No. 786,540. PATENTED APR. 4, 1905.

J. H. WILLIAMS & G. MAYER.

ADVANCING SHELF DISPLAY STAND.

APPLICATION FILED JUNE 30, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

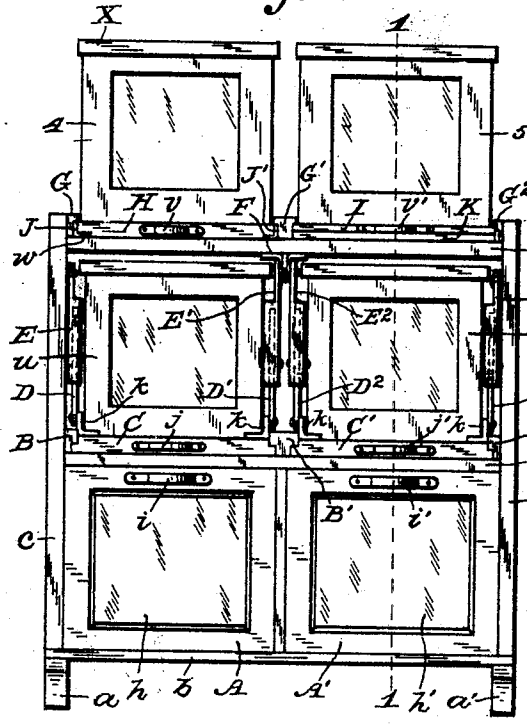


Fig. 2.

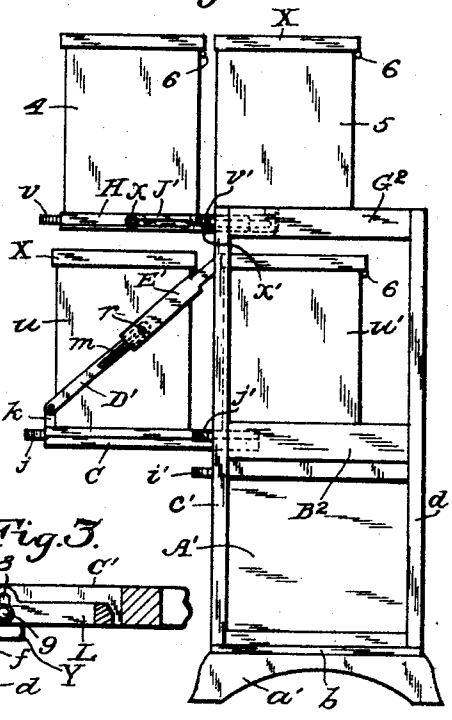


Fig. 3.

Fig. 4.

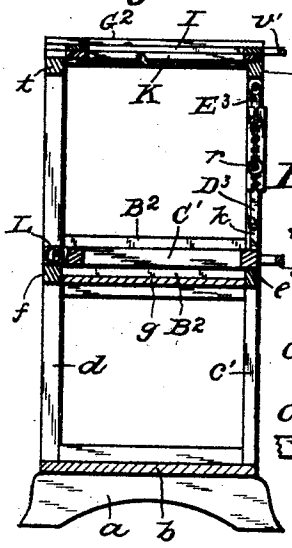


Fig. 5.



Fig. 6.

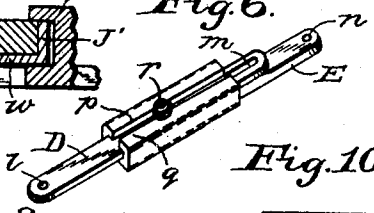


Fig. 7.

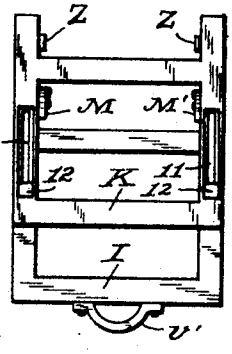


Fig. 8.

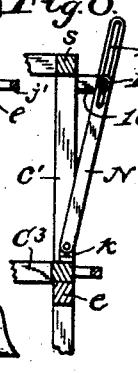


Fig. 9.

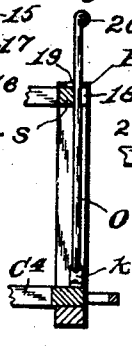


Fig. 10.

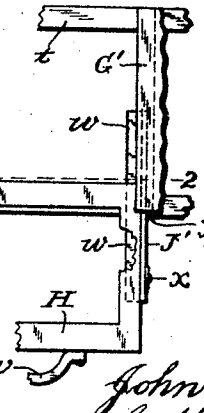
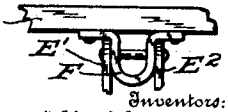


Fig. 11.



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Fig. 12.

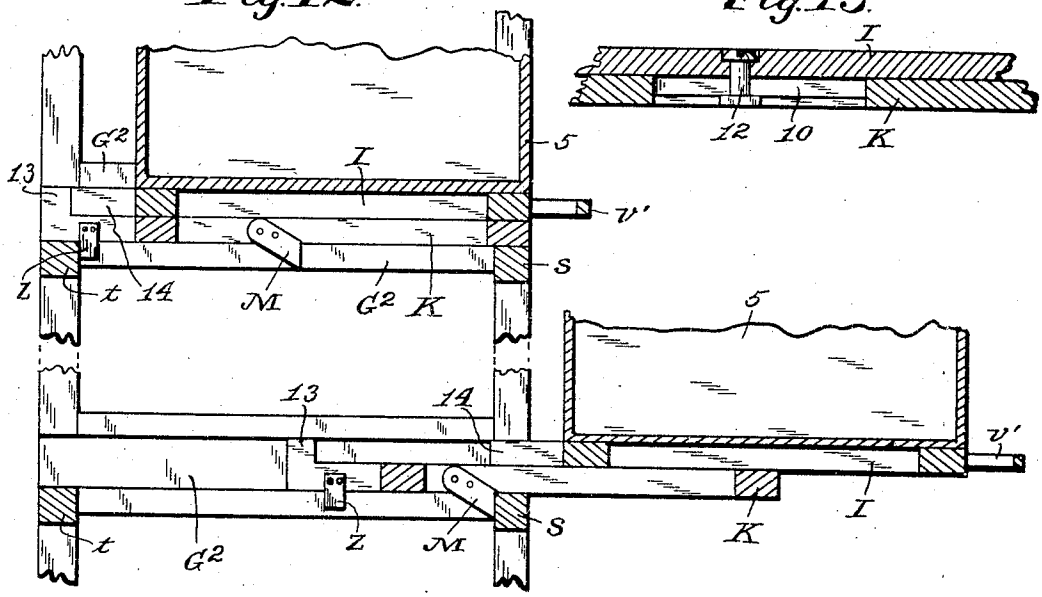


Fig. 13.

Fig. 14.

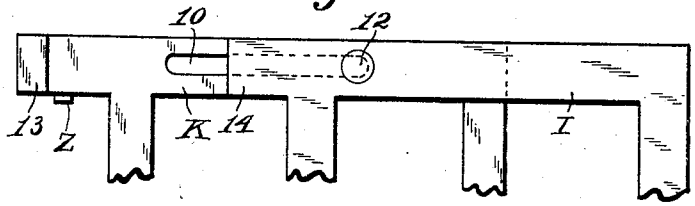


Fig. 16.

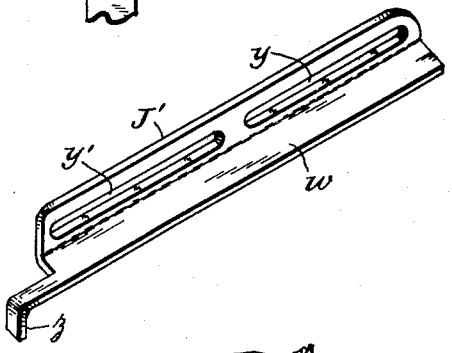


Fig. 15.

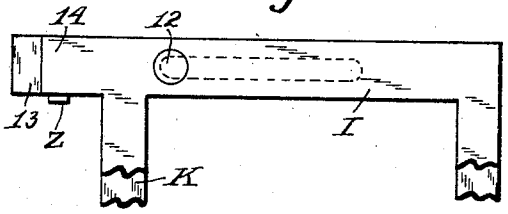
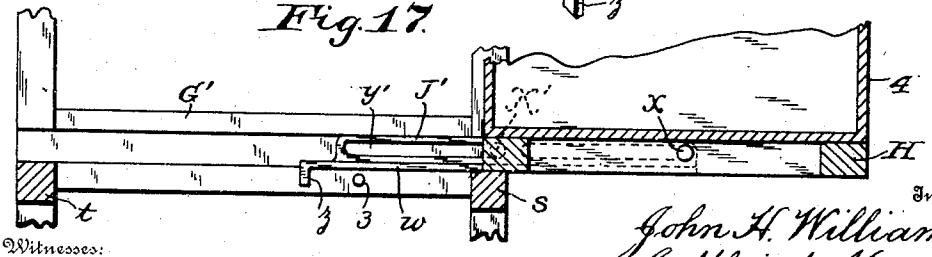


Fig. 17.



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PHOTO-LITHOGRAPHED BY SACHETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 786,540. Patented April 4, 1905.

UNITED STATES PATENT OFFICE.

JOHN H. WILLIAMS AND GOTTFRIED MAYER, OF INDIANAPOLIS, INDIANA.

ADVANCING-SHELF DISPLAY-STAND.

SPECIFICATION forming part of Letters Patent No. 786,540, dated April 4, 1905.

Application filed June 30, 1904. Serial No. 214,726.

To all whom it may concern:

Be it known that we, JOHN H. WILLIAMS and GOTTFRIED MAYER, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Advancing-Shelf Display-Stands; and we do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to stands for holding glass-front cans or boxes of fancy cakes and crackers, or the like in retail stores so that the articles may be conveniently displayed and also retailed from the cans, the invention having reference particularly to stands of this character having closely-arranged shelves for supporting the cans that may be advanced to planes forward of the fronts of the stands in order to enable the dealer to open the lids of the cans when it may be desired to remove some of the goods to be sold, the object of the invention being to provide a stand of this character in which the greatest number of cans may be accommodated conveniently on the least amount of floor-space and at the lowest possible elevation.

With the above-mentioned and minor objects in view the invention consists in a display-stand having advancing shelves provided with automatically-operating extensible supports for the shelves and their loads when advanced to the full extent of their forward movements; and the invention consists, further, in the novel parts and the combinations and arrangements of parts, as hereinafter particularly described and claimed.

Referring to the drawings, Figure 1 is a front elevation of a display-stand of small size in which the improvements are embodied, display-cans of common form being shown supported by the stand; Fig. 2, a side elevation of the stand, showing shelves advanced to their forward positions; Fig. 3, a fragmentary sectional detail view showing a form of shelf-stop; Fig. 4, a vertical transverse sectional view of the empty stand on the line 1 1 in Fig. 1; Fig. 5, a fragmentary sectional detail view on the line 2 2 in Fig. 10, showing portions of a shelf and guide therefor; Fig. 6, a perspective view of a form of shelf-support; Fig. 7, an inverted plan view of a shelf and a support therefor; Fig. 8, a fragmentary sectional detail view showing a form of shelf-support; Fig. 9, a fragmentary sectional detail view showing a modified form of shelf-support; Fig. 10, a fragmentary top plan of a shelf and its support and a guide therefor; Fig. 11, a fragmentary detail view showing a bracket to which one form of shelf-support is pivoted; Fig. 12, a fragmentary vertical sectional view as at the line 1 1 in Fig. 1, showing one of the forms of shelves and supports therefor in both normal and advanced positions supporting display-cans; Fig. 13, a fragmentary sectional detail view showing the manner of connecting one form of shelf to its support; Fig. 14, a fragmentary top plan showing one form of a shelf and its support in relatively advanced positions; Fig. 15, a fragmentary top plan showing the parts in Fig. 14 in relatively normal positions; Fig. 16, a perspective view of one of the forms of shelf-supports, and Fig. 17 is a fragmentary vertical sectional view showing one of the forms of shelves and a support thereof partially advanced with respect to the stand-frame.

Similar reference characters designate corresponding parts or features in the several figures of the drawings.

In construction the stand may be made in various sizes in length and height, and in some cases it may be designed to set the stands under stationary shelving in stores, in which case and also for the sake of improvement in appearance of the stands the stand-frames extend only as high as the upper shelves, so that the upper display-cans may set apparently upon the tops of the stands, the upper shelves in this case having horizontal supports, while the lower shelves may be provided with different and more simple forms of supports, as will further appear.

Base-pieces a and a', forming supports for the stand, are connected by a bottom b and a suitable number of uprights, as c c' d, to which are attached other frame parts of suit-

able form, including a front rail *e* and a rear rail *f*, somewhat higher than the bottom *b*. A number of drawers, as A A′, are arranged in the frame on the bottom *b*, and a roof-board *g* is arranged above the drawers to keep out dust. The drawers have glass-front panels *h h′* and are designed to hold and display bulk crackers or the like that may not be delivered in cans to the retailer, the drawers having draw-pulls *i i′*.

Grooved guides, as B B′ B², are arranged in a plane above the drawers, and movable shelves, as C C′, are mounted in the guides so that they may slide forwardly, draw-pulls *j j′* being attached to the fronts of the shelves. Each shelf is preferably of skeleton form, having no central portion, as a matter of economy of material, and each forward corner of each shelf C and C′ is provided with an ear *k* to serve in supporting the front portion of the shelf and contents when advanced. The supports for the shelves are all designed to be inoperative and withdrawn out of the way when the shelves are in their usual positions in the stand-frame, and they may be made in different forms in detail, yet be extensible, so as to be operative when required. The preferred form of support for all of the shelves except the upper ones comprises each a pair of connected links D and E and links D′ and E′, provided for the shelf C, or links D² and E² and links D³ and E³, provided for the shelf C′, the pairs of links being all alike. Each link D and each other one like it has a pivot-hole *l* in an end thereof, by which it is pivotally connected to an ear *k* of a shelf, and in the opposite end portion of the link is a long slot *m*. Each link E and each other link like it has a pivot-hole *n* in an end thereof, by which it is pivotally connected to a suitable member of the stand-frame somewhat higher than the shelves which they serve to support, and each link also has guides *p* and *q*, between which the companion link may move longitudinally, a stud *r* being also provided, that extends through the slot *m* to limit the amount of extensibility of the pair of links. The links E and E³ are pivoted to the uprights *c* and *c′*, respectively, and the links E′ and E² are pivoted to a bracket F, that is attached to the under side of a front rail *s* of the stand-frame, which is arranged at a suitable height above the rail *e*. A rear rail *t* is arranged at the back part of the frame. The cans *u u′* rest upon the shelves between the shelf-supports and extend up nearly to the rail *s*, so that their lids cannot be opened while in the stand-frame. A number of other tiers of shelves like those above described will be provided in practice, as will be understood.

The upper shelves are preferably arranged at the top of the stand-frame, although the frame may in some cases extend above the shelves, and supports similar to those above described may be employed, as is obvious. When the shelves are at the top of the frame, as shown, the shelf-supports may vary slightly in detail, yet operate in substantially the same manner. A guide G, a double guide G′, and a single guide G² are arranged at the top of the stand-frame and normally support the upper shelves H and I, having draw-pulls *v v′*.

The shelf H has a pair of horizontally-disposed supports J and J′, composed of metal, as a bar, each support being at a side of the shelf and having a guide-flange *w* extending under the edge of the shelf and also having longitudinal slots *y* and *y′* therein, the rear end of the flange *w* being turned over to form a stop *z* to engage a stop-stud 3 or the rail *t*, so that the horizontal movements of the supports J and J′ in the guides G and G′, in which they and the shelf are mounted, is limited in both directions. The shelf is connected to its supports by means of studs or lugs, as *x* and *x′*, attached to the shelf and extending through the slots *y y′*.

The shelf I is substantially like the other shelves except that it may be thinner, and its single support K may be composed of wood and shaped similarly to the shelf itself, both being arranged to slide horizontally either together or separately in the guides G′ and G², the shelf upon its support, both being suitably stopped. The cans 4 and 5 rest upon the shelves H and I; but when they may not be required the empty shelves will not present an unsightly appearance, since the stand does not extend above them, and in some cases the shelves may be used as ordinarily to hold small wares in packages. All of the lids X of the cans have hinges 6 at the rear of the cans.

For limiting the movements of the shelves C and C′ each shelf is provided with a gravity-stop L or a pair of them, each one connected by a pivot 7 to the shelf and having a slot 8, through which a stud 9, attached to the shelf, extends, so that the stop may fall and engage the rail *e* when the shelf is advanced to its forward position. The shelf also has a stop-block Y attached thereto to engage the rear rail *f* when the shelf is retracted to its usual position when the stop L rides on the rail *f* inoperatively.

In order to limit the movements of the shelf H and its support and also for connecting the two members together, the support K has slots 10 and 11 near its edges and the shelf H has lugs 12 attached thereto, extending through the slots. Stops M and M′ are attached to the support K, adapted to engage the front rail *s*, and the support is also provided with stops Z, adapted to engage the rear rail *t*. The support K has a projection 13 at its rear end to be engaged by the extension of the shelf I when the shelf is retracted.

In a cheaper and less attractive design of stand each shelf, as C³, may have a pair of single links N pivoted to the ears *k* and having each a slot 15, so that these links are like

the links D, but are somewhat longer. Brackets 16 project forwardly from the stand-frame at points about the height of the rail *s*, each bracket having a stud 17 that extends through the slot 15 of a link, and it will be clear that when the shelf is advanced the links will be inclined and hang on the pivots 17, thus supporting the shelf. Another slightly-modified form of support comprises a pair of rod-links, as O, pivotally connected to the ears *k* of the shelf C^4, each link extending vertically through a slot 18 in the rail *s* and also through a hole 19 in a plate P, that is secured on the top of the rail *s*, the top of the link having a knob or head 20 formed thereon that cannot pass through the hole 19. It will be seen, therefore, that the links may hang on the plates P when the shelf is advanced, and thus serve as supports.

Other modifications than those described may be made in the extensible shelf-supports, as well as in the shelves and shelf-stops, within the spirit and intent of the invention.

It will be understood that the bottom of the stand may be provided with shelves instead of the drawers, if desired, and the radially-movable supports may be provided throughout, omitting the horizontal supports shown in connection with the upper shelves. Also the links D and E, forming the supports, may be connected together in various ways other than that described in order to render them extensible.

In practical use the shelves will usually remain in the stand-frame, supporting the cans or boxes thereon in close arrangement, as illustrated. In order to raise a can-lid to remove the goods for delivery in small lots, which should be done conveniently and quickly, the particular shelf that holds the can should be drawn out or advanced to the front of the stand-frame, in which position the front and major portion of the shelf and its contents will be supported by the extensible shelf-supports. When the can-lid is thrown up and rearwardly, it will stand open in an inclined position and may be quickly closed when pushing the shelf back to its usual position.

Having thus described the invention, what we claim as new is—

1. In a display-stand, the combination with the stand-frame, and the sliding shelves therein having the ears at the upper forward portions thereof, of extensible-link shelf-supports connected to the frame and also to said ears, each one of said supports being straight in all of its positions, and vertically disposed when the shelf to which it is connected is within the frame, substantially as set forth.

2. In a display-stand, the combination with the stand-frame, and the sliding shelves therein having the ears at the upper forward portions thereof, of extensible-link shelf-supports connected to the frame and also to said ears, each one of said supports comprising two link parts of which one part is slidingly connected with the other part and provided with a stop limiting the amount of extensibility of the support, substantially as set forth.

3. In a display-stand, the combination with the stand-frame having the shelf-guides, and the shelves mounted movably in the guides, of extensible shelf-supports connected to the frame and supporting and stopping the shelves when in forward positions, and vertically disposed when the shelves are withdrawn into the frame, substantially as set forth.

4. In a display-stand, the combination of a stand-frame comprising upright members and also horizontal rails, guides supported by the upright members, double guides supported by the horizontal rails, shelves mounted movably in the guides and the double guides, brackets attached to the horizontal rails, extensible-link supports pivoted to the upright members and also to the shelves, and extensible-link supports pivoted to the brackets and also the shelves, substantially as set forth.

5. In a display-stand, the combination with a stand-frame, of a plurality of display-drawers mounted in the lower portion of the frame, an open or skeleton frame mounted upon the stand-frame and having open or skeleton shelves mounted slidingly at the top thereof and also between the top thereof and the display-drawers, and extensible supports for the shelves, with display-cans upon the shelves, the cans that are on the uppermost shelves extending above said skeleton frame, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN H. WILLIAMS.
GOTTFRIED MAYER.

Witnesses:
WM. H. PAYNE,
E. T. SILVIUS.