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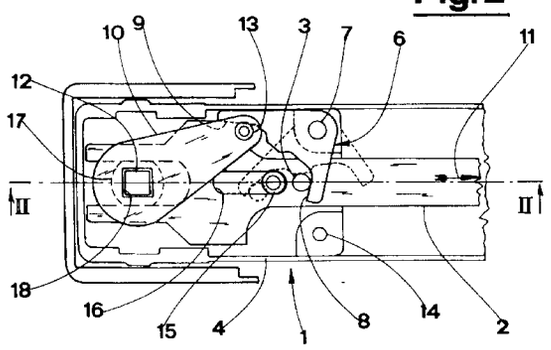
(54) Antipanic pushbar.

(57) The invention relates to an antipanic pushbar, of the type wherein a movement of the mobile body is transformed into a rotation able to perform the opening of a lock which is coupled to the pushbar. The movement of the mobile body produces the axial sliding of a bar (2) which, by means of a pivot (3), interacts with a command lever (6). The said command lever (6), pivoted on a fulcrum (7), in its turn interacts with a manoeuvring lever (10) having, solidly rotatingly fixed about the axis to which it is pivoted, a manoeuvring organ (12) aimed at permitting of coupling with the said lock. A pivot (14) is envisaged, in a symmetrical position with respect to the fulcrum (7), and according to a longitudinal median plane parallel to the movement axis of the said bar (2), which pivot (14) is arranged to permit of pivoting and positioning the entire lever mechanism in an exactly symmetrical position with respect to said plane.

Fig.2



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Object of the present invention is an antipanic pushbar. It is of the type which is fixable on one side of a door and connectable to a lock which can be manoeuvred from the other side by means of a normal handle or key. The activating of the lock is performed by means of a mechanism which is able to transform a movement of a mobile body, with which the pushbar is equipped, into a rotation aimed at producing the opening movement of the lock.

The principal problem existing in the prior art, which the present invention resolves, is that of providing a single pushbar that is usable both with a right-side opening and with a left-side opening: that is, of providing a pushbar which can be applied either to the left or the right side of a door while producing the correct directional rotation in both cases for the rotation manoeuvre of the handle, situated on the opposite side of the door, to produce the opening of the lock. The present invention, as characterized in the claims which follow, provides a simple and effective solution to the above-described problem.

One advantage of the invention consists in its easy possibility of application to all types of locks normally coupled with antipanic pushbars.

Further characteristics and advantages of the invention will better emerge from the detailed description that follows, of some preferred, but not exclusive embodiments of the invention, illustrated here in the form of non-limiting examples in the accompanying figures, in which:

– Figure 1 shows a partial and schematic section along plane II-II of Figure 2;

– Figure 2 shows a schematic section along plane I-I of figure 1;

– Figure 3 shows a schematic section along plane IV-IV of figure 4;

– Figure 4 shows a schematic section along plane III-III of figure 3.

With reference to the above-mentioned figures, 1 indicates a first embodiment of an antipanic pushbar which is provided with a base 4, arranged to be fixed to a side 20 of a door, and with a mobile body 5 mounted to the base 4 and able to move in normal direction with respect to said base 4. The mobile body 5 is fixed to the base 4 by means of a mechanism, not illustrated in the figures, which is able to transform any reasonable movement of the mobile body 5 into an axial sliding of a bar 2 in the direction indicated by the arrow 11. The bar 2 is guided in its sliding by a pivot 15, fixed to the base 4, which pivot 15 is coupled with an allowance internally to a longitudinal slot 16 bored into the bar 2. The bar 2 has solid to it a pivot 3, which pivot 3 is arranged so as to interact with one end 8 of a right-angled command lever 6 which lever 6 is pivoted to the base 4 by means of a first fulcrum 7. The lever 6 has a second end 9 arranged to interact on contact with a pivot 13 which is fixed to the end of a manoeuvring lever 10, in its turn pivoted on the base 4 by means of a hollow pivot 17. The hollow pivot 17 has internally coaxially a square-section hole 18 into which can be inserted a manoeuvring organ 12 in the form of a square bar, arranged to be coupled with a corresponding square-section hole in the lock to which the pushbar 1 is to be coupled. In a perfectly symmetrical position with respect to the fulcrum 7, and with respect to a median longitudinal plane, parallel to the movement axis of the bar 2 and containing the rotation axis of the hollow pivot 17, a second pivot 14 is arranged, with the aim of permitting of the pivoting of the same lever 6, which is also located with symmetrical disposition with respect to the said plane. In other words, the lever 6 can be taken off the first fulcrum 7, turned about and pivoted on the pivot 14. In order to permit this operation, the command lever 6 is equipped with a generally symmetrical structure with respect to its own median plane, which is perpendicular to the rotation axis. Also the manoeuvring lever 10 can be arranged in a symmetrical position with respect to said longitudinal median plane, containing the rotation axis of the hollow pivot 17, in order to keep the reference position of the square-section hole 18 unaltered, so that a perfectly symmetrical mechanism is established with respect to the mechanism, represented in Fig. 2, constituted by the lever 6 and the manoeuvring lever 10.

The possibility of mounting the same mechanism in two exactly symmetrical positions permits of obtaining in both cases two opposite rotation directions of the hollow pivot 17, produced by the same command from the bar 2. The same pushbar can thus be used both for right-side opening and left-side opening.

In figures 3 and 4 a second embodiment of the invention is illustrated which is different from the preceding one in substance by the fact that it envisages, contemporaneously mounted on the base 24 of a pushbar 21, two symmetrical mechanisms, activated by one bar 22. In particular, the two said mechanisms are arranged symmetrically with respect to a longitudinal median plane perpendicular to the base 24 and containing the axis of the bar 22. Each mechanism comprises a command lever 26 having a first end 28 in which a slot 35 is bored, arranged so that a pivot 23 fixed to the bar 22 couples internally to it. Each command lever 26 is further equipped with a second end 29 arranged to come into contact with a pivot 33 of a manoeuvring lever 30, which manoeuvring lever 30 is pivoted by means of a hollow pivot 37 to the base 24. The two levers 26 are pivoted to the base 24 by means of two pivots 27 and 28, which are located symmetrically with respect to the said median plane of symmetry. The hollow pivot 37 is equipped with a hollow square-section sliding fit 38 arranged in order that internally to it a manoeuvring organ 32 can be coupled, which manoeuvring organ 32 comprises a usual-type square-section bar suitable for coupling with the corresponding hole with which the lock to be

coupled with the pushbar 21 is equipped. The two hollow pivots 37 present distinct parallel axes, symmetrically arranged with respect to the said longitudinal median plane. A movement, induced by the mobile body 25 on the bar 22 in the direction indicated by the arrow 31, produces two equal rotations, but in opposite directions, of the two hollow pivots 37. By means of the manoeuvring organ 32 located in one of the two hollow pivots 37, the desired opening movement can thus be obtained.

Claims

1) Antipanic pushbar of the type equipped with a mechanism able to transform the movement of a mobile body with which the pushbar is equipped into a rotation aimed at producing the opening movement of a lock coupled to said pushbar; comprising a bar 2 or 22, which is guided to slide axially by the said mechanism in a direction which is parallel to the angle of the pushbar 1 or 21 and which bar 2 or 22 is equipped with at least one pivot 3 or 23 by means of which said bar 2 or 22 is able to interact with at least one lever mechanism arranged to produce the said opening movement of the lock; said lever mechanism comprising:

- at least one command lever 6 or 26, pivoted by means of a first fulcrum 7 or 27 to a first fixed axis, oblique with respect to the movement axis of the said bar 2 or 22; said command lever 6 or 26 having at least a first end 8 or 28 arranged to interact on contact with said pivot 3 or 23;
- at least one manoeuvring lever 10 or 30 pivoted about a second fixed axis and having rotatably solid about said fixed axis a manoeuvring organ 12 or 32 aimed at permitting coupling with the said lock in order to command the opening movement; said command lever 6 or 26 having a second end 9 or 29 aimed at interacting with a pivot 13 or 33 fixed on the free end of said manoeuvring lever 10 or 30;
- being further envisaged, in a symmetrical position with respect to said first fulcrum 7 or 27 according to a longitudinal median plane parallel to the movement axis of the said bar 2 or 22 and to the axis of the first fulcrum 7 or 27, at least a second pivot 14 or 34 to permit of pivoting at least one said command lever 6 or 26 symmetrical with respect to said median plane and arranged to permit interaction with a manoeuvring lever 10 or 30, which lever 10 or 30 is also located at a symmetrical angle.

2) Antipanic pushbar as in claim 1 wherein at least the said command lever 6 has a completely symmetrical structure according to a median plane perpendicular to its own rotation axis.

3) Antipanic pushbar as in claim 1, wherein the said second fixed axis, on which the said manoeuvring lever 10 is pivoted, is contained within the said median plane of symmetry and is perpendicular to the movement axis of the said bar 2.

4) Antipanic pushbar as in claim 1, comprising two said second fixed pivot axes, separate, parallel and symmetrically arranged according to the said median plane (of symmetry); on each said fixed axis being pivoted one said manoeuvring lever 30; each said manoeuvring lever 30 being coupled with a corresponding command lever 26 together with which it forms the said lever mechanism; its being envisaged that the two said command levers 26 of the two said lever mechanisms have their respective first ends 28 arranged to interact with said pivot 23 of said bar 22.

5) Antipanic pushbar as in claim 4 wherein each said first end 28 of each said command lever 26 has a slot 35 arranged so that it couples internally with said pivot 23, with possibility of axial sliding along the axis of said slot 35; said pivot 23 comprising-a pivot with its axis parallel to the pivot axis of the said command lever 26.

Fig.1

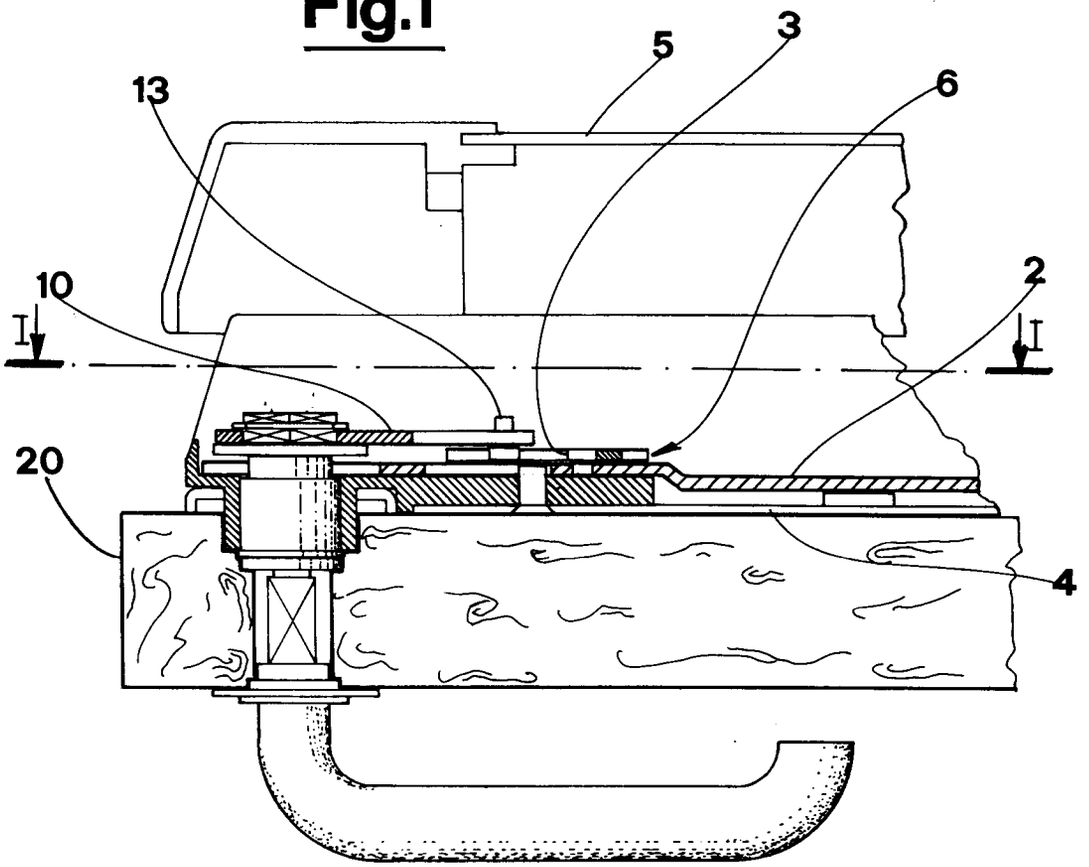
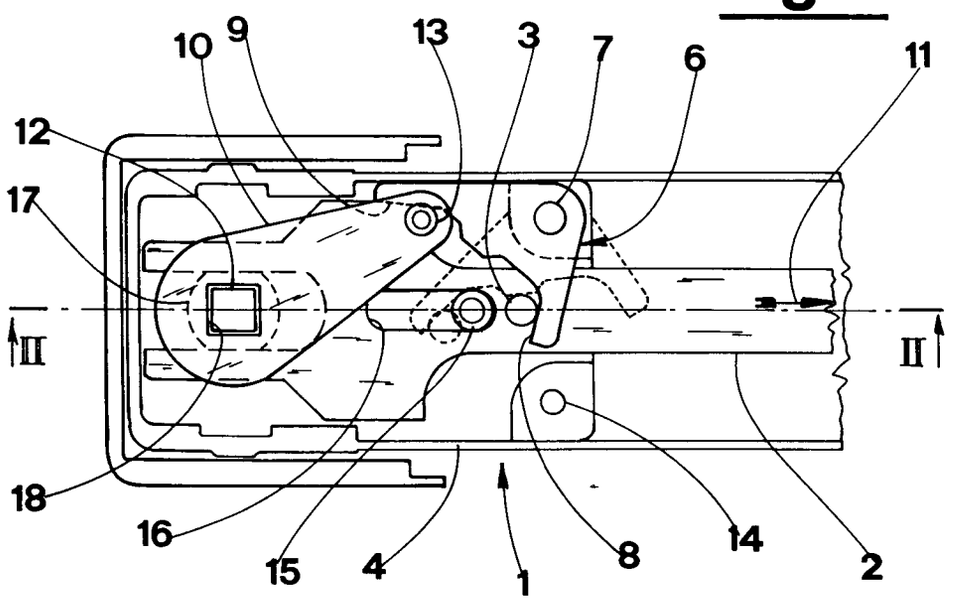


Fig.2



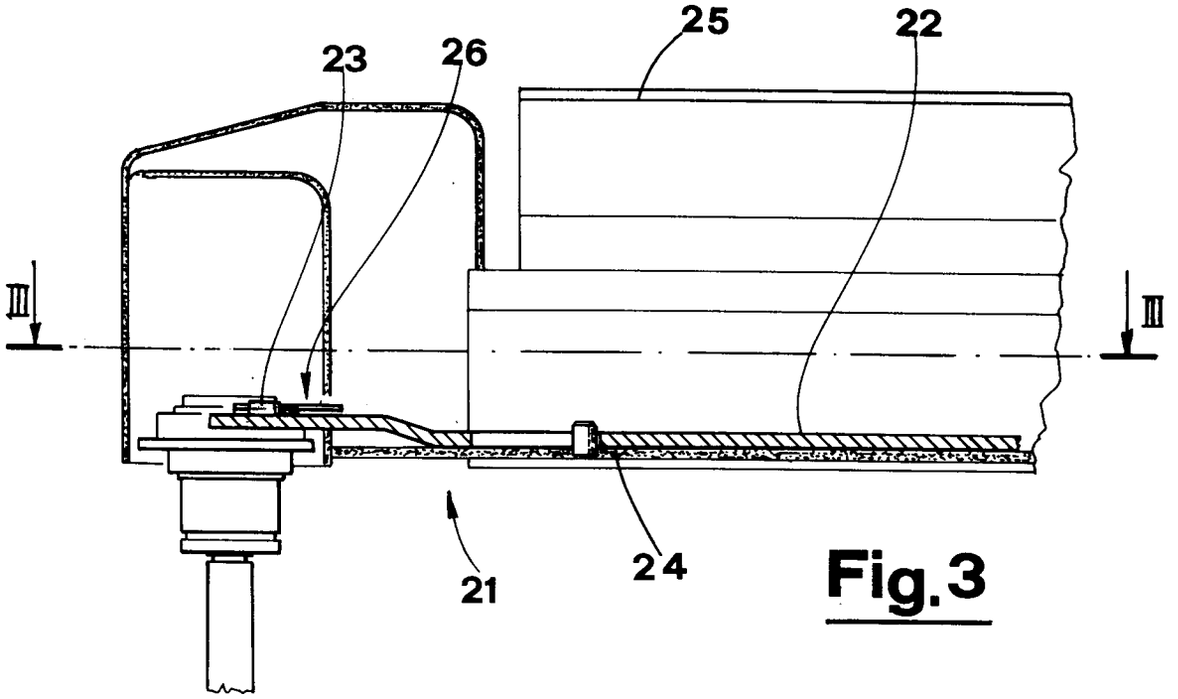

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Fig.3

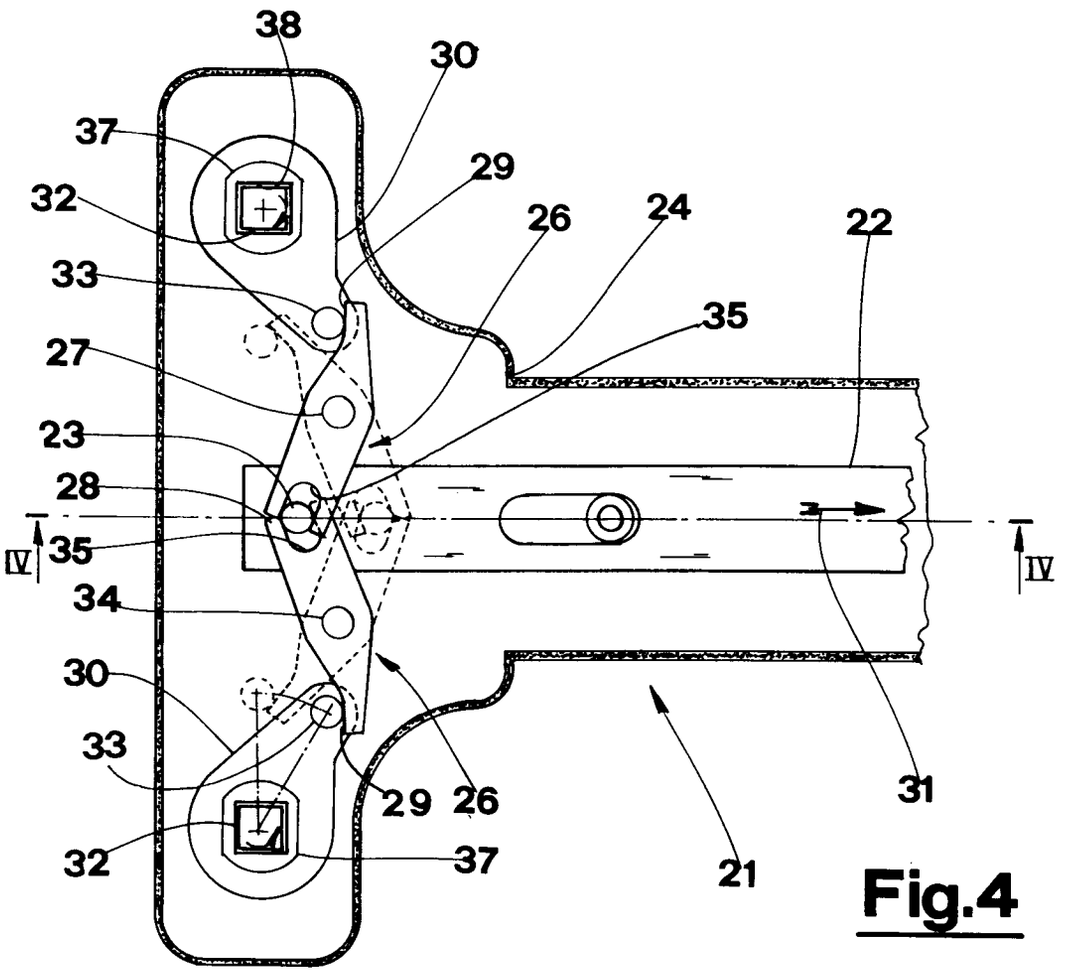
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Fig.4

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 83 0405

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.5)
A	GB-A-219 961 (OY WARTSILA AB) * claims 1-12; figures 1,2 * ---	1-5	E05B65/10
A	US-A-2 962 889 (MCCONNELL) * the whole document * -----	1-5	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

E05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	19 MARCH 1992	VLECK J.

CATEGORY OF CITED DOCUMENTS

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