

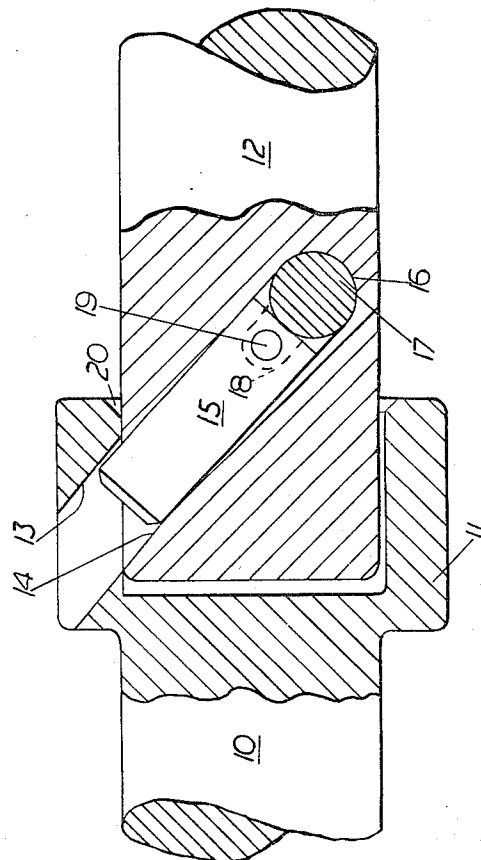
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S. E. PROCTOR

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COUPLING DEVICE

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Inventor

Sidney E. Proctor

By

Stevens, Davis, Miller & Mascher

Attorneys

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COUPLING DEVICE

Sidney E. Proctor, High Wycombe, England, assignor to Austin Hoy and Company Limited, High Wycombe, England

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1 Claim. (Cl. 287—119)

This invention relates to a coupling device.

An object of this invention is to provide for coupling together two members by a coupling device having a release device by virtue of which the coupling device can be simply and quickly released to uncouple the two members.

A coupling device, according to the invention, for coupling together two members, comprises a latch mounted within one member (the first member) for movement between a latched position in which the latch projects from said first member into a recess in the other member (the second member) and an unlatched position in which the latch is retracted into said first member, means to urge the latch into the latched position, and a part on the latch projecting from said first member for forcibly retracting the latch into said first member.

The means to urge the latch into a latched position may comprise a resilient member which is stressed when the latch is retracted.

The first member is preferably formed with a guideway which opens to the exterior of said member and has a receptacle in the body of said member and a transverse access opening.

The resilient member may be a solid resilient block of rubber or rubber-like material which substantially fills the receptacle in the guideway.

One embodiment of device for coupling together two relatively rotatable co-axial shafts is illustrated by way of example only in the accompanying drawing which is shown partly in section.

Referring to the drawing, one end portion of one shaft 10 serving as a driven shaft is formed with a bell-mouthed enlargement 11 arranged to embrace one end portion of the other shaft 12 which serves as a driving shaft. The inner wall of the enlargement 11 is formed with at least one recess 13 in the form of a hole inclined downwardly to the associated end of the driven shaft 10 at about 40° to the axis of said shaft. The end portion of the driving shaft 12 is formed with a bore 14 inclined upwardly towards the end of said shaft at about 45° to the axis of said shaft and opening through the periphery of said shaft. This bore 14 serves as a guideway for a circular-section latch 15 which is a neat sliding fit in the guideway. The guideway 14 has a receptacle 16 for a solid cylindrical block 17 of yielding rubber-like material which urges the latch 15 to project outwardly from the driving shaft 12 into a latched position as described hereinafter. The driving shaft 12 is also formed adjacent to the receptacle 16 with an access opening 18 transverse to the guideway 14 and constituted by short elongated registering slots formed in the periphery of said shaft and opening into the guideway. These slots 18 serve as guides for a crosspiece 19 extending rigidly from the latch 15 and projecting outwardly from both ends of the opening. The enlargement 11 on the driven shaft 10 is formed with depressions (not illustrated) ad-

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jacent to the crosspiece 19 for engagement by an extraction lever intended to engage the crosspiece and to move the latch 15 against the block 17 into retracted unlatched position within the guideway 14.

The inner wall of the entrance to the enlargement 11 is chamfered at 20, so that when the end portion of the driving shaft 12 carrying the latch is inserted into the enlargement, the chamfered wall pushes the latch 15 against the block 17 to permit the latch to enter the enlargement. When said end portion enters the enlargement 11, the latch 15 is immediately urged by the block 17 to enter the recess 13 in latched position and firmly couple the two shafts 10, 12 together. As the recess 13 and the guideway 14 are slightly out of alignment, there will be a slight wedge effect between the latch 15 and the recess 13. When the driving shaft 12 is rotated, the drive will be imparted to the driven shaft 10 by way of the latch 15. It will be understood that there may be more than one recess in the enlargement to provide for rapid coupling of the shafts together.

The shafts may be simply and quickly uncoupled by engaging the extraction tool with the crosspiece and retracting the latch into unlatched position within the guideway.

While the invention has been described in connection with the coupling together of two relatively rotatable shafts, the device may be readily adapted for coupling together two stationary members or for coupling together members, such as mine tubs or cars, to be hauled along a track or road. Where the members to be coupled together are of circular shape, the recess in one member for engagement by the latch on the other member may be in the form of an annular groove. Where the members are of irregular shape, the recess or recesses may be in the form of a hole or holes as described in connection with the embodiment described above.

I claim:

A coupling device for coupling together two members, comprising a first member, a socket carried by said first member, a recess in an internal side wall of said socket, a second member, an end portion of said second member received in said socket, a guideway comprising a blind bore in said end portion and inclined to the axis thereof and extending from a point at which it registers with said recess to a point outside the socket, a latch movably mounted in said guideway, resilient means urging said latch into a latched position in which it projects into said recess, and a projection on said latch projecting from said second member at a position outside the socket for forcibly retracting the latch from said recess.

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