The invention relates to a wall rail system for a shelf system or similar, comprising at least one wall rail which is embodied as a U-shaped profile, comprising a rear part which is secured to a wall, two lateral limbs which are oriented away from the wall, one rear-sided cavity which extends in the longitudinal direction on the side of the rear part which is oriented towards the wall, and at least one connecting element for connecting the two wall rails which push against each other in the longitudinal direction, said connecting element being received in a connected state of the two wall rails in the rear-sided cavity. The connecting element reliably connects, fixes, and aligns the rails in relation to each other without engaging in the usable space between the lateral limbs and the rear side of the U-profile.
WALL RAIL SYSTEM

FIELD OF THE INVENTION

[0001] The invention relates to a wall rail system for suspending shelf supports or similar, in order to form a shelf system which can be used in a flexible and versatile manner.

BACKGROUND OF THE INVENTION

[0002] Such known shelf systems are commonly used and have proved to be practical in domestic and commercial applications as a means of providing a large surface area for storing books, goods, files and similar, for example. Since such shelf systems can be extended upwards and towards the side in any manner, they offer a high degree of flexibility.

[0003] In some situations, especially in commercial applications, shelf heights of three metres, four metres or more are common. For reasons of transport, storage and handling, however, wall rails of more than 1.5 to 2 metres are impractical and uncommon. It is therefore necessary to mount two or more wall rails one above the other. This results in a need for fixing means which will enable two wall rails abutting with one another in the longitudinal direction to be oriented with respect to one another and secured to one another.

[0004] A common type of vertical wall rails are so-called U-section rails, whereby a rear part parallel with the wall is secured to the wall, from which rear part two lateral limbs extend forwards. The limbs may be provided with bores, orifices or similar for suspending shelf supports or similar or vertical notches for guiding moving retaining elements or similar. To avoid restricting the use of U-section rails, the space formed between the rear part and lateral limbs should be as uncumbered as possible.

[0005] GB-A-1 503 214 discloses a wall rail in the form of a U-shaped section with a rear part which can be secured to a wall and two lateral limbs facing away from the wall and a groove extending in the longitudinal direction of the wall rail which forms a wall-side cavity.

[0006] Posts for free-standing shelves are known from U.S. Pat. No. 3,480,155, which are provided with a plug-in connecting element for connecting two shelf posts abutting with one another in the longitudinal direction.

[0007] EP-A-095 021 discloses ceiling or wall panel strips with a C-shaped cross-section, which abut flush with one another at a connecting point and are connected to one another by means of panel connectors, which are likewise C-shaped, which panel connectors are inserted at the side flanks of the C-shaped section.

SUMMARY OF THE INVENTION

[0008] Accordingly, the objective of this invention is to propose a wall rail system with at least a wall rail and a connecting element which enables two wall rails with a U-shaped cross-section abutting with one another in the longitudinal direction to be reliably secured and the wall rails oriented with respect to one another without essentially restricting the usable space between the lateral limbs and the rear part of the U-section.

[0009] In order to achieve this objective, a wall rail system is proposed by the invention, comprising at least one wall rail in the form of a U-shaped section with a rear part which can be secured to a wall and two lateral limbs facing away from the wall and a rear-side cavity extending in the longitudinal direction at the face of the rear part directed towards the wall, and a connecting element for connecting two wall rails abutting with one another in the longitudinal direction, which connecting element is accommodated in the rear-side cavity when the wall rails are in a connected state.

[0010] The connecting element thus secures the two wall rails abutting with one another at their end faces. However, because it is accommodated in the cavity formed on the wall-side behind the rear part of the wall rail, the connecting part does not project into the usable space formed between the two lateral limbs and the rear wall of the U-section wall rail. Accordingly, the connecting element does not obstruct the fixing or vertical movement of retaining elements or similar. The wall rail may therefore be of an extremely compact design.

[0011] In one example of a preferred embodiment, the wall rail has first and second orifices on at least one lengthways end and the connecting element has first and second projections on either side for engaging in the orifices provided in the wall rail. Due to the projections of the connecting element engaging in the respective orifices of the wall rails, the latter are connected to one another and secured against one another.

[0012] The first orifice may preferably be provided in the form of a slot disposed transversely to the longitudinal direction of the wall rail and the first projections are disposed at the end of the connecting element for engaging in the transversely disposed slots of mutually abutting wall rails, thereby causing the relative position of the wall rails to be fixed in the longitudinal direction.

[0013] The second orifice may also preferably be provided in the form of an essentially rectangular cut-out at the end of the wall rail and the second projections of the connecting element are disposed centrally in order to engage in these second orifices, thereby causing the wall rails to be positioned with respect to one another in the transverse direction.

[0014] Due to the combination of a slot-shaped cut-out for positioning in the longitudinal direction and a rectangular cut-out for positioning in the transverse direction, a position can be reliably fixed in both the longitudinal direction and the transverse direction and the rails oriented relative to one another using a connecting element that is compact, as well as easy and very economical to manufacture.

[0015] The connecting element may preferably be an elongate, flat metal element with the first and second projections on either side. This is lightweight, small and inexpensive to produce.

[0016] The side-end first projections of the connecting element may subtend an angle of between 60° and 85°, preferably between 75° and 85°, with the base plane of the connecting element, which base plane is parallel with the wall and with the plane of the rear part of the U-section rail. This choice of angle makes it easier to fit and secure two wall rails to one another and produces an elastic force which connects the two rails to one another.

[0017] In one example of a preferred embodiment, the two central projections of the connecting element are connected to one another by means of a small notch or “crease”, which increases the strength of the connecting element.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The invention will be explained below on the basis of an example of a specific embodiment and with reference to the appended drawings.

[0019] FIG. 1 illustrates an example of an embodiment of the wall rail system proposed by the invention viewed in horizontal section.
FIG. 2 is a side view illustrating an example of an embodiment of the connecting element proposed by the invention.

FIG. 3 is a view from the front illustrating the two wall rails mutually abutting at their ends, based on one example of an embodiment of the invention.

FIG. 4 is a view of the rear face of two wall rails connected to one another by means of a connecting element.

FIG. 5 is a view in vertical section showing an example of an embodiment of the wall rail system proposed by the invention.

DETAILED DESCRIPTION OF THE INVENTION

The invention will be explained in detail below with reference to examples of specific embodiments.

FIG. 1 is a view in horizontal section illustrating an example of an embodiment of the wall rail system proposed by the invention. It comprises a wall rail 10 with a U-shaped cross-section and a connecting element 20 for connecting two wall rails abutting with one another at their lengthways ends (FIGS. 3-5), thus enabling two or more wall rails to be mounted one above the other on a wall, a partition wall, a frame or similar. The wall rail as a whole is provided in the form of a U-shaped section with a rear part 12 which can be secured to a wall 50 and two lateral limbs 14 standing out from the wall. Grooves, projecting termination elements or rails or similar may be provided at the front ends of the lateral limbs 14 remote from the wall for accommodating sliding elements or horizontally displaceable support elements. The shape and design of the lateral limbs 14 are of no consequence to this invention.

The rear part 12 of the wall rail 10, which can be secured to the wall by means of screws for example, has a portion 12a projecting forwards (i.e. away from the wall), which forms a cavity 15 at the wall side. The connecting element 20 for connecting two vertically abutting section rails 10 is accommodated in this cavity 15.

FIG. 2 illustrates an example of an embodiment of a connecting element 20 proposed by the invention. It is provided in the form of a substantially elongate sheet metal part and has two side-end projections 21 as well as two central projections 22. The two central projections 22 are connected to one another via a notch or "crease". However, the central projections could also be of a different shape. The side-end projections 21 may be disposed perpendicular to the main plane of the connecting element, which is parallel with the plane of the wall and with the rear part 12 of the wall rail 10, or preferably may subtend an angle α of between 60° and 85°, preferably between 75° and 85°, with this main plane. This angular position makes it easier to fit the connecting element and the wall rails. The connecting element 20, which may be made from an elastic material such as sheet metal, may also exert an elastic pulling force on the two wall rails to be connected.

FIG. 3 is a view from the front, i.e. in the direction looking towards the wall, illustrating an example of an embodiment of this invention comprising two wall rails 10 mutually abutting at their ends and FIG. 4 is a view from the rear illustrating two wall rails 10 connected to one another by a connecting element 20.

In their rear face portion, the wall rails 10 each have a forwardly projecting middle portion 12a, which forms a cavity 15 at its rear face (wall-side). The connecting element 20 for connecting two wall rails 10 abutting with one another by their ends is accommodated in this cavity 15, as illustrated in FIGS. 1, 4 and 5. Orifices 18 may be provided in the middle portion 12a of the wall rail 10 for securing the wall rail to the wall.

Orifices 17, 19 are also provided in the forwardly projecting middle portion 12a, close to the lengthways end of the wall rail 12. The first orifice 17 is provided in the form of a slot disposed in the transverse direction, whilst the second orifice 19 is of a rectangular shape and is disposed at the end of the middle portion 12a. In order to connect two wall rails to one another, the side-end projections 21 of the connecting element 20 engage in the transverse slots 17 and thus cause the wall rails to be secured to one another in the longitudinal direction (see also FIG. 5). The central projections 22 of the connecting element 20 engage in the two adjacent lying orifices 19 and cause the two rails to be secured to one another in the transverse direction. The exactly positioned engagement of the elongate connecting element 20 at a total of four points also causes a parallel orientation of the two U-shaped wall rails 10 with respect to one another.

The skilled person will realise that the exact shape of the connecting element 20 with the projections 21, 22 and the exact shape and position of the orifices 17, 19 in the wall rail 10 may vary within the context of this invention.

The invention therefore offers a wall rail system with a wall rail and a connecting element which enables the rails to be reliably connected, secured and oriented without encroaching into the usable space between the lateral limbs and the rear face of the U-section. The invention therefore provides a fixing solution which makes fitting very easy, compact and simple.

1. Wall rail system comprising:
   at least one wall rail provided in the form of a U-shaped section with a rear part which can be secured to a wall and two lateral limbs extending forwards from the rear part away from the wall as well as a rear-side cavity extending in the longitudinal direction at the rear face of the rear part directed towards the wall, and
   at least one connecting element for connecting two wall rails mutually abutting in the longitudinal direction, which connecting element is accommodated in the rear-side cavity when two wall rails are in a connected state.

2. Wall rail system as claimed in claim 1, in which the wall rail has first and second orifices in the rear part in at least one lengthways end and the connecting element has first and second projections at both sides for engaging in the orifices provided in the wall rail.

3. Wall rail system as claimed in claim 2, in which the first orifice is provided in the form of a slot disposed transversely to the longitudinal direction of the wall rail and the first projections of the connecting element are disposed at the side-ends for engaging in the first orifices of mutually abutting wall rails and cause a fixed relative positioning of the wall rails in the longitudinal direction.

4. Wall rail system as claimed in claim 2, in which the second orifice is a rectangular cut-out at the end of the wall rail and the second projections of the connecting element are disposed centrally for engaging in the second orifices of mutually abutting wall rails and cause the wall rails to be secured to one another in the transverse direction.
5. Wall rail system as claimed in claim 1, in which the connecting element is provided in the form of an elongate, flat metal element.

6. Wall rail system as claimed in claim 5, in which the first and second projections are located on either side of the connecting element and extend at an angle of between 60° and 85°, preferably between 75° and 85°, with the base plane of the connecting element disposed parallel with the rear face portion of the wall rail.

7. Wall rail system as claimed in claim 2, in which the first and second projections of the connecting element are connected to one another via a notch.

8. Wall rail system as claimed in claim 1, in which the rear-side cavity extending in the longitudinal direction of the rear part is formed by a forwardly projecting middle portion of the rear part.