

Nov. 1, 1938.

J. R. BRAMER

2,135,207

ADVERTISING OR DISPLAY APPARATUS

Filed Dec. 5, 1936

3 Sheets-Sheet 1

Fig. 1.

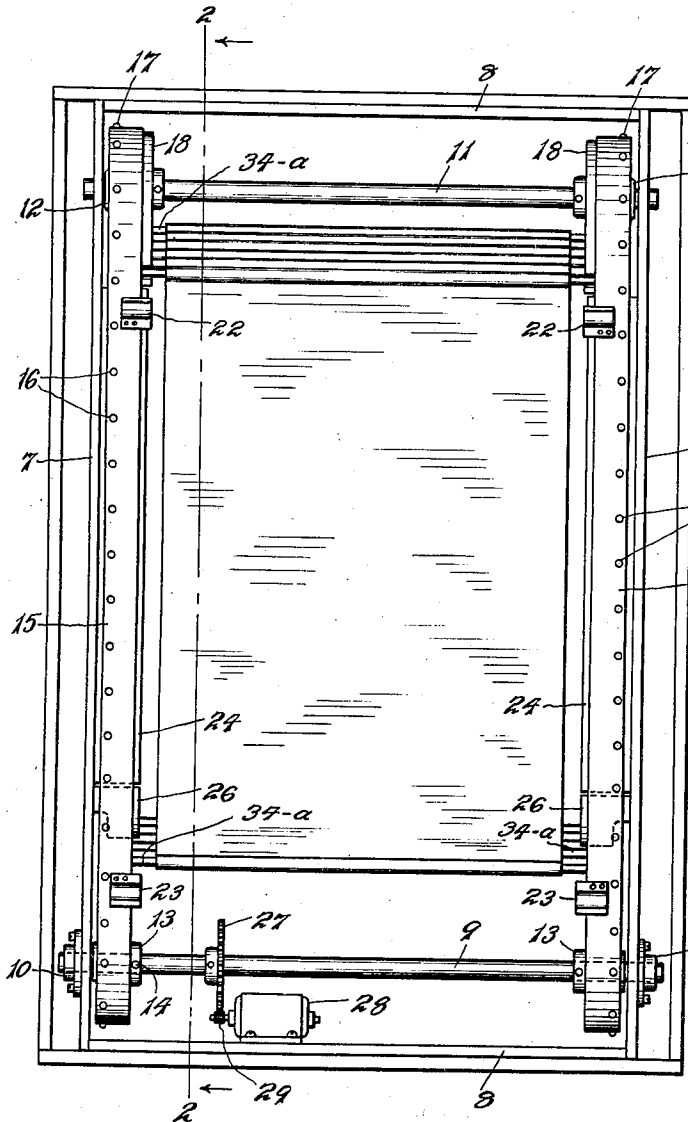
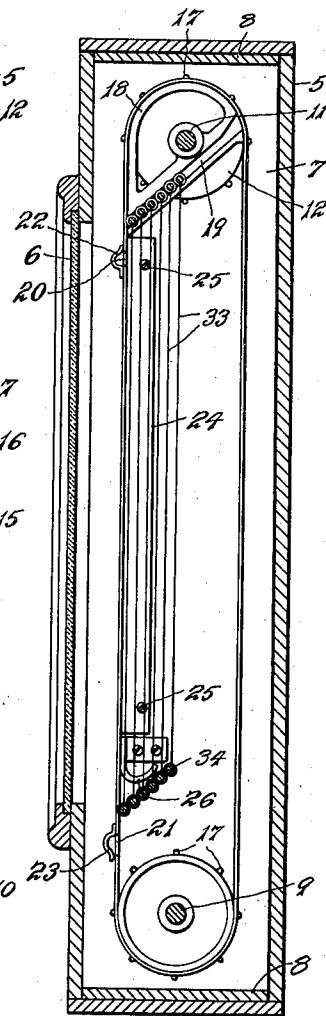


Fig. 2.



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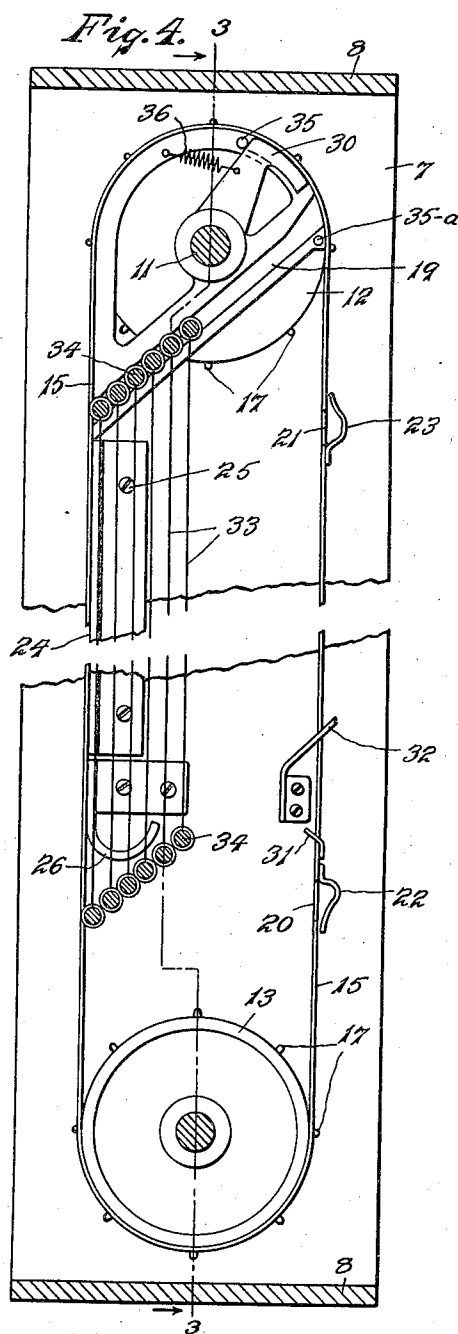
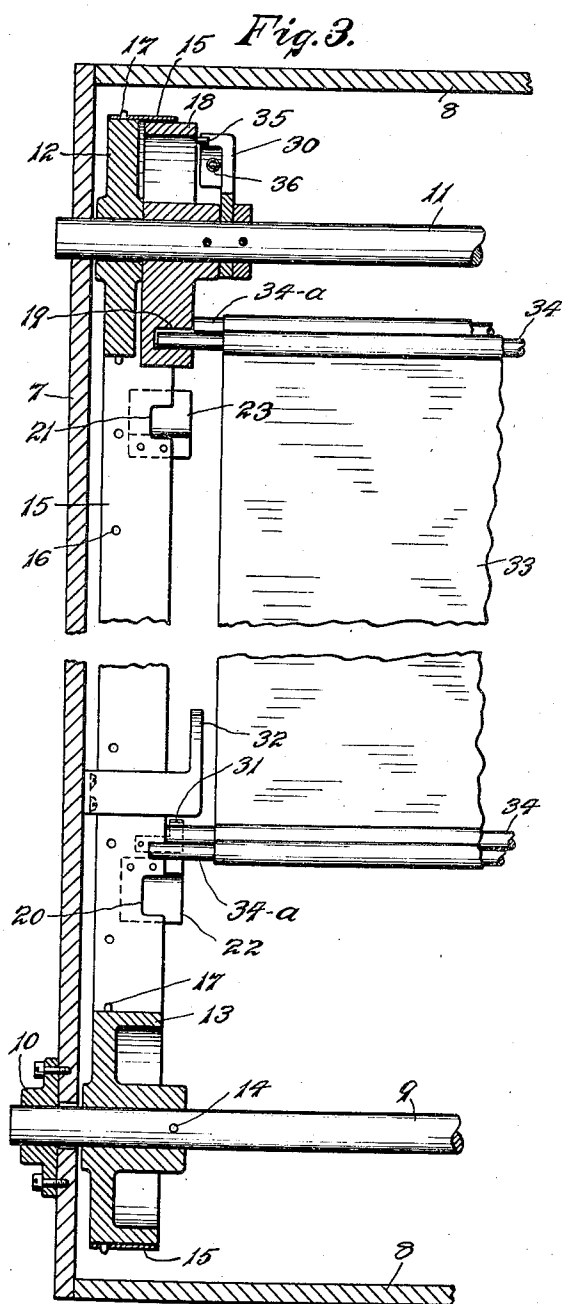
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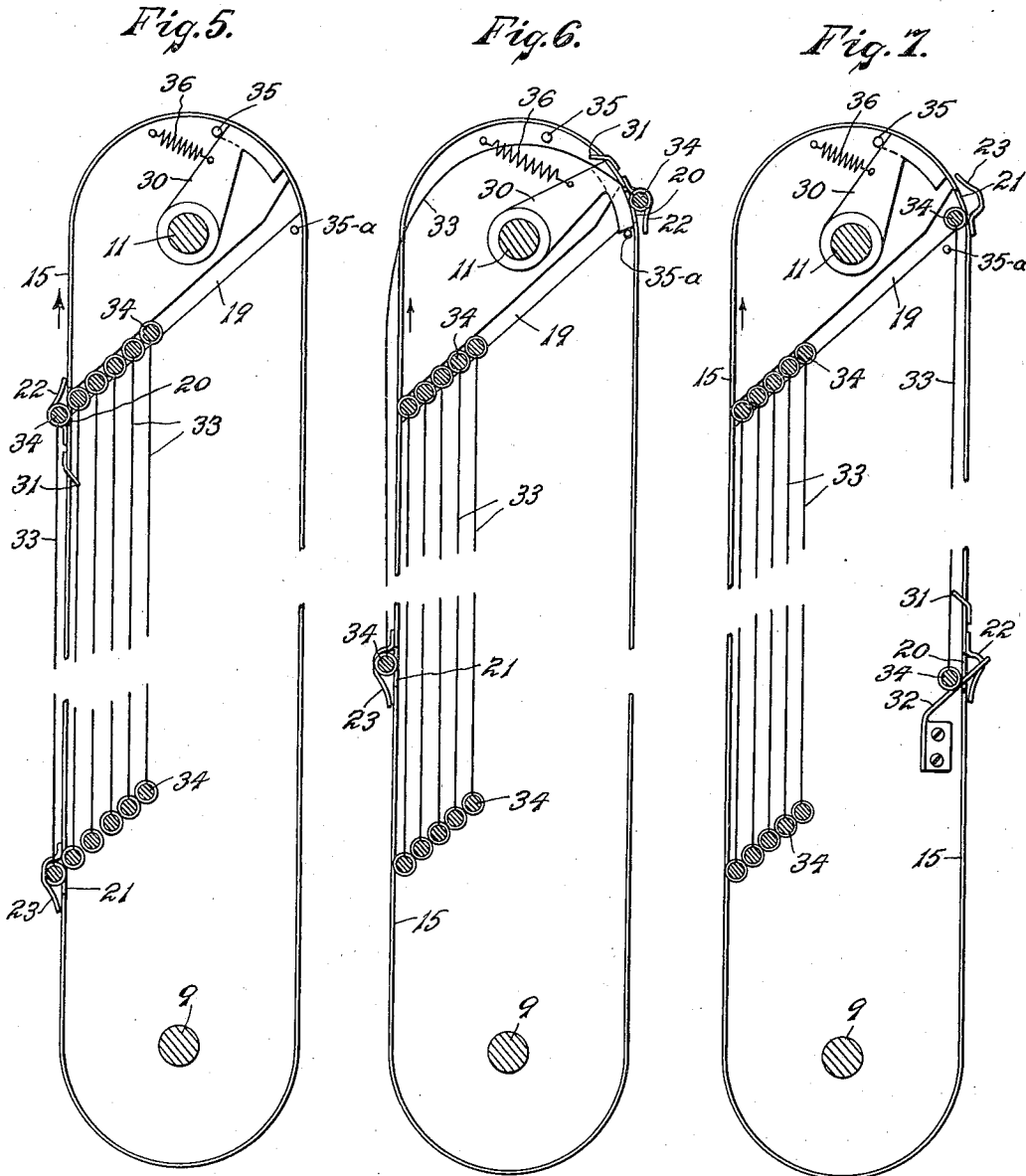
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,135,207

ADVERTISING OR DISPLAY APPARATUS

John R. Bramer, Brooklyn, N. Y.

Application December 5, 1936, Serial No. 114,423

24 Claims. (Cl. 40—36)

This invention relates to advertising or display apparatus of the changing type, such as comprise a housing having a window in front of which are presented, in succession, various changes of display panels and is particularly intended for apparatus of this type wherein the panels are turned over between each successive presentation thereof so that each of the two faces of said panels are alternately shown and thereby doubling the number of displays or advertisements which may be exhibited in a machine of a given size.

An object of this invention is to provide, for such an apparatus, a simple mechanism which requires a minimum number of parts, and which is highly efficient in its operation as well as economical to produce.

A further object is the provision of a mechanism employing the use of endless belts by means of which the operation of moving the different panels into a displaying position is mainly performed and thereby avoiding the use of complicated mechanism.

One form of the device embodying my invention is shown in the accompanying drawings in which:

Figure 1 is a front view, in elevation, of the apparatus with the front panel thereof removed.

Figure 2 is a view in vertical section on line 2—2 of Figure 1.

Figure 3 is a fragmentary view on an enlarged scale, in section on line 3—3 of Figure 4, showing some additional parts not shown in Figures 1 and 2.

Figure 4 is a side view, in vertical section, of the mechanism as shown in Figure 3.

Figure 5 is a partly diagrammatic view illustrating one step in the operation of the device.

Figure 6 is a similar view illustrating a further step.

Figure 7 is a similar view illustrating a still further step.

As illustrated in the drawings, my improved apparatus comprises a casing 5 having a window 6 provided in the front thereof. A frame consisting of side members 7—7 and top and bottom members 8—8 is mounted in said casing. The shaft 9 is rotatably mounted in bearings 10—10 in the said side members and near the bottom of said frame. A stationary shaft 11 is also mounted in said side members near the top of said frame.

A pair of pulleys 12—12 are rotatably mounted on the shaft 11. Another pair of pulleys 13—13 are mounted on the shaft 9 and secured thereto

by means of pins 14 so as to be rotatable therewith.

Carrier belts 15—15 extend over the upper and lower pulleys 12 and 13 at each side of said frame and are provided with spaced perforations 16 adapted to receive teeth, or pins, 17 which are provided on said pulleys to mesh therewith for the purpose of properly positioning said belts with relation to said pulleys and to each other.

A pair of panel supporting members 18—18 are mounted upon the shaft 11. Each of said members is positioned adjacent to one of the pulleys 12 and is stationary on said shaft. The upper portion of said members is semi-circular in shape and of a slightly smaller radius than that of the pulleys 12—12. The lower portion of said members is provided with a groove 19 extending downwardly at an angle towards the window 6.

Each of the said carrier belts 15—15 is preferably constructed of a flexible thin strip of suitable material, such as spring metal, and is provided with notches 20 and 21 adjacent to which are secured, on said belts, panel carrying clips 22 25 and 23.

Retaining bars 24—24 are provided adjacent to that portion of the said belts 15—15 which is located in front of the window 6. The said guides are secured by means of screws 25 to the side members 7—7 of the frame. Panel guide members 26—26 are also provided below said guide bars for the purpose to be hereinafter described.

Suitable driving means for said apparatus may be provided in the form of a gear 27, which is mounted to the shaft 9, and an electric motor 28 having a driving pinion 29 in mesh with said gear 27.

I may employ in my apparatus, if desired, the use of guide levers 30, which are rotatably mounted on the shaft 11, and operating clips 31, carried on movable belts 15, for actuating said levers for the purpose to be also hereinafter described.

I may also employ strippers 32. The use of said levers 30 and strippers 32 is optional, however, as they are not entirely necessary in the operation of my device but may be preferred when panels of certain types of material are used.

The panels adapted to be displayed by the apparatus are indicated at 33. Each of said panels is provided at the top and bottom thereof with a rod 34 which extends for a suitable distance beyond the side edges of said panels to provide extensions 34—*a* whereby the said panels are sup-

ported and operated by the mechanism of the apparatus.

In the operation of the apparatus above described and comprising my invention, it is understood that the panels 23 are supported from their upper ends by means of the extensions 34—*a* of the rods 34, which fit in the grooves 19 of the panel supporting members 18—18, and that the said panels hang perpendicularly therefrom. The rods 34 at the lower end of said panels tend to exert a downward pull thereon causing them to slide downwardly and perpendicular in the grooves 19, on account of the inclination thereof, towards that side of the supporting members 18—18 which is in front of the window 6. The said panels will move downwardly until the extensions, 34—*a* from the rods 34 of the foremost panel, will come to rest against the inside surfaces of the carrier belts 15—15.

The said carrier belts are continuously moving, in an upwardly direction in front of the window 6 by means of the rotation of the lower shaft 9 by the motor 28 through the gear 27 and pinion 29. The said panels are, therefore, intermittently retained in position, with the foremost panel in displaying position before the window 6, by means of the belts 15—15 which operate to hold the rods 34 in the grooves 19. When the said belts have moved to a position wherein the notches 20 and 21 thereof are passing in front of the extensions 34—*a* of the rods 34, the foremost panel is caused to move forwardly, by reason of the inclination of the groove 19 and through gravity, until the extensions 34—*a* of the rods 34 of said panel have moved into position within the clips 22 and 23, as clearly illustrated in Figure 5 of the drawings. At this time all of the panels, in back of the foremost one, move forwardly and downwardly in the grooves 19 until the second panel has come to rest in the position previously occupied by the first panel.

It will be understood that the carrier belts are in continuous motion in the direction indicated by the arrows in Figures 5 to 7 of the drawings.

After the front panel has moved into the position illustrated in Figure 5, continuing movement of said carrier belts will lift the said panel vertically, and in a perpendicular position, past the window 6. If for any reason the lower rod 34 of the panel fails to move into the clip 23 at the time that the upper rod moves into the clip 22, the said lower rod will be pushed into the said clip 23 by the guides 26—26 as it passes upwardly in front of said guides.

The upper, or leading, end of the said panel, with its rod 34, will next be carried around the supports 18—18, as illustrated in Figure 6 of the drawings.

The said panels are constructed of a material which is sufficiently rigid to cause the said upper rod to remain in position within the clips 22 so that they will not enter into the grooves 19 as they move around the guides past the openings into said grooves.

If preferred, however, I may employ the guide levers 30, above described, to close the openings of said grooves as the said leading ends of the panels are passing the same. The said levers are rotatably mounted on the shaft 11 and are retained in an inoperative position against the stop pins 35, by means of the springs 36. As the leading, or upper, ends of the panels are moving past the said levers, the lever operating

clips 31 will engage the lever and move them forwardly against stop pins 35—*a* causing them to close the entrances of the grooves 19 and thereby prevent entry of the rods, at the leading ends of said panels, into said grooves. As the said rods move further, the clips 31 will yield and slide past the said levers 30 until they have become disengaged therefrom; at which time the said levers are pulled back into their normal position by the spring 36, as illustrated in Figure 5.

It is to be understood that after the rod at the upper or leading end of the panel has moved past the grooves, the said rod is still retained within the clips 22. In this manner the panel is carried by the carrier belts with its leading end moving downwardly, at one side of the belts, while its lower end is moving upwardly at the opposite side thereof. Continuing movement of said carrier will carry the lower end of said panel over the said guide, in the same manner as the leading end thereof was previously carried, until the same reaches the position illustrated in Figure 7 wherein the lower rod thereof, which has now become the upper rod, will slide out of the clips 23 by gravity, through the notches 21, into the grooves 19 and move downwardly therein until the said panel assumes its position in back of the other panels. As, what is now, the upper bar of said panel slides, by gravity, out of the clips 23 into the grooves 19, the lower bar of said panels will engage the strippers 32, as it is moving downwardly, and the extensions 34—*a* of said bar will disengage from the clips 22 and pass through the notches 20, in the carrier belts, as the panel moves to its position against the other panels in front of it.

It is pointed out that the guide levers 30 and the guide members 32 are necessary for the proper operation of my improved apparatus only when it is desired to use panels of a highly flexible material such as cloth. It has been found that when the said panels are constructed of a sufficiently rigid material, such as a substantially stiff paper, the rods will, of their own accord, remain in their proper position as the clips 22 are passing the grooves 19. The said rods will, also of their own accord, pass through the notches 20 without the use of the strippers 32. When the said guide members are used, however, a more positive operation of the apparatus is obtained and it may be desired to include the said guide members irrespective of the type of panels used.

It will be noted that the notches 21 in the carrier belts are slightly larger than the notches 20. This is to accommodate any variation, in the distance between the lower and upper rods 34, which may be caused by expansion or contraction of the material of the panels; thus permitting the lower rods 34 to readily enter into the lower clip 23 without interference by the edges of said notch.

From the above description, it will be understood that the panels are retained in their displaying position and within the grooves 19 by means of the carrier belts engaging the extensions 34—*a* of the rods 34.

It will also be understood that the panels are carried upwardly, along the front of the conveyor, and downwardly along the back thereof.

During this operation, the said panels are inverted so that first one face and then the opposite face, of said panels is displayed at each successive cycle of operation.

The advertising or display matter is printed on both faces of the said panels but in relatively inverted position on the respective faces thereof so that, although the said panels are inverted, each successive time that they are displayed in front of the window, the said printed matter will be seen in an upright position.

From the above description it will be clearly seen that I have provided an advertising apparatus whereby both sides of a plurality of panels may be displayed successively by means of a mechanism which is highly efficient and extremely simple in its construction and operation.

It is particularly desired to point out that, by my invention, for an advertising apparatus, I have provided the novel means consisting of a carrier belt which is constructed of a strip of flexible material, such as metal, and that by said means I am enabled to retain the panels in position and cause changes of said panels by simply providing notches in said belts; the extensions on the rods at the ends of the panels passing through said notches into the carrying clips in which they are retained, by means of the retaining bars 24—24, and the outer surfaces of the supports 18—18 until the panels have reached the position wherein the rods are released from said clips and allowed to pass back through the notches at which time the upper rod of the panels slides into the supporting grooves in said supports.

I claim:

1. An apparatus of the character described adapted to display a series of independent panels and having inclined means for successively supporting said panels, endless traveling carriers at opposite margins of the panels adapted to retain the said panels upon said inclined supporting means, and means on said carriers for removing the front panel and transferring the same in an inverted position upon said supporting means and at the back of the series.

2. An apparatus of the character described comprising a series of panels adapted to be successively displayed, bars extending laterally from the ends of said panels, supporting means comprising an inclined surface for supporting said bars with the said panels depending therefrom and causing the same to slide downwardly towards one side of said supporting means, rotatable members, endless carriers comprising strips of flexible material in engagement with and movable by said rotatable members; the said strips overlapping the ends of said bars for retaining the same in position upon said supporting surfaces and having notches in said edges for releasing the front bar and causing the succeeding panels to advance upon said supporting means, means on said carriers adjacent the said notches for receiving the ends of said bar to carry the said panel upon said carriers, separate notches on said carriers in alignment with the lower bars of said panels and receiving means for said bars on said carriers adjacent said notches.

3. An apparatus of the character described comprising a series of independent panels adapted to be successively displayed, lateral bars extending from the ends of said panels, supporting members having inclined surfaces adapted to support said bars, rotatable members adjacent said supporting members, endless carriers comprising flexible strips adjacent the margin of said panels and movable in front of said bars and in engagement therewith to retain said bars upon said supporting members, and bar receiving

means upon said carriers including notches in the edges of said strips for the passage of said bars therethrough into said receiving means.

4. An apparatus of the character described comprising a series of independent panels adapted to be successively displayed, supporting members for said panels, bars extending transversely from the ends of said panels in engagement with said supporting members, endless carriers comprising endless strips of flexible material adjacent the ends of said bars and adapted to engage the same and retain them upon said supporting surfaces, receiving means upon said carriers for receiving said bars and comprising notches in said carrier strips for the passage of said bars therethrough into said receiving means, guide members adapted to guide the bar at the bottom of said panels into the bottom receiving means during the movement of said carriers, and retainers adjacent to said strips for retaining the said bar in said receiving means during the passage thereof in front of said retainers.

5. In combination with an apparatus of the character described for successively displaying a series of panels, means for supporting said panels and carrier means for successively removing the front panel of said series and transferring the same to the back thereof, said carrier means comprising rotatable members, projections on said members, and endless strips carried by said rotatable members and having perforations for the engagement of said strips by said projections.

6. An apparatus of the character described comprising a series of panels adapted to be successively displayed, laterally projecting bars at the top and bottom of said panels, supporting means for supporting said bars comprising inclined grooves, endless carrier means adapted to receive the said bars of the front panel of said series and to transfer the said panel to the back of said series in an inverted position upon said inclined grooves, means operable by said carrier means for closing the entrances to said grooves upon the passing of the bar at the leading end of said panel and adapted to open said entrances after the passing of said leading end to permit entrance of the bar at the opposite end of said panel into said grooves.

7. A displaying apparatus of the character described comprising a series of panels adapted to be successively displayed thereby, and means for supporting said panels in stationary displaying position comprising supporting members and endless carriers adapted to retain said panels upon said members.

8. An apparatus of the character described comprising a series of panels adapted to be successively displayed, laterally projecting bars at the top and bottom of said panels, supporting means for supporting said bars, endless carrier means adapted to receive the said bars of the front panel of said series and to transfer the said panel to the back of said series in an inverted position upon said supporting means, a shaft supporting said carrier means, rocker arms rotatably mounted on said shaft and having extensions adapted to prevent entrance of one of said bars upon said supporting surfaces, and means carried by said endless carriers for operating said rocker arms.

9. A displaying apparatus of the character described comprising a frame, supporting means, a series of panels, inclined surfaces on said supporting means adapted to support said panels and

cause sliding movement thereof in one direction, endless carriers movable in proximity with said supports, means on said carriers for receiving said panels; said supporting means being adapted to deliver said panels directly into said receiving means, means for intercepting the movement of said panels on said supports, and means on said carriers for releasing said panels to allow them to successively slide off of said inclined surfaces and directly on to said receiving means.

10. An apparatus of the character described comprising a frame, stationary supports, a series of panels, inclined surfaces on said supports adapted to support said panels and permit sliding movement thereof in one direction, endless carriers comprising flexible strips having one side thereof adjacent said supports and adapted to retain said panels thereon, and means upon the opposite sides of said strips for receiving said panels and supporting the same thereon.

11. An apparatus of the character described comprising a frame, stationary supports, a series of panels, endless carriers adjacent said supports and cooperating therewith to retain the said panels thereon and means on said carriers for successively changing the position of the panel at the front end of said series to the opposite end thereof.

12. An apparatus of the character described comprising a frame, stationary supports, a series of panels, supporting surfaces on said supports adapted to support said panels and permit movement thereof from one side of said supports to the opposite side thereof, endless carriers comprising flexible strips, means on said strips for successively receiving said panels from the front of said series and carrying the same to the back thereof; the said receiving means being angularly disposed upon said strips whereby the said panels are caused to slide off of the same on to the said supporting surfaces upon registry therewith.

13. An apparatus of the character described comprising a frame, a series of panels, supporting means adapted to support said panels, endless carriers comprising flexible strips adjacent said supporting means and adapted to retain the said panels thereon, the said strips having notches therein, panel receiving means on the side of said strips opposite the said panels for receiving said panels upon movement thereof through said notches, retaining members mounted on said frame and adapted to prevent returning movement of said panel through said notches, and means on said frame for engaging said panel and causing return movement thereof through said notches.

14. An apparatus of the character described comprising a frame, stationary supports, a series of panels having rods extending laterally from the top and bottom thereof, supporting means adapted to support said panels, endless carriers comprising flexible strips adjacent said supports and adapted to retain said panels thereon, the said endless strips having notches therein, receiving means on the side of said strips opposite the said panels for receiving the ends of said rods upon movement thereof through said notches, retaining members mounted on said frame and adapted to retain said rods at the bottom of said panels in said receiving means, and guides associated with said retaining members for guiding said rods through said notches into said receiving means.

15. A display apparatus of the character described comprising a frame, a pair of shafts mounted in said frame, pulleys on said shafts, endless carriers mounted on said pulleys and movable therewith, supporting members mounted on one of said shafts, a series of panels supported on said supporting members in successive position, and means on said carriers for receiving said panels and successively transferring them from their displaying position to the back of said series.

16. An apparatus of the character described comprising a series of independent panels adapted to be successively displayed, supporting members for said panels, bars extending transversely from the ends of said panels and into engagement with said supporting members, carriers comprising endless strips of flexible material adjacent the ends of said bars and receiving means upon said carriers for receiving said bars; said receiving means comprising notches in said carrier strips for the passage of said bars there-through into said receiving means.

17. An apparatus of the character described comprising a series of independent panels adapted to be successively displayed, supporting members for said panels, bars extending transversely from the ends of said panels and into engagement with said supporting members, carriers comprising endless strips of flexible material adjacent the ends of said bars and adapted to receive the said panels from one side of said supporting means and carry them to the opposite side thereof; receiving means upon said carriers, notches in said carrier strips for permitting the said bars to move into said receiving means and retaining means adjacent to said strips for retaining the said bars in said receiving means while the said panels are being carried by said carriers.

18. An apparatus of the character described comprising an upper and lower shaft, supporting members mounted on said upper shaft, a series of panels depending from bars mounted on said supporting members, pulleys on said shafts, carriers comprising endless strips carried by said pulleys, means on said strips for receiving said bars from said supporting members and notches in said strips for permitting the passage of said bars into said receiving means; the said supporting members having means for preventing the passage of said bars through said notches while the said bars are being carried by said carriers.

19. An apparatus of the character described comprising an upper and a lower shaft, supporting members mounted on said upper shaft and having supporting grooves therein, a series of panels depending from bars slidable in said supporting grooves, pulleys mounted on said shafts, carriers comprising endless strips carried by said pulleys and adapted to carry said panels from one side of said supporting member to the opposite side thereof and receiving means on said strips for receiving said bars; the said supporting members having a peripheral portion corresponding to the periphery of the pulleys on the upper shaft and the said endless strips overlapping the said supporting members whereby the said bars are retained in said receiving means while being carried from one side of said supporting members to the opposite side thereof.

20. An apparatus of the character described comprising a frame, a series of panels, supporting means adapted to support said panels, end-

less carriers comprising flexible strips adjacent said supporting means and adapted to transfer the said panels from one side of said supporting means to the opposite side thereof, the said end-
 5 less strips having notches therein, panel receiving means on the side of said strips opposite the said panels for receiving said panels upon movement thereof through said notches, retaining members mounted on said frame and adapted to
 10 prevent returning movement of said panel through said notches, and means on said frame for engaging said panel and causing return movement thereof through said notches.

21. An apparatus of the character described
 15 comprising a series of panels adapted to be successively displayed, laterally projecting bars at the top and bottom of said panels, supporting means comprising inclined surfaces for supporting said panels in displaying position by the bar
 20 at the top thereof, endless carrier means adapted to receive the said bars of the front panel of said series and to transfer the said panel to the back of said series in an inverted position upon said inclined surfaces, and means operable by said
 25 carrier means for preventing the passage of the bar at the leading end of said panel on to the said inclined surfaces and adapted to permit the passage of the bar at the opposite end of said panel on to said surfaces after the passing of the
 30 said leading end.

22. A display apparatus of the character described comprising a frame, supporting shafts mounted in said frame, pulleys on said shafts, endless carriers mounted on said pulleys and
 35 movable therewith, supporting members mount-

ed on said shafts, a series of panels supported on said supporting members in successive position, and means on said carriers for receiving said panels and successively transferring them from their displaying position to the back of said series. 5

23. An apparatus of the character described comprising a series of independent panels adapted to be successively displayed, supporting members for said panels, bars extending transversely
 10 from the ends of said panels and into engagement with said supporting members, carriers comprising endless members adjacent the ends of said bars and adapted to receive the said panels from one side of said supporting means
 15 and carry them to the opposite side thereof; receiving means upon said carriers, notches in said carriers for permitting the said bars to move into said receiving means and retaining means
 20 adjacent to said carriers for retaining the said bars in said receiving means while the said panels are being carried by said carriers.

24. An apparatus of the character described comprising supporting members, a series of
 25 panels depending from bars mounted on said supporting members, endless carriers, means on said carriers for receiving said bars from said supporting members and notches in said carriers for permitting the passage of said bars into
 30 said receiving means; the said supporting members having means for preventing the passage of said bars through said notches while the said bars are being carried by said carriers.

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