

W. L. THORNE.  
DISPLAY APPARATUS.

APPLICATION FILED MAY 29, 1911.

1,007,753.

Patented Nov. 7, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

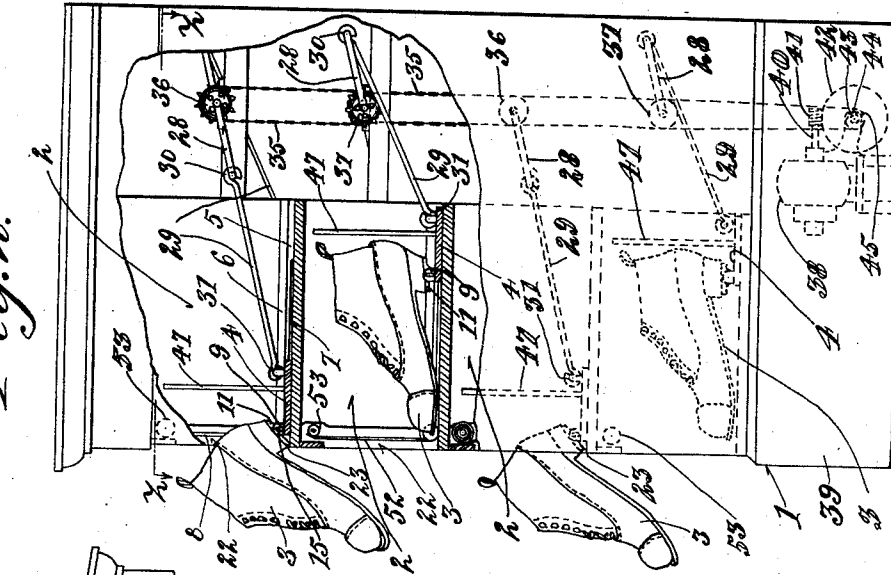
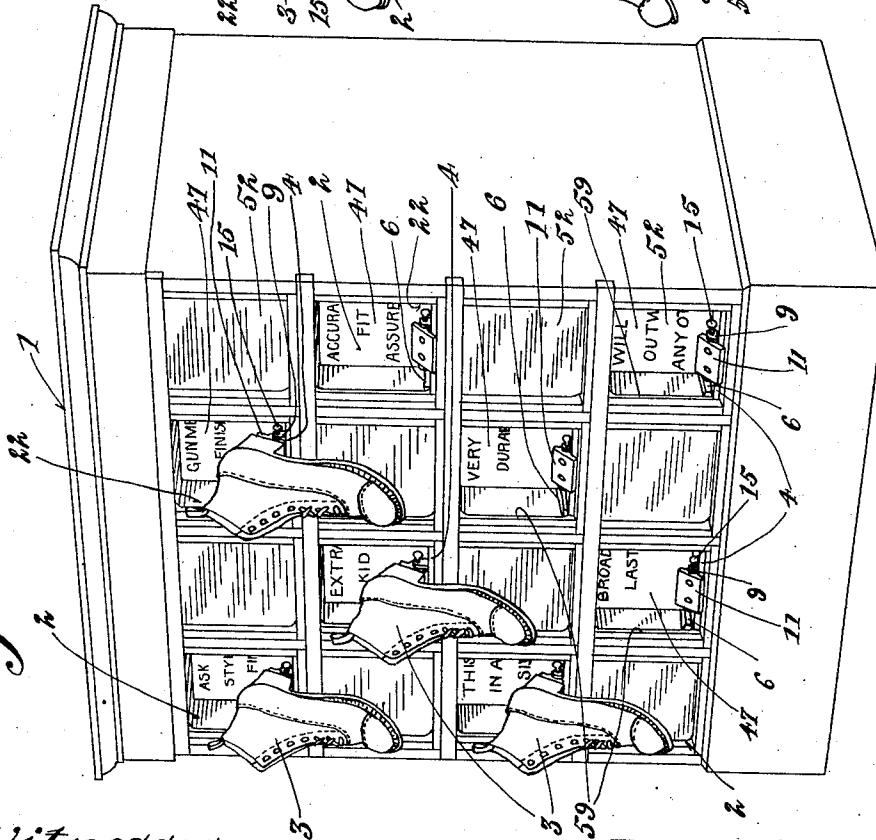


Fig. 2.



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Inventor:  
Walter L. Thorne,  
by P. J. Verbaet, His Attorney.

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2 SHEETS—SHEET 2.

Fig. 4.

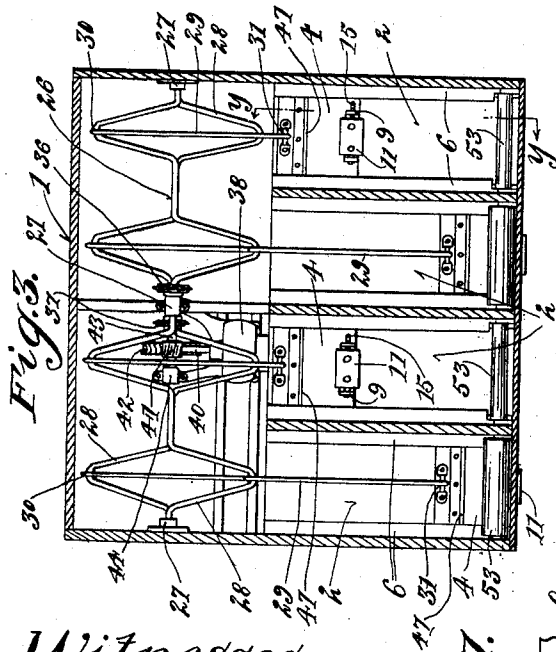
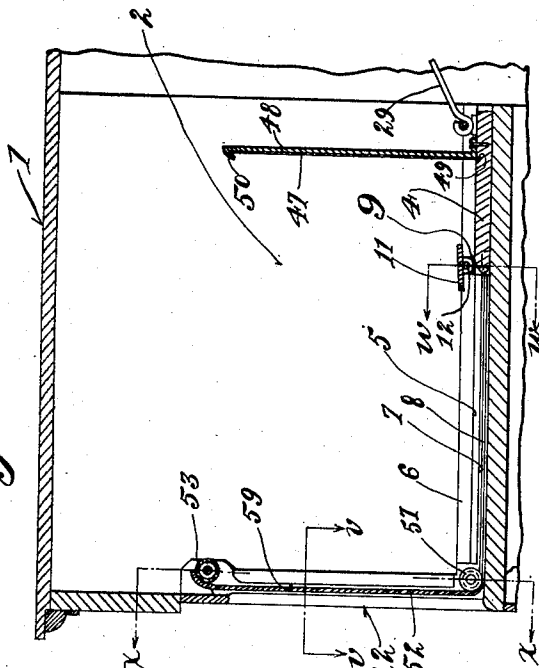


Fig. 5.

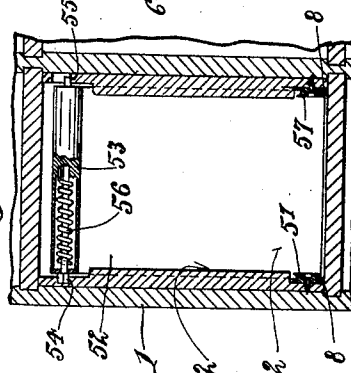
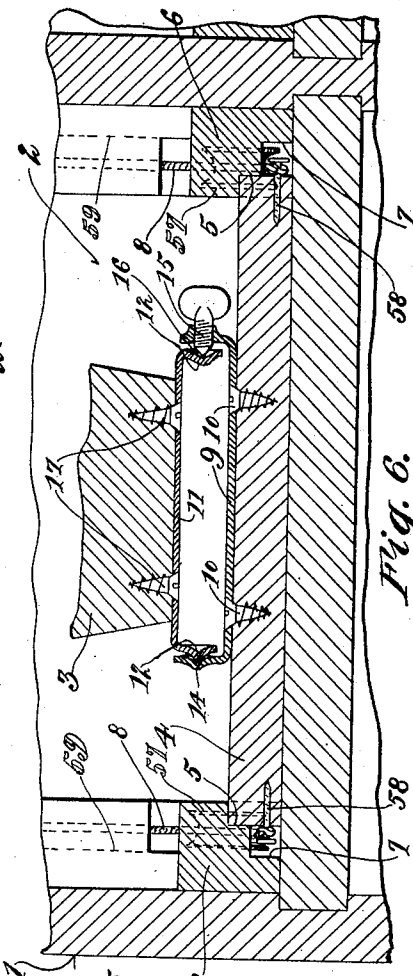


Fig. 6.



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Fig. 7.



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# UNITED STATES PATENT OFFICE.

WALTER L. THORNE, OF CINCINNATI, OHIO.

## DISPLAY APPARATUS.

1,007,753.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed May 29, 1911. Serial No. 630,189.

*To all whom it may concern:*

Be it known that I, WALTER L. THORNE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Display Apparatus, of which the following is a specification.

My invention relates to display apparatus of novel construction, and has for its object the provision of novel means whereby the article to be displayed is alternately brought into view and retracted; and further, the provision of novel means whereby the articles to be displayed are arranged in a plurality of series brought into view and retracted in alternation, the respective series being brought into view and retracted in sequence.

I have illustrated my improved device as employed in displaying foot-wear and arranged in such manner that alternate articles of foot-wear are simultaneously brought into view and retracted.

It is the object of my invention further to provide novel means for accomplishing the purposes stated, and the invention will be further readily understood from the following description and claims, and from the drawings, in which latter:

Figure 1 is a perspective view of my improved device, showing articles being displayed in position. Fig. 2 is a side elevation of the same, partly broken away. Fig. 3 is a horizontal cross-section of the same taken on the line  $z-z$  of Fig. 2. Fig. 4 is an enlarged vertical section taken on the line  $y-y$  of Fig. 3. Fig. 5 is a detail of the curtain mechanism in vertical section on the line  $x-x$  of Fig. 4. Fig. 6 is a cross-section on the line  $w-w$  of Fig. 4, showing the means for securing the article displayed in place; and, Fig. 7 is a detail of the curtain mechanism in section on the line  $v-v$  of Fig. 4.

1 represents the casing, having a plurality of compartments 2 therein adapted to receive the articles to be displayed, shown in the present instance as articles of foot-wear 3, illustrated as shoes.

4, 4 are slides respectively in the compartments, adapted to have the articles to be displayed attached thereto. The slides are guided in guide-ways 5, formed by blocks 6, suitably secured in the lower lateral corners

of the compartments and having rabbets which form the guide-ways 5, and rabbets 7 which respectively form clearance-spaces for flexible connections 8 for the purpose hereinafter described.

The article to be displayed is preferably pivoted to the slide, for accomplishing which in convenient manner I provide a supporting-piece 9, releasably secured to the slide, as by screws 10, and a pivoted piece 11, pivoted to the supporting-piece, as on pivots 12, one of which is shown as a point struck up from a flange depending from the body of the pivoted piece and received in a recess 14 formed in one of the lateral flanges of the supporting-piece, an adjustable connection being provided by a screw 15, threaded into the other upturned flange of the supporting-piece, the end of the screw being received in a recess 16, formed in the other depending flange of the pivoted piece.

The supporting-piece and pivoted piece are preferably struck up from sheet metal. The shoe or article to be displayed is secured to the pivoted piece as by screw 17.

When it is desired to secure the article in place, the thumb-screw 15 is turned to release the pivoted piece, which is then secured to the article, whereupon the pivoted piece is again pivotally secured in place. The slide is adapted to be moved forward and back in its guide-ways, and when moved back the article being displayed is retracted, being shown as received entirely in the compartment through the front opening 22 thereof. When the article is brought to view its forward portion is first received through the opening and, the article being preferably pivoted at its rear portion to the slide, it is arranged to overhang, and, when the slide approaches the opening, the forward portion of the article is arranged to drop for displaying not only the forward but also the upper and lateral portions of the same. It drops or swings downward by gravity, the forward portion of the heel preferably impinging a part of the apparatus as shown at 23, for limiting the descent of the forward portion of the article.

I have shown a series of display compartments arranged side by side and also above one another in the cabinet, and I preferably so arrange the slides and means for operating the same as to display alternate articles both in lateral and up and down relation,

alternate articles being displayed while those between them are retracted, and vice versa.

For operating the slides I prefer to employ a series of crank-shafts 26, mounted in bearings 27 and having the crank-portions 28, between which and the slides links 29 are provided which are articulated to the cranks at 30 and to the slides at 31, these links being preferably stiff links so as to move the slides in both directions. Alternate cranks of the crank-shafts extend in opposite directions for causing alternate slides to respectively move in and out in sequence. The crank-shafts are operatively connected for combined movement, which is preferably accomplished by sprocket-chains 35, received over sprocket-wheels 36, 37 on adjacent shafts. 38 is an electric motor in the base of the cabinet, the armature-shaft 40 of which has a worm 41 thereon which meshes with a worm-wheel 42, secured to a shaft 43, journaled in bearings 44 and having thereon a sprocket-wheel 45, one of the sprocket-chains being received over said sprocket-wheel and a sprocket-wheel on one of the crank-shafts. This construction permits a small motor with rapidly revolving armature to operate the slides.

47 is a show-card secured to the slide preferably in rear of the article being displayed in such manner that when the article is tilted the show-card will be brought into view, the show-card being adapted to have suitable advertising or price matter thereon relating to the article being displayed. This show-card is adapted to be held in place by an upright plate 48 projecting upwardly from the slide at the rear portion thereof, the card being received in a slot 49 in the slide and under a lip 50 on the plate. The card or plate hides the mechanism in rear thereof.

52 is a curtain adapted to be rolled about a roller 53, mounted in suitable bearings 54, 55 in the sidewalls of the openings, the curtain being normally retracted by a spring 56. For drawing the curtain across the opening, the flexible connections 8 are preferably secured to the lower ends of the curtain and are received over rollers 57; journaled in the lower portions of the side walls of the openings, the rollers being located at the front ends of the rabbets 7. The timing of the movements is preferably such that when the curtain has been partly raised, the shoe begins to protrude from the opening. The flexible connections pass over the rollers and are received in the rabbets 7, having their inner ends secured to the slides, as by means of suitable nails 58. The side walls of the openings 22 are provided with grooves 59 for receiving the flexible connections and the side edges of the curtains. The curtain may also have suitable advertising

matter thereon so that when the device is being operated, the articles being displayed and the curtains with the advertising matters thereon may be brought alternately into view.

My improved device provides attractive means for displaying the goods. It enables a maximum amount of advertising matter to be displayed in pleasing manner in connection with the goods. It provides means whereby the slides may be easily operated, and the curtains operated in unison therewith, and forms an economical and automatically acting apparatus whereby the articles are kept in motion in order to attract attention.

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

1. In combination, in a display apparatus, a casing having a compartment therein which has an opening at the front thereof, a slide movable back and forth in said compartment, and a closure for the opening of said compartment secured to and movable by said slide, and means for moving said slide.

2. In a display apparatus, the combination of a casing provided with a compartment having a display opening, a slide movable back and forth therein, an upright member at the back of said slide, a pivoted support for the article being displayed at the front of said slide, and means for moving said slide back and forth.

3. In a display apparatus, the combination of a casing provided with a compartment having a front opening, a slide movable back and forth in said compartment, an article-support articulated thereon, a flexible curtain for the opening of said compartment, a flexible connection between said curtain and slide, and means for moving said slide back and forth in said compartment, the said pivoted support permitting the swinging of said article into downward position when said slide is adjacent to said opening.

4. In a display apparatus, the combination of a casing provided with a compartment having a display opening, a slide movable back and forth in said compartment, said compartment provided with guide-blocks for said slide, a closure for said opening, flexible connections connecting said closure and slide, said guide-blocks for said slide provided with rabbets for receiving said flexible connections, and means for moving said slide.

5. In a display apparatus, the combination of a casing having a series of compartments provided with display openings, slides in said compartments having article-supports thereon, and means for simultaneously moving alternate slides back and

forth, substantially for the purpose described.

6. In a display apparatus, the combination of a casing provided with a plurality  
5 of compartments having display openings and slides therein, pivoted supports on said slides for the articles being displayed, closures for said openings having operative connection with said slides, and means for  
10 simultaneously moving alternate slides back and forth and alternate closures up and

down, said pivoted supports permitting the articles being displayed to swing downward into view in front of closed openings, substantially for the purpose described.

15

In testimony whereof, I have signed my name hereto in the presence of two subscribing witnesses.

WALTER L. THORNE.

Witnesses:

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ANNA M. RYAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."