Sept. 26, 1967 M. S. COUSINS ETAL 3,343,899

ADJUSTABLE STORAGE UNIT ARRANGEMENT

Filed Dec. 21, 1964

FIG. 2

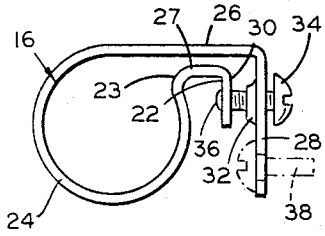


FIG. 3

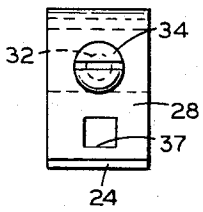


FIG. 4

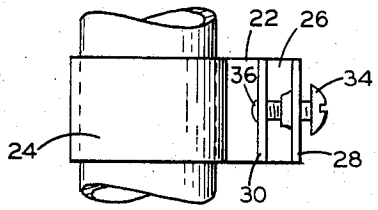


FIG. 1

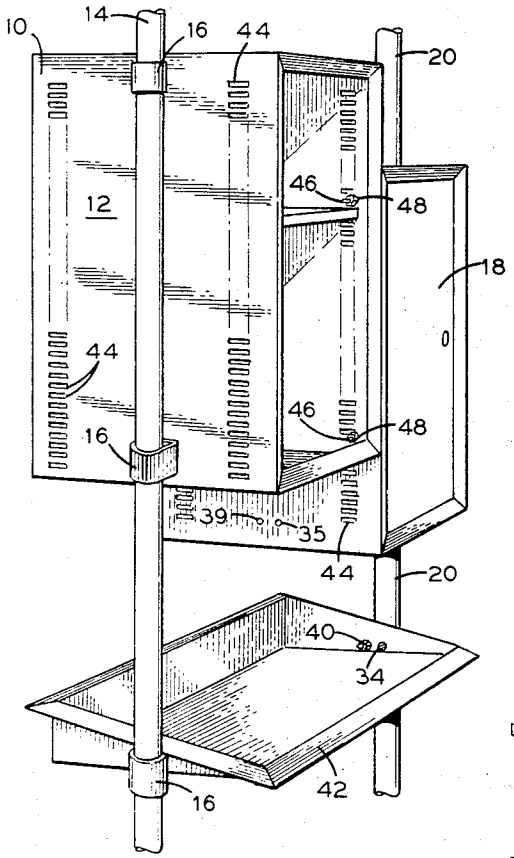


FIG. 5

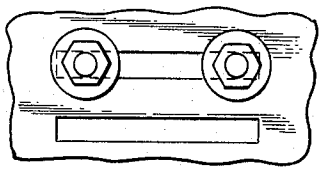


FIG. 6

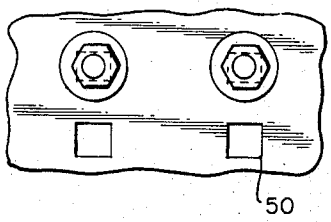


FIG. 8

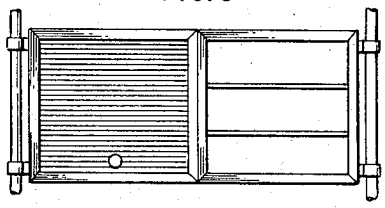


FIG. 9

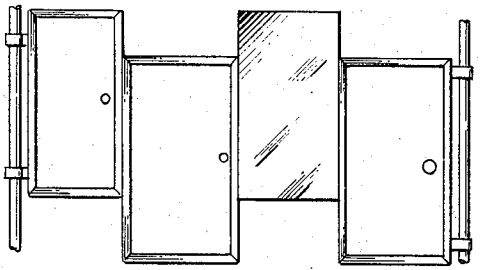
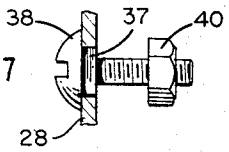


FIG. 7



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ADJUSTABLE STORAGE UNIT ARRANGEMENT

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4 Claims. (Cl. 312—111)

ABSTRACT OF THE DISCLOSURE

An adjustable storage arrangement wherein a plurality of storage units are mounted between poles and are secured together by fastening members extending through the adjacent walls of the storage units. The storage units are mounted on the poles by clips each comprising a pole-grasping member having a U-shaped inner end portion, a base portion extending from the other extremity of the pole-grasping portion and a screw extending through the base portion to apply pressure to the U-shaped portion to tighten the pole-grasping member on the pole.

The present invention provides a storage arrangement and more particularly a storage arrangement adapted for use with a plurality of storage units.

Devices which furnish storage space without permanent installation are particularly popular with apartment house dwellers and those whose skill at carpentry is limited. One common way in which such storage space may be obtained is by the use of pole supports which are often mounted between ceiling and floor by means of a spring coil within each pole. These spring-poles have the advantage of easy mounting and de-mounting without tools and without leaving any damage to the surfaces to which they are secured. There is a need, however, for diversifying the type of storage space attached to the poles and to permit more than one storage unit to be attached side by side between a single pair of poles for even greater versatility. There is also a need for a device by which such storage units may be adjustably mounted on the spring-poles.

It is, therefore, an object of the present invention to provide a storage arrangement which will meet the foregoing requirements.

It is another object of the present invention to provide a storage arrangement which will make a positive contribution toward a pleasing appearance of a room as well as furnishing storage space.

It is a further object of the present invention to provide a storage arrangement which will be adaptable for use with a great variety of storage units, including cabinets, shelves, and drawers.

Additional features and advantages of the present invention will be apparent from the following description and drawing in which:

FIG. 1 is a perspective view of a portion of the storage arrangement of the present invention;

FIG. 2 is a plan view of the spring clip used to attach the storage units to a support;

FIG. 3 is an end view of the spring clip of FIG. 2;

FIG. 4 is a side view of the spring clip of FIG. 2 attached to a pole;

FIG. 5 is a plan view of one method of attaching together the inner sides of two storage units;

FIG. 6 is an alternate method of attaching together the inner sides of two storage units;

FIG. 7 is a cross-sectional view of a square-collared bolt and nut utilized as a fastening member to prevent rotation;

FIG. 8 is a front view of two storage units mounted at the same height between two poles; and

FIG. 9 is a front view of an assortment of four storage units mounted at different heights between two poles.

The present invention provides for the adjustable mounting between a pair of supports of one or more articles, such as storage units. The storage unit may be held at any place along the length of the support by means of a spring clip which encircles the support and is tightened against the same at the desired distance. A plurality of storage units may be joined together between a single pair of supports by means of a fastening member passing through a selected pair of corresponding apertures located at the inner sides of each of the storage units. The selection of corresponding apertures will determine the relative placement of the units, so they may be placed at an even level or may be attached at various displacements relative to each other.

Referring to the drawing, FIG. 1 shows one possible arrangement of storage units according to the present invention. A first storage unit **10**, an open cabinet, is attached at its outer side **12** to a first support **14**. The attachment is accomplished by means of a pair of spring clips **16**, one of which is shown in detail in FIG. 2. A second storage unit **18**, a cabinet with a door, is similarly attached to a second support **20**.

The supports **14** and **20** illustrated here are of the spring-mount variety, in which a spring coil is positioned within a vertical pole. It is entirely conceivable that the supports could be mounted horizontally between two vertical surfaces. The actual mounting of the supports may be accomplished in any desired manner and will have no bearing on the application of the invention.

The spring clip **16** is adapted to hold the storage unit for attachment to the pole support. The required number of clips are slipped onto the pole before the pole is mounted. The clip **16** comprises an approximately rectangular strip of resilient material, namely a material which is stiff but springy. The strip is bent to form at its first extremity a generally U-shaped inner end portion **22**. The strip extends outwardly from the first leg **23** of the inner end portion **22** to form a circular pole-grasping member **24**. A base portion **26** extends from the pole-grasping member **24** and is parallel to and spaced from the bridge **27** of the inner end portion **22**. At its second extremity the strip has an outer end portion **28** which is connected to and extends at approximate right angles to the base portion **26**. The outer end portion is parallel to and spaced from the second leg **30** of the inner end portion **22**. The outer end portion **28** has a threaded hole **32**. The clip **16** is secured to the pole support at any desired height by passing a bolt **34** through an opening **35** in the wall of the storage unit and then through the threaded hole **32**. When the bolt **34** is turned it bears against the leg **30** of the U-shaped inner end portion **22**. The leg **30** is dished at a point opposite the center of the bolt **34** to form a depression **36** in which the tip of the said bolt is held against slippage. Since the entire spring clip is made of a generally resilient material, such as metal, pressure applied to the inner end portion **22** by means of the bolt **34** acts to compress the pole-grasping member **24** for a tight hold on the pole.

The outer end portion **28** of the spring clip **16** has a second hole **37** which is adapted to receive a fastening member, such as a bolt **38**. The second hole **37** is nearer the free extremity of the outer end portion **28** than is the first hole **32**. To attach a unit to the clip, the bolt **38** is passed through the second hole **37** and then through an aperture **39** near the center of the outer side of the storage unit. If desired, the second hole **37** may be square as shown in FIGS. 3 and 7 to prevent rotation of the bolt **38** after its insertion. A nut **40** is threaded onto the bolt **38** to tighten the assembly. This is shown at the lower portion of FIG. 1 where a storage shelf **42** is attached between supports **14** and **20**. Other types of storage units

are attached in the same manner. These may be open cabinets, louvred-door cabinets, and mirrored cabinets. A tall cabinet should be bolted near its top and bottom for secure attachment. The base portion **26** and the bridge **27** of the clip **16** space the unit from the support to achieve an interesting "floating" effect. This can best be seen in FIGS. 8 and 9. When a plurality of storage units are to be attached between two supports, it is necessary to mount only the outer sides of each end unit to the supports. The inner facing surfaces of each unit will be joined together as will be described more fully below.

Extending vertically on at least the inner sides of the storage units is a series of apertures **44**. When the unit has considerable depth as is the case of the cabinets **10** and **18** of FIG. 1 there should be two sets of apertures **44**, one near the front edge and a second near the rear edge of each cabinet. A fastening member, such as a bolt **46**, is passed through corresponding apertures of the cabinets whose inner sides are in approximate abutment. The bolt **46** passes through an aperture of the inner side of one unit **10** through an aperture of the inner side of the second unit **18**. A nut **48** is tightened against the inside surface of the second unit **18**. The number of fastening members required will depend upon the height and weight of the unit in question.

The apertures **44** on the inner sides of the units may be in the form of elongated horizotnal slots as shown in FIGS. 1 and 5, in which one or two fastening members may be positioned. Alternatively, the apertures may be a single vertical row of holes, or perhaps a double vertical row of holes **50**, as illustrated in FIG. 6. These holes **50** are shown to be of square shape to prevent rotation of the bolt, but this is not necessary. The units may be placed at an even level as in FIG. 8 or they may be placed at different levels (FIG. 9) by moving the units relative to each other and selectively positioning the apertures in registry where desired.

The apertures **44** act not only as the means by which the inner sides of the units are attached together, but also as a means by which the cabinets are ventilated. They also serve a design purpose and add to the attractive appearance of the units. In practice, apertures **44** would be located on both sides of each unit so that the units would be interchangeable for positioning on either side of each other.

It may be seen, then, that the present invention provides a storage unit arrangement of particular versatility. A single pair of supports can hold a plurality of units because of the novel way in which the units can be attached to one another. A wide assortment of storage units can be mounted according to this invention and the fact that they may be secured at various heights adds to the versatility and pleasing appearance of the arrangement. The invention also provides an especially useful pole-mounting device by which the units can be attached to a pole support at any distance along its length and such attachment may be readily changed if desired.

While specific embodiments of the invention have been shown and described in detail to illustrate the application of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A spring clip adapted to hold an article for attachment to a pole, said clip comprising an approximately rectangular strip of resilient material bent to form at its first extremity a generally U-shaped inner end portion, said strip extending outwardly from said inner end portion

to form a pole-grasping member, a base portion extending from said pole-grasping member parallel to and spaced from the bight of said inner end portion, said strip having at its second extremity an outer end portion connected to and extending at approximately right angles to said base portion, and means to apply pressure between said U-shaped inner end portion and said outer end portion thereby to tighten the said pole-grasping member and secure the clip to the pole.

2. A flexible storage unit arrangement, said arrangement comprising a first and second pole, a pair of spring clips to hold units for attachment to said poles, each of said clips comprising an approximately rectangular strip of resilient material bent to form at its first extremity a generally U-shaped inner end portion, said strip extending outwardly from said inner end portion to form a pole-grasping member, a base portion extending from said pole-grasping member parallel to and spaced from said inner end portion, said strip having at its second extremity an outer end portion connected to and extending at approximately right angles to said base portion, means to apply pressure to said U-shaped inner end portion thereby to tighten the said pole-grasping member and secure the clip to the pole, a first unit attached at its outer side by one of said spring clips to said first pole, and a second unit attached at its outer side by the other of said spring clips to said second pole, each of said inner sides of said units having corresponding means for fastening together said units whereby a pair of units may be attached side by side between a single pair of poles.

3. A flexible storage unit arrangement for use with a fastening member, said arrangement comprising a first support, a first unit attached at its outer side to said first support, a second support, a second unit attached at its outer side to said second support whereby the inner sides of each of said units are in approximate abutment, the inner sides of said units having a plurality of corresponding apertures adapted for introduction of a fastening member therethrough whereby the units may be attached at various displacements by movement of the units relative to each other for selective positioning of said apertures in registry and introducing a fastening member through an aperture of the inner side of one unit through an aperture of the inner side of the second unit.

4. A flexible storage unit arrangement as in claim **3** in which said units have a plurality of corresponding apertures on both their inner and outer sides to permit interchangeability.

References Cited

UNITED STATES PATENTS

1,246,325	11/1917	Rohmer	248—74
2,352,823	7/1944	Ellinwood	248—74
2,930,566	3/1960	Nawara	248—230
3,043,642	7/1962	Nelson	312—111
3,167,292	1/1965	Meyerowitz	248—230
3,200,962	8/1965	Davelaar	312—111 X
3,216,685	11/1965	Raymond	248—74

FOREIGN PATENTS

1,136,750	12/1956	France.
1,261,330	4/1961	France.
72,532	9/1947	Norway.

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