

(12) UK Patent Application (19) GB (11) 2 145 463 A

(43) Application published 27 Mar 1985

(21) Application No 8421441  
(22) Date of filing 23 Aug 1984  
(30) Priority data  
(31) 8323088 (32) 26 Aug 1983 (33) GB

(51) INT CL<sup>4</sup>  
E04G 7/06 7/18  
(52) Domestic classification  
E2A 370 378 418 GB  
U1S 1705 E2A

(56) Documents cited  
None

(58) Field of search  
E2A

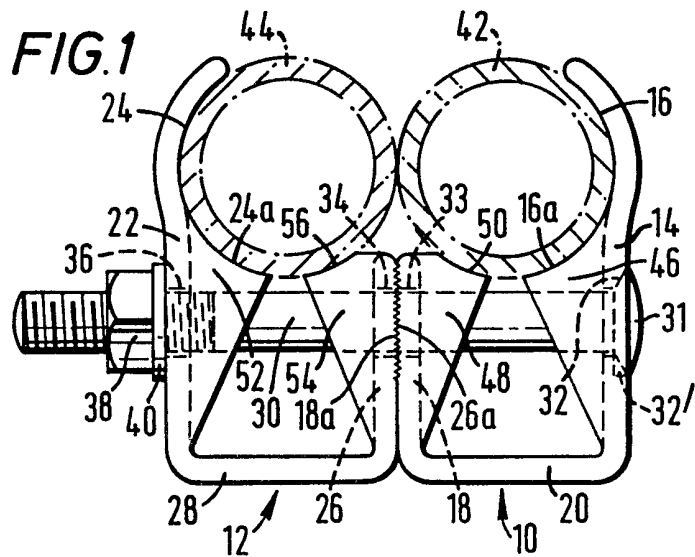
(71) Applicant  
Gordon Lewis Smith,  
35 Stratton Avenue, Wallington, Surrey SM6 9LJ

(72) Inventor  
Gordon Lewis Smith

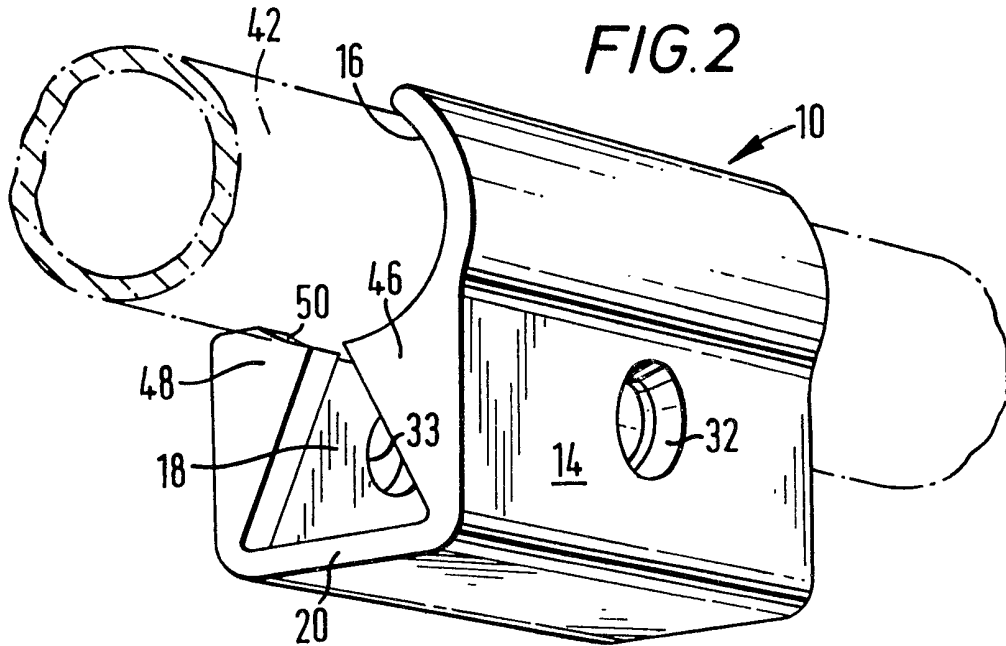
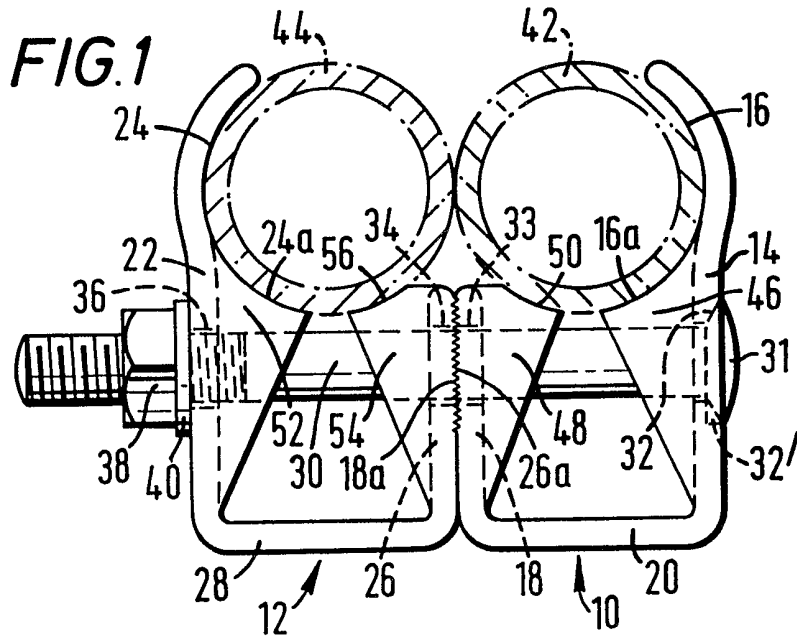
(74) Agent and/or Address for Service  
Raworth Moss & Cook,  
36 Sydenham Road, Croydon, Surrey CR0 2EF

(54) Swivel couplers

(57) A swivel coupler for connecting two scaffold tubes or the like, comprises two body portions 10,12. Each body portion has two substantially parallel sides 14,18 or 22,26 connected by and spaced apart by an integral base 20 or 28 and on one side a concave curved contact surface 16 or 24 to engage a tube. The body portions are mounted on a nut-and-bolt arrangement so that the one sides 14,22 with the concave surfaces are outermost and the concave surfaces face inwards. The nut-and-bolt arrangement is such as to enable the sides of the body portions to be drawn together to grip a scaffold tube or the like therebetween.



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## SPECIFICATION

### Swivel couplers

5 This invention relates to swivel couplers for connecting two scaffold tubes or the like.

Such couplers are used primarily for connecting two scaffold tubes at any angle other than a right angle, though they can be used to connect parallel tubes and tubes which intersect at right angles. Such non-right angle connections occur at the corners of buildings which are not rectangular in plan and between sway bracing tubes and standards, transoms or ledgers.

The present swivel couplers use two bodies, each partially surrounding a tube and connected together by a swivel connector. The open ends of each body are drawn together by a nut-and-bolt arrangement of which there are two.

The swivel connection is such as to enforce a separation between the two connected tubes and their protruding flaps which increase the size and unwieldiness of the couplers.

The present invention seeks to provide a simple construction of swivel coupler by which two tubes can be connected in close proximity with few if any protruberances.

According to the invention, a swivel coupler for connecting two scaffold tubes or the like, comprises two body portions, each body portion having two substantially parallel sides connected by and spaced apart by an integral base and on one side a concave curved contact surface to engage a tube, the body portions being mounted together by securing means so that the one sides with the concave surfaces are outermost and the concave surfaces face inwards, the securing means being adjustable so as to stable the sides of the body portion to be drawn together to grip a scaffold tube or the like therebetween.

The securing means may be a nut-and-bolt arrangement comprising a bolt anchored or secured to the one side of one body portion and passing through the other side and through both sides of the other body portion.

One embodiment of the invention will now be described by way of example with reference to the accompanying drawings, in which:-

*Figure 1* is an end elevation of a swivel coupler according to the invention; and

*Figure 2* is a perspective view of one body portion of such a swivel coupler.

A swivel coupler according to the invention is shown in Fig. 1 connecting two parallel tubes in contact.

The coupler comprises two body portions 10 and 12. The body portion 10 includes one side 14 with a concave curved contact surface 16, another side 18 and a base 20 connecting and spacing the sides. The sides 14 and 18 and base 20 are preferably formed inte-

grally, but may be welded together. The body portion 12 includes one side 22 with a concave curved contact surface 24, another side 26 and a base 28 connecting and spacing the sides. The sides 22 and 26 and base 28 are preferably formed integrally but may be welded together.

Aligned holes 32, 33, 34 and 36 are drilled in the sides 14, 18, 26 and 22 for a bolt 30 which extends therethrough. The head 31 of the bolt 30 could be secured as by welding to the side 14 to prevent it dropping out of the coupler. The head 31 of the bolt is dome shaped and fits into a countersunk hole 32 to reduce the protrusion of the head 31 beyond the external surface of the wall 14. In addition the initial part of the bolt shank extending from the head can be of square section to fit into a corresponding square hole 32 to prevent rotation of the bolt in the hole. The aligned holes 33, 34 and 36 in the sides 18, 26 and 22 are clearance holes to allow the sides of the body portions 10 and 12 to move relative to the bolt, when drawn together and to allow the body portion 12 to pivot about the bolt 30 and body portion 10. The side 22 has a flat surface around the hole 36 and a nut 38 and washer 40 are mounted on the bolt 30.

The contact surface 16 is extended by a first support means in the form of an ear 46 projecting out of the plane of the flat portion of side 14. A second support means in the form of an ear 48 projects out of the plane of the flat portion of side 18 and has a curved concave contact surface 50, which may also be knurled. Either or both ears help to provide effective grip for the tubes 42, 44. The other body portion 12 has a similar ear 52 on the side 22 and an ear 54 with a curved contact surface 56, which may also be knurled, on the side 26.

In use, the body portion 10 is mounted on a scaffold tube 42 with the surfaces 16, 16a and 50 in contact therewith. The other body portion 12 is then mounted on another scaffold tube 44 or the latter is introduced into the body portion 12, the tube 44 being in contact with and supported by the surfaces 24, 24a and 56. The body portions are adjusted relative to each other according to the angle of inclination between the tubes 42 and 44. The nut 38 is then tightened on the bolt 30 and draws the washer 40 against the side 22 to draw the parts together. Each body portion grips its associated tube, and the tubes can be very close and in contact.

As the bolt 30 is not secured to the side 14 it may be readily replaceable as the thread becomes damaged or unusable.

The surfaces 16 and 24 may be knurled to provide better grip for the tubes. Ears may be provided on or in the contact surfaces 16 and 24 projecting out of the planes thereof towards the tubes to provide better grip. Like-

wise, the adjacent external surfaces of walls 18, 26 are knurled at 18a, 26a to provide a better grip.

## 5 CLAIMS

1. A swivel coupler for connecting two scaffold tubes or the like, comprising two body portions, each body portion having two substantially parallel sides connected by and spaced apart by an integral base and on one side a concave curved contact surface to engage a tube, securing means for securing together the body portions so that the one sides with the concave surfaces are outermost and the concave surfaces face inwards, the securing means being adjustable so as to enable the sides of the body portions to be drawn together to grip a scaffold tube or the like therebetween.
2. A swivel coupler according to claim 1, wherein the securing means is a nut-and-bolt arrangement comprising a bolt anchored or secured to the one side of one body portion and passing through the other side and through both sides of the other body portion.
3. A swivel coupler according to claim 1 or 2, further comprising first support means projecting inwardly from the said one side of a body portion and provided with a contact surface for providing additional support for the tube associated therewith.
4. A swivel coupler according to claim 1, 2 or 3 further comprising a second support means projecting inwardly from the other side of each body portion and provided with a contact surface for providing additional support for the tube associated therewith.
5. A swivel coupler according to any one of claims 1 to 4, wherein at least one of said contact surfaces is provided with a friction surface, such as a knurled surface.
6. A swivel coupler according to any one of the preceding claims, wherein the adjacent surfaces of the other side wall are provided with a friction surface, such as a knurled surface.
7. A friction coupler substantially as herebefore described with reference to and as illustrated in the accompanying drawing.