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## (54) Indicating mechanisms

(57) A price totem 10 includes a shell 11, which defines price windows 12 and 13 and an access hatch 14. An indicating mechanism 15 is located within the shell and includes carriages 19 and 20, which carry numerals for viewing through the price windows 12, 13. The carriages 19, 20 can be lowered so that each number location can be accessed through the hatch 14 and the numbers can be changed.

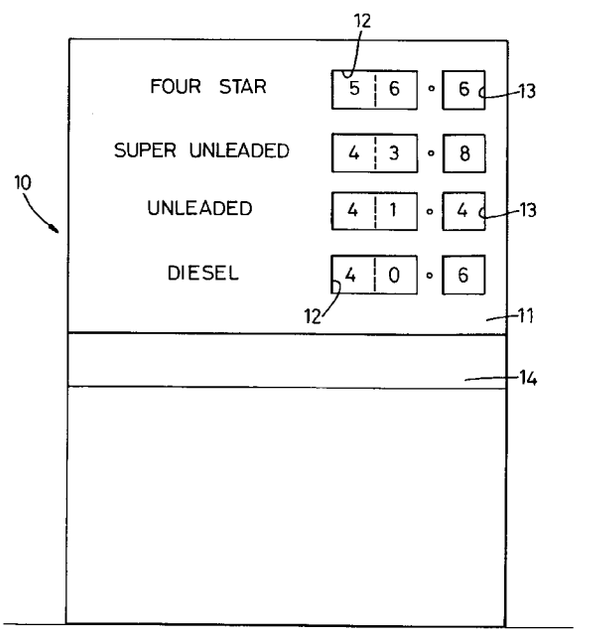


Fig. 1

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## Description

This invention relates to indicating mechanisms for price display devices and in particular, but not exclusively, to the devices known as price totems.

It is common practice for petrol service stations to display their current prices on a large external display. Traditionally these displays had manually removable numbers which had to be accessed by ladder. This made changing the prices an unpopular job, and in these days of increased health and safety regulations such a procedure was undesirable particularly on single operator sites.

The industry therefore adopted a variety of electronic or electro-mechanical displays which could be changed remotely. Whilst these removed the need for ladders, they have proved both expensive and unreliable. In part the difficulties arise from the particularly exposed nature of many of the sites on which they are used. An alternative proposal is to have electrically operated roller blinds, similar to those used in some cricket score boards, but it has been found that condensation causes the blinds to stick to the outer shell of the totem resulting in the blinds becoming jammed and motors being burnt out.

The present invention consists in an indicating mechanism for a price totem comprising, a frame defining a vertical slideway, a carriage mounted in the slideway for movement between a display position and a storage position, the carriage defining a plurality of vertically spaced number locations such that the locations can be successively disposed adjacent a number changing station as the carriage is moved between its display and storage positions.

The frame may define a plurality of slideways and the mechanism may include a plurality of carriages. This has both the advantage of giving the frame increased stability and also reducing the weight of the carriage. One particularly convenient arrangement is to have one carriage holding the "pence" and another holding the figures for the tenths of pence.

The or each carriage may have an associated counterweight, which may, conveniently, be retained in a guide and may be suspended on a line extending from the carriage over a pulley or pulley system to the counterweight. When a counterweight is provided a single wide carriage may be preferred.

The or each carriage may be frictionally held in its slideway so that it can rest at any position in which it is held. For example the slideway may be defined by a pair of aligned flanges and the carriage may be retained on the flanges by slotted bearing elements, at least one of which may be resiliently mounted so that it is urged against its respective flange. The or each carriage may have a handle for moving it manually between its positions and it is preferred that there is a handle between each number location so that the number locations can be successively moved passed the number changing station using each handle in turn.

The mechanism may further comprise interchangeable number plates and these are preferably resiliently flexible to allow them to be sprung into and out of the number locations. They would normally consist of a substantially clear material, such as acrylic, so that the numbers can be back-lit. Each number location may have a pair of oppositely facing channel elements for receiving respective edges of the number plate.

The mechanism may further include a releasable stop for the or each carriage for locking its respective carriage in the display position.

The invention further consists in a price totem including the mechanism as defined above.

The totem may include an outer shell having windows through which the price may be viewed in the display position and a door or hatch defining the number changing station. In this case the shell may define the storage position substantially beneath the number changing station although in that storage position the upper number location on the carriage may sit at the number changing station. This door or hatch will then be accessible to an average man standing at ground level so that the numbers can be changed at that level and the carriage then returned to its display position.

It will be understood that the carriages could be motorised but it is preferred in general that they are not for the sake of simplicity and price.

Although the invention has been defined above it is to be understood it includes any inventive combination of the features set out above or in the following description.

The invention may be performed in various ways and a specific embodiment will now be described with reference to the following drawings in which:

Figure 1 is a front view of a price totem;

Figure 2 is a front view of a mechanism for use with that totem;

Figure 3 is a view on the arrow A of Figure 2 with the carriages removed;

Figures 4(a) and (b) are front views of the large and small carriages;

Figure 5 is a part-sectional view through the mounting element of the carriages;

Figure 6 is a vertical section through a number location on the carriages; and

Figure 7 is an enlarged view of a locking detent for use with the carriages; and

Figure 8 is a schematic side view of a carriage and counterweight system.

The price totem is generally indicated at 10 in Figure 1 and includes a shell 11, which defines price windows 12 and 13 and an access hatch 14. It will be seen that the price windows 12 are of double width to display two digits, whilst the price windows 13 are of single width and, in the illustrated embodiment, display the tenths of pence after the decimal point.

Contained within the shell 11 is an indicating mechanism generally indicated at 15 in Figure 2. The mechanism 15 comprises a frame 16 which defines a pair of slideways 17 and 18 for respective carriages 19, 20. It will be seen that the carriage 19 is twice the width of the carriage 20 and it will be readily understood that the carriage 19 corresponds to the windows 12, whilst the carriage 20 is associated with the windows 13. Each carriage 19, 20 defines four vertically spaced number locations 21 and a handle 22 beneath each location. Number plates 23 are located in each of the number locations 21 and carry numbers to display the relevant prices through the windows 12, 13 as shown in Figure 1. It will be understood that the carriages 19, 20 are shown in their display position in Figure 2.

In use, the carriages 19, 20 can be pulled down progressively from this display position so that each number location 21 becomes aligned, in turn, with the access hatch 14 when the operator has opened that hatch to obtain access to the mechanism 15. The operator can then make whatever necessary alteration is required to the number plates to display the new prices. The totem is provided with a recess below the hatch 14 of sufficient dimension to receive the lowermost three number locations 21 of the carriages 19, 20 so that each of the number locations 21 can appear opposite the hatch 14. In this way the operator standing on the ground can change all of the numbers in the carriages 19, 20 and can then return the carriages to their display position.

Turning to the detailed construction of the mechanism 15, it will be seen that the frame 16 comprises a number of cross members 24 on which are mounted two Z-sections 25 and an inverted top hat section 26. The flanges 27, 28 of these sections define the slideways 17, 18 on which the carriages 19, 20 run. As can be seen in Figures 4 and 5 each carriage has upper and lower mounts 30 which engage the carriage on the respective slideway 17, 18. The mounts 30 each comprise a tube 31, in the ends of which are disposed slotted plastic spigots 32 such that the slots 33 face outwardly to ride on respective flanges 27, 28. One of the spigots 32 is fixed by a pin 34 whilst the other is resiliently mounted by a compression spring 35 which urges it against the flange 27 to provide sufficient frictional engagement for the mount 30 to hold jointly the carriage in the slideway against gravity. The force of the spring 35 is however not sufficiently strong to resist manual movement of the carriages 19, 20 using the handles 22.

For security and peace of mind, a locking detent 36 is mounted on a pivotal handle 37, which itself is secured on the frame 16. The detent 36 can support its respective carriage in the display position as illustrated in Figure 7.

Figure 6 illustrates the cross-section through a number location 21 and it will be seen that oppositely facing channels 38 are provided for receiving the top and bottom edges, respectively, of the number plates 23. Conveniently the number plates 23 are resiliently flexible so that they can be sprung into and out of the channels 38. They are also preferably made of clear acrylic with the numbers printed or painted on them. With this arrangement the numbers can be back-lit by lights (not shown).

Figure 8 is a schematic side view of a carriage and counterweight system. Thus the carriage 19, 20 may have a cable 40 attached to its upper end. The cable passes over pulleys 41, 42 which are mounted on the frame 16 and has its other end attached to a counterweight 43 which is moveable within a guide 44. The counterweight is designed to exactly balance the carriage allowing for its frictional engagement with the frame 16. With an appropriate counterweight it may be possible to configure the carriages 19, 20 as a single unit.

## Claims

1. An indicating mechanism for a price totem comprising, a frame defining a vertical slideway, a carriage mounted in the slideway for movement between a display position and a storage position, the carriage defining a plurality of vertically spaced number locations such that the locations can be successively disposed adjacent a number changing station as the carriage moves between its display and storage position.

2. A mechanism as claimed in claim 1 wherein the frame defines a plurality of slideways and the mechanism includes a plurality of carriages.

3. A mechanism as claimed in claim 1 or claim 2 wherein the or each carriage has an associated counterweight.

4. A mechanism as claimed in claim 3 wherein the counterweight is disposed within a guide.

5. A mechanism as claimed in anyone of the preceding claims wherein means are provided for frictionally retained the or each carriage on the slideway so that it can rest in any position into which it is moved.

6. A mechanism as claimed in claim 5 wherein the slideways are defined by a pair of aligned flanges and wherein the retaining means comprises slotted bearing elements, on the carriage, for receiving a respective flange and wherein at least one of the bearing element is resiliently mounted so that it is urged against its respective flange.

7. A mechanism as claimed in any one of the preceding claims wherein the or each carriage has one or more handles.

8. A mechanism as claimed in claim 6 wherein there is a handle between each pair of number locations on a carriage.

9. A mechanism as claimed in any one of the preceding claims wherein each number location has a pair of oppositive facing channel elements for receiving respective edges of the number plate.

10. A mechanism substantially as hereinbefore described with reference to the accompanying drawings.

11. A price totem including a mechanism as claimed in any one of the preceding claims.

12. A price totem as claimed in claim 11 including an outer shell having windows through which the price may be viewed in the display position and a door or hatch defining the number changing position.

13. A totem as claimed in claim 12 wherein the shell defines the storage position substantially beneath the number changing station.

14. A totem as claimed in claim 13 wherein the upper number locations lie at the number changing station when the carriage is in the storage position.

15. A totem as claimed in any one of claims 11 to 14 wherein the number changing station is accessible to an average man stood on the ground adjacent the totem.

16. A totem substantially as hereinbefore described with reference to the accompanying drawings.

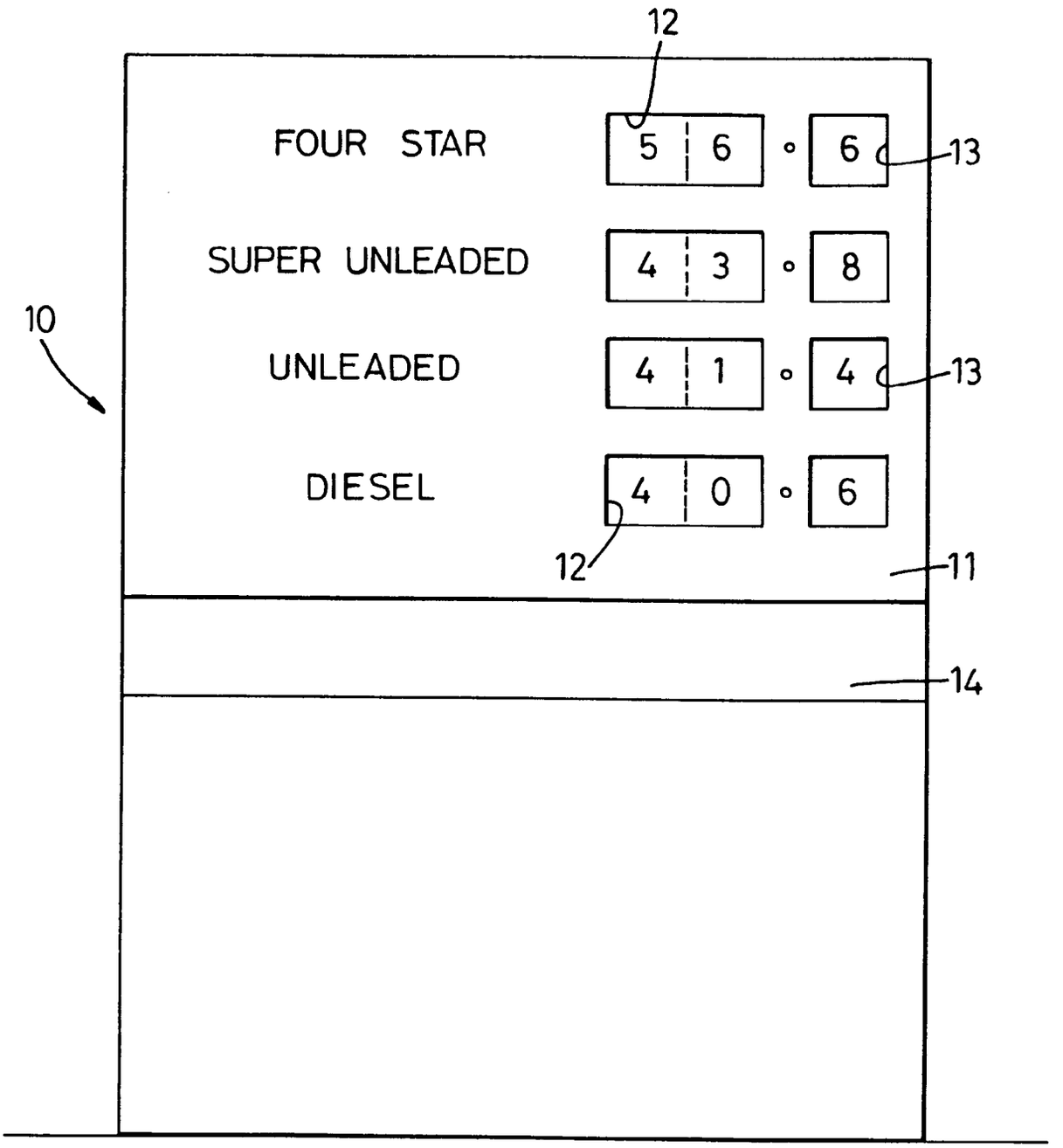
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Fig. 1

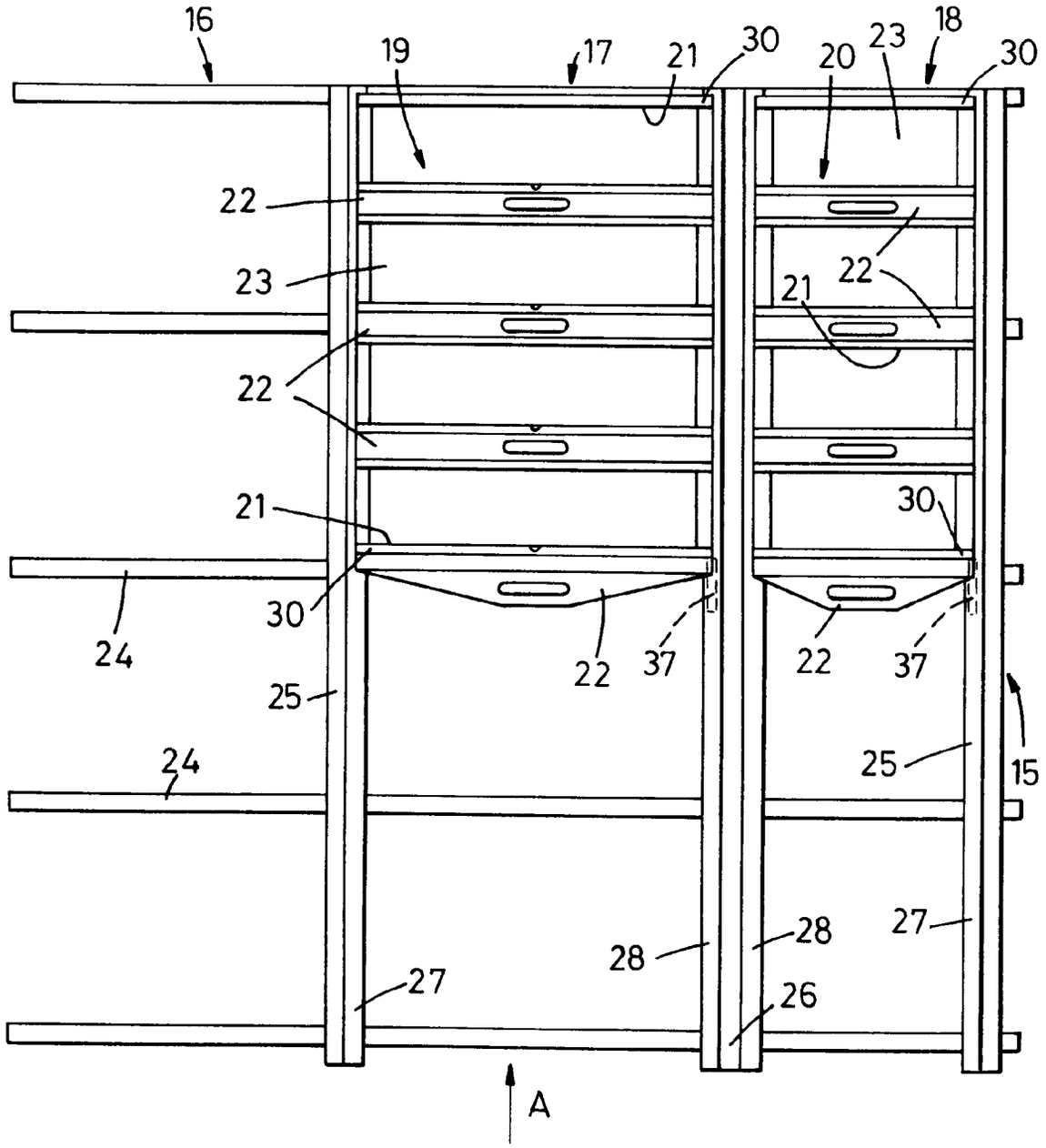
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Fig. 2

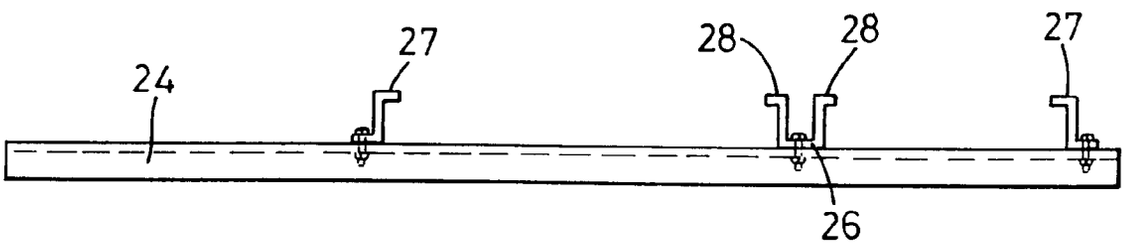
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Fig. 3

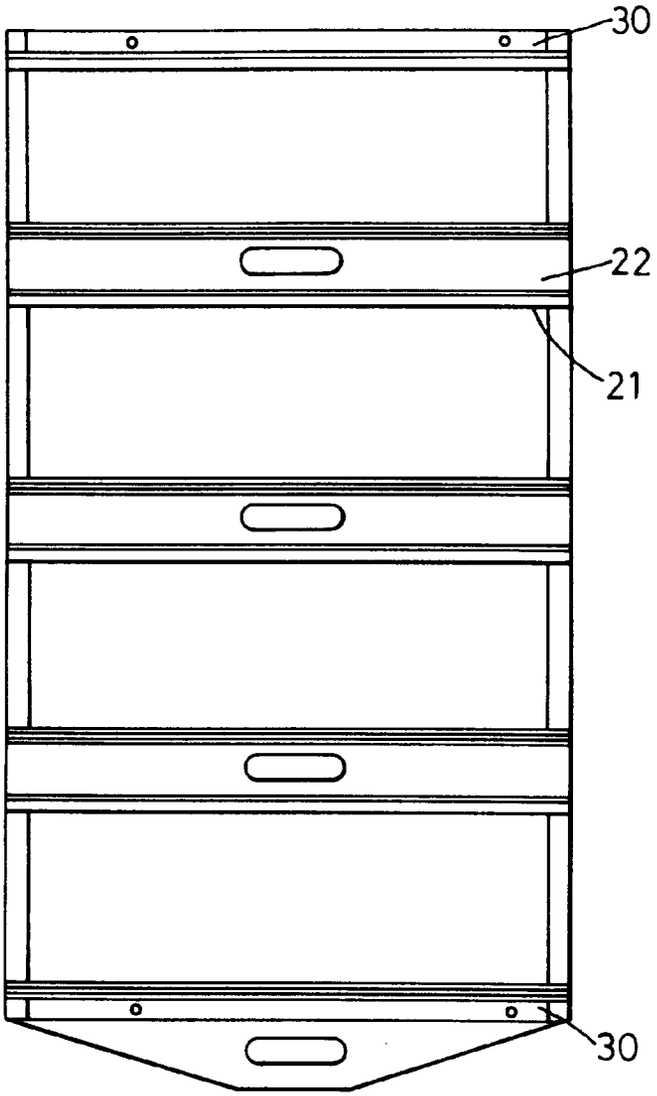


Fig. 4(a)

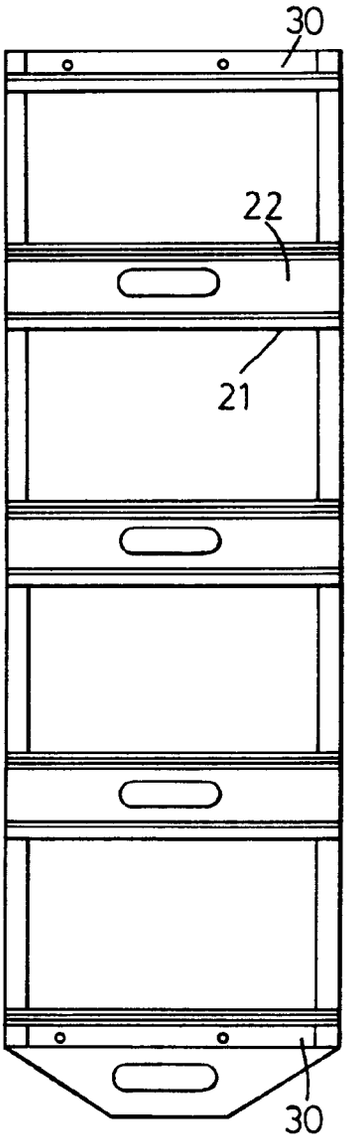


Fig. 4(b)

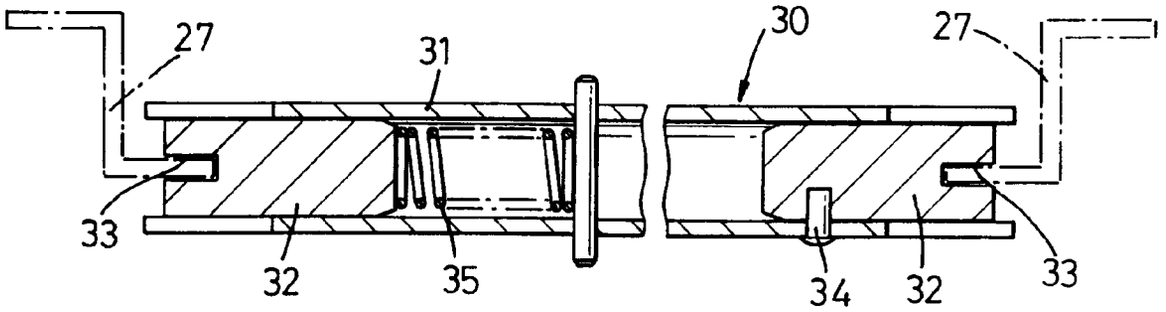


Fig. 5

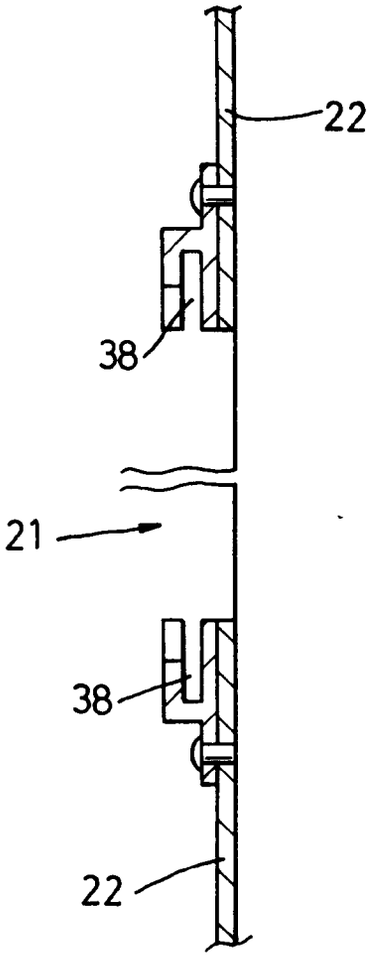


Fig. 6

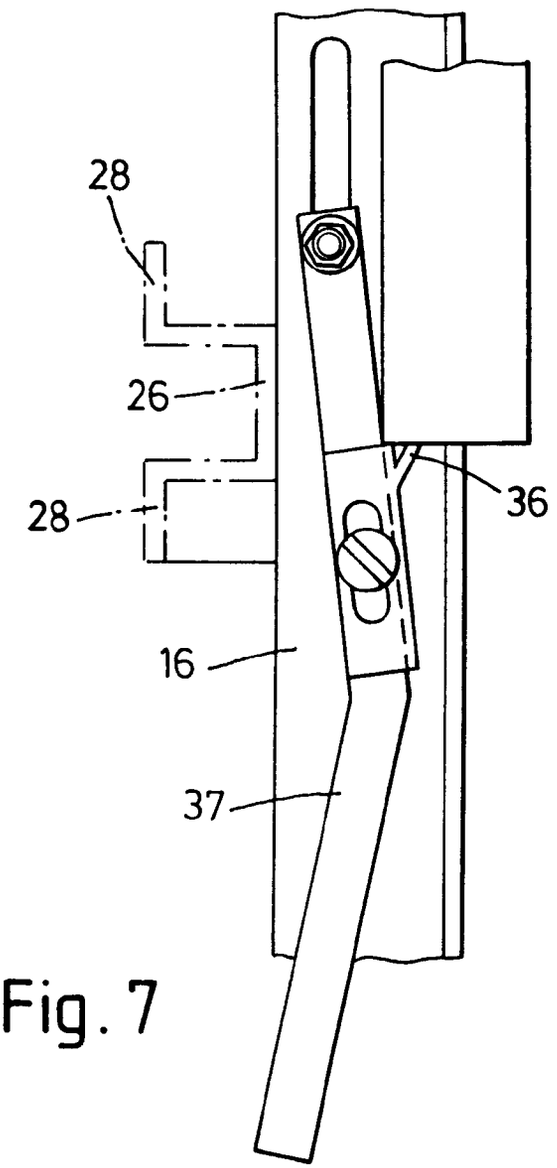


Fig. 7

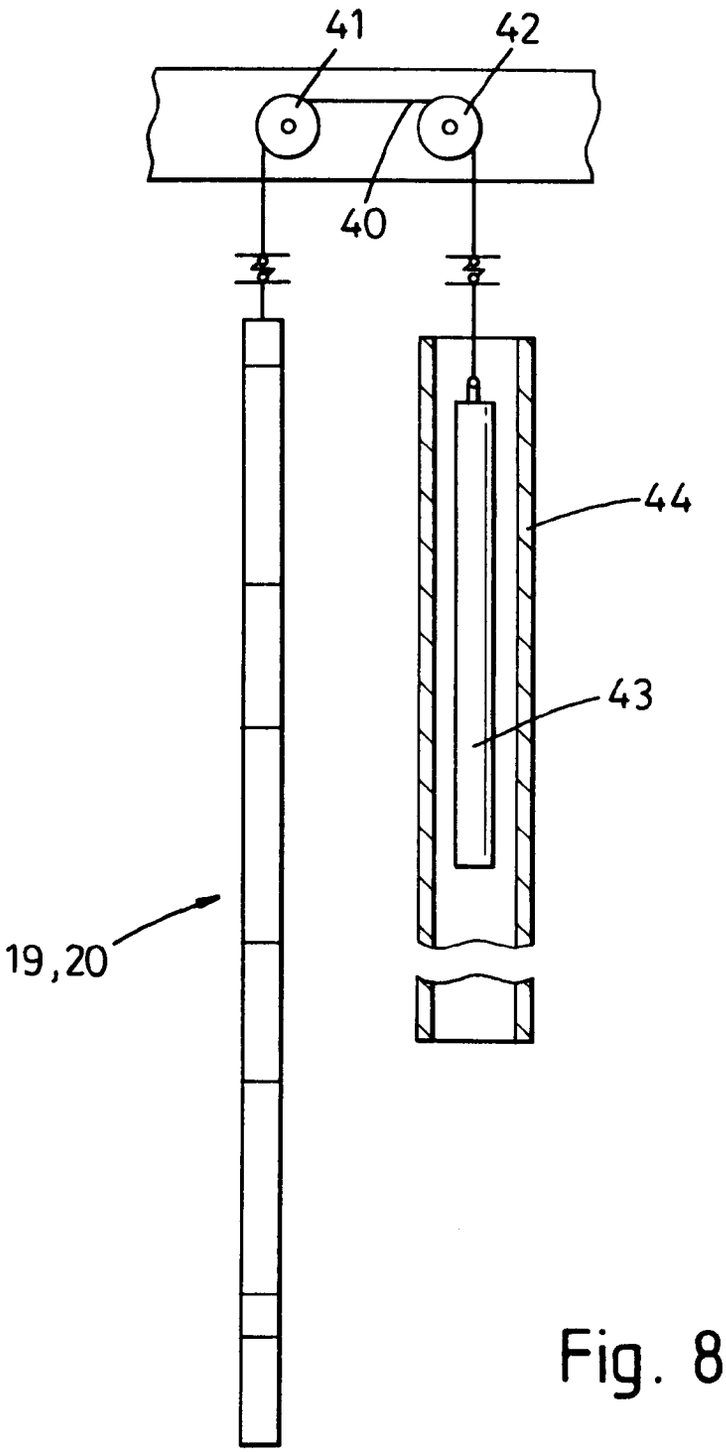


Fig. 8

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# EUROPEAN SEARCH REPORT

Application Number
EP 95 30 6262

## 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.6) |
|---|---|---|---|
| A | US-A-4 406 077 (MOON JOHN E) 27 September 1983<br>* abstract; claim 1; figures 1,5,6,19 *<br>* column 7, last paragraph * | 1,11,15 | G09F11/30<br>G09F13/04<br>G09F7/10 |
| A | FR-A-2 550 366 (CONTE MARC DE LA) 8 February 1985<br>* figures 1-4 * | 1,5 | |
| A | CH-A-675 032 (WALTER SCHORI) 15 August 1990<br>* abstract * | 1,5 | |

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

G09F

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| THE HAGUE | 13 December 1995 | Hulne, S |

CATEGORY OF CITED DOCUMENTS

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