C. DOERING, Jr.

COLLAPSIBLE DISPLAY RACK.

APPLICATION FILED JUNE 7, 1910.

1,035,552. Patented Aug. 13, 1912.

2 SHEETS—SHEET 1.

Fig. 1

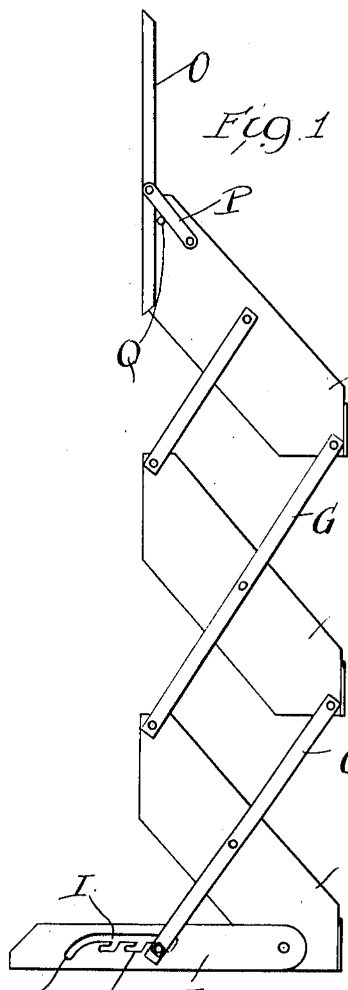


Fig. 2

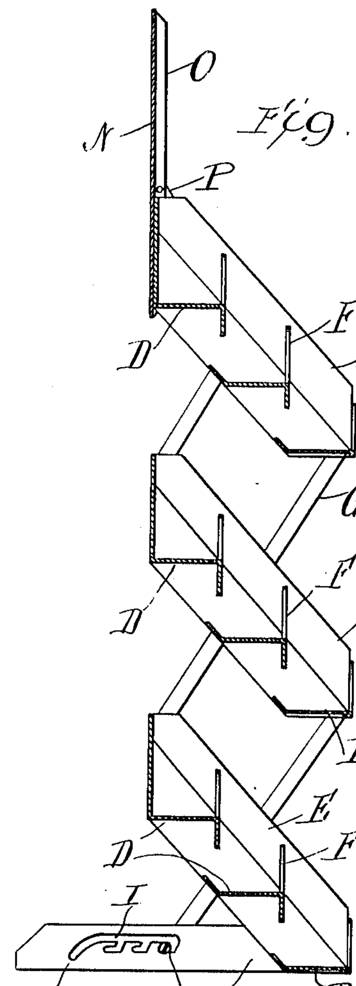
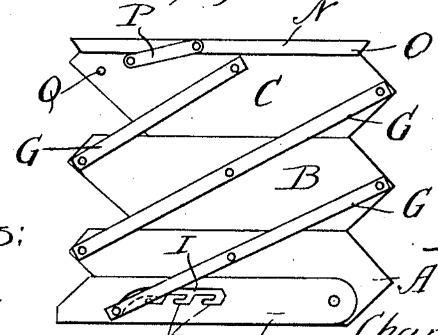


Fig. 3



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2 SHEETS—SHEET 2.

Fig 4.

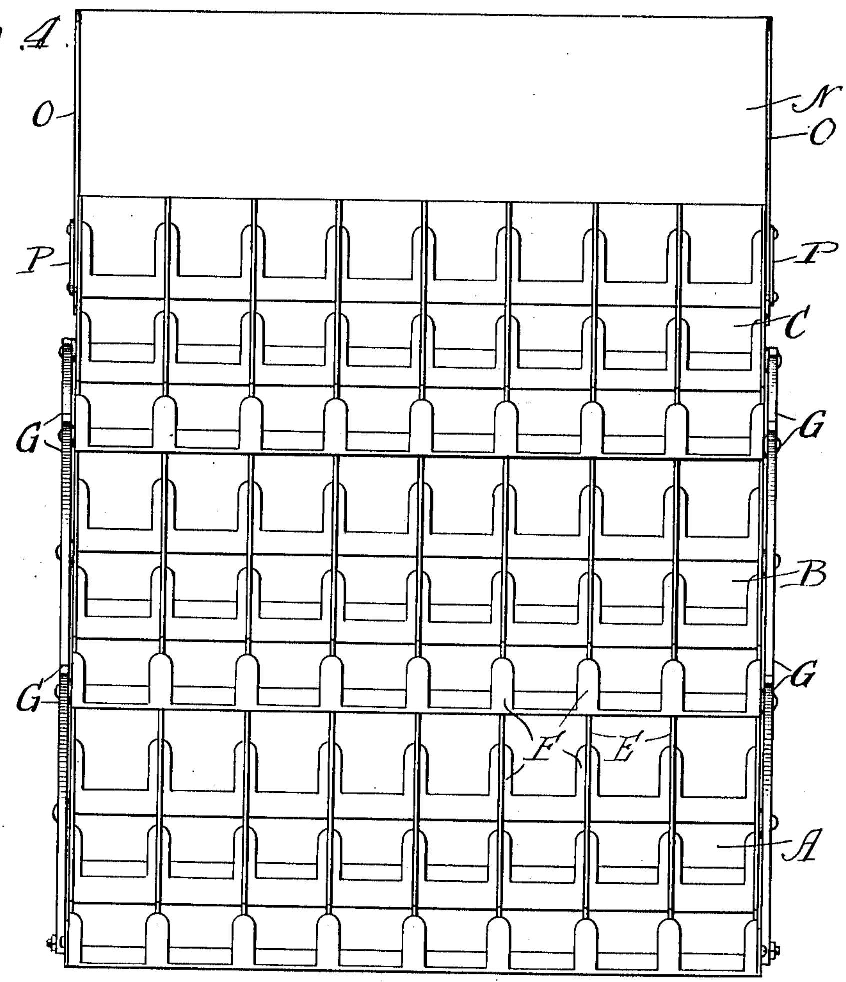
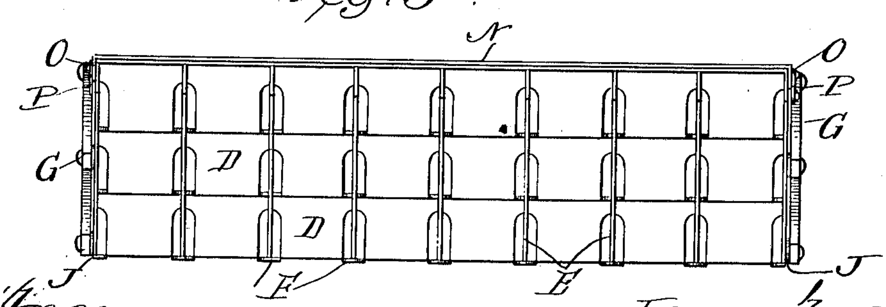


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES DOERING, JR., OF CHICAGO, ILLINOIS.

COLLAPSIBLE DISPLAY-RACK.

1,035,552. Specification of Letters Patent. Patented Aug. 13, 1912.

Application filed June 7, 1910. Serial No. 565,636.

To all whom it may concern:

Be it known that I, CHARLES DOERING, Jr., citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Collapsible Display-Racks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a novel construction in a collapsible display rack, the object being to provide a simple, efficient and durable device of this character which when collapsed makes a relatively small, compact package easily crated and shipped and which when expanded occupies a relatively small supporting area while displaying a very large quantity of goods, such as seed packages or other small articles presented for display in large variety.

The invention consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings illustrating my invention: Figure —1— is a view in side elevation of a collapsible display rack constructed in accordance with my invention. Fig. —2— is a vertical longitudinal section of the same. Fig. —3— is a side elevation of the same showing it in its collapsed position. Fig. —4— is a view in front elevation of the device when fully expanded for displaying packages. Fig. —5— is a similar front view of the same showing it collapsed.

The object of my invention is to provide a cheap display rack for seed packages, booklets or other small articles, such as jewelry and ornaments, to be displayed in large variety, which is very cheap, durable, easily expanded and collapsed and which when collapsed forms a relatively small package readily inserted in a rectangular box or crate for purposes of shipment, and which may be packed with the contents to be displayed at its destination before shipment thereof.

The device consists of a plurality of frames A, B and C, the number of which may be increased or diminished at will, and each of which comprises parallel vertical end walls or members the ends of which are angularly cut away at angles approximating forty-five degrees to the longitudinal edges thereof. The said end walls constitute parts of lazy-tong lever structures consisting of the same and the links or levers G pivotally connected therewith at and between the ends thereof in the usual manner. The said lazy-tong lever G and said end walls of said frames A, B and C are adapted when projected or expanded to the fullest extent to extend at angles of about ninety degrees to each other and about forty-five degrees to a horizontal supporting plane, and when in this position two of the cut away edges of said end walls are approximately vertically disposed. To these edges there are secured the cross pieces or front and rear walls of said frames which are also approximately vertically disposed when said frames are supported at the upper limits of their movement. Disposed between said end walls at different elevations and extending approximately at right angles to the said front and rear walls of said frames are supporting brackets D for the matter to be displayed. These supporting brackets are divided laterally into pockets by means of partition strips E disposed parallel with the end walls and having their longitudinal edges parallel with the longitudinal edges of the latter, said strips being secured at their ends to the front and rear walls of said frames. The edge of each of said supporting brackets D opposing the front wall of the frame of which it forms a part is provided with a downwardly extending edge flange and integral with the latter are projections F cut out of the body of the brackets D and extend upwardly at right angles to the latter. The said projections F are arranged in pairs between which said partition strips E are received and to which they are suitably secured between their ends. The pockets thus formed are of a skeleton nature suitable for containing envelops, cards, booklets and the like, the construction being light and cheap. The lowermost of said links G are equipped at their lower or free ends with projections H passing into slots I in arms J pivotally secured at one end to the lower end portion of the respective end walls of the lowermost receptacle A and adapted to enter angular extensions K of said slots I to support said levers or links G in the desired position to maintain said receptacles A, B and C sup-

ported at the aforesaid incline relatively to the horizontal plane upon which said arms J rest.

In Figs. —1— and —2— I have shown said receptacles A, B and C supported at the maximum elevation and inclination relatively to the supporting surface therefor, this position being determined by the length of the slots I, and when in said position said supporting brackets D are, as previously stated, horizontally disposed and said flanges F vertically disposed. The elevation and inclination of said receptacles A, B and C may be varied by moving the lower end of the lever G relatively to the link or arm J to throw the projection H into the more rearwardly disposed extensions K of said slot I and by moving said projection H into the curved end portion M of said slot I the said receptacles A, B and C will be lowered to the position shown in Fig. —3— in which the lower longitudinal edges of the said side walls A are brought flush with the supporting surface or lower edges of said arms J and the corresponding portions of the side walls of the receptacles B and C rest upon the upper longitudinal edges of the side walls of the receptacles A and B, respectively. The uppermost of said receptacles is equipped with a cover N provided with side flanges O between which the side walls thereof are adapted to be received when said cover is down, as shown in Fig. —3—, the same being pivotally engaged with said side walls by means of the links P pivotally secured at their opposite ends to said flanges O of said cover and said side walls of said receptacle C. Stops Q mounted on the side walls of the latter limit the movement of said links P in one direction and serve to maintain said cover N vertically disposed, as shown in Figs. —1— and —2—, when it is desired to display the contents of the rack.

In the position shown in Figs. —1— and —2— it will be noted that the lowermost points in each of the receptacles B and C are substantially in horizontal alinement with the uppermost points in the receptacles A and B, respectively, and that a sufficient amount of free space is provided between the receptacles A, B and C to permit ready access for the purpose of removing and inserting packages or other matter displayed, the latter being clearly exposed to view.

The projections F integral with the depending flanges of the supporting surfaces D are cut from the body of the latter thus forming slots therein. Between the slots the said supporting surfaces D may be and preferably are provided with a number of perforations so that dust accumulating on the packages together with any vermin that may find its way between the same will gradually fall through instead of accumulating in the pockets.

My said device possesses the advantages of providing a very large number of pockets for the reception of goods to be displayed, which said pockets are of ample depth between their front and rear walls to contain a large number of packages each while the supporting area occupied by the device remains relatively very small. Furthermore my said device possesses the advantage of enabling the display capacity thereof to be readily increased or diminished by increasing or diminishing the number of said frames.

It is customary for seed merchants, publishers, manufacturers and others having small packages or articles for display in large variety to stock display racks at the place of packing, manufacture or publication, as the case may be, and shipping the display racks so packed to the retailers in different parts of the country. Such racks unless collapsible occupy a great deal of space and this necessarily renders shipment thereof expensive owing not only to the cost of crating but likewise to the higher freight rates for articles which are excessively voluminous in proportion to their weight. My said device may be collapsed without danger of any injury to the contents thus occupying minimum space and rendering shipment thereof a matter of ease and minimum cost.

I claim as my invention:

1. A collapsible display rack comprising two sets of lazy-tong levers disposed in parallelism, one-half the levers of each set constituting the end walls of the frames, a pair of arms pivotally secured at one end to the free end of one of the lowermost levers of each set and being provided between their ends with longitudinal slots, the lower walls of said slots being serrated, and projections at the free ends of the lowermost levers of the other set entering said slots and adapted to engage a serration therein to limit the relative movements of all of said lazy-tong levers.

2. A collapsible display rack comprising a plurality of frames disposed in parallelism at different elevations, rods pivotally secured substantially midway between their ends to the end walls of all of said frames disposed below the uppermost thereof substantially midway between the ends of the latter, the upper ends of the lower of said rods pivotally secured to the forward end portions of the end walls of the frame next higher than the one to which they are secured between their ends, and the upper rods similarly secured at their lower ends to the rear end portions of the end walls of lower frames, said rods and said end walls of said frames constituting parallel lazy-

tong lever structures adapted to be expanded and contracted to cause said frames to be projected upwardly and separated from each other and brought down in contact with each other respectively, and means engaging the lower ends of the lowermost rods and the forward end portions of the end walls of the lowermost frame to support said frames at the upper limits of their movement.

3. A collapsible display rack comprising a plurality of frames disposed parallel with each other and adapted to rest upon each other when said rack is collapsed, rods secured at and between their ends to the end walls of said frames at and between the ends of the latter, said rods and said end walls constituting lazy-tong lever structures adapted to be expanded and contracted to project said frames to respectively varying elevations or drop the same upon one another, said frames when projected being inclined, supporting arms pivotally secured at one end to one end portion of each of the end walls of the lowermost frame, racks on said arms between the ends thereof, and projections on the lower end portions of the lowermost rods adapted to engage said arms to support said frames at different elevations.

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

CHARLES DOERING, JR.

Witnesses:

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M. M. BOYLE.