DOOR LATCH ASSEMBLY

FIELD OF INVENTION

The present invention relates to a door latch assembly with particular but not exclusive application for latching a roller door.

BACKGROUND OF THE INVENTION

Latches are used on roller doors for security purposes. Because of the profile of the roller doors with a corrugated surface of ridges and grooves the selection and placement of latches is limited. The fixing of metal latches to the metal corrugated surface of roller doors leads in time to corrosion around the area of the fixed latch. The corrosion degrades the metal and results in weaknesses metal surfaces and eventually produces holes about the area of the latch leaving the door irreparably damaged. In this state, the roller door cannot be secured and the resultant holes expose the contents behind the roller door to the weather such as rain. When the roller door is irreparably damaged, the roller door can only be replaced.

Corrosion between two metal surfaces is accelerated in the presence of moisture particularly if it collects in already damaged areas. Rain and other weather contribute to increasing the rate of corrosion when the roller doors are outdoors. Corrosion is a constant problem with roller doors and latches.

OBJECT OF THE INVENTION

It is an object of the invention to provide a door latch assembly for a roller door which overcomes or at least partly ameliorates some of the abovementioned disadvantages of current roller door latches.

SUMMARY OF THE INVENTION

The invention was developed from continuous trial and error and refining dimensions of components to produce a door latch assembly that substantially prevents corrosion of the metal surface of a roller door.

In one aspect the present invention broadly resides in a door latch assembly for a roller door, said roller door having a corrugated surface of ridges and grooves; the door latch assembly including:

a non-metallic mounting means attachable to the door and substantially within one of the grooves of the corrugated surface;

a latching member locatable substantially within the mounting means;

a latch tongue operatively retained by the mounting means and movable between a retracted position and an extended position for engagement with a door jamb, the latch tongue has at least one protruding portion;

wherein the assembled door latch assembly has the latching member located substantially therein and the at least one protruding portion of the latch tongue extends

outwardly through the mounting means and the latching member to provide access to the latch tongue;

characterised in that the non-metallic mounting means further comprises a plurality of contact formations configured to locate within the groove of the corrugated surface of said roller door and space the mounting means from the corrugated surface to allow circulation of air to dry the corrugated surface.

Preferably each of the plurality of contact formations comprises a rib.

Preferably the installed door latch assembly is substantially recessed. More preferably the installed door latch assembly does not extend outwardly substantially beyond the ridges of the door corrugations.

The mounting means is spaced from the roller door surface to allow the circulation of air to dry the surface. The mounting means has a plurality of contact formations separating the mounting means from the roller door surface. Preferably each contact formation comprises a rib.

The mounting means is preferably made of plastics. The mounting means is more preferably made of UV stabilized plastics for use in outdoor areas.

The mounting means preferably includes a mounting plate having a recess to accommodate the latching member. The mounting means includes a mounting plate and a latching tongue backing plate.

The at least one protruding portion preferably forms a handle that can be used by a person to move the latch tongue.

The at least one protruding portion can form a handle and a locking configuration. In an alternate embodiment there are at least two protrusions where one forms a handle while the other forms part of a locking configuration.

Preferably, the latching member comprises at least one retaining arrangement for retaining the latching member to the latch tongue.

Preferably, the retaining arrangement is configured for retaining the door latch assembly to the roller door at a location substantially intermediate the width of the groove.

Preferably, the retaining arrangement retains both the latching member and the latch tongue to the roller door.

In one alternative embodiment, the securing arrangement is configured to retain the latching member to the latch tongue, and in turn retain the latch tongue to the roller door.

Preferably the retaining arrangement includes two or more fasteners. Preferably, the fasteners can be rivets, screws, or a bolt and nut arrangement.

Preferably, the latching member comprises a locking arrangement configured for locking the latch tongue in its extended position.

Preferably, the locking arrangement comprises a first locking formation coupled to the latch tongue, and a complementarily configured second locking formation securely associated with the latching member, the first locking formation and the second locking formation being complementarily configured to be locked together by a padlock when the latch tongue is in one position selected from its extended position and its retracted position.

Preferably, the first locking formation and the second locking formation each comprise apertures that align when the latch tongue is in its extended position.

With this embodiment a separate padlock type lock is preferably used to the first locking formation with the second locking formation.

In another preferred embodiment, the locking arrangement comprises lock engaging formations configured for engaging and locating a lock barrel.

Preferably, the locking arrangement comprises a lock barrel.

Preferably, the lock barrel comprises one or more biased lock members.

Preferably, the bias is a spring.

Preferably, the lock barrel is movable between a locked position and an unlocked position.

Preferably, the lock barrel is configured to be spring biased to move to its locked position and comprises latching means for holding the lock barrel in its locked position, and wherein the lock barrel is only moveable towards its unlocked position on operation of a key on the key barrel.

Preferably, the lock tongue comprises one or more selected from an aperture and a recess for receiving at least part of the lock barrel.

The door latch assembly can also include an over-locking or secondary locking arrangement. In one form the secondary locking arrangement includes a second set of overlapping apertures associated with the latching member and the latch tongue where a separate padlock type lock can be used to the door latch assembly in the latch tongue's extended position. In an alternate form an insert positionable within the latching member and serving to prevent retraction of the latch tongue can be located and locked in position to the latching member.

Preferably, the latch tongue is slidably moveable between its extended position and its retracted position.

In one embodiment, at least one or more of the latch tongues is comprised of resilient material.

In one embodiment, at least one or more of the latch tongues is comprised of plastic.

Preferably, the base plate is configured for guiding sliding movement of the latch tongue.

Preferably, the base plate is configured for guiding sliding movement of the latch tongue by means of a guiding arrangement.

Preferably the non-metallic mounting means can be of different sizes to substantially fit within corresponding sized recesses in different corrugations while all able to accommodate the same latching member.

In a further aspect, the invention broadly resides in a system for a door latch assembly for a roller door having a corrugated surface of ridges and grooves, the system comprising:

a non-metallic mounting means selected from a plurality of different sized non-metallic mounting means wherein each mounting means is attachable to the door and substantially within one of the grooves of the corrugated surface;

a latching member positionable within the non-metallic mounting means ; and a securing arrangement for securing the latching member and latch tongue substantially within the groove of the roller door

characterised in that each non-metallic mounting means further comprises a plurality of contact formations configured to locate within the groove of the corrugated surface of said roller door and space the mounting means from the corrugated surface to allow circulation of air to dry the corrugated surface.

In another aspect, the invention resides broadly in a method of installing a door latch assembly on a roller door having a corrugated surface of grooves and ridges, the method comprising the steps of:

selecting a non-metallic mounting means from a plurality of non-metallic mounting means each having alternative profiles for engaging roller doors of varying profiles, the selected non-metallic mounting means having a profile adapted for snug engagement substantially within a groove of the roller door to which the door latch assembly is to be attached;

locating a latching member into snug abutment with the selected non-metallic mounting means; and

securing the latching member and latch tongue substantially within the groove of the roller door;

characterised in that each non-metallic mounting means further comprises a plurality of contact formations configured to locate within the groove of the corrugated surface of said roller door and space the mounting means from the corrugated surface to allow circulation of air to dry the corrugated surface.

In another aspect, the present invention comprises a roller door assembly comprising:

a roller door having a corrugated surface of alternating grooves and ridges; and

a door latch assembly as described above attached to the door and substantially within one of the grooves of the corrugated surface.

Preferably, the door latch assembly is secured within the groove of the roller door at a location substantially intermediate the width of the groove.

The features described with one aspect apply also to other aspects of the invention where applicable. Furthermore different combinations of features are claimed and described even if not explicitly stated.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the present invention can be more readily understood reference will now be made to the accompanying drawings which illustrate different preferred embodiments of the invention and wherein:

Figure 1 is a rear isometric view of a first embodiment of a door latch assembly for use with a key barrel with its latch tongue in an extended position;

Figure 2 is a front isometric view of the door latch assembly of figure 1 with its latch tongue in an extended position;

CLAIMS

1. A door latch assembly for a roller door, said roller door having a corrugated surface of ridges and grooves, the door latch assembly including:

a non-metallic mounting means attachable to the door and substantially within one of the grooves of the corrugated surface;

a latching member locatable substantially within the mounting means;

a latch tongue operatively retained by the mounting means and movable between a retracted position and an extended position for engagement with a door jamb, the latch tongue has at least one protruding portion;

wherein the assembled door latch assembly has the latching member located substantially therein and the at least one protruding portion of the latch tongue extends outwardly through the mounting means and the latching member to provide access to the latch tongue;

characterised in that the non-metallic mounting means further comprises a plurality of contact formations configured to locate within the groove of the corrugated surface of said roller door and space the mounting means from the corrugated surface to allow circulation of air to dry the corrugated surface.

2. A door latch assembly as claimed in claim 1, wherein each of the plurality of contact formations comprises a rib.

3. A door latch assembly as claimed in any one of the above-mentioned claims, wherein mounting means is made of UV stabilized plastics.

4. A door latch assembly as claimed in any one of the above-mentioned claims, wherein the mounting means includes a mounting plate and a latching tongue backing plate.

5. A door latch assembly as claimed in any one of the above-mentioned claims, wherein the mounting means includes a mounting plate having a recess to accommodate the latching member.

6. A door latch assembly as claimed in any one of the above-mentioned claims, wherein the at least one protruding portion forms a handle that can be used by a person to move the latch tongue.

7. A door latch assembly as claimed in any one of the above-mentioned claims, wherein the at least one protruding portion can form a handle and a locking configuration.

8. A door latch assembly as claimed in any one of the above-mentioned claims, wherein the latching member comprises at least one retaining arrangement for retaining the latching member to the latch tongue.

9. A door latch assembly as claimed in any one of the above-mentioned claims, wherein the latching member comprises a locking arrangement configured for locking the latch tongue in its extended position.

10. A door latch assembly as claimed in claim 9, wherein the locking arrangement comprises a first locking formation coupled to the latch tongue, and a complementarily configured second locking formation securely associated with the latching member, the first locking formation and the second locking formation being complementarily configured to be locked together by a padlock when the latch tongue is in one position selected from its extended position and its retracted position.

11. A door latch assembly as claimed in claim 10 , wherein the first locking formation and the second locking formation each comprise apertures that align when the latch tongue is in its extended position.

12. A door latch assembly as claimed in any one of the claims 1 to 9, wherein the locking arrangement comprises lock engaging formations configured for engaging and locating a lock barrel.

13. A door latch assembly as claimed in claim 12, wherein the lock barrel is movable between a locked position and an unlocked position.

14. A door latch assembly as claimed in claim 9, wherein the door latch assembly also includes an over-locking or secondary locking arrangement.

15. A door latch assembly as claimed in claim 14, wherein the secondary locking arrangement includes a second set of overlapping apertures associated with the latching member and the latch tongue where a

separate padlock type lock can be used to the door latch assembly in the latch tongue's extended position.

16. A door latch assembly as claimed in claim 14, wherein the secondary locking arrangement includes an insert positionable within the latching member and serving to prevent retraction of the latch tongue.

17. A door latch assembly as claimed in any one of the above-mentioned claims, wherein the non-metallic mounting means can be of different sizes to substantially fit

within corresponding sized recesses in different corrugations while all able to accommodate the same latching member.

18. A system for a door latch assembly for a roller door having a corrugated surface of ridges and grooves, the system comprising:

a non-metallic mounting means selected from a plurality of different sized non-metallic mounting means wherein each mounting means is attachable to the door and substantially within one of the grooves of the corrugated surface;

a latching member positionable within the non-metallic mounting means; and

a securing arrangement for securing the latching member and latch tongue substantially within the groove of the roller door

characterised in that each non-metallic mounting means further comprises a plurality of contact formations configured to locate within the groove of the corrugated surface of said roller door and space the mounting means from the corrugated surface to allow circulation of air to dry the corrugated surface.

19. A method of installing a door latch assembly on a roller door having a corrugated surface of grooves and ridges, the method comprising the steps of:

selecting a non-metallic mounting means from a plurality of non-metallic mounting means each having alternative profiles for engaging roller doors of varying profiles, the selected non-metallic mounting means having a profile adapted for snug engagement substantially within a groove of the roller door to which the door latch assembly is to be attached;

locating a latching member into snug abutment with the selected non-metallic mounting means; and

securing the latching member and latch tongue substantially within the groove of the roller door;

characterised in that each non-metallic mounting means further comprises a plurality of contact formations configured to locate within the groove of the corrugated surface of said roller door and space the mounting

means from the corrugated surface to allow circulation of air to dry the corrugated surface.

20. A roller door assembly comprising:

a roller door having a corrugated surface of alternating grooves and ridges; and

a door latch assembly as claimed in any one of the abovementioned claims mounted attached to the door and substantially within one of the grooves of the corrugated surface.