Aug. 17, 1954 L. R. DAVIS ET AL 2,686,699

JOINT FOR CONNECTING SINK TOPS

Filed April 16, 1953 2 Sheets-Sheet 1

FIG. 1.

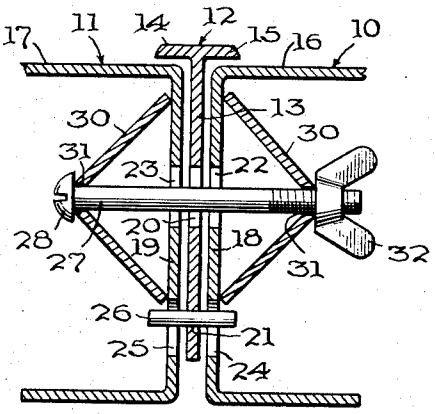


FIG. 2.

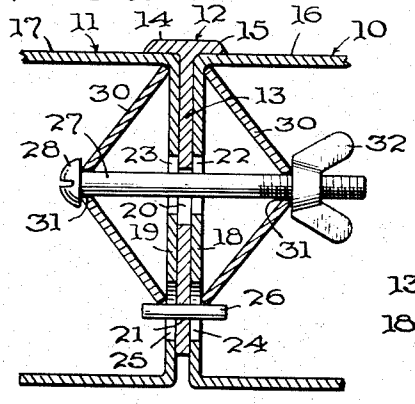


FIG. 3.

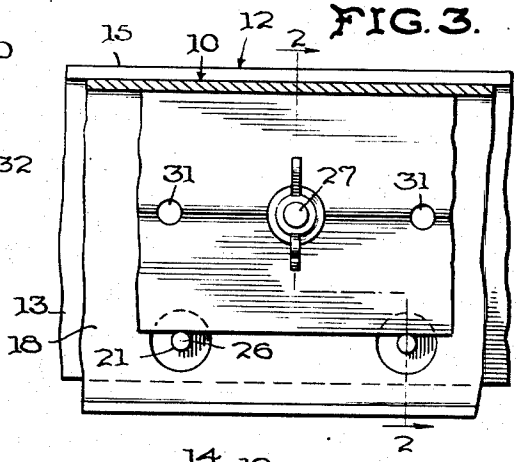
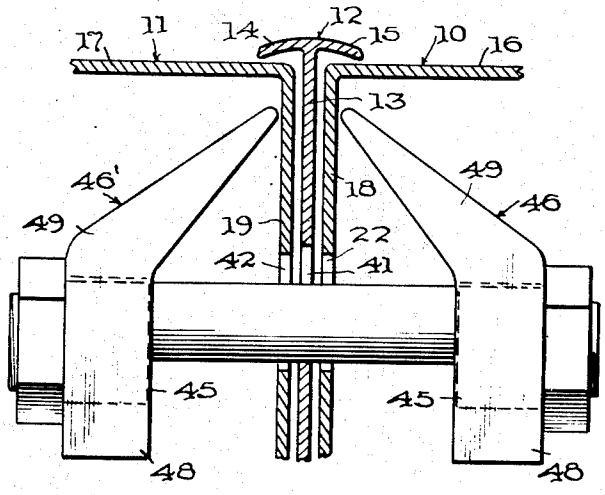


FIG. 5.



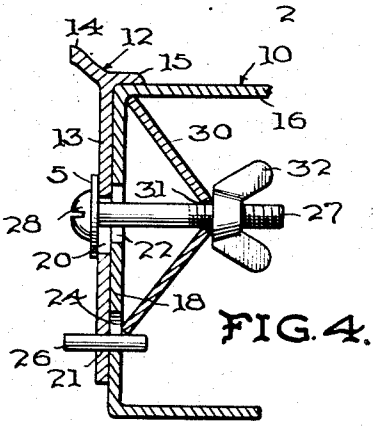


FIG. 4.

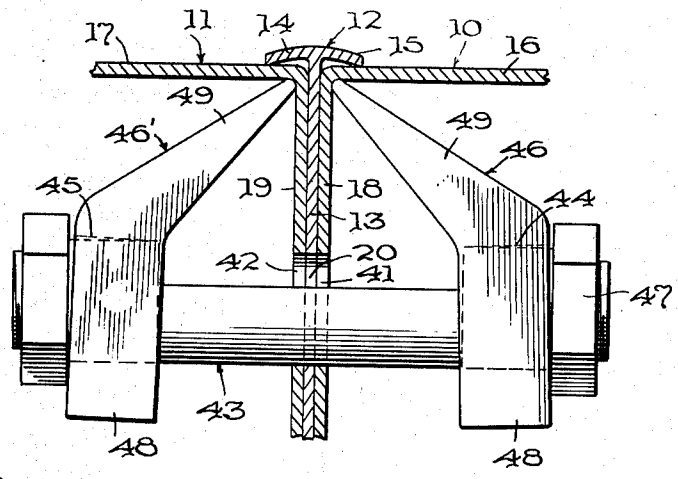
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Aug. 17, 1954 L. R. DAVIS ET AL 2,686,699

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Filed April 16, 1953 2 Sheets-Sheet 2

FIG. 6.



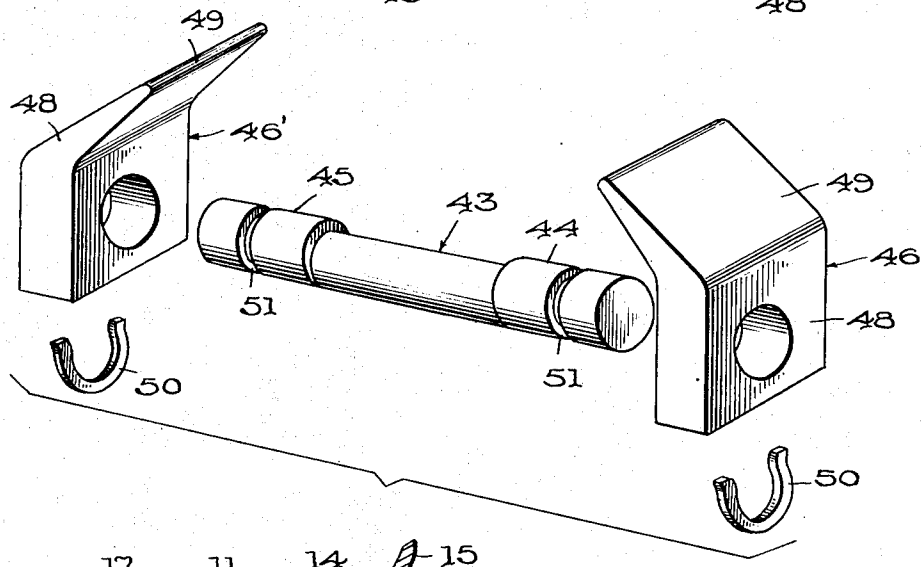


FIG. 7.

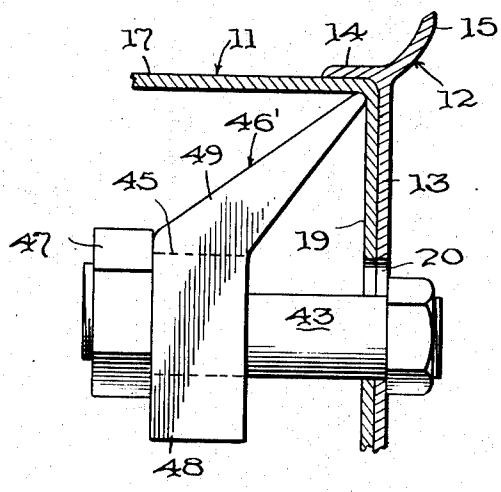


FIG. 8.

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JOINT FOR CONNECTING SINK TOPS

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14 Claims. (Cl. 311—4)

1

This invention relates to joint arrangements. More particularly, it is concerned with providing a novel joint arrangement between adjacent metal sink sections and the like together with novel means for drawing the sink sections tightly together.

In the past, considerable difficulty has been experienced in obtaining a tight joint between adjacent metal sink sections. As a result, openings or crevices have existed between the sections, with the result that no matter how small the crevices were, food particles and other debris would frequently collect within the crevices and remain there because of the difficulties involved in dislodging the same except with special tools. Water from cleaning cloths also collected in these crevices causing spotting and soiling of the sink sections. Sometimes the acids in the food particles that collected in these crevices would break through the enamel films or other protective coatings on the sink sections causing deterioration of the same. As a result of this imperfect condition of installation of the sections, it was difficult to maintain a clean and sanitary sink surface when using the joint arrangements proposed in the past.

Various devices such as molding strips and other fittings have also been proposed for use in sealing the openings or crevices between adjacent sink sections or the like and for drawing the sections closely together. These moldings, however, have not always been completely satisfactory for a number of reasons. Usually these moldings were of a complicated design and required special tools for emplacing the same. Some of these molding strips could not be easily handled and were very difficult to work with in the close or cramped quarters which exist during the installation of the sink sections with the result that it was very diffcult to properly emplace the molding strips and obtain a tight joint between the molding strips and adjacent sink sections.

In other instances, the complexity of the various fittings used for installing the molding strip rendered it difficult to adjust the strip relative to the sections once it had been emplaced, if adjustment was needed.

Accordingly, it is an object of this invention to provide a novel arrangement for securely and tightly connecting two adjacent sink sections or the like together.

It is another object of this invention to provide a novel joint arrangement for joining adjacent sink sections or the like together, wherein a T-shaped molding strip is used.

2

It is another object of this invention to provide a novel joint arrangement between adjacent sink members or the like wherein novel means are used for drawing adjacent sections and a molding strip together, and whereby adjustments between the strip and sections can be easily made.

It is a further object of this invention to provide a novel arrangement for securely and tightly connecting two adjacent sink sections and the like, while using a T-shaped molding strip, wherein novel means are used for drawing the wings of the T-shaped strip down into tight engagement with the top surfaces of the sink sections at the same time that the sink sections are drawn tightly together about the stem of the molding strip.

It is a further object of this invention to provide a novel joint arrangement between adjacent sink sections and the like which can be perfected without the need of special tools or complex fittings.

It is another object of this invention to provide a novel arrangement for securing together a molding strip and a sink section wherein novel means are employed for clamping the sink section tightly against the molding strip.

These and other objects are accomplished by providing novel means for drawing a sink section against one side of a molding strip wherein the molding strip is provided with an apertured stem. A wing member is located at one extremity of the stem. This wing member projects away from the stem at a transverse angle thereto and is adapted to overlie the sink section. The sink section is disposed adjacent one side of the stem. This sink section is in turn provided with a top surface portion and a wall element projecting downwardly therefrom with the wall element also being provided with apertures adapted to be placed in registry with the apertures in the stem of the molding stem. A pin member is insertable within the aligned apertures in the stem and the wall element and a flexible and angular wedge element is affixed to the pin. This wedge element is adapted to engage the wall element on the said sink section and means are used for compressing this wedge element inwardly against the wall element whereby the wall element of the sink section will be drawn tightly against the stem of the molding strip substantially simultaneously with the wing member on the molding strip being forced against the top surface of the sink section.

Other objects and advantages of the instant invention will become more apparent from a re-

view of the following detailed description, when taken in conjunction with the appended drawings, wherein:

Figure 1 is a cross-sectional view taken through two adjacent sink sections and a T-shaped molding strip, just prior to the time that the two sink sections are drawn tightly against the molding strip, and indicates one novel means for drawing the sections together;

Figure 2 is another cross-sectional view of the sink sections of Figure 1, after they have been drawn tightly together by one of the novel means of the instant invention, when taken along the lines 2—2 of Figure 3;

Figure 3 is a framentary side elevational view of the novel joint arrangement provided by the instant invention;

Figure 4 indicates an arrangement for joining a single sink section to a molding strip, while using the novel clamping means of the instant invention;

Figure 5 is a fragmentary cross-secional view taken through two adjacent sink sections and a T-shaped molding strip just prior to the time that the modified novel clamping members of the instant invention are actuated to accomplish the same;

Figure 6 is a fragmentary cross-sectional view through the joint arrangement between the two adjacent sink sections and T-shaped molding strip of Figure 5, after they have been drawn together;

Figure 7 is an exploded perspective view of the novel clamping members shown in Figures 5 and 6, and indicates one arrangement that may be used for actuating the same; and

Figure 8 is a fragmentary cross-sectional view taken through a joint between a molding strip and one sink section, while using one of the novel clamping members shown in Figures 5 and 6.

With further reference to the drawings, and in particular to Figures 1 and 2, the novel joint arrangement between adjacent sink sections 10 and 11 contemplates the use of a T-shaped molding strip 12. This molding strip is provided with a stem 13 and oppositely projecting wings 14 and 15 which are located at one extremity of the stem 13.

The wings 14 and 15 of the T-shaped molding strip 12 are adapted to overlie the top surface portions 16 and 17 of the adjacent sink sections. These sink sections are also provided with downturned walls 18 and 19. The stem of the T-shaped molding strip is provided with one or more horizontally aligned elongated slots 20 which are located in the intermediate portion of the stem, as well as one or more additional slots 21 which are located in vertically spaced relationship with slots 20 on the stem 13, the slots 21 also being located preferably at the bottom portion of the stem 13 of the molding strip.

Walls 18 and 19 are also provided respectively with one or more upper slots or openings 22 and 23 together with one or more lower openings 24 and 25, the latter of which are located in spaced relationship with slots 22 and 23 on the walls 18 and 19.

A short pin or dowel member 26 is adapted to be inserted within the vertically elongated slots 24 and 25 of the wall elements 18 and 19, as well as the opening 21 in the stem 13 of the T-shaped molding strip, when all of the aforesaid openings in the various members are placed in registry with one another. In addition, a second pin member 27 provided with a head portion 28, which head portion may be in the form of a screwhead, is adapted to be placed in the elongated slots 20 of the stem 13 and 22 and 23 of the wall elements on the several sink sections. It is also obvious that more than one each of the pin members 26 and 27 may be used depending upon the results desired.

Affixed to the pin member 27, preferably on both sides of the joint, is a flexible angular clamping or wedge member 30. The intermediate portion of each of the wedge members 30 is provided with a line of slots 31 through which the pin member 27 is inserted.

It will thus be seen that when a wing nut 32 for example is attached to the threaded portion of the pin member 27 and is turned, the flexible or resilient clamping members 30 will be compressed inwardly so that the upper extremities thereof will contact the wall elements, while the bottom extremities thereof will be in bearing engagement with the dowel member 21. As a result, at the same time that the two wall elements 18 and 19 of the sink sections are drawn together, the stem 13 of the T-shaped molding strip 12 will be forced further downwardly in the opening between the wall elements 18 and 19 of the sink sections, until the wings 14 and 15 of the T-shaped strip 12 come into contact with the top surfaces 16 and 17 of the several sink sections.

Although in the preferred embodiment of the invention it is contemplated that two flexible clamping or wedge members 30 be employed, it is obvious that satisfactory results may also be obtained if only one wedge member 30 is used on either side of the joint, since its action during compression will force the two walls 18 and 19 together simultaneously with forcing the stem 13 of the strip 12 further down into the opening between the downturned walls of the several sink sections.

This T-shaped molding strip 12 may be made in the form of an extrusion or it may be roll formed in any suitable manner.

In an advantageous embodiment of the invention it is also possible, as indicated in Figure 4, to utilize the wedge elements 30 for securing the downturned wall 18 of a single sink section to a T-shaped molding strip. For example, such an arrangement could be used at the ends and sides of sink sections, where they meet the walls in the house or other building. In this case, the wing element 14 of the molding strip may also project upwardly as well as outwardly and it would only be necessary to use one wedge shaped element 30 which would be adapted to engage the inner surface of the wall element 18 on the sink section 10. A washer 5 may also be located on the pin 27 adjacent the head portion 28 to prevent the head portion 28 from entering opening 20 on the stem of the molding strip 12. Thus, it will be seen that as the wing nut 32 is tightened, the flexible wedge or fingered element 30 will be compressed and expanded as it were in a plane parallel to the stem of the molding strip with the result that this clamping or wedge member 30 will serve to draw the wall 18 of the sink section 10 close to the stem 13 of the molding strip 12 simultaneously with forcing the stem 13 of the molding strip further along the downturned wall 18 of the sink section.

These wedge shaped members 30 are preferably made of resilient springy material with the intermediate portion thereof which is in contact with the pin member 27 being provided with suitably spaced apertures. In addition, each wedge

member 30 although made from a flexible material yet should be strong enough so as not to collapse through the leg member contacting pin member 27 upon application of compressive forces at the apex of the wedge member 30. This wedge member is bent to a predetermined angle and is deliberately weakened through the apex by the application of holes, slots, etc. to set up the compressive force necessary to apply balanced motions and forces upon the downturned members of the side walls and the pin member 27 in the T strip when direct force is applied to the apex of wedge members 30. The amount of angle and weakening through the apex section of the wedge member 30 is a calculated predetermined factor to obtain the above mentioned action.

It is also within the contemplation of this invention that the several pin members together with the wedge members and the wing nut may be utilized solely as a jig or compressive tool for drawing together adjacent sink sections or one sink section about a molding strip during the time that the sink section and/or sections and the molding strip are welded, riveted, or otherwise securely tied together. Thereafter the jig or tool consisting of the aforesaid elements can be removed.

In another advantageous embodiment of the invention, and as indicated more particularly in Figures 5 and 8, a modified type of wedge member may be used in lieu of that shown in Figures 1 through 4 for bringing adjacent sink sections together about a molding strip or a single sink section about a molding strip. In this event, it is contemplated that the stem 13 of the T member be provided with a single row of apertures 20 while the wall elements 18 and 19 of the sink sections also be provided with a single row of apertures 41 and 42, which apertures are adapted to be placed in registry with the line of apertures 20 in the stem of the T. When the aforesaid openings are placed in registry one with another, a pin member 43 provided with eccentrics or cam elements 44 and 45 at the opposite extremities thereof is then thrust through the aligned openings. Thereafter, wedge elements 46 and 46' are then located or placed upon the opposite ends of the pin 43 at the point where the cam elements 44 and 45 are located.

For the purposes of securing the wedge elements 46 and 46' to the pin member 43, one or both of the opposite ends of the pin member 43 may be provided with a suitable threaded portion to which a lock nut 47 may be attached.

In a modified form of the invention, the wedge elements 46 and 46' may be held on the pin member 43 by means of the springy horseshoe locking clips 50 when they are located in the annular recesses 51 located at opposite ends of the pin member 43.

Each of the wedge elements 46 and 46' is provided with a base portion 48 and a flexible finger 49 which projects upwardly and away from the base member at an angle thereto and toward the wall elements of the sink section. When the pin member 43 is rotated and with the wedge elements 46 and 46' locked thereon, the turning of the cam member as indicated in Figures 5 and 6 will progressively cause the flexible fingers 49 of the wedge elements 46 and 46' to be moved into engagement with the undersurface of the top surface portions of the several sink sections, whereby the sink sections will be first drawn up against the wing elements of the T-shaped molding strip and thereafter the sink sections will be drawn together and toward the stem of the T as the wing elements 49 are further compressed by the action of the eccentrics 44 and 45 and meet the sink sections at the point where the wall elements thereof project downwardly.

It is obvious that in some instances it may be desirable to employ a pin member 43 which is provided with but one clamping element 46' as indicated in Figure 8, when for example it is desirable to use this wedge shaped element 46' for drawing a single sink section against a T-shaped molding strip, as where the edge of a sink section is located adjacent the wall of a house. In this case, one of the wings 15 of the T-shaped molding strip would ordinarily be projected upwardly as well as outwardly so as to make a smooth and tight joint between the wall and the molding strip.

In view of the above discussion it will be observed that a novel arrangement has been provided for drawing several sink sections or one sink section close to and tightly about a molding strip. It is to be noted also that the various means employed may be utilized solely as a compressive tool or jig for holding the several sections or elements together during the time that they are permanently welded or riveted to one another. In addition, although the aforesaid joint arrangements have been described with reference particularly to sink sections, it is obvious that the same arrangement can be used for drawing together other items such as cabinets or other products. Accordingly, the word "sink sections" as used in the claims are to be considered as generic to sinks, cabinets, etc. Furthermore, the same type of joint arrangement may be used for joining articles made of other materials besides metal, such as those made of porcelain, enamel, plastics, or wood.

It will be obvious that various changes can be made in the invention without departing from the spirit and scope thereof as defined by the appended claims, wherein what is claimed is:

1. Means for joining a sink section or the like and a molding strip together comprising the combination of a molding strip provided with an apertured stem and a wing member located at one extremity of the stem projecting away therefrom, a sink section disposed adjacent one side of the stem, said sink section being provided with a top surface and a wall element projecting downwardly therefrom, said wall element also being provided with apertures adapted to be placed in registry with the apertures in the said stem of the molding strip, a pin member insertable within the aligned apertures in said stem and the said wall element, a flexible and angular wedge element affixed to the said pin member and adapted to engage the wall element on the said sink section, and means for compressing said wedge element inwardly against the wall element, whereby said wall element and the said sink section will be drawn tightly against the stem of said molding strip simultaneously with the wing member on said molding strip being forced against the top surface of the sink section.

2. In a joint arrangement comprising the combination of a molding strip provided with an apertured stem and a wing element projecting therefrom at a transverse angle thereto, and a sink section disposed on one side of the said stem, said sink section being provided with a top surface and a wall element projecting downwardly therefrom, said wall element also being provided with apertures adapted to be placed in registry

with the apertures in the said stem of the molding strip, the improvement comprising means for drawing the wall element and said sink section tightly about said molding strip, said means including a pin member insertable within the aligned apertures in said stem and said wall element, a flexible angular wedge element affixed to the said pin member and adapted to engage the wall element on said sink section and means for compressing said wedge element inwardly against said wall element whereby said wall element and said sink section will be drawn tightly against the stem of said molding strip simultaneously with the wing element on said molding strip being forced against the top surface of said sink section.

3. Means for joining adjacent sink sections and the like together comprising the combination of a molding strip provided with an apertured stem and a wing member located at one extremity of the stem and projecting away therefrom, a separate sink section disposed on each side of the said stem, each sink section being provided with a top surface and a wall element projecting downwardly therefrom, said wall elements also being provided with apertures adapted to be placed in registry with the apertures in the said stem, a pin member insertable within the aligned apertures in the stem and the said wall elements, flexible and angular wedge elements loosely mounted upon the pin member at opposite ends thereof, each wedge element being adapted to engage the inner surface of a separate wall element, and means for simultaneously compressing both wedge elements against the wall elements, whereby both of said wall elements and said sink sections will be drawn tightly against the stem of said molding strip simultaneously with the wing member on said molding strip being forced against the top surface of a sink section.

4. Means for joining adjacent sink sections and the like together comprising the combination of a molding strip provided with a stem having a plurality of vertically spaced apertures therein and a wing element projecting therefrom, a sink section disposed on one side of the said stem, said sink section being provided with a top surface and a wall element projecting downwardly therefrom, said wall element also being provided with a plurality of vertically spaced apertures which are adapted to be placed in registry with similar apertures in the said stem of the molding strip, a pin member insertable within the lowermost apertures of said stem and wall element, a second pin member insertable within the apertures in said stem and said wall element located above said first mentioned apertures, and a flexible angular wedge member affixed at the intermediate section thereof to said last mentioned pin member and adapted to contact the inner surface of the wall element and said first mentioned pin member and means for compressing said wedge element against the wall element whereby said wall element and said sink section will be drawn tightly against the stem of said molding strip simultaneously with the wing element on the said molding strip being forced against the top surface of the sink section.

5. Means for joining adjacent sink sections and the like together comprising the combination of a molding strip provided with a stem having a plurality of vertically spaced apertures therein and a wing element projecting therefrom, a sink section disposed on each side of the said stem, each sink section being provided with a top surface and a wall member projecting downwardly therefrom, each of said wall members also being provided with a plurality of vertically spaced apertures which are adapted to be placed in registry with the apertures in the said stem of the molding strip, a pin insertable within the lowermost apertures in the said stem and wall elements, a second pin insertable within the apertures in said stem and said wall element located above said first mentioned apertures, and a separate flexible angular wedge member affixed at an intermediate portion thereof to each end of the second mentioned pin and adapted to contact the inner surface of a wall member and said first mentioned pin, and means for simultaneously compressing both of said wedge elements against said wall members whereby both of said wall members and said sink sections will be drawn tightly against the stem of the molding strip simultaneously with the wing element on said molding strip being forced against the top surface of a sink section.

6. In a joint arrangement of the type described wherein adjacent sink members and the like are tied together, the combination of a T-shaped molding strip provided with opposing wing members and a stem having a plurality of vertically spaced apertures therein, a separate sink section disposed on each side of the stem, each sink section being provided with a top surface portion and a wall projecting downwardly therefrom and located in parallel relationship with and adjacent to said stem, each of said walls also being provided with a plurality of vertically spaced apertures which are adapted to be placed in registry with the apertures in the said stem of the T-shaped molding strip, a pin member insertable within the lowermost apertures of said stem and walls, a second pin member insertable within the apertures in said stem and said walls located above said first mentioned apertures, and a separate flexible angular wedge member affixed at an intermediate portion thereof to each end of the second mentioned pin and adapted to contact the inner surface of a wall and said first mentioned pin and means for simultaneously compressing both of said wedge members inwardly against the walls whereby both of said walls and said sink sections will be drawn tightly against the stem of the molding strip simultaneously with the wing members on the molding strip being forced against the top surfaces of the sink sections.

7. In a joint arrangement comprising a T-shaped molding strip provided with an apertured stem and wing elements projecting therefrom, and sink sections disposed on each side of the stem, each of said sink sections being provided with a top surface portion and a wall projecting downwardly therefrom, said walls also being provided with apertures adapted to be placed in registry with the apertures in the stem of the molding strip, the improvement comprising means for drawing the walls and the sink sections tightly about the molding strip, said means including a pin member insertable within the aligned apertures in said stem and said downwardly projecting walls, upwardly projecting flexible angular wedge elements affixed to the opposite ends of the pin and adapted to engage the walls of said sink sections and means for compressing the wedge elements inwardly against the walls, whereby said walls will be drawn tightly against the stem of the molding strip simultaneously with the wing elements on the molding

strip being forced against the top surfaces of the sink sections.

8. In a joint arrangement of the type described wherein sink members and the like are tied together, the combination of a molding strip provided with an apertured stem and a wing element projecting from one extremity thereof, a sink section located on one side of said molding strip, said sink section being provided with a top surface portion and an apertured wall projecting downwardly therefrom, a pin member insertable within the apertures in said stem and downwardly projecting wall, and means attached to said pin member for drawing the sink section and molding strip together, said means including a wedge element provided with a base portion directly attached to said pin member and a flexible finger projecting at an angle upwardly and away from said base portion and adapted to contact the top surface portion of a sink section adjacent the downwardly projecting wall thereof, whereby upon progressive upward movement of said wedge element the said flexible finger will first cause the sink section to be moved upwardly and into engagement with the wing of the molding strip and thereafter cause the sink section to be drawn against the stem of the molding strip, and means for moving the wedge element and the finger thereon upwardly.

9. The combination claimed in claim 8, wherein the means for moving the wedge elements upwardly includes a rotatable cam affixed to the pin member and engageable with the base portion of the wedge element.

10. The combination of claim 8 including a projecting element on said pin member engageable with said stem of the molding strip.

11. In a joint arrangement of the type described wherein sink members and the like are tied together, the combination of a molding strip provided with an apertured stem and a wing element projecting from one extremity thereof, a sink section located on each side of said molding strip, said sink section being provided with a top surface portion and an apertured wall projecting downwardly therefrom, a pin member insertable within the apertures in said stem and downwardly projecting walls, and means attached to said pin member for drawing the sink sections about said molding strip, said means including wedge members provided with base portions directly attached to each extremity of the pin member, a flexible finger projecting at an angle upwardly and away from each base portion and adapted to contact the top surface portions of the sink sections from underneath adjacent the downwardly projecting walls thereon, whereby upon the upward movement of said wedge members the said flexible fingers will progressively cause the sink sections to be moved upwardly against the molding strip until the wing element is contacted and thereafter to be drawn against the stem of the molding strip, and means for moving the wedge members and the fingers thereon upwardly.

12. The combination claimed in claim 11, wherein the means for moving the wedge members upwardly includes a pair of spaced cams on the pin member, each one of which is engageable with the base portion of a separate wedge member.

13. In a joint arrangement of the type described wherein sink members and the like are tied together, the combination of a T-shaped molding strip provided with an apertured stem and oppositely projecting wing elements, a sink section located on each side of said T-shaped molding strip, each sink section being provided with a top surface portion and an apertured wall projecting downwardly therefrom, a pin member insertable within the apertures in said stem and downwardly projecting walls and means attached to said pin member for drawing the sink sections about said molding strip, said means including wedge members provided with base portions directly attachable to each extremity of the pin member, a flexible finger projecting at an angle upwardly and away from each base portion and adapted to contact the top surface portions of the sink sections from underneath adjacent the downwardly projecting walls thereon, whereby upon the upward movement of said wedge members the said flexible fingers will progressively cause the sink sections to be moved upwardly until the wing elements of the molding strip are contacted and thereafter to be drawn together against the stem of the molding strip and means associated with the pin member for moving the wedge members and the fingers thereon upwardly.

14. The combination claimed in claim 13 wherein the means for moving the wedge members upwardly includes a pair of spaced cams on the pin member, each one of which is engageable with the base portion of a separate wedge member.

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