Sept. 1, 1953 A. J. DALPIAZ 2,650,404

ADJUSTABLE CLAMP

Filed May 11, 1951

FIG. 1.

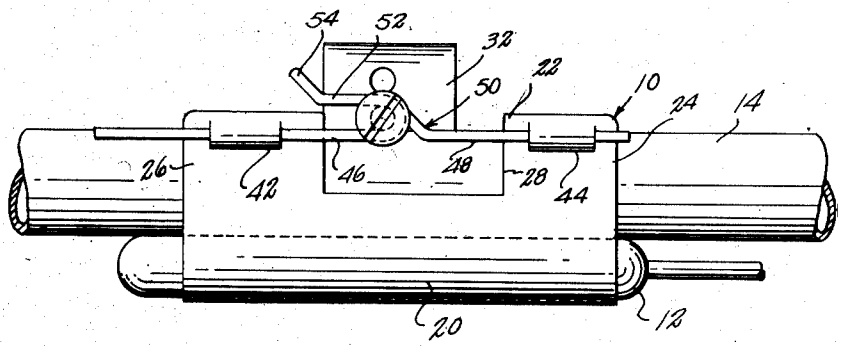
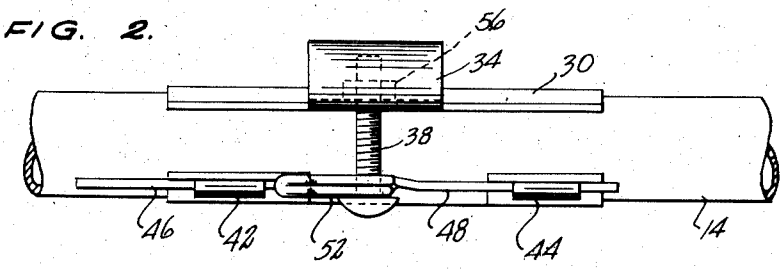


FIG. 2.



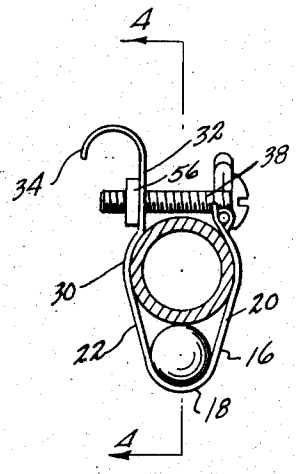


FIG. 3.

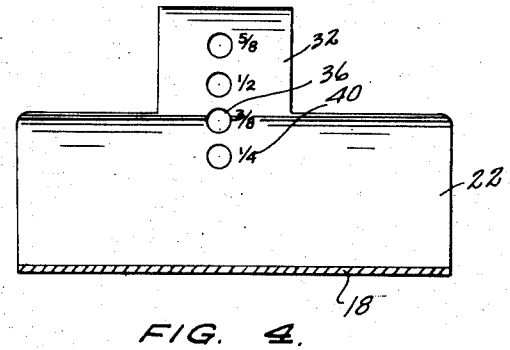


FIG. 4.

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ADJUSTABLE CLAMP

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5 Claims. (Cl. 24—243)

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This invention appertains to improvements in clamps for securing a pair of members in side by side relationship and particularly relates to a clamp for clamping thermostat expansion valve bulbs to suction lines of refrigeration and air conditioning units.

It is an object of this invention to provide an adjustable clamp, which dependably and securely affixes a thermostatic valve bulb to a suction line of a refrigeration or air conditioning unit, the clamp being adjustable to engage suction lines of various sizes.

Another object of this invention is to provide a clamp, which is adapted to securely embrace a pair of members and secure the members in side by side relationship, the clamp being fastened by a bolt assembly, which is attachable to the clamp, prior to positioning of the clamp on the members, so as to obviate loss of the nut and reduce the time required for securing the clamp in position.

A further object of this invention is to provide a compact and inexpensive clamp, which can be used for securing a pair of cylindrical members in side by side relationship and which is easily attached and removed.

These and ancillary objects and structural features of merit are attained by this invention, the preferred embodiment of which is set forth in the following description and illustrated in the accompanying drawing, wherein:

Figure 1 is a side elevational view of a clamp, constructed in accordance with the principles of this invention, and illustrating the same in its preferred environmental use;

Figure 2 is a top plan view thereof;

Figure 3 is a cross sectional view, and

Figure 4 is a longitudinal vertical sectional view, taken on line 4—4 of Figure 3, with the bolt assembly, suction line and valve removed.

With continued reference to the accompanying drawing, the clamp 10 is especially designed for clamping a conventional thermostat expansion valve bulb 12 in side by side relationship to a suction line 14 of a refrigeration or air conditioning unit. Of course, the clamp may be used for securing a pair of members, irrespective of their use or type, in side by side relationship.

The clamp 10 includes a U-shaped body portion 16, which is formed of a malleable material and which includes a web portion 18 and upstanding outwardly extending side sections 20 and 22.

The side section 20 is formed with a bifurcated free end 22, which defines a pair of opposed

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branches 24 and 26, separated by a cutout portion 28.

The branches 24 and 26 are curved inwardly, as seen in Figure 3, and the upper end 30 of the side section 22 is similarly curved inwardly. An arm 32 is formed integral with the free upper end of the side section 30 and projects upwardly therefrom, the arm terminating in an outwardly and downwardly extending end 34.

Longitudinally spaced openings 36 are formed in the arm 32 and in the side section 30 for receiving a bolt 38, the openings being identified by indicia 40, corresponding to the diameter of the suction line 14. In this regard, the diameter of the suction line 14 is first determined and, after being determined the bolt 38 is inserted through the opening, having an identifying number 40, corresponding to the diameter of the line.

Integral outwardly extending sleeves 42 and 44 are formed on the branches 24 and 26 and are disposed in longitudinal alignment. An anchoring member 50 extends longitudinally across the cutout portion or opening 28 and has legs 46 and 48 supported in the sleeves 42 and 44, respectively, for pivotal movement toward and away from the arm 32 and for longitudinal sliding movement with respect to the side sections 20 and 22. The anchoring member 50 is preferably formed from a single piece of wire, having its center section 52 bent upon itself and extended laterally from the opposing axially aligned legs 46 and 48. The center section 52 terminates in an offset free end 54 and the center section overlies the leg 46 for the slidable mounted reception of the shank of the bolt.

Thus in use, the bolt 38 is inserted in one of the openings 36 and the nut 56 is threaded on the shank of the bolt. The expansion valve bulb 12 is cradled in the web portion 18 of the body and the opposing side sections are embracingly disposed on the opposing sides of the suction line 14, as seen in Figure 3. The bolt 38, which has its head engaging on the inner surface of the side section 30 or arm 32, when the clamp is positioned on the valve bulb and suction line, is moved across the line 14 and the anchoring member is moved forwardly in the sleeves 42 and 44, until the bolt is received between the center section 52 and the leg 46. The head of the bolt is then securely held by the complemental center section and leg 46 of the anchoring member and the nut is tightened on the bolt to securely fasten the clamp on the suction line and valve bulb.

Due to the provision of the slidable anchoring member 50, the nut is threaded on the bolt, prior

to the positioning of the clamp on the valve bulb and suction line, which decreases the time required for fastening the clamp and obviates the possibility of loss of the nut **56**.

Of course, the clamp may be effectively employed for securing any members in side by side relationship and, thus, is not limited in use to the illustrated and described environmental use.

Having thus described the invention, what is claimed is:

1. An elongated U-shaped clamp comprising a bight, a pair of side sections projecting from said bight, one of said side sections having an opening extending inwardly from the free end intermediate the sides thereof, an arm arranged longitudinally of the other one of said sections and having one end secured to the free end of said other section, said arm being in alignment with said opening, anchoring means arranged in opposed relation with respect to said arm and supported on said one section for longitudinal sliding movement therealong and for pivotal movement toward and away from said arm, and fastening means loosely and adjustably carried by said arm and positioned in said opening end engageable with the anchoring means.

2. An elongated U-shaped clamp comprising a bight, a pair of side sections projecting from said bight, one of said side sections having an opening extending inwardly from the free end intermediate the sides thereof, an arm arranged longitudinally of the other one of said sections and having one end secured to the free end of said other section, said arm being in alignment with said opening, anchoring means embodying a hook arranged in opposed relation with respect to said arm and supported on said one section for longitudinal sliding movement therealong and for pivotal movement toward and away from said arm, and fastening means embodying a headed bolt having the portion remote from the head loosely and adjustably carried by said arm and having the head positioned in said opening and engageable with said hook.

3. An elongated U-shaped clamp comprising a bight, a pair of side sections projecting from said bight, one of said side sections having an opening extending inwardly from the free end intermediate the sides thereof, an arm arranged longitudinally of the other one of said sections and having one end secured to the free end of said other section, said arm being in alignment with said opening, bearing means carried by each of the portions of said one section intermediate said opening and the adjacent end thereof, anchoring means extending longitudinally across said opening and supported in each of said bearing means for pivotal movement toward and away from said arm and for longitudinal sliding movement with respect to said side sections, and fastening means having one end loosely and adjustably carried by said arm and having the other end positionable in said opening and engageable with the adjacent portion of said anchoring means.

4. An elongated U-shaped clamp comprising a bight, a pair of side sections projecting from said bight, one of said side sections having an opening extending inwardly from the free end intermediate the sides thereof, an arm arranged longitudinally of the other one of said sections and having one end secured to the free end of said other section, said arm being in alignment with said opening, bearing means carried by each of the portions of said one section intermediate said opening and the adjacent end thereof, anchoring means extending longitudinally across said opening and supported in each of said bearing means for pivotal movement toward and away from said arm and for longitudinal sliding movement with respect to said side sections, said anchoring means including a hook on the portion adjacent the opening in said one section, and fastening means embodying a headed bolt having the portion remote from the head loosely and adjustably carried by said arm and having the head positionable in said opening and engageable with said hook.

5. An elongated U-shaped clamp comprising a bight, a pair of side sections projecting from said bight, one of said side sections having an opening extending inwardly from the free end intermediate the sides thereof, an arm arranged longitudinally of the other one of said sections and having one end secured to the free end of said other section, said arm being in alignment with said opening and being provided with a plurality of longitudinally aligned apertures arranged in spaced relation, bearing means carried by each of the portions of said one section intermediate said opening and the adjacent end thereof, anchoring means extending longitudinally across said opening and supported in each of said bearing means for pivotal movement toward and away from said arm and for longitudinal sliding movement with respect to said side sections, and fastening means having one end loosely and adjustably carried in a selected one of said apertures of said arm and having the other end positionable in said opening and engageable with the adjacent portion of said anchoring means.

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