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

Sicherheitsgehäuse mit integriertem Schutzgitter für Fenster, Türen, oder dergleichen

Boitier de protection avec grillage de sécurité intégré pour fenêtre, porte, ou similaire

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Description

[0001] This invention proposes 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 retracted 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] EP-A-0.676.529 discloses a grating that can be opened to receive a mosquito net, consisting of a fixed casing to be applied to a window opening and at the least a wing formed by a first element hinged to the side wall of the window opening and a second element hinged to the first one.

[0013] A mosquito net is wound around a drum, which is, in its turn, rotatably mounted on the wing.

[0014] 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. 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.

[0015] For such a purpose a fixture is added according to the characterising part of the claims here enclosed.

[0016] 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.

[0017] 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.

[0018] 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.

[0019] 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.

[0020] 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.

[0021] According to the invention this openable side of the frame is placed just next to the jalousie side hinged to the building structure.

[0022] 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.

[0023] 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.

[0024] According to a different preferred embodiment of the invention, the slide can also be extensible, as shown in fig. 9, indicated with no. 35.

[0025] 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.

[0026] 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.

[0027] 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.

[0028] 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.

[0029] 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 be-

tween the wings.

[0030] 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.

[0031] 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.

[0032] 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.

[0033] 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".

[0034] Its use is hereinafter described:

[0035] 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.

[0036] In this position nothing is visible from the outside and the jalousie looks like a common jalousie.

[0037] 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.

[0038] 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.

[0039] 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.

[0040] 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.

[0041] 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.

[0042] 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.

[0043] 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.

[0044] 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 somebody can reach with one's hand the central closing and blocking devices.

[0045] 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 fixtures aside from their nature, without the need of substitutions or other expansive interventions.

[0046] This solution can be successfully applied also to doors, front gates, French windows and any kind of fixture.

[0047] 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.

[0048] 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.

[0049] 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.

[0050] 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.

[0051] The element 34 is hinged to the element 33 in such a way as to rotate on a substantially horizontal plane.

[0052] 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.

[0053] A skilled in the art may make changes and different versions as long as they are included within the scope of this invention, as limited by the appended claims.

Claims

1. Safety fixture, **characterised by** the fact of providing

at least one wing (1) to which is applied an openable frame (4) inside which is fitted a sliding protection grate (5); this openable frame (4) can go from a closing position - in which this grate (5) is enclosed inside this frame (4) without protruding from the wing (1) profile - to an opening position in which this grate (5) can slide along this frame (4) to finally go to close the window opening.

2. Safety fixture according to claim 1, **characterised by** the fact that this frame (4) consists of a frame applied along the perimeter of the wing (1) and which consists of a series of fixed channel sections (6) which form three sides of the frame (4) and two hinged channel sections (7,8) which form a fourth openable side and enable in the open position the sliding of the grate (5) out of the wing (1).
3. Safety fixture according to claim 2, wherein said wing (1) has a side hinged to the wall, **characterised by** the fact that said fourth openable side of the frame (4) is the one adjacent to said hinged side of the wing (1).
4. Safety fixture according to claim 2, in which this grate (5) is provided with means for locking it in the window dosing position, said grate having, just next to the zone where these locking devices are located, a protection slab for said dosing and blocking devices.
5. Safety fixture according to claim 2, **characterised by** the fact that the openable side of the frame consists of two parts (7,8) respectively hinged to the ends of the lower and upper side of the frame (4), wherein these parts can rotate on their hinging point from a position in which they place themselves in line, to an opening position in which they place themselves respectively in contact to the lower and the upper side of the window opening, aligned with the lower and upper sections of the frame (4), respectively.
6. Safety fixture 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 (4), said extensible parts being movable from a position in which they are retracted inside the wing (1), to an opening position in which they place themselves respectively in contact to the upper and lower side of the window opening, aligned with the upper and tower sections of the frame (4) respectively.
7. Safety fixture according to claims 5 or 6, **characterised by** the fact that these movable parts of the frame (4) present at least one pin (10) which fits in a corresponding seat placed respectively in the lower and the upper wall of the window opening, when said

sections are in the open position of the frame (4).

8. Safety fixture according to claim 7, **characterised by** the fact of providing in the side wall of the window opening, at least one seat where said at least one pin (10) projecting from the openable parts of the frame (4), fits when the wing (1) is closed. 5
9. Safety fixture according to any of the previous claims, **characterised by** the fact of providing, on one side of the wing (1), projecting elements which when the wing is in the closure position fits in corresponding seats placed in the building wall, sideways the window opening. 10
10. Safety fixture according to each of the previous claims, **characterised by** the fact of providing a wing (1) consisting of two parts, respectively inside and outside, between which is included this frame (4) with the grate (5), said frame (4) being comprised inside the perimeter of the wing (1). 15
11. Frame according to any of the previous claims, **characterised by** the fact that each of these movable parts of frame (4) consists of two elements, a first one hinged to the frame (4) and the second one hinged to the first element, said second element when said movable part is in the open position of the frame (4), can rotate on a substantially horizontal plane and therefore place itself parallel to the wall even In case the fixture cannot be fully opened. 20 25 30

Patentansprüche

1. Sicherheitsvorrichtung, **gekennzeichnet durch** die Tatsache, dass sie mindestens einen Flügel (1) vorsieht, an dem ein Rahmen (4) angebracht ist, der sich öffnen lässt, innerhalb von welchem ein verschiebbares Schutzgitter (5) angebracht ist; dass dieser Rahmen (4), der sich öffnen lässt, aus einer Schließstellung - in der dieses Gitter (5) innerhalb dieses Rahmens (4) eingeschlossen ist, ohne aus dem Umriss des Flügels (1) überzustehen - in eine Öffnungsstellung übergehen kann, in der sich dieses Gitter (5) entlang dieses Rahmens (4) verschieben kann, um schließlich dazu überzugehen, die Fensteröffnung zu verschließen. 35 40 45
2. Sicherheitsvorrichtung nach Anspruch 1, **gekennzeichnet durch** die Tatsache, dass dieser Rahmen (4) aus einem entlang des Umfangs des Flügels (1) angebrachten Rahmen besteht, und welcher aus einer Reihe von festen Rinnenprofilen (6) besteht, die drei Seiten des Rahmens (4) bilden, sowie zwei angelenkten Rinnenprofilen (7, 8), die eine vierte Seite bilden, welche sich öffnen lässt, und die in der offenkstellung das Herausschieben des Gitters (5) aus 50 55

dem Flügel (1) ermöglichen.

3. Sicherheitsvorrichtung nach Anspruch 2, bei welcher der Flügel (1) eine an der Wand angelenkte Seite aufweist, **gekennzeichnet durch** die Tatsache, dass die vierte Seite des Rahmens (4), die sich öffnen lässt, diejenige ist, die zu der angelenkten Seite des Flügels (1) benachbart ist.
4. Sicherheitsvorrichtung nach Anspruch 2, bei welcher dieses Gitter (5) mit Einrichtungen versehen ist, um es in der Fensterschließstellung zu blockieren, wobei das Gitter, ganz in der Nähe der Zone, wo diese Blockiervorrichtungen angeordnet sind, eine Schutzplatte für die Schließ- und Blockiervorrichtungen aufweist. 10 15
5. Sicherheitsvorrichtung nach Anspruch 2, **gekennzeichnet durch** die Tatsache, dass die Seite des Rahmens, die sich öffnen lässt, aus zwei Teilen (7, 8) besteht, die an den Enden der Unter- bzw. Oberseite des Rahmens (4) angelenkt sind, wobei sich diese Teile auf ihrem Schwenkpunkt aus einer Stellung, in der sie sich selbst in Fluchtung bringen, in eine Öffnungsstellung drehen können, in der sie sich selbst in Kontakt mit der Unter- bzw. der Oberseite der Fensteröffnung bringen, wobei sie mit dem unteren bzw. oberen Profil des Rahmens (4) ausgerichtet sind.
6. Sicherheitsvorrichtung nach Anspruch 2, **gekennzeichnet durch** die Tatsache, dass die Seite des Rahmens, die sich öffnen lässt, aus zwei ausziehbaren Teilen an der Ober- bzw. Unterseite des Rahmens (4) besteht, wobei die ausziehbaren Teile aus einer Stellung, in der sie in den Flügel (1) zurückgezogen sind, in eine Öffnungsstellung bewegbar sind, in der sie sich selbst in Kontakt mit der Ober- bzw. Unterseite der Fensteröffnung bringen, wobei sie mit dem oberen bzw. unteren Profil des Rahmens (4) ausgerichtet sind. 35 40
7. Sicherheitsvorrichtung nach den Ansprüchen 5 oder 6, **gekennzeichnet durch** die Tatsache, dass diese beweglichen Teile des Rahmens (4) mindestens einen Bolzen (10) darbieten, der in einen entsprechenden Sitz passt, welcher in der unteren bzw. der oberen Wand der Fensteröffnung angebracht ist, wenn sich die Profile in der Offenstellung des Rahmens (4) befinden.
8. Sicherheitsvorrichtung nach Anspruch 7, **gekennzeichnet durch** die Tatsache, dass in der Seitenwand der Fensteröffnung mindestens ein Sitz vorgesehen ist, wo der mindestens eine Bolzen (10) passt, der aus den Teilen des Rahmens (4), die sich öffnen lassen, übersteht, wenn der Flügel (1) geschlossen ist. 45 50 55

9. Sicherheitsvorrichtung nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** die Tatsache, dass auf einer Seite des Flügels (1) überstehende Elemente vorgesehen sind, die, wenn sich der Flügel in der Verschlussstellung befindet, in entsprechende Sitze passen, welche in der Gebäudewand seitwärts von der Fensteröffnung angebracht sind.
10. Sicherheitsvorrichtung nach jedem der vorangehenden Ansprüche, **gekennzeichnet durch** die Tatsache, dass ein Flügel (1) vorgesehen ist, der aus zwei Teilen, innen bzw. außen, besteht, zwischen denen dieser Rahmen (4) mit dem Gitter (5) enthalten ist, wobei der Rahmen (4) innerhalb des Umfangs des Flügels (1) enthalten ist.
11. Rahmen nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** die Tatsache, dass jeder dieser beweglichen Teile des Rahmens (4) aus zwei Elementen besteht, einem am Rahmen (4) angelenkten ersten Element und dem am ersten Element angelenkten zweiten Element, wobei sich, wenn sich der bewegliche Teil in der Offenstellung des Rahmens (4) befindet, das zweite Element auf einer im Wesentlichen horizontalen Ebene drehen und sich daher selbst in dem Fall, dass die Vorrichtung nicht vollständig geöffnet werden kann, parallel zur Wand platzieren kann.

Revendications

1. Fixation de sécurité, **caractérisée par** le fait de prévoir au moins une aile (1) à laquelle est appliqué un châssis ouvrant (4) à l'intérieur duquel est ajustée une grille de protection coulissante (5) ; ce châssis ouvrant (4) peut aller d'une position de fermeture - dans laquelle cette grille (5) est enfermée à l'intérieur de ce châssis (4) sans faire saillie du profil de l'aile (1) - à une position d'ouverture dans laquelle cette grille (5) peut coulisser le long de ce châssis (4) pour finir par aller fermer l'ouverture de la fenêtre.
2. Fixation de sécurité selon la revendication 1, **caractérisée par le fait que** ce châssis (4) consiste en un châssis appliqué le long du périmètre de l'aile (1) et est constitué d'une série de sections de canal fixes (6) qui forment trois côtés du châssis (4) et de deux sections de canal articulées (7, 8) qui forment un quatrième côté ouvrant et permettent, dans la position ouverte, le coulisement de la grille (5) hors de l'aile (1).
3. Fixation de sécurité selon la revendication 2, dans laquelle ladite aile (1) a un côté articulé sur le mur, **caractérisée par le fait que** ledit quatrième côté ouvrant du châssis (4) est celui qui est adjacent audit côté articulé de l'aile (1).
4. Fixation de sécurité selon la revendication 2, dans laquelle cette grille (5) est munie de moyens pour la verrouiller dans la position de fermeture de la fenêtre, ladite grille ayant, juste à côté de la zone où ces dispositifs de verrouillage sont situés, une dalle de protection des dispositifs de fermeture et de verrouillage.
5. Fixation de sécurité selon la revendication 2, **caractérisée par le fait que** le côté ouvrant du châssis est constitué de deux parties (7, 8) respectivement articulées aux extrémités des côtés inférieur et supérieur du châssis (4), dans laquelle ces parties peuvent tourner sur leur point d'articulation d'une position dans laquelle ils se placent eux-mêmes en ligne à une position d'ouverture dans laquelle ils se placent eux-mêmes respectivement en contact avec les côtés inférieur et supérieur de l'ouverture de la fenêtre, en étant alignés respectivement avec les sections inférieure et supérieure du châssis (4).
6. Fixation de sécurité selon la revendication 2, **caractérisée par le fait que** le côté ouvrant du châssis est constitué de deux parties extensibles, respectivement aux côtés supérieur et inférieur du châssis (4), lesdites parties extensibles pouvant se déplacer d'une position dans laquelle elles sont rétractées à l'intérieur de l'aile (1) à une position d'ouverture dans laquelle elles se placent respectivement en contact avec les côtés supérieur et inférieur de l'ouverture de la fenêtre, en étant alignées respectivement avec les sections supérieure et inférieure du châssis (4).
7. Fixation de sécurité selon la revendication 5 ou 6, **caractérisée par le fait que** ces parties mobiles du châssis (4) présentent au moins une cheville (10) qui s'ajuste dans un siège correspondant placé respectivement dans les parois inférieure et supérieure de l'ouverture de la fenêtre lorsque lesdites sections sont dans la position ouverte du châssis (4).
8. Fixation de sécurité selon la revendication 7, **caractérisée par** le fait de fournir dans la paroi latérale de l'ouverture de la fenêtre au moins un siège où ladite au moins une cheville (10) faisant saillie des parties ouvrantes du châssis (4) s'ajuste lorsque l'aile (1) est fermée.
9. Fixation de sécurité selon l'une quelconque des revendications précédentes, **caractérisée par** le fait de prévoir, sur un côté de l'aile (1), des éléments faisant saillie qui, lorsque l'aile est dans la position de fermeture, s'ajustent dans des sièges correspondants placés dans le mur du bâtiment, à côté de l'ouverture de la fenêtre.

10. Fixation de sécurité selon chacune des revendications précédentes, **caractérisée par** le fait de fournir une aile (1) constituée de deux parties, respectivement à l'intérieur et à l'extérieur, entre lesquelles est inclus ce châssis (4) avec la grille (5), ledit châssis (4) étant compris à l'intérieur du périmètre de l'aile (1). 5

11. Châssis selon l'une quelconque des revendications précédentes, **caractérisé par le fait que** chacune de ces parties mobiles du châssis (4) est constituée de deux éléments, un premier articulé au châssis (4) et un second articulé au premier élément, ledit second élément, lorsque ladite partie mobile est dans la position ouverte du châssis (4), peut tourner sur un plan sensiblement horizontal et par conséquent se placer parallèlement au mur même dans le cas où la fixation ne peut pas être complètement ouverte. 10 15

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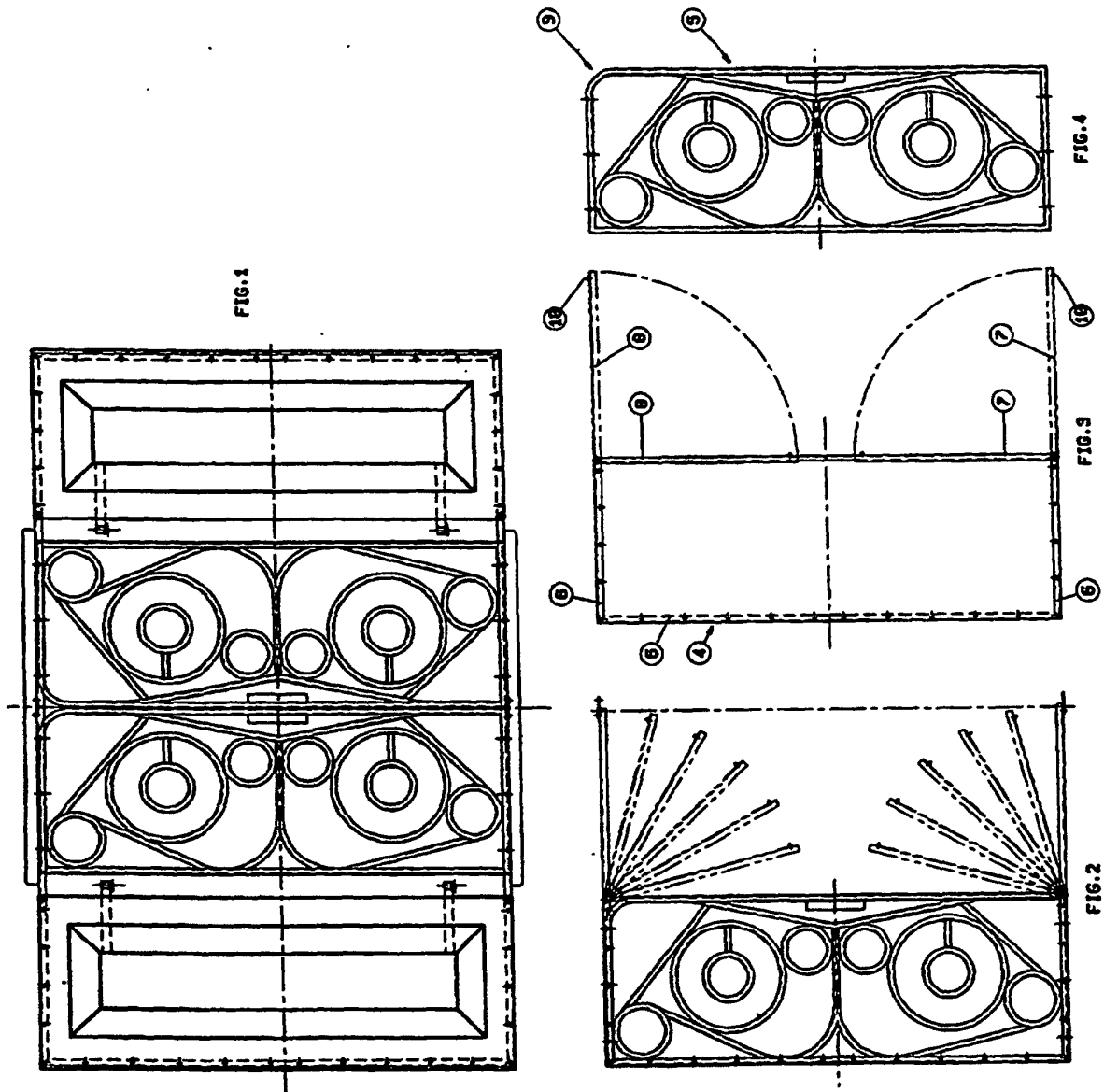
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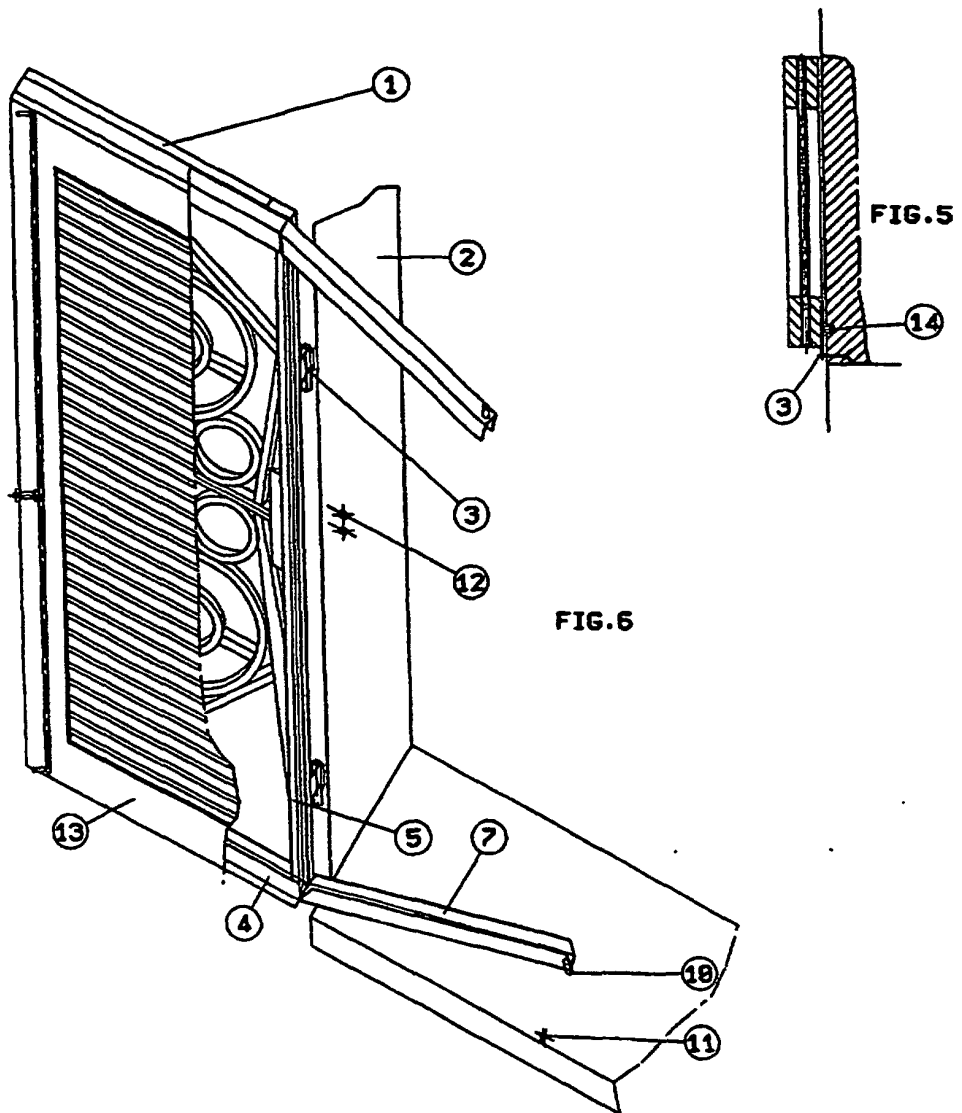
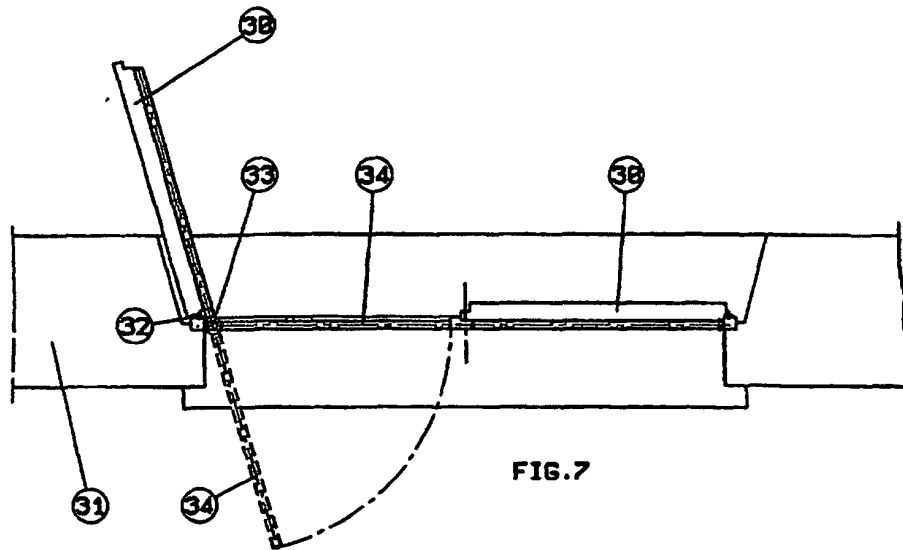
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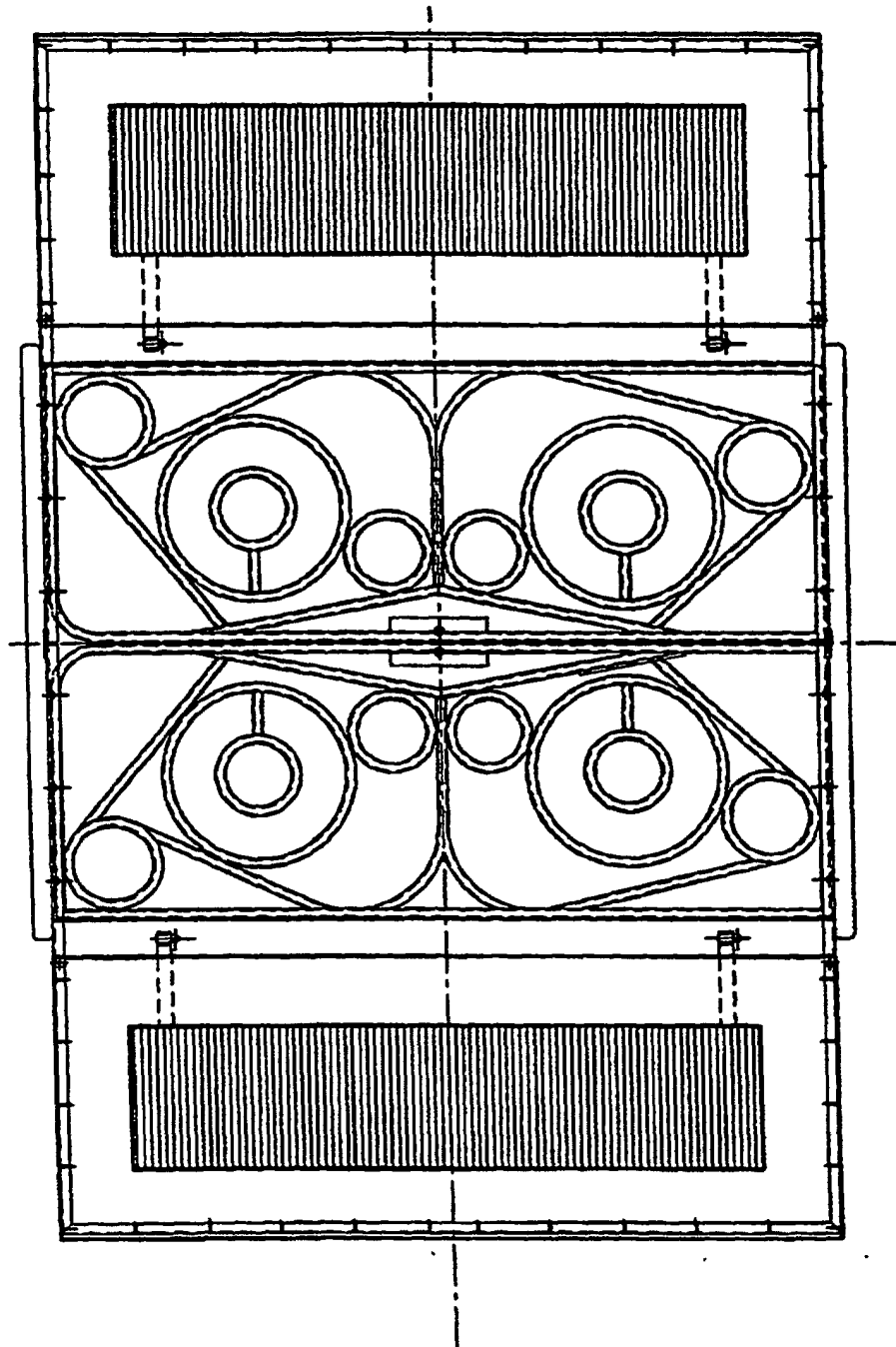


FIG. 8

