M. T. ASH.

DISPLAY APPARATUS.

APPLICATION FILED DEC. 10, 1909.

1,018,403.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.

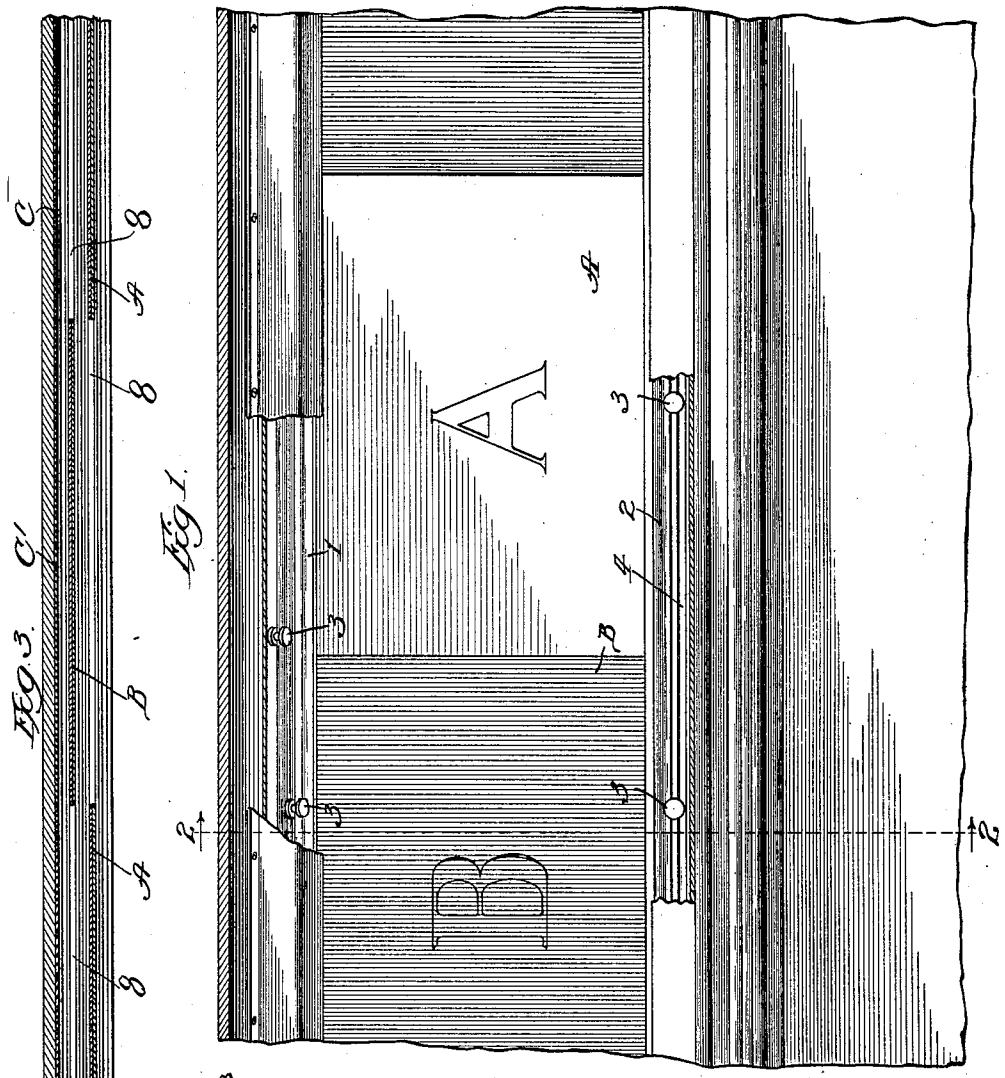

Fig. 1.

Fig. 3.

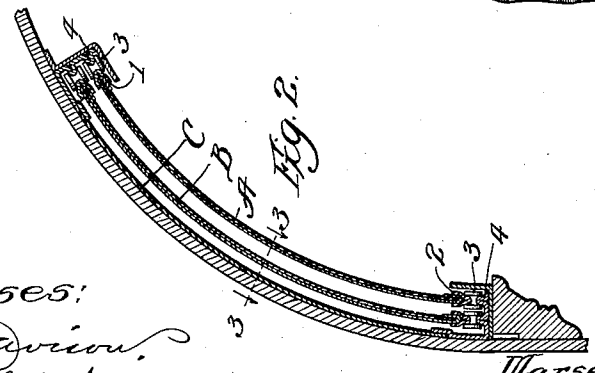

Fig. 2.

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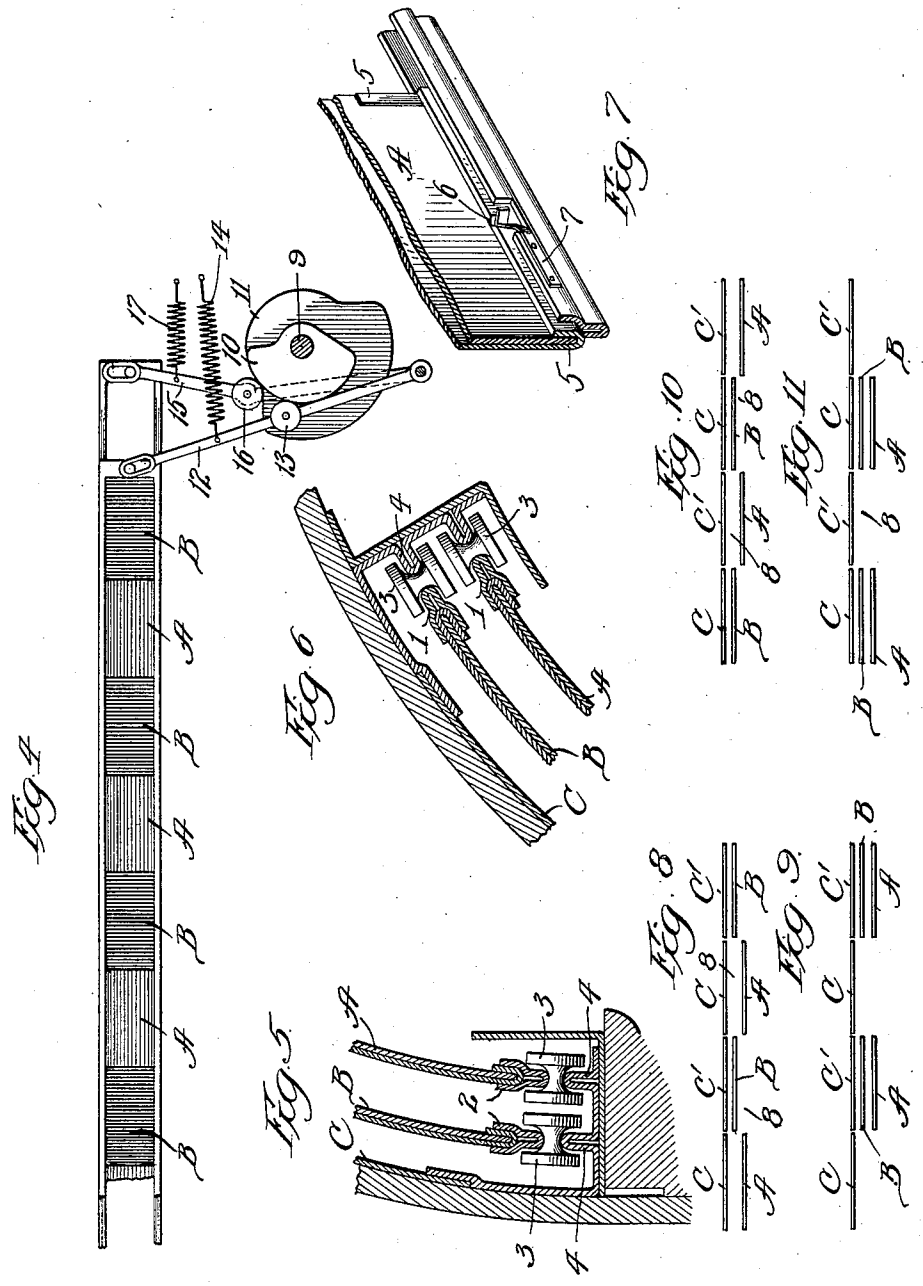

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DISPLAY APPARATUS.

1,018,403. Specification of Letters Patent. Patented Feb. 27, 1912.

Application filed December 10, 1909. Serial No. 532,384.

To all whom it may concern:

Be it known that I, MARSELIUS T. ASH, 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 Apparatus, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to display apparatus and has for its object the provision of mechanism whereby a given space reserved for the display matter may accommodate display portions which in the aggregrate will exceed the reserved space.

In practicing my invention, I employ a plurality of relatively movable sets of display portions, the portions of one set being so interrelated with the portions of a companion set that relative movements between these sets will conceal or reveal display portions of one set and will reveal or conceal display portions of an additional set if added according to the directions of the relative movements between the sets of display portions.

In the preferred embodiment of my invention, I employ a stationary set of display portions, the portions being preferably of similar dimensions, and place before this stationary set of display portions another set of display portions that is movable and the portions of which preferably have dimensions similar to the dimension of the stationary set. Adjacent portions of the movable set, however, have clear spaces, which are preferably open, intervening between them and of dimensions similar to the dimensions of the display portions. The display portions of the stationary set preferably have no spaces intervening between the same.

Mechanism is preferably provided whereby periodical reciprocating movements are imparted to the movable set of display portions so that adjacent portions of the stationary set are alternately revealed and concealed. If desired, another movable set of display portions, constructed and arranged similarly to the first movable set of display portions and also having similar clear spaces intervening between adjacent display portions, may also be employed, to which reciprocating movements may be periodically imparted for further increasing the number of display portions that may be exhibited within the same given space.

While one of the sets of display portions is preferably stationary, I do not wish to be limited to this characteristic in all embodiments of the invention, and while adjacent portions of the movable sets are preferably separated by spaces having dimensions similar to the dimensions of the display portions, I do not wish to be limited to this characteristic.

I will explain my invention more fully by reference to the accompanying drawings showing the preferred embodiment thereof, in which—

Figure 1 is a view in elevation of a part of the structure, certain parts being broken away to reveal hidden features; Fig. 2 is a view in cross section on line 2 2 of Fig. 1; Fig. 3 is a sectional plan view on line 3 3 of Fig. 2; Fig. 4 is a diagrammatic view indicating mechanism for effecting relative reciprocating movements of two sets of display portions, both of which are movable with respect to a stationary set of display portions not shown in this figure; Figs. 5 and 6 are enlarged views of the lower and upper end portions respectively of the structure indicated in Fig. 2; Fig. 7 is a perspective view of a detail of construction showing a clip structure for holding a display portion in position; and Figs. 8, 9, 10 and 11 are diagrammatic plan views showing the various relative positions the display portions may occupy.

Like parts are indicated by similar characters of reference throughout the different figures.

In the drawings, the space appropriated for advertising purposes is located where signs are usually displayed in vehicles, but I do not wish to be limited to such location. The display portions of the stationary set are marked alternately C C′ and are preferably of the same dimensions with no intervening spaces. The display portions C C′ constitute what are termed in some of the claims a rear display member. These display portions may be provided upon suitable sign bearing material which may be in one integral sheet or each display portion may be upon a separate sheet as desired. The set of display portions that is immediately in front of the portions C C′ are marked B and have dimensions similar to the dimensions of the display portions C C′.

The adjacent display portions B B are separated by clear spaces which have dimensions equaling the dimensions of the display portions B C C′, the display portions B being in fixed relation with each other, which result may be attained by having said display portions upon a single sheet of material in which the clear spaces are cut, though I do not wish to be limited to this characteristic. The third set of display portions A A are preferably related to each other as are the display portions B B, similar clear spaces intervening between adjacent display portions A A.

Mechanism is provided for moving the sets of display portions A B in such manner that the display portions C may be revealed while the display portions C′ are concealed and whereby the display portions C′ may be revealed while the display portions C are concealed. In order to reveal the display portions C C′, the clear spaces intervening between the display portions B are caused to be in alinement with the clear spaces between the display portions A, these alined spaces being brought into alinement with the display portions C to reveal the same and into alinement with the display portions C′ to reveal them. When there is the stated alinement of the clear spaces, the display portions B are concealed by the display portions A. In order that the display portions B may be revealed, the clear spaces between the display portions A are brought into alinement with the display portions B. I have thus illustrated two sets of movable display portions, one superposed upon the other and both superposed upon the fixed set of display portions, but I do not wish to be limited to two movable sets of display portions.

The movable sets of display portions may be operated by hand but it is preferable to employ machinery for this purpose. The drawings illustrate one of many mechanical devices that may be employed for this purpose. Each set of display portions is provided with a fixed marginal portion 1 at its top and another fixed marginal portion 2 at its bottom. These fixed marginal portions are received within the grooves of grooved rollers 3 that are free to roll upon tracks 4 also received in said grooves. Each individual display portion is preferably upon a card distinct from the rest so that the display portions may be replaced as occasion may require. When the display portions are thus distinct and separable, they are preferably received within individual frames 5, (see Fig. 7 particularly), these frames being provided with notches 6 to receive the kinked ends of springs 7 that are carried upon the marginal portions 1, whereby the display portions may be readily secured in position. The sets of display portions having the fixed marginal portions 1 have clear spaces between adjacent display portions, the clear spaces of the two sets, when alined, revealing either the display portions C or the display portions C′ according to the positions to which the movable display portions are reciprocated. These clear spaces are indicated by the reference character 8.

Referring now most particularly to Fig. 4, I have illustrated one of many instrumentalities that may be employed to move the sets of display portions A B with respect to each other and also with respect to the stationary set of display portions C C′. The mechanism illustrated includes a shaft 9 constantly driven at a uniform rate of speed and carrying thereupon two distinct cams 10 and 11. The set of display portions A is in pin and slot connection with an arm 12, carrying a cam roller 13 constantly pressed into engagement with the came 10 by a spring 14, while the set of display portions B is in pin and slot connection with an arm 15 carrying a cam roller 16 constantly pressed into engagement with the cam 11 by the spring 17. The mechanism described causes the sets of display portions A B to be so reciprocated as to occupy the positions with respect to each other and with respect to the stationary set of display portions which are exhibited diagrammatically in Figs. 8, 9, 10 and 11. In Fig. 8, all of the stationary display portions are concealed and all of the movable display portions are visible. In Fig. 9, two of the stationary display portions are revealed and only the foremost movable display portions are visible. In Fig. 10, the display portions are relatively shifted as compared with the position thereof indicated in Fig. 8, the stationary display portions again being concealed and all of the movable display portions being visible. In Fig. 11, the same movable display portions which are visible according to the arrangement in Fig. 9 are again the only movable display portions that are visible, but all the movable display portions have here been shifted so as to reveal the stationary display portions that were previously concealed and to conceal the stationary display portions that were previously revealed.

The organization as I preferably embody it thus constitutes a display apparatus which includes two relatively movable sets of alined display portions disposed in the same display space, said portions being of substantially the same dimensions, one of said sets of display portions overlying the other and having clear spaces intervening between the display portions thereof, through which spaces display portions of the companion set may be seen, the latter portions being substantially unseparated, relative movement of the display portions in one direc-

tion revealing some of the portions of said companion set and concealing others, and relative movement in the reverse direction concealing revealed display portions and revealing concealed portions, an additional set of alined display portions having clear spaces intervening between the display portions thereof through which spaces display portions of the other two sets may be seen, the display portions of this additional set and the open spaces therebetween being of substantially the same dimensions as the other display portions and intervening spaces, said additional set of display portions being relatively movable with respect to its companion set and in one movement revealing some display portions and concealing others and in reverse movement concealing revealed portions and revealing concealed portions, and mechanism for relatively reciprocating those sets whose portions are spaced apart to bring the portions of one set over the spaces between the portions of the other set, for alining the spaces between the portions of these two sets whereby display portions are revealed, and for shifting the alined spaces to reveal fresh display portions.

While I have herein shown and particularly described the preferred embodiment of my invention, I do not wish to be limited to the precise details of construction shown, as changes may readily be made without departing from the spirit of the invention, but,

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following:—

1. Display apparatus including two relatively movable sets of display portions disposed in the same display space, one of said sets of display portions overlying the other and having clear spaces intervening between the display portions thereof through which spaces display portions of the companion set may be seen, said portions being adapted by relative movement of the sets of display portions in one direction to reveal some of the portions of said companion set and to conceal others, and by relative movement in the reverse direction to conceal previously revealed display portions and to reveal previously concealed display portions, and an additional set of display portions having clear spaces intervening between the display portions thereof through which spaces display portions of the other two sets may be seen, said additional set of display portions being relatively movable with respect to its companion sets and adapted in one movement to reveal some display portions and to conceal others and in reverse movement to conceal previously revealed portions and to reveal previously concealed portions.

2. Display apparatus including two relatively movable sets of display portions disposed in the same display space, one of said sets of display portions overlying the other, and a display member located behind the two sets of display portions, the portions of each of said sets having clear spaces intervening between the same whereby the rear display member may be partially revealed when said clear spaces are brought into alinement and whereby the display portions of the rear one of the two sets may be revealed when brought into alinement with the clear spaces intervening between the front one of the two sets of display portions.

3. Display apparatus including two relatively movable sets of display portions disposed in the same display space, one of said sets of display portions overlying the other, and a display member located behind the two sets of display portions, the portions of each of said sets having clear spaces intervening between the same whereby the rear display member may be partially revealed when said clear spaces are brought into alinement and whereby the display portions of the rear one of the two sets may be revealed when brought into alinement with the clear spaces intervening between the front one of the two sets of display portions, both of said sets of display portions being movable with respect to the rear display member so as to reveal and conceal different parts of the rear display member that may be viewed through the clear spaces.

In witness whereof, I hereunto subscribe my name this ninth day of December A. D., 1909.

MARSELIUS T. ASH.

Witnesses:
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R. E. ATHERTON.