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Schick

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[54] **DISPLAY DEVICE**

[76] Inventor: **Jean Francois Schick,** 7 rue de la Chaise, Paris, France

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[52] **U.S. Cl.** **312/268;** 198/131; 312/97; 312/134

[51] **Int. Cl.²** **A47B 49/00**

[58] **Field of Search** 312/134, 268, 267, 97, 312/266; 211/121; 198/131, 132

[56] **References Cited**

UNITED STATES PATENTS

962,749	6/1910	Davis	312/268
988,262	3/1911	Gulack	211/121
1,680,035	8/1928	Buckingham	312/268
2,596,291	5/1952	Thor	211/121

FOREIGN PATENTS OR APPLICATIONS

1,068,121	6/1954	France	312/268

Primary Examiner—Paul R. Gilliam
Assistant Examiner—Kenneth J. Dorner
Attorney, Agent, or Firm—Michael S. Striker

[57] **ABSTRACT**

A device for displaying miscellaneous articles, of the type comprising a plurality of movable supports, for example vertical panels driven along a closed circuit comprising ascending path and a descending path, by means of driving members such as chains or belts disposed on either side of said panels. The movable display supports are attached to said driving members through the medium of arms rigid with said members so as to project outwards at right angles to the corresponding portion of said members, each support pivoting freely to the end of a pair of said arms disposed at a same level as said lateral driving members.

6 Claims, 3 Drawing Figures

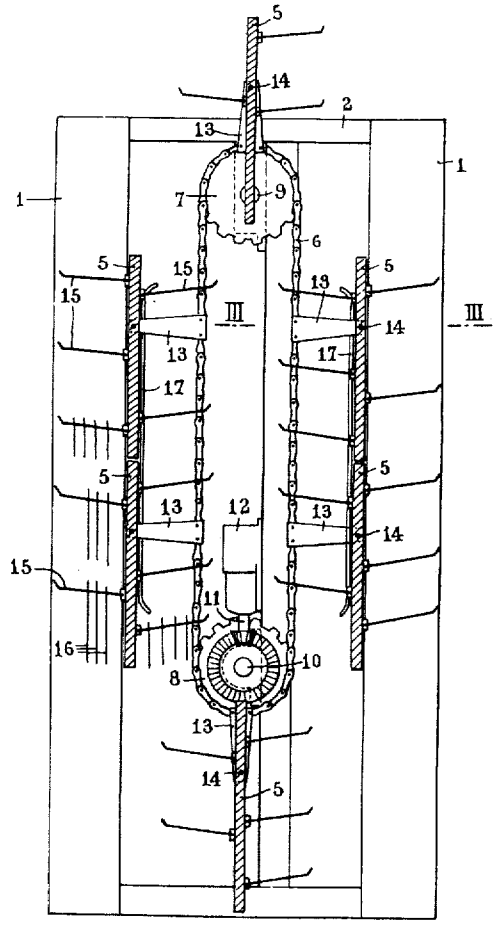


Fig.1

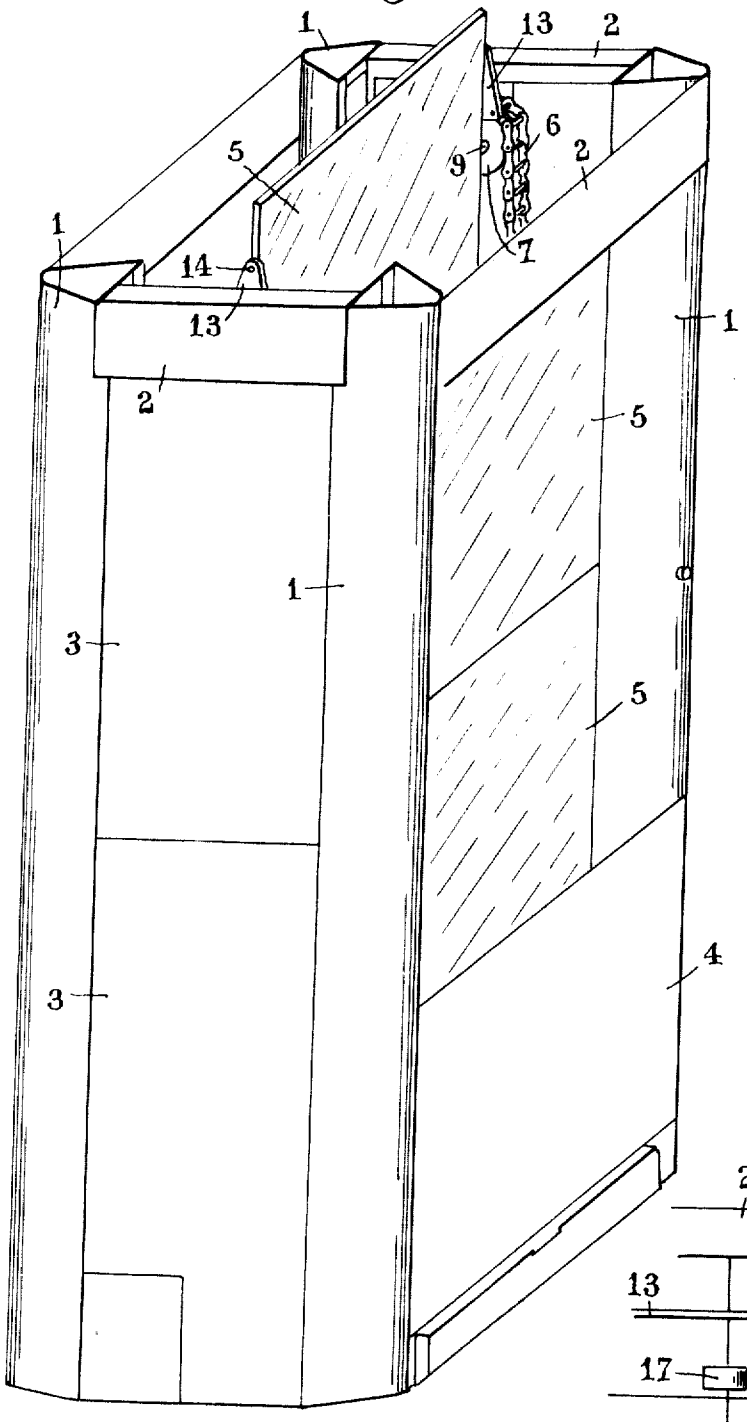


Fig.3

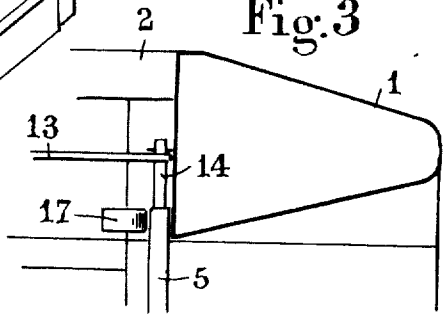
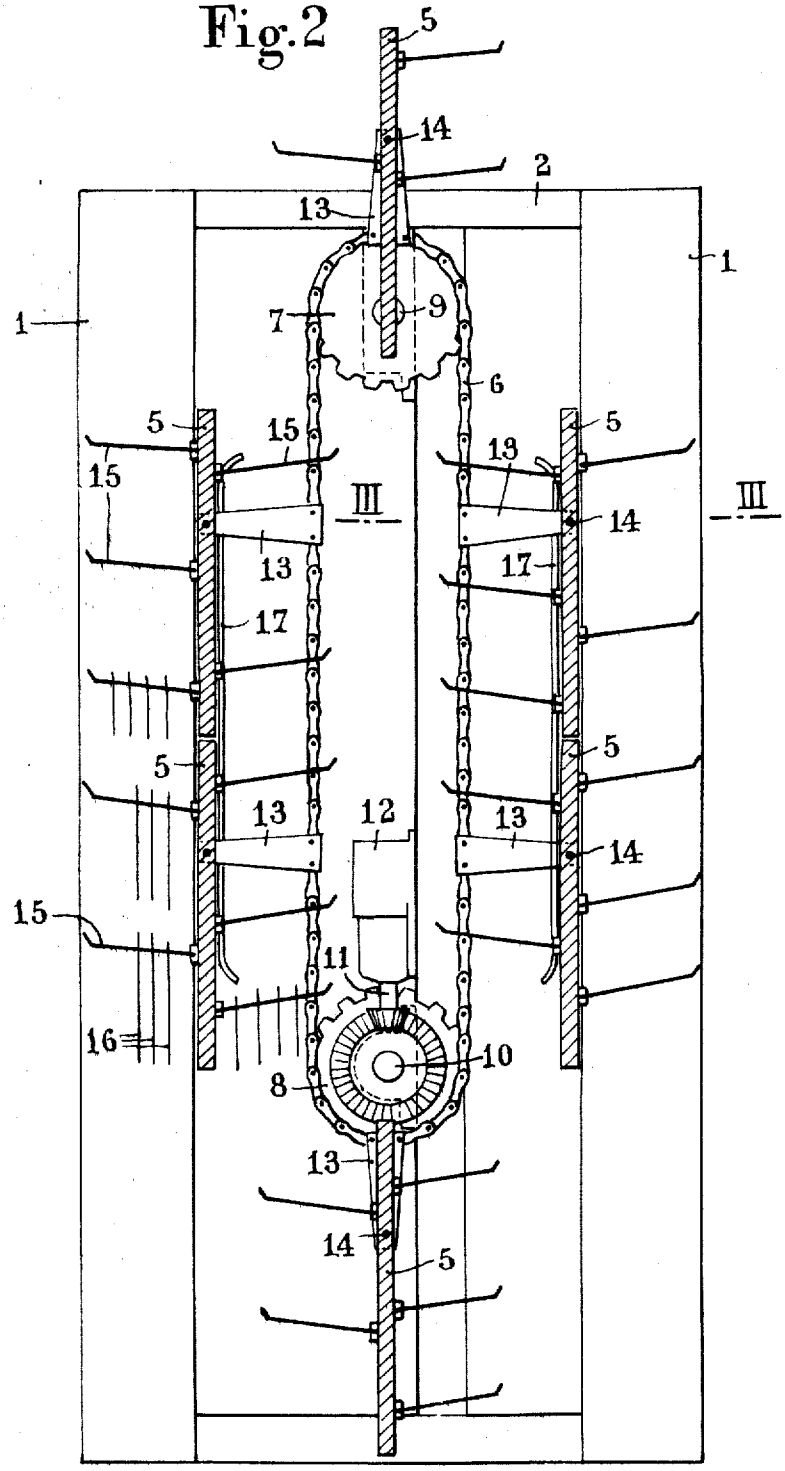


Fig.2


5
14
2
13
1
1
7
9
6
5
15
15
13
5
III
III
14
13
17
17
5
5
13
12
13
14
15
11
16
10
8
13
14
5

DISPLAY DEVICE

The present invention relates in general to devices used for displaying miscellaneous articles in stores and exhibition places.

More particularly, this invention relates to devices serving the broad purpose set forth hereinabove and comprising vertical panels or similar support means driven along a closed circuit path by transmission members such as chains or belts.

As a rule, devices of this character consist of a kind of cabinet open on two opposite main faces for making visible the movable supports carrying the articles to be displayed. The members driving these supports extend around guide or return pinions or pulleys disposed in the lower and upper portions, respectively, of said cabinet, thus providing each two vertical runs extending along the two apertures of the corresponding cabinet. Thus, the panels or other supports carrying the articles to be displayed are driven along an ascending vertical path, then along a descending vertical path, registering with one and the other aperture of the cabinet. Under these conditions both faces of each display panel or other support can be seen in succession.

In hitherto known devices of this type the upper end of each display panel is mounted for free pivotal movement about horizontal pivot pins carried by the driving members, so that these panels are constantly kept in a vertical position by gravity.

Due to the direct pivotal mounting of these panels on their driving members, said panels are located between these members when travelling past one or the other cabinet aperture. It is therefore necessary to provide some means capable of preserving a relatively wide spacing between the two ascending and descending runs of said driving members so that the panels disposed on either side thereof cannot interfere with each other through projecting elements provided for supporting the articles to be displayed. Besides, a similar likelihood of interference between two adjacent or successive panels exists when one of these panels moves away from one side of the cabinet towards the opposite side. To avoid this possibility, a certain gap may be provided between two adjacent or successive panels. However, the presence of this gap is detrimental to the general appearance of the panel assembly when the panels travel along the two opposite faces of the corresponding cabinet. On the other hand, when this cabinet is put at the disposal of customers in a store, these customers are exposed to the risk of engaging their hands between two successive panels.

It is therefore the primary object of this invention to provide an improved device for displaying articles, of the type broadly set forth hereinabove but free of the inconveniences characterising hitherto known devices of this type. Moreover, the design and arrangement of the device according to this invention are such that its overall dimensions are reduced considerably in comparison with prior art devices of this character.

To this end, in a display device according to this invention the vertical movable panels or other display supports are attached to their lateral driving members by means of arms rigid with said members and projecting to the outside, substantially at right angles to the corresponding portion of the members, each support pivoting freely to the end of two arms of this character

disposed at a same level on one and the other of the two lateral driving members.

With this arrangement it is possible to keep the panels or other display supports spaced from their driving members during their ascending or descending vertical movements. Thus, any risk of interference between the panels disposed on one and the other faces is definitely avoided without resorting to a substantial relative spacing between the two runs of the driving members.

On the other hand, any risk of interference is also avoided when a panel or other support moves or is transferred from one side or face of the device to the other. In fact, with the arrangement contemplated each support is caused to travel rapidly when passing from one run to the other.

According to another feature characterising the device of this invention the pivot pins of each panel or display support are located at a certain distance beneath the upper end of the support but above its mid-height line, for example at the first third thereof as measured from the top. This also assists in avoiding any risk of interference between two adjacent or successive panels when changing from one run to the other run, and vice versa. Besides, this feature also assists in reducing the over-all dimensions of the assembly.

Other features and advantages of this device will appear as the following description proceeds with reference to the attached drawing illustrating diagrammatically by way of example a typical form of embodiment of the invention. In the drawings:

FIG. 1 is a perspective view of a display device constructed according to the teachings of this invention;

FIG. 2 is a vertical section thereof, and

FIG. 3 is a fragmentary section taken along the line III—III of FIG. 2.

The device illustrated consists essentially of a cabinet of substantially rectangular parallelipipedic configuration comprising a frame structure having four uprights 1 disposed at its four vertical edges.

These uprights 1 are rigidly interconnected by brace-forming cross members 2. The minor sides of the cabinet are closed by panels 3 and the major sides are simply closed at their lower portion by panels 4, otherwise they are freely open, except for said cross members 2.

Visible through the apertures thus formed are a plurality of vertical movable panels 5 carrying the articles or objects to be displayed. These movable panels are driven by means of a pair of endless parallel sprocket chains 6 disposed on either side of the cabinet, adjacent the fixed side panels 3. These chains 6 extend around sprockets 7 and 8 disposed at the upper and lower ends, respectively, of the cabinet.

The pair of upper sprockets 7 are adapted to rotate loosely on separate shafts 9 secured to the cabinet sides, but the pair of lower sprockets 8 are carried by a common horizontal shaft 10 and coupled via a pair of bevel gears to the output shaft 11 of an electric driving motor 12.

According to an essential feature characterising this invention, the vertical movable panels 5 are attached to the pair of parallel chains 6 by means of bracket-forming arms 13 extending outwards at right angles to said chains. At one end, these arms are secured at two spaced points to corresponding links of each lateral chain, so that they are constantly kept in a position at right angles to said links.

Each panel is thus suspended on each side by means of a pair of side arms **13** each rigid with one of the parallel driving chains **6**. The free ends of the two corresponding chain arms carry each a horizontal pivot pin **14** to permit the free pivotal movement of the corresponding panel.

Concerning this particular mounting it may be emphasized that, according to a specific feature characterising the device of this invention, the pivot pins **14** of each panel are not positioned at the upper end of the panel as in hitherto known apparatus of this character. In fact, in the device of this invention these pivot pins **14** are somewhat spaced from said upper end but in any case in the first half of the height of the panel, as measured from the top. Thus, these pivot pins **14** may advantageously be located at about one-third of the panel height as measured from the top.

Both faces of said panels **5** may comprise rods or hooks **15** for supporting the articles **16** to be displayed and the nature of these articles may vary considerably; thus, small wares (haberdashery), hardware, hair dressing or perfumery articles, etc.. may be displayed.

The arrangement is such that when the front face of the vertical marginal portions of said vertical movable panels **5** are in sliding contact with the uprights **1** when said panels **5** move past the front aperture of one of the major faces of the cabinet, the rear face of said marginal portion is in sliding contact with registering vertical guide rails **17**. Thus, these panels **5** are safely held in position during their travel along one or the other face of the cabinet.

As already mentioned in the foregoing, the mounting of these movable panels **5** on the driving chains **6** by means of the perpendicular arms **13** is such that these arms **13** are constantly spaced from said chains **6** when said panels **5** register with one or the other of the major faces of the cabinet. Thus, any risk of interference between the panels disposed on one or the other side and the rods or hooks **15** for supporting the articles to be displayed is safely avoided.

Besides, when moving from one face to the other face of the cabinet, each panel cannot engage or interfere with the preceding panel by means of said rods or hooks **15**. In fact, this release and transfer movement from one to the other side of the cabinet takes place much more rapidly than the normal vertical travel thereof. Under these conditions, the relative spacing between the arms **13** supporting said panels **5** may be such that these panels **5** follow one another without forming or leaving a gap therebetween when they extend along one or the other major face of the cabinet. Thus, the general aesthetic appearance of the assembly is greatly improved and the possibility of inserting one's hand into the gap separating two adjacent or successive panels **5** is definitely precluded.

The particular position of the pivot **14** of each panel at a certain distance from the upper edge of the relevant panel is advantageous not only in that it permits of accelerating considerably the release and transfer movement from one face to the other face of the cabinet but also of reducing the over-all dimensions of the assembly in the vertical direction. In fact, referring to the lower portion of FIG. **2**, it will be seen that this position of the pivot pin **14** well below the upper end of each panel permits of reducing accordingly the height of the lower portion of said cabinet.

Of course, this modification is attended by a higher uppermost position of the panel **5** during its transfer from one vertical path to another at the upper end of the cabinet, but this is substantially immaterial for as a rule it is more advantageous to reduce the height of the lower portion concealed by the fixed panels **4** disposed on the front and rear faces of the cabinet.

The specific position of the pivot pins **14** of the movable panels is also advantageous in that it reduces or eliminates the oscillations of each panel during the transfer thereof from one to the other side of the device. Under these conditions, each panel is presented in the best possible position when starting a fresh ascending or descending run, with respect to the vertical slideways consisting of the guide rails **17** and uprights **1**.

Of course the vertical movable panels **5** could be provided with any other suitable type of support capable of receiving the articles to be displayed. Besides, these panels may themselves be replaced by other supports adapted to receive these articles, for instance boxes or containers adapted to enclose these articles.

Finally, the present invention should not be construed as being strictly limited by the specific form of embodiment described hereinabove and illustrated in the accompanying drawing, given by way of example.

This device may be used for displaying various articles either for exhibition purposes or for selling them. In this last instance, the device constitutes a particularly attractive display cabinet capable of containing in a relatively reduced volume a great variety of articles which can be picked up by the purchasers themselves. These articles may consist for example of small-wares or hardwares, or any other objects to be displayed exhibited or put on sale.

What I claim is:

1. A moving display for exhibiting objects, comprising a frame having a first and an opposite second side each provided with an aperture; drive means for moving the objects to be exhibited intermediate said sides and in a closed path having an ascending and a descending portion inwardly of the respective apertures; a plurality of vertically oriented panel members each having opposite planar surfaces and being driven by said drive means, said planar surfaces of each of said panel members facing said first and second sides, respectively; projecting elements mounted on said planar surfaces for supporting the objects to be displayed; and a plurality of mounting arms extending transversely of said sides and each having a first end portion pivotally supporting one of said panel members, a second end portion fixedly mounted on said drive means, and supporting the respective panel member at a predetermined distance outwardly of said drive means which is sufficient so that the projecting elements provided on respective panel members located in said ascending and descending portions of said path are free from interference with one another, whereby the objects supported on said planar surfaces of said panel members can move into register with the respective apertures without interference.

2. A moving display as defined in claim **1**; and further comprising a pivot pin provided on each of said vertically oriented panel members and cooperating with said first end portion of said extension arms so as to pivotally support said panel members, said pivot pin being located at a distance which is at least one-third of the

total length of each of said panels members as measured in the vertical direction.

3. A moving display as defined in claim 1, wherein successive ones of said panel members which are located in said ascending and descending portions of said path are positioned without substantial gaps between said successive panel members.

4. A moving display as defined in claim 1, wherein said frame is substantially rectangular and further comprises four upright members located at the four corners of said frame; and further comprising guide rails spaced from said upright members and guiding said panel members when the latter are being driven in said ascending and descending portions of said path, the space between said guide rails and said upright members accommodating the outer marginal portions of said panel members.

5. A moving display as defined in claim 1, wherein said drive means comprises a pair of upper gears rotatable on separate shafts and respectively secured to said opposite sides of said frame; a pair of lower gears rotatable on a common shaft; a pair of endless chains respectively entrained over said upper and lower gears so that said upper gears will rotate whenever one of said lower gears is caused to rotate; and a prime mover coupled to at least one of said lower gears so as to rotate the same.

6. A moving display as defined in claim 1, wherein a first surface of one and an opposite second surface of another of said panel members register with the respective apertures simultaneously.

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