April 17, 1962 K. W. BROOKS 3,030,162

FURNITURE COMPONENTS

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Fig. 1

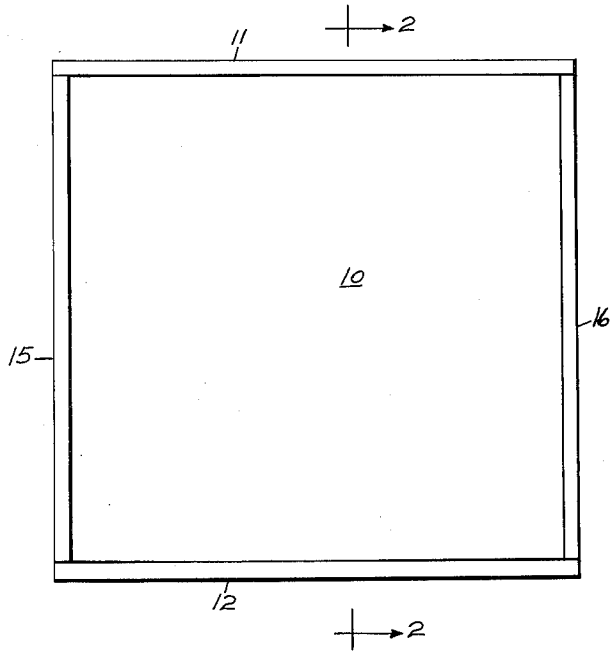



Fig. 2

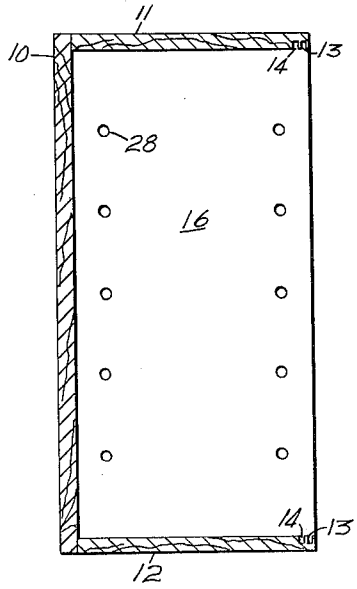
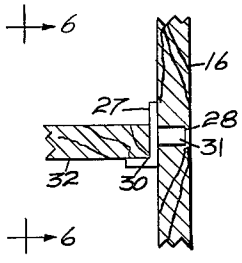



Fig. 5




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Fig. 3

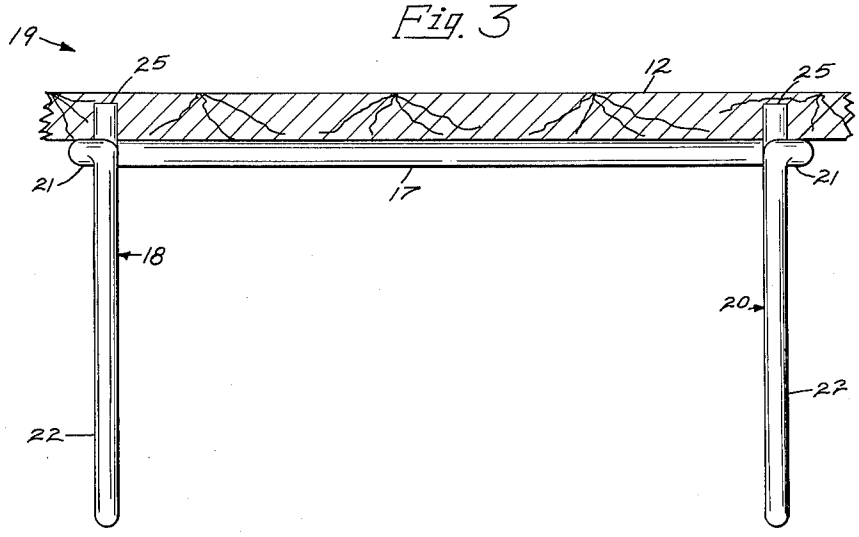
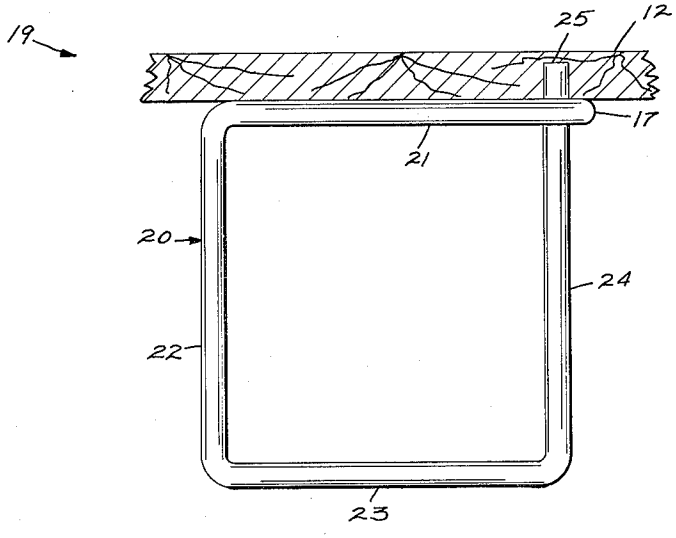



Fig. 4




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April 17, 1962 K. W. BROOKS 3,030,162

FURNITURE COMPONENTS

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Fig. 9

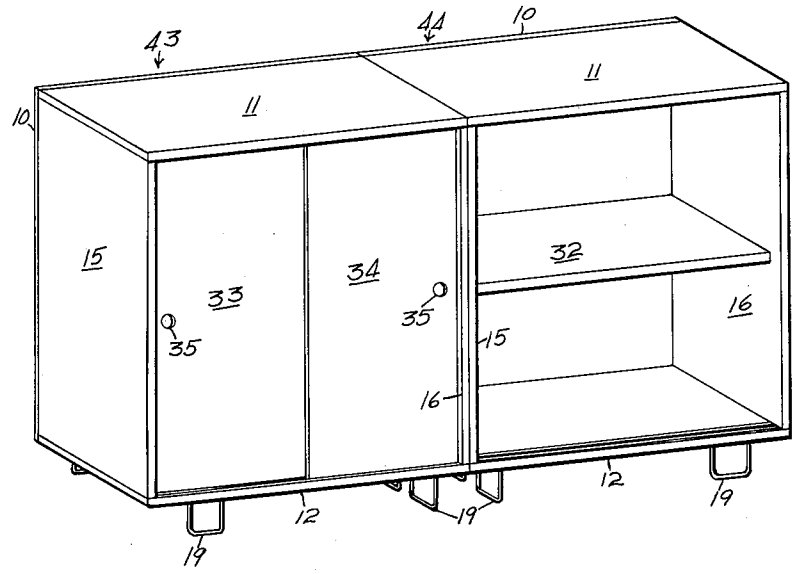



Fig. 7

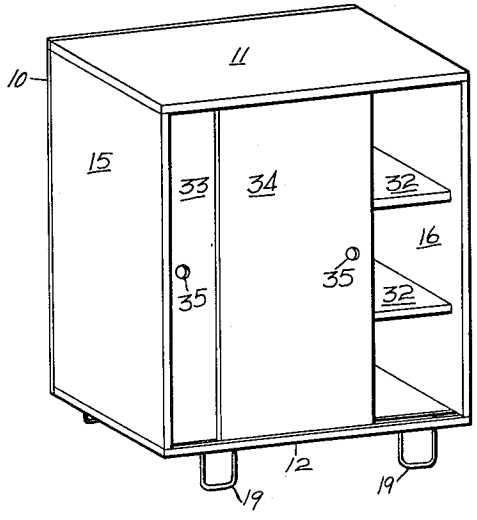
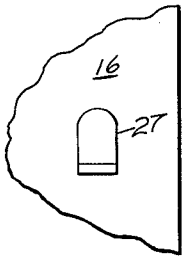



Fig. 6




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Fig. 10

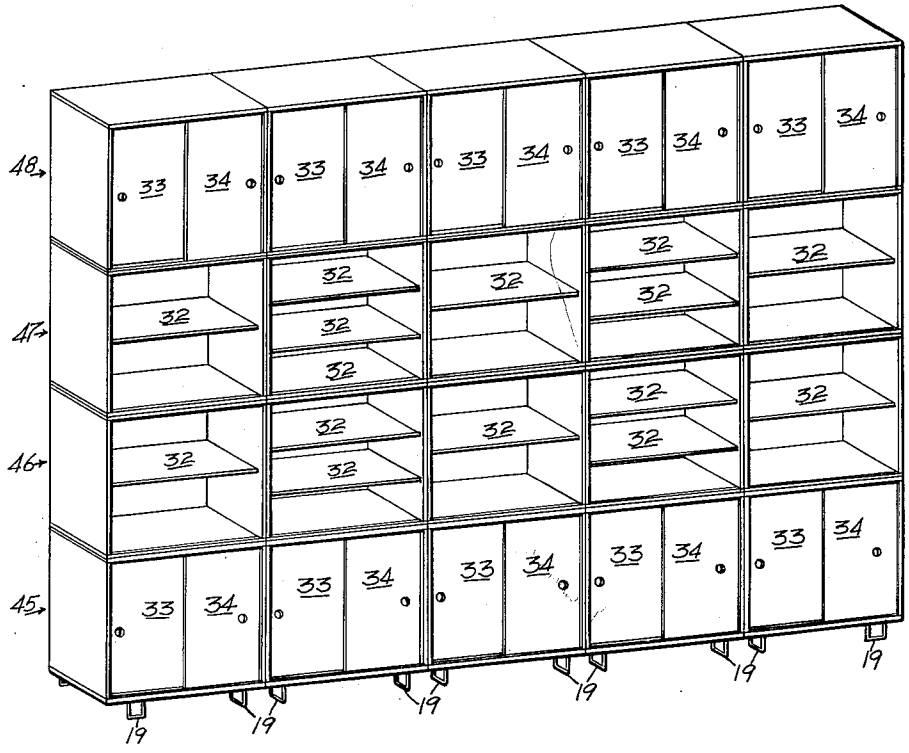
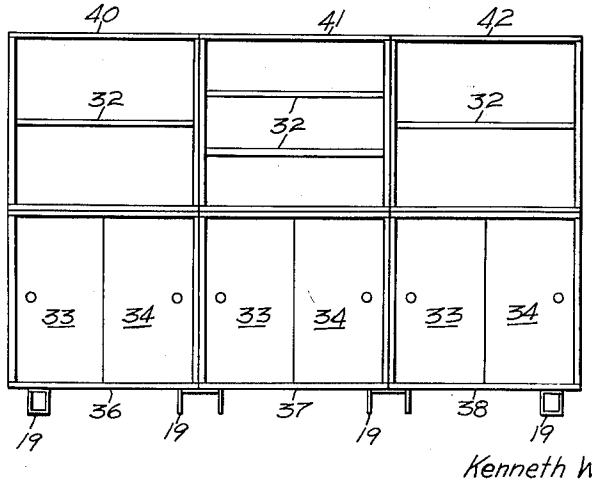



Fig. 8




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United States Patent Office 3,030,162 Patented Apr. 17, 1962



3,030,162

# FURNITURE COMPONENTS

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Filed June 16, 1960, Ser. No. 36,609
3 Claims. (Cl. 312—111)

This invention relates to novel structural components for furniture.

The invention resides in a basic furniture unit which can be used as a building block to form a multitude of various furniture arrangements for storage purposes. This unit is combined with interrelating accessories including novel floor supports which lock into apertures formed in the unit.

It is an object of the invention to provide a basic furniture unit which can be used in a plurality of forms to combine with similar units resulting in a completed storage unit adaptable to any purpose. The completed article according to the invention has modern furniture qualities such as simplicity and a low silhouette, and is easily constructed without special skills.

It is another object of this invention to provide novel floor supports of modern design which lock into apertures in the furniture units with only their spring tension to hold them securely in place. These supports are easily installed or removed by simply grasping them and inserting them into the apertures.

These and further objects will be evident from a study of the following description and the accompanying drawings, which show the basic components and several of the many possible completed installations. The specific embodiments shown are merely illustrative of the practical usage of the invention, which is bounded only by the limitations set out in the annexed claims.

In the drawings:

FIGURE 1 is a front view of a single basic unit;

FIGURE 2 is a sectional view taken through line 2—2 in FIGURE 1;

FIGURE 3 is a fragmentary sectional view of a floor support in place on the bottom of a basic unit;

FIGURE 4 is similar to FIGURE 3, showing an end view of the floor support;

FIGURE 5 is a fragmentary sectional view through the side of a unit showing a shelf support in place;

FIGURE 6 is a fragmentary front view of a side element in a unit showing a shelf support;

FIGURE 7 is a front view of a fully completed component unit with one sliding panel partly opened, showing it from a perspective angle;

FIGURE 8 is a front view of a multiple unit utilizing six component units;

FIGURE 9 is a front perspective view of a multiple unit formed from two component units arranged side-by-side; and

FIGURE 10 is a perspective view of a storage wall composed of stacked units.

The basic unit used in the practice of this invention is illustrated in FIGURES 1 and 2. It consists of a rectangular plywood back element 10 to which is secured a pair of rectangular elements 11 and 12 which extend across the back element 10 and which are respectively located adjacent to opposite terminal edges of the back element 10 to form flush surfaces. Elements 11 and 12 are also preferably cut from plywood stock. Each element 11 and 12 is formed with a pair of longitudinal inwardly facing grooves 13, 14 adjacent to the edge thereof



which is remote from the back element 10. The unit is completed by a second pair of rectangular elements 15, 16 which are of a width equal to that of elements 11 and 12 and of a length equal to the open distance between the elements 11 and 12 mounted on the back element 10. The elements 11 and 12 are joined to elements 15 and 16, which in turn are mounted adjacent opposite terminal edges of back element 10 to form an enclosed rectangular configuration.

The unit may be set on any base or may be used with no base attached thereto. A preferable form of support 19 is shown in FIGURES 3 and 4. This support is bent from a single still metal rod and consists of a central portion 17 and two end rectangular configurations 18 and 20. The configurations 18 and 20 are mirror images of each other and the same numerals shall be applied to both. They consist of a top horizontal portion 21 bent from central portion 17, a first vertical portion 22 bent perpendicularly downward from portion 21, a bottom horizontal portion 23 bent from portion 22 back toward portion 17, and a second vertical portion 24 bent upwardly from portion 23 and having a straight terminal end portion 25. This terminal end portion 25 is biased against the inner surface of portion 21 bent from portion 17. The terminal end portions 25 are therefore free to be flexed inwardly toward one another, but will tend to separate due to the internal tension of the rod. It is this tension which is used to hold the support in place on the unit, as can be seen in FIGURE 4. The second vertical portion 24 is parallel to the first vertical portion 22, the thickness of the rod being offset by the bend between portions 17 and 21. This provides a certain degree of binding when the terminal end portions 25 are inserted in a vertical hole in a tight fit.

The specific form of the supports 19 is quite important to the overall appearance of articles supported thereon. It is important to note that the two rectangular configurations 18 and 20 are in parallel planes. Also, all the vertical portions 22, 24 are perpendicular to the bottom horizontal portions 23 and are in parallel alignment with one another. The only bend which is not perpendicular and parallel to its complementary portion is the bend between the central portion 17 and the top horizontal portion 21. This is immaterial to the appearance of the support 19, since it is adjacent to the lower surface of the supported cabinet and would be hidden from view.

In order to utilize these supports, the bottom rectangular member 12 is provided with two apertures cut partially through the element 12 and spaced apart by a distance slightly less than the normal distance between the terminal end portions 25. One such aperture is shown in section in FIGURE 4 and is designated as 26. The apertures are also spaced from the adjacent ends of members 12 a distance one-half the distance between apertures on a single element 12. In this manner, the floor supports can overlap adjacent units which are rigidly joined to one another. The floor supports are easily insertable in the apertures by flexing the vertical portions 24 toward each other and pushing the terminal end portions 25 into the apertures until the central portion 17 and top horizontal portions 21 rest against the bottom surface of the element 12. When the support is released, the internal tension in the support will urge portions 24 outwardly to securely grip the element 12 and provide a substantial support for the unit. The supports act in the same manner when inserted in apertures cut into the bottom surfaces of rigidly joined double units to overlap the two units.

In order to provide shelves within the unit, a plurality of shelf supports 27 are utilized in vertical rows. The supports 27 are inserted in apertures 28 cut partially through elements 15, 16 and arranged in aligned double rows along the inner surfaces thereof. The support 27 consists of a right angle bracket 30 having a peg 31 extending outwardly from one leg of the bracket 30. The peg 31 is adapted to fit into the aperture 28. A shelf 32 is cut to a length equal to the distance between the inner surfaces of brackets 30 and serves to hold the pegs 31 in place by restricting inward movement of the bracket 30. This provides a simple, versatile shelf structure which is capable of instant adjustment.

The shelves 32 are cut to a depth less than that of elements 11, 12, 15, and 16 so as to provide clearance for grooves 13, 14. Mounted individually in grooves 13, 14 are two rectangular panels 33, 34 which extend slightly more than half the distance between elements 15 and 16. The panels 33, 34 are preferably made of smooth hardboard which is easily flexed for insertion into grooves 13, 14, but may be formed of any suitable material, such as a clear plastic material, if desired. Each panel 33, 34 is provided with a round hole 35 which is provided as a hand hold to facilitate sliding of the panel.

Various installations utilizing the above described components are illustrated in FIGURES 7–10. In FIGURE 7, a single complete unit is shown, equipped with shelves 32, panels 33, 34 and floor supports 19. FIGURE 8 shows a multiple unit wherein three lower units 36, 37 and 38 are rigidly joined to one another by bolts or any suitable means. Each unit 36—38 is provided with shelves 32, panels 33, 34 and overlapping floor supports 19. Three upper units 40, 41 and 42 are shown placed above units 36, 37, and 38 respectively and are bolted to adjacent elements of the adjoining side and bottom units. The upper units 40—42 are shown with shelves 32 in place. They may also be provided with sliding door panels if desired.

FIGURE 9 shows a typical bookcase installation using two units 43, 44 joined side-by-side. Unit 43 has shelves 32 and panels 33, 34 while unit 44 has only shelves 32 spaced to suit the books. Floor supports 19 overlap the two units to provide a stable leg structure.

A storage wall consisting of twenty units is shown in FIGURE 10. It is designed for floor to ceiling installation and has a bottom row of units 45 with shelves 32 and panels 33, 34, two central rows of units 46, 47 having staggered shelves 32, and a top row of storage units 48 having both shelves 32 and panels 33, 34.

These arrangements are typical of the multitude of modern installations possible using the basic units described herein. The units may be stacked vertically, horizontally or back-to-back in any desired configuration and with any combination of accessory units. The possible combinations are limited only by the ingenuity of the user.

The basic simplicity of the units readily lends itself to packaging in kit form, which provides savings in manufacture, storage and retailing. The basic unit can be assembled in minutes with only a hammer, nails and paint brush required.

Obviously, the structural design of these units can be altered without overreaching the limits of invention described herein. Therefore the following claims are presented as the only intended definitions of the extent of the invention.

Having thus described my invention, I claim:

1. A floor support for furniture comprising a unitary article bent from a stiff length of rod having a rectangular supporting configuration formed at each of its longitudinal ends, each configuration being a mirror image of the other, each configuration comprising a straight upper horizontal portion bent beyond the perpendicular from a common horizontal portion of the rod, the end of said upper horizontal portion remote from said common horizontal portion being longitudinally offset from the junction of said upper horizontal portion and said common horizontal portion a distance equal to the thickness of the rod, a first vertical leg bent perpendicularly downward from the remote end of said upper horizontal portion, a lower horizontal portion bent perpendicularly from the lower end of said first vertical leg in the direction of said common horizontal portion and perpendicular thereto, said lower horizontal portion lying in a plane parallel to that of said upper horizontal portion and said common horizontal portion, a second vertical leg bent perpendicularly upward from said bottom horizontal portion and terminating in a straight section, the length of said second leg being greater than the length of said first leg, the straight terminal section of said second leg being biased to rest against the inner surface of said upper horizontal portion.

2. In a furniture installation, the combination with a plane bottom surface having formed therein a pair of spaced apertures of a floor support comprising a unitary article bent from a stiff length of rod having a rectangular supporting configuration formed at each of its longitudinal ends, each configuration being a mirror image of the other, each configuration comprising a straight upper horizontal portion bent beyond the perpendicular from a common horizontal portion of the rod, the end of said upper horizontal portion remote from said common horizontal portion being longitudinally offset from the junction of said upper horizontal portion and said common horizontal portion a distance equal to the thickness of the rod, a first vertical leg bent perpendicularly downward from the remote end of said upper horizontal portion, a lower horizontal portion bent perpendicularly from the lower end of said first vertical leg in the direction of said common horizontal portion and perpendicular thereto, said lower horizontal portion lying in a plane parallel to that of said upper horizontal portion and said common horizontal portion, a second vertical leg bent perpendicularly upward from said bottom horizontal portion and terminating in a straight section, the length of said second leg being greater than the length of said first leg, the straight terminal section of said second leg being biased to rest against the inner surface of said upper horizontal portion, said straight terminal sections of the two rectangular configurations being normally spaced apart a distance greater than the distance between the spaced apertures formed on the plane bottom surface and being adapted to be flexed toward each other during installation so as to be insertable into said apertures, the projection of said terminal portions beyond said common horizontal portion being less than the depth of said apertures whereby said plane bottom surface rests on the common and upper horizontal portions of said rod when said straight terminal sections are inserted in the apertures.

3. In a furniture installation, the combination with a pair of furniture units having adjacent sides bolted to one another, the bottom surfaces of said units each being provided with an aperture, of a floor support comprising a unitary article bent from a stiff length of rod having a rectangular supporting configuration formed at each of its longitudinal ends, each configuration being a mirror image of the other, each configuration comprising a straight upper horizontal portion bent beyond the perpendicular from a common horizontal portion of the rod, the end of said upper horizontal portion remote from said common horizontal portion being longitudinally offset from the junction of said upper horizontal portion and said common horizontal portion a distance equal to the thickness of the rod, a first vertical leg bent perpendicularly downward from the remote end of said upper horizontal portion, a lower horizontal portion bent perpendicularly from the lower end of said first vertical leg in the direction of said common horizontal portion and perpendicular thereto, said lower horizontal portion lying in a plane parallel to that of said upper horizontal portion and said

common horizontal portion, a second vertical leg bent perpendicularly upward from said bottom horizontal portion and terminating in a straight section, the length of said second leg being greater than the length of said first leg, the straight terminal section of said second leg being biased to rest against the inner surface of said upper horizontal portion, said straight terminal sections of the two rectangular configurations being normally spaced apart a distance greater than the distance between the apertures formed on the bottom surfaces of said units and being adapted to be flexed toward each other during installation so as to be insertable into said apertures, the projection of said terminal portions beyond said common horizontal portion being less than the depth of said apertures whereby said bottom surfaces rest on the common



and upper horizontal portions of said rod when said straight terminal sections are inserted in the apertures.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 560,884 | Anderson | May 26, 1896 |
| 835,582 | Tobey | Nov. 13, 1906 |
| 1,714,909 | Illmer | May 28, 1926 |
| 2,628,877 | Woo | Feb. 17, 1953 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 536,909 | Italy | Dec. 12, 1955 |
| 787,825 | Great Britain | Dec. 18, 1957 |
| 871,358 | Germany | Feb. 12, 1953 |