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71 Applicant: **BELEGGINGSMAATSCHAPPIJ
BOUWMATERIEEL EUROPA B.V.**
Europaweg 97
NL-5707 CL Helmond(NL)

72 Inventor: **de Groot, Jochem**
Kerkeind 42
NL-5463 BD Milheeze(NL)

74 Representative: **Lips, Hendrik Jan George, Ir.**
et al
HAAGSCH OCTROOIBUREAU Breitnerlaan
146
NL-2596 HG Den Haag(NL)

54 **Scaffold comprising uprights, cross members and platforms connected to the cross members.**

57 A scaffolding construction comprising uprights (1) and cross members (3) on which the open ends of claws (5,18) may be positioned, which claws (5,18) are connected to a platform (4). For locking the platform (4) in respect of a cross member (3) a catch (12) is present which is displaceably embraced by a U-shaped strap (11) connected to the platform (4). Said catch (4) is shaped such that when lowering a claw (5,18) onto a cross member (3) the catch is lifted from the locking position and will resume this once the claw (5,18) rests on the cross member (3).

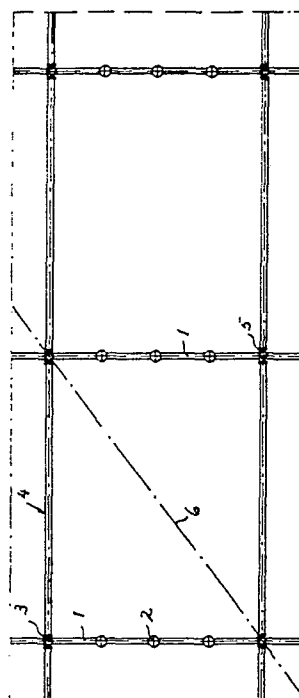


Fig 1

EP 0 305 014 A2

Scaffold comprising uprights, cross members and platforms connected to the cross members.

The invention relates to a scaffold construction comprising uprights and cross members connected to the uprights and keeping them spaced apart, on which cross members the open ends of substantially U-shaped claws may be positioned from above, said claws being connected to a platform and being automatically locked with respect to the cross members after mounting.

Such a scaffold construction is known from: Dutch Patent Application No. 86 01564, laid open to public inspection. In this known construction locking is achieved in that a part of the upper surface of the cross members, which are circular in cross-section, will come to rest into recesses of the U-shaped claws while the substantially vertical parts of the claws are at some distance from the relevant cross member and the most outwardly positioned leg of the claw is slightly curved inwardly such that it will be within the outer circumference of the relevant cross-section, as seen in vertical direction. If now an upwardly directed movement is exerted on the claw the inwardly curved part of it will come to rest against the cross member, so that it is prevented that the claw leaves the cross member.

A disadvantage of this known construction is not only that the internal shape of the claws should comply with very high demands, but it is especially disadvantageous that on mounting and dismantling of a platform, this has to be displaced to and from in a particular manner in order to be able to release the claws from the cross members on lifting the platform.

A further disadvantage of the known construction is also that the locking of the claws is not absolutely safe and that there is such a play present between the main part of the claw and the cross member that no substantial forces exerted in a horizontal direction on the platform, can be transferred to the cross member without more. Thus, the platform can not act for stiffening the scaffold construction in the plane of the platform.

Now the invention removes these disadvantages and provides to that end that for achieving the locking a catch is present, which is displaceably embraced by a U-shaped strap connected to the platform, said catch being shaped such that when lowering a claw of a platform onto a cross member, the catch will be lifted from the locking position by the cross member and will resume the locking position once the claw rests on the cross member.

In this way it is achieved that locking will always occur automatically and that substantially there need not be any play between the claws and the cross member so that a very stable support of

the platform is achieved. At the same time the platform will be suitable for stiffening the scaffold construction.

When the platform has to be removed the catch simply may be pressed manually to a higher position in which it does not lock the platform anymore.

Though it might be provided that the catch would be reset into its locking position by means of a spring, preferably the catch will be made such that it will occupy the locking position under the effect of its own weight..

According to a preferred embodiment of the invention the catch is formed by a twice bended strip with substantially the shape of a U, the legs of which are making an obtuse angle with the body, the strip being provided with extending parts at both ends so that the catch can not be removed from the strap which is connected to the platform.

In this way it is achieved that the catch will always perform its function, because substantially there is no chance that the catch remains in an inactive position while the catch can not be detached from the platform either.

According to the invention it may be provided, however, that the catch and the strap by which it is embraced, are executed such that the catch may remain in the unlocked position as long as no tilting movement or a blow is exerted on the platform.

This allows an easy removal of the platform because the catch is brought into an inactive position so that the claw of the platform can be lifted from the cross member. The catch will substantially always return to its active position immediately thereafter.

Though the claw may have the shape of a U, of which the inner surfaces of the legs are extending substantially parallel to each other, in particular it may be provided that the claw is having an internal shape adapted to the circular shape of the cross member in such a way that the claw is having a widened inlet opening but that there is no or substantially no play present between the claw and the cross member in the ultimate position.

In particular it may be provided that the claw is having a cavity adapted to the largest diameter of the cross member applied, said cavity having a recess for receiving a cross member with a diameter which is substantially smaller than the first mentioned diameter.

In this way a single claw can be used for two different diameters of cross members, without disadvantageously affecting the strong connection between the claw and thus the platform on the one hand and the cross member on the other hand.

The invention will now be described by means of embodiments shown in the drawing, in which:

Fig. 1 shows a view of a portion of a scaffold with some platforms;

Fig. 2 shows a plan view of the scaffold of Fig. 1;

Fig. 3 shows a side view of an end of a platform provided with the catch locking device according to the present invention;

Fig. 4 shows a front view of the catch locking device of Fig. 3;

Fig. 5 shows a side view according to Fig. 3 just before the claw connected to the end of the platform is mounted on a cross member;

Fig. 6 shows a side view according to Fig. 5 after the claw is mounted on the cross member and the platform has been locked on it;

Fig. 7 shows a side view according to Fig. 6, but with the catch in the unlocked position;

Fig. 8 shows a side view according to Fig. 7 after the platform has been lifted from the cross member, and

Fig. 9 shows a side view of an end of the platform provided with a specially shaped claw mounted on a cross member, a neighbouring platform and the claw connected to it being shown in dash-lines.

The scaffold construction shown in Figs. 1 and 2 consists of the uprights 1, provided with the junctions 2 and being mutually connected by means of the cross members 3. The cross members 3 are mutually connected by means of platforms 4, the claws 5 of which are mounted on the cross members 3. In addition diagonally extending braces 6 may be used to obtain adequate stability of the scaffold construction.

As appears in particular in Fig. 2 the claws 5, connected to a platform 4, are staggered in respect of each other so that the claws of two platforms 4 may be mounted on one cross member 3.

The platforms 4 are formed by the frame 7, which is provided with a locking device 8 at each one of its ends 7a. The locking devices 8 are staggered at the ends. Additionally the frame 7 is connected with a plywood slab 9, such that the platform 4 represents a rigid entity in its plane. Additionally a reinforcement 10 is mounted under the slab 9 at the place of the locking device 8, as in particular appears from Fig. 3 too.

As appears from Figs. 3-8 the locking device 8 is formed by a U-strap 11, welded on the end 7a of the frame 7, by which a catch 12 is displaceably embraced.

The catch 12 is formed by a substantially U-shaped strip, the body 13 of which is provided with the legs 14 and 15. The leg 14 is connected to the lower pin 16 and the leg 15 to the upper pin 17.

The pins 16 and 17 extend outside the strap 11 so that the catch 12 can not be removed from the strap 11. In general the catch 12 will assume the position as shown in Fig. 3 by its own weight.

When now both claws 5 of a platform 4 have to be mounted on a cross member 3, the cross member 3 will come into contact with the pin 16 of the catch 12, as appears from Fig. 5, by which the catch 12 will be pushed upward. After the catch 12 has passed the cross member 3 it will fall downward to the position shown in Fig. 6.

If now an attempt is made to lift the platform 4, this will be counteracted by the catch 12 lying against the cross member 3. Thus a safe locking of the platform 4 with respect to the cross member 3 is obtained. By this the unintended release of the platform 4, and thus of the claws 5 of it, from the cross member 3 is prevented.

If the platform 4 should have to be removed, the catch 12 can be brought into the position as shown in Fig. 7, so that the claw 5 of the platform can be released from the cross member 3. This position is shown in Fig. 8. When tilting the platform from the position shown in Fig. 8, or on touching the catch 12, the catch will very easily fall back towards the position as shown in Figs. 3 and 5. Thus in practice there appears to be hardly any chance that the catch 12 will maintain the position as shown in Fig. 8, so that after mounting of the platform 4 the catch 12 will always be in the locking position.

In the claw 5, shown in Figs. 5-8, the inner walls of the legs extend parallel to each other. To allow easy mounting of the claw on a cross member 3, some play should be present between the claw 5 and the cross member 3. Though this play may be kept small, it nevertheless will result in a less stable connection between a platform 4 and a cross member 3.

In order to prevent this use can be made of a claw 18 as shown in Fig. 9.

The claw 18 is composed of the inlet section 19, the section 20 with a radius of curvature R corresponding with the radius of the cross member 3, the section 21 having a radius of curvature S corresponding with the radius of a cross member with a smaller diameter, a section 22 with the radius of curvature R again and a substantially straight section 23.

A claw 18, shaped in this manner, can be easily mounted on the cross member 3 while thereafter the claw can no longer be displaced in horizontal direction with respect to the cross member.

The claw 18 can be applied also when cross members with a smaller diameter are used.

In Fig. 9 the platform positioned next to the platform 4 is shown in dash-lines as well as the claw 18 connected to it. For better clarity the

locking device 8 has been deleted from Fig. 9.

It will be obvious that only some possible embodiments of the invention are shown in the drawing and have been described above and that many modifications can be applied without leaving the scope of the invention.

Claims

1. A scaffold construction comprising uprights (1) and cross members (3) connected to the uprights and keeping them spaced apart, on which cross members the open ends of substantially U-shaped claws (5,18) may be positioned from above, said claws being connected to a platform and being automatically secured with respect to the cross members after mounting, characterized in that for achieving the locking (8) a catch (12) is present which is displaceably embraced by a U-shaped strap (11) connected to the platform (4), said catch being shaped such that, when lowering a claw (5,18) of a platform (4) onto a cross member (3), the catch (12) will be lifted from the locking position by the cross member (3) and will resume the locking position once the claw (5) rests on the cross member (3).

2. A scaffold construction according to claim 1, characterized in that the catch (12) will resume the locking position under the effect of its own weight.

3. A scaffold construction according to claim 1 or 2, characterized in that the catch (12) is formed by a twice bended strip with substantially the shape of a U, the legs (14,15) of which are making an obtuse angle with the body (13), the strip being provided with extending parts (16,17) at both ends so that the catch (12) can not be removed from the strap (11) which is connected to the platform (4).

4. A scaffold construction according to claim 3, characterized in that the catch (12) and the strap (11), by which it is embraced, are executed such that the catch (12) may remain in the unlocked position as long as no tilting movements or a blow is exerted on the platform (4).

5. A scaffold construction according to one of the preceding claims, characterized in that the claw (18) is having an internal shape adapted to the circular shape of the cross member (3) in such a way that the claw (18) is having a widened inlet opening, but that there is no or substantially no play present between the claw (18) and the cross member (3) in the ultimate position.

6. A scaffold construction according to claim 5, characterized in that the claw (18) is having a cavity adapted to the largest diameter of the cross member (3) applied, said cavity having a recess for receiving a cross member with a diameter which is substantially smaller than the first mentioned diameter.

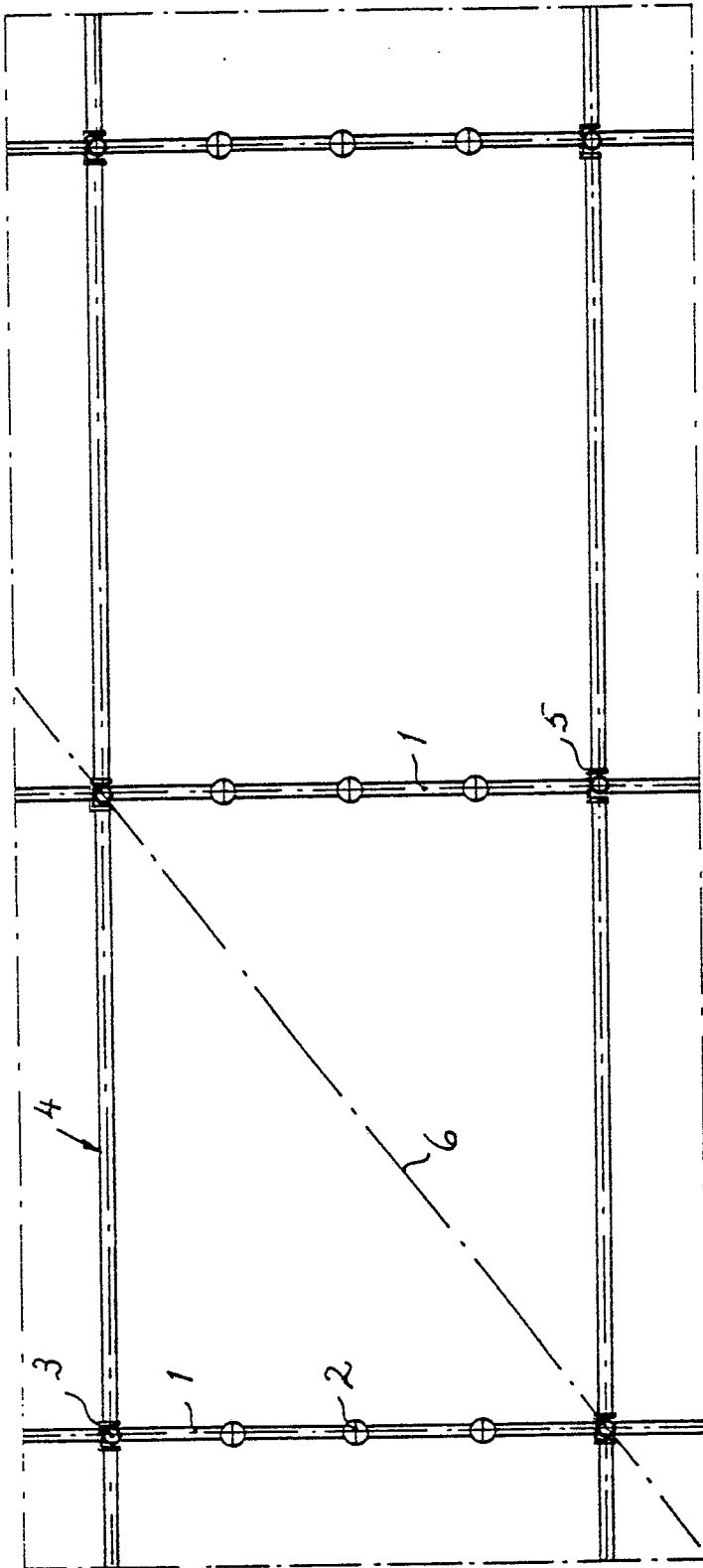


Fig. 1

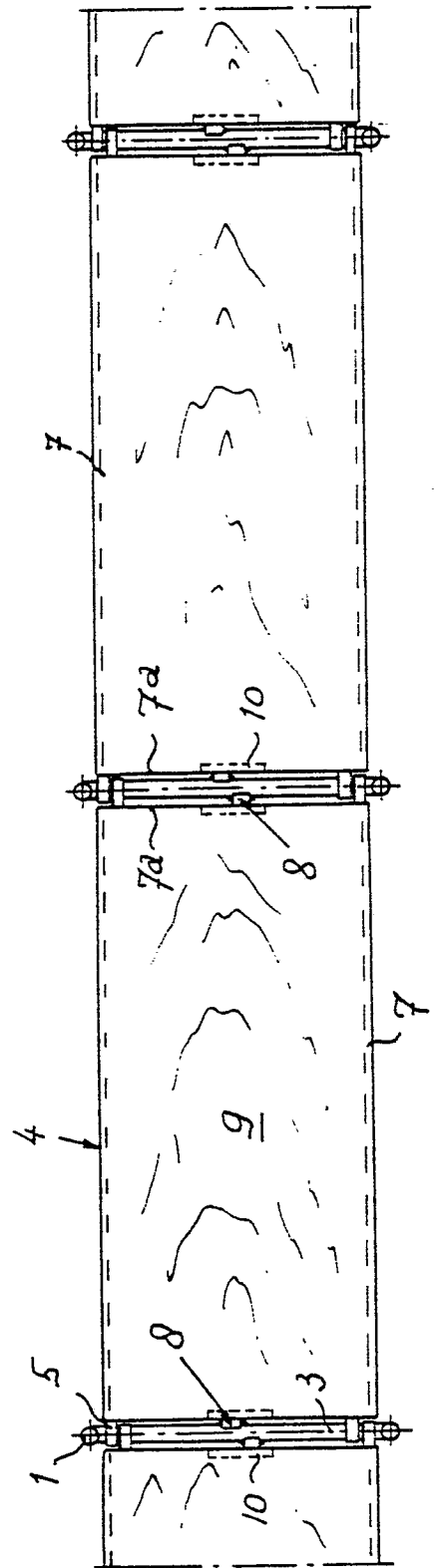


Fig. 2

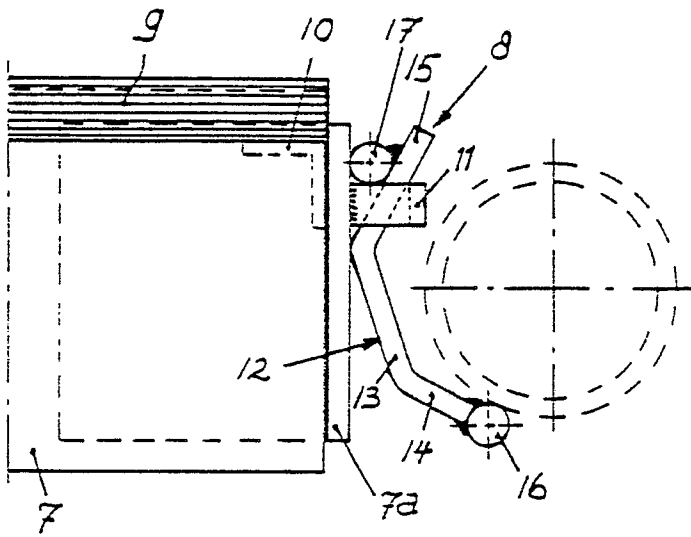


Fig. 3

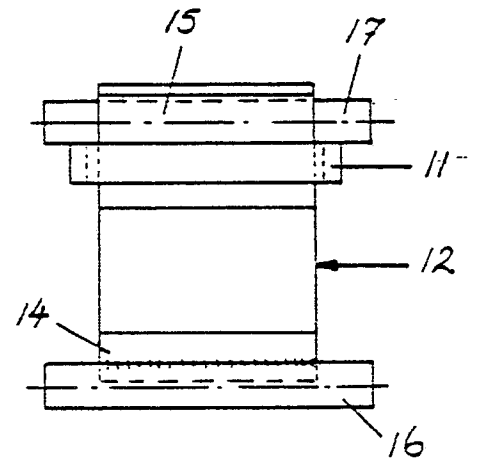


Fig. 4

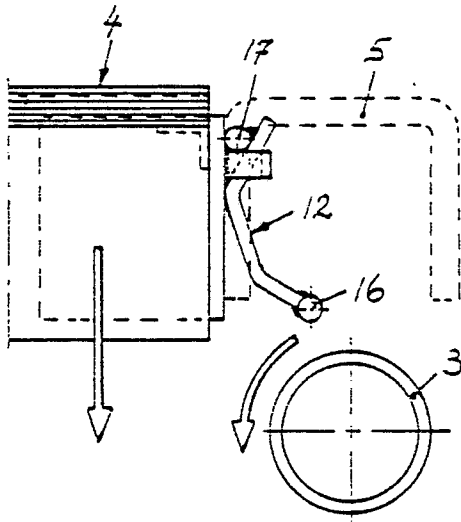


Fig. 5

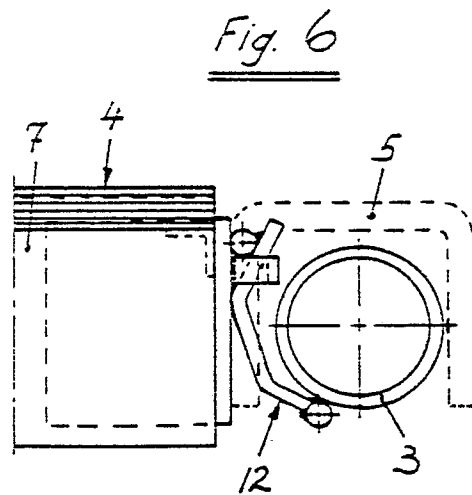


Fig. 6

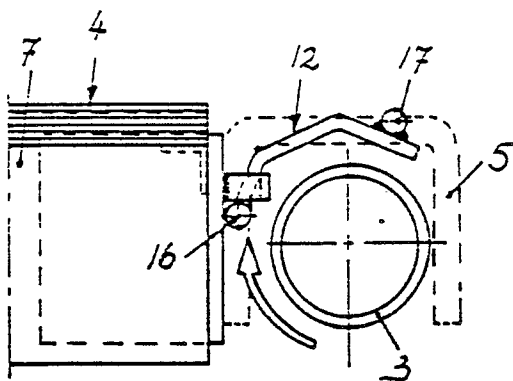


Fig. 7

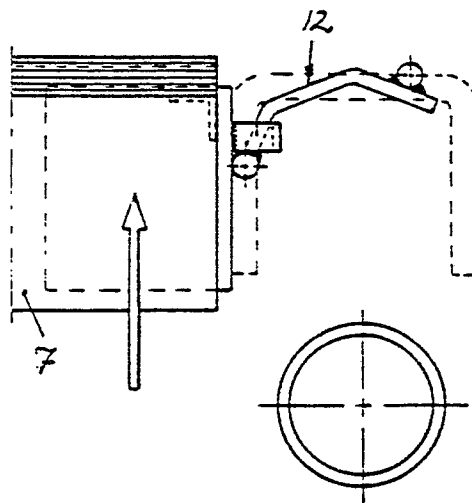


Fig. 8

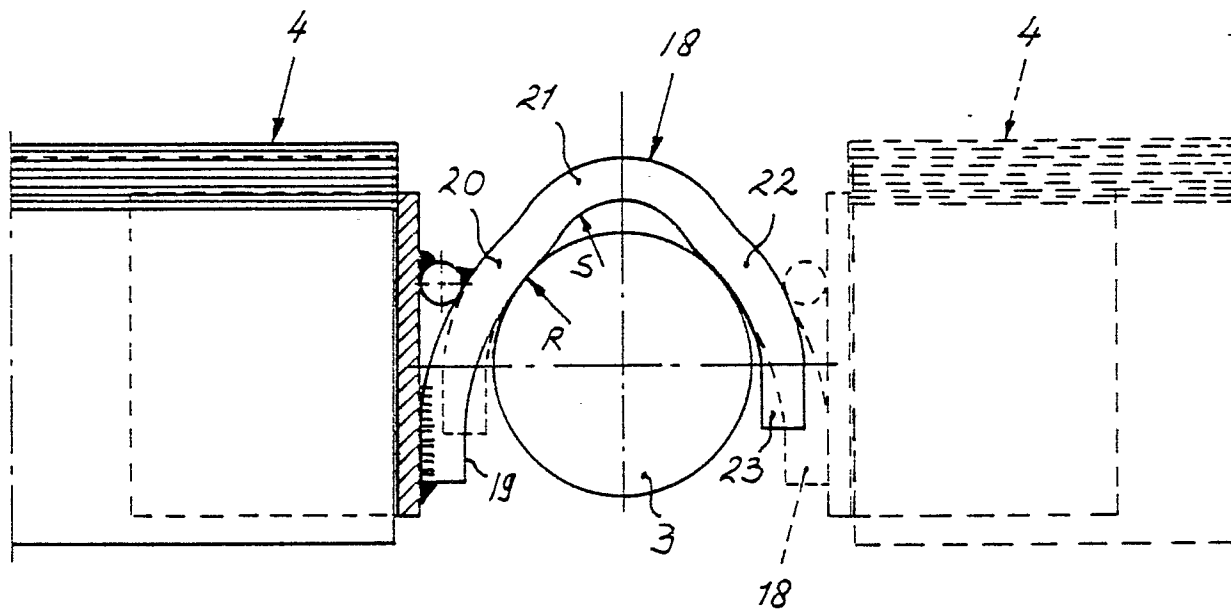


Fig. 9