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(54) **Locking device for the handle of an espagnolette lock.**

(57) A locking assembly comprising an axially rotatable locking rod (3) and radial handle assembly (6) associated with a door (2) is provided wherein the handle (6) has a perforated ear (7) secured thereto. The perforated ear (7) co-operates with a stud (10) and latch assembly of the type in which a latch plate (11) is held in a bifurcation of the stud (10) by a pivot (12) and the latch (11) is rotatable about one end (14) of a slot (13) through which the pivot (12) passes to align the latch with the stud (10) and allow the perforated ear (7) to move on and off the stud (10). The latch (11) can be rotated to a position transverse the stud (10) and be moved to locate the pivot (12) away from the end (14) about which it is rotatable. A seal can be installed in the said end (14) of the slot (13) to seal the door (2) closed.

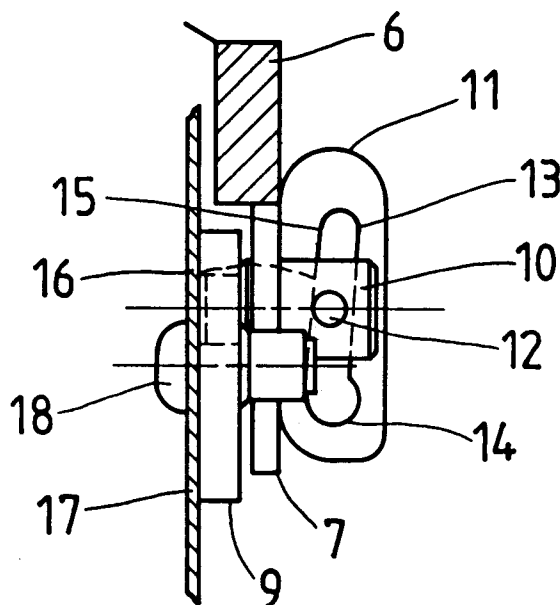


FIG. 3

THIS INVENTION relates to a handle lock assembly for door closures and, more particularly, door closures of the type in which a locking rod which extends up the entire height of a door is rotatable about its own axis, between positions corresponding to open and closed. The locking rod has latch arrangements located at each end thereof for locking the door to a surrounding frame, and a radially extending handle for rotating the locking rod.

In door locking arrangements of the above general type in which the locking rod is located rotatably in journals, bushes or the like, latching members are provided at each end thereof for co-operation with co-operant anchor members secured to a surround or door frame. The locking rod is generally rotatable by means of a radially extending handle which is either fixed rigidly to the locking rod or through a pivot. Such doors and locking arrangements are commonly used on transport containers (which term includes shipping containers and the like) as well as transport vehicle and truck bodies.

In many cases, and in particular the case of transport containers, it is desirable to lock or seal the handle in a closed position so that, if the lock or seal is broken at a destination, responsibility for damage or theft will lie with certain persons having had control of the container. Seals are most commonly employed.

As far as applicant is aware, the most widely used locking or sealing arrangement is one in which a locking rod handle is pivoted to its locking rod so as to be movable in the plane of the locking rod. A bracket or hook is provided into which the handle can be lifted so as to become located between a flange and the door itself. A seal plate, which is also in the form of a bracket and is pivoted to the door, can then be rotated to close the mouth whereby the handle entered the space between the flange and the door, and both the flange and seal plate have outwardly directed lugs for receiving a padlock or seal through aligned holes therein.

This arrangement is fairly complicated and necessitates that the handle be pivotally attached to the locking rod.

It is the object of this invention to provide a simplified form of locking or sealing arrangement for such locking rod handles.

It is to be understood that, in this specification, the term "stud and transverse latch assembly" is to be interpreted as meaning a latch assembly in which a stud is bifurcated at one end and receives therein an elongate plate having a slot extending along its length and wherein the elongate plate is held captive relative to the stud by means of a pivot passing between the limbs of the bifurcated end of the stud and through the slot.

The plate can be rotated about an end thereof to be co-axial with the stud to allow installation of a perforated member onto the stud, and can then be rotated about said end and installed in a transverse orientation to prevent said perforate member from being moved off the stud. Usually the slot extends at a slight incline to the edge of the plate so that the plate can be wedged between the pivot and the perforated member to firmly lock it in position on the stud against a base for the stud.

In some cases the one or both edges of the slot are corrugated to enable locking of the plate in a transverse position to be effected. Such latch arrangements have been known as "gravity locks" or latches as they can be orientated such that gravity acts on the plate to urge it into firmer wedging action between the pivot and a perforate member. However, the purpose to which such latch assembly is placed in this application is independent of the action of gravity.

In accordance with this invention there is provided a locking rod and handle assembly of the general type described above, generally in association with a door, and wherein the handle is provided with a perforated ear orientated in a plane parallel to the axis of the locking rod and the door has secured thereto a stud of a "stud and transverse latch assembly" (as above defined) adapted for co-operation with said perforated ear.

Further features of the invention provide for the stud to be carried by an anchor plate secured to the door by means of suitable fasteners; for the latch member to be orientated in a vertical plane; for the latch member to have corrugations in one edge of the slot for co-operation with the pivot of the stud; and, for the end of the slot about which the latching plate is to pivot to be enlarged into a part-circular hole for receiving a seal therein.

Preferably the fasteners whereby an anchor plate is secured to a door are of the swaged tension type in which a headed fastener having a series of circumferential grooves in the shank thereof is applied in tension to the parts being interconnected and a ferrule is swaged onto the grooved portion of the shank whilst it is under tension to firmly secure the parts together. Generally the shank has a weakened zone which snaps when the correct tension and deformation of the ferrule has been achieved. Such fasteners are widely known by a trade mark under which they have been sold, namely, "HUCK" bolts.

The invention also provides a transport container having at least one door provided with an axially rotatable locking rod and handle assembly substantially as defined above.

In order that the invention may be more fully understood, one embodiment thereof will now be described with reference to the accompanying drawings.

In the drawings:-

FIG. 1 is an elevation of a double door assembly of a side opening transport container;

FIG. 2 is a front elevation of a handle sealing or locking arrangement according to the invention; and,
 FIG. 3 is a sectioned side view of the handle locking arrangement of Figure 2.

In the embodiment of the invention illustrated in the drawings the handle locking or sealing arrangement according to the invention is applied to a double door assembly, generally indicated by numeral 1, of a side opening transport container (not shown). In this case each of the door sections 2 has a rotatable locking rod 3 extending up the height thereof, in known manner. A latch component 4 is attached to each end thereof projecting beyond the edge 5 of the door. Accordingly, by rotation of the locking rod 3 about its own axis, the doors can be locked top and bottom.

A locking handle 6 extends radially outwardly from each locking rod and serves as a means whereby the rod can be rotated.

In the locked condition of the door the handle 6 is adapted to be held against the surface of the door, in known manner, by a suitable latching, locking or sealing arrangement.

Referring now more particularly to Figures 2 and 3, the locking handle 6 has, in terms of this invention, an ear 7 welded thereto so that the ear is orientated in a plane parallel to the axis of the locking rod 3 and so that it can be located, in the closed position, in a plane parallel to the plane of the door. The ear has a laterally elongate and oversized aperture 8 therein.

Secured to the door itself is an anchor plate 9 carrying a stud and transverse latch assembly having a stud 10, bifurcated at its outer end to receive an elongate locking plate 11 forming the transverse latch member. The latter is held captive relative to the stud by a transverse pivot 12 (see Figure 3) passing through a slot 13 therein.

The slot extends along the length of the elongate plate at a slight incline to such length, in known manner. The plate can be rotated between a position in which it is substantially co-axial with the stud and in which position the aperture 8 of the ear can be passed over the latching member and stud, and a position in which it is transverse to the stud and in which it locks the ear 7 against the anchor plate 9.

The latching member is rotatable about one end 14 of the slot which is enlarged to a part-circular shaped hole. The direction of inclination of the slot 13 relative to the length of the latching member 11 is such that, in order to rotate the latching member about the pivot 12, the latching member must be moved so that the pivot is received in the part circular hole 14. The slot 13 is provided, in its side 15 which co-operates with the pivot 12 in the closed position, with corrugations 16 to enable it to be firmly wedged into position.

Preferably, to enable all components and the side wall of the door to be painted prior to installation of the latch, which can conveniently be galvanised, the anchor plate 9 is secured to the side wall, indicated by numeral 17, by a fastener 18 of the swaged tension type described above.

It will be understood that, in use, a seal can be secured in the part circular hole 14 at the end of the slot which will prevent the latching member from being moved to a position in which the ear can be moved off the stud.

In the manner described above an extremely simple yet highly effective sealing or locking arrangement for a door handle is provided.

Numerous variations can be made to the embodiment of the invention described without departing from the scope hereof which is limited only to the use of a stud and transverse latching member arrangement for locking a handle in its closed position.

Claims

1. A locking rod and handle assembly of the type wherein a locking rod 3 is rotatable about its own axis to effect locking of a door 2 to which the locking rod is attached, and the locking rod has a transverse handle 6 for effecting rotation thereof, the assembly being characterised in that the handle is provided with a perforated ear 7 orientated in a plane parallel to the axis of the locking rod and the door has secured thereto a stud 10 of a "stud and transverse latch assembly" (10, 11, 12, 13, 14, 15, 16) (as herein defined) adapted for co-operation with said perforated ear.
2. An assembly as claimed in claim 1 in which the stud is carried by an anchor plate 9 secured to the door by means of suitable fasteners 18.
3. An assembly as claimed in either of claims 1 or 2 in which the latch member 11 is orientated in the vertical plane.
4. An assembly as claimed in any one of the preceding claims in which the latch member has corrugations

16 in one edge 15 of the slot 13 for co-operation with the pivot 12 of the stud.

5. An assembly as claimed in any one of the preceding claims in which the end of the slot about which the latching plate is to pivot is enlarged to define a hole 14 for receiving a seal therein.

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6. An assembly as claimed in claim 2 in which the fasteners 18 whereby the anchor plate 9 is secured to the door are of the swaged tension type.

7. A transport container having at least one door provided with an axially rotatable locking rod and handle assembly as claimed in any one of claims 1 to 6.

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8. A transport container as claimed in claim 7 in which each door has a locking rod, handle and stud.

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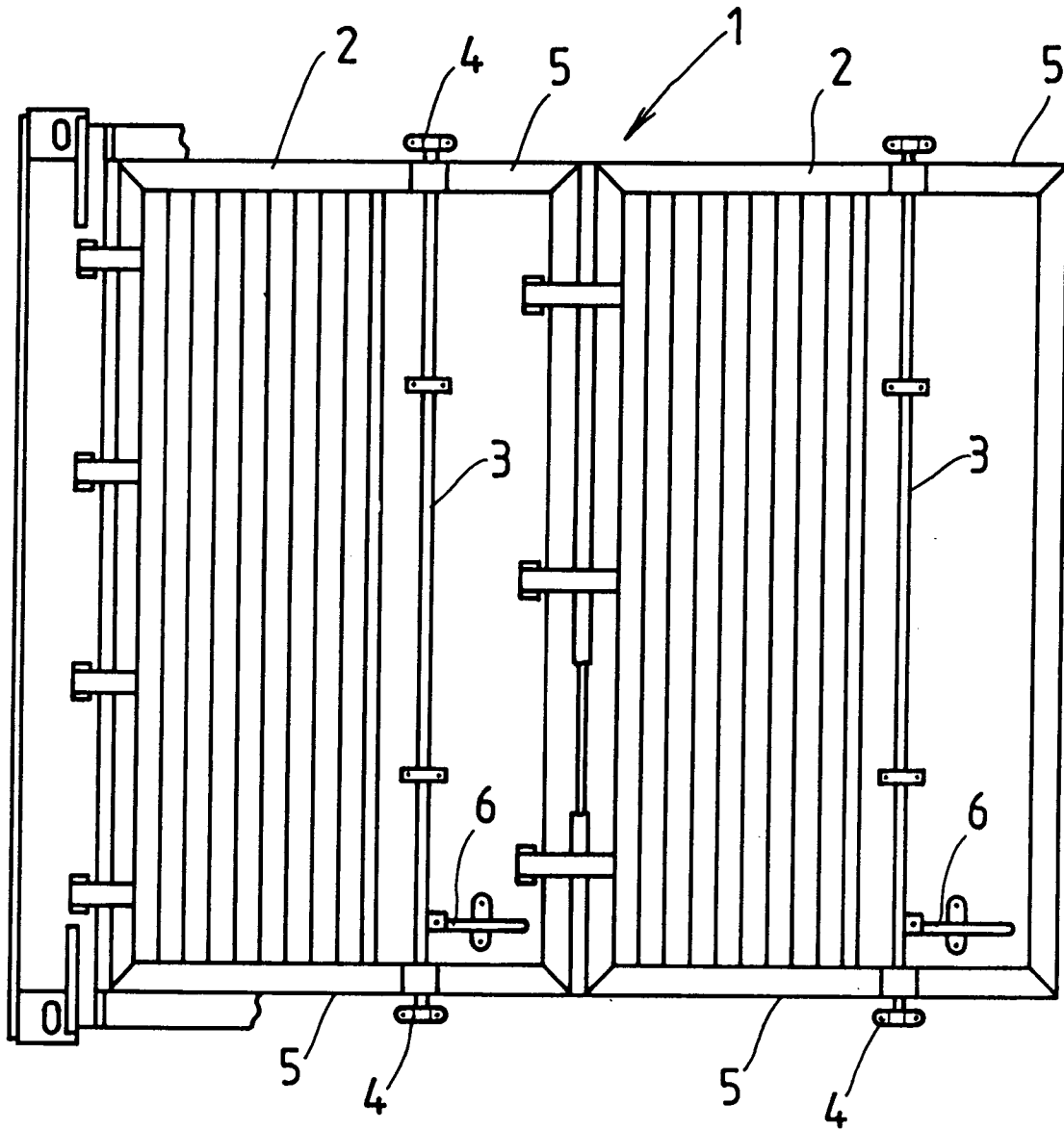


FIG. 1

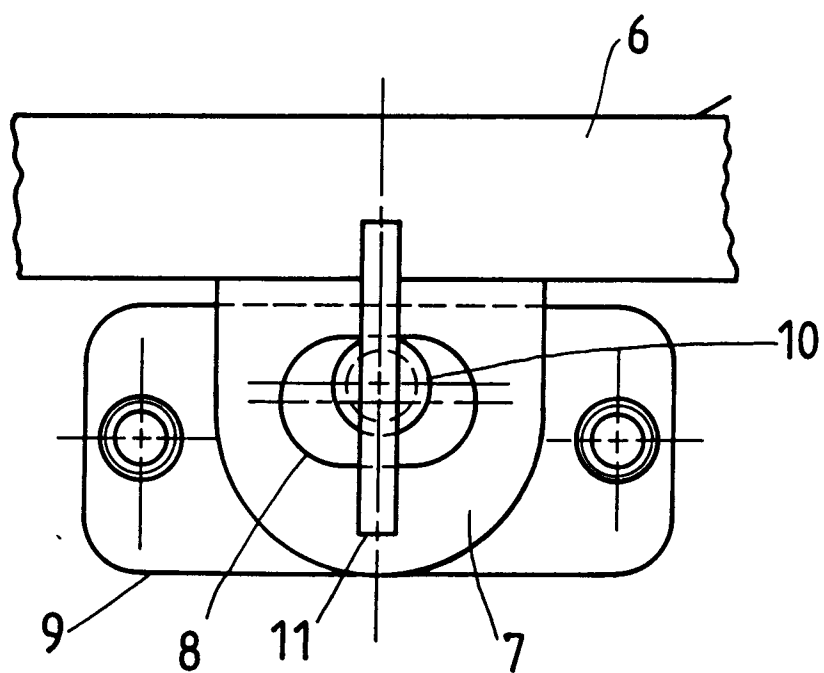


FIG. 2

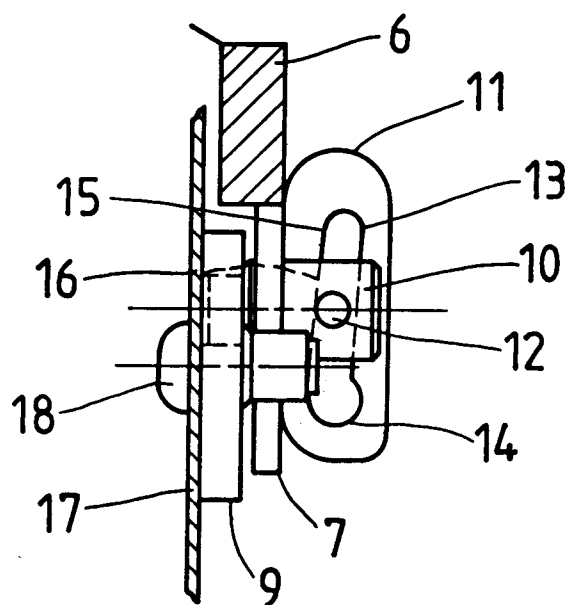


FIG. 3



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 93 30 7926

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
A	US-A-1 917 159 (SCHAAF) * the whole document *	1	E05B13/00 E05B65/16
A	EP-A-0 452 890 (KARL HILDEBRAND GMBH) * abstract; figures *	1	
A	FR-A-417 523 (RODIER ET AL.) * figures *	1	
A	FR-A-1 563 886 (BLAIR PRODUCTS S.A.)	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			E05B E05C
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		11 January 1994	Gimenez Burgos, R
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