A. E. BEZOIER.

HAT DISPLAY RACK.

APPLICATION FILED FEB. 19, 1909.

943,805.

Patented Dec. 21, 1909.

3 SHEETS—SHEET 1.

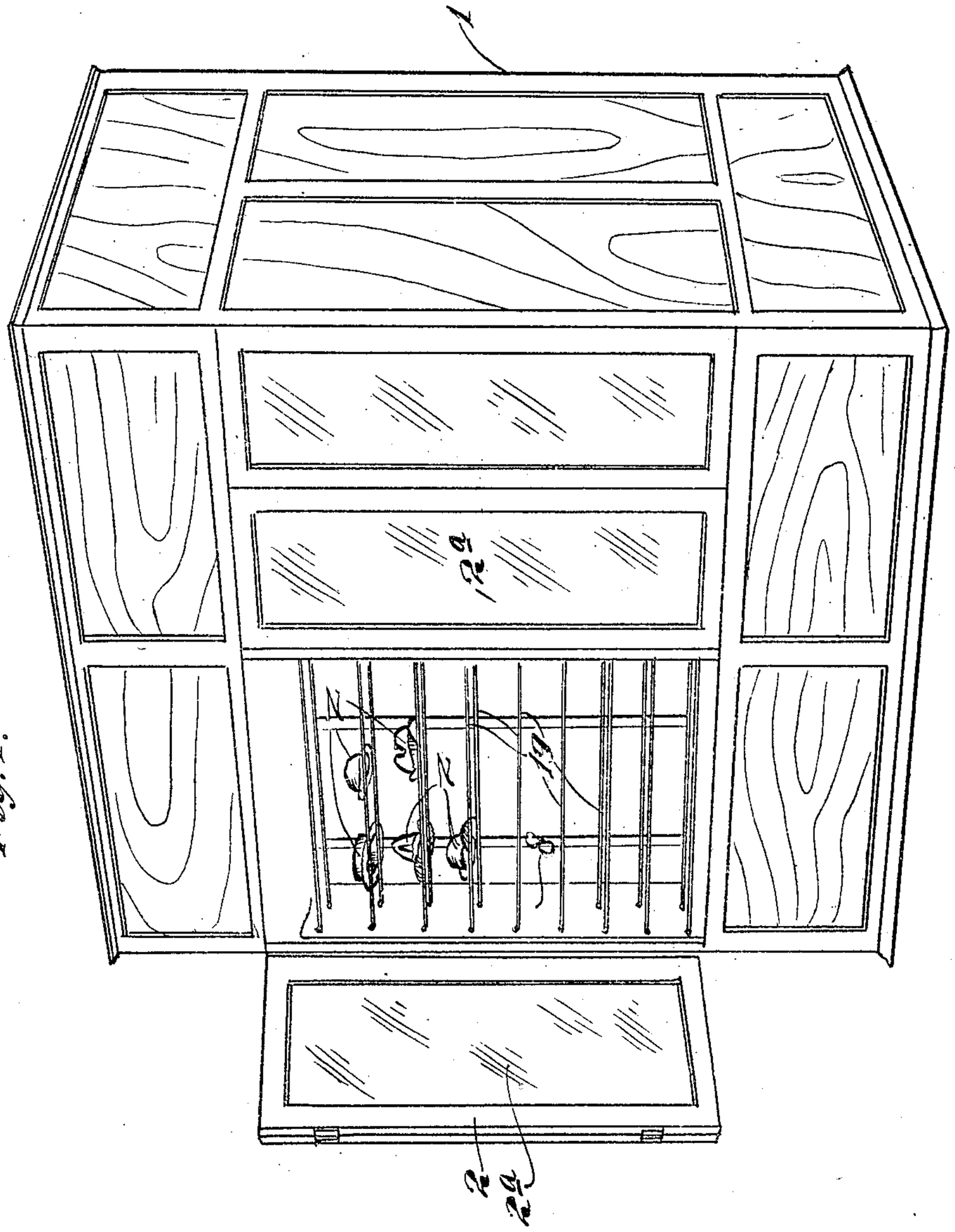

Fig. 1.

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3 SHEETS—SHEET 2.

Fig. 3.

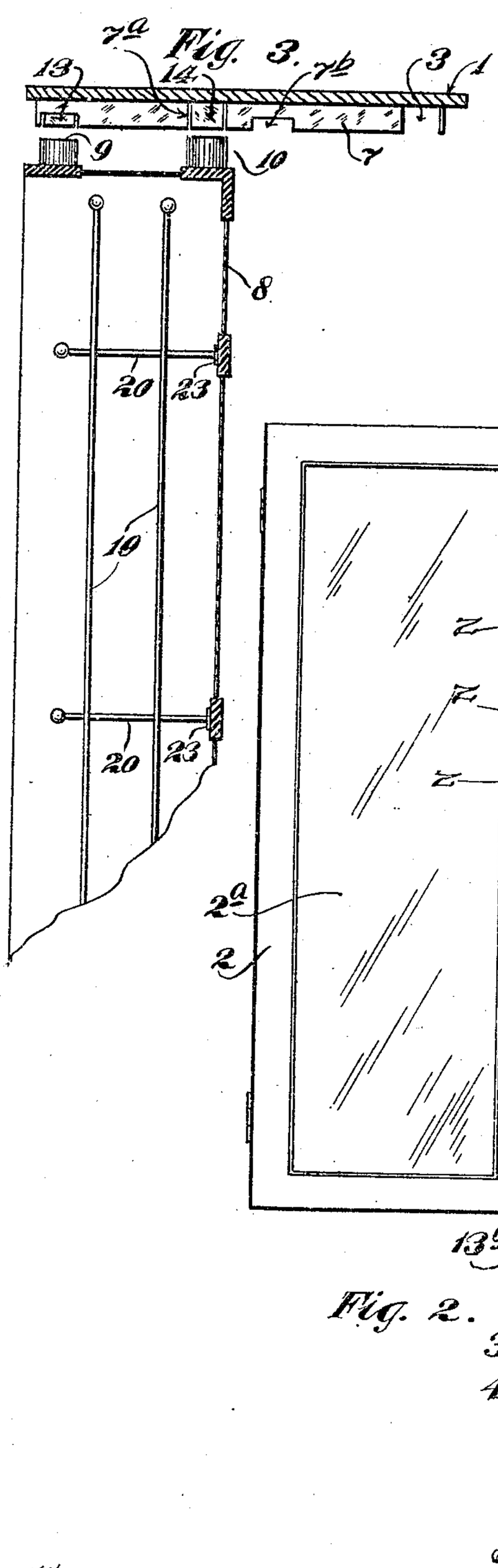
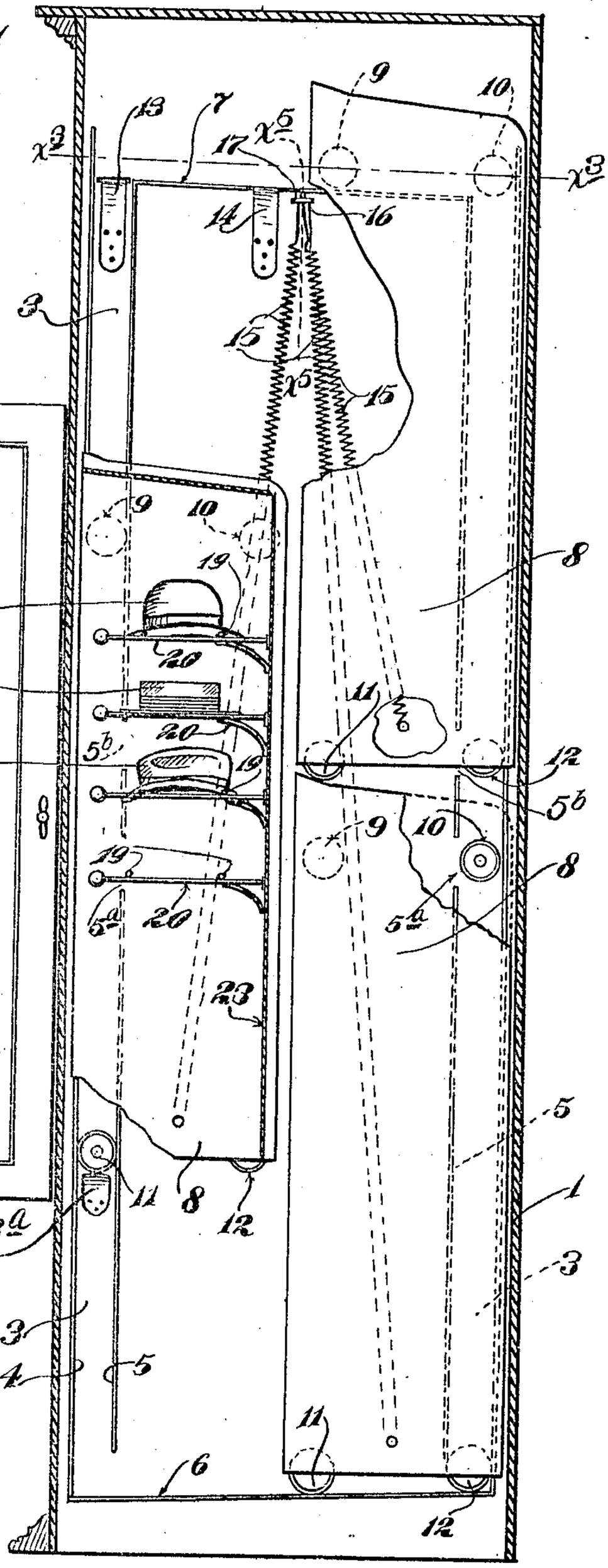


Fig. 2.



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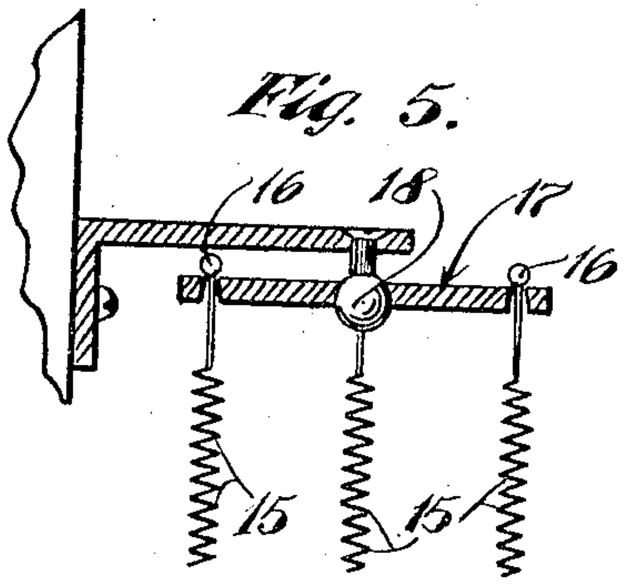
3 SHEETS—SHEET 3.

Fig. 5.



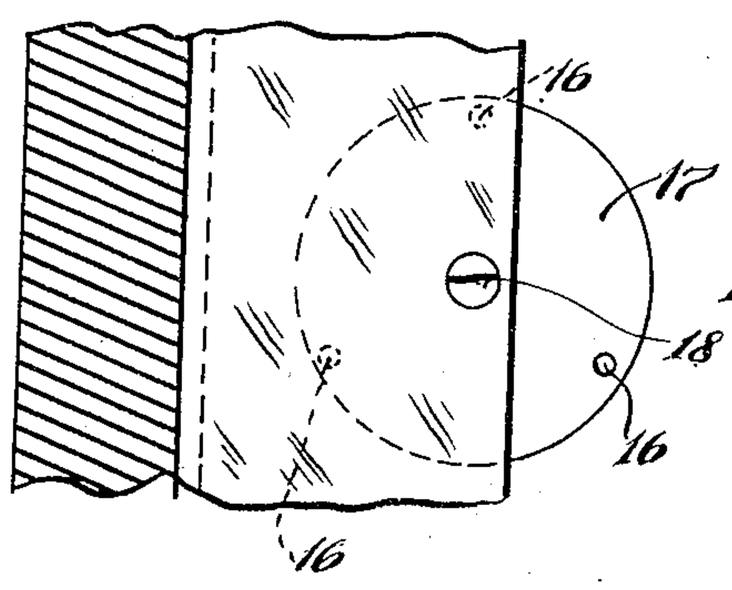


Fig. 6.

Fig. 4

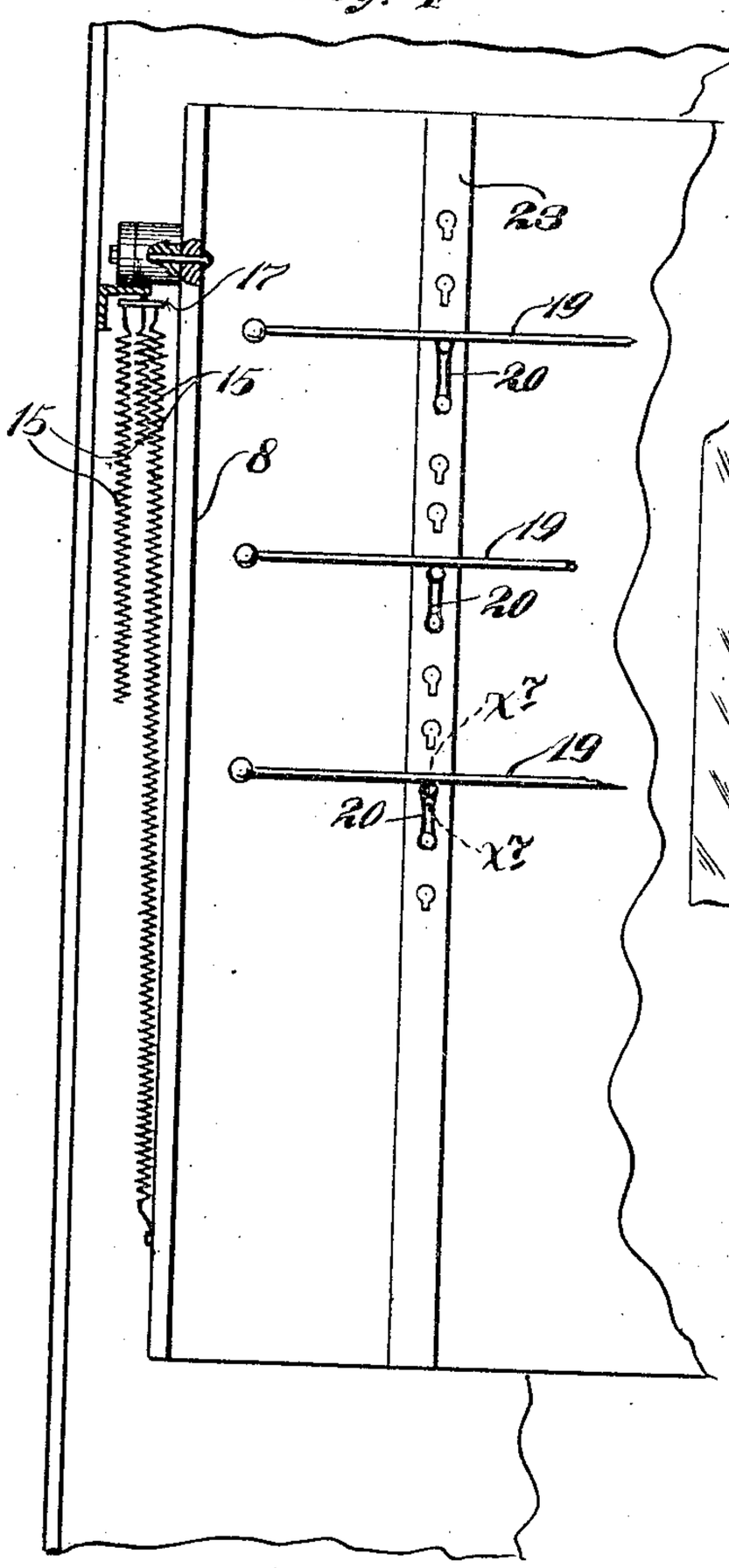


Fig. 8.

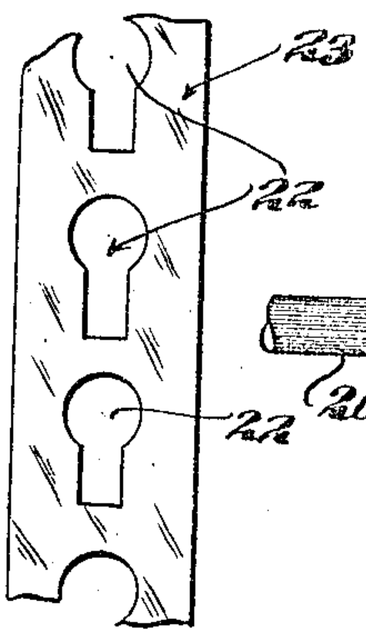
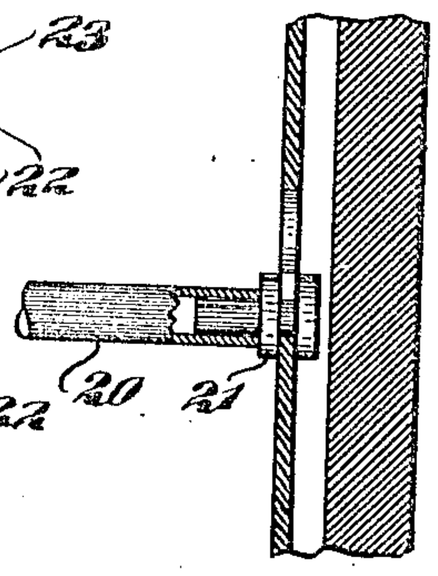


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALEXIS E. BEZOIER, OF MINNEAPOLIS, MINNESOTA.

HAT-DISPLAY RACK.

943,805. Specification of Letters Patent. **Patented Dec. 21, 1909.**

Application filed February 19, 1909. Serial No. 478,819.

To all whom it may concern:

Be it known that I, ALEXIS E. BEZOIER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Hat-Display Racks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable other skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved cabinet with movable racks especially adapted for use in displaying hats, but adapted also for use in displaying various other articles of merchandise.

To the above ends, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a perspective view, showing a duplex or double cabinet designed in accordance with my invention; Fig. 2 is a view in vertical section taken from front to rear through one of the sections or compartments of the cabinet shown in Fig. 1; Fig. 3 is a horizontal section taken on the line x^3 x^3 of Fig. 2, some parts being broken away, and certain of the parts being separated or drawn apart; Fig. 4 is a fragmentary view in front elevation, with some parts sectioned, and some parts broken away, showing the left hand side portion of the improved device; Fig. 5 is a detail view in vertical section, taken approximately on the line x^5 x^5 of Fig. 2; Fig. 6 is a plan view of the parts shown in Fig. 5; Fig. 7 is an enlarged vertical section taken approximately on the line x^7 x^7 of Fig. 4; and Fig. 8 is a detail view in front elevation, showing on an enlarged scale, one of the several supporting bars applied on the display racks.

The numeral 1 indicates a rectangular cabinet, shown as formed double or with two compartments, and provided in front of its compartment with folding hinged doors 2 provided with mirrors 2^a, which latter, are desirable, so that a prospective purchaser may observe the appearance of hats while standing in front of the cabinet.

So far as my invention is concerned, the cabinet may be provided with any desired number of compartments or sections, and hence the same will be described as if there was but one compartment section.

On the inner surface of the opposite sides of the cabinet compartment, is provided vertical front and rear runways 3, formed between guide rails 4 and 5. The outer guide rails 4, at their lower ends, connect to forwardly inclined bottom rails 6, and the inner rails 5, at their upper ends, are connected to rearwardly inclined top rails 7. The outer rails 4 extend to points considerably above the top rails 7, and the inner rails 5 terminate at points considerably above the lower rails 6.

Within the cabinet compartment, is a multiplicity of box-like hat racks 8, there being as shown, three thereof. The racks 8 are open at their front sides, and as shown, they are also opened at their bottoms. Each rack 8, at each side, is provided with a pair of upper supporting rollers 9—10, and at their lower portions are provided with pairs of supporting rollers 11—12. The top plates of the racks 8 are rearwardly inclined for a purpose which will hereinafter appear.

When one rack is in its forward position, its rollers 9 and 11 will be in the front channels or runways 3; and when the said racks are in their rearmost positions, their rollers 10 and 12 will be in or alined with the rearmost channels or runways 3. When a box is supported by engagement of its rollers 11 and 12 with the inclined lower rails 6, the said rack will tend to run forward under the action of gravity, and this forwardly moving tendency, will be increased by the engagement of the rollers 11 of the overlying rack with the inclined top thereof.

By reference to Fig. 3, it will be noted that the upper rollers 10 are longer or wider than the upper rollers 9. The said rollers 9 and 10, as they pass upward from the front runways 3 onto the upper supporting rails 7, press backward spring latches 13 and 14, and the rollers 10 pass through notches 7^a in the said rails 7. When the rack is lowered at the rear of the cabinet, the rollers 10 pass downward into the rear runways 3, and the narrow rollers 9 pass downward through narrow notches 7^b formed in the said rails 7. It is here important to note, that the rollers 10 are so wide that they will pass on to the rails 7 over the narrow notches 7^b when traveling rearward.

Attention is called to the fact, that in

Fig. 3, the rack 8 is drawn endwise away from the rail 7, so that its rollers 9 and 10 are removed from the said rail, this being done to more clearly show construction in said rail and of the spring latches and other parts that coöperate therewith. The rails 5 are provided with notches 5[a] that clear the rollers 9 and 10, and permit forward movements of the racks 8 and the rails 5 are further provided with notches 5[b] that clear the rollers 9 and 10 and permit rearward movement of the racks 8.

The several racks 8 are supported in part or are partly counterpoised by suitable devices which make the lifting of the racks an easy matter. These devices are preferably in the form of long coiled springs 15, attached at their lower ends to the lower side portions of the racks 8. At their upper ends, the three springs 15, are attached at equidistant points by means of swivel heads 16 to a rotary head 17, shown as mounted on the headed end of a stud 18 secured to the overlying upper rail 7, as best shown in Figs. 4, 5 and 6. In practice, it may be found desirable to employ a ball bearing connection between the rotary spring anchoring plate or head 17 and the stud or other part to which it is rotatively mounted.

In practice, the spring devices above described, would be applied at both ends or sides of the movable racks 8. The hats indicated by the character Z may be supported within or upon the racks 8 by any suitable means, but preferably they are supported by parallel rods 19, which in turn, rest upon brackets 20. These brackets 20, at their inner ends, have grooved heads 21 that are adapted for inter-locking engagement in the matter of bayonet joint, with slots 22 formed in vertical metal strips or bars 23 suitably secured to the backs of the respective racks 8. The slots 22 are enlarged at their upper extremities so as to permit the heads 21 to be passed endwise therethrough, and the lower portions thereof are contracted for engagement with the necks or reduced portions of the said heads. Furthermore, the said slots 22 are closely positioned in said bars 23 so that the brackets 20 may be secured in different vertical adjustments thereon, and thereby adapt the shelves or hat holding devices for adjustments to different kinds of hats.

As already stated, the racks 8 are partially supported by the springs 15. It is therefore an easy matter to raise the forward rack into a position in which its rollers 9 and 10 will pass above the spring latches 13 and 14, and onto the upper rails 7.

In Fig. 2, the forward rack 8 is shown in an intermediate position and at a proper height to bring the hats contained therein, within an easy reach of the salesman and purchaser. To support the same in this partially raised position, a spring latch 13[a] corresponding in construction to the spring latch 13, is applied in the side of the cabinet or case 1, in position to form a rest for the engaged roller 11 as shown in Fig. 2.

When the forward rack 8 is raised with its rollers 9 and 10 above the upper rails 7, the lowermost rear rack 8, will, under the action of gravity, run forward on the inclined lower rails 6 and the pressure of the upper rear rack 8, acting on the inclined top thereof, through the rollers 11, will assist in producing this forward movement. The upper portions of the latches 13 are either made horizontal, or are set slightly below the upper surfaces of the upper rails 7, so that when a rack 8 is moved upward until its rollers 9 rest on the said latches, the rearward movement of the said rack will not take place. When the said rack is thus raised however, the lower rack, at the rear, will move forward under the same, so that the hats contained in the two forwardly moved racks, will be displayed at the front of the cabinet. When however, the lower rack at the front is then slightly raised, its inclined side flanges 8[a], will engage the rollers 11 of the overlying rack, and by a camming action, will impart the initial rearward movement to the said overlying rack.

When the several racks are moved one after the other, as above described, the rotary spring actuating head 17, will be rotated so that the several springs 15 will be caused to clear each other.

By reference to Fig. 2, it will be seen, that the springs of the racks that are at the rear, pull rearward on one side of the rotary head 17, and that the spring of the rack which is in front pulls forward on the other side of the said rotary head. This, as is evident, will cause the said rotary head to rotate under the above described movement of the racks. If desired in practice, the lower ends of the springs 15 may be connected to the racks 8 by swivel joints. Swivel joints at some point or points in the spring connections, is required to prevent twisting of the springs under rotation of the spring anchoring heads 17.

This so-called display cabinet is, as is evident, adapted to contain a large number of hats or other articles placed therein. While especially adapted for use to contain and display hats, it is not, of course, limited to that use.

What I claim is:

1. The combination with a suitable cabinet, having front and rear runways and upper and lower supporting rails, of a multiplicity of display racks having upper and lower front rollers and upper and lower rear rollers, said front rollers being arranged to work in said front runways, said rear rollers being arranged to work in said

rear runways, said upper rollers being arranged to run on said upper rails, and the said lower rollers being arranged to run on said lower rails, and the said vertical runways and upper rails having suitable roller clearing passages whereby the said racks may be moved one after the other on endless paths.

2. The combination with a suitable cabinet, having endless approximately rectangular runways, of a multiplicity of display racks having rollers for coöperation with said runways, the upper portions of said runways being rearwardly inclined, and the lower portions of said runways being forwardly inclined to cause said display racks when raised, to travel backward and when lowered, to travel forward under the action of gravity, substantially as described.

3. The combination with a suitable cabinet, having approximately rectangular runways, the upper portions of which are rearwardly inclined and the lower portions of which are forwardly inclined, of a multiplicity of display racks having rollers coöperating with said runways, and having inclined upper portions adapted to be engaged by rollers of an overlying rack, substantially as described.

4. The combination with a suitable cabinet, having endless runways, of a multiplicity of display racks having rollers coöperating with said runways, and counter balancing devices supporting said racks, at least in part, and arranged to clear each other under movements of said rack.

5. The combination with a suitable cabinet, having approximately rectangular runways, the upper portions of which are provided with roller clearing passages and spring latches therein, of a multiplicity of display racks having rollers coöperating with said runways and spring latches, the latter serving to hold the racks in uplifted positions, substantially as described.

6. The combination with a suitable cabinet, having endless runways, of a multiplicity of display racks having rollers coöperating with said runways, a rotary spring anchoring device at the upper portion of said runways, and coiled springs eccentrically connected to said rotary anchoring device at their upper ends, and connected to said display racks at their lower ends, substantially as described.

7. The combination with a suitable cabinet, having approximately rectangular runways and a spring latch located at the intermediate forward portion of one of said runways, of a multiplicity of display racks having rollers coöperating with said runways, said spring latch being operative on one of said rollers to hold a forwardly positioned rack partly raised, substantially as described.

8. The combination with a suitable cabinet, having endless approximately rectangular runways, provided in their upper portions with notches 7^b and with spring latches 13 and 14, of a multiplicity of racks provided with rollers 9, 10, 11 and 12 for coöperation with said runways, the said rollers 10 being wider than the said rollers 9, and coöperating respectively with the latches 14 and 13, and which rollers 9 are adapted to pass downward through said notches 7^b while the said rollers 10 are adapted to pass over the said notches, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXIS E. BEZOIER.

Witnesses:
ALICE V. SWANSON,
HARRY D. KILGORE.