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(54) Safety device for rail vehicles.

(57) So that a wheel of a rail vehicle can be prevented from turning in either direction, the device includes a master wedge (10) and a follower wedge (12) in oppositely disposed relation, and means (22,24) for drawing the two wedges together into wedging engagement with opposite sides of a wheel.

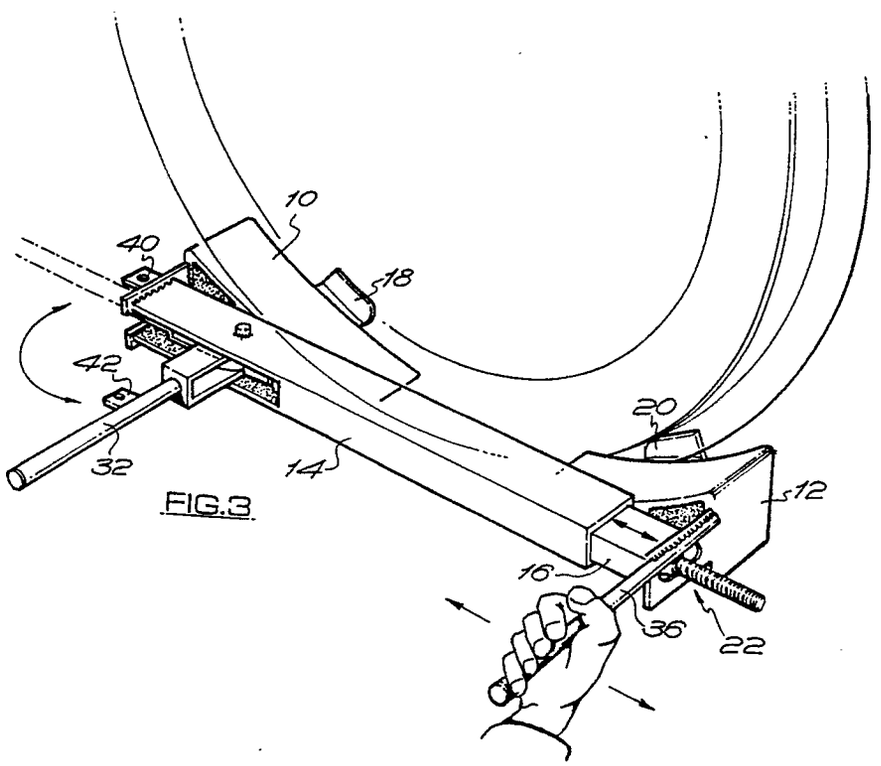

FIG.3

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SAFETY DEVICE FOR RAIL VEHICLES.

The invention relates to a safety device for rail vehicles whereby the vehicle can quickly and easily be rendered immobile.

The so-called "wheel scotch" has been known for many years and comprises a simple wedge for insertion in front of or behind a vehicle wheel. Devices such as this have been used to "chock" the wheels of various kinds of vehicle and have sometimes been connected to the vehicle by lengths of chain or the like to guard against their loss. However, such devices have never been entirely safe. For example, they are effective in preventing the rotation of the vehicle wheel in one direction only. Also, in some circumstances, it may be found that a simple wedge device, especially a wooden wedge can be rolled over by the wheel, thus being quite ineffective. It is also possible for such a device to become dislodged sideways so that the wheel is again completely free to turn.

The invention as claimed solves the problem of how to design a safe device for rail vehicles which will be effective in preventing the rotation of the vehicle wheel in either direction.

The main advantage offered by the device is that it cannot by inadvertence become dislodged from a wheel to which it has been fitted.

One way of carrying out the invention is described in detail below with reference to the accompanying drawings which illustrate only one specific embodiment, in which:-

Figure 1 is a side view of a safety device embodying the invention,

Figure 2 is a plan view,

Figure 3 is a perspective view which shows the device being fitted in position, and

Figure 4 is a view similar to Figure 2 which illustrates a possible modification.

Referring now to Figures 1 to 3 of the drawings, the safety device there illustrated is for use on rail vehicles whereby the vehicle can quickly and easily be rendered immobile. The device includes a master wedge 10 and a follower wedge 12 arralnged in oppositely disposed relation to each other and connected together by tubes 14 and 16 slidably disposed the one inside the other. The tubes 14,15 constitute longitudinally sliding means which permit the adjustment of the wedges towards and away from each other. The extreme ends of the tubes 14,16 are connected to the respective wedges by means of end plates 15,17.

As indicated by the chain-dotted lines, the wedges 10 and 12 can be placed on a rail in positions on opposite sides of a flanged wheel mounted on the rail. The wedges are provided with respective retaining clips 18,20, which, when the two wedges have bean mounted on the rail, can be engaged with the wheel flange, that is to say the upstanding parts of said clips are brought into positions partly behind the wheel flange, by movement of said wedges towards each other. The clips would engage the wheel flange if any attempt was made to dislodge the wedges by moving them sideways.

The spacing of the two wedges is determined by the setting of screwthreaded adjustment means, generally indicated 22, at one end of the device and over-centre means, generally indicated 24, at the other end. A screwthreaded rod 26, which is common to both, extends, as shown, through the tubes 14,16 and is provided near its one end with a nut 28 which can be brought into abutment with a recessed abutment wall 30 within the tube 16 through a compressed coil spring 29. At its other end the rod is connected, as shown, to a lever 32 which is pivotted at 34 within a slotted part of the tube 14. With the lever 32 in an inoperative position, as shown in chain-dotted lines in Figure 2, (and before the spring 29 has been compressed by movement of the wedge 12 away from the wedge 10 as it is located in its operative position on the rail) the nut 28 is accessible, also as shown in chain-dotted lines, for adjustment along the projecting end length of the rod 26. In this position, the nut constitutes the adjustment means 22, this being for setting the initial spacing of the two wedges. When the initial spacing of the two wedges has been properly adjusted, and the two wedges placed in their operative positions on the rail, the operation of the over-centre means by the movement of the lever 32 to the position in which it is shown in full lines in Figure 2 will draw the two wedges together by an amount which will force both wedges into effective wedging engagement between wheel and rail on opposite sides of the wheel.

When the lever 32 is in its inoperative position in which it is shown in chain-dotted lines in Figure 2, it constitutes one of a pair of handles by means of which the device can be placed in position on a rail or by means of which it can subsequently be removed. The other of said pair of handles is constituted by a length of rod 36 which is welded to the end plate 17 to form a fixed handle projecting from the follower wedge.

The device just described can very quickly and easily be fitted to a flanged wheel within a wide range of diameters. It can also very quickly and easily be removed when the wheel is to be released. However, if for the sake of safety the device is to be unable to be removed without author-

ity, a padlock (not shown) can be engaged through a hole 38 in a catch plate 40 and through a similar hole in a plate 42 welded to the lever 32. When the padlock has been fitted to secure the two plates together, the lever cannot be moved to its inoperative position to release the wedging forces which hold the device in position.

Thus there is provided a safety device for rail vehicles which is effective in preventing a wheel to which it is fitted from turning in either direction. It is consequently an ideal device to use when any form of repair or maintenance is to be carried out on a rail vehicle. When adjusted for use with a particular diameter of flanged wheel it should not normally be necessary to re-adjust the device when re-fitting it to another wheel of the same nominal diameter.

Various modifications may be made. For example, in Figure 4 there is illustrated one possible modification in which the screwthreaded adjustment means 22 has been altered so that the screwthreaded rod 26 no longer projects outwardly from the device to be vulnerable to damage. As shown, in the modified arrangement, the screwthreaded adjustment means comprise a tubular member 25 which is connected at one end to the over-centre means. At its other end, the tubular member is provided with a nut 27 which is engaged by the screwthreaded rod 26. In this case, the nut 28 which can be brought into abutment with the recessed abutment wall 30 within the tube 16 is made fast on the end of the rod 26. In effect, the screwthreaded rod 26 has become a headed bolt which engages the nut 27.

Various other modifications may be made.

Claims

1. A rail vehicle safety device including a wedge (10) adapted to be placed in position on a rail in engagement with a vehicle wheel, characterised in that the device also includes a follower wedge (12) arranged in oppositely disposed relation to the first mentioned or master wedge, the two wedges being connected together by longitudinally sliding means (14,15) which permit their adjustment towards and away from each other, the latter being associated with adjustments (22) for setting the initial spacing of the two wedges and over-centre means (24) for drawing the two wedges (10,12) together by an amount which will force both wedges into effective wedging positions on opposite sides of the wheel.

2. A safety device as claimed in claim 1, in which the wedges (10,12) are provided with respective retaining clips (18,20) for engaging the flange of the wheel with which they are to have effective wedging engagement, that is to say for resisting any attempt to dislodge the wedges by moving them sideways.

3. A safety device as claimed in either one of the preceding claims, in which a fixed handle (36) is provided at one end of the device, a handle at the other end of the device being constituted, in its inoperative position, by a lever (32) forming part of the over-centre means (24).

4. A safety device as claimed in any one of the preceding claims, in which the arrangement is such that when the two wedges (10,12) have been forced into effective wedging engagement with the opposite sides of the wheel by the operation of the over-centre means (24), the adjustment means (22) for setting the initial spacing of the two wedges is inaccessible.

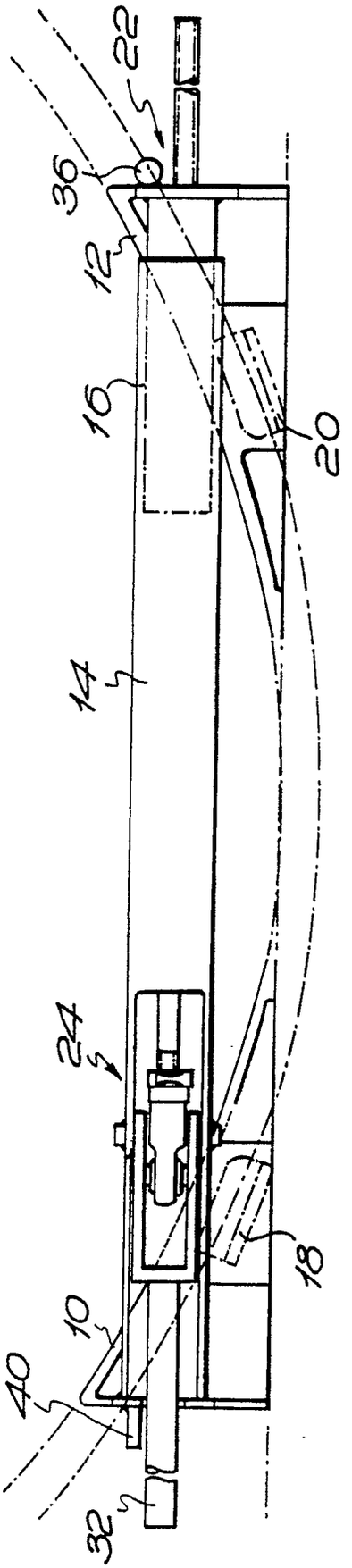

FIG.1

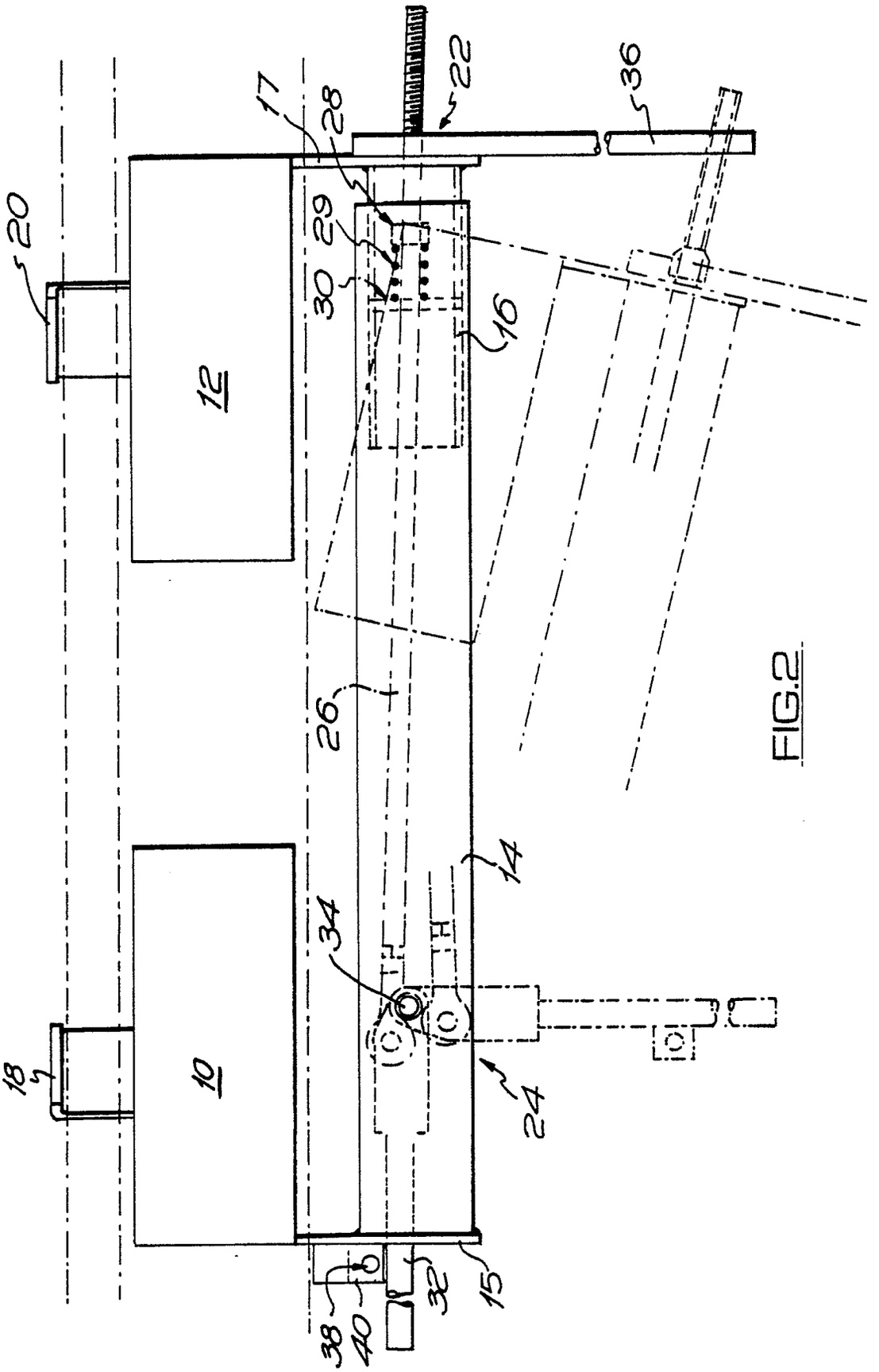

FIG.2

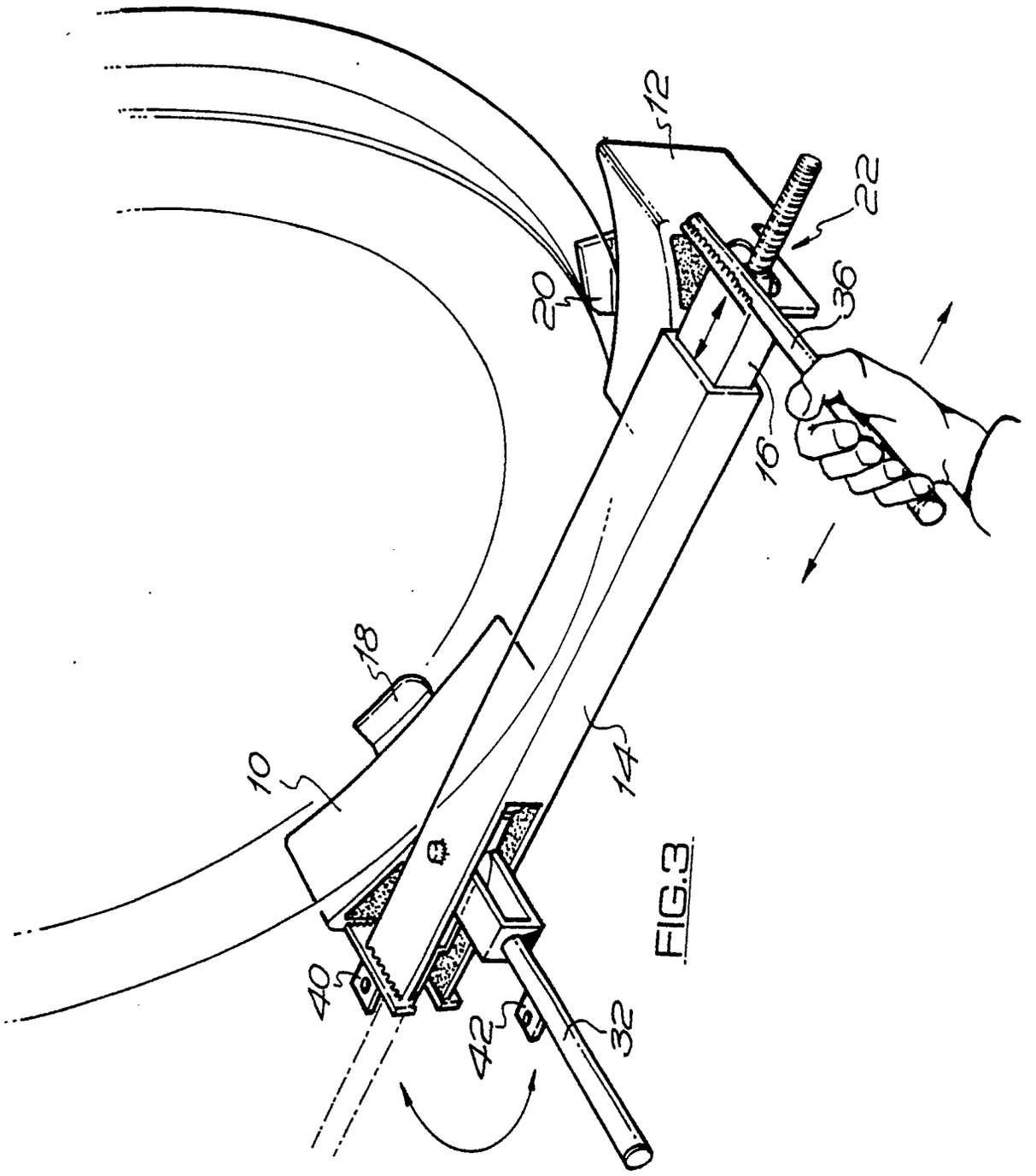

FIG.3

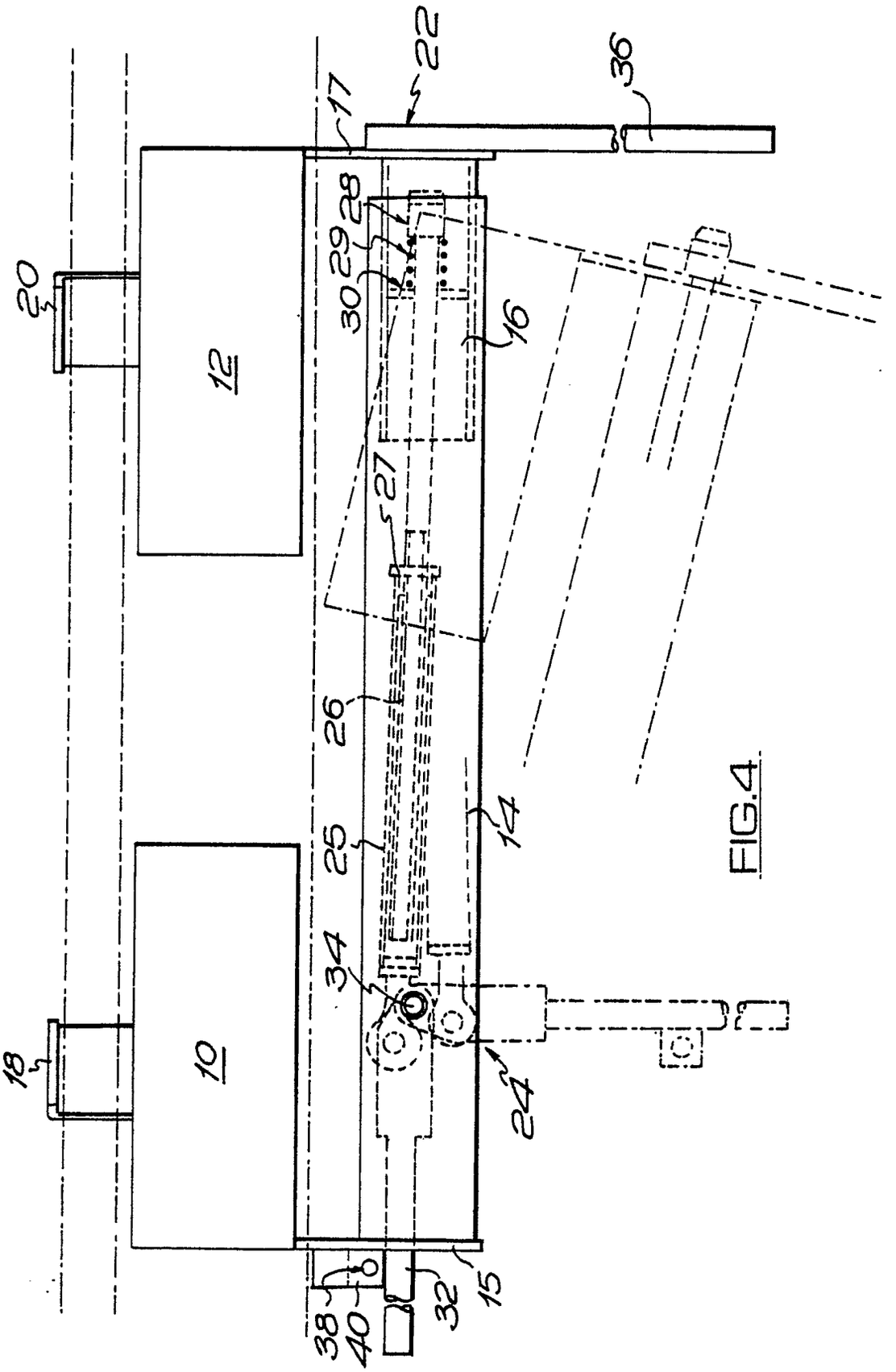

FIG.4.

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EUROPEAN SEARCH REPORT

Application Number

EP 90 30 6935

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-2461248 (A. T. WRIGHT) * column 2, line 3 - column 2, line 38; figures 1, 2 *	1	B61K7/20 B61H7/10
A	DE-C-763265 (BORSIG LOKOMOTIV - WERKE GMBH) * page 2, line 37 - page 2, line 72; figures 1-7 *	1	
A	CH-A-580510 (FIRMA PAUL MEIER) * column 1, line 63 - column 2, line 38; figures 1, 2 *	1, 3	
A	DE-C-61201 (GEWERKSCHAFT HOHENMAUTEN, ERBER & UNGER) * the whole document *	1, 2	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B61K
B61H
B60T

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	01 OCTOBER 1990	CHLOSTA P.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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