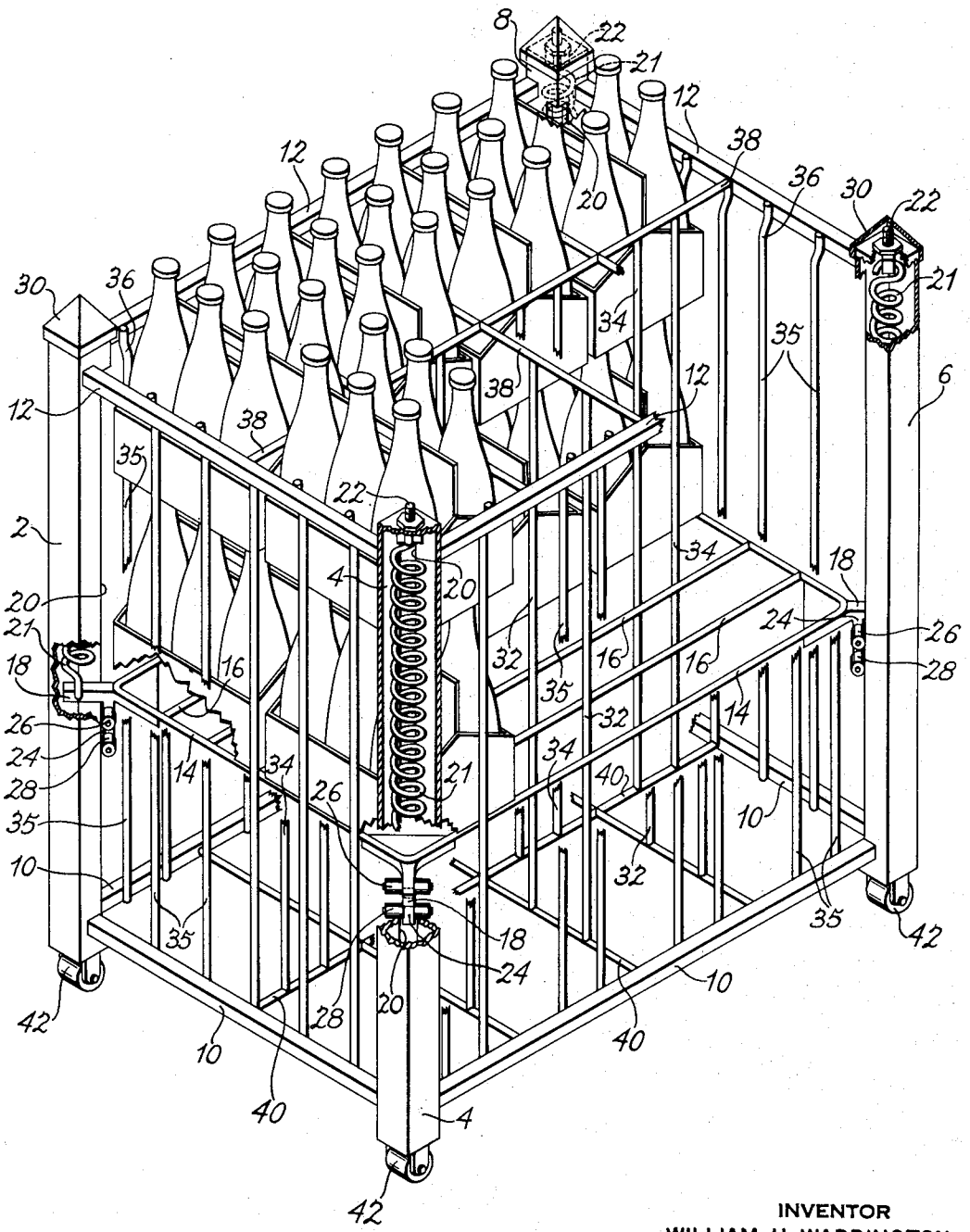
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SELF-LEVELING, STORING AND DISPENSING APPARATUS

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SELF-LEVELING, STORING AND DISPENSING APPARATUS

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This invention relates to a self-leveling, storing and dispensing display apparatus and particularly to a display unit which is suitable for use in public markets for displaying merchandise.

Much work has been done to make displays in a self-service market as attractive and accessible as possible. It is the purpose of this invention to further advance this art by providing a self-leveling, storing and dispensing apparatus which is suitable for island displays especially where any displays of food or merchandise is required.

An object of this invention is therefore to provide a self-leveling dispensing apparatus in which the merchandise can be seen from all sides.

Another object of this invention is to provide a four corner tension spring device for supporting a carrier so that material supported thereon will always be maintained at a constant level.

Another object of this invention is to provide supports for the carrier which will prevent the carrier from binding and to provide guides for the merchandise supported on the carrier which avoids merchandise becoming caught in the dispenser housing.

A further object is to provide a self-leveling apparatus wherein the counterbalancing springs will be connected directly to the carrier so as to eliminate friction arising from springs rubbing against stationary parts.

Other objects and features of the invention will appear as the description of the particular physical embodiment selected to illustrate the invention progresses. In the accompanying drawings, which form a part of this specification, like characters of reference have been applied to corresponding parts throughout the several views which make up the drawings.

The figure is an isometric view with parts broken away to show the construction of the self-leveling dispensing apparatus.

My storing and dispensing display apparatus consists of four posts, **2**, **4**, **6** and **8** which are joined together at the bottom by horizontal bars **10** and joined together at the top by horizontal bars **12**.

A material supporting carrier **14** having cross bars **16** is mounted for up and down movement in between the four posts **2**, **4**, **6** and **8**. An arm **18** extends from each corner of the carrier **14** through elongated slits **20** formed in each of the upright posts **2**, **4**, **6** and **8**. A calibrated tension spring **21** is mounted inside of each post and is connected at the upper end to the upper end of the post and is connected at its lower end to the arms **18** of the carrier. The upper end of the calibrated tension spring **21** is preferably connected by suitable adjusting means such as an eyebolt **22**. The top of each upright post is covered by a suitable cap **30** to conceal the adjusting bolts **22**.

In order to maintain the carrier **14** horizontal when it is unevenly loaded a downwardly extending arm **24** is connected to each corner of the carrier **14**. Rollers **26** and **28** are mounted on arms **24** and ride against the edges of the slots **20** formed in each of the upright posts **2**, **4**, **6** and **8**. By maintaining the carrier platform horizontal, it does not become jammed and always moves up and down freely. In this way the spring supported carrier immediately adjusts itself for each increment or decrement of weight added thereto, thereby always maintaining the top of the material stored thereon at a subsantially constant level.

The interior of the dispensing apparatus may be compartmentized by means of vertical guide rods **32** and **34** so as to support the material therein for free up and down movement. The upper end of each guide rod is preferably made with an offset **36** so as to prevent the material supported on the carrier from becoming caught under the arms **12**. The upper ends of the vertical guide rods **34** which compartmentize the self-leveling dispensing apparatus, may be provided with similar offsets where necessary to prevent articles from being caught on the cross bars **38** connecting the vertical guide rods at their upper ends. The lower ends of the vertical guide rods are connected by cross rods **40**. It will be understood that the cross rods **16** are positioned so that they can move up and down between the vertical guide rods **32** and **34** without touching these rods. The entire dispensing apparatus may be mounted on suitable casters **42** so as to facilitate its being loaded at one station and moved to a place where it may be placed on display at another station.

The self-leveling display apparatus is brought to the source of supply or if desired the source of supply may be trucked to the display apparatus itself, when an employee then removes material from the source of supply and places it on top of the carrier **14** and **16** in each of the compartments formed by the vertical guide rods **32** and **34**.

When the bottom tier placed on the carrier has been completed the carrier will have descended to a lower level. As the employee places additional tiers on top of those already placed on the carrier **14** and cross bars **16** the carrier descends similar distances so that the top tier of material will always be maintained at a constant level. Tension springs **21** are of calibrated design so that they extend a given distance for each tier of material supported on carrier platform **14** and cross bars **16**, which results in the top tier of material being maintained at the substantially constant level just described. It will be noted that when the spring is stretched by the weight of the material it is supporting it does not touch the sides of the posts **2**, **4**, **6** and **8**. This has the advantage that the apparatus is not thrown out of calibration on account of friction in the counterbalancing mechanism.

As material is removed from the self-leveling, dispensing apparatus the springs **21** contract as the load becomes lighter and elevates the material supported thereon to bring the top tier to the desired elevation. Thus the merchandise is always readily accessible to the consumer. By having the entire dispensing apparatus open on four sides the consumer can more readily inspect the merchandise supported in the display unit.

The invention above described may be varied in construction within the scope of the claims, for the particular device selected to illustrate the invention is but one of many possible embodiments of the same. The invention, therefore, is not to be restricted to the precise details of the structure shown and described.

What is claimed is:

1. A self-leveling, storing and dispensing apparatus comprising a rectangular base, three or more hollow upright posts located at the corners of said base to which they are connected, said posts having elongated slits extending up and down along the length of said posts, calibrated tension springs connected to the top and freely suspended downwardly inside each of said posts, a ma-

terial supporting platform mounted for free up and down movement between said posts, arms extending vertically and outwardly from said platform, said outwardly extending arms extending through said slits to the inside of said posts for movement up and down in said posts as the carrier platform travels up and down, means for securing the lower ends of said springs to said outwardly extending arms to counterbalance the material supported on said platform so as to maintain the upper surface of the material at a substantially constant level, and sets of vertically spaced rollers mounted on the arms which extend vertically to engage the outside of said posts on the slitted side thereof to positively maintain said carrier platform horizontal as it moves up and down.

2. A self-leveling, storing and dispensing apparatus comprising a rectangular base, three or more hollow upright posts arranged in non-aligned relationship at corners of the base to which they are connected and extending upwardly therefrom and having vertical slits formed therein, bracing means maintaining said posts in fixed relationship with respect to one another, a carrier platform having arms extending through the slits formed in each of said posts, a calibrated tension spring mounted inside of each of said posts and connected at the lower end to said arms and at the upper end to the top of said posts to counterbalance material supported on said carrier, members attached to said carrier and extending vertically in front of the slitted portion of each of said slits, and sets of vertically spaced rollers connected to said members and engaging with the outside slitted portion of said posts to maintain said carrier platform horizontal.

3. A self-leveling, storing and dispensing apparatus comprising a horizontally disposed rectangular framework, three or more upright posts extending vertically from the corners of said framework to which they are

connected, said posts having elongated vertically extending slits formed therein, a horizontal material supporting platform mounted for up and down movement in the area between said upright posts, members extending outwardly from said platform through said slits, counterbalancing tension springs suspended at their upper ends from the top of said posts and having their lower ends connected to said outwardly extending members, said springs being of calibrated design so as to maintain the upper surface of the material supported on said platform at a constant level regardless of whether material is added to or removed from said platform, members fixedly connected to said material supporting platform and extending up and down in front of said elongated slits, and vertically spaced rollers mounted on said last named members for engaging with the outside slitted portion of said vertical posts for maintaining said material supporting platform free from tilting in any direction.

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