

PATENT SPECIFICATION

(11) 1200 427

DRAWINGS ATTACHED

- (21) Application No. 22338/69 (22) Filed 1 May 1969
 (45) Complete Specification published 29 July 1970
 (51) International Classification E 05 c 1/08
 (52) Index at acceptance
 E2A 3B C8F D5BU



(54) LOCKS SUITABLE FOR USE ON GATES

(71) I, GOH HIOW LEE, a citizen of Singapore, of 15 Lorong Siglap, Singapore 15, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to locks. The locks here concerned are suitable for use on gates, particularly telescopic sliding gates.

According to the invention, there is provided a lock arrangement comprising a lock member and a keeper for it having first and second openings, there being first and second pins in the lock member which can slide along straight paths and enter the first and second openings respectively, to effect locking of the lock member to the keeper, and key-operated means in the lock member for forcing the pins to slide in opposite directions out of the openings to effect unlocking of the lock member and keeper.

For a better understanding of the invention, a constructional example will now be described with reference to the accompanying drawings in which:—

Figure 1 is a perspective view of a lock member, omitting some details,

Figures 2 to 4 are side views of the lock member and show some of the details,

Figure 5 is a perspective view of a keeper for the lock member, omitting some details,

Figures 6 to 8 are side views of the keeper and show the details, and

Figures 9 to 11 show details of a key-operated mechanism in the lock member.

The illustrated lock arrangement consists generally of a lock member 1 and a keeper 2 for it, both made of brass. In use for locking a telescopic sliding gate of the kind in which two telescopic panels extend from opposite side posts and meet in the middle when the gate is closed, the member 1 will be carried at the inner side of one panel and the member 2 at the inner side of the other

panel. If, however, the lock arrangement is to be used on a gate of the kind in which a single telescopic panel extends from one stationary post to another when the gate is closed, the member 2 will be fitted on one of the posts and the member 1 to the adjacent side of the sliding panel. The member 1 has a projecting portion 3 which enters a deep recess 4 in the member 2 so that the members 1, 2 may be termed the "male" and "female" members of the lock arrangement.

The projecting portion 3 of the male member is formed with a bore 5 which extends through the portion 3 from top to bottom thereof and is widened at both ends to provide shoulders 6 and 6A. In this bore 5 slides a pin 7 which is urged downwardly by a spring 8. The pin has a flange 9 at its upper end and below this a portion 10 of increased thickness and a portion 11 of further increased thickness. Where the portions 10 and 11 meet a shoulder 12 is formed. The spring 8 surrounds the portion 10 and is compressed between the shoulders 12 and 6. A similar pin 7A with parts 9A to 12A, corresponding to the parts 9 to 12 described above, slides in the bore 5 and is urged upwardly by a spring 8A.

The upper and lower surfaces of the projecting portion 3 of the male member are convexly curved, as can be seen from Figures 1 and 2, and the surfaces of the female member on opposite sides of the recess 4 are concavely curved, as can be seen from Figures 5 and 8. Thus entry of the male member into the female member is possible only by movement of the male member to the left and/or the female member, to the right, considering Figures 3 and 7. To assist entry, the leading part of the male member is bevelled at top and bottom, as indicated at 13 and the leading edges of the portions 11 and 11A are bevelled, as indicated at 14 and 14A.

The female member is formed with two openings 15 and 15A into which the ends of the portions 11 and 11A of the pins 7 and

7A are pushed by the springs 8 and 8A when the male member is fully home in the female member, whereby the members 1 and 2 are locked together.

5 In order to effect unlocking, a rotatable lock barrel 16 is provided in the male member 1. This is formed with five radial holes, each of which receives a brass pin 17. The lock barrel is part of an assembly which can be
10 pushed into a recess in the male member and which also includes a stationary part 18 which is formed with five holes which, in the position of the barrel 16 illustrated in Figure 9, are aligned with the five holes in
15 the inner end of a blind hole in the part 18. each contain a brass pin 19 which is urged downwardly by a spring 20 bearing upon the inner end of a blind hole in the part 18. A key 21 can be inserted in the barrel as
20 illustrated. The shank of the key is formed with five depressions, one for each pin 17. The depth of each depression and the length of the associated pin 17 are so chosen in relation to one another that when the key 19 is inserted the tops of all the pins 17 lie
25 on the curved surface of the barrel so that the barrel can be turned simply by turning the key. If a key of different dimensions were used, at least one of the pins 17 would be forced by the key into the adjacent hole in the part 18, and/or at least one of the pins
30 19 would be forced by the associated spring 20 to enter the adjacent hole in the barrel 16. It would then be impossible to turn the barrel with that key.

The inner end of the barrel 16 is formed with a projection 23 which lies below the flange 9 on the pin 7 and above the flange 9A on the pin 7A. When the barrel 16 is
40 turned in the appropriate direction by the proper key, the projection 23 drives the pin 7 upwardly and the pin 7A downwardly, against the actions of the springs 8 and 8A, until the portions 11 and 11A of the pins
45 7 and 7A become fully retracted into the hole 5. Then the members 1 and 2, if they were previously locked together, become unlocked and can be pulled apart.

50 The projection 23 prevents the pins 7 and 7A from coming right out of the lock member 1.

Holes 22, for fixing screws, are formed through both of the members 1 and 2.

WHAT I CLAIM IS:—

1. A lock arrangement comprising a lock member and a keeper for it having first and second openings, there being first and second pins in the lock member which can slide along straight paths and enter the first and second openings respectively to effect locking
60 of the lock members to the keeper and key-operated means in the lock member for forcing the pins to slide in opposite directions out of the openings to effect unlocking of the lock member and keeper. 65

2. A lock arrangement according to claim 1 in which the key-operated means comprises a barrel which can be turned only by an appropriate key and on one end of a barrel is a projection, there being flanges on the
70 pins which are engaged by the projection to force the pins to move in opposite directions as aforesaid when the barrel is turned.

3. A lock arrangement according to claim 2 in which the projection prevents the pins
75 from coming right out of the lock member.

4. A lock arrangement according to any preceding claim in which there are spring means to urge the pins into the openings.

5. A lock arrangement according to any preceding claim wherein the lock member is formed with a projection and the keeper is formed with a corresponding recess which receives the projection when the lock member and keeper are locked together. 90

6. A lock arrangement according to claim 5 in which the projection is convexly curved and the walls of the recess are concavely curved so that the projection can be pushed in one direction only into the recess. 95

7. A lock arrangement substantially as hereinbefore described with reference to the accompanying drawings.

HASELTINE LAKE & CO.,
Chartered Patent Agents,
28, Southampton Buildings,
Chancery Lane,
London, W.C.2.
Agents for the Applicant.

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5 In order to effect unlocking, a rotatable lock barrel 16 is provided in the male member 1. This is formed with five radial holes, each of which receives a brass pin 17. The lock barrel is part of an assembly which can be pushed into a recess in the male member and which also includes a stationary part 18 which is formed with five holes which, in the position of the barrel 16 illustrated in Figure 9, are aligned with the five holes in the inner end of a blind hole in the part 18. 15 each contain a brass pin 19 which is urged downwardly by a spring 20 bearing upon the inner end of a blind hole in the part 18. A key 21 can be inserted in the barrel as illustrated. The shank of the key is formed with five depressions, one for each pin 17. The depth of each depression and the length of the associated pin 17 are so chosen in relation to one another that when the key 19 is inserted the tops of all the pins 17 lie on the curved surface of the barrel so that the barrel can be turned simply by turning the key. If a key of different dimensions were used, at least one of the pins 17 would be forced by the key into the adjacent hole in the part 18, and/or at least one of the pins 19 would be forced by the associated spring 20 to enter the adjacent hole in the barrel 16. It would then be impossible to turn the barrel with that key.

35 The inner end of the barrel 16 is formed with a projection 23 which lies below the flange 9 on the pin 7 and above the flange 9A on the pin 7A. When the barrel 16 is turned in the appropriate direction by the proper key, the projection 23 drives the pin 7 upwardly and the pin 7A downwardly, against the actions of the springs 8 and 8A, until the portions 11 and 11A of the pins 7 and 7A become fully retracted into the hole 5. Then the members 1 and 2, if they were previously locked together, become unlocked and can be pulled apart.

45 The projection 23 prevents the pins 7 and 7A from coming right out of the lock member 1.

Holes 22, for fixing screws, are formed through both of the members 1 and 2.

WHAT I CLAIM IS:—

1. A lock arrangement comprising a lock member and a keeper for it having first and second openings, there being first and second pins in the lock member which can slide along straight paths and enter the first and second openings respectively to effect locking of the lock members to the keeper and key-operated means in the lock member for forcing the pins to slide in opposite directions out of the openings to effect unlocking of the lock member and keeper.

2. A lock arrangement according to claim 1 in which the key-operated means comprises a barrel which can be turned only by an appropriate key and on one end of a barrel is a projection, there being flanges on the pins which are engaged by the projection to force the pins to move in opposite directions as aforesaid when the barrel is turned.

3. A lock arrangement according to claim 2 in which the projection prevents the pins from coming right out of the lock member.

4. A lock arrangement according to any preceding claim in which there are spring means to urge the pins into the openings.

5. A lock arrangement according to any preceding claim wherein the lock member is formed with a projection and the keeper is formed with a corresponding recess which receives the projection when the lock member and keeper are locked together.

6. A lock arrangement according to claim 5 in which the projection is convexly curved and the walls of the recess are concavely curved so that the projection can be pushed in one direction only into the recess.

7. A lock arrangement substantially as hereinbefore described with reference to the accompanying drawings.

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