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(54) **Pusher apparatus**

(57) Pusher apparatus e.g. for pushing a row of cigarette packets towards the front of a shelf is disclosed. The leading package is arranged down to drop down a step at one end of a track (1) and be held in the dropped position against a stop (8) by gentle pressure on the entire row from a pusher (3). By locating a damped movement

connection, for example a rack (35) engaged by a damped pinion (36) mounted on the pusher (3), the movement of the pusher itself maybe sufficiently damped to enable certain and repeatable dropping of the leading package as the row of packages is advanced, following the repeated removal of the leading one.

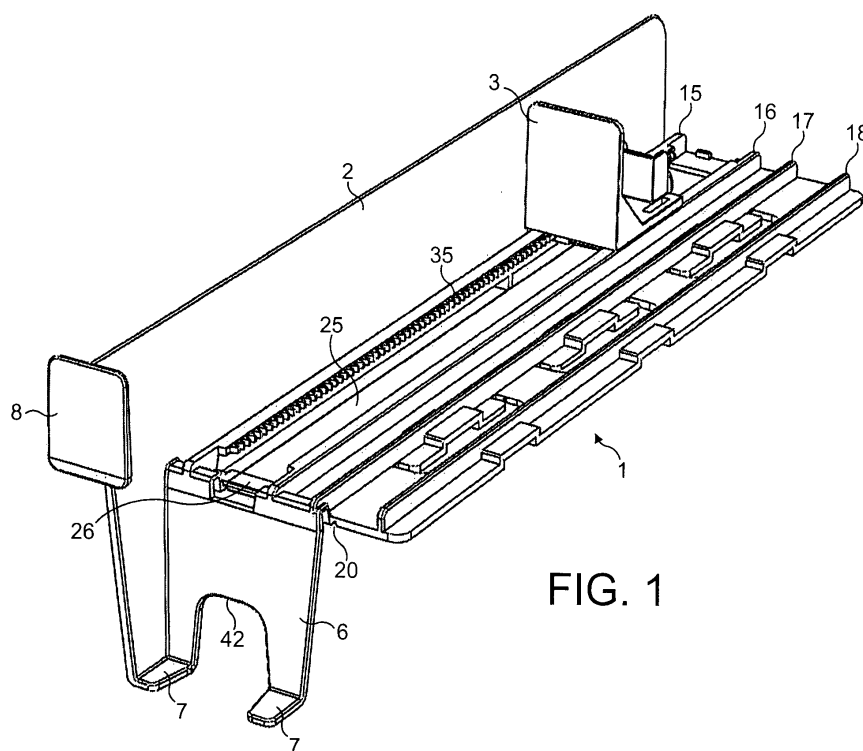


FIG. 1

Description

[0001] This invention relates to pusher apparatus for use in displaying merchandise.

[0002] There are many items which are sold at retail which come in the form of individual relatively small packets or packages. If these are for self-selection, arranging the packages on shelves leads to the packages being picked from the front of the shelf leaving the remainder of packages less visible. This naturally diminishes the eye appeal. It is accordingly desirable to ensure that packages are presented at the front of a shelf. This may be achieved for example by inclining the shelf downwardly. An alternative approach is to provide the shelf with a track on which a set of packages may be placed and to provide a pusher which urges the packages toward the front.

[0003] Such pusher apparatus is widely known in a variety of forms. Examples are to be found disclosed in GB-A-2290077 and WO 2004/021843. Both these documents disclose pusher apparatus with a base or track and a pusher slidably moveable along the track under the influence of a spring. Such pusher devices are widely used in merchandising display apparatus for cigarette packets. These are normally located behind a service counter in a retail outlet and it is of particular advantage that the individual packets are at the front because they can then more easily be grasped by sales personnel behind the counter, removed from the front of the stack and handed to the customer. The remainder of the stack then moves forward under the influence of the pusher.

[0004] Conventionally, the individual packages are held from being pushed forward off the edge of the shelf or the like on which the pusher apparatus is located by means of a suitable barrier, for example an upstanding flange at the end of the track. This flange should preferably be sufficiently unobtrusive that the packages and products themselves can be adequately seen. In a relatively recent development, pusher apparatus has been installed in retail outlets where at the front of the track there is a downwards step on to which the leading one of the packages to drop as it moves forward following the removal of the previously leading package. Because the succeeding package has not dropped, the front view of the packages is now of greater visual impact because the viewer can see the whole of the front of the leading package and the upper portion of the front of the next package. This accordingly provides more visual exposure for the products because the first two packages in the stack are essentially staggered vertically one with respect to another, and this is thought, by way of increased visual impact, to increase sales.

[0005] Such apparatus having a downwards step at the front or dispensing end, however, tends not to work satisfactorily in practice because the foremost package does not always drop down cleanly. This not only makes extraction of the package by the sales personnel or customer more difficult, but undermines the increased visual

impact intended. In the case (as is often the case for cigarette merchandising) of a shelf having a plurality of pushers with stacks of cigarette packets on them side by side, the failure of each leading packet to drop down to the desired level also gives rise to a visually displeasing higgledy-piggledy appearance.

[0006] We have now found that this phenomenon of failure of the leading package to drop down the step, following the removal of the previously leading package may be avoided by providing, directly connected between the pusher member and the track, a movement damping mechanism.

[0007] Accordingly, the present invention provides apparatus for sequentially dispensing packages, the apparatus including a track supporting a row of packages, a pusher for urging the row of packages towards one end of the track, formations at that one end of the track for holding a package against further movement in the direction of the track but allowing its removal from the end of the track laterally to that direction, and wherein the track is stepped at its forward end allowing the leading package in the row to drop below the level of the next package, and which is characterised by means acting directly between the track and the pusher to damp the movement of the pusher along the track.

[0008] Preferably the damping means comprises, fixed to the pusher, a damped rotatable pinion, for example a pinion set in a housing via a damped rotational bearing, and the track comprises a rack engaged with the pinion.

[0009] Preferably the pusher is urged towards one end of the track via a spiral spring having one end fixed adjacent to the one end of the track identified above and having its other end arranged to form a coil against a face of the pusher remote from that one end of the track.

[0010] It should be noted that the use of a rack and pinion engagement between the track and the pusher is not new. The apparatus disclosed in WO2004/021843 (which does not have a downwards step at the dispensing end) includes engagement between a pinion (preferably two) and the track, to avoid canting, but the pinion(s) is/are not damped. In one specific embodiment of pusher apparatus described in that specification, a damper is provided to damp the motion of a pulley or shaft around which a coil spring is wound, but it is found that, possibly because of the "lost motion" aspects of a coiled spring, the reliable operation of the pusher unit, with the pusher itself not moving so fast that the newly-revealed leading package can drop following removal of the leading package, is compromised.

[0011] In the apparatus of the invention, in contrast, the movement damping mechanism and the spring drive are separate.

[0012] The invention is illustrated by way of example with reference to the accompanying drawings in which:

Figure 1 is a general view of one example of apparatus according to the invention in perspective and

as seen from the front of a shelf. The packages have been omitted for the sake of clarity;

Figure 2 is a view similar to Figure 1 but seen from the rear of the shelf;

Figure 3 is a top plan view of the two basic components of the apparatus shown in figures 1 and 2;

Figure 4 is a perspective view on an enlarged scale showing the pusher and the rear end of the track i.e. the end remote from the front of the track from which the packages are to be dispensed;

Figure 5 is a view similar to Figure 4 showing the apparatus including the spring and the damping unit;

Figure 6 is a partial diagrammatic perspective view from below showing the pusher and track;

Figure 7 is a diagrammatic section through the apparatus along the lines 7-7 in Figure 6 but with the spring removed for the sake of clarity;

Figure 8 is a general perspective view of an end piece; and

Figures 9 and 10 are perspective views of an extension piece.

[0013] Referring to the drawings, the apparatus basically consists of an elongate track 1 having a lateral upstanding wall 2. Mounted on the track 1 is a pusher 3 designed to urge a row of packages placed on the track 1 towards a dispensing position i.e. towards the left as shown in Figures 1 and 2. At the left hand end of the track there is a downward step formed by a downwardly extending plate 6 having a pair of forwardly projecting feet 7 on which a package may rest. A stop member 8 is mounted on the forward end of the upstanding wall 2. The unit shown in Figure 1 is designed to be assembled together with a number of adjacent such units, side-by-side, this assembly being facilitated via a set of tabs 10 projecting from one side of the unit which are designed to clip into a set of apertures 11 located on the opposite side of track 1 to the tabs 10. Accordingly items such as cigarette packets which are located on top of track 1 and held under slight compression between pusher 3 and stop member 8 are located between two upstanding walls 2, one from one such unit and the other from the adjacent such unit. At the end of such an assembly of units, the track for the packages may be defined by an upstanding wall 2 and a separate "wall unit", one such being illustrated in Figure 8. The wall unit has a number of laterally extending tabs 10 which clip into apertures 11 in the end-most unit of a set of units as shown in Figure 1 and assembled side-by-side.

[0014] In order to assist the sliding of the packages

along the track, the upper surface of the track is effectively formed by four elongate ribs 15, 16, 17 and 18 and this enables the packages to be slid along easily.

[0015] In order to enable the same unit to be used for dispensing packages of two sizes, conventionally packets of cigarettes containing twenty or ten cigarettes respectively, the unit may be narrowed by snapping off the right hand side of the track 1 as viewed in Figure 1 (the left hand side as viewed in Figure 2). Snapping off may be facilitated by moulding a break line into the underside of the track, this break line being denoted 20, and the width between walls 2 (or between wall 2 and the wall of the wall unit of Figure 8) then corresponds to that of the packets of 10 cigarettes. Such packets are also conventionally thinner than packets of 20, i.e. the packet dimension in the direction of track 1 is reduced. To compensate for this, an extension piece as shown in Figures 9 and 10 may be clipped or press-fitted over the pusher 3.

[0016] In order to urge the pusher 3 to the left as shown in Figures 1 and 2, and upwardly as shown in Figure 3, a coil spring 25 is provided with its forward end 26 shaped to fit over one end of track 1 and with its end remote from end 26 forming a coil in a recess 28 at the rear of the pusher 3. As the pusher 3 is moved away from stop 8, more of spring 25 lies flat and between ribs 15 and 16, less of it coiled up behind pusher 3. As pusher 3 moves towards stop 8, an increasing quantity of spring 25 forms a coil in housing 28.

[0017] As can be clearly seen in Figure 4 and Figure 7 (which is of course upside down relative to Figure 4) the ribs 15 and 16 are undercut to enable them to be engaged by two L-section tabs 30 and 31 on the underneath of pusher 3, tab 30 engaging under rib 15 and tab 31 under rib 16.

[0018] The edge of rib 15 is formed as a rack 35 which meshes with a pinion 36 which is set in a housing 39. Housing 39 is mounted in an aperture 38 located in pusher 3 and identified on Figure 4 of the drawings. As can be seen in Figure 7, pinion 36 is integrally formed with a disc member 37 and a shaft 38. Between disk 37 and the housing 39 there is a filling of a viscous fluid, for example a silicone oil, the whole assembly of pinion 36 and housing 39 being a sealed damped unit where, because of the silicone oil, the movement of the pinion 36 relative to the housing 39 is damped.

[0019] Accordingly, once the housing 39 is set into the aperture 38, because of the engagement of pinion 36 and rack 35, movement of pusher 3 along the track is damped.

[0020] Because of this damping, it is found that as a row of packages is advanced towards the end of the track, each one drops down neatly to rest on tabs 7 each time the leading package, being held by the pusher 3 against stop 8, is removed from the row of packages, for example by the shop assistant grasping the lower end of the leading packet of cigarettes and pulling it forward and downwards out of the apparatus. Such grasping is materially facilitated by the provision of a cut-out portion of plate 6,

denoted 42 in Figure 1, which enables the index finger of the assistant to be placed behind the leading package with the thumb on the lower portion of the front of that package.

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Claims

1. Apparatus for sequentially dispensing packages, the apparatus including a track (1) for supporting a row of packages, a pusher (3) for urging the row of packages towards one end of the track, formations (8) at that one end of the track for holding a package against further movement in the direction of the track, but allowing removal of the package from the end of the track laterally to that direction, and wherein the track is stepped at its forward end (6, 7) to enable the leading package in the row to drop below the level of the next package, **characterised in that** the apparatus includes means acting directly between the track and the pusher to damp the movement of the pusher along the track. 10 15 20
2. Apparatus according to Claim 1 **characterised in that** the damping means comprises, fixed to the pusher, a damped rotatable pinion and the track comprises a rack (35) engaged with the pinion (36). 25
3. Apparatus according to Claim 2 wherein the damped rotatable pinion consists of a pinion (36) set in a housing (39) via a damped rotational bearing. 30
4. Apparatus according to any of Claims 1 to 3 wherein the pusher is urged towards one end of the track by means of a spiral spring (25) having one end fixed adjacent to the end of the track to which the packages are urged and having its other end arranged to form a coil against a face of the pusher (3) remote from that one end of the track. 35 40
5. Apparatus according to any one of Claims 1 to 4 and including means (20) enabling the width of the track to be reduced. 45
6. Apparatus according to any one of Claims 1 to 5 and including an extension piece (Figures 9, 10) enabling the pusher to be modified to take thinner packages. 50 55

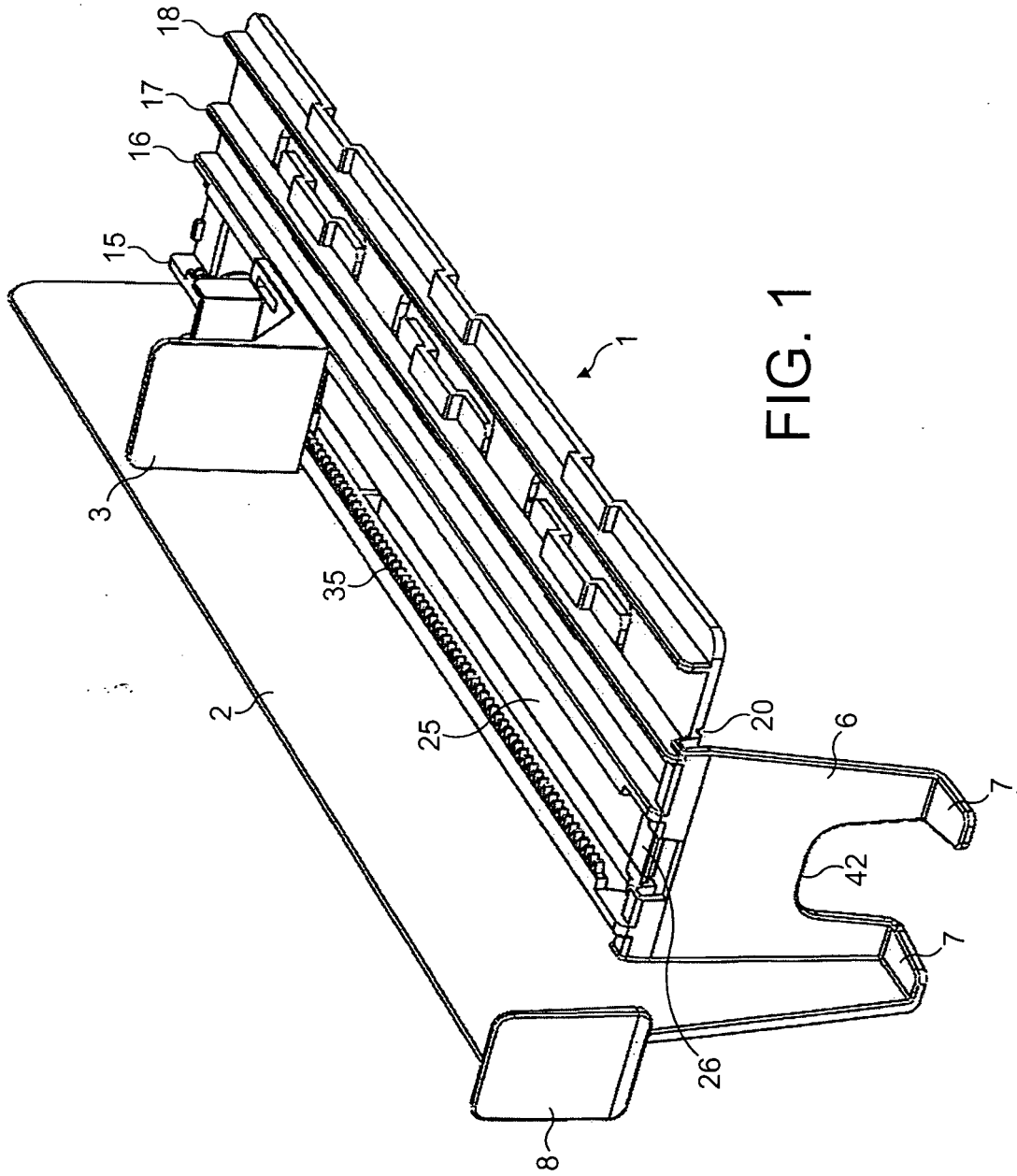


FIG. 1

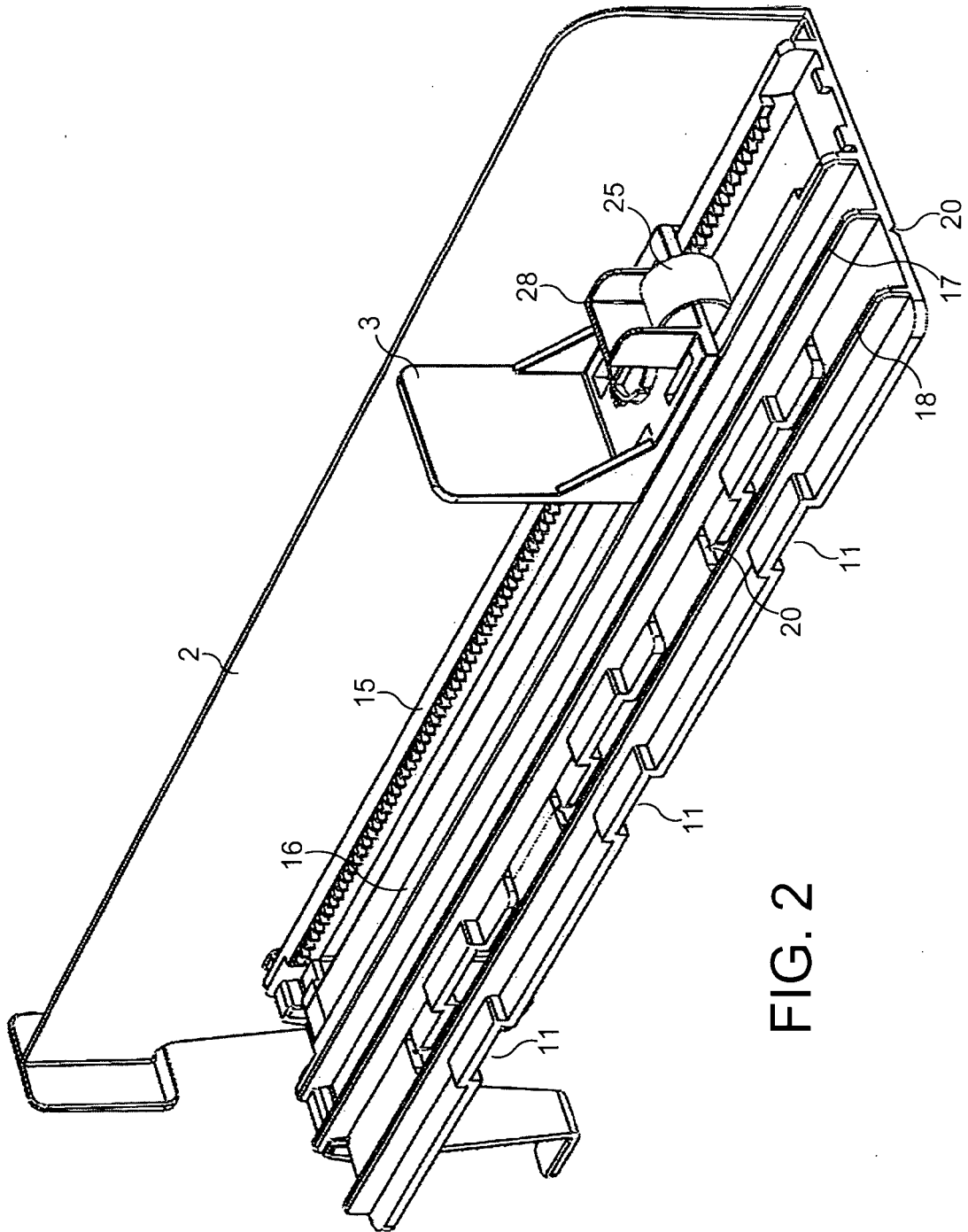


FIG. 2

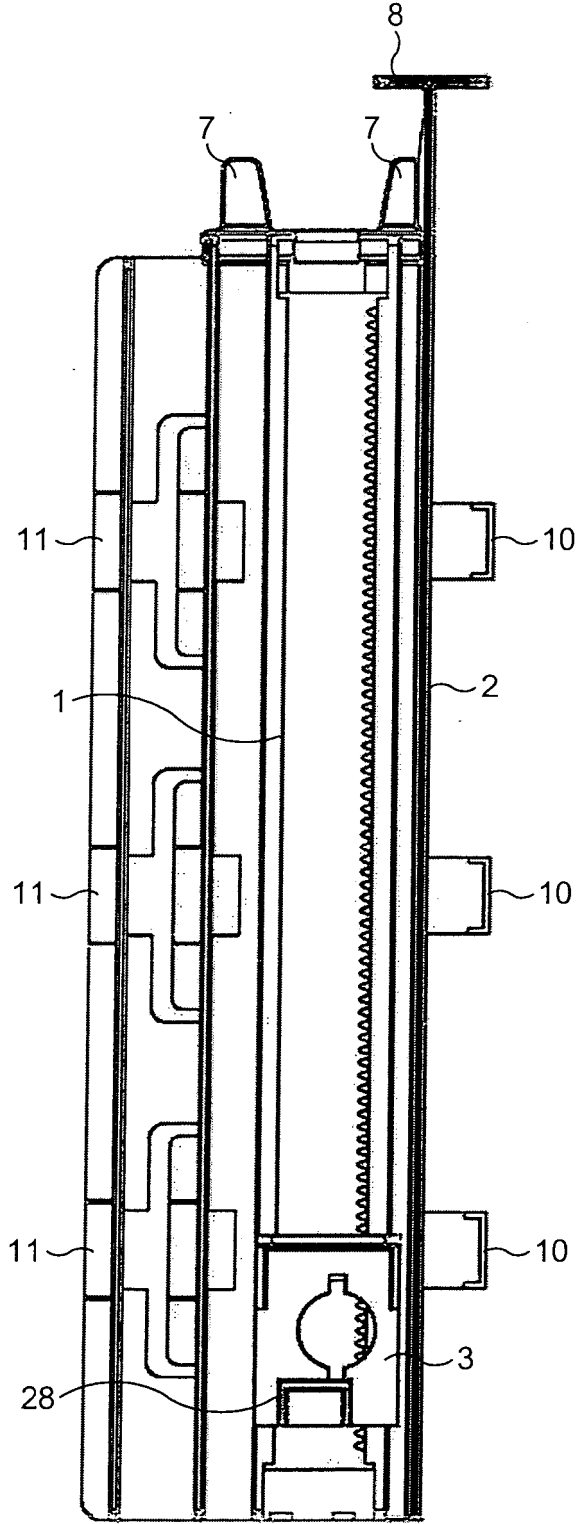


FIG. 3

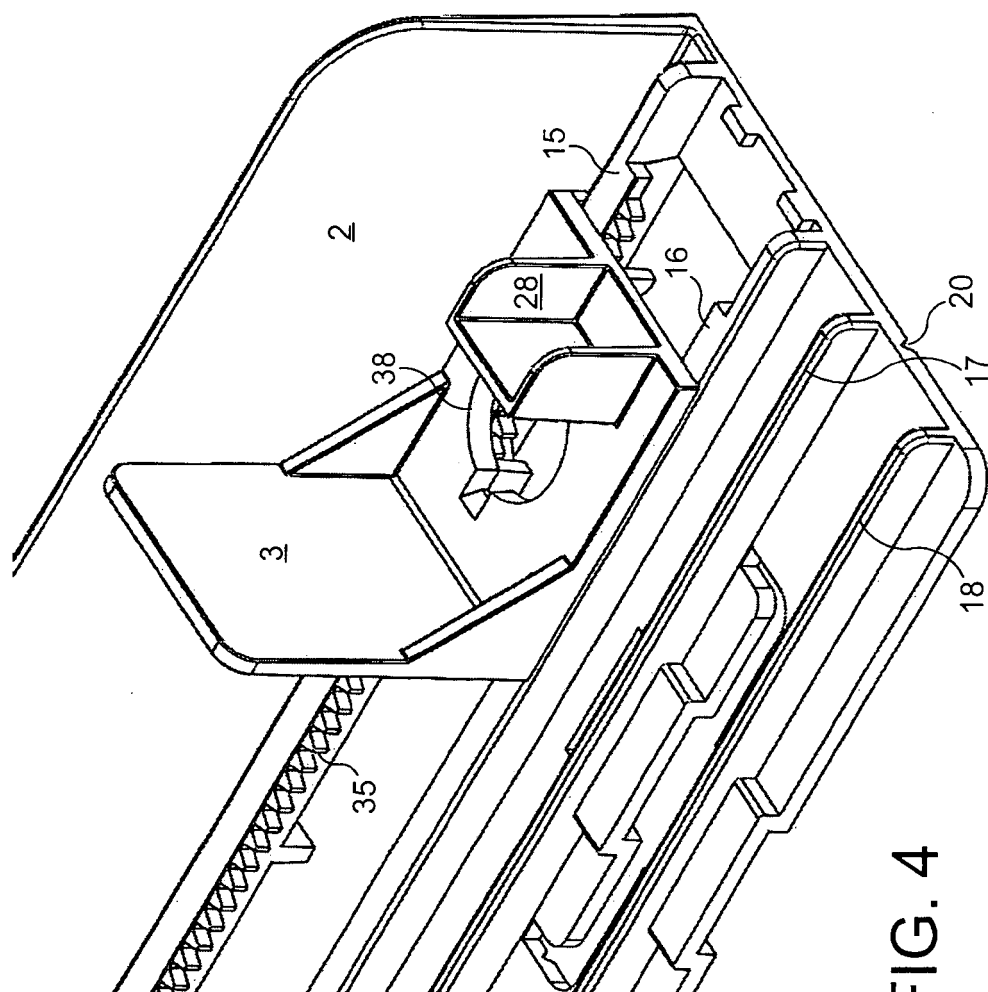


FIG. 4

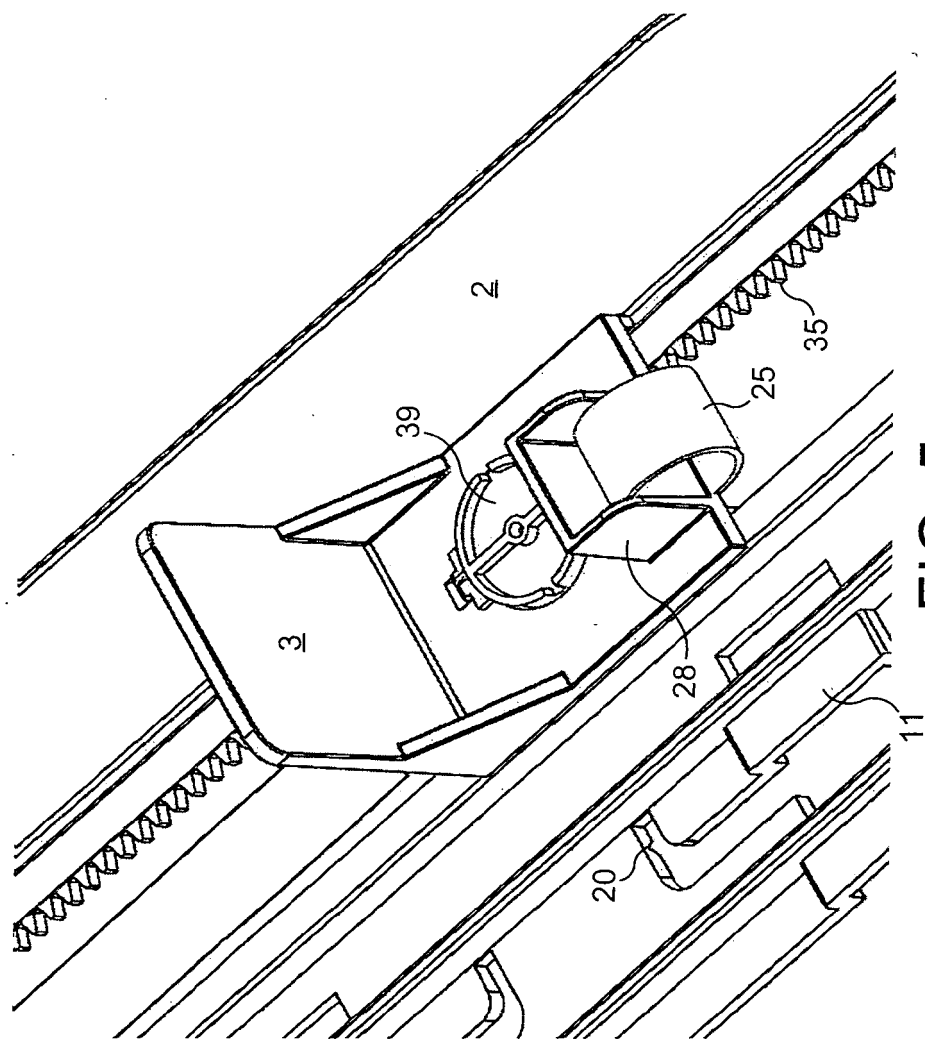


FIG. 5

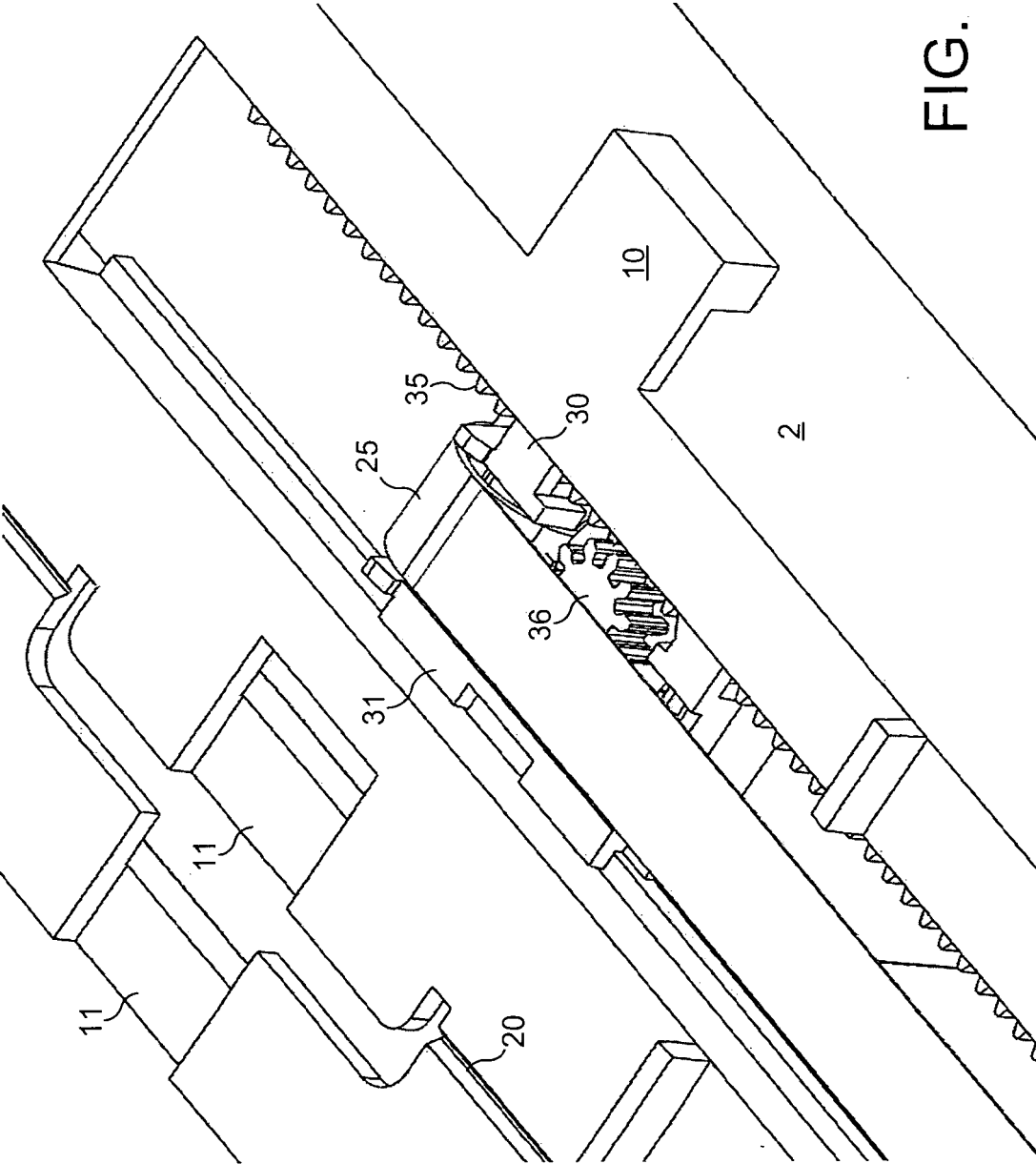


FIG. 6

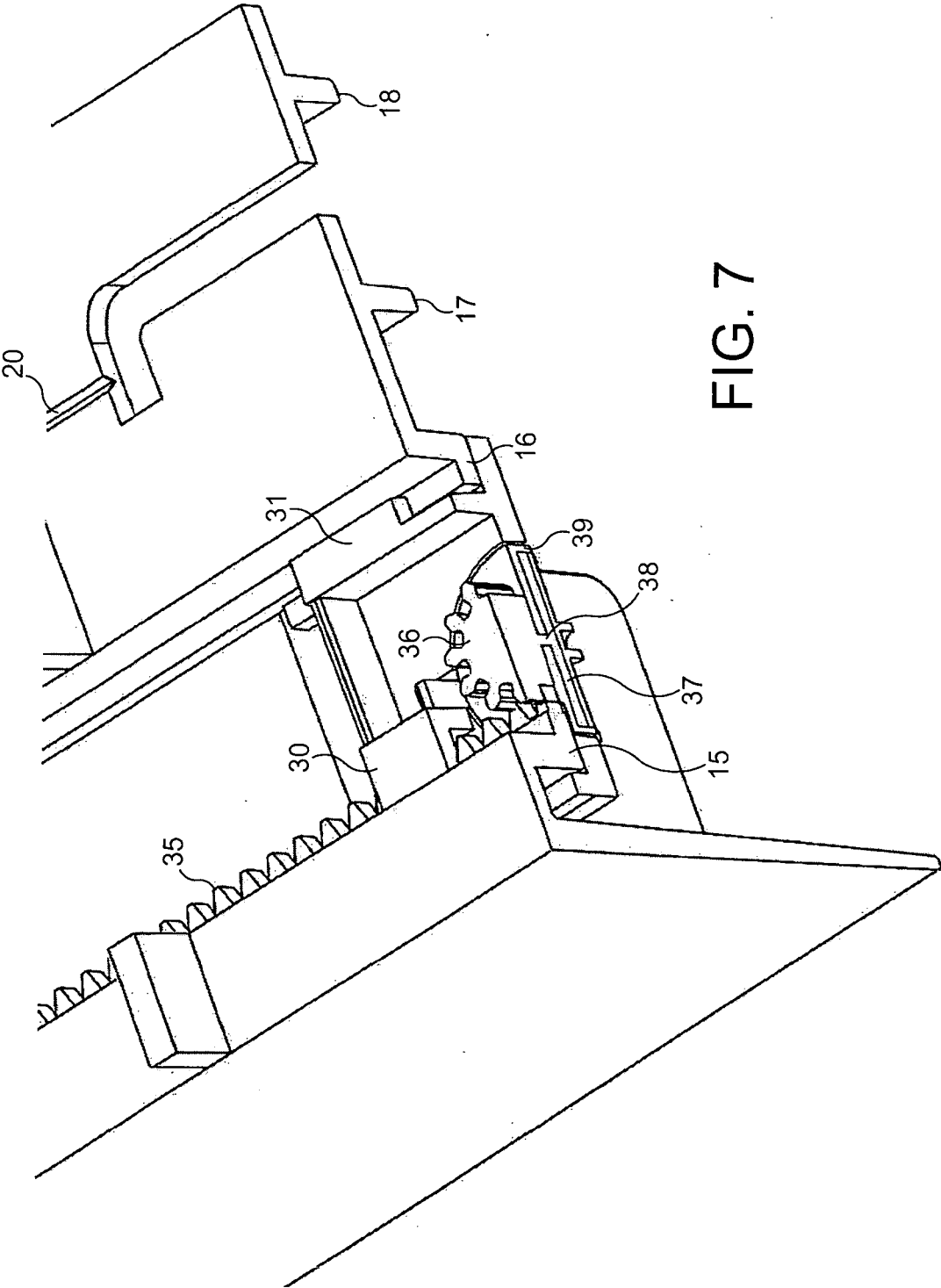
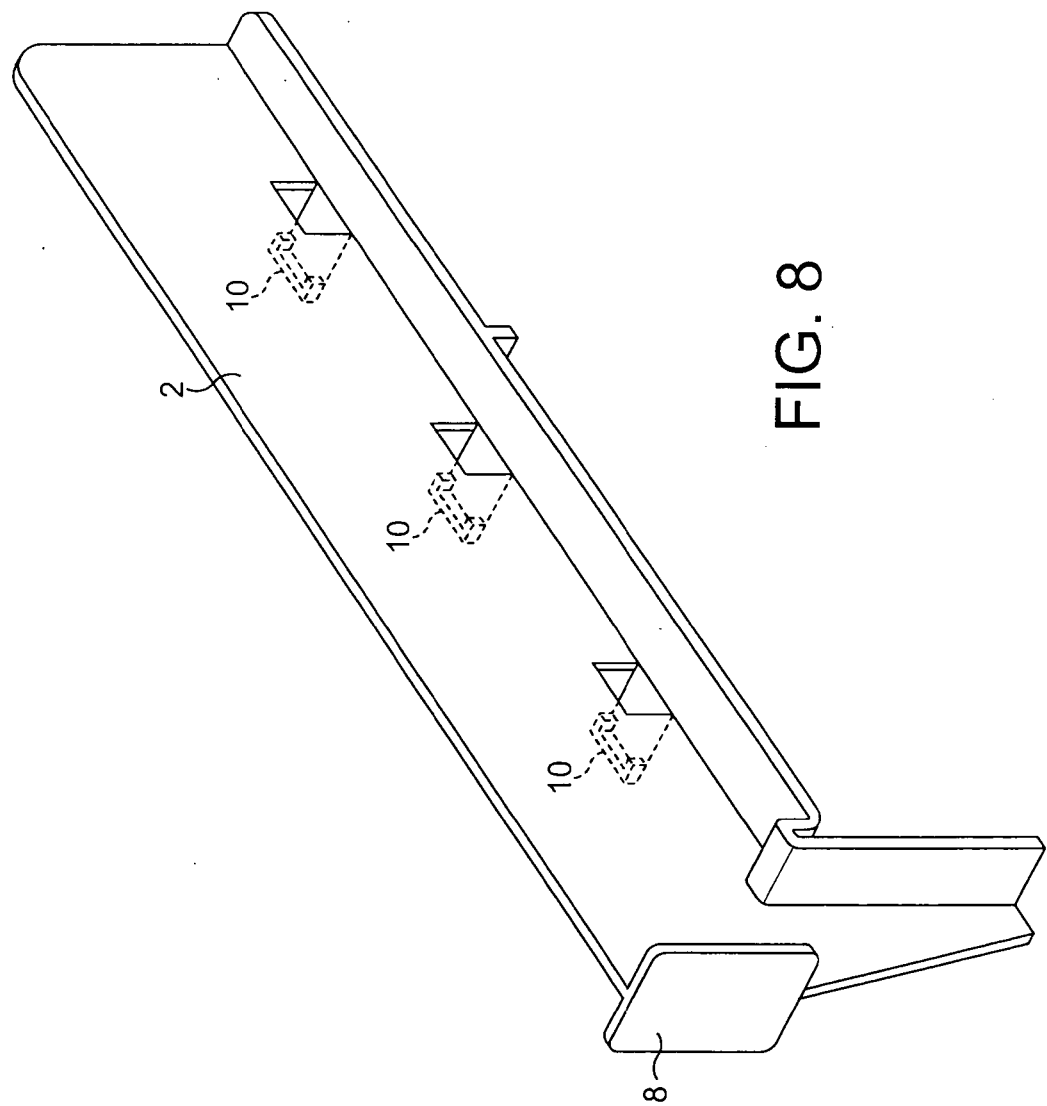


FIG. 7



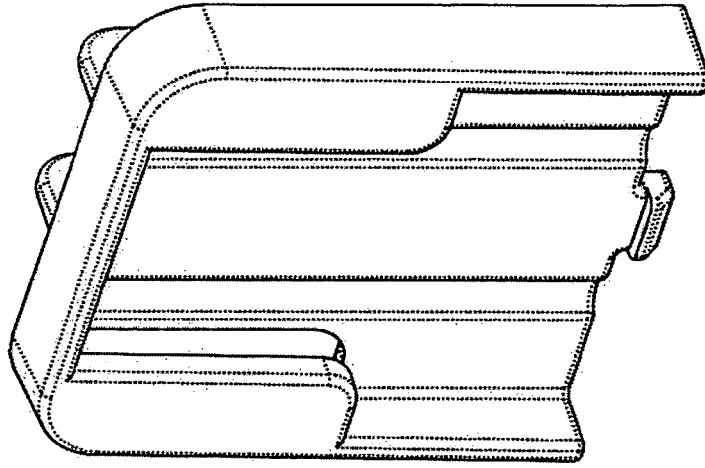


FIG. 10

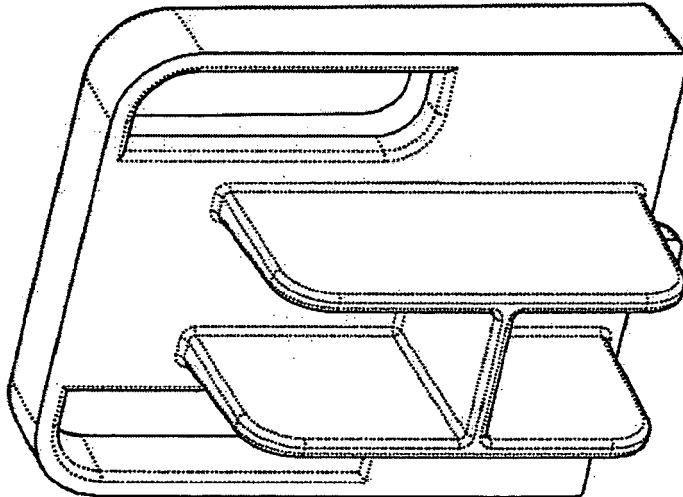


FIG. 9

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- GB 2290077 A [0003]
- WO 2004021843 A [0003] [0010]