



The invention relates to a connecting lock for connecting, in detachable manner, two parts of a stand, especially a supporting member and a frame member, in which the connecting lock is fixedly arranged in the frame member, which is in the form of a hollow section, and has, in a housing, at least one fixing member by means of which the connecting lock and thus also the frame member can be connected, in detachable manner, to the supporting member, and in which a cam is rotatably mounted in the housing of the connecting lock, by means of which cam the fixing member is so guided in the housing that it is movable longitudinally, as a result of which a component of the fixing member that projects from the end face of the housing can be introduced into an undercut groove in the supporting member and fixed therein, and in which the cam head of the cam, which can be pressed into the housing, is able to engage in a bore in the frame member.

Connecting locks of this type are known in a variety of designs, and they are used especially for the connection of supporting members and frame members which are employed, inter alia, for the construction of stands at fairs. The connection should on the one hand be extremely secure; on the other hand, however, it should also be easily made and released again.

A connecting lock of the generic type is known from DE-A-31 28 595. This connecting lock comprises a bearing housing having an ascending wedge surface and a fixing member which is in the form of a sheet steel strip and is accommodated in the housing in such a manner that it is movable longitudinally. The fixing member has a counter-slope, which is pressed against the wedge surface by elastic force. The fixing member in the form of a sheet steel strip can be moved longitudinally by way of a cam, as a result of which a coupling hook on the end of the fixing member is movable both longitudinally and also

transversely as a result of the counter-slope mounting the wedge surface. A spring tongue is cut out of the sheet steel strip and bent downwards, and the end of the spring tongue rests on an inner wall of the bearing housing and is guided there in such a manner that it is movable longitudinally. The wedge surface extends between two coupling lugs, and a bent portion in the holding member engages behind it, which bent portion holds the eccentric pin in an opening in the rear wall of the bearing housing.

Such a connecting lock is not only difficult to put together, but it also has considerable shortcomings when in use, since, when the fixing member is pulled hard by the cam, the holding member can become disengaged from the wedge surface and the connection can thus come undone again. In addition, when the connecting lock is subjected to great stress, it may tilt as a result of the one-sided engagement of the coupling hook with the undercut groove in the supporting member, and this leads to difficulties when assembling, for example, a stand for a fair, and involves the risk that, when suitably stressed, the connection may inadvertently come undone again.

The problem on which the invention is based is, therefore, to provide a connecting lock of the type described at the beginning, by means of which it is possible to make a detachable connection having a high load-bearing capacity between two parts of a stand, the connecting lock having the dimensions of the connecting locks known per se and being easily assembled.

According to the invention, this problem is solved in that the component of the fixing member that projects from the housing, in conjunction with its longitudinal movement, is pivotable about its longitudinal axis in a limited angular region, the fixing member is movably connected to the cam by way of a pulling member, and the

free end of the projecting component terminates in a transverse bar. In such a connecting lock, connection of the two parts of the frame is effected only by a longitudinal and rotary movement of the fixing member, which no longer has to be moved out of this longitudinal direction of movement, which is effected in the known connecting locks either by means of the wedge surfaces described or by means of additional resilient members. Tilting or the like is thus ruled out, and it is therefore ensured that the fixing member engages securely with the undercut groove in the other part of the frame.

In a further development of this inventive concept, the end of the projecting component of the fixing member that is closest to the housing is firmly connected to a guide rod which is pivotable, in controlled manner, about its longitudinal axis and is connected at its other end to the pulling member. A particularly heavy connecting lock can thus be produced.

In a particularly light-weight embodiment of the invention, the fixing member has in its middle region a twisted portion by means of which it extends through a slot-like opening in the end face of the housing. If this fixing member is moved in the longitudinal direction by means of the cam, it automatically executes a rotary movement about its longitudinal axis. The transverse bar of the fixing member thus engages with a web forming the undercut groove in the supporting member.

The connecting lock according to the invention can be assembled in especially simple manner if its housing is in two parts, namely a base portion and a cover.

The connecting lock is very light-weight and simple to produce if the housing is made of plastics, and this is extremely advantageous especially in the case of mass production. In the case of a two-part housing, it is a considerable advantage if the base portion at least is

made of plastics.

Especially in the light-weight embodiment of the connecting lock according to the invention, the cover of the two-part housing covers the end face of the housing and is provided with the guide slot for the fixing member. It is thus possible to produce the connecting lock from only a very small number of individual components.

The fixing member is connected to the pulling member preferably in such a manner that the end of the fixing member that is remote from the transverse bar is provided with a groove or is angled, in order to engage with a seat in the pulling member. The movable connection prevents the fixing member from tilting in the housing. In addition, mounting of the fixing member is facilitated.

In a further development of the inventive concept, two or more fixing members may be provided in the connecting lock and connected to the cam by way of a single pulling member. As a result, it is possible to achieve an even greater pulling force or an even greater holding capacity of the connecting lock.

According to a preferred embodiment of the invention, the guide means for the guide rod is provided on its peripheral surface. Since such a guide means can readily be attached directly to the housing, no additional component is required, which simplifies production of the connecting lock and also brings about a corresponding increase in its load-bearing capacity.

It has proved especially advantageous to provide a drill-like rod for guiding the guide rod. This allows a controlled movement to be realised in technically simple manner, without the need for complicated control mechanisms. The guide means for the guide rod is particularly simple if the drill-like rod is a twisted square metal plate. However, it may also be a square

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steel bar, a round steel bar into which guide grooves have been cut, or any other drill-like rod.

In order that the drill-like rod may be guided without twisting, the light-weight embodiment of the invention provides that the guide means for the drill-like rod is fixedly arranged on the housing. In the heavy embodiment according to the invention, the guide means for the drill-like rod is a sheet metal structure, which has at least two guide means on the peripheral surface of the guide means for the drill-like rod. It has proved especially advantageous for the guide means for the drill-like rod to be in the form of a guide plate inserted in a guide body which is provided in the housing and through which pass one or more of the fixing members. The connecting lock can thus to a large extent be pre-assembled outside the housing.

In order to position the drill-like rod without great frictional resistance, it has been found that the guide plate consisting of a metal sheet should have a thickness of less than 2 mm. It has proved especially advantageous for the guide plate to have a thickness of 0.5 mm.

In accordance with a further embodiment of the invention, in order that the guide body may be held securely in the housing and yet be easily exchanged, locking means, especially spring clips, are provided on the lateral walls of the guide body and engage in corresponding grooves in the housing.

In order to limit the displacement path of the guide rod, a further embodiment of the invention provides that at least one stop is provided in, or on, the housing for limiting the rotary movement of the guide rod. Advantageously, a stop sleeve may be arranged in the housing as the stop, which stop sleeve comes to rest against a counter-stop on the guide rod. The stop sleeve is especially simple to mount if it need be pushed into

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the housing only at the end. In especially simple manner, a flattened portion in the guide rod may serve as the counter-stop for the stop sleeve.

According to the invention, the stop for limiting the rotary movement of the guide rod may also be provided in the region of the seat for hooking the fixing member on the pulling member, and may come to rest against a counter-stop on the guide rod. In this case, the stop provided on the housing may be integral with the housing. No additional stop would then be required.

A particularly secure connection is preferably achieved as a result of the fact that the transverse bar(s) is/are double-headed in the form of a hammer head. Connecting locks having a hammer head that engages behind a portion of another frame part are known, for example, from DE-A-26 03 228. In these connecting locks there is provided a spring-loaded bolt which is arranged in an inset and which has, transverse to its longitudinal axis, a conical bore with which there cooperates a screw which is displaced relative to the axis of the bore and which has a conical tip, and in which, in addition, the bolt carries the hammer head that engages behind a slot in the one part.

The manufacture and the load-bearing capacity of the connecting lock according to the invention are considerably facilitated and increased, respectively, as a result of the fact that, in accordance with a further embodiment, the projecting component, the pivotable guide rod and the drill-like rod are constructed in one piece.

In order to protect the projecting component(s), two webs or a web-like bracket is/are advantageously formed on the end face of the housing.

Advantageously, the cam extends through the pulling member at its end that is remote from the fixing member. The cam head is advantageously held by means of a compression spring in the position in which it is engaged

in the bore in the frame member.

In order to produce a controlled connection, a further development of the inventive concept provides that, on execution of a half stroke, the transverse bar(s) in the heavy embodiment of the subject of the invention are pivoted through 90° transversely to the undercut groove in the supporting member and come to rest against the inner faces of the undercuts. In the light-weight embodiment of the subject of the invention, the transverse bar is pivoted, on execution of a half stroke, through approximately 30° transversely to the undercut groove in the supporting member and comes to rest against the inner faces of the undercuts.

In order to achieve a positively-locking connection, according to yet a further embodiment of the invention, straight knurls or diagonal knurls are provided on the faces of the transverse bars that face the housing in the heavy embodiment of the subject of the invention. In the light-weight embodiment of the subject of the invention, the faces of the transverse bars that face the housing are inclined slightly or are toothed. The surfaces thus formed come to rest against the undercuts in the other frame part and ensure an even more secure hold.

The invention is explained in greater detail below with reference to three embodiments, which are shown in the drawing, in which:

Figure 1 shows a side view, partially cut away, of a connecting lock inserted in a frame member, in the released position,

Figure 2 shows a side view corresponding to Figure 1, the connecting lock being tightened and thus making a connection between the frame member and a supporting member,

Figure 3 shows a front view, partially cut away, of the connecting lock in the position shown in Figure 2,

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Figure 4 shows a side view of a second embodiment of a connecting lock in a sectional view according to Figure 2,

Figure 5 shows a exploded view of the connecting lock shown in Figure 4,

Figure 6 shows, on an enlarged scale, a detailed view of the connecting lock shown in Figure 5,

Figure 7 is a side view of a third embodiment of a connecting lock in a view corresponding to Figures 2 and 4, and

Figure 8 is an exploded view of the connecting lock shown in Figure 7.

Figures 1 to 3 show a frame member 1, which is in the form of a hollow section and in which there is inserted a connecting lock 2 by means of which the frame member 1 can be connected to a supporting member 3. The connecting lock 2 comprises a housing 4 in which a fixing member 5 is so arranged that it is movable longitudinally. The fixing member 5 comprises a drill-like rod 6 which at one longitudinal end carries a transverse bar 7 and to the other end of which there is hooked a pulling member 8.

The transverse bar 7 that projects from the end face 9 of the housing 4 is introduced into an opening 10 in the supporting member 3 and, when the connection is made, which is shown in Figures 2 and 3, engages with an undercut groove 11 in the supporting member 3. A seat 12 for attaching the fixing member 5 is provided on the pulling member 8. At its opposite end, the pulling member 8 has a recess 13 with the edge of which the cam plate 14 of a cam 15 engages. The cam head 16 of the cam 15 projects from the connecting lock 2 by an amount corresponding approximately to the thickness of the wall of the frame member 1, in order to engage in a bore 17 in the lateral wall 18 of the frame member 1 and thus hold

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the connecting lock in a position in which it cannot be moved. A bearing journal 19, which is adjacent to the cam plate 14 of the cam 15 and is integral therewith, is guided in a bearing opening 20 in the opposite lateral wall 21 of the connecting lock 2. A compression spring 22 arranged around the bearing journal 19 allows the cam 15 to be pushed into the housing in the manner of a push button, so that, in the initial position, the cam head 16 of the cam 15 is engaged in the bore 17 in the frame member 1.

For guiding the drill-like rod 6 in the housing 4 there is provided a guide plate 23, which is approximately 0.5 mm thick and is in the form of a sheet metal member, and which has two guide pins 24, 25 located in opposing positions on its peripheral surface. These guide pins 24 and 25 ensure that the guide plate 23, which serves as guide means for the drill-like rod, is arranged fixedly in the housing 4. The guide pins 24 and 25 are integral with the guide plate 23. A stop sleeve 26 comes to rest against the guide plate 23, which stop sleeve is pushed into the end face of the housing 4 and serves to limit the displacement path of the fixing member 5 and thus also the rotary movement of the drill-like rod 6. A counter-stop 27, which is formed on the guide rod 30 of the fixing member 5, comes to rest against the stop sleeve 26, the counter-stop 27 being in the form of a flattened portion in the guide rod 30, which is easy to produce.

In order to protect the transverse bar 7 from damage, webs 28 and 29 are provided on the front end 9 of the housing 4.

The operation of the connecting lock 2 when connecting two parts of a frame is described below:

The connecting lock 2 is pushed into the frame member 1 until the cam head 16, which is provided with a hexagonal socket, of the cam 15 engages in the ready-

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prepared bore 17 in the frame member 1. In the untightened state shown in Figure 1, the hammer-shaped transverse bar 7 is parallel to the width of the connecting lock 2, it being protected from damage by the webs 28 and 29.

When the connecting lock 2 has been inserted into a frame member 1, that unit is then attached to a supporting member 3 by first pushing the transverse bar 7 through the opening 10 into the supporting member 3. The cam 15 is then turned by means of a suitable key. The pulling member 8 is thus drawn into the housing 4.

Since the transverse bar 7 is firmly connected to the drill-like rod 6, the transverse bar 7, on execution of a half stroke, rotates through 90° (approximately one quarter of a revolution of the cam) transversely to the undercut groove 11 in the supporting member 3 and comes to rest against the inner faces 31 of the undercuts. In order that the transverse bar 7 reaches a guaranteed position, stops are provided in, or on, the housing 4 and on the fixing member 5 itself. In the embodiment shown, the stops are formed by flattened portions in the guide rod 30. The fixing member 5 remains in its locked position by clamping of the cam 15. By releasing the cam, the transverse bar 7 also becomes disengaged from the undercut in the supporting member 3.

Tilt-free locking is also achieved, inter alia, as a result of the fact that the transverse bar is double-headed. In the embodiment shown, the fixing member 5 comprising the transverse bar 7, the guide rod 30 and the drill-like rod 6 is in one piece. The result is that, on the one hand, the possible load-bearing capacity can be increased, and, on the other hand, assembly of the connecting lock 2 is facilitated.

A further possible method of increasing the forces that can be absorbed by a connecting lock is shown in the second embodiment of a connecting lock shown in

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Figures 4 to 6. Instead of having only one fixing member, this connecting lock 33 has two identical fixing members 34 and 35. Each of these fixing members 34, 35 comprises a guide rod 36, a drill-like rod 37 and a hammer-shaped transverse bar 38. The fixing members 34 and 35 are connected by way of a guide body 39 to a single pulling member 40, which is in turn connected to a cam 41.

The cam 41 corresponds to the cam 15 in the embodiment of Figures 1 to 3 and, like that cam, is held in the manner of a push button in the housing 43 by means of a compression spring 42. A bearing bush 44 is provided for mounting the cam 41 in the housing 43.

For guiding the fixing members 34 and 35, a guide plate 45 is inserted in the guide body 39, which is inserted in the housing. In order to illustrate this, Figure 6 shows that part of the connecting lock 33 on an enlarged scale. The guide body 39 has on a lateral wall 46 a slot-like recess 47 for receiving the guide plate 45. The guide plate 45, which is approximately 0.5 mm thick, has on its end faces two substantially semi-circular recesses 48 and 49 the edges 50 and 51 of which engage in guide grooves 52 in the drill-like rods 37, thus providing guide means for the drill-like rod 37.

As guide means for the fixing members 34, 35 there are provided in the guide body 39 two circular through-holes 53 and 54, which extend vertically. When the fixing members 34 and 35 have been inserted into these through-holes 53 and 54, the pulling member 40 is connected to the fixing members 34, 35. For that purpose, the angled upper end of the pulling member 40 has two recesses 56 and 57 into which the T-shaped lower ends 58 of the guide rod 36 are hooked.

At its other end the pulling member 40 has a longitudinal recess 59 through which passes the cam plate of the cam 41.

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When the fixing members 34 and 35 and the guide plate 45 have been inserted into the guide body, the latter is inserted into the cross 43 in such a manner that the opening of the slot-like recess 47 lies on the inside in the housing 43, the guide plate 45 thus being prevented from falling out. The guide body 39 itself is held in the housing by means of spring clips 60, which are arranged on its lateral faces and engage in grooves (not shown) in the housing 43.

A bracket 61 is provided on the end face of the housing 43, both as an aid to introduction and as a means of protecting the hook-head-shaped transverse bars 38 of the fixing members 34 and 35.

Figures 7 and 8 show an especially simple and light-weight embodiment of a connecting lock. This connecting lock 62 comprises a housing 63, in which a fixing member 64 is so arranged that it moves longitudinally. The housing 63 is in two parts and comprises a base portion 66 and a cover 67. The cover 67 is angled at its front end, the angled portion 68 forming the end face of the housing 63.

In the angled portion 68 of the cover 67 there is formed an oblique slot 69 through which extends the fixing member 64, which is in one piece. The fixing member 64 has at its front end a hammer-shaped transverse bar 70, adjoining which there is a symmetrically twisted portion 71. The other end of the fixing member 64 is formed by a hook 72, which is inserted into a slot-like recess 73 in a pulling member 74 in the form of a pushing spring.

The pulling member 74 is moved in the longitudinal direction of the housing 63 by means of a cam 75. The cam head 76 of the cam 75 has a tool seat 65 for actuating the cam and extends through an opening 77 in the base portion 66 of the housing 63. The bearing journal 78 of the cam 75, which is located opposite the

cam head 76, projects through a longitudinal opening 79 in the pulling member 74 and a circular opening 80 in the cover 67. Between the pulling member 74 and the cover 67, a compression spring 81 is placed around the bearing journal 78 of the cam 75. The cam head 76 can thus be pushed into the housing in the manner of a push button.

In order to ensure that the fixing member 64 is guided in the housing without twisting, a longitudinal recess 82 for the hook 72 is provided in the base portion 66. The cover 67 can either be screwed to the base portion 66 or connected thereto in any other suitable manner, especially by bolting. This is illustrated in Figure 8 by the connecting pins 83.

In this especially simple embodiment, the fixing member 64 is a single component that combines the functions of the guide rod and the drill-like rod in the above-described embodiments. When the cam 75 is rotated, the fixing member 64 is drawn into the housing 63 through the slot 69 in the cover 67. As soon as the twisted portion 71 reaches the region of the slot 69, the fixing member 64 is rotated. The rotation of the hammer-shaped transverse bar 70 on execution of a half stroke is approximately 30°. In order that the hook 72 of the fixing member 64 does not tilt in the base portion 66, the recess 82 is provided there.

As an aid to introduction and as a means of protecting the hammer-shaped transverse bar 17, webs 84 and 85 that project forwards are provided on the base portion 66 of the housing 63. Both the base portion 66 and the cover 67 of the housing 63 may be made of plastics, as a result of which the connecting lock, which is already very light, becomes even lighter. However, it is also possible for only the base portion 66 to be made of plastics, while the cover 67 is made of sheet metal. The fixing member 64 and the pulling member 74 are advantageously made of hardened spring steel.

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List of reference numerals

1	frame member	35	fixing member
2	connecting lock	36	guide rod
3	supporting member	37	drill-like rod
4	housing	38	transverse bar
5	fixing member	39	guide body
6	drill-like rod	40	pulling member
7	transverse bar	41	cam
8	pulling member	42	compression spring
9	end face of 4	43	housing
10	opening in 3	44	bearing bush
11	undercut groove in 3	45	guide plate
12	seat	46	lateral wall
13	recess	47	slot-like recess
14	cam plate	48	recess
15	cam	49	recess
16	cam head	50	edge
17	bore	51	edge
18	lateral wall	52	guide groove
19	bearing journal	53	through-hole
20	bearing opening	54	through-hole
21	lateral wall of 4	55	upper end
22	compression spring	56	recess
23	guide plate	57	recess
24	guide pin	58	T-shaped end
25	guide pin	59	recess
26	stop sleeve	60	clip
27	counter-stop	61	bracket
28	web	62	connecting lock
29	web	63	housing
30	guide rod	64	fixing member
31	inner face	65	tool seat in 76
32	surface	66	base portion
33	connecting lock	67	cover
34	fixing member	68	angled portion of 67

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- 69 slot
- 70 transverse bar
- 71 symmetrically twisted portion
- 72 hook
- 73 slot-like recess
- 74 pulling member
- 75 cam
- 76 cam head
- 77 opening
- 78 bearing journal
- 79 opening
- 80 opening
- 81 compression spring
- 82 recess
- 83 connecting pins
- 84 web
- 85 web



Patent Claims

1. Connecting lock (2, 33, 62) for connecting, in detachable manner, two parts of a stand (1, 3), especially a supporting member (3) and a frame member (1), in which the connecting lock (2, 33, 62) is fixedly arranged in the frame member (1), which is in the form of a hollow section, and has, in a housing (4, 43, 63), at least one fixing member (5; 34, 35; 64) by means of which the connecting lock (2, 33, 62) and thus also the frame member (1) can be connected, in detachable manner, to the supporting member (3), and in which a cam (15, 41, 75) is rotatably mounted in the housing (4, 43, 63) of the connecting lock (2, 33, 62), by means of which cam the fixing member (5; 34, 35; 64) is so guided in the housing (4, 43, 63) that it moves longitudinally, as a result of which a component (7, 38, 70) of the fixing member (5; 34, 35; 64) that projects from the end face of the housing (4, 43, 63) can be introduced into an undercut groove (11) in the supporting member (3) and fixed therein, and in which the cam head (16, 76) of the cam (15, 41, 75), which can be pressed into the housing (4, 43, 63), is able to engage in a bore (17) in the frame member (3), characterised in that the component (7, 30; 36, 38; 64, 70) of the fixing member (5; 34, 35; 64) that projects from the housing (4, 43, 63), in conjunction with its longitudinal movement, is pivotable about its longitudinal axis in a limited angular region, the fixing member (5; 34, 35; 64) is movably connected to the cam (15, 41, 75) by way of a pulling member (8, 40, 74), and the free end of the projecting component (30, 36, 64) terminates in a transverse bar (7, 38, 70).

2. Connecting lock according to claim 1, characterised in that the end of the projecting component (7, 38) of the fixing member (5; 34, 35) that is closest to the



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housing is firmly connected to a guide rod (30, 36) which is pivotable, in controlled manner, about its longitudinal axis and is connected at its other end to the pulling member (8, 40).

3. Connecting lock according to claim 1, characterised in that the fixing member (64) has in its middle region a twisted portion (71) by means of which it extends through a slot-like opening (69) in the end face of the housing (63, 67, 68).

4. Connecting lock according to any one of claims 1 to 3, characterised in that the housing of the connecting lock (2, 33, 62) is in two parts and comprises, especially, a base portion (66) and a cover (67).

5. Connecting lock according to claims 3 and 4, characterised in that the cover (67, 68) of the two-part housing (63) covers the end face of the housing and contains the guide slot (69) for the fixing member (64).

6. Connecting lock according to any one of claims 1 to 5, characterised in that the end of the fixing member (5) that is remote from the transverse bar (7, 38, 70) is provided with a groove or is angled, in order to engage with a seat (12; 56, 57; 73) in the pulling member (8, 40, 74).

7. Connecting lock according to any one of the preceding claims, characterised in that two or more fixing members (34, 35) are provided in the connecting lock (33) and are connected to the cam (41) by way of a single pulling member (40).

8. Connecting lock according to any one of the preceding claims, characterised in that the guide means



for the guide rod (30, 36) is provided on its peripheral surface.

9. Connecting lock according to claim 2 or 8, characterised in that a drill-like rod (6, 37) is provided for guiding the guide rod (30, 36).

10. Connecting lock according to claim 9, characterised in that the drill-like rod (6) is a twisted square metal plate, a square steel bar or a round steel bar into which guide grooves have been cut or which has a round thread.

11. Connecting lock according to claim 9 or 10, characterised in that the guide means (23, 45) for the drill-like rod is fixedly arranged in the housing.

12. Connecting lock according to claim 11, characterised in that the guide means for the drill-like rod is a guide plate (45) inserted in a guide body (39) which is provided in the housing (43) and through which pass one or more of the fixing members (34, 35).

13. Connecting lock according to claim 12, characterised in that the guide plate (45) has a thickness of less than 2 mm, especially of approximately 0.5 mm.

14. Connecting lock according to claim 12, characterised in that locking means, especially spring clips (60), are formed on the lateral walls of the guide body (39) and engage in corresponding grooves in the housing (43).

15. Connecting lock according to any one of claims 2 or 8 to 13, characterised in that at least one stop (26) is provided in, or on, the housing (4) for limiting the rotary movement of the guide rod (30).



16. Connecting lock according to claim 15, characterised in that, as the stop, there is arranged in the housing (4) a stop sleeve (26), which comes to rest against a counter-stop (27) on the guide rod (30).

17. Connecting lock according to any one of the preceding claims, characterised in that the stop for limiting the rotary movement of the guide rod (30) is provided in the region of the seat (12) for hooking the fixing member (5) on the pulling member (8) and comes to rest against a counter-stop on the guide rod (30).

18. Connecting lock according to any one of the preceding claims, characterised in that the transverse bar(s) (7, 38, 70) is/are double-headed in the form of a hammer head.

19. Connecting lock according to any one of the preceding claims, characterised in that the projecting component (7, 38), the pivotable guide rod (30, 36) and the drill-like rod (6, 37) are constructed in one piece.

20. Connecting lock according to any one of the preceding claims, characterised in that, in order to protect the projecting component(s) (7, 38, 70), webs (28, 29; 84, 85) or a web-like bracket (61) is/are formed on the end face of the housing (4, 43, 63).

21. Connecting lock according to any one of the preceding claims, characterised in that the cam (15, 41, 75) extends through the pulling member (8, 40, 74) at its end that is remote from the fixing member (5; 34, 35; 64), the cam head (16, 76) of the cam (15, 41, 75) being held by means of a compression spring (22, 42, 81) in the position in which it is engaged in the bore (10) in the frame member (3).



22. Connecting lock according to any one of the preceding claims, characterised in that, on execution of a half stroke, the transverse bar(s) (7, 38) in the heavy embodiment having a guide rod (30, 36) are pivoted through 90°, and the transverse bar (70) in the light-weight embodiment having a twisted portion (71) is pivoted through approximately 30°, transversely to the undercut groove (11) in the supporting member (3) and come(s) to rest against the inner faces (31) of the undercuts.

23. Connecting lock according to any one of the preceding claims, characterised in that the faces (32) of the transverse bars (7, 38, 70) that face the housing (4, 43, 63) are provided with straight knurls or diagonal knurls or are toothed, or the faces of the transverse bars (70) that face the housing (63) are inclined slightly.