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NL-5600 AP Eindhoven(NL)(54) **Container for refuse.**

(57) The invention relates to a container for refuse provided with a presser head (14) arranged near one end of the container, said presser head (14) being movable to and fro by means of at least one hydraulic setting cylinder near a supply opening for the refuse which is provided higher in the container than the presser head. A driving unit (38) for the setting cylinder, provided with a motor (40), a pump, a liquid reservoir (39) and a control unit (42) is arranged on a slide (41) which is movably provided in an enclosed space (32) forming part of the container.

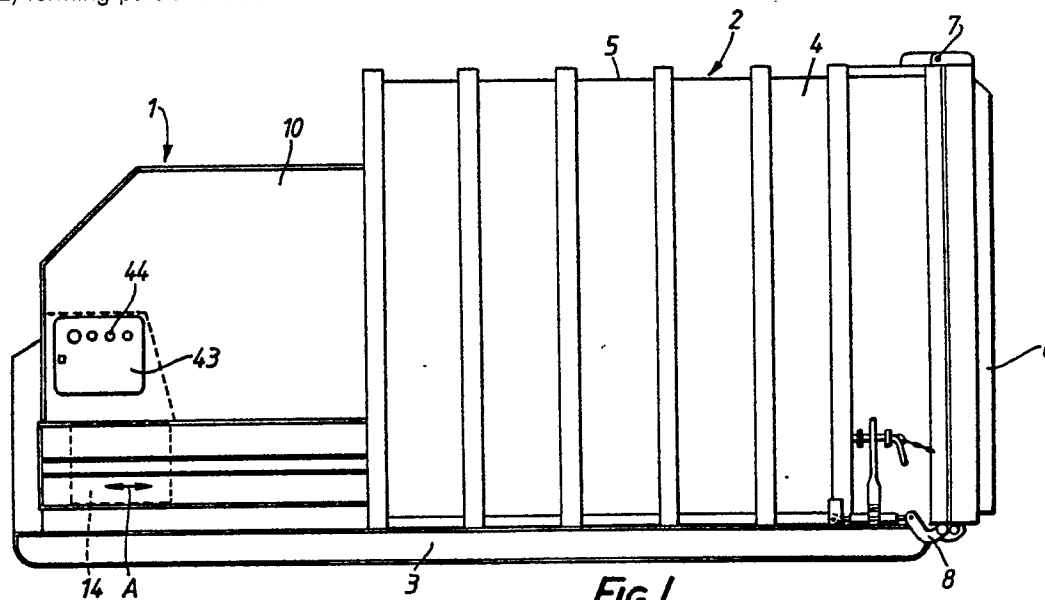


Fig. 1.

Container for refuse.

The invention relates to a container for refuse provided with a presser head arranged near one end of the container, said presser head being movable to and fro by means of at least one hydraulic setting cylinder near a supply opening for the refuse which is provided higher in the container than the presser head, whilst there is provided a driving unit for the setting cylinder, said driving unit being provided with a motor, a pump, a liquid reservoir and a control unit.

Such containers, usually being portable, such as e.g. known from NL-A-7713833 are constructed liquid-tight in many cases, so that the liquid which has been supplied to the container cannot escape. During compression of the refuse present in the container by means of the presser head said liquid is simultaneously squeezed out of the refuse, however. In practice it has appeared that this may cause serious fouling of and damage to the driving unit and thus may lead to breakdowns and costly repairs.

The purpose of the invention is to obtain a container of the above kind whereby the above-mentioned disadvantages can be avoided.

According to the invention this can be achieved in that the driving unit is arranged on a slide, which is movably arranged in an enclosed space forming part of the container.

In this manner the driving unit can be arranged in an enclosed space, protected from moisture and dirt, whilst the driving unit can be removed from the space easily for maintenance and the like.

It is noted that from US-A-3,613,569 there is known a mobile container for refuse which can be coupled with one end to a stationary pressing device. This known container is not equipped with its own pressing means therefore, as is the container according to the invention. It is true that in this stationary pressing device certain parts are mounted on an auxiliary frame, but this auxiliary frame is fixed to the main frame of the pressing device and is not constructed as a movable slide.

According to a further aspect of the invention the presser head is supported by guide means which are fixed partly to the presser head and partly to the walls of the container, whereby the guide means are adjustable relatively to each other, transversely to the direction of movement of the presser head.

If any wear occurs it will be easy in this way to effect an adjustment between the guide means which are movable relatively to each other in the direction of movement of the presser head in order to bring the guide means into guiding contact with

one another again in the correct manner.

The invention will be explained hereinafter with reference to an embodiment of a container according to the invention diagrammatically illustrated in the accompanying figures.

Fig 1 is a diagrammatic side view of a container according to the invention.

Fig 2 is a top view of the container illustrated in fig 1.

Fig 3 is a larger-scale front view of the front part of the container.

Fig 4 is a side view of the front part of the container illustrated in fig 3.

Fig 5 is a top view of the driving unit.

Fig 6 is a side view of fig 5.

Fig 7 illustrates on a larger scale the detail VII encircled in fig. 3.

Fig 8 illustrates on a larger scale the detail VIII encircled in fig 3.

The portable container for refuse illustrated in the figs 1 and 2 comprises a front part 1 and a rear part 2 which is constructed higher than the front part 1. The two parts 1 and 2 are supported by beams 3 extending in the longitudinal direction of the container. The rear part 2 is built up of a bottom plate (not shown) supported by the beam 3, upright side walls 4 and an upper wall 5. At its rear side the container is closed by means of a door 6, which can be swung upwards about pivots 7 provided near the upper side of the door and which can be kept in the closed position by means of a locking mechanism 8 at its bottom side.

The front part comprises a pair of side walls 9 and 10 extending parallel to each other, said side walls being fixed to the front wall of the rear part 2 by means of wings 11 extending transversely to the side walls. Between the front ends of the side walls 9 and 10 there is provided a front wall 12 which extends upwards from the bottom plate 13 supported by the beams 3 only along part of the height of the side walls.

Between the side walls 9 and 10 and just above the bottom 13 there is arranged a presser head 14, which can be moved to and fro, as indicated by the double arrow A, by means of hydraulically operating setting cylinders (not shown) which are provided between the front wall 12 of the container and the presser head 14.

As is illustrated in more detail in fig 7 recesses 15 are formed in the side walls of the presser head extending in the direction of movement of the presser head, a block 16 made of plastic material being located in said recesses. In this block, in the side directed towards the side wall 9 or 10, there is

provided a recess whose section is at least substantially triangular. In this recess there is accommodated a guide which is formed by an angle steel 17 and is fixed to the relevant side wall 9 or 10. A supporting strip 18 rests against the plastic block 16 at the side remote from the guide 17. Said supporting strip 18 can be adjusted by means of bolts 19, which are screwed into the threaded holes which are provided in a plate 20 fixed to the presser head. At their ends remote from the plate 18 said bolts 19 are provided with hexagonal recesses in a manner known by itself. It will be apparent that by rotating the bolts 19 the block 16 can be adjusted relatively to the guide 17, such that there will be practically no play between the block 16 and the guide 17, whilst the presser head guided by the guide means formed by the block 16 and the guide 17 can still be moved up and down evenly by means of the above-mentioned hydraulic setting cylinders. The bolts 19 can be fixed in the adjusted position by means of nuts 21 screwed on the bolts.

As furthermore appears from the figure a scraper strip 22 sliding across the bottom plate 13 is provided at the bottom side of the presser head. Above the presser head there are arranged a pair of aprons 23 and 24 whose side edges are movably guided in guide blocks 25 fixed to the side walls 9 and 10, as illustrated in more detail in fig 8.

To the upper side of the presser head there is fixed a stop 26 which, when the presser head moves rearwards in the container from its front position illustrated in fig 4, will come into contact with a gauge plate 27 fixed to the rear end of the lower plate 23 at a given moment, so that the lower apron 23 will be taken along by the presser head then. When the lower apron 23 has been taken along by the presser head over a certain distance a stop 28, fixed to the upper side of the upper plate 23, will come into contact with a strip 29 fixed to the rear side of the upper plate 24, so that also the apron 24 will be taken along then. When the presser head moves back from its most left-hand position, seen in fig 4, the stop 26 fixed to the presser head will first come into contact with a stop 30 fixed to the front side of the plate 23 and thus carry back said apron 23 again. Then the stop 28 fixed to the apron 24 will come into contact with a stop 31 fixed to the front edge of the apron 24 at a given moment, so that also this apron 24 will be carried back by the presser head to the position illustrated in fig 4.

Near the front side of the container, above the presser head, there is formed an enclosed space 32 which is bounded by the upper part of the front wall 12, by a pair of parallel, horizontally extending plates 33 and 34 fixed to said front wall and by a plate 35 extending between said plates and located

spaced from the front wall. As appears from fig 4 the plate 35 slopes downwards from the upper plate 33 in a direction remote from the front wall 12. To the bottom end of the plate 35 there is fixed an adjustable scraper strip 36 which co-operates with the upper apron 24, which can be moved to and fro by the presser head, in order to prevent that dirt is deposited between said apron 24 and the lower plate 34 of the enclosed space 32. To the upright walls 12 and 35 of said enclosed space there are fixed guide rolls 37, rotatable about horizontal axes of rotation, for guiding a driving unit 38, illustrated in more detail in figs 5 and 6, which is to be mounted in said space 32. Said driving unit comprises a liquid reservoir 39 in which there is arranged a pump (not shown). Said pump can be driven by means of an electromotor 40 fixed to the liquid reservoir. The liquid reservoir 39 is mounted on a pair of beams 41, extending parallel to each other and having a U-shaped section, which form a slide which is movable to and fro inside the space 32 over the rolls 37. On the beams 41 forming the slide there is furthermore mounted a control unit 42, which can be operated by means of control knobs 44 and the like provided on a panel 43 which is mounted on the ends of the beams 41. The motor 40 can be put into operation and out of operation by means of the control unit 42 which can be operated by the control knobs 44.

The pump driven by the motor and provided in the reservoir 39 is connected via hoses (not shown) to a connecting block 45 (fig 3). This connecting block is connected via hoses (not shown) to the setting cylinders moving the presser head to and fro.

As appears from fig 1 the space accommodating the driving unit 38 will be closed at one side by the panel 43 when the driving unit has been moved entirely inside said space. At the other end this space 32 may also be closed with a detachable panel. It will be apparent that the driving unit will thus be accommodated in an entirely enclosed space 32 during operation.

The hoses connecting the pump to the connecting block 45 are thereby constructed such that the driving unit can be moved out of the space 32 for maintenance and the like, as is indicated by dotted lines in fig 2.

The refuse to be compressed may be supplied to the container through the open upper side of the front part 1, so that said refuse will lie on the bottom of the container, to the right of the presser head, seen in fig 1. By moving the presser head to the right said refuse can be moved into the space 2 and be compressed gradually there. As the driving unit is arranged in an entirely enclosed space 32, as explained above, it is prevented that dirt or moisture possibly squeezed out of the refuse

comes into contact with said driving unit, so that fouling and/or corrosion of parts of the driving unit will be prevented.

As is furthermore illustrated in fig 3 the space in which the pressure cylinder is arranged is accessible through an opening provided in the front wall 12, which opening is normally closed by a detachable cover 46. After removal of the cover the interior of the presser head will be accessible, as a result of which it has become possible to readjust the plastic blocks 16 by means of the bolts 19 in order to eliminate possible wear.

Claims

1. Container for refuse provided with a presser head arranged near one end of the container, said presser head being movable up and down by means of at least one hydraulic setting cylinder near a supply opening for the refuse which is provided higher in the container than the presser head, whilst there is provided a driving unit for the setting cylinder, said driving unit being provided with a motor, a pump, a liquid reservoir and a control unit, characterized in that the driving unit is arranged on a slide which is movably provided in an enclosed space forming part of the container.

2. Container according to claim 1, characterized in that the space accommodating the driving unit with the slide is located above the pressure cylinder.

3. Container according to claims 1 or 2, characterized in that the slide with the driving unit is movably mounted transversely to the longitudinal direction of the container inside the space.

4. Container according to any one of the preceding claims, characterized in that one of the boundary walls of the space accommodating the slide forms the front wall of the container.

5. Container according to any one of the preceding claims, characterized in that above the presser head there is located an apron, which is movable by means of a stop fixed to the presser head, said stop being movable between two stops fixed to the apron and being spaced from each other, seen in the direction of movement of the presser head.

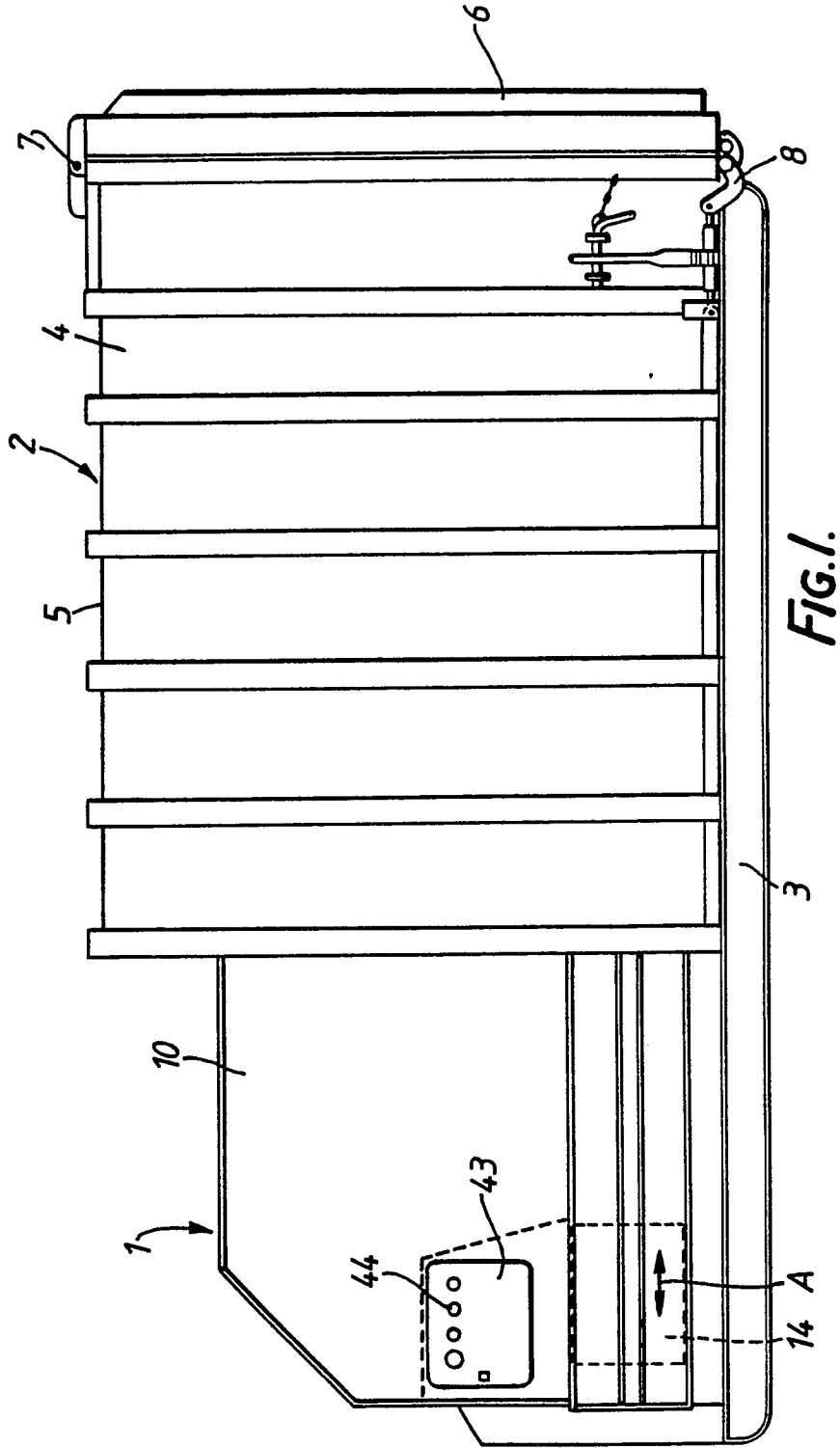
6. Container according to claim 5, characterized in that above the apron there is provided an additional apron, which is movable by means of a stop fixed to the former apron, said stop being movable between two stops fixed to the additional apron and being spaced from each other, seen in the direction of movement of the presser head.

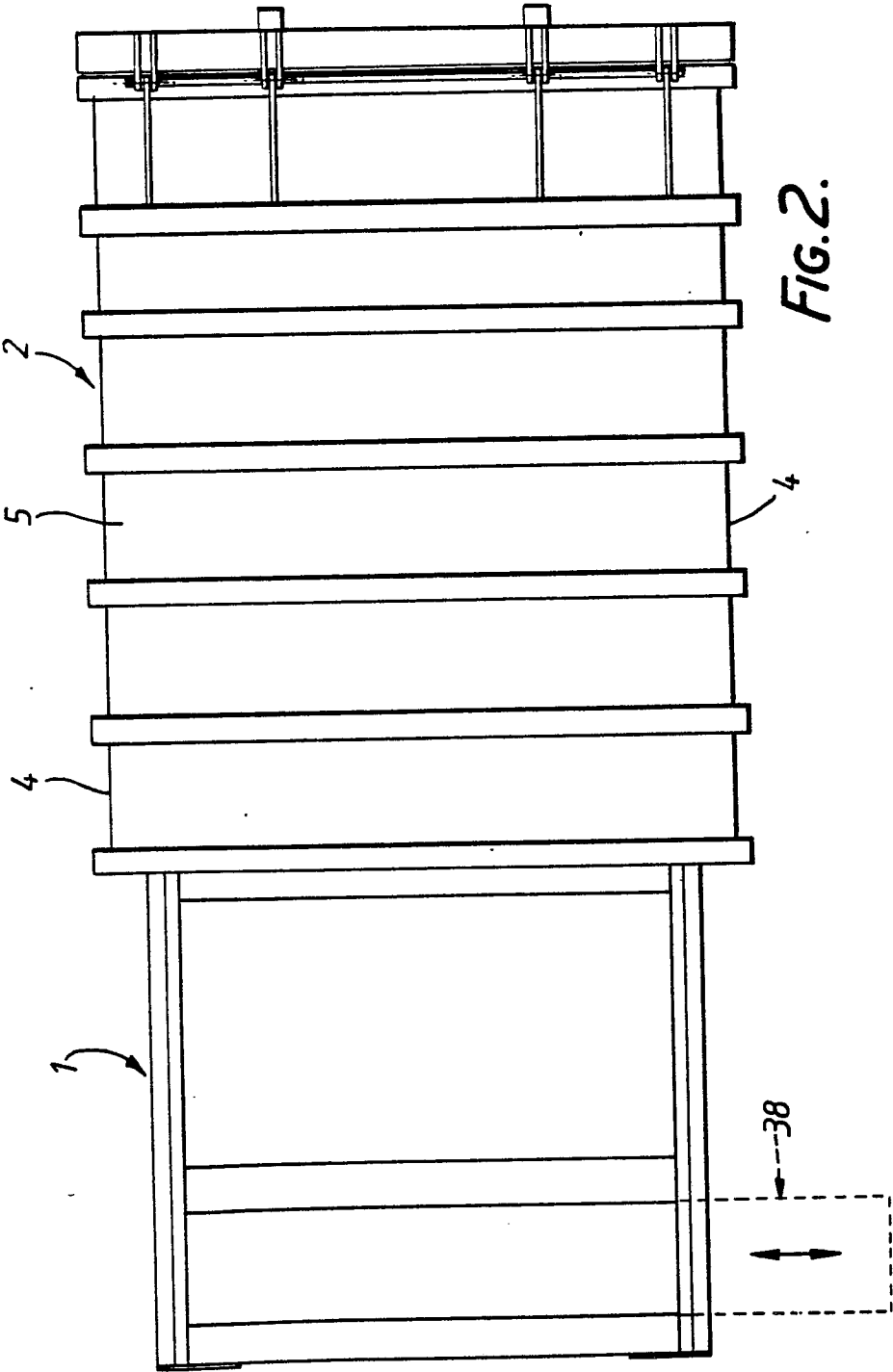
7. Device according to claims 5 or 6, characterized in that one apron moves along the lower edge of a boundary wall of the enclosed space accom-

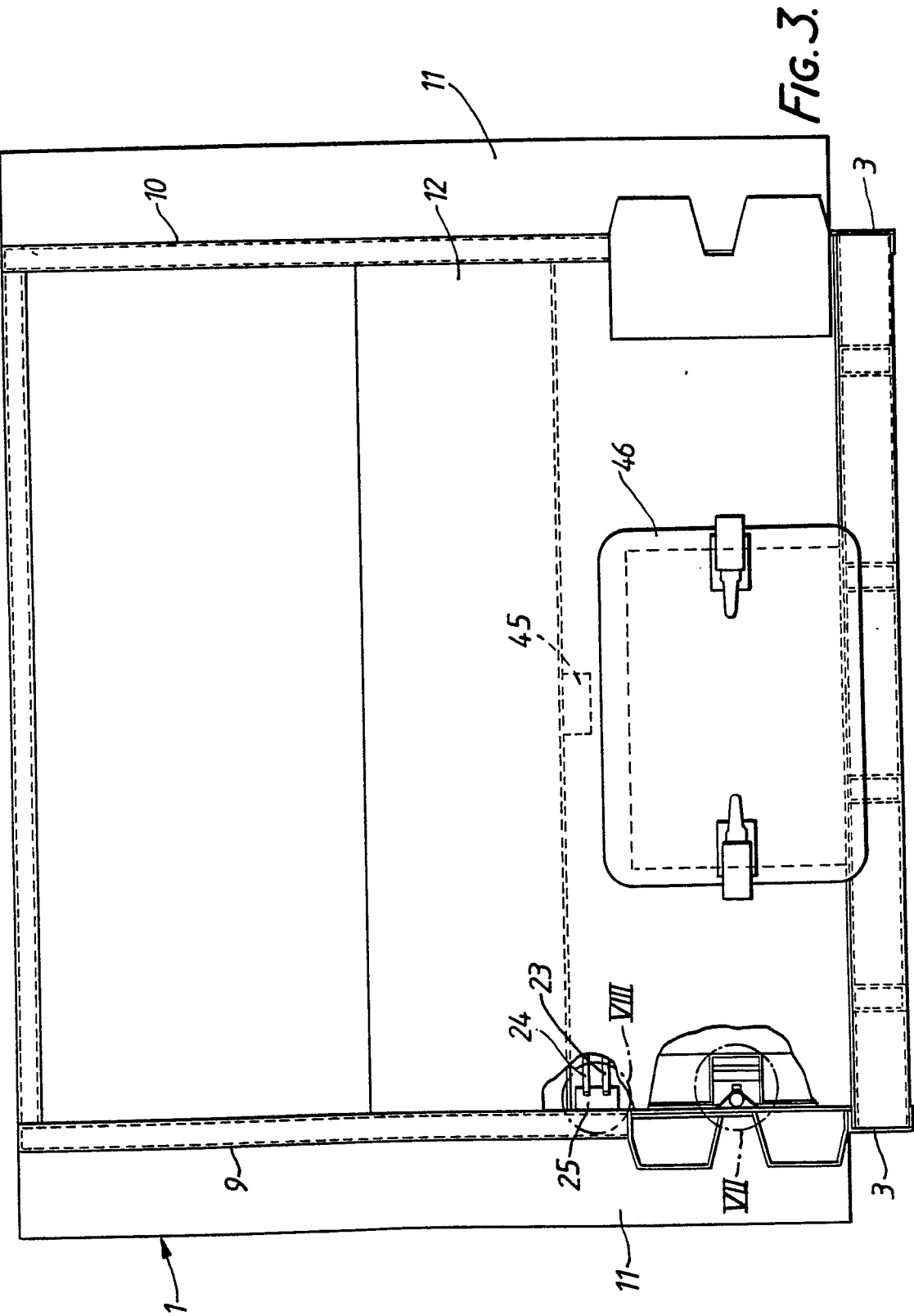
modating the driving unit, said boundary wall being located at some distance from the front wall of the container.

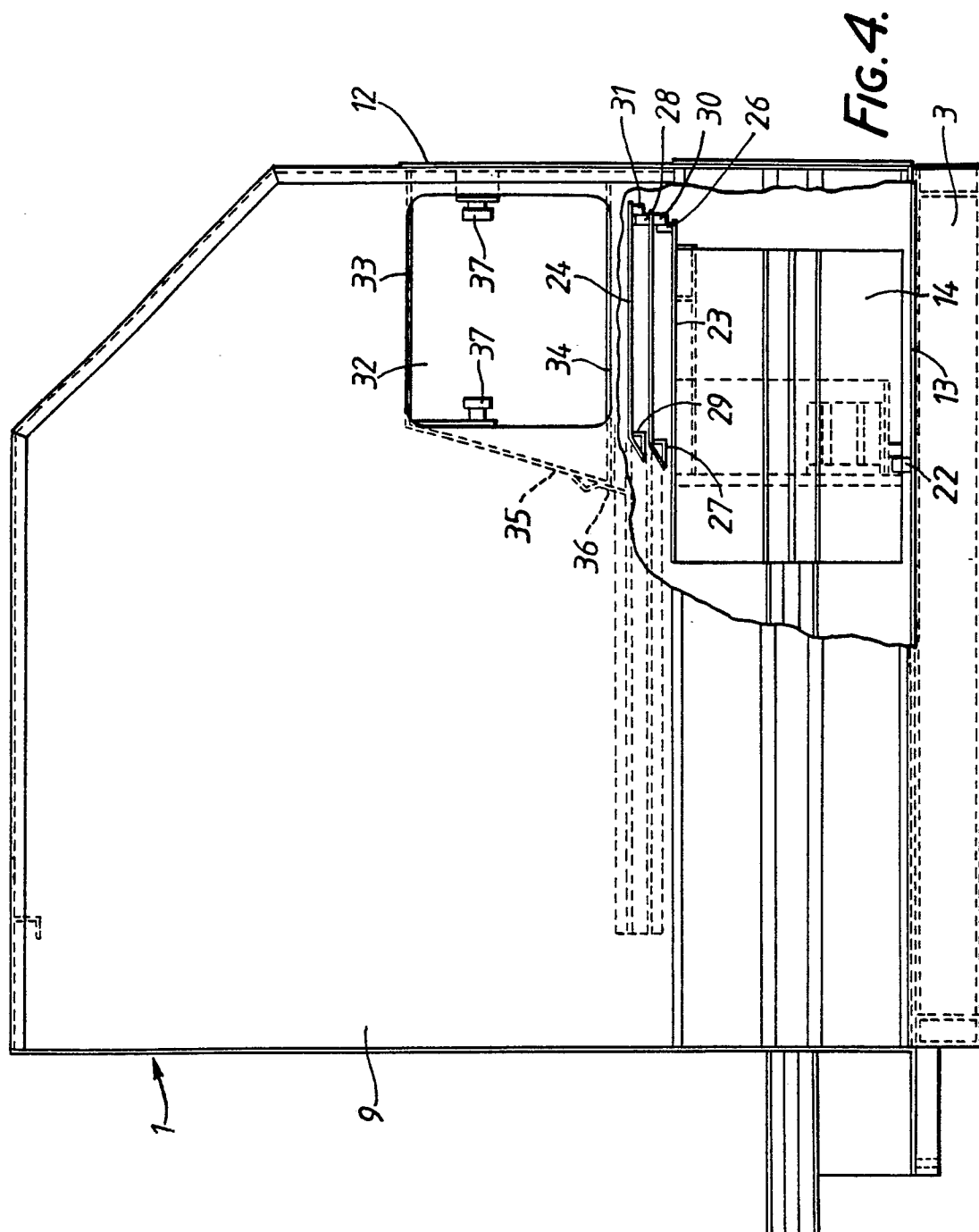
8. Container, in particular according to any one of the preceding claims, characterized in that the presser head is supported by guide means which are fixed partly to the presser head and partly to the walls of the container, said guide means being adjustable relatively to one another, transversely to the direction of movement of the presser head.

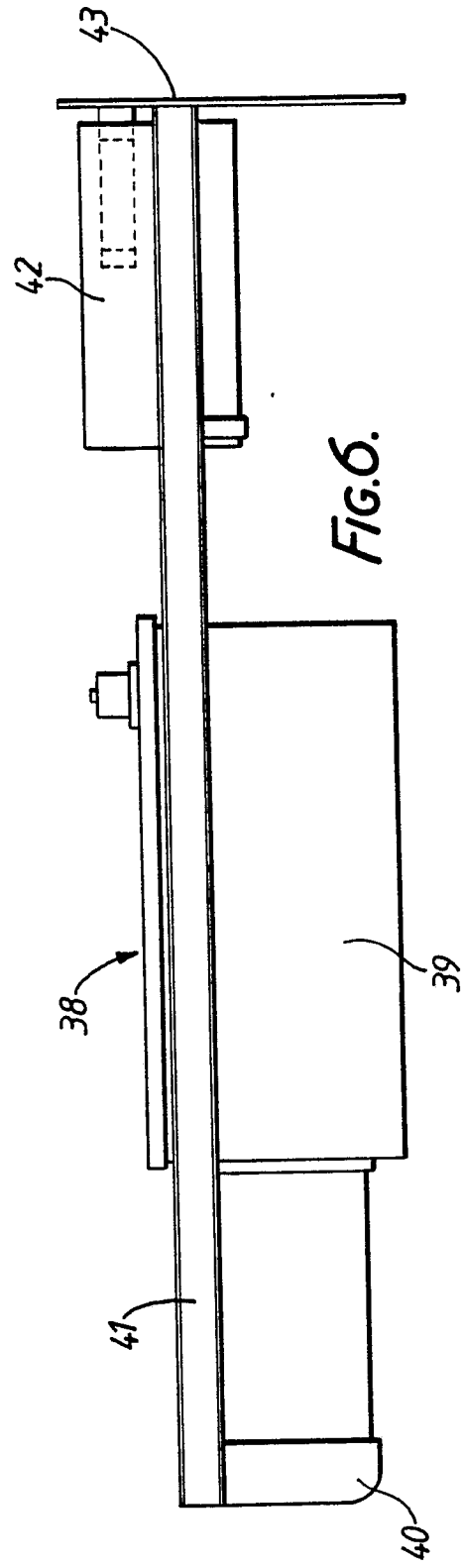
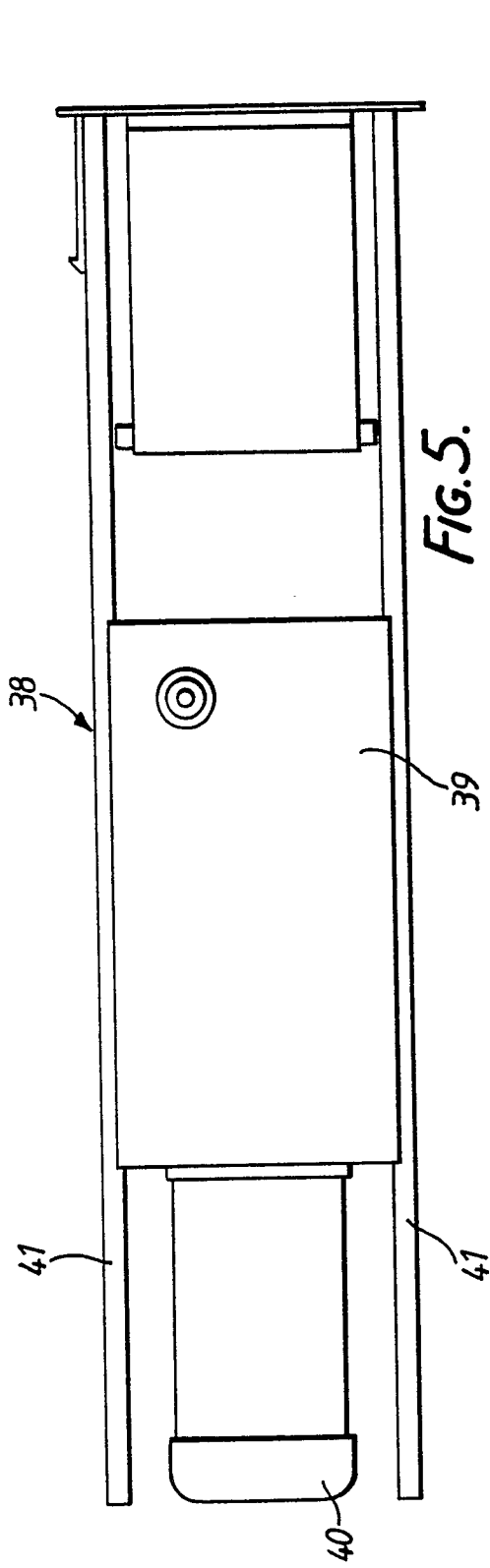
9. Container according to claim 8, characterized in that to the wall of the container there is fixed a guide profile which is at least partly located in a correspondingly shaped recess in a block made of plastic material which is supported by the presser head, said block being adjustable transversely to the longitudinal direction of the presser head by means of adjusting bolts.

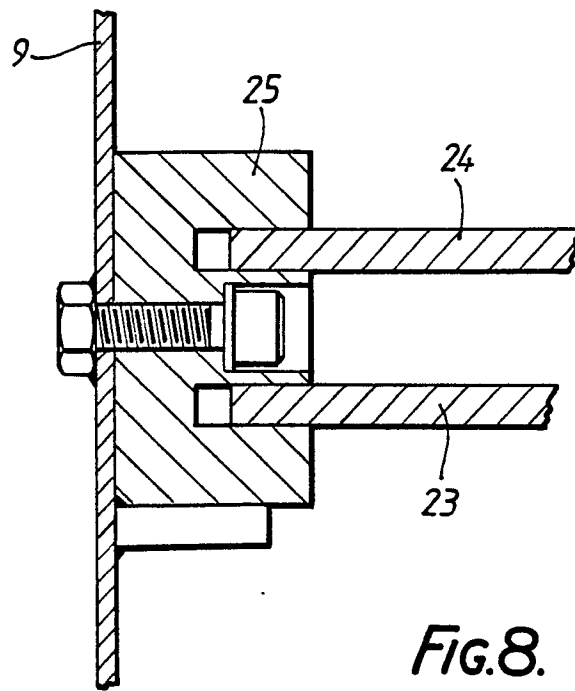
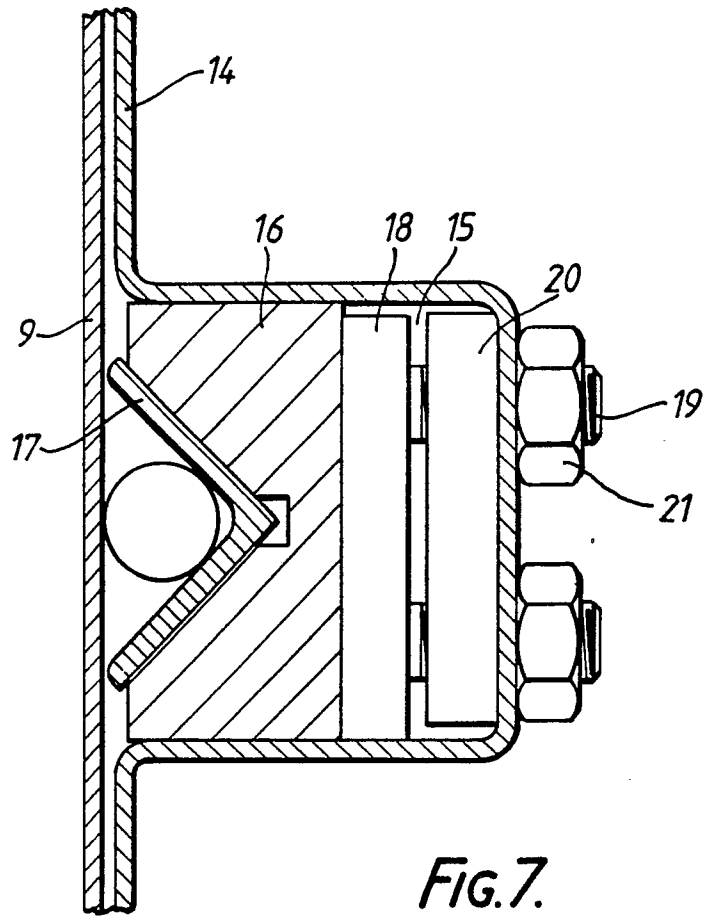














DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
Y,D	NL-A-7 713 833 (HUSMANN) * Whole document * ---	1,2,5,6 ,8,9	B 30 B 9/30
Y,D	US-A-3 613 569 (LIBERMAN) * Column 3, lines 21-31; column 4, line 74 - column 6, line 1; figures 1,2,8,9 * ---	1,2	
Y	GB-A-2 003 826 (URPO HANNONEN) * Page 1, lines 117-123; figure 2 * ---	5,6	
Y	GB-A-1 389 213 (BULLEN) * Page 1, line 98 - page 2, line 13; figure 3 * ---	8,9	
A	US-A-2 930 322 (SPENCER) * Whole document * ---	1	
A	GB-A-1 346 262 (VOSKUIL) * Page 2, lines 32-39; figure 2 * ---	8	
A	US-A-4 269 115 (GATTYAN) * Whole document * -----	8	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			B 30 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 13-02-1989	Examiner BOLLEN J.A.G.
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			