

[54] **DEVICE FOR FASTENING DECORATIVE  
RODS TO UPRIGHT RODS OF METAL  
RAILINGS**

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[51] Int. Cl. .... **E04b 1/48**, A44b 21/00

[58] **Field of Search** ..... 52/663, 665, 719;  
285/198; 287/53.5, 118; 24/125 N, 135 N,  
243 S, 243 B, 243 CC, 243 AB

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[57]

**ABSTRACT**

A U-shaped member is slid about the decorative and upright rods of a railing, at a desired point of connection, to partially enclose the rods. A bridging member is then engaged with the U-shaped member at the open end thereof to complete the enclosure. At least one of the members carries a setscrew designed to engage a rod member within the enclosure and urge all of the rods into close engagement.

**8 Claims, 9 Drawing Figures**

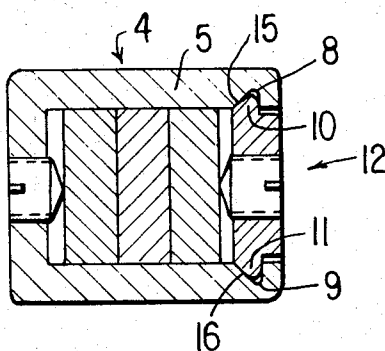


FIG. 1

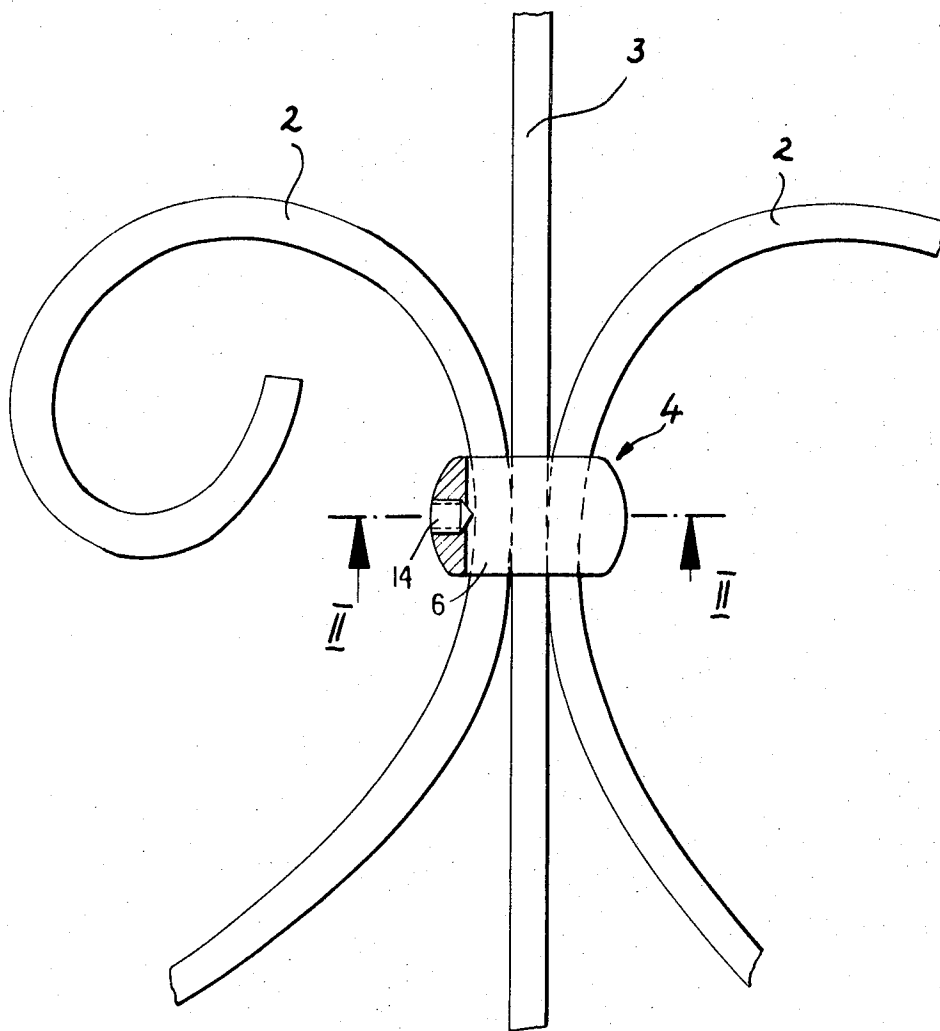


FIG. 2

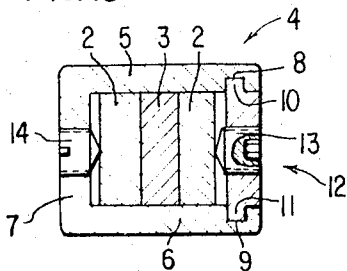


FIG. 4

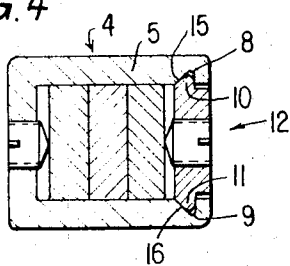


FIG. 3

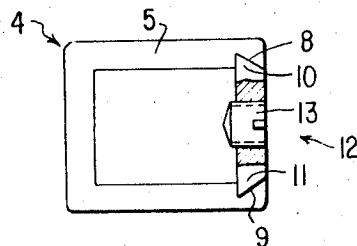


FIG. 5

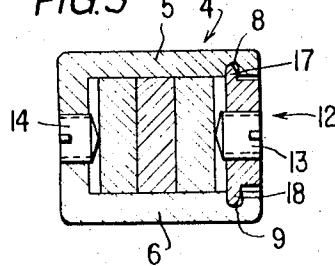


FIG. 6

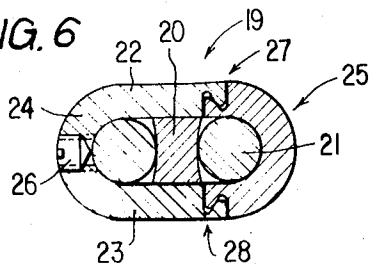


FIG. 7

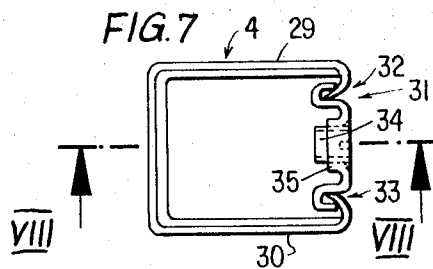


FIG. 9

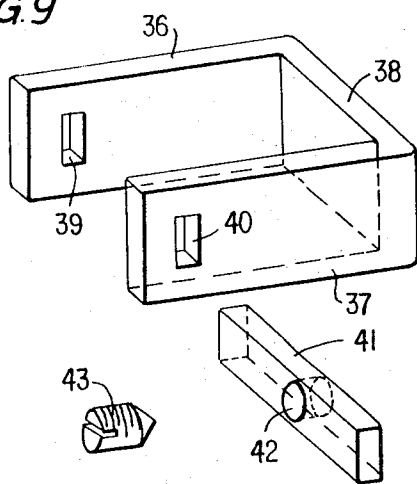
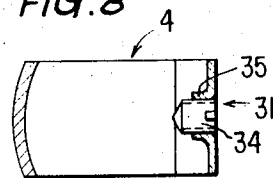


FIG. 8



# DEVICE FOR FASTENING DECORATIVE RODS TO UPRIGHT RODS OF METAL RAILINGS

## BACKGROUND OF THE INVENTION

The present invention relates to a fastening device 5 for the attachment of decorative rods to the upright rods of metal railings on staircases, bridges, etc.

Previously, ornamentally bent, decorative rods have been used either by themselves, instead of filling or supporting rods, in staircase and bridge banisters, or with supporting and filling rods as a protective fence 10 that is screwed or welded to the railings.

Difficulties arise if it is later determined that the spacing of the filling and supporting rods does not provide sufficiently close safety protection or when a simple rod railing is subsequently to be improved by decorations. According to the known art the railings then had to be removed and modified by welding or screwing-in of the decorative rods which were to be included in the railing. This is costly when done at the place 20 where the railing is located and is complicated for shop work.

## SUMMARY OF THE INVENTION

It is the object of the present invention to avoid the costly and complicated work now required to fasten decorative rods to the upright rods in metal railings. This object is accomplished, according to the present invention, by providing a separate device for fastening such decorative rods with the filler or supporting rods in a railing. This device is a U-shaped member which at the point of connection is adapted to the profile of the rods and whose open profile side can be closed by a bridging member which can be inserted into grooves in the member. The bridging member is provided with a strong setscrew which serves to bridge the spacing, compensate for tolerances and clamp together the rods to be connected.

A further development of the present invention resides in the fact that, in addition to the symmetrical arrangement of the U-shaped member with respect to the rods, a strong setscrew also passes through the transverse bar of the U-shaped member.

In this way it is possible in a simple manner to subsequently install ornamentally bent decorative rods, for example, into a rod-type banister. This type of fastening also permits subsequent exchange of the decorative rods or their removal without damaging the filler or supporting rods.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary elevation view, partially broken open, showing the device connecting the plurality of rods in a banister.

FIG. 2 is a section of FIG. 1 taken on the line II—II.

FIG. 3 is a plan view, partially in section, showing another embodiment of the device.

FIG. 4 is a view similar to that of FIG. 2 but showing yet another embodiment of the device.

FIG. 5 is a view similar to that of FIG. 2 but showing still another embodiment of the device.

FIG. 6 is also a view similar to that of FIG. 2 and showing a further embodiment of the device.

FIG. 7 is a plan view showing yet a further embodiment of the device.

FIG. 8 is a section of FIG. 7 taken on the line VIII—VIII.

FIG. 9 is an expanded perspective view of the elements of a still further embodiment of the device.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

As seen in FIG. 1, a pair of decorative rods 2 are fastened together with a filler or supporting rod 3 of a railing by means of a device, generally indicated by the reference numeral 4. In this particular instance all of the rods are rectangular in cross section and FIG. 2 shows the manner of applying the device 4 to the rods.

The device 4 has a U-shaped member with longitudinally extending walls 5 and 6 connected by a transverse bar 7. Adjacent the open end of the walls 5 and 6 there are inwardly facing complementary openings 8 and 9, respectively, which, in this embodiment of the device, are rectangular shaped grooves. These grooves are adapted to receive the edge portions, in the form of the flanges 10 and 11, of a bridging member, generally indicated at 12, which closes the device. A setscrew 13 extends through bridging member or component 12 and, if desired, a similar type setscrew 14 can be provided in the bar portion 7.

The device is used in the following described manner. Rods 2 are disposed in a desired position on rod 3 within the railing and the U-shaped member of device 4 is pushed, from one side, over the connecting point of the rods to partially enclose them. The bridging member 12 is then placed into engagement with the U-shaped member with flanges 10 and 11 in grooves 8 and 9. The setscrews are adjusted to clamp the rods together as seen in FIG. 2.

The embodiment of the device shown in FIG. 3 has the same general U-shaped member 4 but in this embodiment it will be seen that the openings 8 and 9 are triangular in shape and receive similarly shaped flanges 10 and 11 on bridging member 12.

In the embodiment shown in FIG. 4 the arrangement is similar to that of FIG. 3 in that triangular shaped openings 8 and 9, with similarly shaped flanges 10 and 11 on the bridging member 12, are utilized. However, this embodiment differs from the embodiment shown in FIG. 3 in that the oblique edges 15 and 16 of openings 8 and 9 face the bridging member 12.

The embodiment disclosed in FIG. 5 differs from that disclosed in FIG. 2 only in that openings 8 and 9 are U-shaped and are undercut at 17 and 18 respectively. With this arrangement arms 5 and 6 are restrained from spreading open when set screw 13 is tightened.

In FIG. 6, a device 19 is shown for fastening together a supporting rod 20, which is generally rectangular in cross section, and a pair of decorative rods 21, which are circular in cross section. In a manner similar to that previously described, a U-shaped member, with longitudinally extending walls 22 and 23 and a transverse portion 24, is interconnected with a bridging member, generally indicated at 25 which is of U-shaped cross section. Transverse portion 24 carries a setscrew 26 and the U-shaped member and bridging member are interconnected by means of oppositely directed interconnecting flanges, generally designated by the reference numerals 27 and 28.

The embodiment of the device shown in FIGS. 7 and 8 differs from previously discussed embodiments in that the U-shaped member, with longitudinally extending walls 29 and 30, and the bridging member, generally indicated at 31, are strips of metal. The U-shaped

member and the bridging member are interconnected by means of oppositely disposed flanges on the respective pieces as indicated generally at 32 and 33. A setscrew 34 is received in a threaded, inwardly pressed, center portion 35 in the bridging member 31.

In FIG. 9, the device is shown as having a U-shaped member with longitudinally extending walls 36 and 37 and a transverse bar portion 38. There are slots 39 and 40 in the walls 36 and 37, into which a bridging member 41 can be slid. A threaded opening 42 in the bridging member 41 receives a setscrew 43 and the device is used as a fastening means in a manner similar to that of the other embodiments.

It will be understood that the above description of the present invention is susceptible to various modifications, changes and adaptations, and the same are intended to be comprehended within the meaning and range of equivalents of the appended claims.

I claim:

1. A device for fastening decorative rod members to upright rod members in railings, the device having an axis coextensive with the length dimension of said rod members, comprising:
  - a. a one-piece U-shaped member having two legs of identical length dimension measured normal to said axis and a base component interconnecting said legs; said legs and said base component having each an internal and an external wall face; the internal wall faces of said legs being planar and extending parallel to one another and to said axis;
  - b. a bridging component interconnecting said legs opposite and spaced from said base component, said bridging component having an internal and an external wall face; the length of said legs measured in a direction normal to said axis is substantially larger than the dimension of said bridging component measured in the same direction, whereby the space between said legs accommodates at least two of said rods; all said internal wall faces together define a laterally contiguous and axially open inner space of said device through which at least one upright rod member and at least one decorative rod member extends;
  - c. complementary flange-and-groove securing means provided in said internal wall faces of said bridging component and said legs in the zone of their ends remote from said base component; said securing means having a length dimension extending parallel to said axis for permitting a sliding motion of

said bridging component with respect to said U-shaped member solely in a direction parallel to said axis; and

- d. a setscrew provided in at least one of said components, said setscrew having a head and an axis normal to and intersecting said axis of said device; said setscrew, when tightened, engages one of the rod members, whereby all of the rod members are urged into close engagement and said bridging component is immobilized with respect to said U-shaped member; a cross section of said device taken at any point of said axis of said device is symmetrical to the plane containing both said axes; the external face of said device constituted by the external faces of said legs, said base component, said bridge component and an exposed face of said setscrew head is entirely contiguous and devoid of projections and depressions in the tightened condition of said setscrew.
2. An arrangement as defined in claim 1, wherein said setscrew is movably disposed in said base component of said U-shaped member.
3. An arrangement as defined in claim 1, wherein said setscrew is movably disposed in said bridging component.
4. An arrangement as defined in claim 1, wherein the grooves of said securing means are provided on said legs and are rectangular in cross section and receive correspondingly shaped flanges on said bridging component.
5. An arrangement as defined in claim 1, wherein the grooves of said securing means are provided on said legs and are triangular in cross section and receive correspondingly shaped flanges on said bridging component.
6. An arrangement as defined in claim 5, wherein the oblique wall portions of said triangular shaped grooves face said bridging component.
7. An arrangement as defined in claim 1, wherein the grooves of said securing means are provided on said legs and are U-shaped in cross section and are undercut at one wall to receive correspondingly shaped flanges on said bridging component.
8. An arrangement as defined in claim 1, wherein said bridging component is U-shaped in cross section and said securing means comprises one pair of grooves and one pair of flanges on both the bridging component and the U-shaped member.

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