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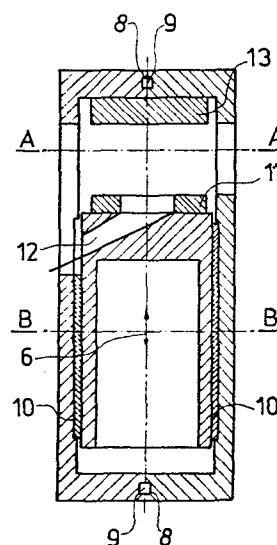
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Press with a box frame.

A press with a box frame and an arbitrary hydraulic-, mechanical- or other drive, said frame consisting of two parts and preferably symmetrical and forming after connection a closed box provided with holes enabling an access to the pressing plates of the press. The parting plane of both parts of the frame is parallel to a direction (6) of the working motion of a press slide (7). The slide (7) in a form of a box is slidably mounted in guides (10) fixed to the inner surfaces of parts of the press frame. Guides (10) and possibly an upper plate (13) are at the same time elements connecting both parts of the press frame. In the parting plane of parts and of the press frame there are grooves (8) with slats (9) protecting against mutual displacement of parts of the frame in the parting plane.



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Press with a box frame

The subject of the present invention is a press with a box frame having hydraulic-, mechanical- or other drive, which can be applied for various technological purposes, especially for plastic working.

Those skilled in the art know presses with a frame supporting structure, being a further progress in the design of previously applied C-frame presses. As compared with the latter, presses with a frame supporting structure enable a considerable increase of rigidity of the frame and rigid guidance of the press slide, which in C-frame presses was supported from two sides, whereas in presses with a frame supporting structure -- from four sides. A substantial disadvantage of the known frame structures, however, was the necessity of applying correspondingly big assembling windows enabling introduction of the slide and the driving mechanism to the inside of the press frame, as well as difficulties associated with the treatment of surfaces for guides of the inner part of the press frame. For this reason presses with a

frame design are most often equipped with guides of the press slide situated in its corners due to which the contact surface of slide guides is considerably limited. In order to eliminate partially these inconveniences, in presses having a frame design roll - lateral guides have been applied, which, however, for the reason of the quantity of transferred pressures, have not given positive results because of a too small contact surface of guiding elements. A particular inconvenience has been shown by presses with a frame supporting structure at the application of hydraulic drives. Namely, for the reason of assembling difficulties the hydraulic drive is mounted outside the press frame, most often on its top, and is attached to the said frame by means of screws, the said screws transferring forces coming from the main pressure of the press.

In order to eliminate partially these disadvantages presses of a box - column design have been introduced, known, for example, from the Polish patent no. 70013. The frame of such a frame consists of a box open at one side and a flat closing plate connected thereto, whereby the driving mechanism can be situated both in the box and in the closing plate. Presses of this type are characterized by increased rigidity and an easy access to the working space of the press, however, in result of the fact that the parting planes of elements of the supporting unit of the press are

perpendicular to the working direction of the press
slide the connecting elements, usually screws,
transfer forces resulting from the working pressure of the press. Transfer of pressure forces occurs in all parting planes of both the frame and
5 the drive of the frame.

The task of the present invention is to eliminate the mentioned disadvantages of hitherto known presses of the frame- or box-column design of the supporting unit and to create such a design of the
10 press, which on one hand will enable high rigidity of the supporting unit, and on the other hand will enable an improvement of conditions of guiding the slide inside the frame by increasing the contact surface of guides. This task has been realised according to the invention by an application of a frame consisting of two preferably symmetrical parts which after assembling form a closed box provided with windows enabling an access
15 to the working space of the press, the parting plane of the said box being parallel to the direction of movement of the press slide. Due to this elements connecting both parts of the frame do not transfer forces originating from the main pressure of the press. Besides, the design of this type enables an access to the interior of the frame in a dismounted state in order to perform a
20 treatment of surfaces and to fix guides of the press slide. Due to the division of the frame in the plane parallel to the direction of the working
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motion of the slide there is a possibility of mounting the slide and possibly the driving mechanism on the side before connecting both parts of the press which after connection form a closed box. In result of this the length of the slide is not like in the hitherto known designs of presses restricted by assembly reasons or the size of assembling windows. Thus, in the press according to the invention the necessity has been avoided of increasing the height and the transverse dimensions of the press frame for the reasons of assembling the slide, due to which it has been possible to attain not only a reduction of dimensions and weights of the press frame but also a considerable increase of its rigidity in comparison with the hitherto known designs.

The invention is explained by way of example in the attached drawing in which fig.1 presents the press with a split frame in a perspective projection, fig.2 presents the same press in a schematic vertical section with a plane CC, fig.3 - one of the two parts of these frames of the presses in the view from the centre, fig.4 - the same part of the press frame in a section along the line DD (fig.3), and fig.5 - the press in a schematic cross-section along the line AA (fig.2), and fig.6 - the press in a schematic cross-section BB (fig.2).

The frame of the press according to the invention consists of two parts 1 and 2 preferably symmetrical and forming after connection a closed box

(fig.1) provided with holes 4, 5 enabling an access to the working space of the press, the parting plane 3 of both parts 1 and 2 being parallel to the direction 6 of the working motion of the press slide 7. In the parting plane 3 both parts 1 and 2 are provided with grooves 8 in which slots 9 protecting against mutual displacement of both parts 1 and 2 in the parting plane 3 are situated. Inside both parts 1 and 2 of the frame flat guides 10 are fixed which serve for guiding the slide 7 of the press, whereby as opposed to the hitherto known designs the slide is guided along side surfaces and not on corners. At the top the slide 7 is connected with a plate 11 serving for fixing tools and provided with a discharging hole 12 serving for discharge of ready details and wastes from the inside of the press. At the opposite side to the plate 11 a plate 13 is fixed to parts 1 and 2, serving for fixing the upper part of a tool. A guide 10a of the slide 7 covering the parting plane 3 of both parts 1 and 2 of the frame and the upper tool plate 13 are at the same time elements connecting both parts 1 and 2 of the press frame, whereby the said elements do not transfer forces coming from the main pressure. The slide 7 is preferably provided in corners with bevels 14 enabling a corresponding thickening of corners 15 of parts 1 and 2 of the press frame, and due to this, correspondingly, an increase of rigidity of the said frame and advantageous transfer

of loads acting on the said frame.

The press according to the invention is mounted so that to part 1 of the frame guides 10 and 10a of the slide 7 are fixed, and then the tool plate 13, and in part 1 the slide 7 is mounted together with the press drive which is not shown, and then the frame together with the mounted slide and the drive is closed by the other part 2 of the frame fixed by means of pins and screws situated in guides 10 and the plate 13.

The press according to the invention can be applied both as a press with hydraulic drive, mechanical drive and other.

What is claimed is:

1. A press with a box frame, characterized in that its frame consists of two similar parts 1 and 2 preferably symmetrical to a parting plane 3 parallel to a direction 6 of the working motion of a press slide 7, forming after connection a closed box provided with holes 4 and 5 enabling an access to the working space of the press.
2. A press according to claim 1, characterized in that to inner surfaces of its parts 1 and 2 of the frame guides 10, 10a of the slide 7 and a tool plate 13 are fixed, guides 10 and the plate 13 being at the same time elements connecting both parts 1 and 2 of the frame.
3. A press according to claims 1 and 2, characterized in that the slide 7 in a form of a box open at one side is provided in corners with bevels 14, and corners of parts 1 and 2 of the frame are provided with corresponding thickenings 15.
4. A press according to claim 1, characterized in that parts 1 and 2 of the frame are provided in the parting plane 13 with grooves 8 enclosing slots 9.

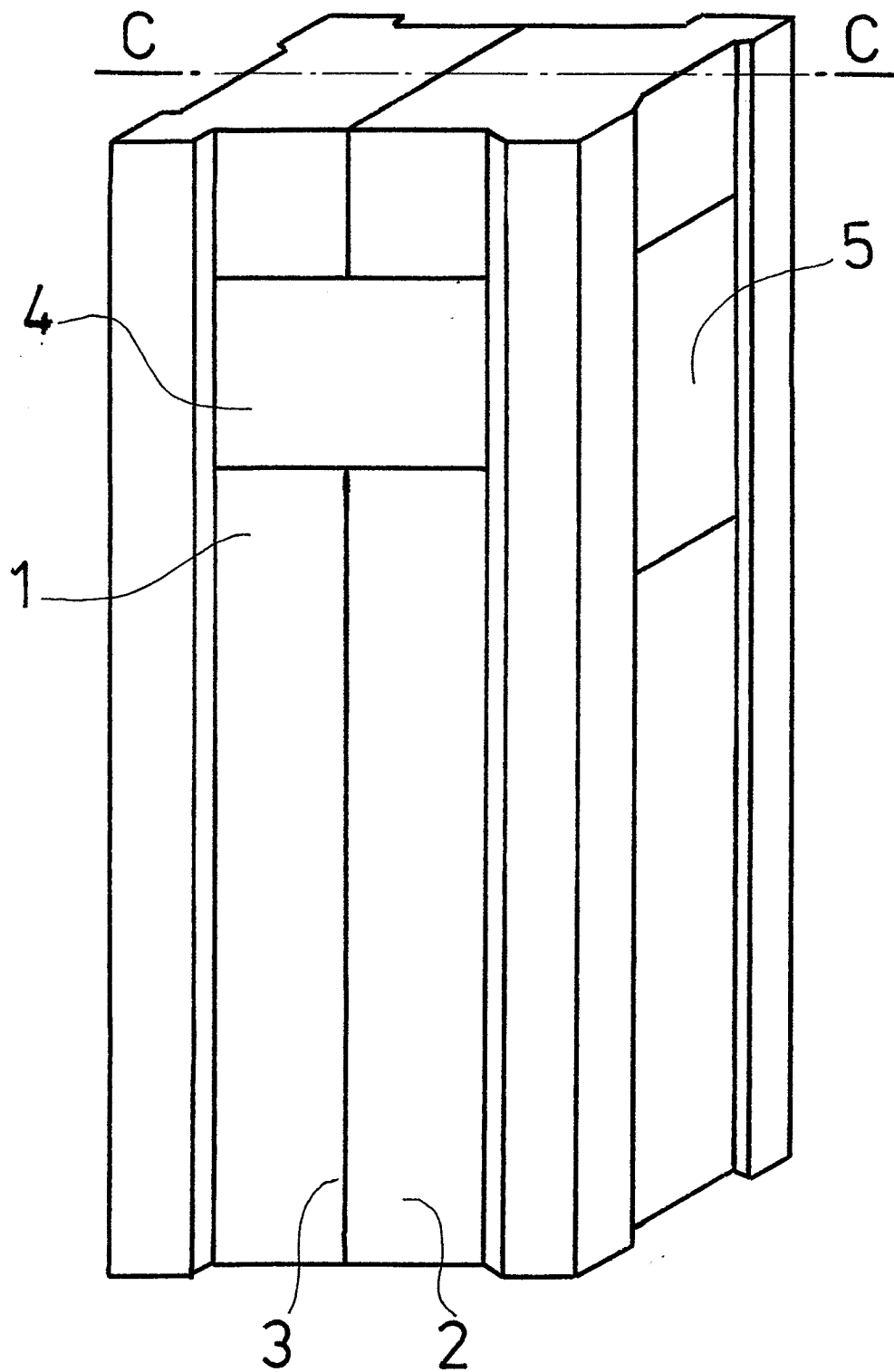


Fig 1

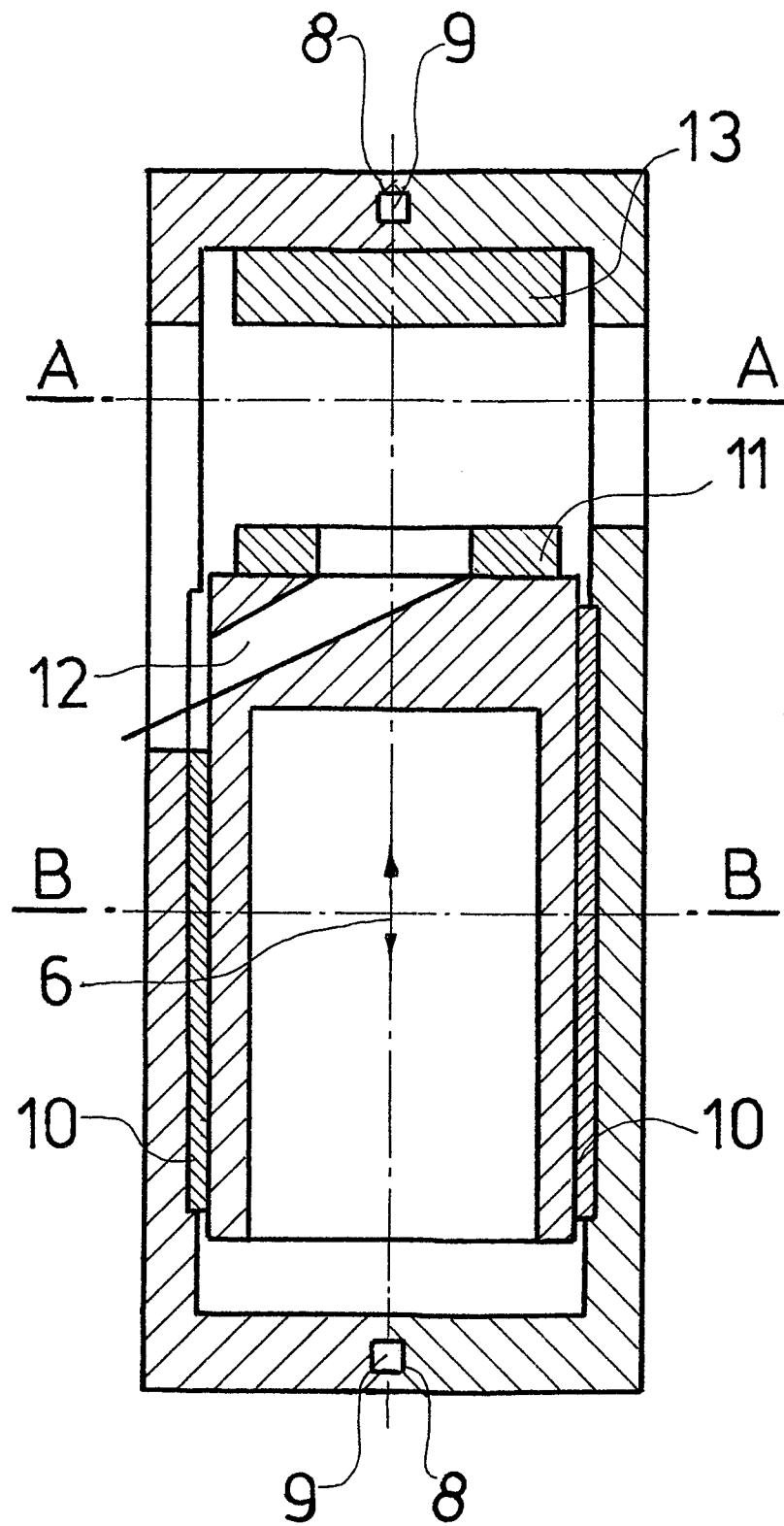


Fig 2

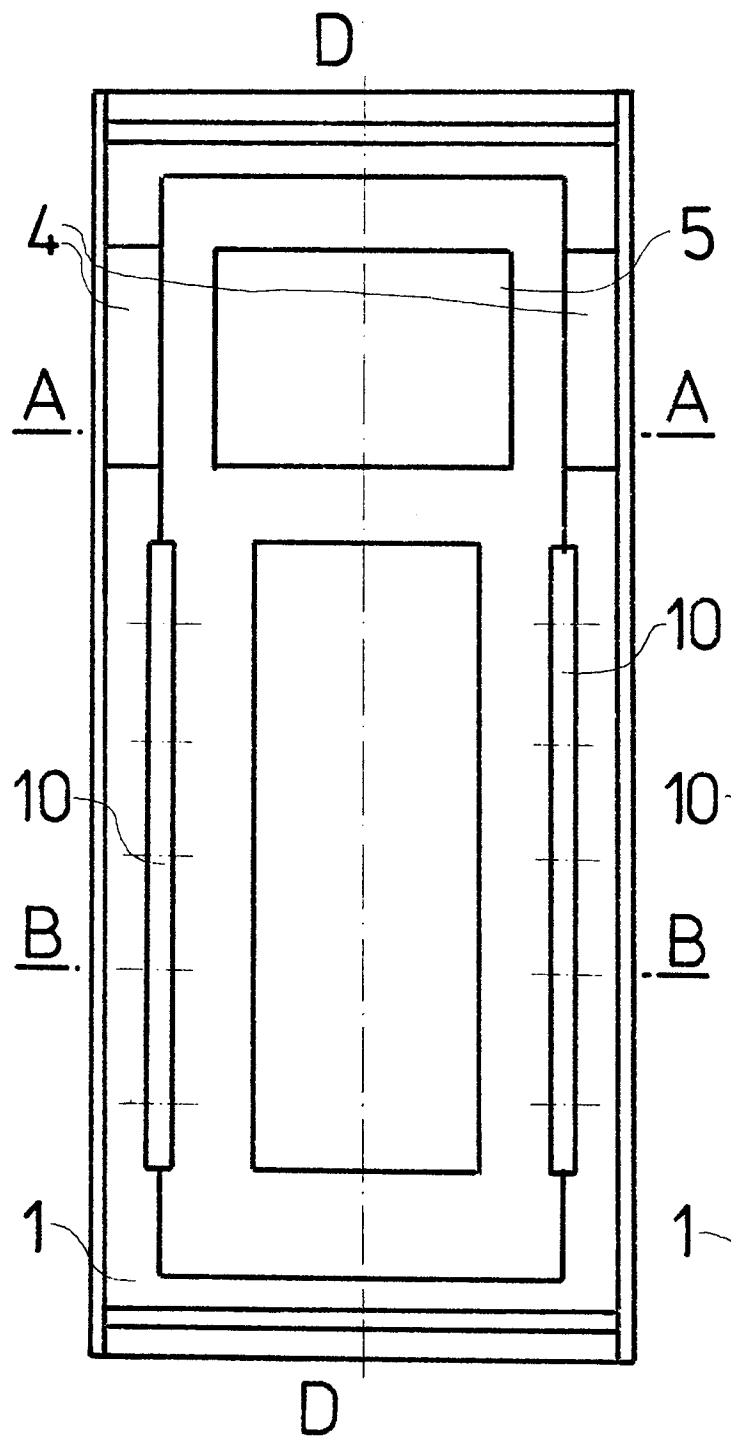


Fig 3

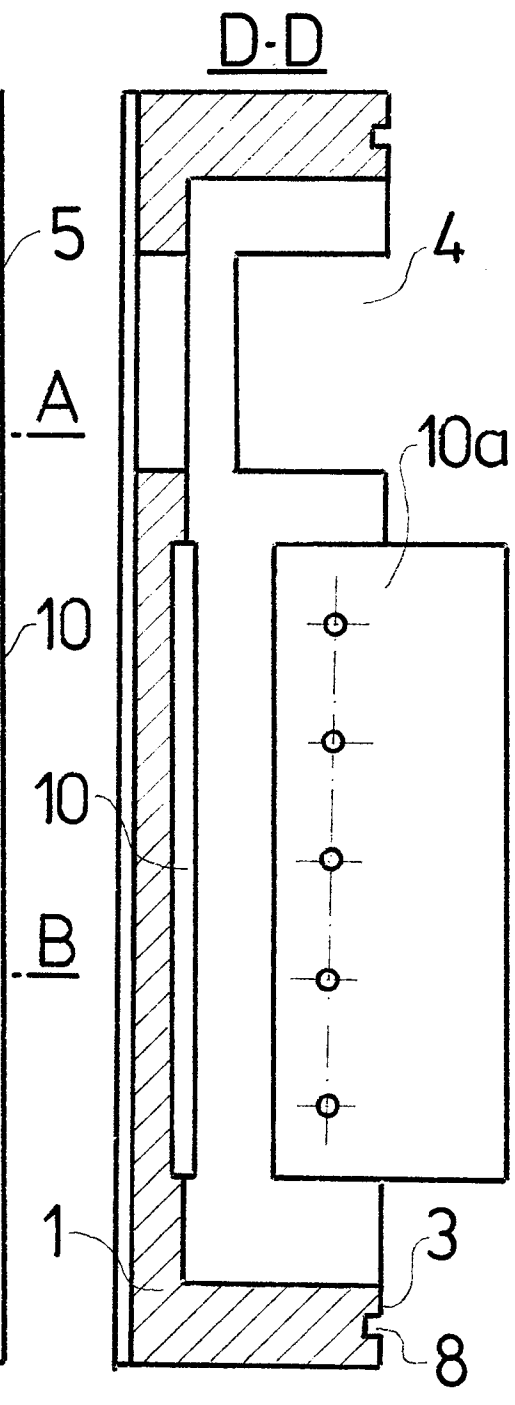


Fig 4

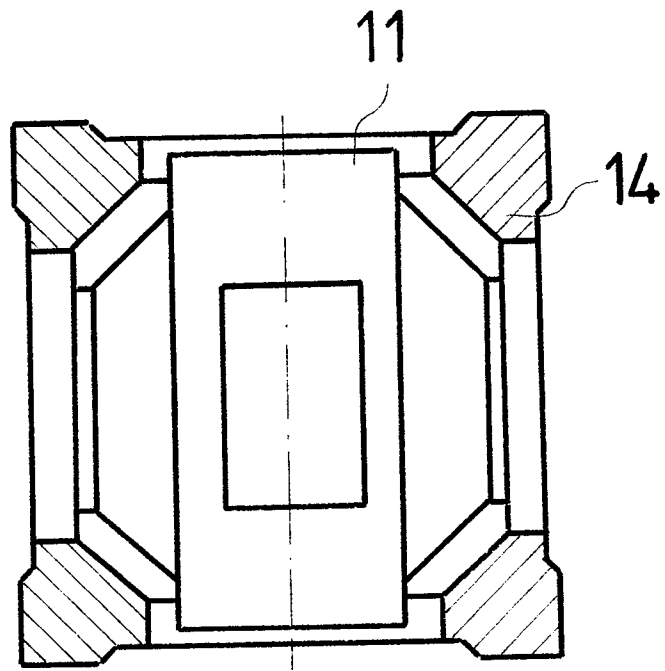


Fig 5

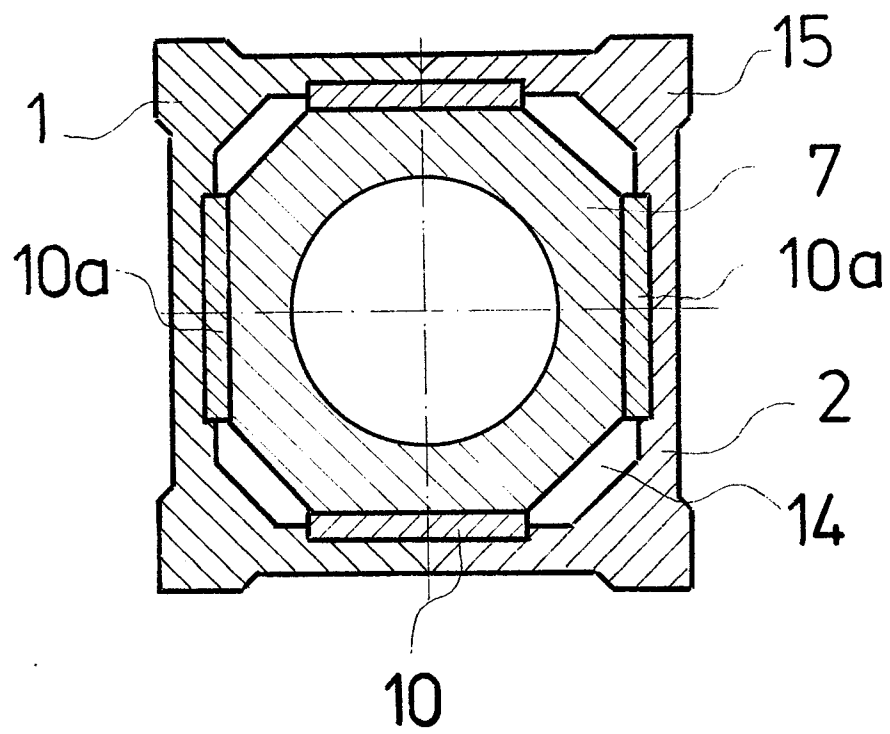


Fig 6



DOCUMENTS CONSIDERED TO BE RELEVANT			EP 83103670.2
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Y	<u>DE - A - 2 201 327</u> (EDWIN MILLS) * Fig. *	1,2	B 30 B 9/30
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Y	SOVIET INVENTIONS ILLUSTRATED, section PQ, week C 50, January 28, 1981 DERWENT PUBLICATIONS LTD., London, P 71 * SU-730 607 (BUDMAN M I) *	1,2	
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D,A	<u>PL - A - 70 013</u> (NOWAK) ----		
			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
			B 30 B
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 04-07-1983	Examiner GLAUNACH
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	