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⑤④ **ANTI-BURGLARY SAFETY DEVICE FIXABLE TO ROLLER BLIND SLATS FOR WINDOWS AND DOORS.**

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## Description

At present the various types of roller blinds for closing windows or doors just slide up and down by means of side runner guides without actually being fixed to the walls; which means that it is very easy for burglars to break in.

For the first time this invention achieves a strong union between blind, runner guides and walls, thus providing the best possible way of closing windows and doors.

This takes place by means of the application of steel rods inside the slats; the ends of the steel rods are fixed into the side runner guides by means of special pins; the heads of these pins slide up and down inside the runner guides, which are, in turn, firmly screwed to the surrounding walls. When the slats are placed in position one on top of another the aperture is closed and an "armoured" wall is formed.

To break into a building with this type of blind would only be possible after many hours of work with heavy house-breaking equipment and a great deal of noise would be made. It is even difficult to perforate with bullets from an ordinary fire-arm. The present type of roller blinds may easily be substituted by our new safety blinds by means of the application of special runner guides. It is only necessary to pull out the blind, fix the special runner guides into the existing ones, screw them in and then insert the new blind. In new buildings the procedure is the same as that followed at the present.

### Working method - (see appended drawings)

The special metal runner guides are fixed into the already existing ones or into specially prepared grooves by means of long screws placed at a distance of 15 cms. one from another (figure 5, no. 23). The runner guides come in two types:

#### 1st type: Figure 2 - no. 1:

This model is completely inserted into the wall and is used for new buildings and wherever it is easy to insert.

#### 2nd type: Figure 2 - no. 2:

This model is used for insertion into metal U-type runner guides already fixed into the walls.

- Both models have slots for bolts to block the rolling up of the blinds (figure 3, no. 3, figures 8 & 9). They also have grooves for anti-vibration fillets, figure 5, no. 24).

- The pins (figure 2, no. 4), which are inserted into the runner guides can be installed in two different ways:

- **A** - They are simultaneously anchored to the

steel rods and to the slats of the blinds (figure 2).

A steel strap (no. 6) is inserted in the slat (no. 10) of the blind. The steel strap is the same length as the slat, it is curved and has a hole at each end; it is joined to the metal dowel (no. 7); the pin (no. 4) is inserted into the special hole.

The head of the pin is protected by an anti-friction nylon bush (no. 5); the pressure block (no. 8) is inserted into the small square hole (no. 9.) All these parts are then pushed inside the slat (no. 10) until the opposite curved extremity of the metal strap (no. 6) comes out on the other side of the slat. This operation is repeated, putting together the parts nos. 4, 5, 6, 7, 8, on this side of the slat and everything is re-inserted in the slat so that the heads of the pins (no. 4) protude to the same extent on both sides. On the inside of the slat the small metal block (no. 8) is then squashed by means of a punch; by doing this the metal block (no. 8) becomes wider and a groove or slot is formed in the slat (no 10)(figure 4, no. 22) which blocks all the pieces.

- **B** - By anchoring the pins just to the metal rods. (fig's 10 - 15).

- The pin (no. 25) is inserted into the alignment dowel (no 26) and then soldered to the metal strap (no. 28) at point no. 31. On the other side pin (no. 29) is soldered without its head no. 30 so that it may be inserted into the slat (no. 10). After the pin protudes part no. 26 is fixed and the pin head (no. 30) is applied and soldered.

This system can also be applied to metal sheet roll-down shutters used in shops and store-houses, simply by soldering the metal strap (no. 28) and pins (no. 25) directly onto the metal slats. This system can also be applied to grill-like roller blinds by soldering the pins, the heads of which are blocked and run up and down inside the lateral runner guides, to metal rods which are inserted into the parts of the blind - **C** - by directly anchoring the pins to the slats of the blinds with internal cavity.

- Where the reinforcement of all the slats is superfluous, that is, where it is sufficient that alternate slats be reinforced, it is possible for the slats to be anchored to the side runner guides without the steel rods.

- This is carried out with the use of pins (no. 4), dowels (no. 7) and pressure blocks (no. 8), illustrated in figure 2, which are all, after being joined together, inserted into the slat (no. 10) and then blocked by squashing with a punch as previously described in point - A -.

- Bolts, blocking pins, alignment of the slats, filling of the slat cavities with synthetic resin or rubber cement:

- In order to ensure that the blinds cannot possibly be lifted, at the top and bottom and if necessary at other points, some of the slats have heavy bolts at both sides which penetrate into the side walls through the runner guides (figure 3, nos. 3, 12, - figures 8 - 9). - To reinforce the blind even more against the possibility of it being pushed in from the outside the bottom slat has

one or more bolts which penetrate into the window sill or floor if it is a door. We have placed rubber buffers above the bolts in order to ensure that the blind stops gently against the lintel- (figure 1, nos. 17, 18, 19, 20, 21, figures 8 - 9). - When the blind slats have been assembled they are aligned vertically and placed into position by the fixing of special plugs (figure 2, no. 11; figure 10, no. 26).

Now the slat cavities are injected with polyurethane foam or another product, which makes the slats more compact, gives protection from the cold and heat and helps to isolate the rooms from noise - (figure 13, no. 32).

At this point the blind is rolled on to the normal rollers in the container above the window or door and is then inserted into the special runner guides (figures 2 & 3, no's 1, 2).

- As the blind is now heavier than before and to make it easier to lift the blind, any well-known reduction gear device or special electric motor may be applied to the rolls whereon the blind is wound.

#### List of Reference Numbers:

- 1 Runner guide for total insertion
- 2 Runner guide for partial insertion
- 3 Bolt hole
- 4 Pin with head
- 5 Nylon bush (washer)
- 6 Steel Strap with holes for
- 7 Metal dowel
- 8 Pressure block
- 9 Square hole for block No.8
- 10 Blind slat
- 11 Plug for aligning slats
- 12 Bolt
- 13 Nylon bush (washer)
- 14 Hole for inserting bush No. 13
- 15 Spring
- 16 Chek-pin
- 17 Connecting support
- 18 Screw (self-screwing)
- 19 Cone-shaped pin
- 20 Rubber dowel
- 21 Screw for uniting dowel and pin
- 22 Pressure point of block No. 8
- 23 Screws for fixing runner guides to wall
- 24 Anti-vibration fillets
- 25 Pin with head
- 26 Plug for aligning slats
- 27 Hole for injection of resin
- 28 Steel strap
- 29 Pin without head
- 30 Pin head No. 29 to be soldered
- 31 Soldering point for pin No. 29
- 32 Resin
- 33 Guiding Pins
- 34 Sliding space for the head of the pin

#### Claims

1. Anti-burglary safety device fixable to roller blind slats for windows and doors, characterized in that it comprises steel bars (6, 28), which can be applied to the slats of the shutter and having at both ends pins (4, 25, 29) the heads of which are held inside the lateral guideways (1, 2) of the shutter, and slide up and down along with the shutter.

2. Device according to claim 1., further characterized in that each of the said lateral guideways (1, 2) are substantially "C" shaped in transversal section and can be completely inserted in the wall, and have two opposite fins (33) delimiting the sliding space (34) which is also used for retention of the above mentioned heads of pins (4, 25).

3. Device according to claim 2., further characterized in that each of the said lateral guideways (2) can be inserted into pre-existent guideways in the walls, whereby they derive added support from added vertical bulges (35) which lean against the rim of the pre-existent guideways.

4. Device according to claim 1, further characterized in that the said reinforcing steel bar (6) has, at its ends, holes (36) for the passage of the corresponding said pins (4) joined the bar (6) by inserting a pressure block (8) on a stopping-groove (37) obtained in the pins and in the corresponding stopping-hole (38) in the said bar (6), the head of each of the mentioned pins (4) being fitted into an antifricition nylon bush (5).

5. Device according to claim 4., further characterized in that each bar (6) bent at both ends where the said holes (36) for the passage of the pins (4), can be inserted into the corresponding slat (10) and is joined to two metal dowels (7) both having a hole (39) for the longitudinal passage of the pin (4), and a transverse opening (9) where the said pressure block (8) is inserted, thereby expanding to fix the pin (4), the bar (6), the dowel (7) and the slat (10).

6. Device according to claim 1., further characterized in that the last slat (10) placed at the base of the said shutter has at least one blocking mechanism on the sill whereon it rests, formed by a support (17), cone-shaped cylinder (19) penetrating into the sill, and a rubber dowel fixed on the mentioned support (17) acting as buffer.

7. Device according to claim 1., further characterized in that each of the said pin (25) is used on one side of the corresponding said slat (10), with a corresponding dowel (26) for the vertical alignment of the slat (10), to be fixed to the said steel bar (28), which can be inserted into the slat (10), and one pin (29) without a head, to allow the group, pin (25) dowel (26), bar (28), pin (29), to be passed through the inside of the slat (10) for the application, on the other end, of the other dowel (26) and of the head (30) to lock the whole assembly in place.

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### Patentansprüche

1. Der Sicherheitsmechanismus, der gegen Aufbruch bei Rolläden für Fenster und Türen anwendbar ist, wird durch Stahlstäbe zur Verstärkung (6, 28), die an den Rolläden anzubringen sind, charakterisiert. Diese Stäbe sind an ihrem Ende mit Haltestiften (4, 25, 29), deren Köpfe festgehalten in den Seitenschienen (1, 2) des Rolladens laufen, ausgestattet.

2. Der Mechanismus, nach Forderung 1, wird von Seitenschienen (1, 2), die in ihrem Querschnitt eine C-Form aufweisen, charakterisiert. Diese Schienen werden gänzlich in die entsprechenden Mauern eingebaut, wobei in ihrem Inneren zwei gegensätzliche Klappen (33) einen Raum (Spalt) abgrenzen (34), der das Verankern und Laufen der Köpfe der bereits erwähnten Stifte (4, 25) ermöglicht.

3. Der Mechanismus, nach Forderung 2, wird durch den Anbau von jeder der schon genannten Laufschiene (2) auf bereits vorhandene Laufschiene charakterisiert, wobei die anzubauenden Laufschiene längsgerichtete Erhebungen (35) auf dem Rand der bereits vorhandenen Laufschiene bilden.

4. Der Mechanismus, nach Forderung 1, wird durch die bereits erwähnten Stahlstäbe zur Verstärkung (6) charakterisiert, die an ihren Enden Löcher (36) aufweisen, welche für das Passieren der entsprechenden Stifte (4) geeignet sind. Diese Stifte werden mit dem Stahlstab (6), durch den Gebrauch von dem Einsatzstück (8), auf einer Auskehlung (37) der Stifte zur Sperrung und einem geeigneten Loch (38) in dem Stahlstab (6) selbst, verbunden. Die Köpfe der Haltestifte (4) werden in Nylonhülsen (5), die Reibung verhindern, gesteckt.

5. Der Mechanismus, nach Forderung 4, charakterisiert durch die gebogenen Enden der Stäbe (6), an denen sich die bereits genannten Löcher (36) befinden, die das Passieren der Stifte (4) ermöglichen, lässt das Einfügen jeder dieser Stäbe in den Rolladenstab (10) zu. Diese Stäbe sind mit zwei metallenen Einsatzstücken (7) versehen, welche ebenfalls ein Loch (39) für das längsgerichtete Passieren der Stifte (4) aufweisen. Außerdem hat der Stab selbst ein Querfenster (9), in dem sich das Einsatzstück (8) unter Druckausübung ausdehnt, wodurch der Haltestift (4), der Stahlstab (6), das Einsatzstück (7) und der Rolladenstab (10) miteinander stark verbunden werden.

6. Der Mechanismus, nach Forderung 1, ist durch den letzten Rolladenstab (10), der untersten Ende des Rolladens befestigt ist, charakterisiert. Dieser Rolladenstab ist mit mindestens einem Sperrungselement ausgestattet, auf welchem der Rolladen gestützt ist. Dieses Sperrungselement besteht aus einem Träger (17), einem Zylinder (19) zur Kuppelung an den Sockel (Fensterbank), einem Einsatzstück aus Gummi (20), welches an dem oben genannten Träger (17) befestigt ist und als Stossfänger dient.

7. Der Mechanismus, nach Forderung 1, wird

dadurch charakterisiert, dass jeder der bereits erwähnten Stifte (25), an den Seiten des entsprechenden Rolladenstabs (10) ein Einsatzstück (26) zur vertikalen Aufreihung der Rolladenstäbe (10) benötigt, um sich dann fest an den Stahlstab zur Verstärkung (28), durch Einfügung in das Innere des Rolladenstabs (10), zu binden. Dieses Einfügen in das Innere des Rolladenstabs (10) wird durch den Stift (29) ohne Kopf, der der Gruppe Stift (25), Einsatzstück (26), Stab (28) und Stift (29) angehört, ermöglicht, wobei jener am anderen Ende des Rolladenstabs, unter Anbringung eines anderen Einsatzstücks (26) und dem fehlenden Kopf (30) den sich im Inneren befindenden Stab blockiert.

### Revendications

1. Dispositif de sécurité antivol se fixant sur les lattes des volets roulants pour fenêtres et portes, comprenant des barres de renforcement en acier (6, 28) se fixant sur les lattes et munies aux extrémités de chevilles (4, 25, 29) avec tête qui coulissent et qui sont maintenues à l'intérieur des glissières latérales (1, 2) des volets.

2. Dispositif selon la revendication 1, caractérisé par le fait que chacune des glissières latérales (1, 2), ayant une section transversale en "C" et totalement encastrables dans le mur, présente à l'intérieur des ailettes opposées (33) délimitant un espace de coulissage (34) pour l'accrochage des têtes des susdites chevilles (4, 25).

3. Dispositif selon la revendication 2, caractérisé par le fait que chacune des glissières latérales (2) peut s'adapter sur des glissières déjà existantes dans les murs et présente des reliefs (35) longitudinaux externes d'arrêt sur le bord des glissières citées précédemment.

4. Dispositif selon la revendication 1, caractérisé par le fait que cette dite barre de renforcement en acier (6) présente aux extrémités des trous (36) adaptés au passage des chevilles (4) leur correspondant, reliés à la barre (6) par l'emploi d'une pièce de blocage (8) sur une rainure d'arrêt (37) créée dans les chevilles et dans un trou de blocage correspondant (38) situé sur la barre (6). La tête de chaque cheville (4) est enfilée dans une gaine de nylon antifrottement (5).

5. Dispositif selon la revendication 4, caractérisé par le fait que chaque barre (6), recourbée aux extrémités où se trouvent les trous (36) de passage des chevilles (4), est encastrable à l'intérieur du profilé correspondant (10) et est jointe à deux tasseaux métalliques (7) dotés eux-aussi d'un trou (39) de passage longitudinal de la cheville (4), ainsi que d'une ouverture transversale (9) dans laquelle est placée la pièce de blocage (8) qui en se dilatant assemble solidement la cheville (4), la barre (6), le tasseau (7) et le profilé (10).

6. Dispositif selon la revendication 1, caractérisé par le fait que le dernier profilé (10) placé à la

base du volet est muni d'au moins un organe de blocage à la base de l'ouverture sur laquelle il s'appuie, formé d'un support (17), d'un pivot conique (19) dans la base, et d'un tampon (20) en caoutchouc fixé au-dessus du support (17) servant de butoirs.

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7. Dispositif selon la revendication 1, caractérisé par le fait que chaque cheville (25) possède, sur le côté du profilé correspondant (10) un bouchon d'alignement (26) vertical des profilés (10) qui est relié solidement à la barre (28) de renforcement encastrée à l'intérieur du profilé (10), étant une cheville (29) sans tête qui permet au groupe cheville (25), bouchon (26), barre (28), cheville (29) de s'encastrer à l'intérieur du profilé (10) pour l'application suivante, de l'autre côté, de l'autre bouchon (26) et de la tête (30) pour bloquer le tout.

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TABLE 1

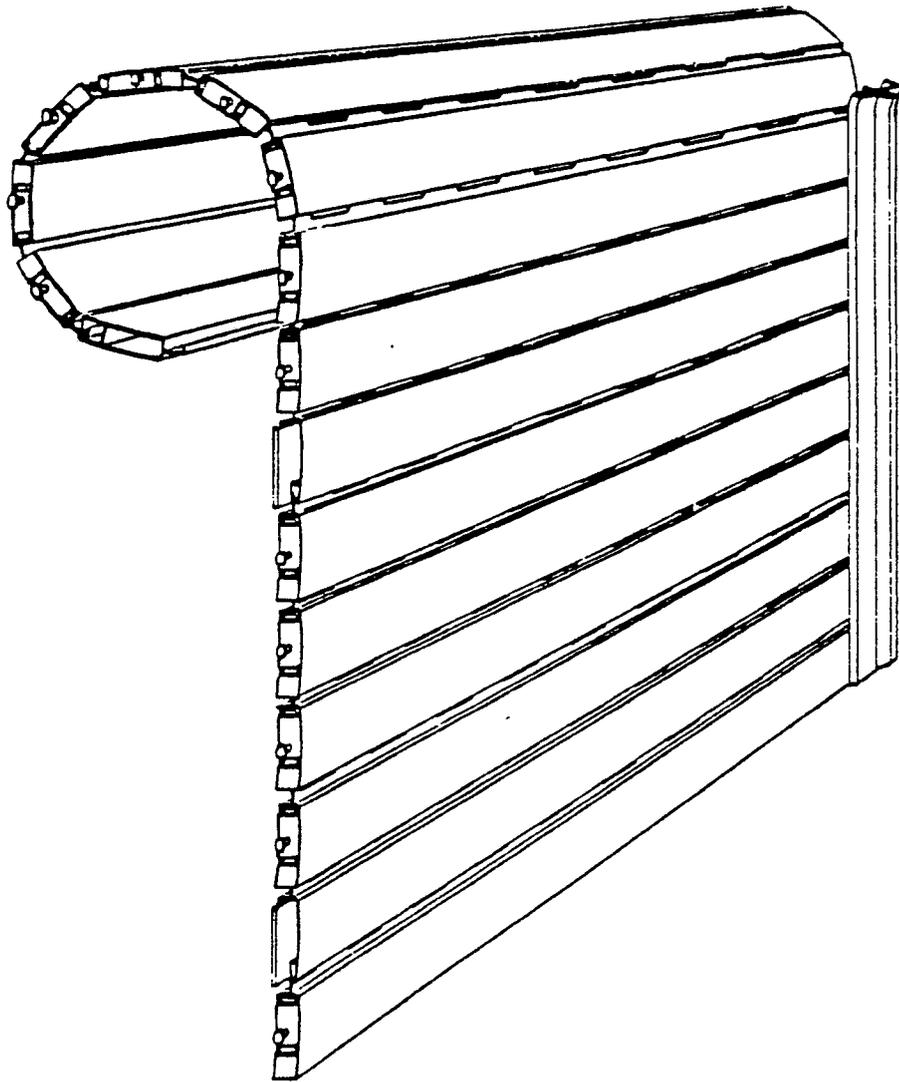


Fig. 16

Isometric axonometry

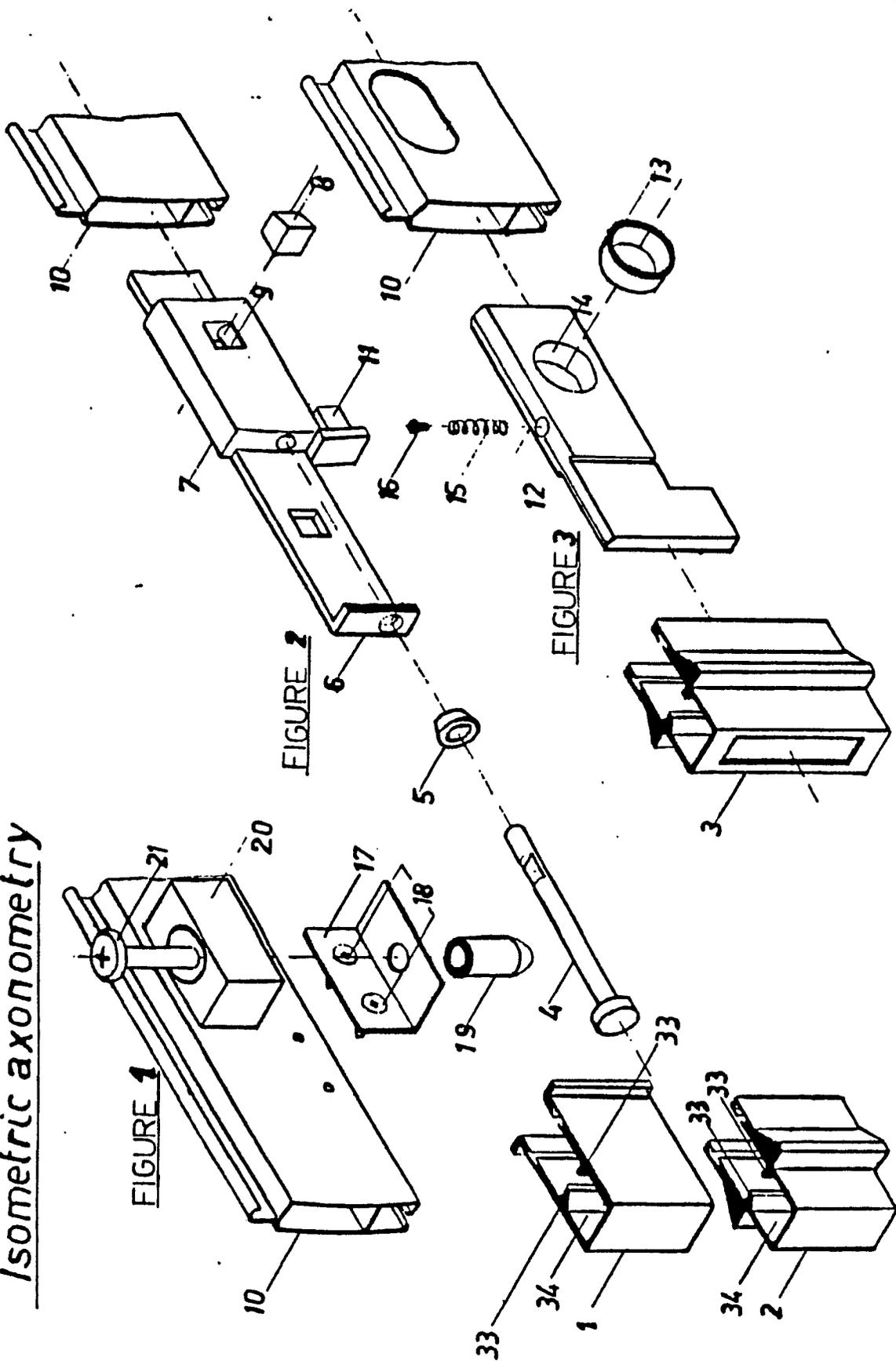


TABLE 3

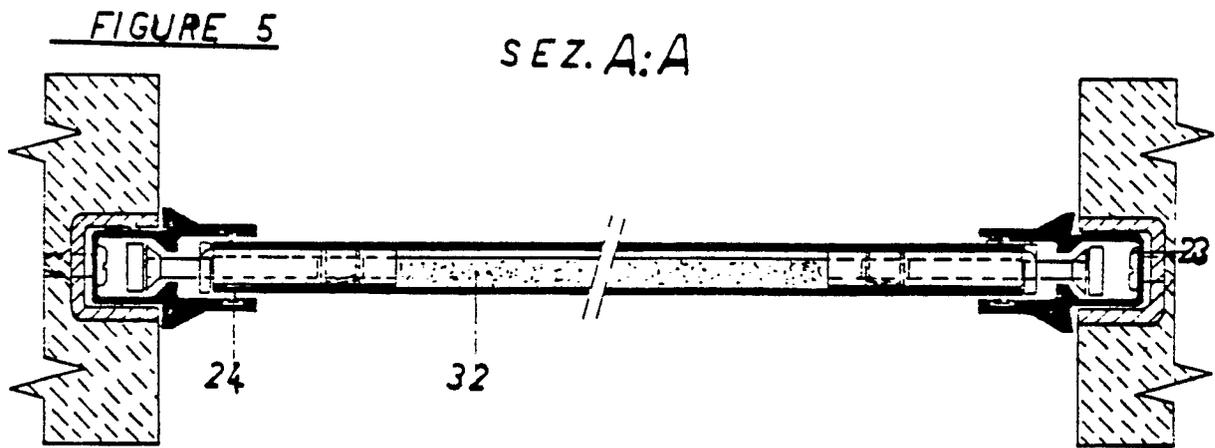
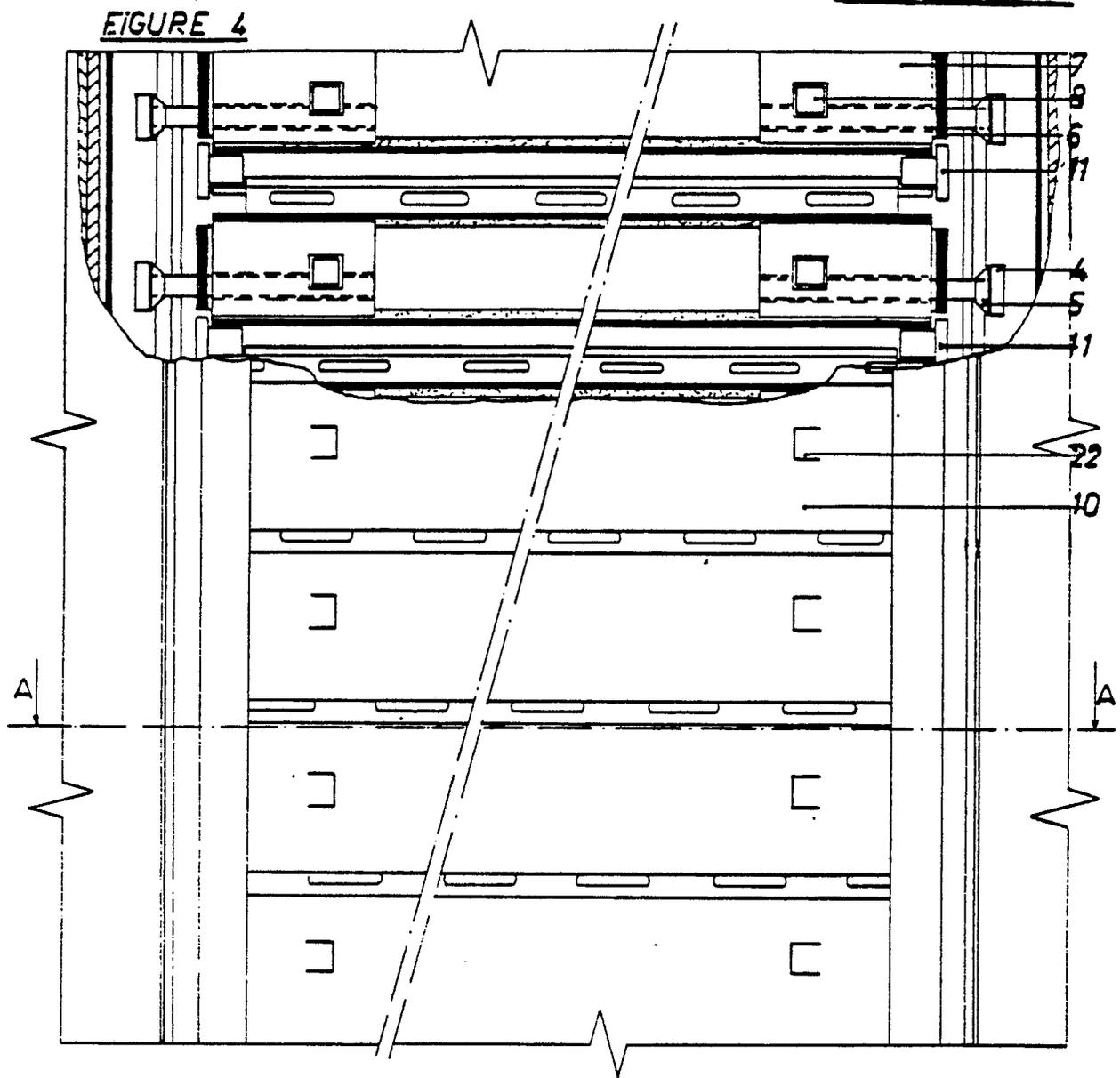


TABLE 4

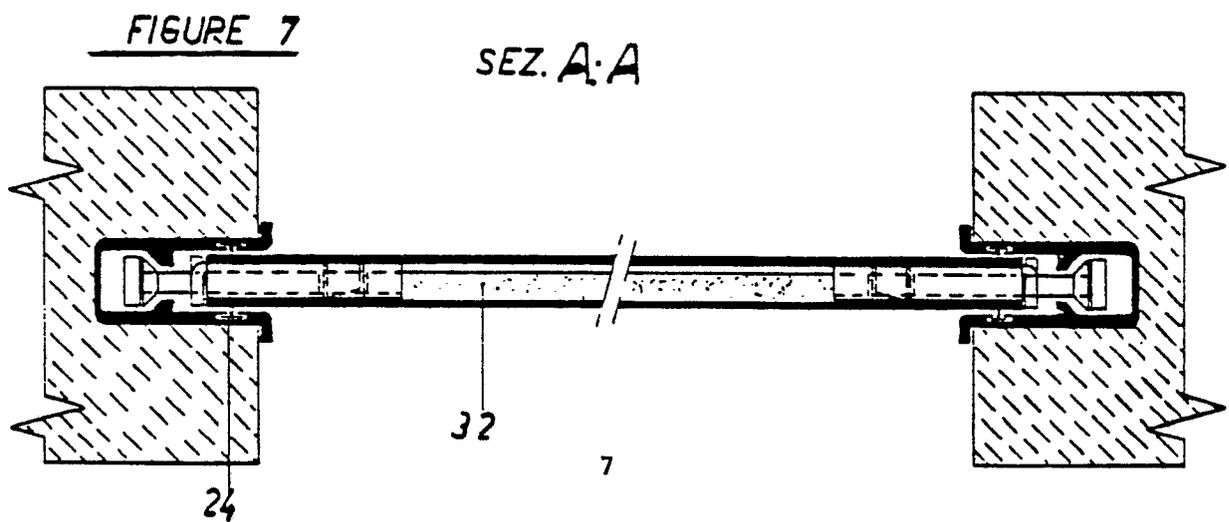
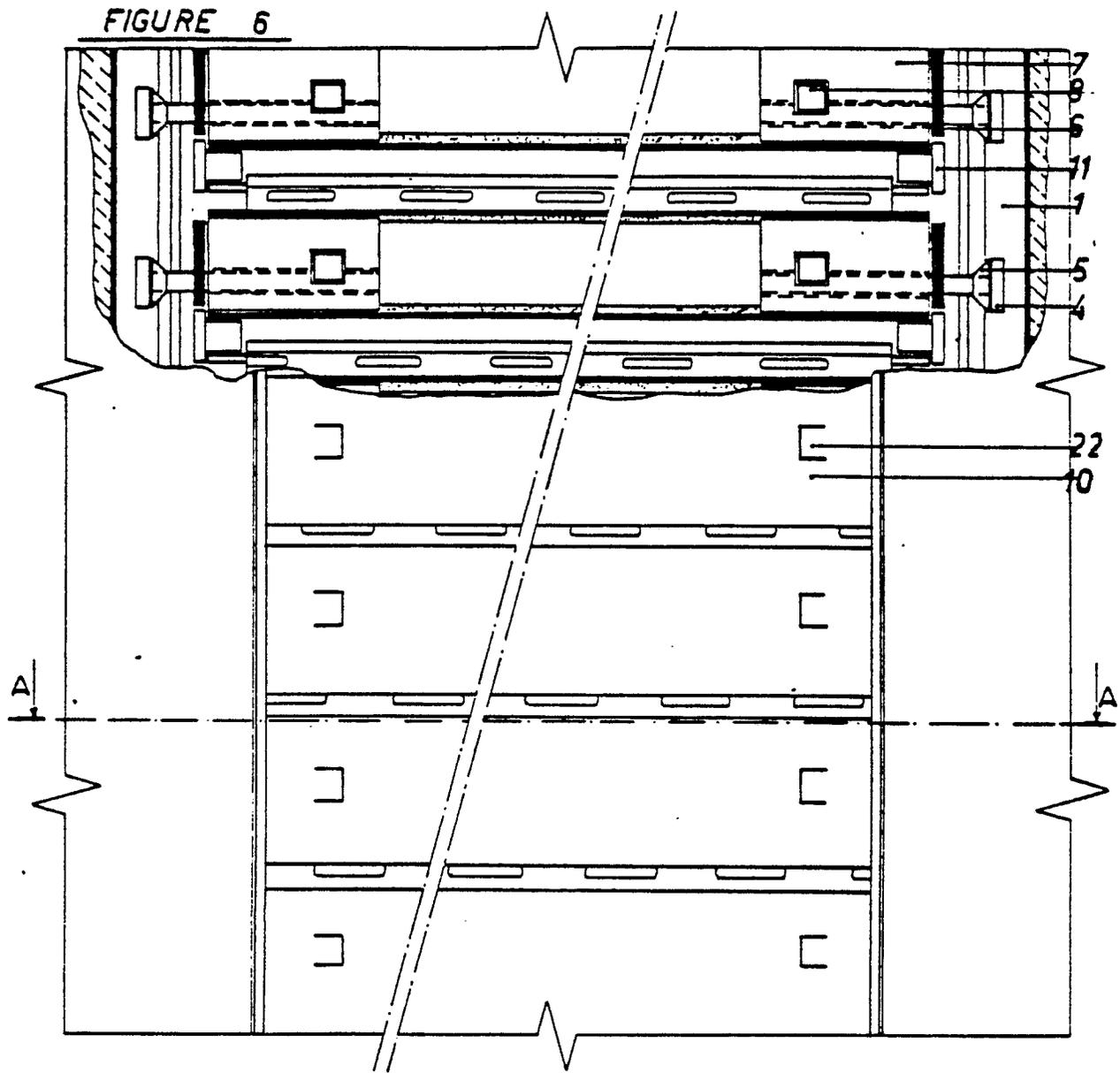


FIGURE 8

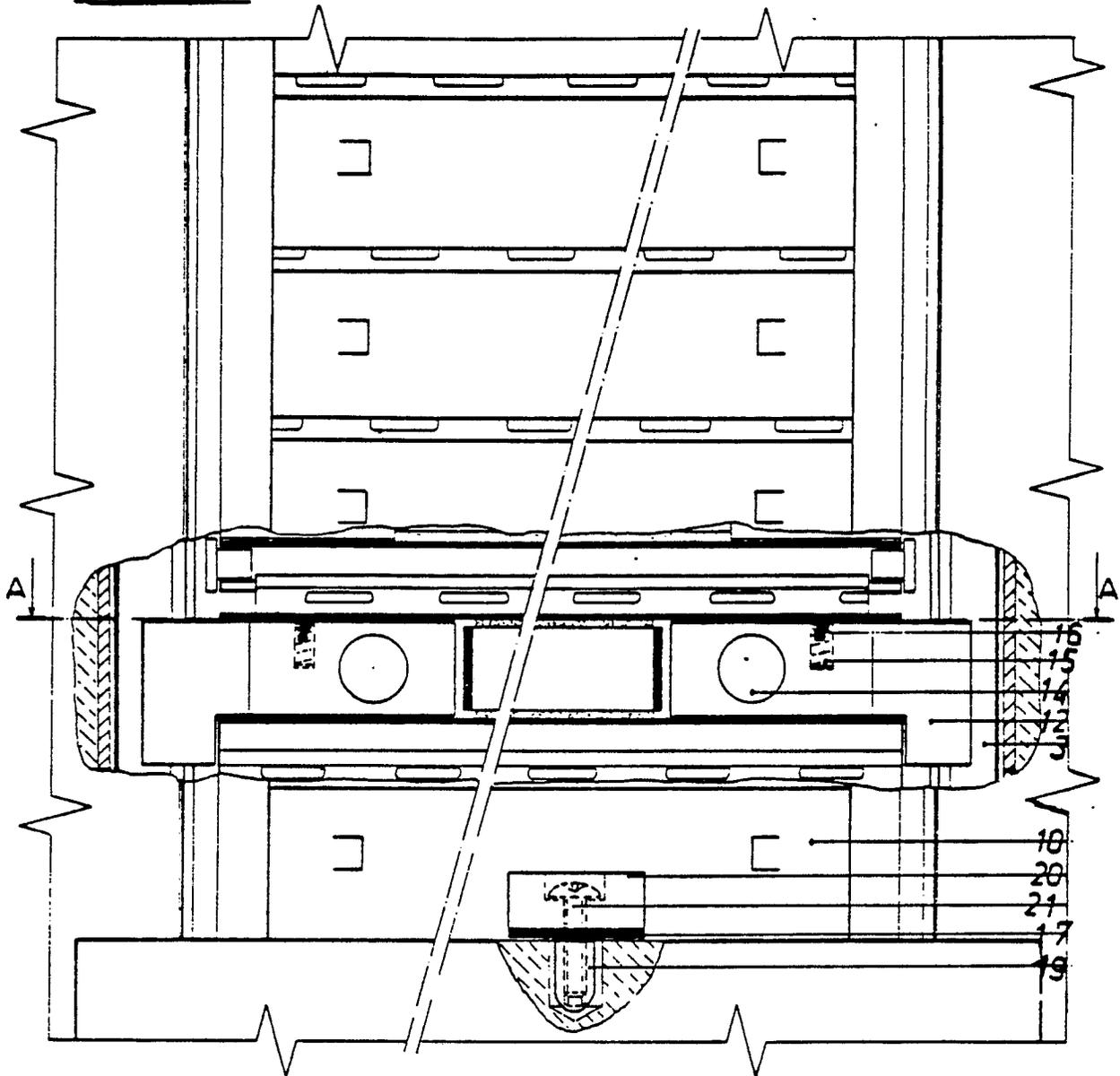
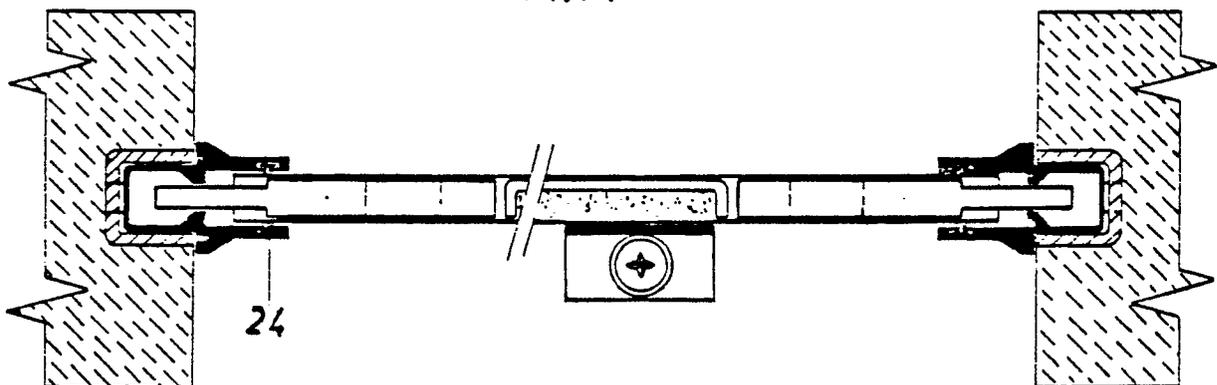


FIGURE 9

SEZ. A:A



Isometric axonometry

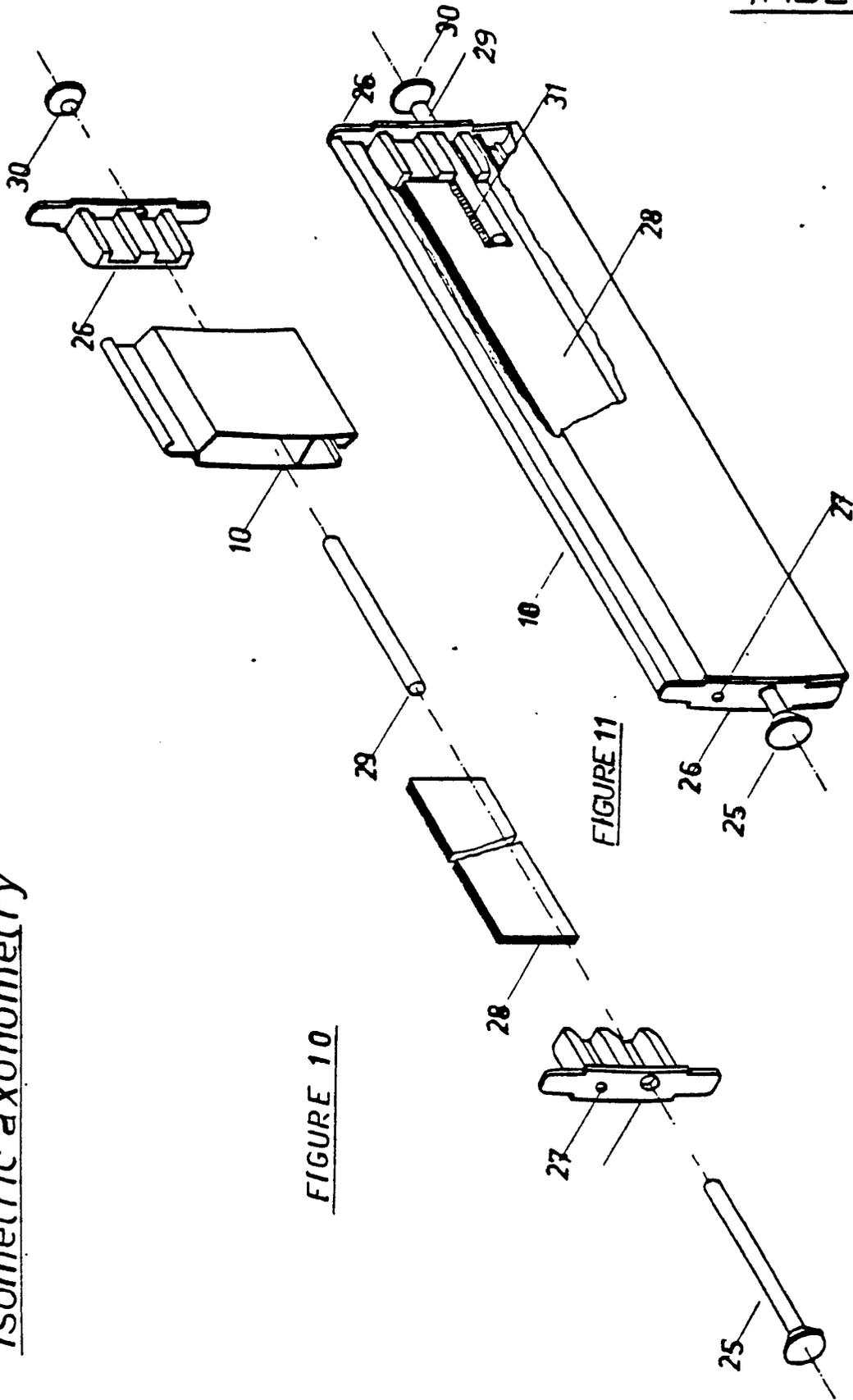


FIGURE 10

FIGURE 11

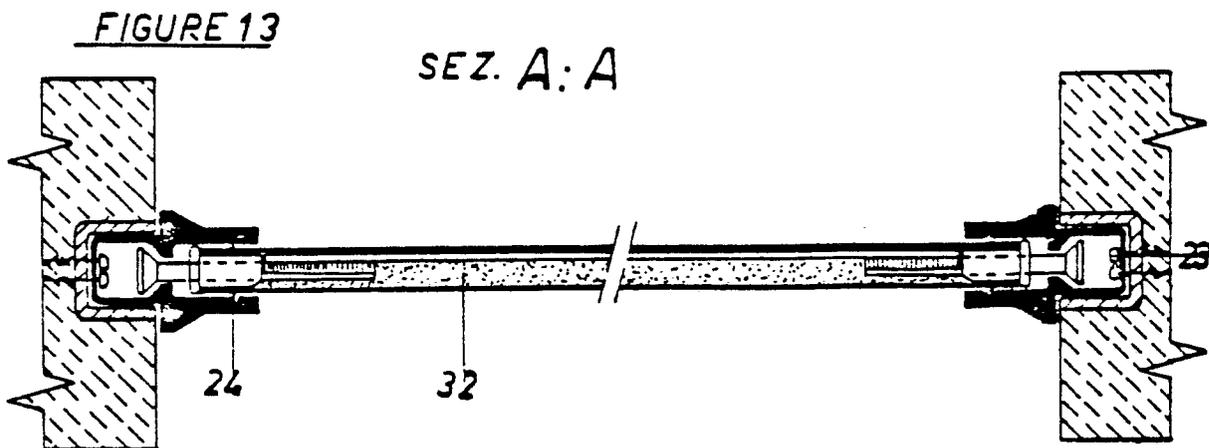
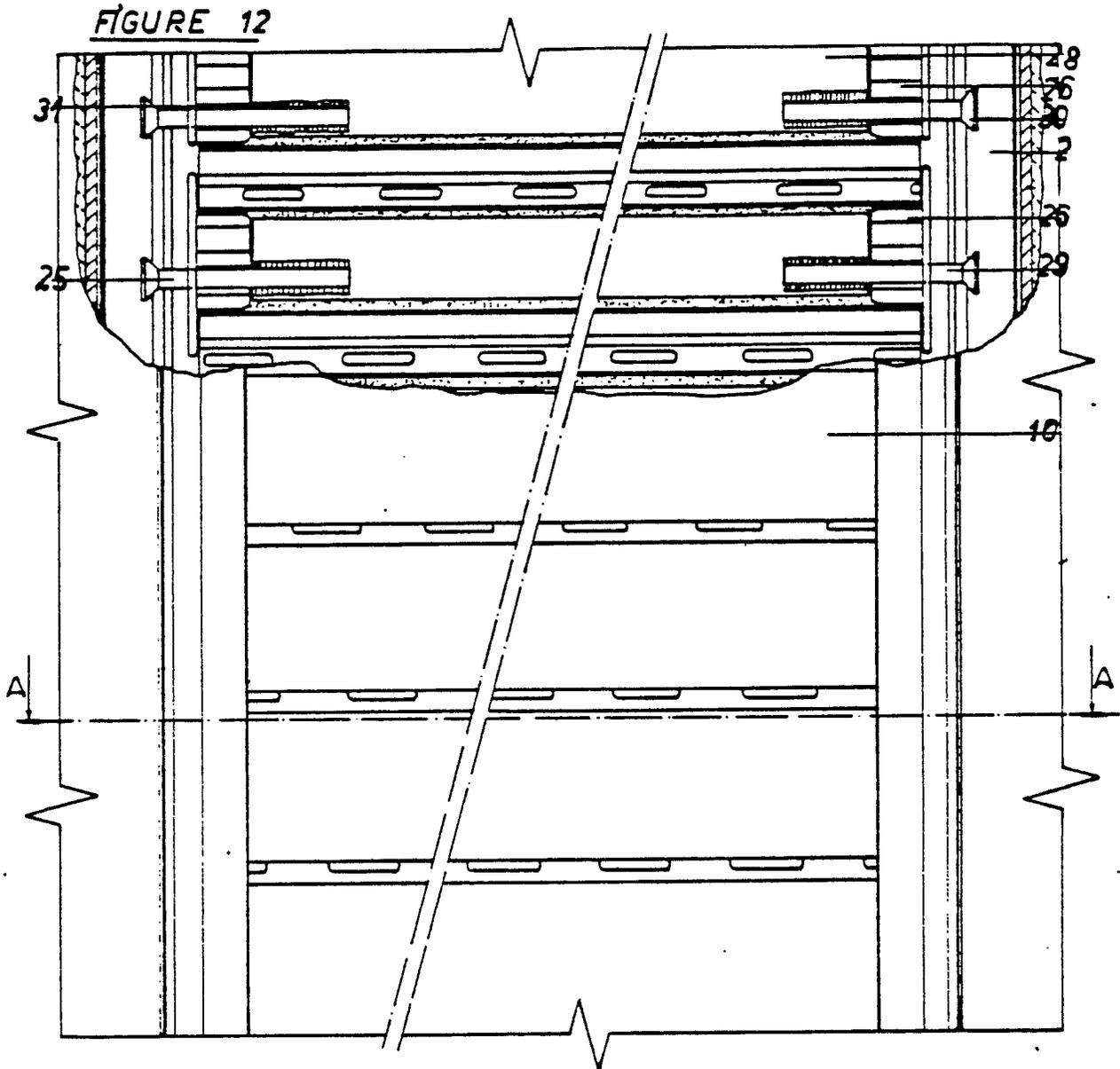


FIGURE 14

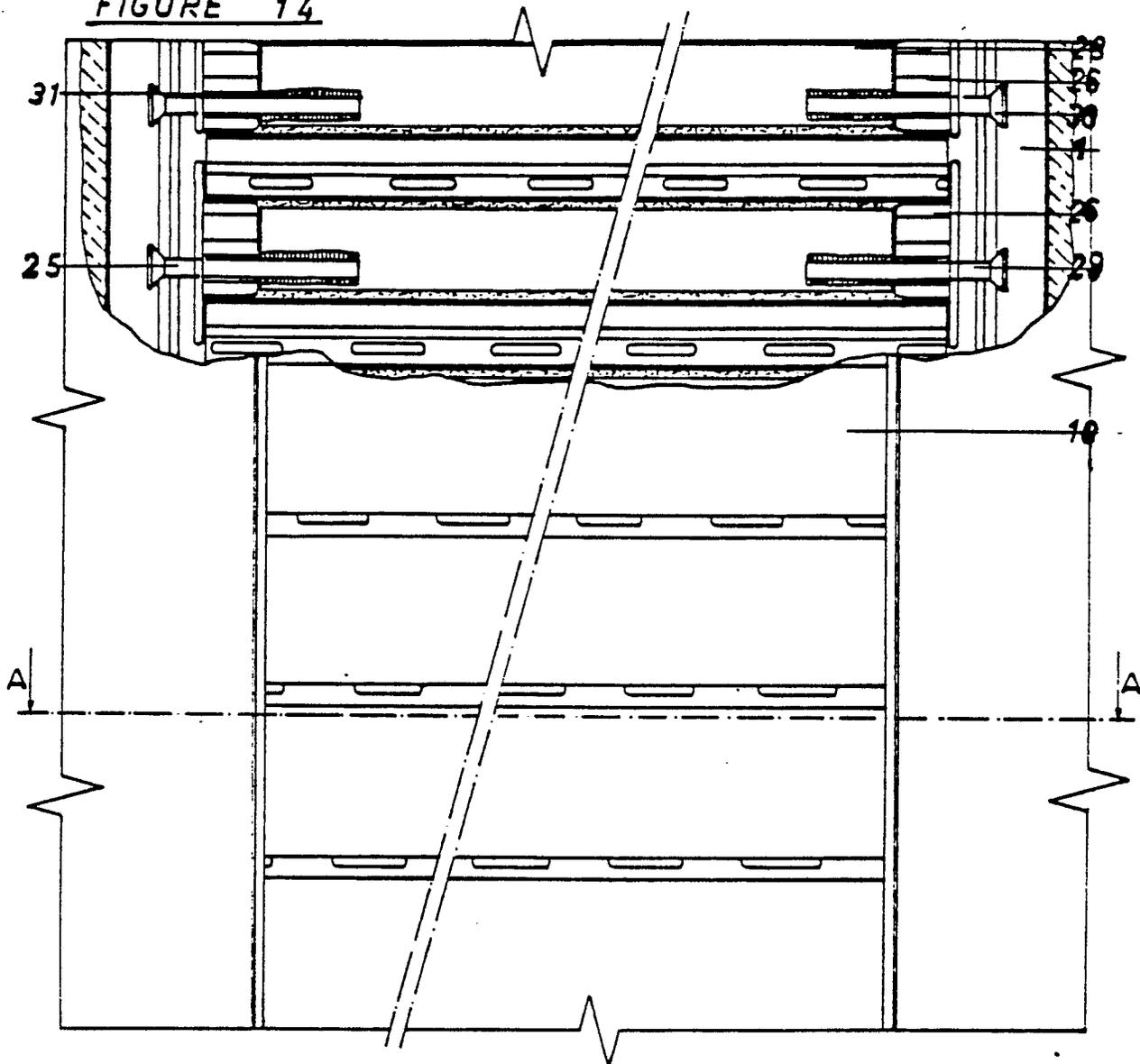


FIGURE 15

SEZ. A:A

