May 29, 1951 J. E. WOOD 2,555,070

REVOLVING ADVERTISING DISPLAY MACHINE

Filed Jan. 21, 1948 2 Sheets-Sheet 1

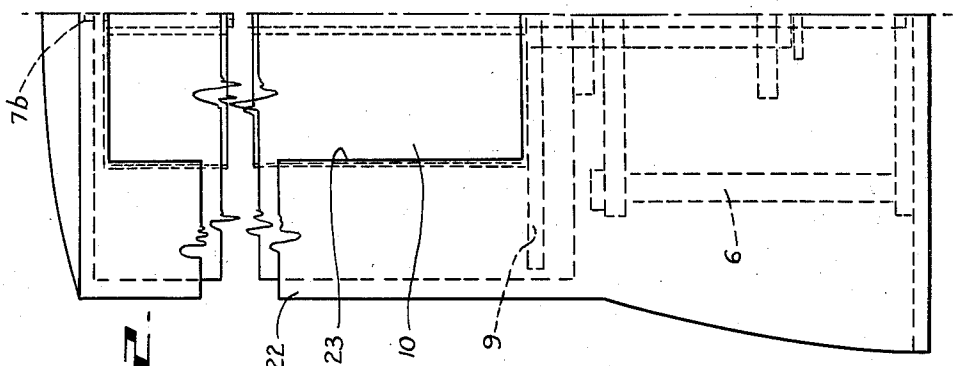


Fig. 2.

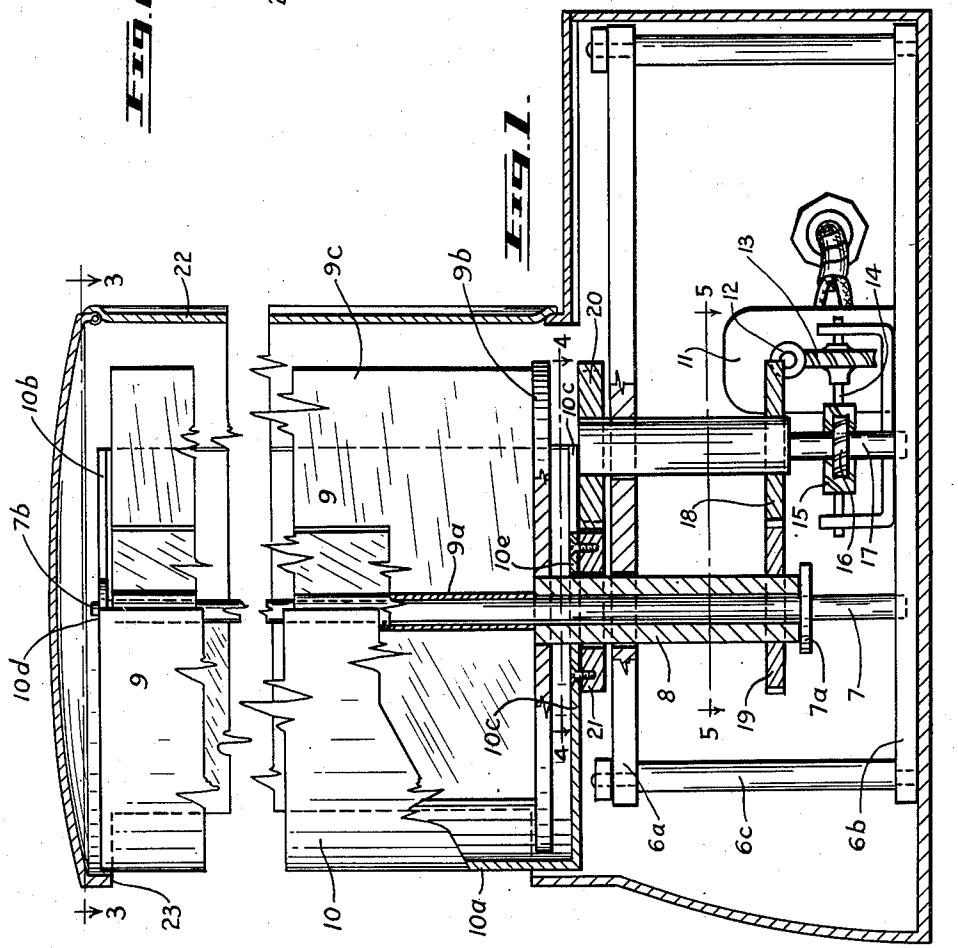


Fig. 1.

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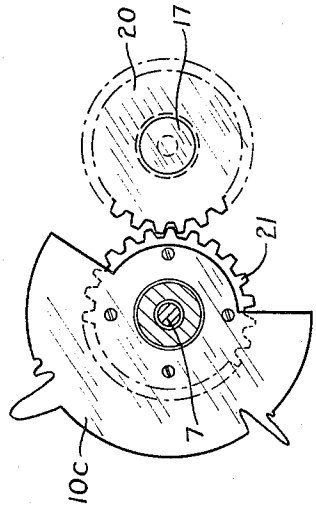


Fig. 4.

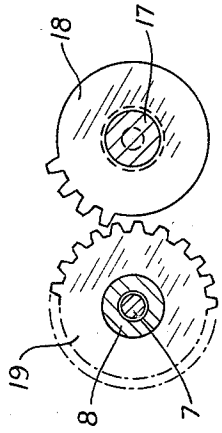


Fig. 5.

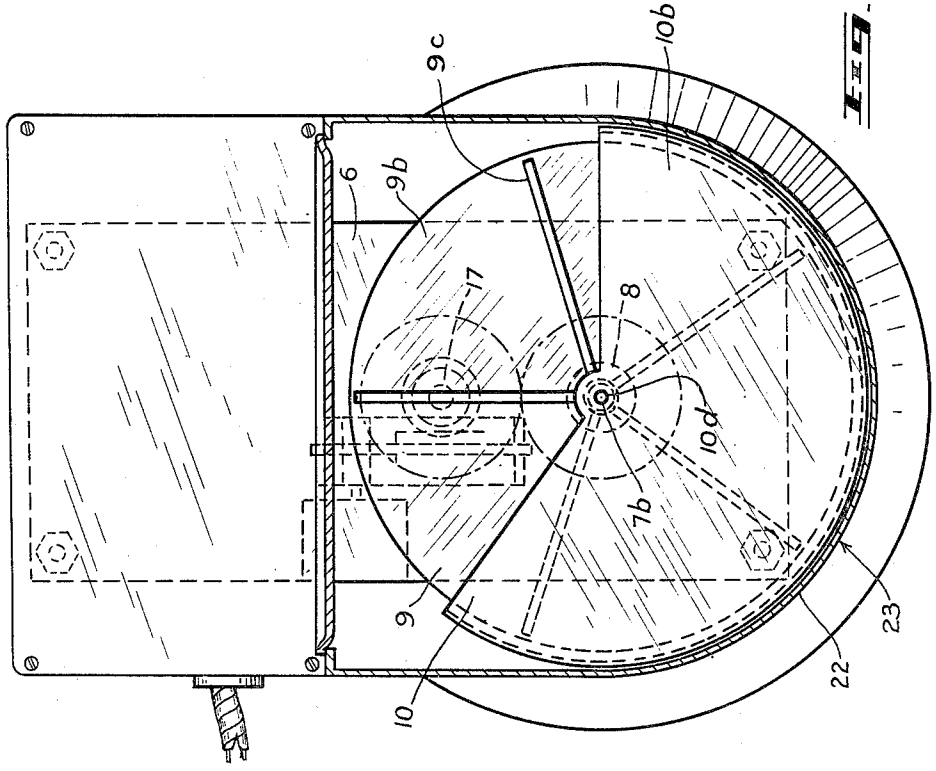


Fig. 2.

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Patented May 29, 1951

2,555,070

UNITED STATES PATENT OFFICE

2,555,070

REVOLVING ADVERTISING DISPLAY MACHINE

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Application January 21, 1948, Serial No. 3,535

2 Claims. (Cl. 312—125)

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This invention relates to new and useful improvements in a revolving advertising display machine and appertains particularly to a motor driven apparatus in which a plurality of images or exhibits are successively displayed to view, with the movement incidental to the changing of such displays being screened.

An object of the invention is to provide an advertising display apparatus wherein a number of separate exhibits are arranged on an intermittently turning platform or turn table and a constantly revolving screen or shutter temporarily hides the exhibits while the last exposed one is being retired and its successor moved into viewing position.

A further object of the invention is to provide a cabinet-enclosed display apparatus having a shuttered window through which a series of exhibits on an intermittently turning platform or turntable are successively viewed, the movement incidental to the changing of such exhibits being screened by a revolving shutter operating between said exhibit-displaying turntable and said windowed cabinet.

A still further object of the invention is the provision of a simply-constructed, smoothly operating, automatic scene changing display apparatus that is attractive to an onlooker and particularly useful in retail trade by creating more interest in the merchandise displayed than a similar group of immovably positioned exhibits would.

To the accomplishment of these and related objects as shall become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts as shall be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the claims hereunto appended.

The invention will be best understood and can be more clearly described when reference is had to the drawings forming a part of this disclosure wherein like characters indicate like parts throughout the several views.

In the drawings:

Figure 1 is a vertical section through the machine;

Figure 2 is a fragmentary front elevation thereof;

Figure 3 is a horizontal section, as taken on line 3—3 of Figure 1, looking in the direction indicated by the arrows; and

Figures 4 and 5 are sectional-elevational details of the driving mechanism as taken on lines 4—4 and 5—5 respectively of Figure 1.

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In the presently illustrated embodiment of the invention the apparatus is shown as comprising a frame work 6 having a vertically spaced pair of plates 6a and 6b and four corner posts 6c. Pocketed in the lower plate 6b and passing through the upper plate 6a is a spindle or post 7. A loose sleeve 8 surrounds the spindle 7, being supported on the flange 7a and rising through the upper frame plate 6a in which latter the sleeve is freely rotatable. Likewise loosely surrounding the stem or spindle 7 is a turntable 9 comprising a central tube 9a, a lower tray or stage 9b and a plurality of radial wings 9c, the latter in this instance being five in number and equally spaced thus dividing the rotary stage or turntable in five similar sector shaped display compartments. The tray or stage 9b is centrally bored to receive the upper end of the cylindrical sleeve 8 in a tight press fit.

Rotatable about this multiple compartment turntable 9 is a shutter 10 comprising an arcuate screen portion 10a and sector like upper and lower plates 10b and 10c respectively; the former having a small bore 10d at its midpoint to receive the reduced stepped top 7b of the spindle 7. A substantial enlargement 10e of circular form occurs coaxially on the lower plate 10c to loosely surround the cylindrical sleeve 8; the whole rotatable shutter 10 floating lightly on the shoulder of the stepped top of spindle 7.

In the operation of this automatic display machine with its screened scene changes it is desired that the display turntable 9 shall turn intermittently at intervals of predetermined spacing and through an angle of 72 degrees on each occurrence while the concentrically disposed shutter 10 with its arcuate screen 10a extending through 216+ degrees or less (144 degrees would suffice) revolves continuously. To this end an electric motor 11 is mounted in the frame 6 with a worm 12 on its drive shaft that meshes with a worm gear 13 on a horizontal, bracket supported shaft 14. A worm 15 on this shaft engages a worm gear 16 on the vertical drive shaft 17 that like the spindle 7 is journal recessed in the lower frame plate 6b. Above the worm gear 16 the shaft 17 is of increased diameter and carries a segmental gear 18 that intermittently meshes with a gear 19 on the sleeve 8, while above the frame upper plate 6a through which the shaft 17 passes, another gear 20 meshes with a companion gear 21 mounted on the underside of the shutter lower plate 10c and its coaxial circular enlargement 10e, such

shutter carried gear 21 being clear of and freely rotatable relative to the sleeve 8 passing through it.

A suitable casing, cabinet or jacket 22 houses the machine; a window 23, preferably just less in height and width than the sector like compartments of turntable 9 at the circumference thereof, occurring in the front of the cabinet.

In operation, the motor turns the shaft 17 and with it both the segmental gear 18 and the upper gear 20; the former meshing with the gear 19 on the cylindrical sleeve 8 on which the turntable 9 is tightly engaged causes this display stage to revolve through one-fifth of a revolution at a time to bring the several sector like compartments successively opposite the window of the cabinet 22 whilst the latter gear 20 meshing with the companion gear 21 on the floating shutter 10 causes the arcuate screen thereof to revolve continuously and the gearing is so timed that on each sweep of the shutter as it closes across the window and obscures the last display, the teeth of the segmental gear 18 engage the gear 19 to move the turntable 9 through 72 degrees so that the next succeeding display is positioned opposite the cabinet window when the arcuate screen of the shutter moves past. Thus the display compartments of the turntable are never exposed while moving but change smoothly, quickly and automatically while fully concealed by the magic like revolving shutter as it glides by.

From the foregoing description taken in connection with the accompanying drawings, it will be manifest that a revolving advertising display machine is provided that will fulfil all the necessary requirements of such a device, but as many changes could be made in the above description and many apparently widely different embodiments of the invention may be constructed within the scope of the appended claims, without departing from the spirit or scope thereof, it is intended that all matters contained in the said accompanying specification and drawings shall be interpreted as illustrative and not in a limitative or restrictive sense.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:

1. A display apparatus comprising an intermittently revolvable stage divided by radial wings into a plurality of sector-like exhibiting compartments, a continuously revolvable shutter with an arcuate screen portion partially encircling said revolvable stage, a vertical spindle rising axially through said sector divided stage and from the top of which said shutter is floatingly suspended from rotation about said stage, said spindle having a flange below the level of said stage and shutter, a loose sleeve surrounding said spindle and resting on said flange and having a tight press fit engagement with said stage, a gear on said sleeve near the bottom thereof, a ring gear on the bottom of said shutter concentrically and loosely encircling said sleeve, driving means intermittently engaging the stage turning gear on said sleeve and continuously engaging said shutter sweeping ring gear and a windowed cabinet enclosing the same and through the window of which the several exhibiting compartments of said stage are successively exposed between the scene-changing-obscuring sweeps of the shutter screen.

2. A display apparatus comprising an intermittently revolvable stage divided by radial wings into a plurality of sector-like exhibiting compartments, a continuously revolvable shutter with an arcuate screen portion partially encircling said revolvable stage, a frame housed in said cabinet, a vertical spindle rising therefrom about which said stage revolves and on the top of which said continuously revolvable shutter is floatingly suspended, a loose sleeve surrounding said spindle and having a tight press fit engagement with said stage and about which the bottom of said shutter encircles, vertically spaced and concentric gear and gear ring on said sleeve and shutter bottom respectively, a drive shaft paralleling said spindle and a segmental gear and another gear on said shaft engageable respectively with said first mentioned and concentric gear and gear ring, and a windowed cabinet enclosing the same and through the window of which the several exhibiting compartments of said stage are successively exposed between the scene-changing-obscuring sweeps of the shutter screen.

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