April 28, 1931. O. L. VAN NESS 1,802,622

ADVERTISING DEVICE

Filed May 5, 1930 2 Sheets-Sheet 1

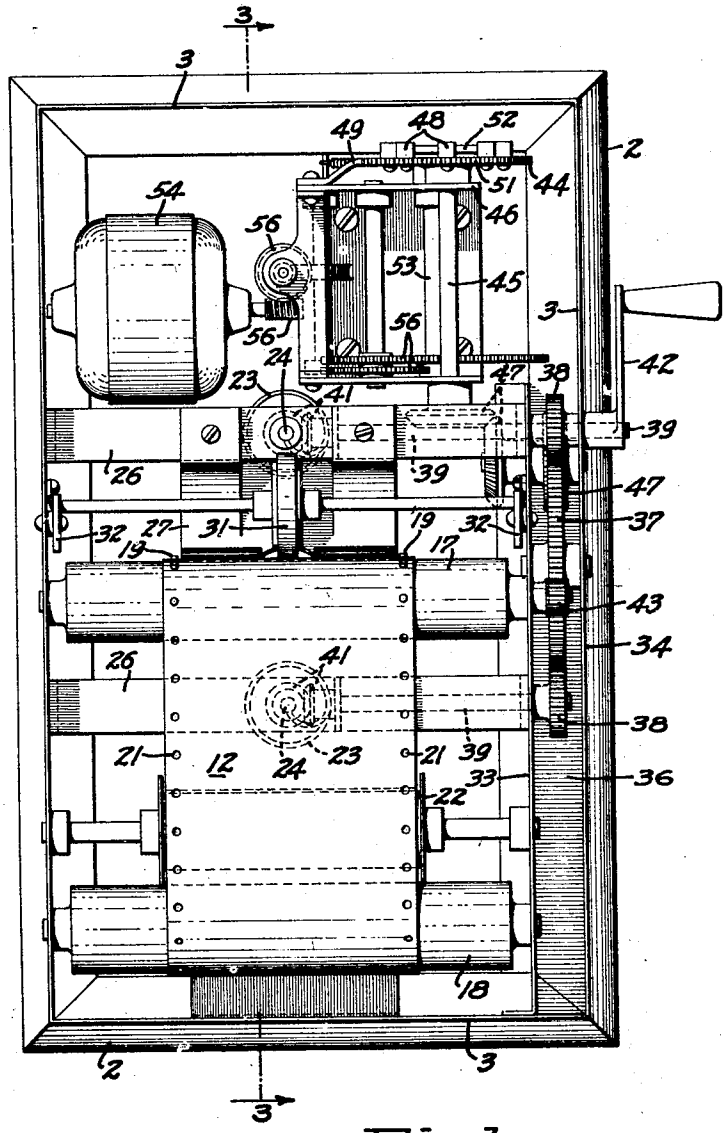


Fig. 1

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Fig. 2

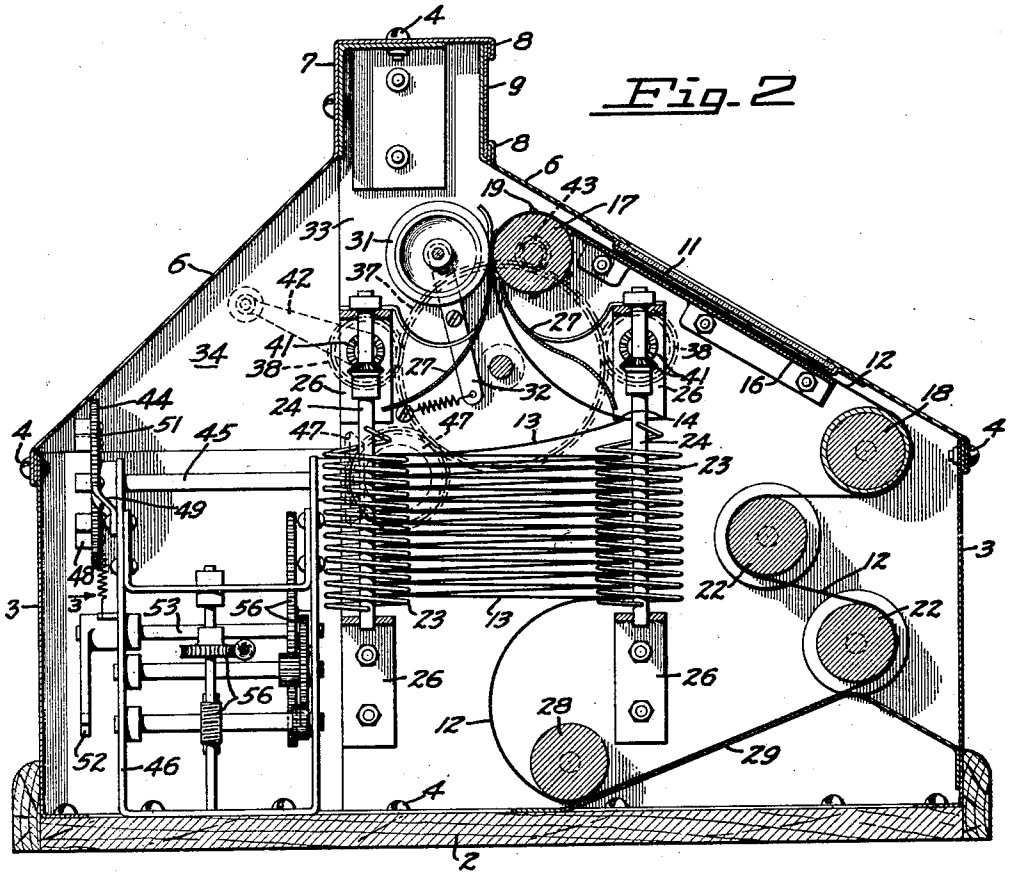
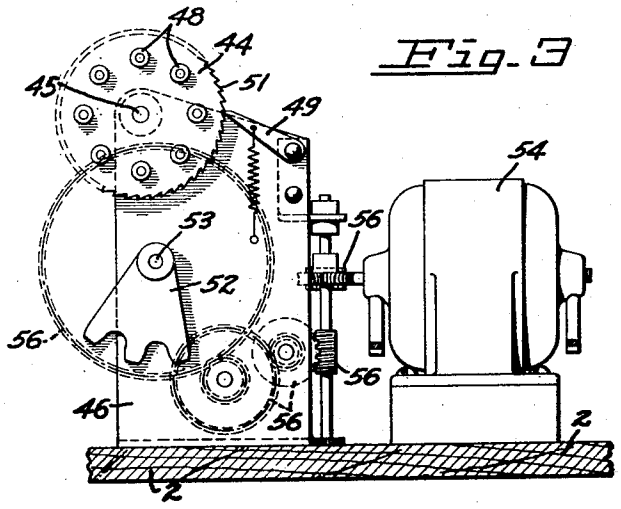


Fig. 3



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Patented Apr. 28, 1931

1,802,622

UNITED STATES PATENT OFFICE

OSCAR L. VAN NESS, OF BERKELEY, CALIFORNIA

ADVERTISING DEVICE

Application filed May 5, 1930. Serial No. 449,866.

My invention relates to an advertising device, and particularly to such a device for displaying advertising matter arranged on a strip of material.

It is among the objects of the invention to provide an advertising device which is continuous and automatic in its operation.

Further objects of the invention include the provision of an advertising device in which the adjacent portions of a long strip of material may be successively and intermittently displayed; and in which the excess portions of the strip are stored in compact form.

The invention possesses numerous other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawings:

Figure 1 is a plan view of the advertising device embodying my invention; the top portions of the housing are omitted to show the construction.

Figure 2 is a vertical sectional view of the device taken in a plane indicated by the line 2—2 in Figure 1; and Figure 3 is a rear elevational view of the driving mechanism taken in the direction indicated by the arrow 3 in Figure 2.

In terms of broad inclusion the invention comprises an endless strip of material movable over a predetermined path; the said material being longer than the path. Means are provided for moving the strip to display successive portions thereof; the movement of the strip preferably being periodic, so that the portions are intermittently displayed. Means are also provided for compactly storing the excess portions of the strip.

In greater detail, the device of my invention is mounted on a generally rectangular frame comprising the base 2 and the housing 3 assembled and secured together by suitable bolts 4. In the preferred form of the invention the top portions 6, of the housing, slope downwardly to the front and rear from a rectangular ridge portion 7. It is to be noted however that the frame construction may be of any suitable or desirable shape.

The forward side of the ridge portion 7 is preferably provided with the guideways 8 for holding a display card 9; and the literature on this card may conveniently pertain to the subject matter being advertised by the device. For the purpose of viewing the substance or printed matter to be displayed, a window 11 is provided, and is preferably mounted on the forward sloping portion of the housing top 6. With other types of housings this arrangement may be varied to suit the construction.

The articles or printed advertising matter to be displayed are carried before the eye of an observer on a flexible strip of material 12 comprising a series of sections 13 hinged together to provide an endless belt. The sections 13 may conveniently be a part of the strip itself, the hinges being formed by creases or perforations 14; or the sections may be individual units secured to a flexible backing strip. Articles to be advertised, such as samples of clothing fabrics, may comprise the sections 13, or the sections may merely contain printed matter.

The strip 12 is movable over a predetermined path within the housing 3, and passes over a plate 16 mounted on the housing below the window 11 and parallel with the forward sloping top portion 6. This plate serves as a support for the strip sections 13 while they are being viewed through the display window. The strip is held under the window 11 by the rollers 17 and 18 journaled in the housing adjacent the upper and lower edges of the window.

Movement is imparted to the strip 12 by the upper roller 17, which is positively driven, by a series of radially extending spaced roller studs 19 engaging the similarly spaced apertures 21 in the edges of the strip 12. The lower roller 18 is surfaced with leather or other suitable frictional material to prevent the strip from slipping

over its face, and sufficient drag is applied to the strip by the offset flanged guide rollers 22 to hold the sections 13 taut while they are being viewed through the window.

In order to maintain compactness in the device, and still provide a strip long enough to carry sufficient quantities of the advertising matter, the endless strip 12 is considerably longer than the predetermined path over which it moves; the predetermined path being defined by the various rollers which guide the strip.

Means are provided for storing the excess portion of the strip in a conveniently folded and compact form. A pair of spaced helical rotors, comprising a helix 23 surrounding and secured to a shaft 24, are journaled in the housing in the brackets 26. The rotors are perpendicularly arranged below, and in a spaced position on each side of, the drive roller 17. The rotor shafts 24 are spaced a distance slightly greater than the length of a strip section 13, so that the sections may readily lie therebetween as shown in Figure 2.

A pair of guide brackets 27, mounted on the rotor brackets 26, are arranged to direct the strip sections 13 into engagement with the helical rotors in their downward movement after passing off the drive roller 17. As the journaled rotors are rotated, the adjacent coils of the helixes 23 engage the hinged portions 14 of the sections 13 and hold the individual sections folded in a horizontal overlapped position. Since the helical rotors have a screw or worm gear motion, which is clockwise as viewed from the top in Figure 2, the section folds are carried downward when the rotors are actuated.

As the section folds pass out of engagement with the rotors they are straightened out, and the strip is passed over a friction roller 28 journaled in the housing, up an inclined guide plate 29 mounted on the base, and thence is directed over the guide roller 22. From this point the strip continues over the predetermined path and under the display window 11 as has previously been described.

The strip is held in frictional engagement with the drive roller 17 by a spring pressed idler friction roller 31 mounted on the housing on the bracket arms 32. The action of this roller tends to keep the strip 12 from buckling out of engagement with the drive roller studs 19. One of the guide brackets 27 straddles the idler roller, and engages the strip as soon as it comes off the drive roller 17 to direct it in its downward movement.

Means are provided for rotating the drive roller 17 and the helical rotor shafts 24; and means are preferably provided whereby this may be accomplished either by power or by hand. A portion 33 of the housing 3 is spaced inwardly from the side 34, and serves to receive the rollers journaled in that side of the housing. The space between the portion 33 and side 34 provides a compartment 36 for portions of the driving mechanism. A gear 37 is journaled in the housing, and arranged in the compartment 36. This gear meshes with the pinions 38 mounted on the shafts 39, which in turn drive the helical rotor shafts 24 through the beveled pinions 41.

One of the shafts 39 extends through the side 34 of the housing, and a suitable hand crank 42 is mounted on the projected end thereof. The gear 37 also meshes with a pinion 43 mounted on the projected end of the drive roller 17. By this arrangement it is seen that a rotation of the hand crank 42 serves to simultaneously rotate the drive roller and helical rotors. The roller and helical rotors are directly connected through the gear train, and hence their respective movements are synchronized.

The arrangement of the gears in the above mentioned train is such that the drive roller 17 is rotated counter-clockwise as viewed in Figure 2, and the helical rotors are rotated clockwise as has previously been described. From this arrangement it is apparent that the movement of the strip about its predetermined path is counter-clockwise as viewed in Figure 2.

The size of the various gears is such that the helical rotors rotate to cause the adjacent coils of each helix to engage the consecutive hinges of the strip sections 13 as the strip 12 moves off the drive roller 17. This timed relationship is fixed by the positive drive and does not vary, and hence the synchronized movement can not get out of adjustment. As the strip moves off the drive roller it is folded at its hinges, first in one direction and then in another, so that the excess portions thereof are stored in compact and convenient folds.

It is to be noted that the normal position of the strip sections is the folded position, since they are stored in this form for the greater part of the time. This is an advantage, because they are held in a flat position, and hence the material being displayed will not tend to buckle up when it passes under the display window, as would be the case if the sections were normally kept in rolls.

Power means is provided for operating the device, and this means is preferably periodic in its operation so that the strip 12 is moved with an intermittent motion to successively display the individual sections 13 thereof. A disk 44 is mounted on the end of a shaft 45 journaled in the base bracket 46, and connected by suitable pinions 47 with the gear 37. The disk 44 is provided with a series of radially positioned

spaced studs 48 arranged about a circle concentric with the disk axis.

A spring pressed ratchet 49 engaging the ratchet teeth 51 on the periphery of the disk, is provided to prevent a clockwise movement of the disk as viewed in Figure 3. This precludes any backward movement of the various parts during the interval when power is not being applied, and maintains the strip in proper position for further advancement through the device.

A segment gear 52 is mounted on a shaft 53 journaled in the base bracket 46, and is arranged to mesh with the disk studs 48 during a portion of its movement. The segment gear 52 is driven by the motor 54 through suitable reduction gears 56; this arrangement being clearly shown in Figure 3. The gear ratios are such that the strip 12 is advanced a distance equal to the length of one of the sections 13, and since the segment gear 52 is in engagement with the disk studs 48 during only a portion of its movement, it is apparent that drive is periodic and that the strip movement is intermittent.

This action keeps one of the strip sections 13 under the window 11, which is of a size substantially equal to that of a section, sufficiently long to permit inspection by an observer. The process is continuous and automatic; each individual section in the strip being successively displayed.

I claim:

1. In an advertising device, an endless strip of material comprising a series of hinged sections movable over a predetermined path, said strip being longer than the path, means for moving the strip, and a helical rotor engaging the hinged portions of the sections for storing the excess portions of the strip in folds.

2. In an advertising device, an endless strip of material comprising a series of hinged sections movable over a predetermined path, said strip being longer than the path, means for moving the strip, and a pair of spaced helical rotors engaging the alternate hinged portions of the sections for storing the excess portions of the strip in folds.

3. In an advertising device, an endless strip of material comprising a series of hinged sections movable over a predetermined path, said strip being longer than the path, means for moving the strip, a helical rotor engaging the hinged portions of the sections for storing the excess portions of the strip in folds, and means for actuating the rotor to vary the portion of the strip being stored.

4. An advertising device comprising a frame, an endless strip of material comprising a series of hinged sections movable over a predetermined path, said strip being longer than the path, guide rollers for directing the strip over the predetermined path, a window arranged on the frame adjacent the strip, means for periodically driving one of the rollers to move the strip and intermittently display successive sections thereof through the window, a helical rotor journaled in the frame and engaging the hinged portions of the sections for storing the excess portions of the strip in folds, and means timed with the strip moving means for rotating the rotor to vary the portion of the strip being stored.

In testimony whereof, I have hereunto set my hand.

OSCAR L. VAN NESS.