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(54) Device for changing a squeegee.

(57) The invention provides a device for removing a squeegee (3) from a stencil (2) of a printing machine. The device comprises a horizontal guide (5) placed on a stand and a carriage (6) which is displaceable along the guide and on which are fixed means for gripping the end part of a squeegee.

In one of the embodiment of the invention a number of guides and associated gripping means (7) are arranged on the stand and the guide is pivotable between the horizontal position and a position varying from the horizontal position and the guides are rotatable in a horizontal plane around the stand.

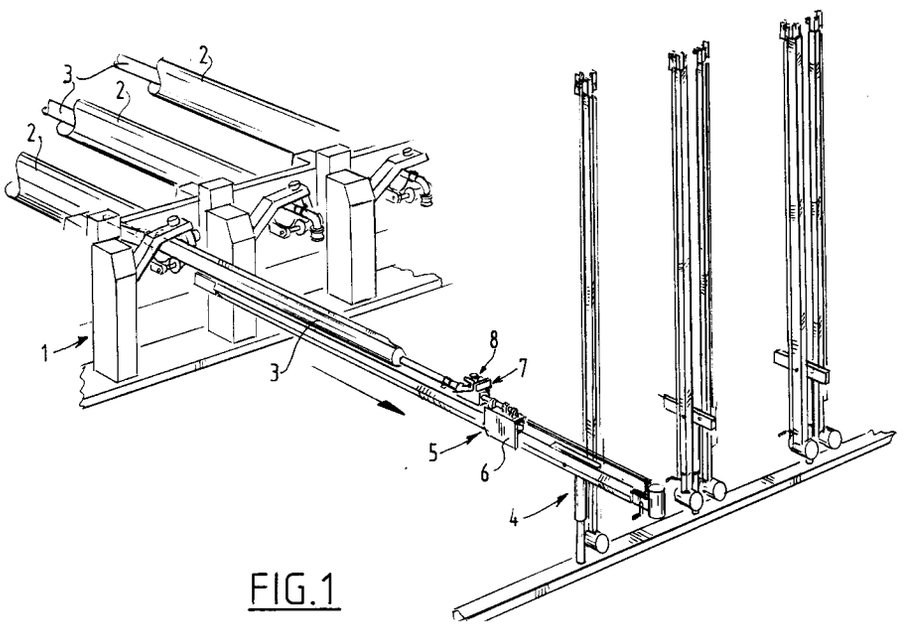

FIG.1

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The invention relates to a device for removing a squeegee from a stencil of a printing machine.

Printing machines, and in particular screen printing machines in the textile industry, are provided with tubular screen printing plates, so-called stencils, using which a design is applied for instance to textiles. When dye-colour and/or design is changed the stencils also have to be changed. For this purpose the squeegee is first removed from the stencil. The squeegee provides the supply of dye to the stencil. The resilient sheet fixed to the squeegee then presses the dye through the hole pattern of the stencil onto the textile.

The squeegee has to be removed prior to changing of the stencil. Up until now this has generally been done manually. However, the weight and length of the squeegee represent a heavy load for back and arms. The sharpness of the resilient sheet makes handling of the squeegee dangerous. Furthermore, damage to the stencil can hereby occur.

The invention has for its object to provide a device for removing a squeegee from a stencil wherein the above stated drawbacks are avoided. This is achieved with the invention by a horizontal guide placed on a stand and a carriage which is displaceable along the guide and on which are fixed means for gripping the end part of a squeegee.

The position of the squeegee relative to the stencil is adjustable within a 50 mm circle. From the operating position the stand will therefore be adjustable both vertically and horizontally in sideways direction.

The squeegee is received in the gripping means and subsequently pulled out of the stencil by means of the carriage displaceable along the guide. In analogous manner a squeegee can also be placed in a stencil.

In a preferred embodiment of the invention a number of guides and associated gripping means are arranged on the stand. Each guide is pivotable between the horizontal position and a position varying from the horizontal position. In addition the guides are rotatable in a horizontal plane around the stand. A dirty squeegee can hereby be removed and a clean squeegee directly inserted without great loss of time.

In preference the gripping means are pivotable about their horizontal axis relative to the carriage. The connection point of the squeegee for a dye conduit can thereby be turned upward for transport of the squeegee. This prevents unnecessary leakage of dye.

A number of devices according to the invention corresponding to the number of stencils is preferably disposed in the vicinity of a printing machine, wherein each device is placed relative to the printing machine such that in the horizontal position the guide lies in the line of the squeegee.

Further details and special features will become apparent from the annexed drawings, in which:

fig. 1 is a perspective view of an arrangement of a number of devices according to the invention;

fig. 2 is a perspective view of a preferred embodiment of a device according to the invention;

fig. 3 shows a partly broken away, perspective view of the displaceable carriage with gripping means according to III of fig. 2;

fig. 4 shows a partly broken away, perspective view of the transport mechanism according to IV from fig. 2; and

fig. 5 is a partly broken away, perspective view of the fixed clamping means according to V from fig. 2;

Fig. 1 shows the disposition of a number of preferred embodiments of devices according to the invention. A printing machine 1 comprises a number of stencils 2 having squeegees 3 therein. Device 4 has a guide 5 along which a carriage 6 with gripping means 7 is displaceable. The gripping means 7 enclose a connection point for a dye conduit 8 of the squeegee.

Fig. 2 shows a device according to the invention which consists of two guides 9 and 10 fixed to a stand 11. Guide 9 is situated in its horizontal position and is pivotable about a point 13 in the direction of arrow 12. Both guides are rotatable about the stand 11 in the direction of arrows 14 via the point of rotation 15.

Fig. 3 shows in detail the displaceable carriage 16 with the gripping means 17. The connecting point 18 of the squeegee 20 already turned in the direction of arrow 19 is shown in dashed lines. The gripping means 17 are pivotable about their horizontal axis by means of a toothed wheel mechanism 29. The squeegee 19 rests in a seat 21. The connecting point 18 is clamped between two rod-like elements 22 and held fixedly by a resilient hook 23. The carriage 16 is displaceable in the direction of the arrow 26 by means of profiled rollers 24 and a belt 30 over a tilted guide 25 with a square profile. The carriage 16 is situated in the figure on the end of the guide 25 facing the printing machine. Situated on this same end are upwardly foldable fixed clamping means 27 which can fold up in the direction of the arrow 28 (see fig. 5). The fixed clamping means 27 are attached in a manner not shown to a rod 32 which is connected to the other end of the guide. Situated in the carriage 16 for folding up the fixed clamping means 27 is a rod-like element 31.

Fig. 4 shows the end of a guide remote from the printing machine. The belt 30 is driven by means of handle 33 in order to displace the car-

riage along the guide 25. Handle 34 is used for pivoting the gripping means about the horizontal axis. Counterweight 35 holds the guide in equilibrium. The rod 32 which is attached to the fixed clamping means is connected to a lever arm 36. This lever arm 36 is provided with a recess 37 for receiving the rod-like element 31 (see fig. 3). A movement of the carriage in the direction of the counterweight 35 causes a movement of the lever arm 36 in the direction of arrow 38 and a movement of the rod 32 in the direction of arrow 39. The fixed clamping means are hereby folded upward for receiving the extremity of a squeegee (see fig. 5).

Fig. 5 shows the extremity of a squeegee 40 which is held fixedly by fixed clamping means 27. These latter are folded up by means of a lever member 41 which is connected to the rod 32 via a pivot point 42.

Claims

1. Device for removing a squeegee from a stencil of a printing machine, comprising a horizontal guide placed on a stand and a carriage which is displaceable along the guide and on which are fixed means for gripping the end part of a squeegee.

2. Device as claimed in claim 1, **characterized in that** a number of guides and associated gripping means are arranged on the stand and that the guide is pivotable between the horizontal position and a position varying from the horizontal position and that the guides are rotatable in a horizontal plane around the stand.

3. Device as claimed in claim 1 or 2, **characterized in that** the gripping means are pivotable about a horizontal axis relative to the carriage.

4. Device as claimed in claims 1-3, **characterized in that** the extremity of the guide remote from the gripping means is provided with fixed clamping means.

5. Printing machine provided with a device as claimed in any of the foregoing claims, **characterized in that** the device is placed relative to the printing machine such that in the horizontal position the guide lies in the line of the squeegee.

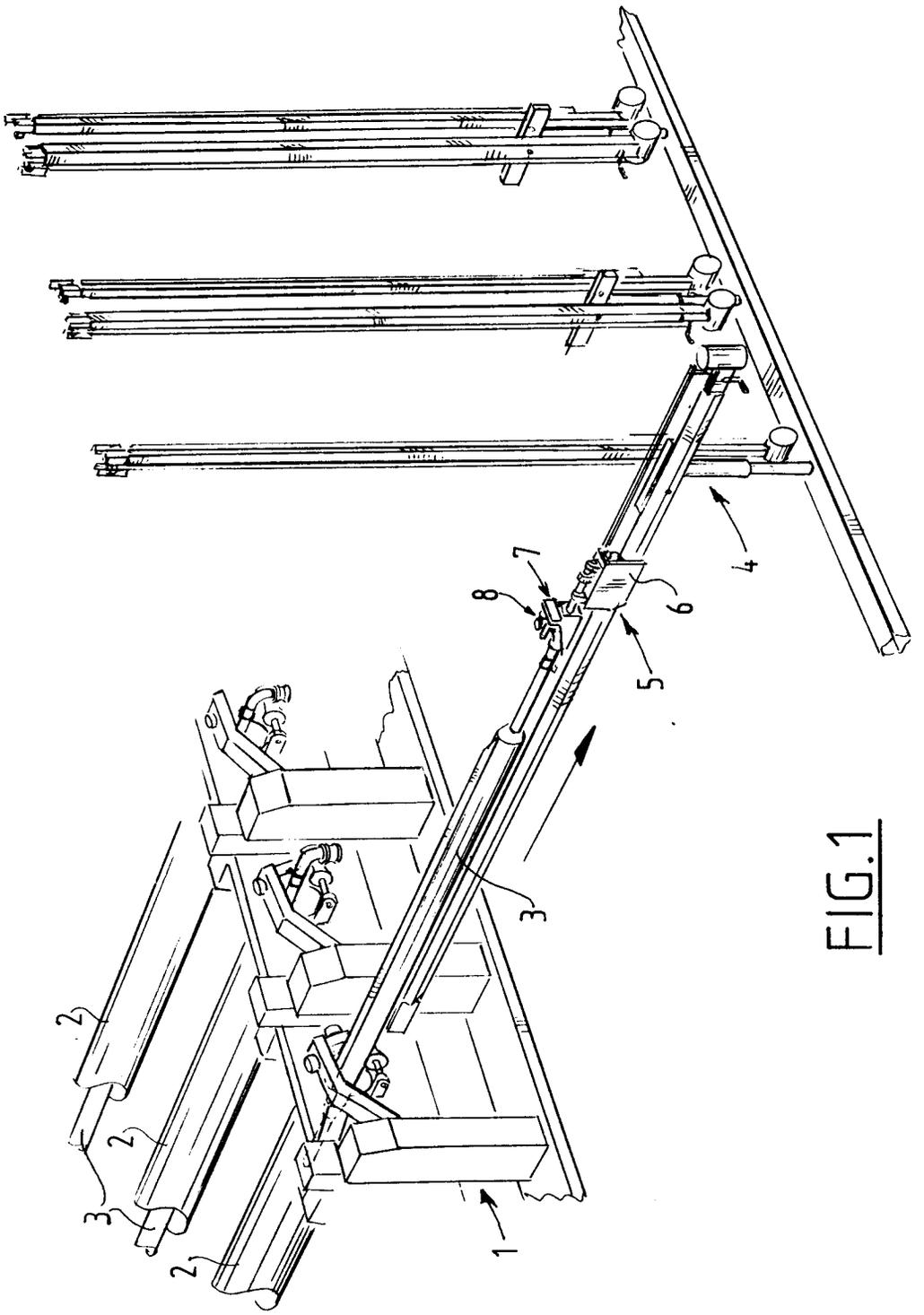

FIG.1

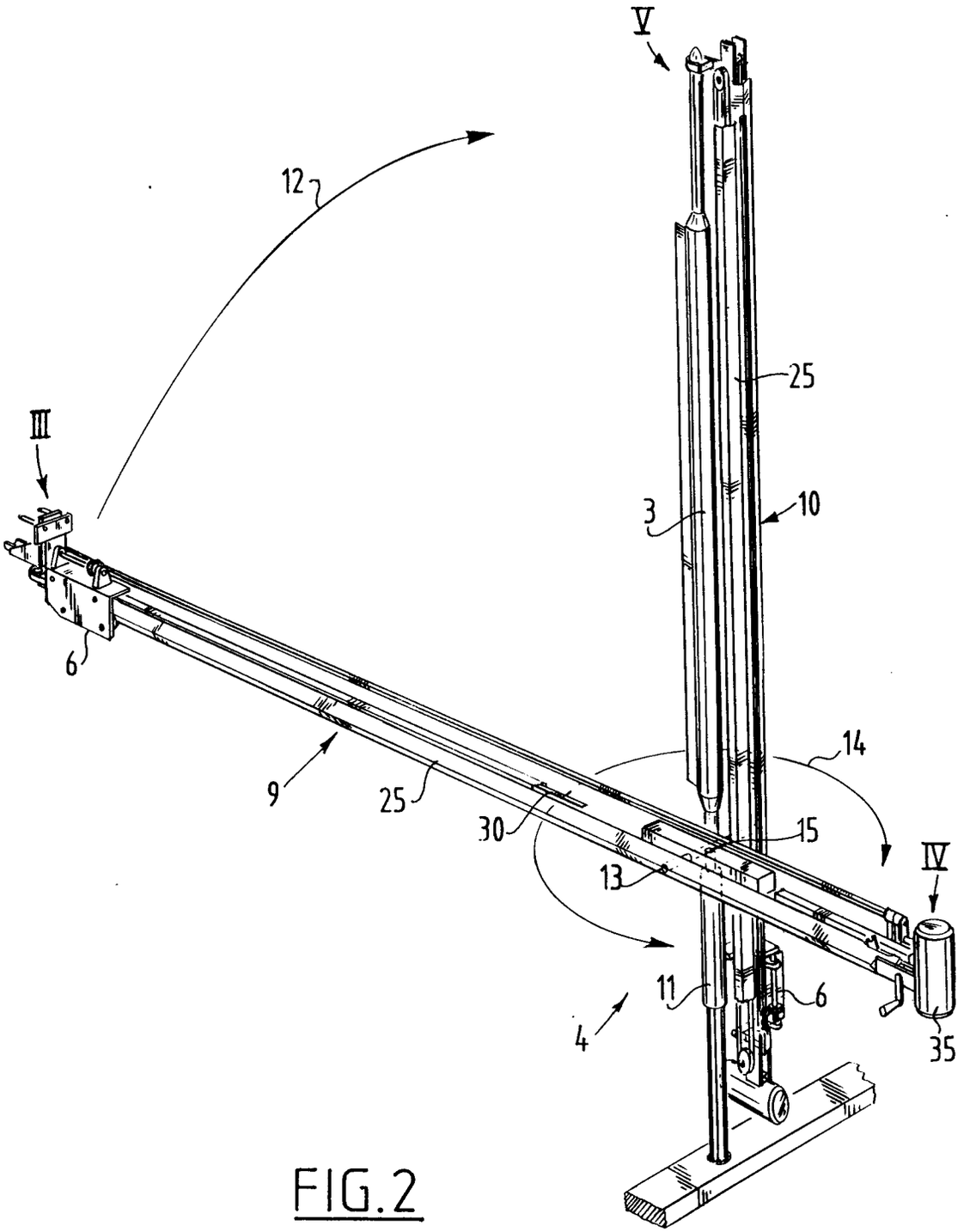

FIG.2

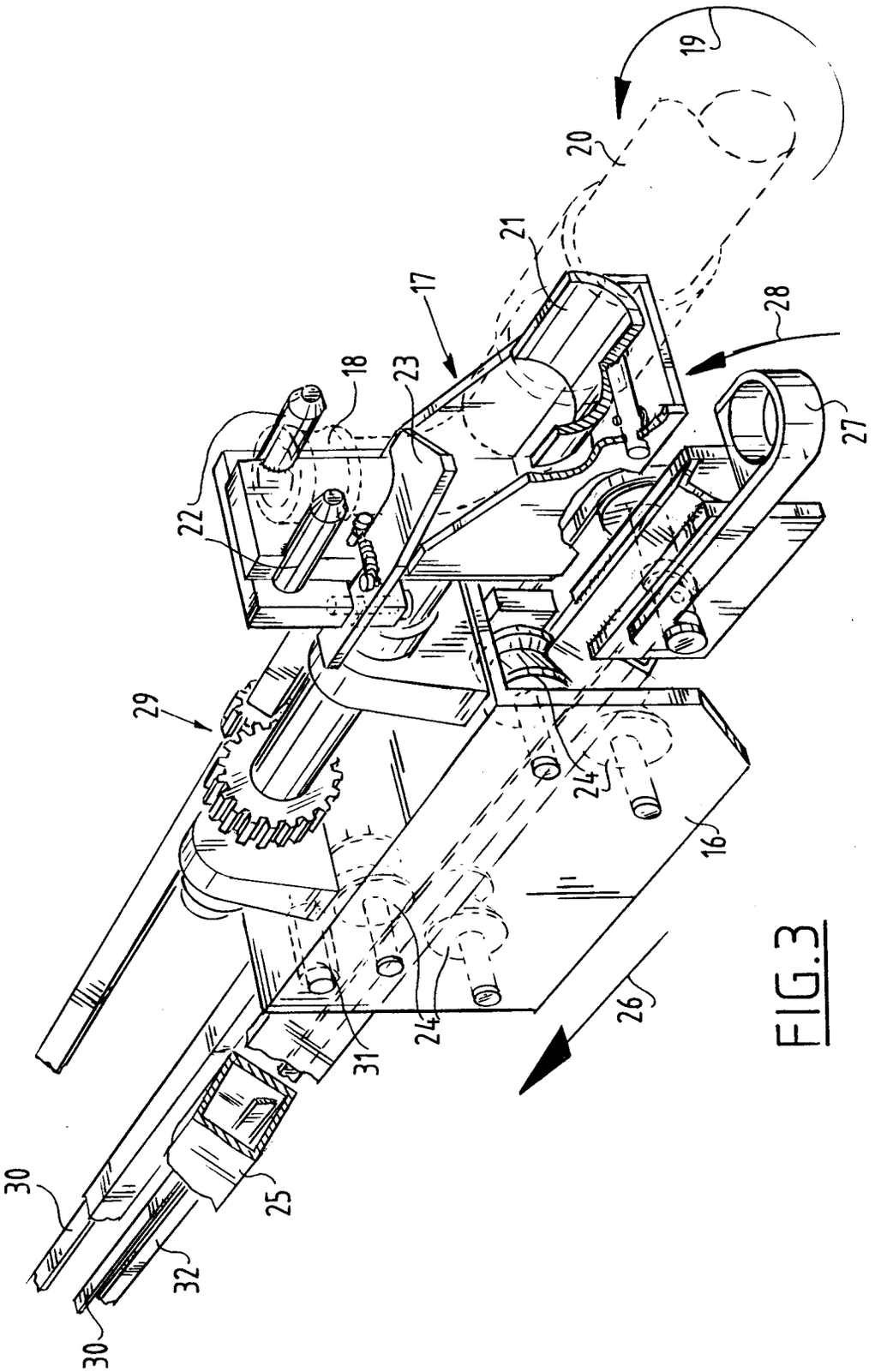

FIG.3

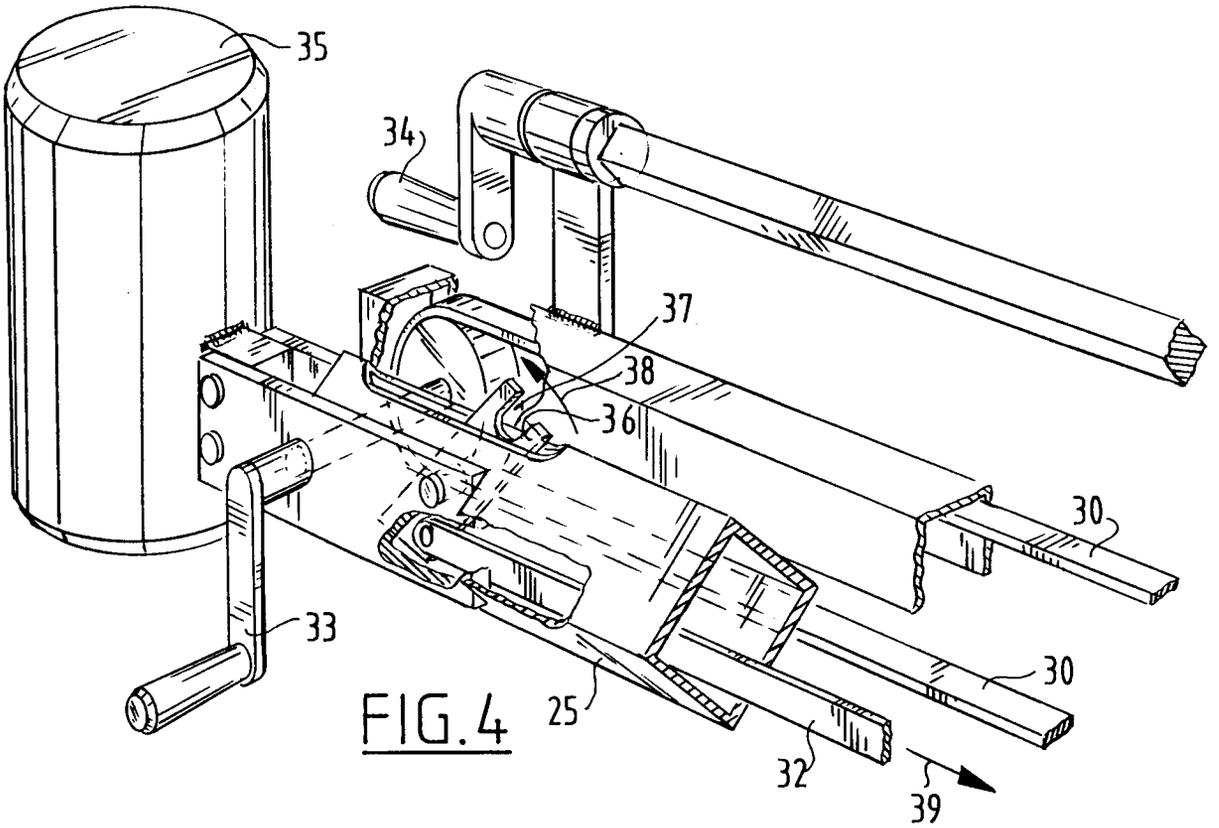

FIG.4

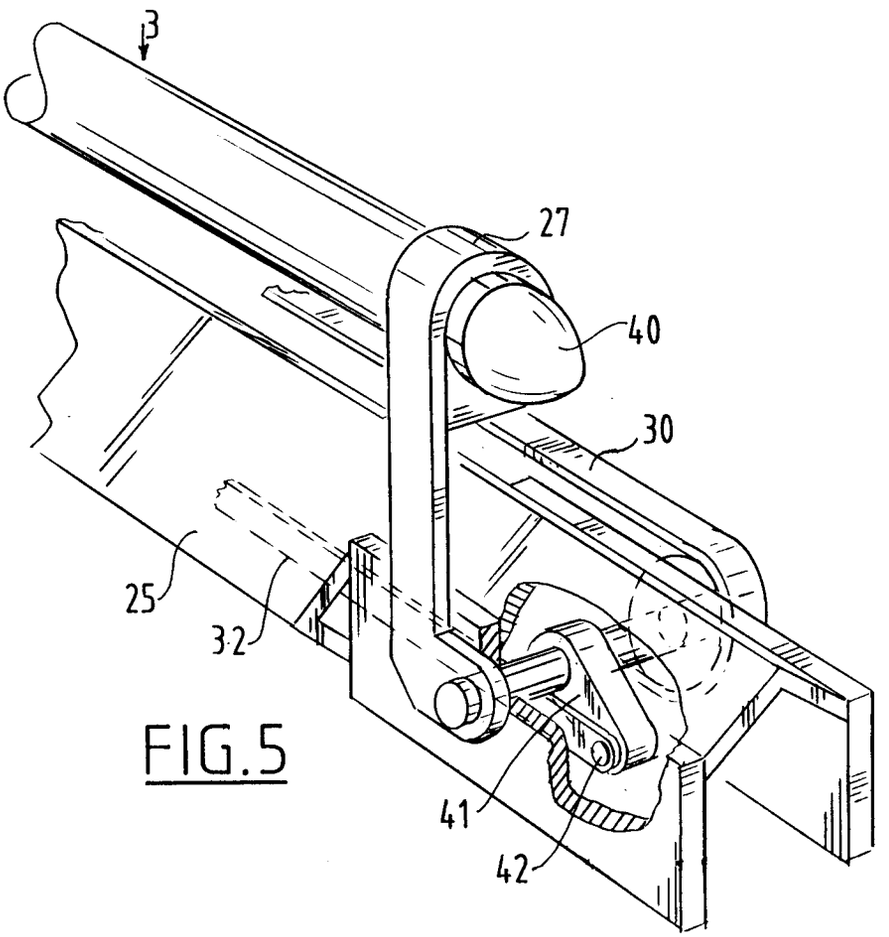

FIG.5

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EUROPEAN SEARCH REPORT

Application Number

EP 91 20 1590

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	NL-A-8 000 024 (MITTER) * the whole document *	1	B 41 F 15/42

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B 41 F

The present search report has been drawn up for all claims

Place of search	Date of completion of search	Examiner
The Hague	01 October 91	LONCKE J.W.

CATEGORY OF CITED DOCUMENTS

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