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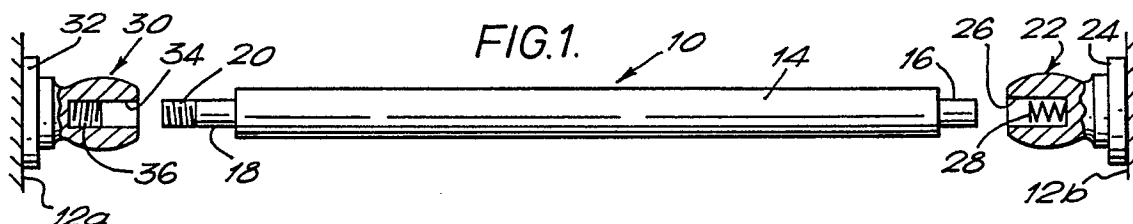
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54 **Stair-rods.**

57 A stair-rod (10), preferably formed in three parts, includes spring means (28) so that the stair-rod can be fitted in place across the full width of a stair, between the side walls (12a, 12b), without the need for any fixing brackets. The stair-rod preferably has the spring means (28) at one end and a screw-thread adjustment mechanism (20,36) at the other end to assist in taking up any slack.



STAIR-RODS

This invention relates to stair-rods, sometimes called stair-rails.

Conventional stair-rods comprise metal or wooden rods, fixed in eyes, to secure a stair carpet in the bend of each step in a flight of stairs. In the case of stair-rods made of brass, it has heretofore been impossible easily to remove the rods from the stairs, for example for cleaning, and the use of brass stair-rods has therefore lost its popularity. Also, with the conventional brass stair-rods it is a time-consuming job to fit them to the stair carpet, requiring the fixing eyes or brackets to be screwed into place at the correct spacings.

It is known, for example from GB-A-823460 to provide spring loaded sockets into which the ends of a stair-rod can be fitted. When two such sockets are aligned at the junction of a tread and riser, a stair-rod can be assembled by pressing the rod into the sockets, thereby compressing the springs. However, this type of spring-loaded stair-rod requires the use of brackets to secure the sockets in place at the junction of the treads and risers. This not only increases the expense, but it also means that the sockets and brackets have to be carefully positioned. Also, although it is possible to remove the rods for cleaning purposes, one cannot remove the sockets/brackets without unscrewing them from the stair-case. This therefore makes it difficult to clean the carpet and staircase thoroughly.

It is an object of the present invention to provide an improved stair-rod which can be fitted easily into place across the full width of the stairs, from side wall to side wall, without the need for any fastening between the stair-rod and the staircase.

It is a further object of the present invention to provide an improved stair-rod which can be readily detached from its position on the staircase, thereby enabling the stair-rod and the underlying carpet to be cleaned.

In accordance with the present invention there is provided a stair-rod comprising a first end portion adapted for abutting engagement with one side of a stairway, an opposite end adapted for abutting engagement with the opposite side of the stairway, and spring means incorporated in the rod enabling lengthwise compression and expansion of the rod to take place.

In one preferred embodiment of the invention, the stair-rod has spring means adjacent to one end of the rod and a screw threaded adjustment mechanism adjacent to the other end of the rod. Preferably, the stair-rod is formed in three parts, with a central cylindrical portion and end portions associated with said spring means and said screw threaded adjustment mechanism respectively.

In order that the invention may be fully understood, three embodiments of stair-rod in accordance with the invention will now be described by way of example and with reference to the accompanying drawings. In the drawings:

Fig. 1 is a diagrammatic illustration of a first embodiment of spring loaded stair-rod in accordance with the invention.

Fig. 2 is a diagrammatic illustration of a second embodiment of spring loaded stair-rod in accordance with the invention.

Fig. 3 is a diagrammatic illustration of a third embodiment of spring-loaded stair-rod in accordance with the invention.

The present invention is particularly appropriate for use in conjunction with brass stair-rods, although it is to be understood that the invention is not limited to stair-rods of any particular material, and other metals, or even wood or plastics material for example, could alternatively be used.

Referring first to Fig. 1, there is shown a stair-rod, illustrated generally at 10, fitted between a pair of facing walls 12a and 12b. These could be either true walls or the side members of the staircase. The stair-rod 10 is formed in three parts. The first part 14 comprises a cylindrical rod portion which is provided at one end with a reduced diameter spigot 16. At its other end the rod 14 is provided with a reduced diameter spigot 18 and, outwardly of the spigot, an externally screw-threaded stub 20. The second portion of the stair-rod 10 is a socket, indicated generally at 22, which comprises an end plate 24 which has a flat surface for abutment with the wall 12b. The socket portion 22 is provided with a cylindrical bore 26 in which a spring 28 is located. This is preferably a steel spring. The third portion of the stair-rod, indicated generally at 30, is a similar socket portion, which also has an outer end plate 32 and an axial bore 34. Here however, the bottom of the bore 34 is provided with a screw thread 36 which is adapted for engagement with the screw-threaded stub 20 on the rod 14.

In use, the socket portion 30 is screwed on to one end of the rod 14, and the spigot 16 is pushed into the bore 26 in the other socket portion 22. The stair-rod can then be fitted in place on the stair by appropriate rotation of the threaded socket portion 30 so that the overall length of the stair-rod 10 is such that the spring loaded movement made possible by the spring 28 will take up the slack between the facing walls 12a and 12b and enable the stair-rod to be held firmly in place between those walls without the requirement for any fastening brackets. The provision of the screw-threaded socket portion 30 at one end of the stair-rod means that minor

errors in measurement of the distance between the facing walls 12a and 12b can be catered for. In order to remove the stair-rod 10 from the staircase for cleaning, etc., it is simply necessary to pull the socket portion 22 axially away from the wall 12b, compressing the internal spring 28, whereupon the whole rod can then be removed.

A second embodiment of stair-rod in accordance with the invention is shown in Fig. 2. Here again the stair-rod is in three parts, comprising a central cylindrical rod portion 40 and end portions 42 and 44, each of which have an ovoid outer end piece 46 for abutment with the respective walls 12a and 12b. In this embodiment the two ends of the cylindrical rod 40 are provided with internal bores. The bore 48 at one end of the rod receives a spigot 50 on the end portion 44 and contains a spring 52. The bore 54 at the other end of the rod 40 is generally cylindrical but has a screw-threaded portion 56 at its inner end. This is engaged by an externally screw-threaded portion 58 at the outer end of a spigot 60 which constitutes a reduced diameter end portion of the end piece 42. Here again, the combination of the spring-loading provided by the spring 52 and the screw-threaded adjustment provided at the other end of the stair-rod enables the stair-rod to be readily fitted in place and detached, with due allowance for any minor errors in measurement of the spacing between the side walls 12a and 12b. For aesthetic reasons, ferrules 62 are positioned over the junctions between the respective parts of the stair rod, in order to mask these junctions.

Similar ferrules can of course be provided on the embodiment shown in Fig. 1.

Although the particular dimensions of the stair-rod will be determined by various parameters, particularly by the materials used, it is preferred that there should be the capacity for an overall length movement of about 1/4 inch (6mm), including about 1/8 inch (3mm) movement due to the compression/expansion movement of the spring.

Fig. 3 shows a further embodiment of stair-rod, which is here made in two parts only, comprising a cylindrical rod portion 70 which is provided at its outer end with a generally ovoid foot 72. Between the foot 72 and the cylindrical rod portion 70 the stair-rod has a section which is circumferentially grooved. The end of the cylindrical rod portion 70 remote from the foot 72 is provided with a cylindrical socket 74 having a depth of for example 9 to 12 mm. Within this socket 74 is located a spring 76. The other portion of the stair-rod consists of a detachable end piece 78 which has a spigot 80 at its inner end and an ovoid foot 82 at its outer end. The spigot 80 is dimensioned to be a sliding fit in the socket 74. Fig. 3 shows the stair-rod in its assembled position between the side walls 12a and

12b, with the spigot 80 seated in the socket 74 and biased outwards by the force of the spring 76. In order to remove the stair-rod from the staircase it is simply necessary to push the two parts of the stair-rod together slightly, compressing the spring 76 and freeing the feet from the respective walls. A ferrule 84 is shown positioned on the cylindrical rod portion to mask the junction between the two parts of the stair-rod. The other ferrule 84 is simply provided to give "visual" balance.

Claims

1. A stair rod formed in at least two parts and having axial outer end surfaces for abutting engagement with opposing sides of a staircase, the stair-rod incorporating spring means providing for relative longitudinal movement of the parts thereof.

2. A stair-rod according to claim 1, which includes screw-threaded adjustment means to permit longitudinal relative movement of the parts of the stair-rod.

3. A stair-rod comprising a central rod portion and first and second outer end portions each of which has an outer end face for abutting engagement with opposing sides of a staircase, spring means between the rod portion and one outer end portion to permit relative movement thereof, and adjustment means between the rod portion and the other outer end portion to permit relative movement thereof.

4. A stair-rod according to claim 3, in which the adjustment means is a screw-threaded mechanism.

5. A stair-rod according to claim 3, in which the fitting of the rod portion to the outer end portions is by spigot and socket joints.

6. A stair-rod according to claim any preceding, in which the maximum relative movement of the parts of the stair-rod is about 1/4 inch (6mm).

Neu eingereicht / Newly filed
Nouvellement déposé

