOORE.