

12 **EUROPEAN PATENT APPLICATION**

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71 Applicant: **A. Ahlström Osakeyhtiö, Noormarkku (FI)**

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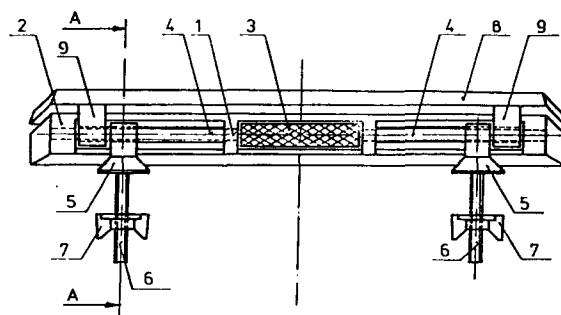
72 Inventor: **Seger, Leif, 07970 Ruotsinpyhtää (FI)**

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74 Representative: **Pirson, Jean et al, c/o Bureau
Gevers 7, rue de Livourne, Boîte no 1, B-1050
Bruxelles (BE)**

54 **An adjustable fastening device for a WC seat.**

57 The invention relates to an adjusting device for a WC seat which can be used for securing the WC seat on WC bowls having different spacing of the fastening holes. The fastening device comprises an elongated rotatable shaft (1) having two threaded portions (4), said portions being threaded in opposite directions, and being fixed to the back of the WC seat; fastening parts (5) having counter-threads, being fitted to the threaded portions of the shaft and moving symmetrically in relation to the center line of the WC seat when the shaft (1) is rotated whereby the spacing of the fastening parts (5) is changed.



An adjustable fastening device for a WC seat

This invention relates to an adjustable fastening device, intended especially for WC seats, which can be used for securing a WC seat to various WC bowls having different spacing of the fastening holes.

- 5 The spacing of the fastening holes in WC seats by different producers differ greatly from each other and vary usually within the range of 130 to 240 mm. Conventional WC seats have a fixed fastening device which fits to a certain spacing of the fastening holes. This has created problems when
10 changing WC seats, whereby it has been found out that a new WC seat does not fit to the existing WC bowl.

- WC seats with an adjustable spacing of the fastening holes have been manufactured in order to solve the problem. However these have been defective and complicated in construction. The adjustable range has been small and the adjusting
15 operation itself has been awkward and has required tools. Further more, to adjust the spacing of the fastening parts, it has been necessary to measure in advance the exact spacing of the fastening holes as an easy stepless adjustment on
20 a WC seat has been impossible.

An example of a known construction is disclosed by the French Patent Publication 1.260.289, where the fastening bolts of a WC seat are movably joined to the fastening parts through a T-joint.

It is an object of the invention to provide a simple fastening device for a WC seat with easy stepless adjustment.

According to the invention the adjustable fastening device of a WC seat comprises an elongated rotatable shaft having
5 two threaded portions, said portions being threaded in opposite directions, and being fixed to the back of the WC seat; fastening parts having counter-threads being fitted to the threaded portions of the shaft and moving symmetrically in relation to the center line of the WC seat when the shaft is
10 rotated whereby the spacing of the fastening parts is changed.

The invention is described in more detail below with reference to the enclosed drawing, where Fig. 1 shows an adjustable fastening device, in connection with a WC seat, according to the invention seen from the back; Fig. 2 shows the main
15 parts of the fastening device detached from a WC seat seen from above and Fig. 3 shows a section along line A - A in Fig. 1 of the fastening device fixed to a WC seat.

The main part of the fastening device is an elongated shaft 1, journaled to a WC seat ring 2 and going through the back of
20 a WC seat. The center portion of the shaft is formed to an adjusting wheel 3 by which the shaft can be rotated. The shaft has portions 4 threaded in different directions on both sides of the adjusting wheel. Fastening parts 5 of a WC seat provided with counter-threads are fitted to both the threaded
25 portions 4; said parts 5 move along the shaft in opposite direction compared to each other when the adjusting wheel is rotated. In this manner the spacing of the fastening points of a WC seat can steplessly be adjusted to a desired value. L_1 indicates the smallest possible spacing and L_2 the largest.
30 The spacing is always kept automatically symmetric to the center line of the WC seat. Fastening bolts 6 and butterfly nuts 7 of a WC seat are provided in the fastening parts 5 to secure the WC seat onto a WC bowl. A WC seat lid 8 can easily be secured to the shaft through a hinge 9. The
35 fastening parts 5 can be provided with several threaded bores 10, where the fastening bolts alternatively can be secured.

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A WC bowl is indicated by the numeral 11 and the fastening holes in it by the numeral 12.

The shaft 1 of the fastening device can be made of one piece but can also consist of several sections.

WHAT WE CLAIM IS:

1. An adjustable fastening device for a WC seat characterized in that it comprises an elongated rotatable shaft (1) having two threaded portions (4), said portions being threaded in opposite directions, and being fixed to the back
5 of the WC seat; fastening parts (5) having counter-threads being fitted to the threaded portions (4) of the shaft and moving symmetrically in relation to the center line of the WC seat when the shaft (1) is rotated, whereby the spacing of the fastening parts (5) is changed.
- 10 2. An adjusting device for a WC seat according to claim 1 characterized in that the shaft (1) can be rotated by an adjusting wheel (3) on the shaft.
3. An adjusting device for a WC seat according to claims 1 and 2 characterized in that the shaft (1) consists of several
15 sections.
4. An adjusting device for a WC seat according to claims 1, 2 and 3 characterized in that the shaft (1) constitutes at the same time the axle of a hinge for the WC seat ring and lid.
- 20 5. An adjusting device for a WC seat according to claims 1, 2, 3 and 4 characterized in that the fastening parts (5) are provided with two or more threaded bores (10) to which the fastening bolts (6) can be fitted.

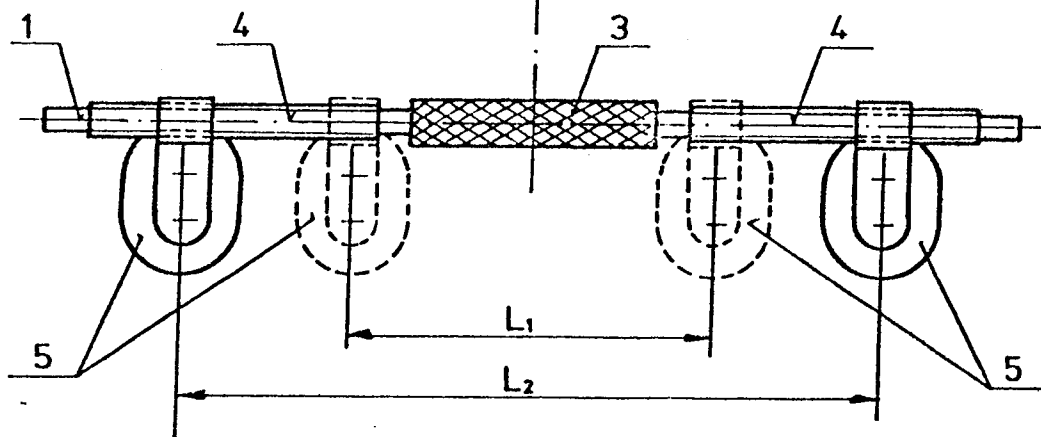
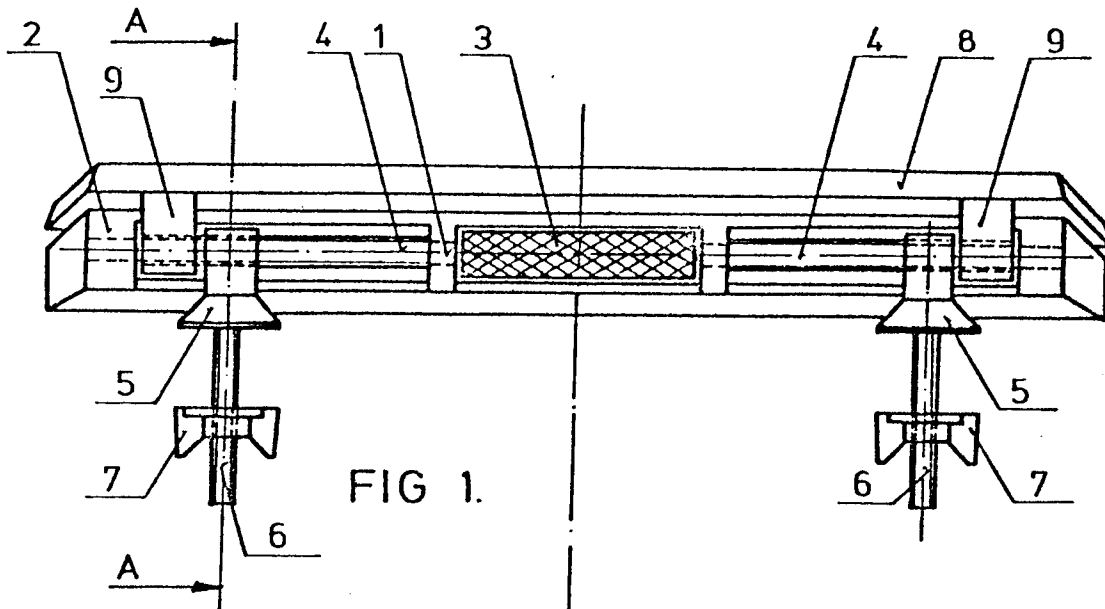


FIG 2.

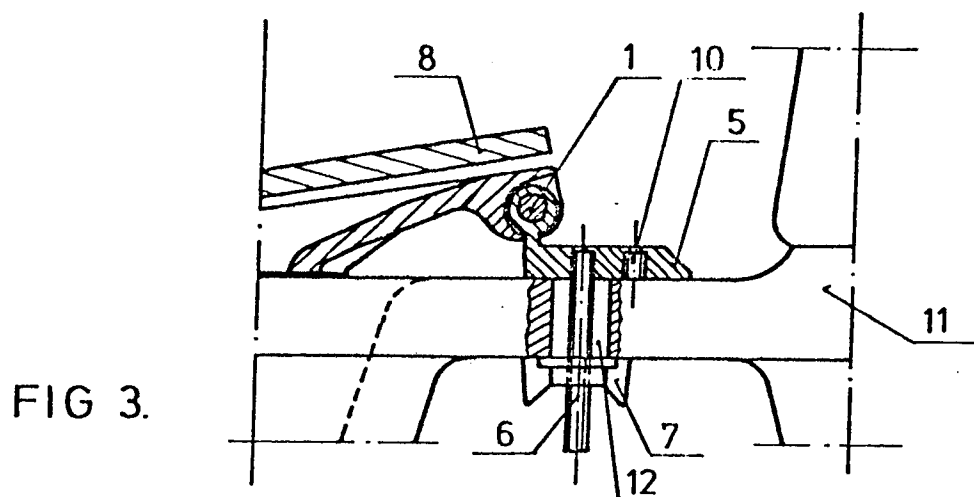


FIG 3.

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European Patent
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EUROPEAN SEARCH REPORT

Application number

EP 79 10 1933

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	<u>BE - A - 397 530</u> (DE COCK) * Page 1; figures * --	1-4	A 47 K 13/26
A	<u>FR - A - 395 196</u> (DUPETITMAGNEUX) * Page 1, lines 27-42; figures 1,2,3 * ----	1,4	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 2)
			A 47 K
			CATEGORY OF CITED DOCUMENTS
			X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
			&: member of the same patent family, corresponding document
☒ The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		26-09-1979	SCHOLS