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(54) Cam assembly for knitting machines.

(57) A cam assembly for knitting machines being characterized in that from the side of the needle bed (12) there is a recess (14) in the cam block (1), the recess (14) being limited by walls, in said recess there are cams (8 to 11) provided with through-holes (15) through which passes only one fixing element (13) which holds the cams in the cam block. The walls (2 to 6) of the recess (14) in the cam block (1) limit angular position for cylinder, dial or sinker cams, height position of cylinder cams and radial position of dial or sinker cams, radial position of cylinder cams and height position of dial or sinker cams. Fixing by only one fixing element (13) is performed so that the cylinder cams can radially and dial or sinker cams can vertically move between the needle or sinker and upper wall of the recess within the limits of the gap between the fixing element and the surface of the through-hole in the cams.

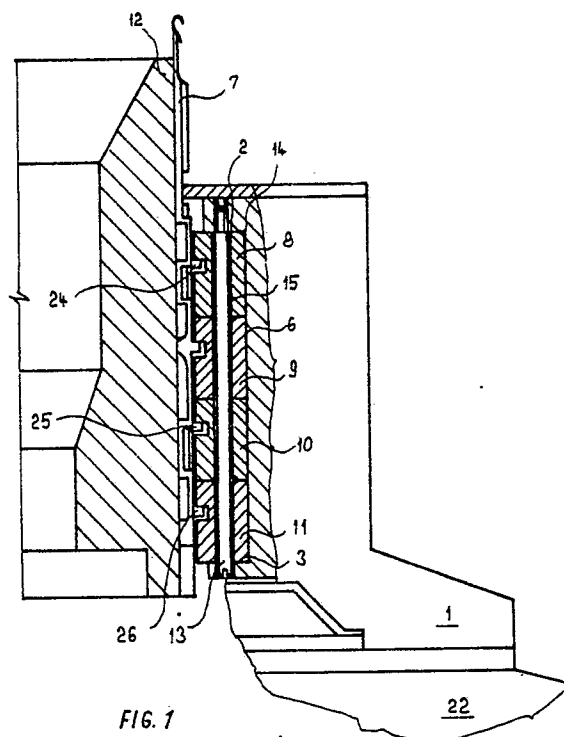


FIG. 1

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Cam assembly for knitting machines

The invention relates to a cam assembly for knitting machines, particularly to fix the cams in the cam blocks in knitting machines.

Cam elements which limit the tracks of needle or sinker butts are normally fixed to carrying members by screws or rivets, while adjustment of their position is performed by pins or other screws which must be positioned very precisely. For changing the cam elements it is necessary to unscrew and to screw a number, in case of multi-track machines a large number of screws. Another disadvantage is that precise reproducibility of the position of cam elements is not guaranteed and that exchanged cam elements must be checked and adjusted. Said exchange of cams is laborious and time demanding.

It is the object of the invention to provide a cam assembly, in which the cam elements can be changed quickly and in which the adjusting of the new cam elements can be done very simple.

This object will be solved according to the invention by a recess in the cam block is disposed from the side of the needle bed of the machine, said recess being limited by upper and lower walls, side walls and rear wall, in said recess there are cams provided with through-holes through which passes an only one fixing screw holding the cams in the cam block. The upper and lower walls of the recess in the cam block limit the height position of cylinder cams and the side walls of the recess limit the angular position of cylinder cams. The right and left walls of the recess in the cam block limit radial position of dial cams, not shown side walls limit angular position of dial cams. Between the screw holding the cams in the cam block and the surface of the through-hole in the cams there is a gap permitting a motion of the cams between the knitting elements and the wall of the recess in the cam block opposite to said knitting elements.

The advantage of the arrangement according to the invention is that when changing the cams it is necessary to unscrew only one screw in the cam block what releases all the cams in the block and after the exchange to screw-in said only one screw again. Precise position of the cams is given by upper, right, lower, left and side walls of the recess in the cam block.

Further advantages and features of the invention will be seen from the following description of an example shown in the drawings, where

Fig. 1 is a side view of a cam block with cams cooperating with knitting elements in the cylinder,

Fig. 2 is a front view of the same cam block with the cams,

Fig. 3 is a side view of a cam block with cams cooperating with knitting elements in a dial or a sinker ring.

According to Figs. 1 and 2, cams 8 to 11 cooperating with knitting elements 7, 24, 25, 26 in a cylinder 12 are located in a recess 14, in a cam block 1 which is fixed to a cylinder cams carrier 22. The recess 14 is made in the cam block 1 from the side of the cylinder 12 and said recess 14 is limited by an upper wall 2, a lower wall 3, side walls 4 and 5 and a rear wall 6. The upper wall 2 and the lower wall 3 of the recess 14 in the cam block 1 limit the height position of cams 8 to 11 and the side walls 4, 5 limit the angular position of the cams 8 to 11. The cams 8 to 11 are fixed to the cam block 1 by only one fixing element, in this exemplary embodiment by only one screw 13 which passes through the through-holes 15 made in the cams 8 to 11 and screwed into the cam block 1. Between the screw 13 and the wall of the through-hole 15 in the cams there is a gap which permits a motion of the cams between the knitting elements 7, 24, 25, 26 in the cylinder 12 and the rear wall 6 of the recess 14. The screw 13 passing the cams 8 to 11 and screwed into the cam block 1 prevents a releasing of the cams 8 to 11 from the recess 14 when the cam block 1 is taken out from the cylinder cams carrier 22.

After unscrewing the screw 13 from the cam block 1 the cams 8 to 11 are released and it is possible to change their arrangement or to exchange them when it is necessary to change the track for the motion of knitting elements 7, 24, 25, 26 in the cylinder 12.

In the embodiment of Fig. 3, cams 16, 17 cooperating with knitting elements 19 and 23 in a dial or in a sinker ring 18 fixed to a dial carrier 20, are located in a recess 14 in a cam block 1 which is fixed to the dial cams carrier 21. The recess 14 is made in the cam block 1 from the side of the dial 18 and it is limited by right wall 2, left wall 3, not shown side walls and upper wall 6. The cams 16, 17 are fixed to the cam block by only one screw 13 which passes through the through-holes 15 made in the cams 16, 17 screwed into the cam block 1. A clearance between the screw 13 and the wall of the through-hole 15 permits motion of cams 16, 17 between the knitting elements 19, 23 in the dial 18 and the upper wall 6 of the recess 14 in the cam block 1. Radial position of the cams 16, 17 is limited by walls 2 and 3 of the recess 14 in the

cam block 1, angular position of the cams 16, 17 is limited by not shown side walls of the recess 14 in the cam block 1.

Claims

1. Cam assembly for a knitting machine comprising a cam block with cams for controlling the knitting elements, said cam block being fixed on a cam carrier, **characterized** in that, from the side of the bed (12, 18) of knitting elements (7, 19, 23 to 26) is provided a recess (14) in the cam block (1) in said recess (14) are disposed the cams (8 to 11, 16, 17) provided with through-holes (15) through which passes only one fixing screw (13) which holds all of the cams (8 to 11, 16, 17) in the cam block (1).

2. Cam assembly according to claim 1, characterized in that the recess (14) is limited by an upper wall (2) and a lower wall (3) limiting the height position of the cams (8 to 11), side walls (4, 5) limiting the angular position of cams (8 to 11) and a rear wall (6).

3. Cam assembly according to claim 1, characterized in that the recess (14) is limited by a right wall (2) and a left wall (3) limiting radial position of the cams (16, 17), side walls limiting angular position of cams (16, 17) and upper a wall (6).

4. Cam assembly according to claims 1 to 3, characterized in that between the screw (13) holding the cams (8 to 11, 16, 17) in the cam block (1) and the wall of the through-holes (15) made in cams (8 to 11, 16, 17) there is a gap permitting a motion of the cams (8 to 11, 16, 17) between the knitting elements (7, 19, 23 to 26) and the wall (6) of the recess (14) in the cam block (1).

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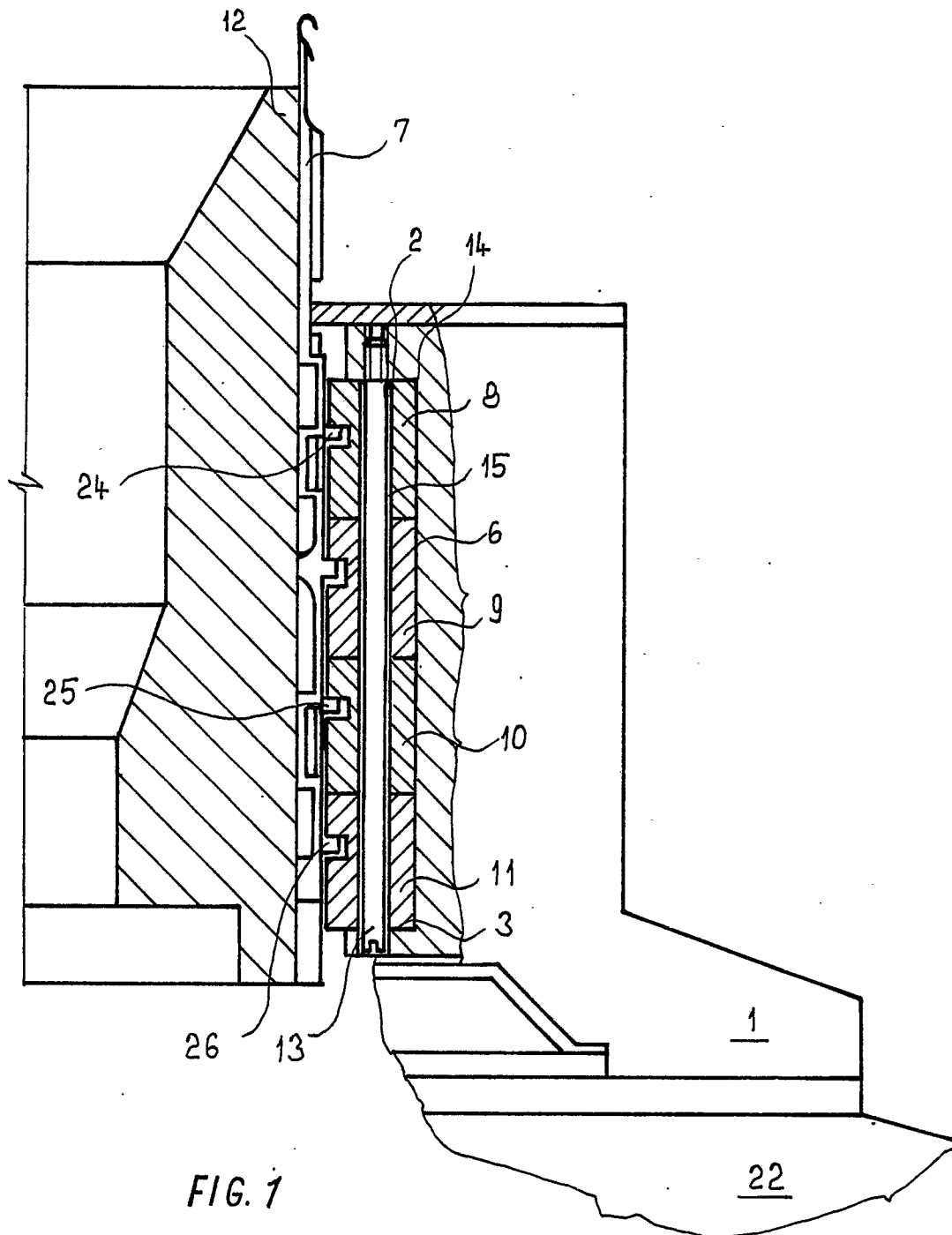
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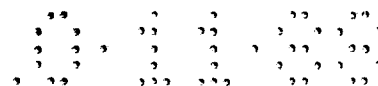
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Neu eingereicht / Newly filed
Nouvellement déposé





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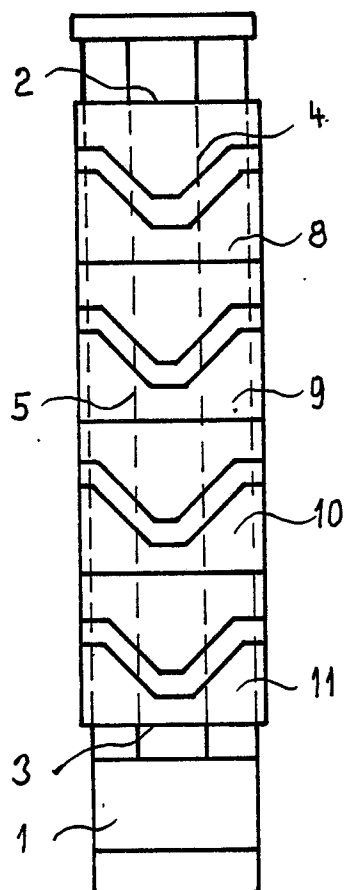
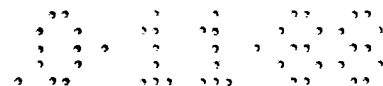


FIG. 2



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Nouvellement déposé

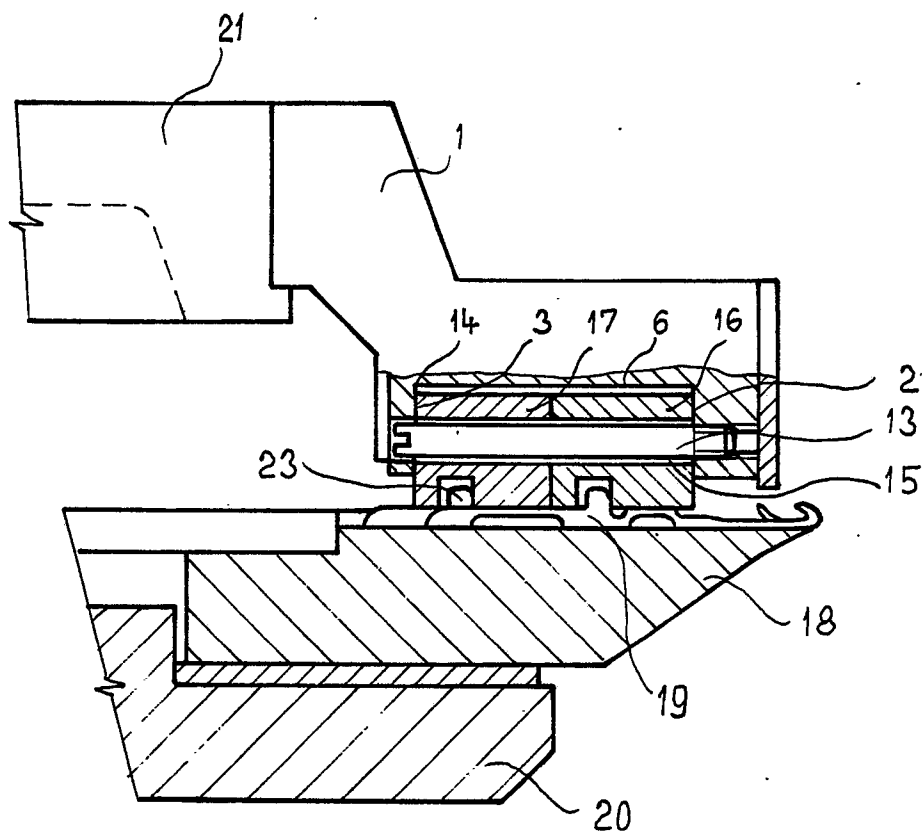


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number

EP 88 11 7748

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.4)
A	DE-A-2544197 (SULZER MORAT GMBH) ---		D04B15/32
A	DE-A-2242169 (C. TERROT SÖHNE) ---		
A	GB-A-2075070 (VEB KOMBINAT TEXTIMA) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			D04B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 15 FEBRUARY 1989	Examiner VAN GELDER P.A.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			