

Dec. 27, 1955

O. H. GRISWOLD
DISPLAY DEVICE

2,728,622

Filed Sept. 20, 1952

3 Sheets-Sheet 1

FIG. 1

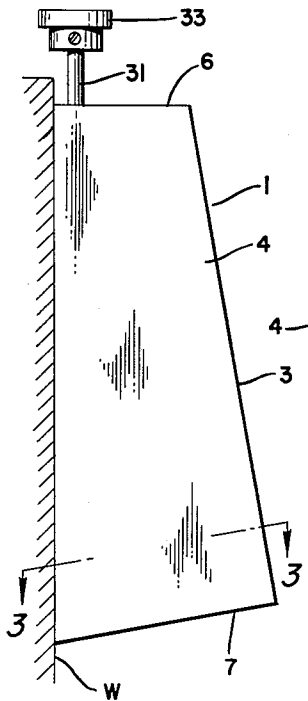


FIG. 2

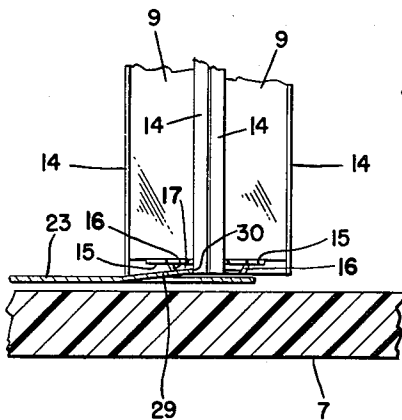
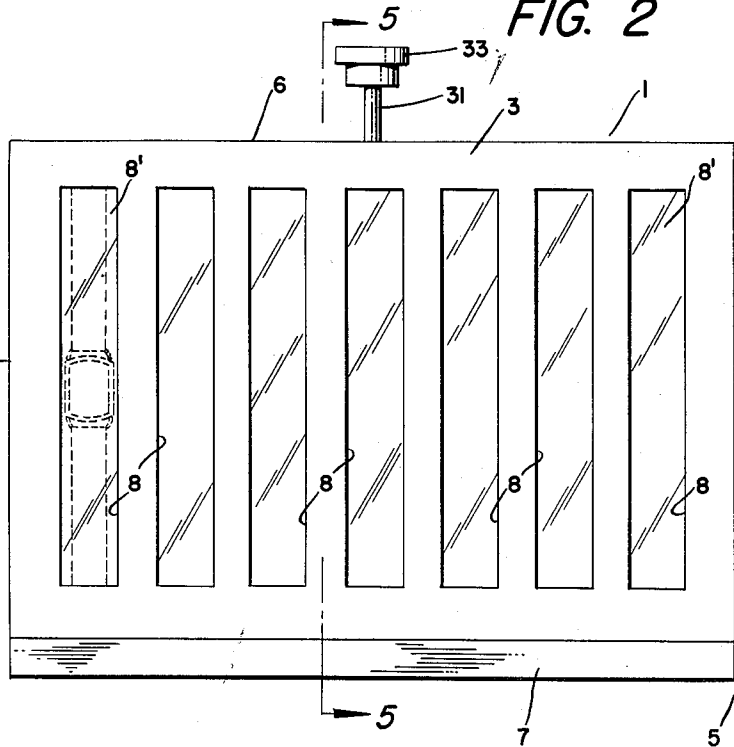


FIG. 6

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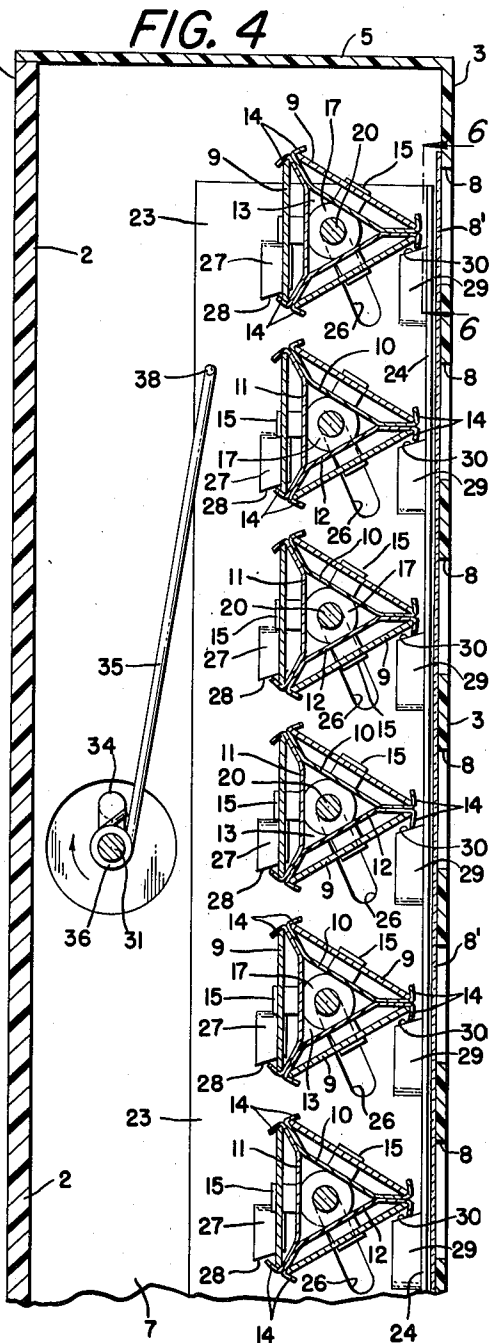
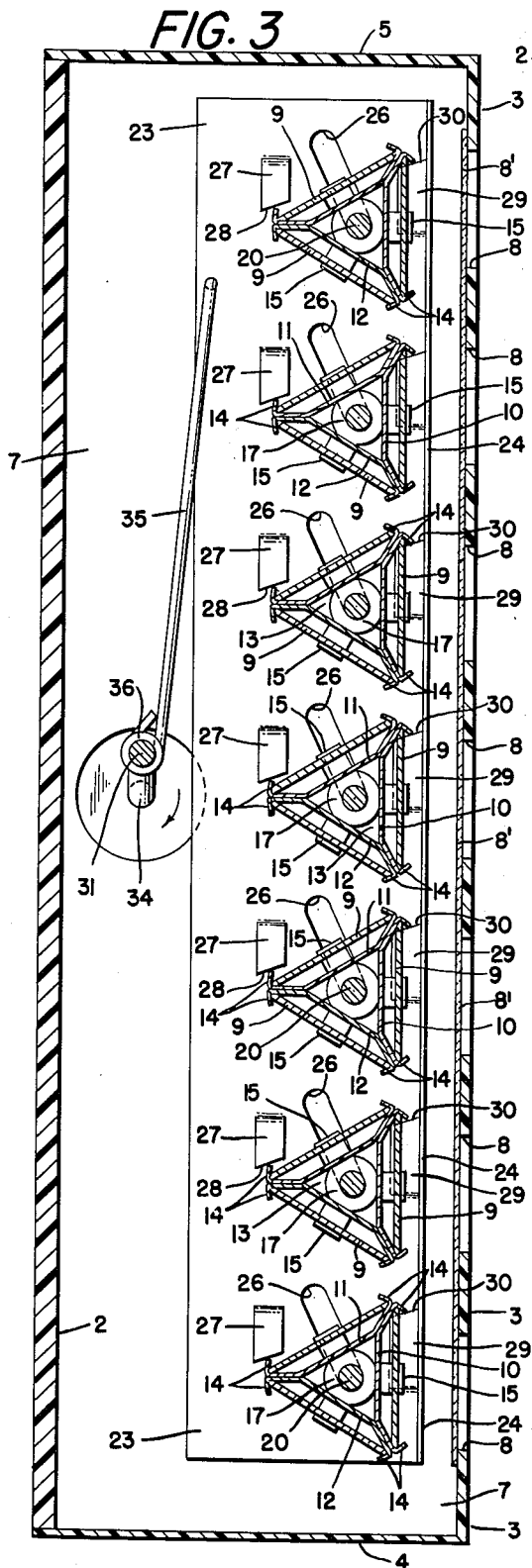
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FIG. 5

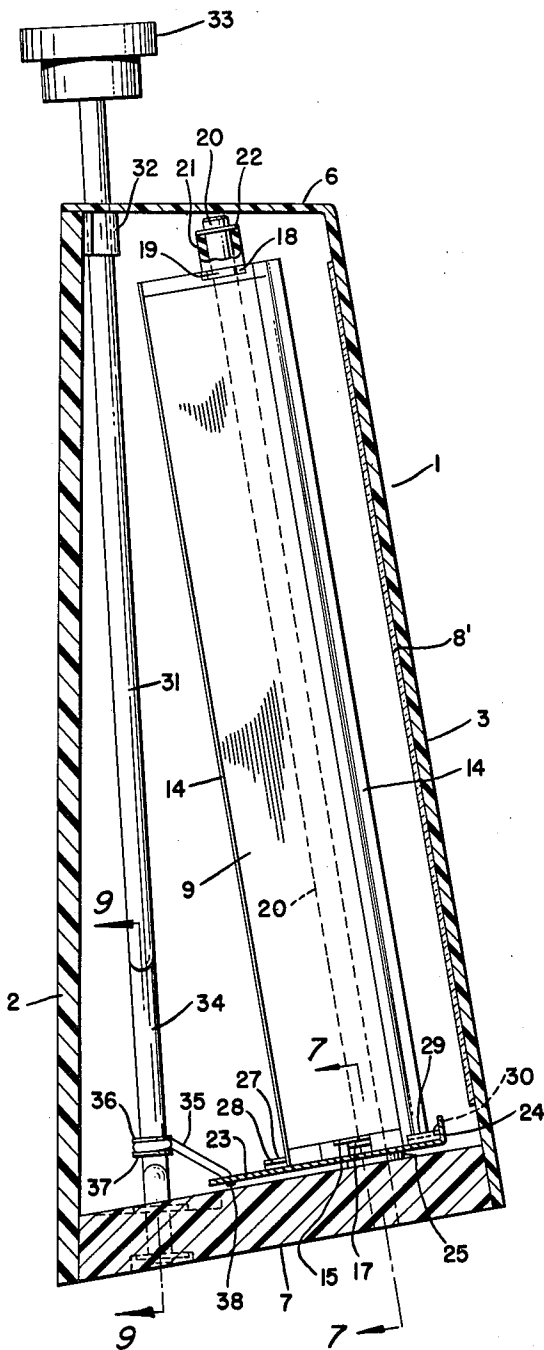


FIG. 7

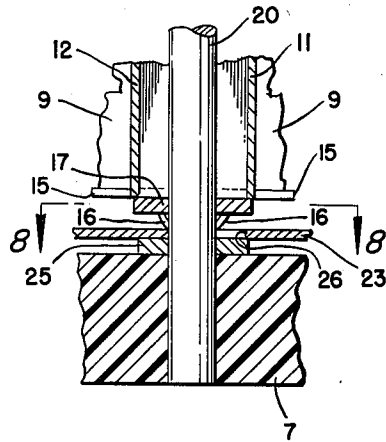


FIG. 8

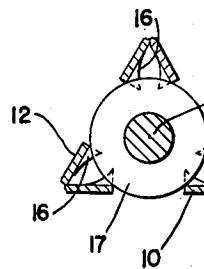
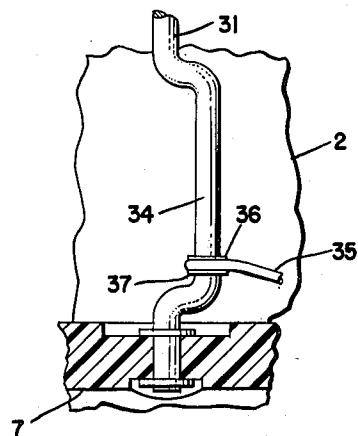


FIG. 9



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2,728,622

DISPLAY DEVICE

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Application September 20, 1952, Serial No. 310,581

6 Claims. (Cl. 312—135)

This invention relates generally to display devices, but has reference more particularly to a device of this character which has been especially designed for the display or exhibit of watch bands and the like.

A primary object of the invention is to provide a device of the character described which will enable a large number of articles to be displayed within a relatively small space or volume, and without handling of the individual articles.

Another object of the invention is to provide a device of the character described which is of relatively simple construction, consisting of a relatively small number of parts which can be easily manufactured and assembled, and on which the articles to be displayed or exhibited can be quickly and easily mounted.

Other objects and advantages of my invention will be apparent during the course of the following description. In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevational view of the display device, as viewed from the left end of Fig. 2;

Fig. 2 is a front elevational view of the display device;

Fig. 3 is a transverse cross-sectional view through the device, taken on the line 3—3 of Fig. 1, and showing the position of the parts at the instant of movement of the display elements from one operative or display position to another;

Fig. 4 is a view similar to Fig. 3, but showing the parts at a position intermediate the position of Fig. 3 and the next operative or display position;

Fig. 5 is a vertical cross-sectional view through the device, taken on the line 5—5 of Fig. 2;

Fig. 6 is a fragmentary cross-sectional view, taken on the line 6—6 of Fig. 4;

Fig. 7 is a fragmentary cross-sectional view, taken on the line 7—7 of Fig. 5;

Fig. 8 is a fragmentary cross-sectional view, taken on the line 8—8 of Fig. 7, and

Fig. 9 is a fragmentary cross-sectional view, taken on the line 9—9 of Fig. 5.

Referring more particularly to the drawings, reference numeral 1 designates generally a housing or casing comprising a vertical back 2 adapted for removable attachment to a wall W (Fig. 1), an inclined front 3, sides 4 and 5, a horizontal top 6, and a bottom 7 disposed at an angle of 90 degrees to the front 3. The housing or casing may be made of plastic or like material, and the front 3 is provided, in this instance, with a multiplicity of spaced rectangular openings 8, through which articles, such as wrist watch bands or the like may be displayed. Such a watch band is indicated in broken lines in Fig. 2. The openings 8 may be backed by a sheet 8' of glass or other transparent material.

Each watch band is mounted on a base 9 of "flocked" cardboard or the like, which is mounted on a rotatable display element which will now be described.

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Each display element comprises three strips of metal, 10, 11 and 12, arranged and welded together to form a hollow tube 13 of triangular cross-section, this tube being open at top and bottom. Each of the strips 10, 11 and 12 is provided at its side edges with rebent flanges 14 which retain the base 9 against lateral movement as well as movement away from the strip 10, 11 or 12, as the case may be, and for the purpose of supporting the base 9 on the strip 10, 11 or 12, each of these strips is provided at a point spaced from its lower edge with a forwardly extending flange 15, forming a ledge for the lower edge of the base 9. The base 9 is thus restrained against movement in any direction except upwardly, being removable from the display element only by such upward sliding movement, after the top 6 of the display cabinet or housing is removed.

The flange 15 is formed by slitting the strip 10, 11 and 12, upwardly from its lower edge at parallel spaced points, and then bending the tongue thus formed to a position at right angles to the strip.

The metal of the strips 10, 11 and 12, laterally outwardly of the slits is bent inwardly to some extent to provide supports 16 for a washer 17.

The washer 17 is thus restrained against movement upwardly by the flange 15, against movement laterally by the vertical edges of the slits formed in slitting the strip 10, 11 and 12 to form the flange 15, and against movement downwardly by the supports 16.

At the upper ends of the strips 10, 11 and 12, the strips are provided with openings 18, upon which a washer 19, similar to the washer 17, is supported.

Extending through the washers 17 and 19 is a post 20, the lower edge of which is rigidly mounted in the base or bottom 7 of the cabinet (see Fig. 5).

For the purpose of frictionally securing the washers 17 and 19 to the display elements, so that these washers do not rotate independently of the display elements, rubber washers or collars 21 are mounted on the posts 20 and resiliently bear against the washers 19, being retained in position by metallic retainers 22 which are rigidly secured to the upper ends of the posts 20.

The display elements (10—11—12) are supported upon a rectangular supporting plate 23 having an up-turned flange 24 at its forward edge. The plate 23, in turn, is supported in spaced relation to the bottom 7 of the cabinet by means of loose washers 25 which surround the posts 20.

The display elements (10—11—12) are held against the plate 23 by the rubber washers or collars 21 which resiliently bear against the retainers 22.

The plate 23 is provided at points spaced to correspond with the spacing of the posts 20 with elongated slots or openings 26 through which the posts 20 extend, these slots or openings extending at an angle of about 18 degrees to the longitudinal axis of the plate 23.

The plate 23 is also provided at points spaced to correspond with the spacing of the posts 20 with upwardly extending tongues 27 having beveled ends 28. Similar tongues 29 having beveled ends 30 are formed in the plate 23 adjacent the flange 24 of the plate, these tongues being disposed in parallelism with the tongues 27 but at the side of the posts 20 diametrically opposite to that at which the tongues 27 are located. The tongues 29 extend in a direction opposite to that in which the tongues 27 extend. The tongues 27 and 29 are formed by slitting the metal of the plate, and then bending the tongues thus formed upwardly to a slight angle to the plane of the plate 23, as clearly shown in Fig. 6.

The plate 23 is adapted to be longitudinally reciprocated to the extent permitted by the length of the slots 26, and at the same time moved rearwardly and forwardly rela-

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tively to the cabinet to an extent permitted by the inclination of these slots. For this purpose, mechanism is provided, including a crank shaft 31 which is journaled for rotation in the bottom 7 and in a bearing 32 secured to the back 2 of the cabinet.

The crank shaft 31 has a knob 33 secured to its upper end for manually rotating the shaft, and is provided with an offset or crank portion 34 adjacent its lower end, to which one end of a connecting rod 35 is pivotally secured, this end of the rod being restrained against movement along the crank shaft by means of retainer washers 36 and 37 (Fig. 5) rigidly secured to the rod. The other end of the rod 35 has a downturned end 38 which extends through the plate 23.

The operation and use of the display device will now be described.

It will be assumed that the parts are in the position shown in Fig. 3 in which position the bases 9 (having watch bands thereon) which are disposed on the strips 10 are visible through the openings 8 in the display cabinet.

As the crank shaft 31 is rotated in a clockwise direction from the position shown in Fig. 3, the plate 23 is pulled to the left (downwardly as viewed in Fig. 3), causing the edges 28 of the tongues 27 to engage the flanges 14 of the display elements, thereby causing these elements to be rotated about the posts 20 through an angle of 60 degrees to the position shown in Fig. 4, at which point, the crank shaft 31 will have been rotated one-half revolution, i. e., through 180 degrees. During this movement, and in order to insure that the tongues 27 do not move away from the flanges 14 (which would normally occur due to the fact that the flanges move in an arc about the axes of the post 20), the plate 23 is moved forwardly in the cabinet to follow these flanges. This is effected by the posts 20, which, as the plate 23 moves to the left (downwardly as viewed in Fig. 3) engage the edges of the slots 26 and cam the plate 23 towards the front of the cabinet.

At the conclusion of the aforesaid movement, the posts 20 are disposed in the opposite ends of the slots 26 from those in which they are disposed in Fig. 3, as clearly shown in Fig. 4.

Rotation of the crank shaft 31 is continued through the other half of a revolution, i. e., through another 180 degrees from the position shown in Fig. 4 back to the original position shown in Fig. 3. This causes the plate 23 to be pulled to the right (upwardly as viewed in Fig. 4), causing the edges 30 of the tongues 29 to engage the adjacent flanges 14 of the display elements, thereby causing these elements to be rotated about the posts 20 through an angle of 60 degrees to a position in which the bases 9 (having watch bands disposed therein) which are disposed on the strip 12 are parallel with and visible through the openings 8 in the cabinet. During this movement (and again in order to insure that the tongues 29 do not move away from the flanges 14), the plate 23 is moved rearwardly in the cabinet to follow these flanges. This is again effected by the posts 20, which, as the plate 23 moves to the right (upwardly as viewed in Fig. 5) engage the edges of the slots 26 and cam the plate towards the rear of the cabinet.

During movement of the display element by the tongues 27, portions of the display element ride over the tongues 29, and conversely during movement of the display element by the tongues 29, portions of the display element ride over the tongues 27. As said portions of the display elements ride over the tongues 27 and 29, the plate 23 tilts in a fore and aft direction about its longitudinal axis. This is permitted by the washers 25 which support the plate only along the center at the post 20, and by the resilient washers 21 which keep the driving and driven parts in contact.

It will be apparent from the foregoing that upon each complete revolution of the crank shaft 31, that the display elements are rotated through an angle of 120 degrees to

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expose a fresh set of watch bands to view, thereby, in the present instance, making possible a display of 21 watch bands in a space in which only 7 bands would normally be shown.

It will also be apparent that the device can be operated in the same manner by rotating the crank shaft in a counterclockwise, instead of clockwise direction.

Although the invention has been described particularly with reference to the display of watch bands, it will be understood that it may be used, with or without slight modification, for the display of articles or items other than watch bands, and that it can be used to exhibit a series of pictures forming an interesting advertising novelty.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to, without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a device of the character described, a cabinet having a front provided with a multiplicity of spaced openings through which articles to be displayed are visible, a multiplicity of rotatable display elements spaced to correspond with the spacing of said openings, each of said display elements having a plurality of angularly related facets upon which articles to be displayed are adapted to be mounted, and means for rotating said elements in unison through a predetermined angle, whereby corresponding facets of all of said elements are brought into parallel relation with said openings and behind said openings, and the articles on said corresponding facets may be observed through said openings, said means comprising a reciprocable plate having tongues adapted to engage said elements to rotate the elements through a predetermined angle, and a second series of tongues adapted to engage said elements to rotate the elements through a predetermined angle equivalent to the first angle, and means for reciprocating said plate.

2. A device, as defined in claim 1, in which means are provided for shifting said plate transversely of the direction of reciprocation during rotation of said elements whereby the engagement between said tongues and elements is maintained irrespective of the angular rotation of said elements.

3. A device, as defined in claim 2, in which said reciprocating means comprises a crank-shaft, and a connecting rod interconnecting said crank-shaft with said plate.

4. In a device of the character described, a plurality of spaced display elements, each adapted to support a plurality of angularly related articles to be displayed, and means for rotating said elements in unison through a predetermined angle to display one article of each element at a time, said means comprising a reciprocable plate having a row of tongues spaced longitudinally of the plate to correspond with the spacing of said elements and adapted to engage said elements to rotate the elements through said angle, and a second row of tongues spaced longitudinally of the plate to correspond with the spacing of said elements and adapted to engage said elements to rotate the elements through a predetermined angle equivalent to the first angle, said second row being spaced transversely of the plate from said first row, a crank-shaft, and a rod interconnecting said crank-shaft and plate.

5. A device, as defined in claim 4, in which means are provided for shifting said plate transversely of the direction of reciprocation during rotation of said elements whereby the engagement between said tongues and elements is maintained irrespective of the angular rotation of said elements.

6. In a device of the character described, a plurality of spaced rotatable display elements, each having a plurality of angularly related facets upon which an article to be displayed is adapted to be mounted, and means for rotating said elements in unison through a predetermined angle,

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whereby corresponding facets of all of said elements are brought into coplanar relation with each other, said means comprising a reciprocable plate having a row of tongues spaced longitudinally of the plate to correspond with the spacing of said elements and adapted to engage said elements to rotate the elements through said angle, and a second row of tongues spaced longitudinally of the plate to correspond with the spacing of said elements and adapted to engage said elements to rotate the elements through a predetermined angle equivalent to the first angle, said second row being spaced transversely of the plate from said first row, a crank-shaft, and a rod interconnecting said crank-shaft and plate.

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