(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 971 094 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
12.01.2000 Bulletin 2000/02

(51) Int. Cl.[7]: **E06B 9/04**

(21) Application number: **99112697.0**

(22) Date of filing: **02.07.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **10.07.1998 IT MI981584**

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(54) Safety casing or fixture with simultaneous armour plating, for windows, doors or the like

(57) This invention is represented by a casing or a fixture in which is fitted, at least on one wing of the fixture, a frame consisting of openable or extensible slides; these slides consist of movable parts suited to go from a closing position, in which the series of slides form a frame enclosing a safety grate, to an opening position in which these slides allow the grate to come out from the fixture profile and finally close the windows/door opening. The invention intends to apply to the wing of a fixture, a frame consisting of channel irons, duly shaped, placed along the perimeter of the wing; among these channels is fitted a metallic protection grate.

The structural shapes, constituting the frame wedge placed just next to the hinging side of the wing, can be opened and go into contact respectively with the windowsill and the upper edge of a window opening, in such a way as to create a couple of slides along which the grate representing the armour plating element can slide in order to close the window opening.

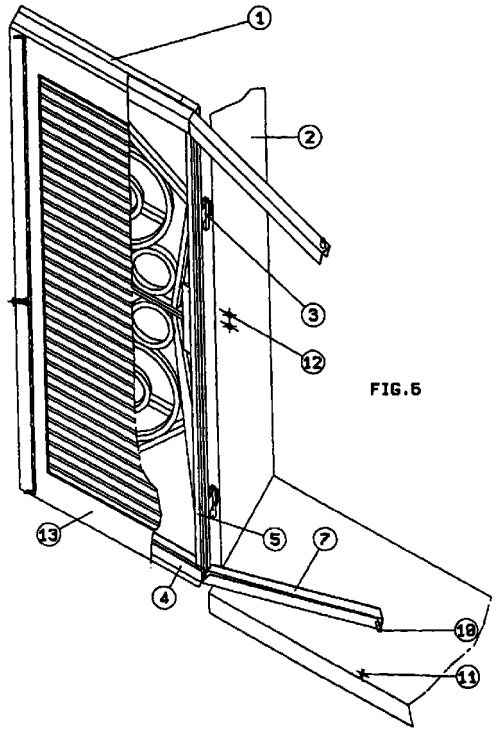

FIG.6

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Description

[0001] This invention proposes a casing or a safety fixture in which is fitted, at least on one wing of the fixture, a frame consisting of openable or extensible slides in which is fitted a grate; these slides include movable parts suited to go from a closing position - in which the series of slides creates a frame enclosing a safety grate - to an opening position in which these slides allow the grate to come out from the fixture profile and finally close the window/door opening.

[0002] The invention ultimately intends to apply to the wings of a fixture, such as a jalousie, a frame that may consist of channel irons or similar, placed along the perimeter of the wing; among these channels is fitted an armour plating element consisting e.g. of a metallic grate.

[0003] According to the invention, the structural shapes, constituting the wedge of the frame placed just next to the hinging side of the wing, can be opened and go into contact respectively with the windowsill and the upper edge of a window opening, in such a way as to create a couple of slides along which the grate, representing the armour plating element, can slide in order to close the window opening.

[0004] According to a preferred embodiment of the invention this frame can be provided with a second panel, in such a way as to create a double-panel wing, so that the frame remains enclosed between the panels and cannot be visible from outside.

[0005] Hence, also the grate can be fully hidden when it is retracte between the wings.

[0006] The most important advantage of this invention is given by the fact that it can be also applied to existing one- or more-wing fixtures, without the need of substitutions and substantial changes.

[0007] Another advantage is represented by the fact that this invention does not influence the appearance of the fixtures, so that it can be freely applied to any kind of building, apart from possible normative obligations.

[0008] As everybody knows, dwellings and offices safety and inviolability represent ever more a problem of the utmost importance.

[0009] In order to avoid any risk of housebreaking and intrusion it is necessary for everybody to resort to the application of windows gratings and grates and reinforced doors and windows.

[0010] The application of gratings made of fixed elements seriously damages the harmony of a building; furthermore, being these elements not removable, they do not allow to use the windowsill and to hang over the window whereas, in case of reinforced fixtures, the armour plating performs its function of protection only with the fixtures closed.

[0011] It is also known the use of openable gates or grates, which can be applied just next to the doors/windows opening but, being these always visible, they damage the harmony of the building and furthermore, in case of application to existing buildings, they will involve great expenditures and hard work to fit the pre-existing structures.

[0012] On the other hand, there is a great demand of armour plating and/or protection systems (such as a removable grate which can be easily removed in order to have free access to a door/window opening) which can also offer a safety function, also when the door or the window is open.

[0013] Ideally these systems should not be visible when not in use and should not require works of substitutions or substantial changes to the existing fixtures or buildings.

[0014] For such a purpose a casing is added according to the characterising part of the claims here enclosed.

[0015] The following pages offer a detailed description of this invention, by way of example not restrictive, with reference to the enclosed figures:

- fig 1 shows a windows with open jalousie and a protection grate for the closing of the window opening;
- fig. 2 shows the frame applied to the jalousie in which is fitted the protection grate;
- fig. 3 shows only the frame as to fig 2;
- fig. 4 shows the grate to be fitted in the above mentioned frame;
- fig. 5 shows the horizontal section of the fixture wing in which is fitted the armour plating according to the invention;
- fig. 6 schematically shows a perspective view and partially a sectional view of a jalousie wing made according to the teachings of the invention;
- fig. 7 schematically shows a horizontal section of a particular version of the fixture according to the invention;
- fig. 8 shows a protection grate applied to pre-existing jalousies or large-size wings:
- fig. 9 shows a jalousie with extensible slides or similar made according to the teachings of the invention.

[0016] It is specified that in the following pages we will report an example of a specific reinforced jalousie; even though the description is limited to this particular example, it can also be applied to any kind and sort of fixtures and casings.

[0017] With reference to the figures here enclosed, and in particular to fig. 6, 1 indicates the jalousie wing fitted to wall 2 of a building just next to a window opening, by means of hinges 3.

[0018] According to this invention, this jalousie is provided with a frame 4 in which is fitted a grate 5 i.e. the reinforcement and safety element.

[0019] The frame 4 consists of a series of channel sections or channel irons or having different shapes, three of them, indicated with number 6 in fig. 3, are fixed and form three sides of the frame, whereas, just next to

the fourth side, the frame consists of two structural shapes respectively indicated with 7 and 8 (fig. 3), respectively hinged to the ends of the upper and lower structural shapes 6.

[0020] According to the invention this openable side of the frame is placed just next to the jalousie side hinged to the building structure.

[0021] The structural shapes 7 and 8 can rotate on their hinging pins to go from a closing position - shown by a continuous line in fig. 3, where the frame 4 takes the form of a closed rectangle and encloses the grate 5 - to an open position - shown by a dashed line in fig. 3, in which the structural shapes 7 and 8 place themselves in contact with the windowsill and with the upper surface of the window opening, in line with their respective structural shapes 6 they are hinged to.

[0022] In this position the structural shapes 7 and 8 form a slide along which the grate 5 slides, then comes out from the space occupied by the jalousie and goes just next to the window opening.

[0023] According to a differenr preferred embodiment od the invention, the slide can also be extensible, as shown in fig. 9, indicated with no. 35.

[0024] Said extensible parts can go from a position in which they are retracted inside the wing, to an opening position in which they place themselves respectively in contact to the lower and the upper side of the window opening, so as to allow the grate to slide and come out from the wing and therefore close the window opening.

[0025] The grate 5 (see fig. 4) is made of material with suitable resistance, e.g. a reinforcing iron rod or a metallic structural shape with suitable dimensions and it ideally presents an upper edge, indicated with 9, rounded so that, by taking out the grate, the grate itself can push upward the upper structural shape 8 until it gets an opening position.

[0026] The upper edge of the grate shall be ideally rounded, so that, by taking out the grate, the upper movable element of the frame 8 can be pushed upward until it gets the opening position after the engagement with the rounded edge of the grate itself.

[0027] Each structural shape 7 and 8 is provided with a projecting pin 10 that in opening position fits into holes 11 respectively provided in the windowsill and in the upper part of the window opening and - after retracting the grate and closing the frame also the jalousie has been closed - fit into the corresponding seats 12 placed in the side wall of the window opening, creating means of constraint which can oppose to possible attempts of breaking and entering.

[0028] Preferably, but not necessarily, the frame 4 can be provided with a covering element consisting for example of a wing 13, the same as wing 1, with the frame 4 and the respective grate 5 which remain enclosed between the wings.

[0029] This way, when the grate 5 fully retracts inside the wing, it is fully invisible from the outside and the harmony of the building remains unmodified.

[0030] The grate may be provided with means suitable to engage a striker such as a hole placed in the windowsill and in the upper part of the window opening to block it in position; these means may consist for example of a lock or similar with removable handle in order to avoid that it can be opened from the outside.

[0031] The outside panel of the jalousie shall be profitably provided with a couple of projecting pins or similar, shown in fig. 5 and indicated with number 14, that, when the jalousie is fully open, may fit in the corresponding seats placed in the building wall.

[0032] This solution avoids for example the unhinging of the jalousie or the unthreading from its hinges when it is open, whereas at the same time the frame 4, with the rails 7 and 8 hooked to the building and stiffened by the grate 5, oppose to any attempt of "uprooting".

[0033] Its use is hereinafter described:

[0034] Usually the grate 5 fully retracts inside the jalousie, with frame 4 in closing position, i.e. with the structural shapes 7 and 8 closing up against the grate 5 placing themselves in line along the jalousie edge.

[0035] In this position nothing is visible from the outside and the jalousie looks like a common jalousie.

[0036] By closing the jalousie the window is protected and reinforced by the grate fitted inside the wings and the pins 10, engaging in the seats 12 of the panel, oppose to the removal of the frame with the respective armour plating.

[0037] The wings can be normally opened and, if the grates 5 are not taken out, the window opening remains completely free, just like in a common window without protection.

[0038] On the other hand, in case of need of protection of the window opening without closing the fixture, it is enough opening the frames 4 or the extensible slides, by letting the structural shapes 7 lean on the windowsill with the pins 10 fitted in the holes 11 and at the same time the structural shapes 8 in contact with the upper wall, and therefore withdraw the grate.

[0039] In this case the window looks like the windows shown in fig. 1, 8 and 9, with the open wings and the two grates engaging the window opening.

[0040] Of course the window opening must be provided with suitable accessories such as frames, projecting slabs or similar, in which it is possible obtaining, in a suitable position, the seats 11, 12, 14 suited to be engaged by the frame pins.

[0041] The grate must be blocked in position according to the teachings of the known art, for example as mentioned above, by a lock or similar with removable handle, performing their protection function and keeping at the same time the window open.

[0042] The grate shall be provided with windowstop devices known to the art, i e stops suited to set out the correct positioning of each grate in the window opening.

[0043] Furthermore, the grate can present, just next to the area where these stops are located, a protection slab not shown in the figure, suited to avoid that some-

body can reach with one's hand the central closing and blocking devices.

[0044] The casing according to the invention offers numerous advantages:

- easy access to doors and windows, offers the user plenty of freedom, being at the same time protected against intrusions, without the need of fixed gratings;
- allows to live with the window fully free without the irksome "prison" effect given by walled-up gratings;
- with the shutters closed, transforms the fixture in a reinforced fixture, guaranteeing easy use and quickness of manoeuvre;
- it can be applied also to pre-existing casings, aside from their nature, without the need of substitutions or other expansive interventions.

[0045] This solution can be successfully applied also to doors, front gates, French windows and any kind of fixture.

[0046] The same kind of solution can be successfully applied also in case of inner fixture, usually hinged just next to a hollow in the wall and that consequently cannot be fully opened and cannot place themselves parallel to the wall.

[0047] This solution is shown in fig 7, where number 30 indicates a fixture, e.g. the inner pane of a window, hinged at the wall 31 in a point 32, placed inside as to the wall-line.

[0048] In this case, as shown in fig 7, the inner side cannot be fully opened and it wouldn't be possible to use the method above described.

[0049] In this case the invention provides for the realisation of openable or extensible slides of the frame 4, each of them in two parts, respectively indicated with numbers 33 and 34 in fig. 7.

[0050] The element 34 is hinged to the element 33 in such a way as to rotate on a substantially horizontal plane.

[0051] By this method, once the glass fixture is open, it is possible to slide the grate on the element 34 and when the grate is fully extracted from the wing, the element can be rotated to place itself parallel to the wall, in such a way as to bring the grate to a closing position of the window opening.

[0052] A skilled in the art may make changes and different versions which must be considered included within the competence of this invention.

Claims

1. Safety fixture or casing, characterised by the fact of providing at least one wing to which is applied an openable frame inside which is fitted a sliding protection grate; this openable frame can go from a closing position - in which this grate is enclosed inside this frame without protruding from the wing profile - to an opening position in which this grate can slide along this frame to finally go to close the window opening.

2. Safety fixture or casing according to claim 1, characterised by the fact that this frame consists of a frame applied along the perimeter of the wing and shaped in such a way as to allow the fitting in of the grate inside the profiles constituting the frame, this frame having an openable or extensible side in order to let this grate slide and come out from the wing.

3. Safety fixture or casing according to claim 2, characterised by the fact that this openable side of the frame is the one placed just next to the hinging wedge of the wing.

4. Safety fixture or casing according to claim 2, in which this grate is provided with means for locking it in the window closing position, said grate having, just next to the zone where these locking devices are located, a protection slab suited to avoid that somebody can reach with one's hand daid closing and blocking devices.

5. Safety fixture or casing according to claim 2, characterised by the fact that the openable side of the frame consists of two parts respectively hinged to the ends of the upper and lower side of the frame, wherein these parts can rotate on their hinging point to go from a position in which they place themselves in line, in such a way as to create a closing side of the frame, to an opening position in which they place themselves respectively in contact to the lower and the upper side of the window opening, so as to allow the grate to slide and come out from the wing and therefore close the window opening.

6. Safety fixture or casing according to claim 2, characterised by the fact that the openable side of the frame consists of two extensible parts, respectively at the upper and lower side of the frame, wherein said extensible parts can go from a position in which they are retracted inside the wing, to an opening position in which they place themselves respectively in contact to the lower and the upper side of the window opening, so as to allow the grate to slide and come out from the wing and therefore close the window opening.

7. Safety fixture or casing according to claims 5 or 6, characterised by the fact that these movable parts of frame present at least one pin suited to fit in a corresponding seat placed respectively in the lower and the upper wall of the window opening.

8. Safety fixture or casing according to claims 5 to 7,

characterised by the fact that these pins, projecting from the openable parts of the frame fit, when the wing is closed, in corresponding seats placed in the side wall of the window opening, in such a way as to create elements which secure the armour plating to the building wall.

9. Safety fixture or casing according to any of the previous claims, characterised by the fact of providing, on one side of the wing, projecting elements suited to fit in corresponding seats placed in the building wall, sideways the window opening.

10. Safety fixture or casing according to each of the previous claims, characterised by the fact of providing a wing consisting of two parts, respectively inside and outside, between which is included this frame with the grate, so that, when the grate is retracted inside the frame, it is completely hidden.

11. Frame according to any of the previous claims, characterised by the fact that each of these movable parts of frame consists of two elements hinged in such a way as to rotate, once they have been opened, on a substantially horizontal plane and therefore place themselves parallel to the wall even in case the fixture cannot be fully opened.

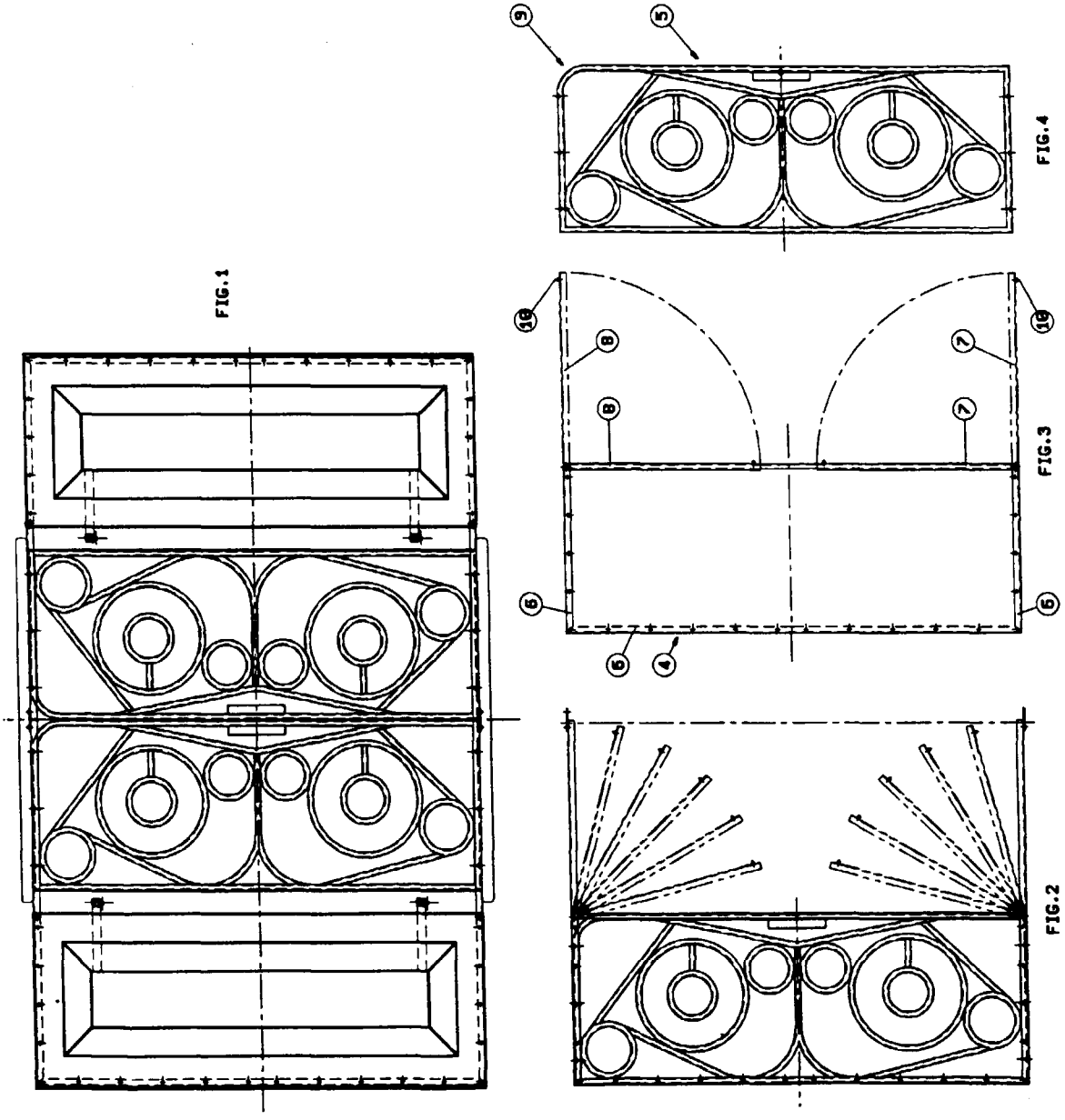
FIG.1
FIG.2
FIG.3
FIG.4
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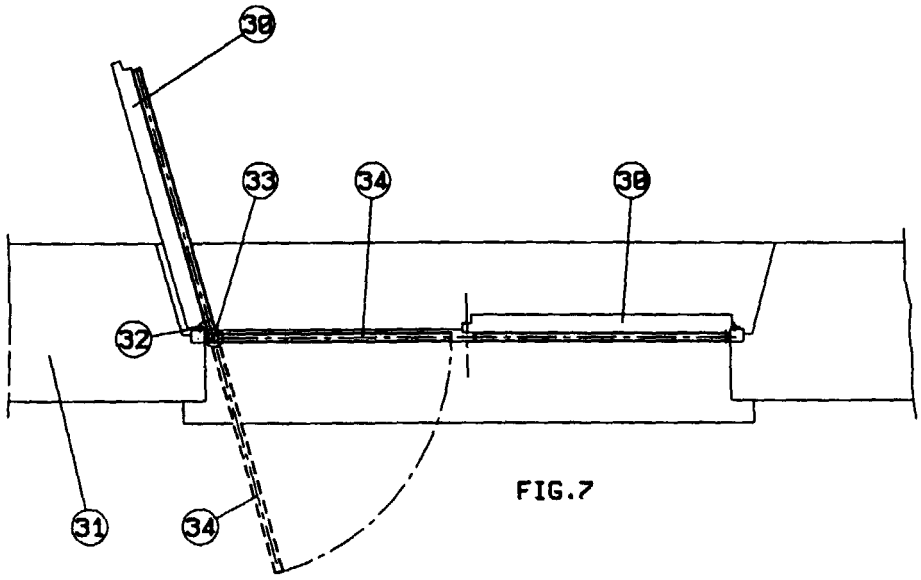

FIG.7

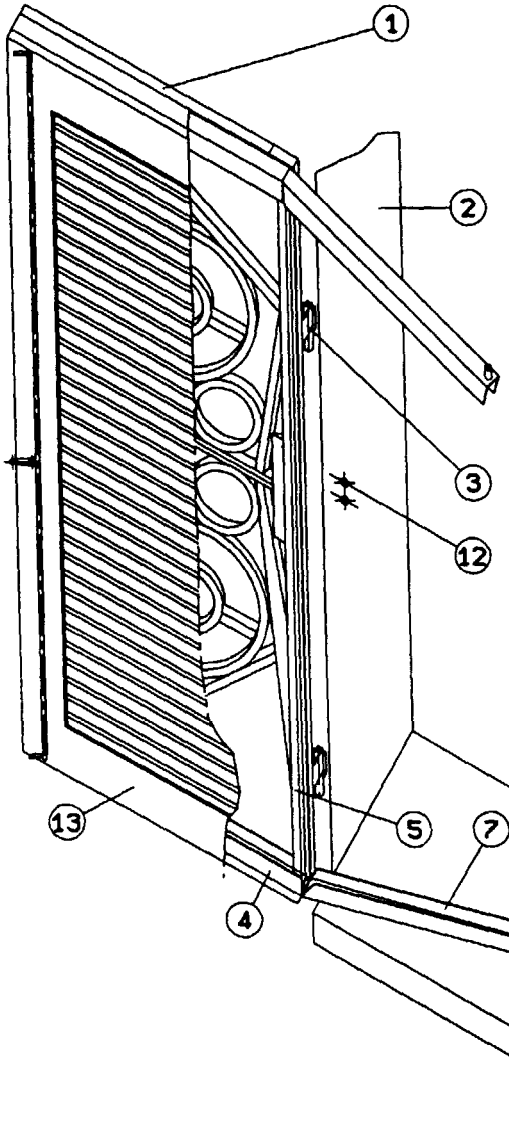

FIG.6

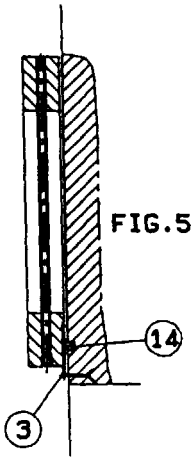

FIG.5

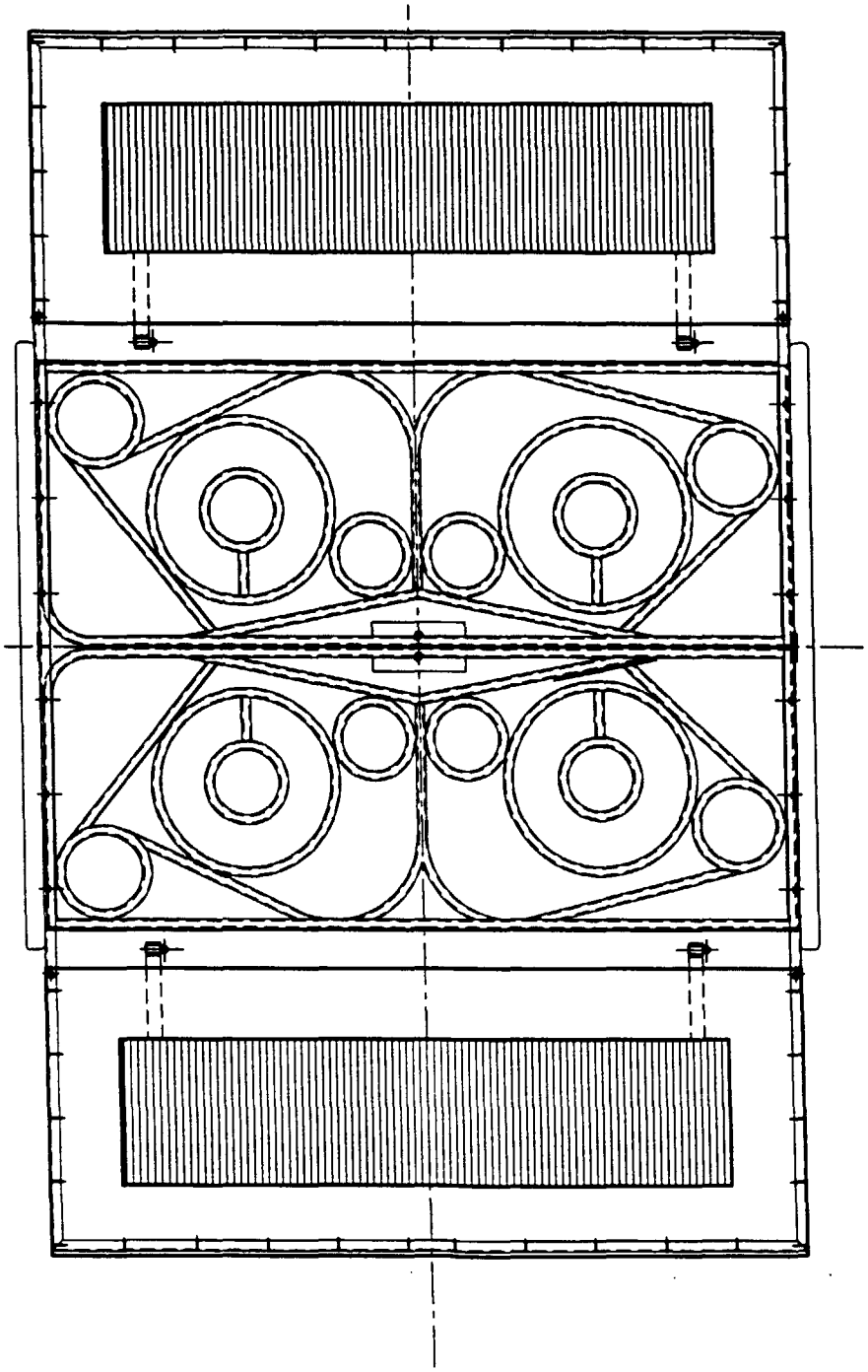

FIG.8

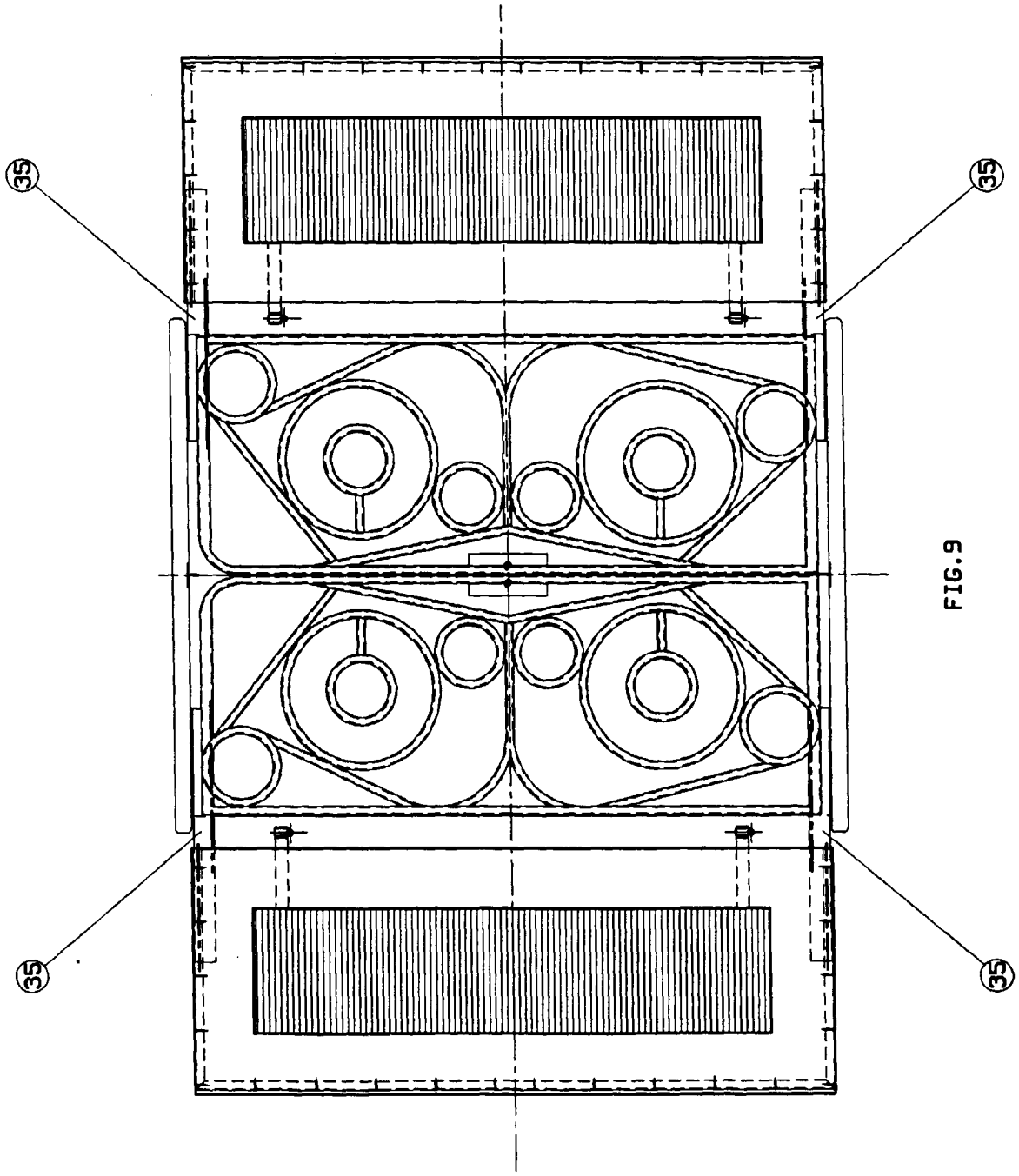

FIG.9