

March 14, 1961

P. SPREEUWENBERG
SCAFFOLDING COUPLING

2,974,985

Filed Jan. 15, 1960

2 Sheets-Sheet 1

FIG. 1

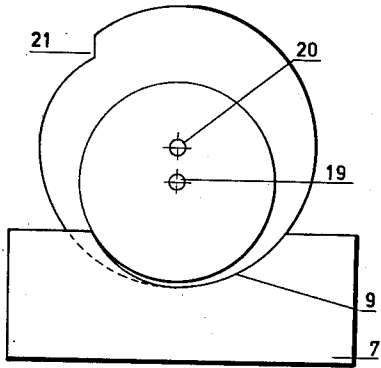


FIG. 2

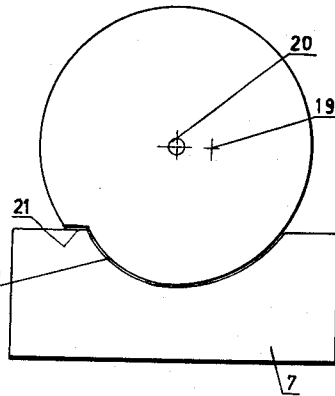
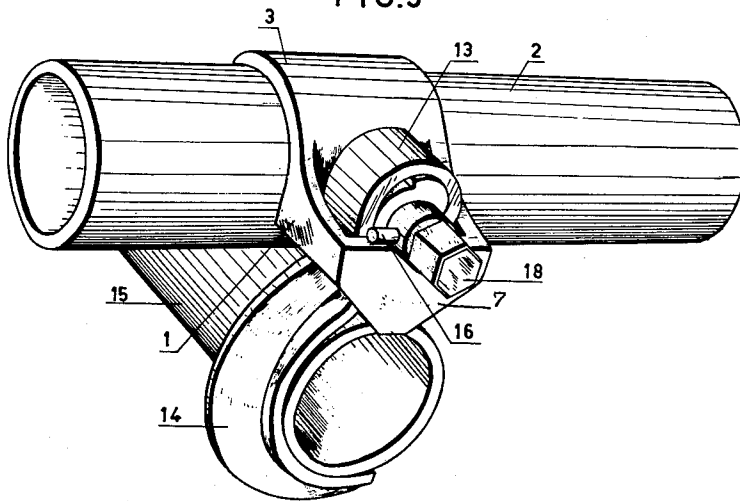


FIG. 3



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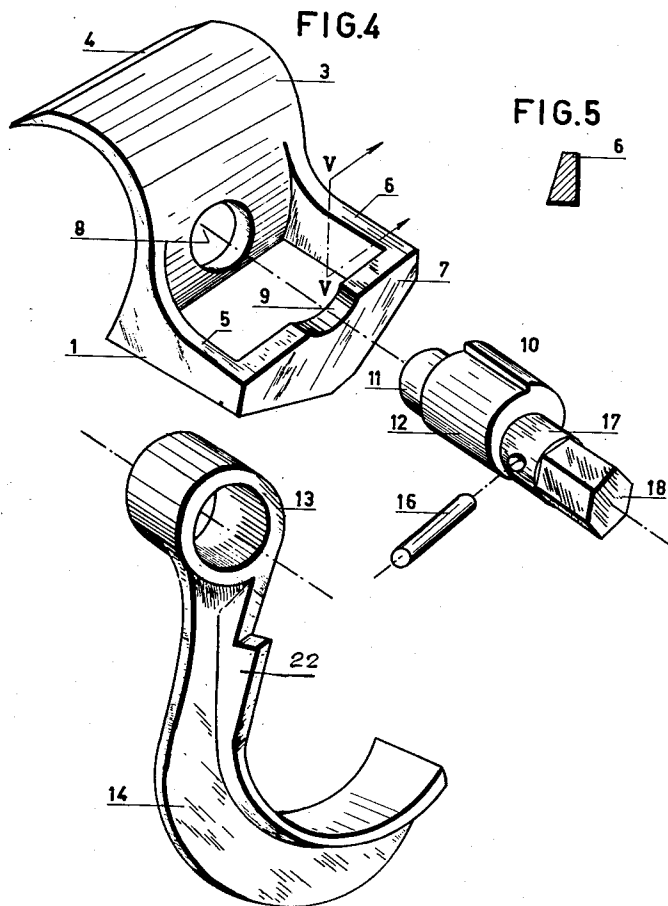
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SCAFFOLDING COUPLING

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10 Claims. (Cl. 287—54)

This invention relates to a scaffolding coupling comprising two surfaces for engaging two tubular or bar-like building elements forming an angle with one another, and aims at providing a scaffolding coupling of cheap manufacture and adapted to be easily and quickly mounted, this coupling being of the type destined to connect together horizontal transverse tubes and horizontal tubes of a scaffolding structure forming an angle, usually a right angle, therewith.

This is achieved by the scaffolding coupling according to the invention in that each engaging surface for a building element is provided in a separate part of which the one part comprises an opening for receiving an eye of the other part which is hook-shaped, there being provided in said eye the eccentric portion of an eccentric member rotatably mounted in bearings of the first part. On account of the fact that an eccentric member is applied this scaffolding coupling may be locked on both tubes with one single rotary movement of a key.

In order to prevent the eccentric member from unintentionally getting out of the scaffolding coupling the eccentric portion of the eccentric member may, according to the invention, comprise a recess and the cross-section of said eccentric portion near said recess may correspond to the cross-section of the bearing in the connecting portion. In this way the advantage is obtained that no additional part is required for locking the eccentric member.

According to the invention there may be provided in the shaft portion of the eccentric member, said pin serving as an abutment for limiting rotary movement of the eccentric member. This abutment may also serve as an indication showing the position of the eccentric member.

The hook-shaped portion of the second part of the scaffolding coupling may be provided with a cam cooperating with the connecting portion of the arm.

The second bearing for the shaft portion of the eccentric member, which bearing is provided in the form of an opening, is preferably of elliptical shape.

In order to be able to arrange the eye sufficiently but with a minimum of play in the opening of the first part and to allow the hook-shaped part nevertheless to rotate sufficiently far, the cross-section of the arm facing the hook-shaped portion may be wedge-shaped.

The invention will be described below with reference to the accompanying drawings showing by way of example an embodiment of the scaffolding coupling according to the invention.

Figures 1 and 2 diagrammatically show the locking of the eccentric member.

Fig. 3 shows in perspective the scaffolding coupling in its operative position.

Fig. 4 is a drawing showing the assembling, the eccentric member being somewhat turned for clarity's sake.

Fig. 5 is a cross-section according to the line V—V in Fig. 4.

The scaffolding coupling shown in the drawings comprises a body 1 which in Fig. 3 is clamped on a horizon-

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tal tube 2 of a scaffolding structure. For this purpose said body 1 has a curved portion 3 forming an engaging surface for the tube 2 and being located on the upper portion of this tube. The front end 4 of this curved portion is chamfered. By this chamfering one avoids the risk of the body 1 being struck off the tube by unintentional impacts or blows against the front rim of said body. The body 1 comprises two arms 5 and 6 so interconnected by a connecting portion 7 that the parts 3, 4, 5, 6 and 7 constitute one unit, for example one casting.

In the body 1 there are provided an opening 8 and a bearing 9 for an eccentric member 10. This opening 8 is of elliptical shape. The longitudinal axis of the ellipse is inclined relative to the horizontal plane. The eccentric portion 12 of the eccentric member is engaged by an eye 13 of a curved hook which, as is apparent from Fig. 3, forms an engaging surface for the second horizontal tube 15 and is adapted to engage part of this tube 15. The tube 15 crosses the tube 2 at right angles and the tube 2 is supported by this tube 15. The dimensions of the hook 14 are so selected that its end extends somewhat beyond the vertical plane passing through the centre line of tube 15. The end of this hook is likewise chamfered in order to obtain the smallest possible surface of application for unintentional impacts or blows against said end.

As will be explained below with reference to Figs. 1 and 2 the bearing 9 and the eccentric portion 12 are so constructed that in assembled condition the eccentric member cannot be removed from the scaffolding coupling before a pin 16 is removed from the shaft portion 17 and this eccentric member is rotated into a certain position. The pin 16 also serves as an abutment and indicator means showing whether the eccentric member has been brought to its final position. This is done by means of a key engaging the part 18.

When such a coupling has to be provided in a scaffolding structure the curved portion 3 is slid on the tube 2, which tube rests on the tube 15, so that the hook 14, which is in its lowest position, engages the tube 15. Thereafter the eccentric member is rotated and as a result the scaffolding coupling is firmly clamped on the tubes lying one against the other. The lower end of the connecting portion 7 is supported by the tube 15.

In order to prevent the eccentric member from dropping out of the eye 13 the bearing 9 in the connecting portion 7 is so embodied that the eccentric portion 12 of the eccentric member is locked by this connecting portion. The shape which this bearing must have deviates, as may be seen from Figs. 1 and 2, from an arc of a circle. In Figures 1 and 2 reference numeral 19 denotes the centre line of the rotation shaft of the eccentric member and reference numeral 20 the centre line of the eccentric portion 12. When the eccentric member is rotated around the centre line 19 of the rotation shaft 11—17, a portion of the eccentric portion 12 of the eccentric member in rotating over an angle between the two positions of abutment of the pin 16 against the connecting portion 7 will always be situated at a level below the upper surface of said connecting portion 7 so that the eccentric member cannot be removed. In order to make it possible to introduce the eccentric member into the eye 13 the eccentric portion 12 has a recess 21 which, as appears from Fig. 2, is so shaped that the portion in question of said eccentric portion has a cross-section corresponding to the bearing 9. When the eccentric portion 12 has been rotated into the position according to Fig. 2 the eccentric member may be inserted or removed. For this purpose it is necessary that the opening 8 is of non-circular, preferably elliptical shape. After the eccentric member has been put in place the hook 14, which is in highest position when the eccentric member is mounted, may swing downwards so that consequently

the eccentric member is lowered in oblique direction so that the shaft portion 11 is supported by the lower portion of the hole 8 and the shaft portion 17 is supported in the bearing 9. Thereafter the pin 16 may be mounted. In order to have the pin 16 also serve as indicator means for the position of the eccentric member there is provided in the eccentric member a hole for this pin in which the pin 16 is so inserted that in the clamping position of the scaffolding coupling said pin assumes the position shown in Fig. 3 and abuts against the connecting portion 7 and in the uncoupled position of the coupling said pin points in the opposite direction and abuts likewise against the connecting portion 7.

If the hook would have the same overall width as the axial length of the eye 13 it would still be possible to move said hook so far upwards that the eccentric member could still be removed from the eye 13. In order to prevent this said hook comprises a cam 22 facing the connecting portion 7 so that when mounting the scaffolding coupling the eye 13 must be inserted from below into the body 1. In order to ensure that the hook has not too much play in the body 1, which might cause the eccentric member to assume a position in which it could be removed from the eye 13, the arm 6 has a wedge-shaped cross-section as shown in Fig. 5.

It is obvious that the invention is not restricted to the embodiment described above with reference to the drawings but that it may be varied in many ways without departing from the scope of the invention. For example the locking of the eccentric member may also be effected in some other manner. The part 22 for example may also consist of a pin or some other projection adapted to be fixed in the hook 14.

I claim:

1. A scaffolding coupling comprising a first and a second part each having a surface for engaging a portion of the outer surface of a tubular building element forming an angle with one another, the first part having an opening for receiving an eye of the second part said second part being hook-shaped, the eccentric portion of an eccentric member being arranged in said eye, said eccentric member being rotatably mounted with shaft portions in bearings of the first part.

2. A scaffolding coupling according to claim 1, characterized in that the eccentric portion of the eccentric member comprises a recess, the cross-section of said eccentric portion near said recess corresponding to the cross-section of the bearing in the wall of the opening remote from the engaging surface of the first part of the coupling.

3. A scaffolding coupling according to claim 1, characterized in that a pin is provided in one of the shaft portions of the eccentric member, said pin serving as an abutment for limiting rotary movement of the eccentric member.

4. A scaffolding member according to claim 1, characterized in that the eccentric portion of the eccentric member comprises a recess, the cross-section of said eccentric portion near said recess corresponding to the cross-section of the bearing in the wall of the opening remote from the engaging surface of the first part of the coupling, a pin being provided in one of the shaft portions of the eccentric member, said pin serving as an abutment for limiting rotary movement of the eccentric member.

5. A scaffolding coupling according to claim 1, characterized in that the eccentric portion of the eccentric member comprises a recess, the cross-section of said eccentric portion near said recess corresponding to the cross-section of the bearing in the wall of the opening

remote from the engaging surface of the first part of the coupling the hook-shaped portion of the second part being provided with a cam co-operating with the wall of the opening in the first part lying remote from its engaging surface.

6. A scaffolding member according to claim 1, characterized in that the second bearing in the first part for one of the shaft portions of the eccentric member consists of a substantially elliptical opening.

7. A scaffolding coupling according to claim 1, characterized in that the eccentric portion of the eccentric member comprises a recess, the cross-section of said eccentric portion near said recess corresponding to the cross-section of the bearing in the wall of the opening remote from the engaging surface of the first part of the coupling the second bearing in the first part for one of the shaft portions of the eccentric member consists of a substantially elliptical opening.

8. A scaffolding coupling according to claim 1, characterized in that the eccentric portion of the eccentric member comprises a recess, the cross-section of said eccentric portion near said recess corresponding to the cross-section of the bearing in the wall of the opening remote from the engaging surface of the first part of the coupling the hook-shaped portion of the second part being provided with a cam co-operating with the wall of the opening in the first part lying remote from its engaging surface, the second bearing for one of the shaft portions of the eccentric member consisting of a substantially elliptical opening, a pin being provided in one of the shaft portions of the eccentric member, said pin serving as an abutment for limiting the rotary movement of the eccentric member.

9. A scaffolding coupling according to claim 1, characterized in that the eccentric portion of the eccentric member comprises a recess, the cross-section of said eccentric portion near said recess corresponding to the cross-section of the bearing in the wall of the opening remote from the engaging surface of the first part of the coupling the second bearing in the first part for one of the shaft portions of the eccentric member consists of a substantially elliptical opening, the walls of the opening in the first part which are provided with bearings being connected by arms, one of said arms facing the hook-shaped part being wedge-shaped.

10. A scaffolding coupling according to claim 1, characterized in that the eccentric portion of the eccentric member comprises a recess, the cross-section of said eccentric portion near said recess corresponding to the cross-section of the bearing in the wall of the opening remote from the engaging surface of the first part of the coupling the hook-shaped portion of the second part being provided with a cam co-operating with the wall of the opening in the first part lying remote from its engaging surface, the second bearing for one of the shaft portions of the eccentric member consisting of a substantially elliptical opening, a pin being provided in one of the shaft portions of the eccentric member, said pin serving as an abutment for limiting the rotary movement of the eccentric member, the walls of the opening in the first part which are provided with bearings being connected by arms, one of said arms facing the hook-shaped part being wedge-shaped.

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