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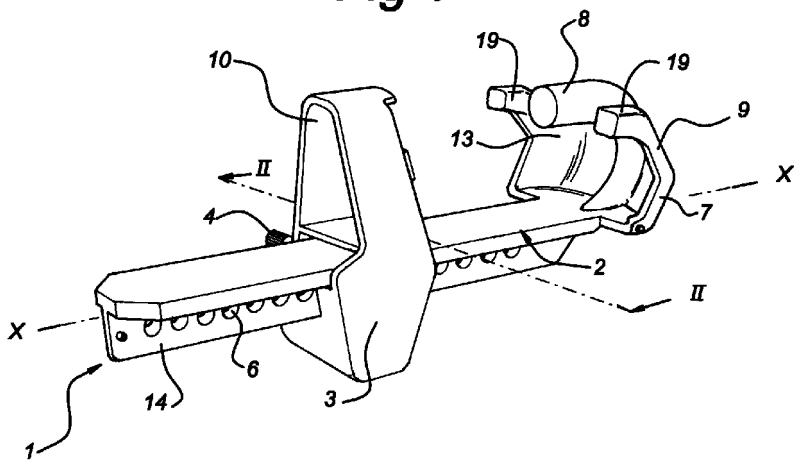
(54) Lock assembly

(57) Lock assembly consisting of a slider (3) that can be moved along a guide (2). The guide (2) is provided at one end with a bent-over section (7) consisting of a pin (8) that interacts with an opening (10) in the slider. The slider (3) can be locked in various positions with respect to the guide with the aid of a bolt-lock construction. Wings (9) are arranged adjoining the pin (8) to prevent turning of the lock assembly with respect to the object to be protected. By this means the lock assembly can be adapted to various constructions which have to be protected.

Fig 1



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Description

[0001] The present invention relates to a lock assembly comprising two parts which can be moved with respect to one another and are lockable with respect to one another, said parts together delimit an accomodation for receiving part of a construction to be protected, such as part of a container, wherein the first part comprises a guide for the second part and is provided at one end with a bent-over section that extends essentially parallel to the X-X axis of said guide and wherein the second part comprises a body that can be moved along said guide, extending perpendicularly to the axis of said guide and being provided with an opening for accommodating the pin.

[0002] A lock assembly of this type is disclosed in US 5 181 403 A. Skips, containers and the like are transported with the aid of lorries and the like to the place of use, where they are removed from the vehicle in order to be used. This use can be the storage of material, but other applications are also generally known. In practice it has been found that theft occurs during this stage when the skip, container and the like has been separated from the vehicle. For this purpose the thief will use his own vehicle to lift up the skip again and drive it away.

[0003] In order to prevent this abuse it is proposed in the prior art to fit padlocks and the like on the interlocking fixings of the vehicle and the container, skip or the like. These interlocking fixings can be hooks, sleeves, eyes and the like. As a result of, for example, fitting a padlock on an eye it is no longer possible to attach a hook of a chain on the vehicle to such an eye.

[0004] However, it has been found that security features of this type on the one hand are inadequate because they can easily be sabotaged and, on the other hand, are not suitable for universal use, that is to say are suitable only for the protection of part of a container or skip. US-A 5 181 403 discloses a padlock consisting of a U-shaped bracket, one end of which is accommodated in a housing and another end of which is provided with a tubular part that is slid over the housing. Locking can take place in various positions. Such a lock is intended in particular for receiving the front fork of a motorcycle or the steering wheel of a car. Such a lock is not suitable for securing large and heavy objects, such as the containers, skips or the like described above. With such a lock it cannot always be guaranteed that both ends of the second part drop in and, respectively, around the first part. Moreover, with such heavy objects it is simple to exert appreciable levering forces with the aid of crowbars and the like, as a result of which such a lock construction fails.

[0005] US 5 375 442 A discloses a wheel clamp. This construction too can easily be opened by exerting torsional forces. Furthermore, a padlock is used at the free protruding end of the locking pin, as a result of which optimum security can never be provided.

[0006] The aim of the present invention is to avoid the disadvantages described above and to provide a lock assembly which is suitable for universal use and is highly resistant to sabotage.

[0007] This aim is achieved with a lock assembly as described above in that the bent-over section comprises a pin with wings adjoining the pin on either side.

[0008] The construction according to the invention makes adaptation to an accommodation of various sizes possible. That is to say it is possible for an enclosed structure to be obtained by interaction of the pin and the associated accommodation. This is important, for example, in the case of containers where the fixing to a vehicle or the like consists of an eye. By closing off this eye it is not possible to attach a hook of a chain on a vehicle thereto and the container cannot easily be stolen. On the other hand, it is also possible with this construction to shut off a sleeve, which sleeve is used for attaching to a lifting installation on a lorry. A pin of the lock assembly can be moved in such a sleeve. Because the body can be fixed in various positions along the guide, optimum adaptation of the receptacle delimited by the lock assembly can be provided. As a result of the presence of wings alongside the pin, it is possible to counteract torsional movement exerted on the lock, as a result of which the freedom of movement of the lock with respect to the object to be protected is appreciably restricted.

[0009] The lock construction can comprise any construction known in the state of the art. For instance, it is possible to fix the body with respect to the guide using, for example, a high-security padlock.

[0010] However, it is preferred to fit a lock in the body. The body must be of fairly robust construction so that it is possible to accommodate such a lock construction such that it is well protected. Such a lock construction comprises a bolt or interacts with such a bolt. The latter construction is more robust because the forces applied by the lock are then never bolting forces, that is to say forcing the lock does not result in unlocking, whilst exerting stress on the bolt does not subject the lock to excessive strain. More particularly, the lock construction is designed such that the lock can be fitted and fixed in place only after the two parts of the lock assembly have been taken apart. That is to say, when the two lockable parts are in the fitted position only that part of the lock in which a key or the like has to be inserted is accessible.

[0011] According to a further advantageous embodiment of the invention, the central pin is delimited on either side by further pins which extend beyond the wings.

[0012] As a result the wall of the receptacle for the central pin is protected against sabotage and more positive locking of the parts with respect to one another is produced. Moreover, as a result of the pins being some distance away on either side of the central pin it is possible to lock some container constructions with better

security.

[0013] According to a further advantageous embodiment of the invention the bent-over part that is located between the guide and the projecting part of the pin is preferably of dish-shaped construction, so that a cavity is produced within which certain parts of a container can be accommodated.

[0014] The lock according to the invention is suitable for universal use and can be of heavy-duty construction if desired, so that it cannot be forced within the time set for this by various authorities. In addition to the application described above, it is possible, for example, to fit the lock around the caterpillar tracks of tracked vehicles, as a result of which theft is prevented because it is no longer possible to move them. Depending on the use, adaptations will be made to the lock assembly.

[0015] The invention will be explained in more detail below with reference to an illustrative embodiment shown in the drawing. In the drawing:

Fig. 1 shows a perspective view of the lock assembly according to the invention.
Fig. 2 shows the section along line II-II in Fig. 1; and
Fig. 3 shows a use of the lock assembly according to the invention on part of a container.

[0016] In the drawing the lock assembly according to the invention is shown by 1. This lock assembly consists of a guide part 2 on which a slider or body 3 has been fitted. As can be seen from Fig. 2, the slider 3 is designed to move over the T-section 14 of the guide 2. One section thereof is provided with openings 6 which are able to interact with a locking pin 4 fitted in the slider 3. This locking pin 4 can be locked or unlocked under the influence of lock 5. The various aspects are illustrated in Fig. 2, from which it can be seen that in the locked position a lip 11 of the lock drops into a recess 12 close to the end of pin 4. A T-section provides a particularly stable guide. This is in contrast to hollow or round sections.

[0017] The guide is provided with a bent-over section 7 close to one end thereof. This bent-over section 7 extends in the first instance perpendicularly to the axis X-X of the T-section 14 and then curves back to end with pin 8 parallel to this axis X-X. As a result it is possible to accommodate pin 8 in receptacle 10 of slider 3. Alongside central pin 8 there are wings 9 located some distance away. In the locked position, the enclosure around receptacle 10 drops into the space between the pins 8 and 19. As a result of the presence of these wings, which may or may not be provided with projecting parts or pins 19, twisting of the lock in the direction of arrow 21 in Fig. 3 is made appreciably more difficult.

[0018] It will be understood that the choice of materials will differ depending on the application. This relates to the type of material and to the thickness thereof and the type of heat treatment.

[0019] In Fig. 3 the use of lock assembly 1 according to the invention on a socket 21 of a container 20 is shown. It can be seen from this figure that the lock according to the invention can be adapted in an optimum manner to the condition in question. In the position shown in Fig. 3 it is no longer possible to lift container 20 and to place this on a vehicle in the correctly secured position and abuse is thus counteracted.

[0020] It is, of course, also possible to move slider 3 in Fig. 1 fully to the right, as a result of which pin 8 moves into receptacle 10. As a result of the dish-shaped design of the bent-over section 7, which is indicated by 13, a cavity is delimited, together with the slider 3, through which, for example, a pick-up hook of a container or the like can extend.

[0021] However, if the object to be protected is "longer", the slider will then be moved away from the bent-over section 7.

[0022] It will be understood that a multiplicity of container constructions and more particularly loading eyes and the like of containers and skips and the like can be protected by means of the invention. Of course, slight modifications can be made to the lock construction in order to adapt this to a specific type of container eye, lip, projection, socket and the like. Such modifications are obvious after reading the above description and fall within the scope of the appended claims.

Claims

1. Lock assembly (1) comprising two parts (2, 3) which can be moved with respect to one another and are lockable with respect to one another, which parts together delimit an accommodation for receiving part of a construction to be protected, such as part of a container (20), wherein the first part (2) comprises a guide for the second part and is provided at one end with a bent-over section (7) that extends essentially parallel to the X-X axis of said guide and wherein the second part (3) comprises a body that can be moved along said guide, extending perpendicularly to the axis of said guide and being provided with an opening (10) for accommodating the pin, characterised in that the bent-over section comprises a pin (8) with wings (9) adjoining the pin on either side.

2. Lock assembly according to Claim 1, wherein the body (3) is provided with a bolt (8) which is lockable by means of a lock and is designed to interact with openings (6) made in said guide.

3. Lock assembly according to Claim 2, wherein the bolt is a part separate from the lock.

4. Lock assembly according to one of the preceding claims, wherein said wings are provided with freely projecting parts (19).

5. Lock assembly according to one of the preceding claims, wherein that part (13) of the bent-over section that extends essentially perpendicularly to the axis of the guide is of dish-shaped construction.

6. Lock assembly according to one of the preceding claims, wherein the guide comprises a T-section.

Fig 1

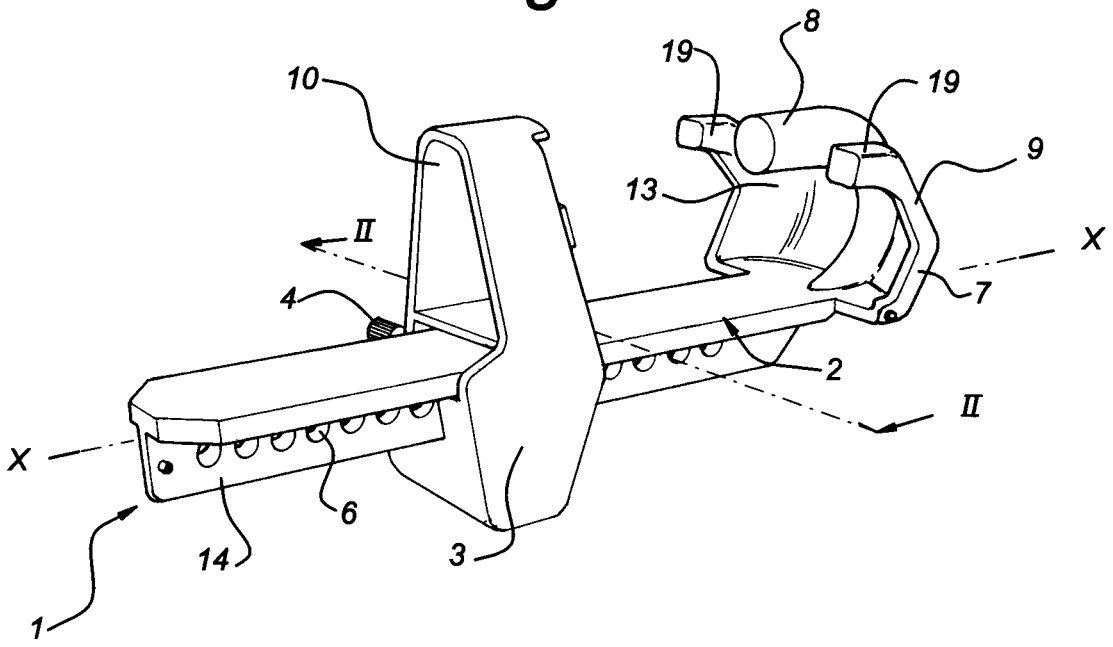


Fig 2

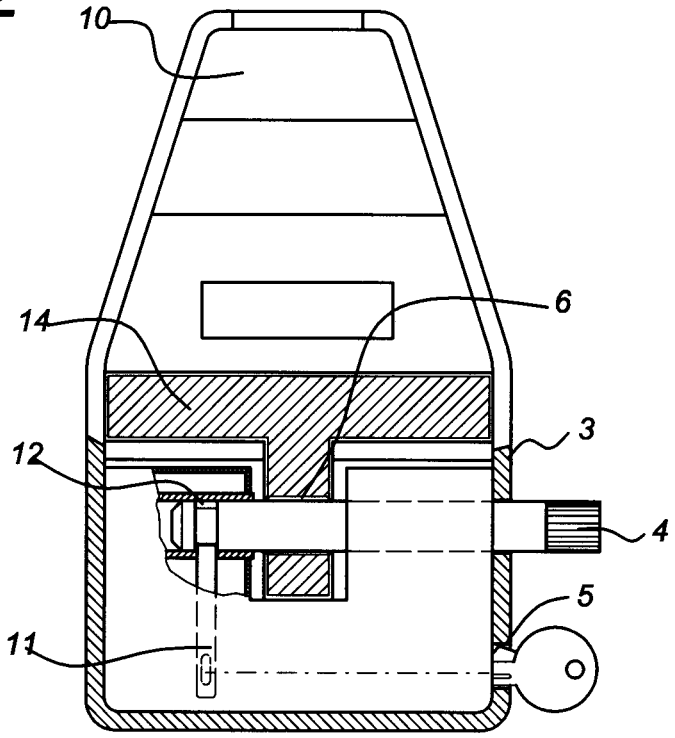
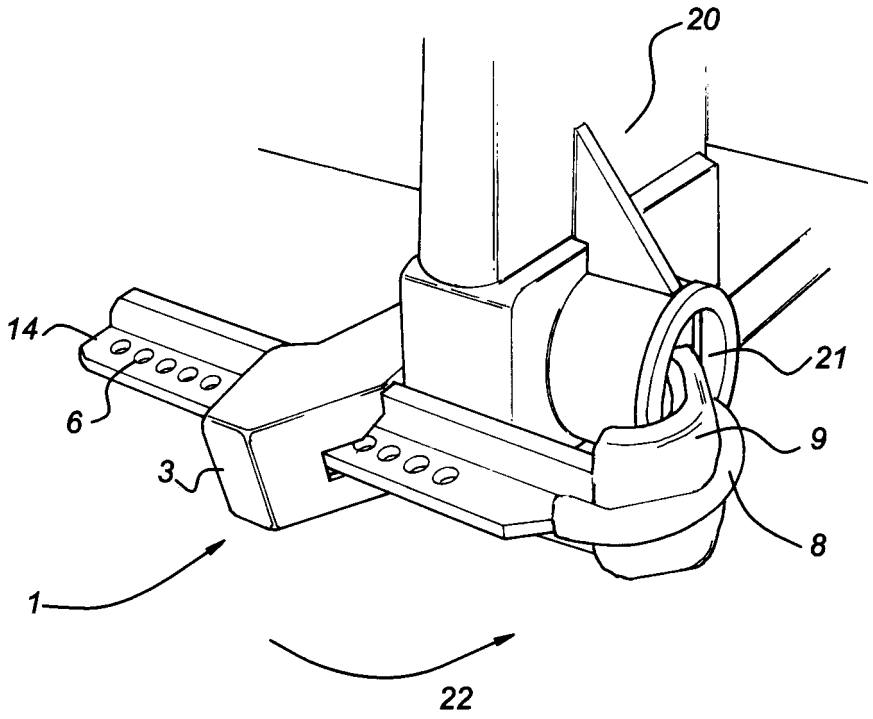


Fig 3



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EUROPEAN SEARCH REPORT

Application Number
EP 00 20 3404

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	3 January 2001	Westin, K

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Application Number
EP 00 20 3404

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