May 12, 1959 A. P. SIMPSON 2,886,391

SELF LEVELING, STORING AND DISPENSING APPARATUS

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FIG. 1

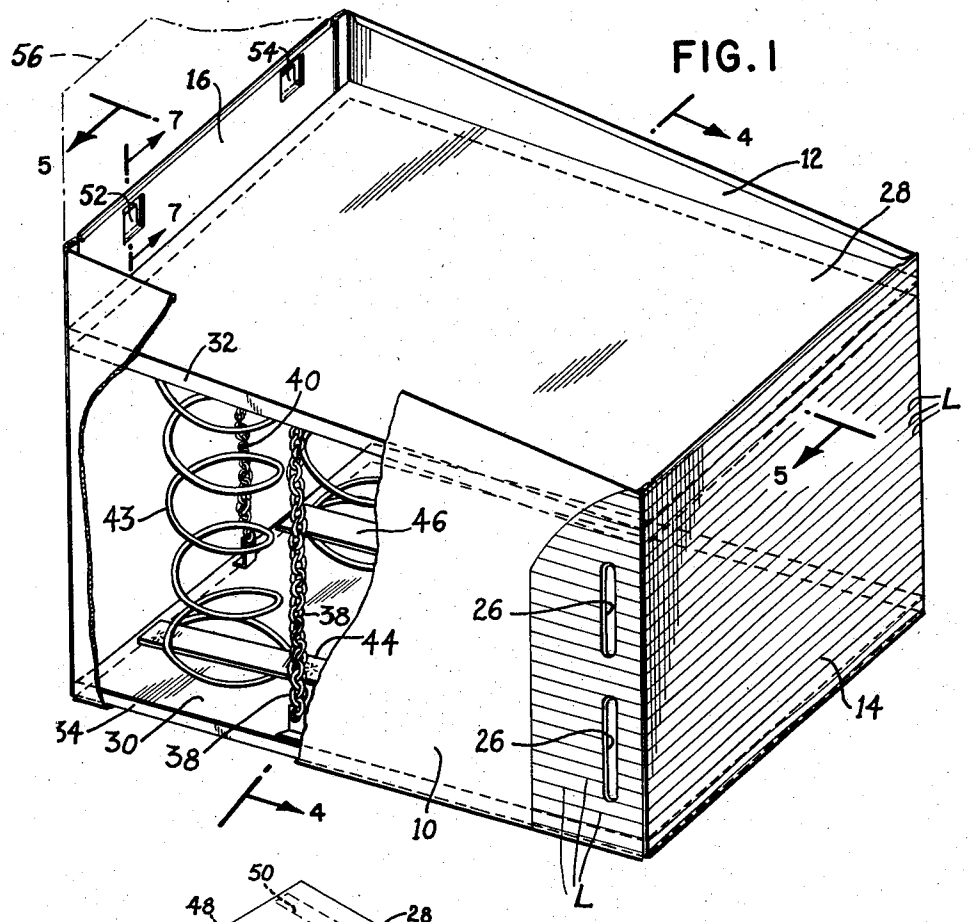


FIG. 2

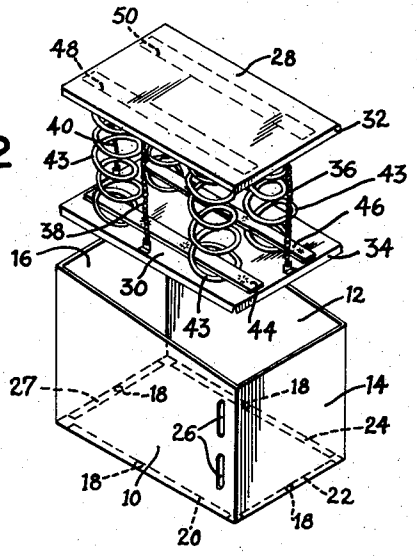
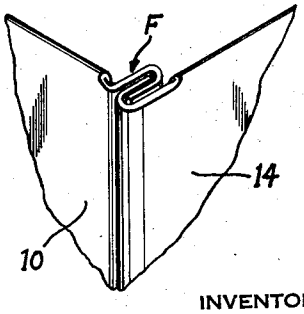


FIG. 3



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FIG. 4

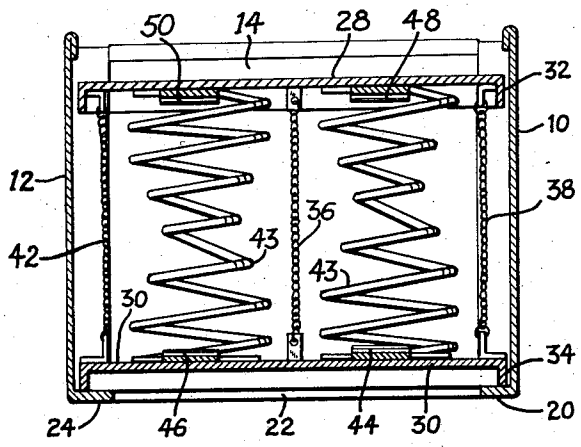


FIG. 5

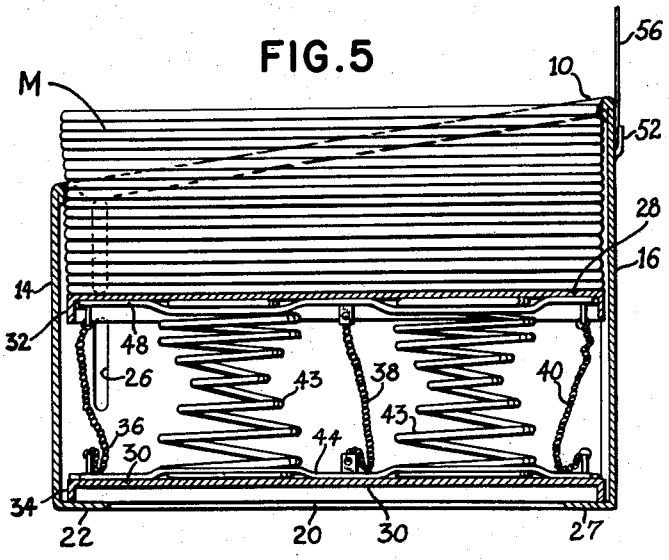


FIG. 6

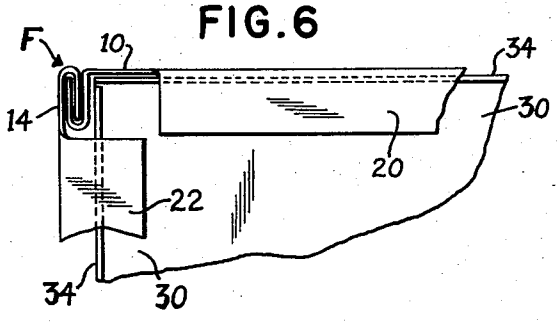
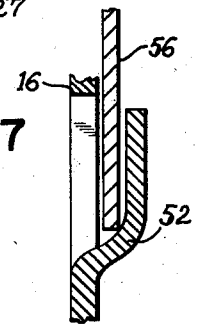


FIG. 7



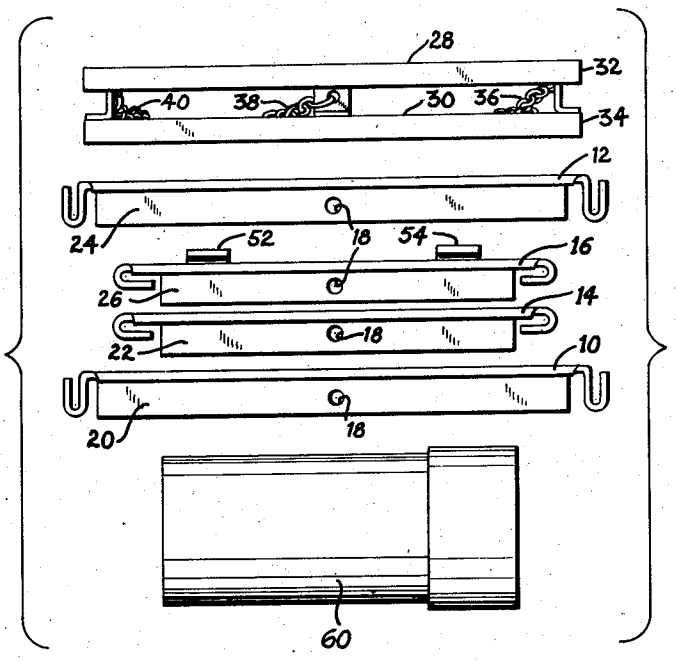
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FIG. 8



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2,886,391

SELF LEVELING, STORING, AND DISPENSING APPARATUS

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Application March 15, 1954, Serial No. 416,278

3 Claims. (Cl. 312—71)

This invention relates to self-leveling, storing, and dispensing apparatus and more particularly to self-leveling dispensing apparatus which is especially well suited for handling periodicals.

Self-leveling dispensers designed heretofore had been found too costly to be economically feasible for this purpose. Also, they have been too complex to be readily shipped in collapsed condition and were not of such design as to be capable of being set up on a counter.

It is an object of this invention to provide a self-leveling dispenser which is adapted for shipment in a collapsed form and which can be readily assembled by news dealers or periodical distributors.

Another object of this invention is to provide a self-leveling dispenser which is especially well adapted for positioning on a counter to facilitate the distribution of periodicals.

A further object is to provide a self-leveling dispenser wherein the carriage can move very close to the base when fully loaded to minimize any waste of space.

Another object of this invention is to provide a self-leveling dispenser which will create the illusion of a large number of periodicals even though there may be only a few periodicals in the dispenser.

Another object of this invention is to provide a simple self-leveling dispenser which will be reliable in operation and yet economical to construct.

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.

Fig. 1 is an isometric view illustrating a self-leveling, storing and dispensing apparatus for periodicals or related stationery goods.

Fig. 2 is also an isometric view of the self-leveling, storing and dispensing apparatus showing the carrier and balancing mechanism prior to being inserted in its housing.

Fig. 3 is an isometric view of the lock seam of one of the corners of the housing.

Fig. 4 is a sectional end elevation of the self-leveling, storing and dispensing apparatus, taken on line 4—4 of Fig. 1.

Fig. 5 is a sectional side elevation of the same taken on line 5—5 of Fig. 1.

Fig. 6 is a bottom view of one of the corners of the dispenser housing.

Fig. 7 is a sectional side elevation of one of the advertising holding clips of the dispenser housing, taken on line 7—7 of Fig. 1.

Fig. 8 is a side elevation of the component parts of the self-leveling dispenser collapsed and in condition for shipment.

For purposes of illustrating the invention I have shown how a unit can be readily constructed for storing magazines. For example, in Fig. 1, the self-leveling dispenser consists of an outer shell made up of two side walls **10** and **12** and two ends walls **14** and **16**. The walls are joined and held together by means of lock folds F, sometimes referred to as Pittsburgh corners, which permit assembling of the walls of the shell by sliding the folds of the same into each other to form the corners of the shell or housing shown in Fig. 3. When the housing has been assembled in the manner described above, the lock seams may be squeezed to assure greater rigidity. Since it may be desirable to secure the housing to a counter or stand the flanges **20**, **22**, **24**, and **27** formed along the lower edges of the side and end walls are provided with suitable holes **18** through which screws or bolts may be inserted for fastening.

The side walls **10** and **12** are also provided with vertical slots **26** through which the proprietor can immediately determine how many magazines M he still has remaining in his self-leveling dispenser.

The operating counterbalancing mechanism consists of two flat sheets of metal **28** and **30** representing the carrier platform and supporting base respectively. Said platforms are provided with downwardly extending flanges **32** and **34** which give them the desired rigidity. Interposed between the base **30** and the material supporting carrier **28** are suitably calibrated springs **43** which are held in place at their lower ends by bands **44** and **46**. These springs may be varied in number and may be designed so as to be V shaped or accordion shaped in cross section to enable the carrier and base to move very close together when fully loaded. The bands **44** and **46** are spot welded at spaced intervals to the base **34** so that the lowermost coil of the spring **43** can be inserted under the bands **44** and **46** from the outside. The calibrated springs are of such design that they exert a counterbalancing force on the carrier platform in a manner similar to that described in U.S. Patent 2,251,874 granted to William J. Gibbs on August 5, 1941. These springs lower or raise the carrier platform a distance corresponding to the weight of each increment or decrement of material added to or removed from the platform so as to always maintain the top of the material supported thereon at a constant level.

Similar bands **48** and **50** are secured by spot welding to the under side of carrier **28**. In this case the uppermost coil of the springs **43** is similarly pushed under the band from the outside. If desired, other suitable spring fastening means could be employed such as metal tabs projecting from the base and the carrier which could be bent over the springs to secure the same.

It has been found desirable to insert the springs from the outer side edge of the platforms **28** and **30** under the holding bands **44** and **46** and **48** and **50** so that said springs are securely held in position and prevented from slipping out from under bands **44**, **46**, **48** and **50** by means of side walls **10** and **12** and the downwardly extending flanges formed on the sides of the carrier **28** when the unit is assembled.

The distance between the carrier platform **28** and the base plate **30** which are held apart by means of springs **43** is controlled by suitable chains **36**, **38**, **40**, and **42** which are secured to each side of the supporting base **30** and carrier **28**.

The back wall **16** has two pressed-out clips **52** and **54** which are adaptable for receiving and holding a suitable display card **56**.

The front wall **14** and a portion of the side walls **10** and **12** adjoining the front wall carry lithographic reproductions L of the edges of the periodicals which are supported on the carrier platform **28** so as to give the illusion of a stack of magazines.

When periodicals such as magazines are placed upon the carrier platform 28 it descends under the weight of the magazines a predetermined distance which is correlated with the thickness of the magazine so that the top top magazine is always maintained at a constant level regardless of whether magazines are added to the stack or removed from it.

It has been found that at least one chain must be placed adjacent the perimeter of each side of the operating mechanism so as to assist in preventing the carrier platform from tilting excessively if pressure is applied to one side, such as might occur when a magazine is removed by a purchaser. Without such chains it has been found that the carrier platform has tilted to such an extent that the magazines slide to the side of the carrier and cause a jam between the carrier and the side walls of the dispenser.

While many previous devices have been developed for positively maintaining the carrier platform horizontal in self-leveling dispensers, such for example as that disclosed in the patent granted to William J. Gibbs, No. 2,449,892, on September 21, 1948, applicant has found that the cost of adding such features to a dispenser increased the cost to the extent that it is no longer economically feasible to use such devices for low cost dispensers. Up until the present time unless such a device were employed the self-leveling dispenser could not be put to a practical use because of the jamming action that resulted whenever the carrier platform would be tilted.

By means of the present apparatus applicant has provided a simple means for avoiding excess tilting and due to the carrier platform 28 being of approximately the same area as the area of the magazine when it lies flat, the stack of magazines also tends to assist in avoiding excessive tilting if pressure is applied to one side. However, because of the chain support formed along the perimeter of the carrier 28 and base 30 applicant has avoided excessive tilting and as a consequence he has provided a solution to the problem of making self-leveling dispensers without the necessity of employing a separate leveling device to maintain the carrier platform horizontal.

Another highly desirable feature of the apparatus is clearly illustrated in Fig. 8 wherein the entire unit can be shipped in collapsed form to its destination, thus minimizing shipping problems that would normally be encountered in keeping the costs of distribution down. When the unit is shipped in collapsed condition it does not have the springs inserted in place, so that the carrier and the base which are interconnected by the chains 36, 38, 40, and 42 are collapsed against one another and the side walls 10, 12, 14, and 16 are similarly stacked flat against the base 30 and carrier 28.

The springs are nested within one another and the entire collection of springs 43 may be placed if desired in a suitable tube or container 60. The entire unit may therefore be shipped in the manner indicated in Fig. 8 in collapsed condition. In the field the periodical distributor can readily assemble the dispenser without any technical advice or assistance because of the dispenser's simplicity and once the unit has been assembled it will give years of trouble-free service.

The invention hereinabove 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 for periodicals comprising a material supporting carrier platform, strips of sheet metal tacked at spaced distances to the under side of said carrier, short downwardly extending flanges formed on each side of said carrier, calibrated counterbalancing springs having one end pushed under said strips from the outside so as to secure the springs from dislocation by its location between said flange and said strip, elongated strips attached at spaced intervals to said base, said strips being of such design as to receive the opposite end of said springs as they are pushed under said strips in a direction from the outside of the sides of said base, means limiting the distance the sides of said carrier and the sides of said base can move away from each other, a rectangular shell surrounding said base and carrier to permit the carrier to move up and down freely while confining the lower end of said springs between said rectangular base and said base strips, said shell having sliding lock corners to facilitate their being joined together.

2. A self-leveling, storing and dispensing apparatus for periodicals having the features provided for in claim 1 wherein an inspection opening is provided in one side of said shell to permit a person to look through said opening into said self-leveling dispenser to see the number of periodicals stacked in said self-leveling, storing and dispensing apparatus.

3. A self-leveling, storing and dispensing apparatus having the features provided for in claim 1 wherein the front side of said rectangular shell has photolithographic reproductions of the edges of the periodicals to be stored so as to blend with the edges of the periodicals stored in said carrier to give the illusion of a stack of periodicals extending down to the bottom of said dispensing apparatus.

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