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(54) **Ring binder for collection and/or display of sheet-shaped information carriers.**

(57) Device for display and possible collection of sheet-shaped information carriers The device comprises firstly a bottom plate (10) provided with a display aperture (20) intended to be positioned on e.g. the picturepane of an overhead projector, and secondly on two opposite sides of the display aperture (20) two ring mechanisms (20, 24) for retaining the informatin carriers, which preferably have double perforations along two opposite edges. Preferably, the ring mechanisms (22, 24) are coupled together with a transfer device (34, 38, 40) adapted to be actuated by means of an operating handle (48) for alternately opening and closing the two ring mechanism (22, 24). If desired, the bottom part (10) is provided in conventional manner with back parts (16, 18) and binder covers (12, 14) in order at the same time to constitute a collection binder for the inserted sheet-shaped information carriers.

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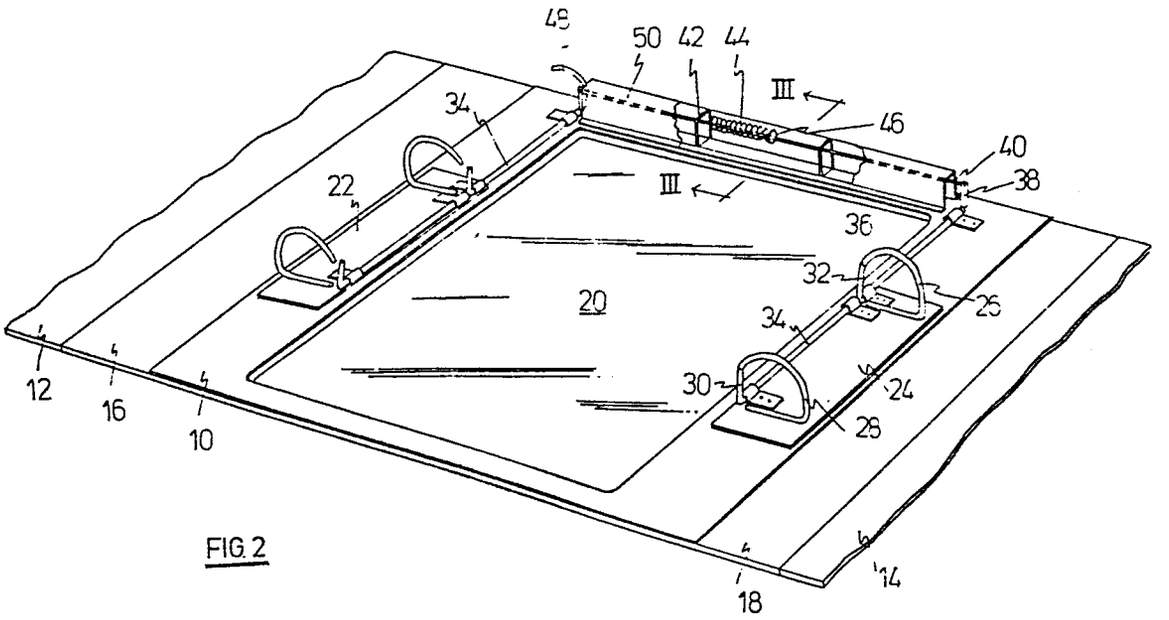
48
50
42
44
III
46
40
38
34
22
III
36
32
26
20
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12
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10
18
14

FIG. 2

RING BINDER FOR COLLECTION AND/OR DISPLAY OF SHEET-SHAPED INFORMATION CARRIERS

The present invention relates to a ring binder for collection and/or display of sheet-shaped information carriers and comprising at least one ring mechanism and an aperture or window for the display.

In the storage and display of sheet-shaped information and/or picture carriers for instance in display in overhead projectors, it is the most usual procedure that the sheets are provided with a perforated edge portion and kept separately in a conventional ring binder. For the display the sheets are taken out each individually and introduced into the projector and after the display the sheets are again inserted into the ring binder. This operation is extremely difficult and tedious, since it is difficult during the display to keep the sheets in order when it is desired, for example, to return to previously displayed sheets while the sheets at the same time are easily mixed up so that a careful sorting must be made between subsequent displays.

One proposal for solving the problems connected with this system of loose sheets is to use display sheets provided with perforations along two of its edges, the one perforated edge of the sheets being deposited in the ring mechanism of a conventional ring binder for storage of the sheets. When the sheets shall be displayed, they are inserted into a separate file or holder with own ring mechanism in such a manner that the last-mentioned ring mechanism will be located adjacent the free perforated edge of the sheets kept in the ring binder. The projection file is introduced under the number of sheets which are desired to be removed from the collection binder and thereupon the ring mechanism of the projection file is brought to engagement with the perforations in the free perforated edge portion which is turned away from the ring

mechanism of the collection binder. After that the sheets have been released from the ring mechanism of the collection binder, the projection file with the selected pictures or sheets is transferred to the projector for display.

However, this device known from the Swedish patent 7203082-8 does not solve the problems mentioned initially above. Prior to the display already and prior to the transfer of the sheets from the collecting binder to the display file it must be decided which are the pictures which shall be displayed, and the transfer between the binders and the files becomes smooth and easy in that case only when all sheets which are transferred are positioned in sequence adjacent one another in the collection binder. When individual sheets which are not positioned adjacent one another in the collection binder, shall be displayed and transferred, the transfer operation becomes very difficult. Those sheets which have been transferred into the projection file, remain indeed within the same during the display operation due to the feature that the projection file has been provided with an aperture which is adapted to the picture pane of the overhead projector, but the sheets are kept inserted in a certain consecutive sequence in the projection file also, and, therefore, one is bound to a certain display sequence, unless the sheets are removed from the projection file in the same manner as in connection with the loose-leaf system used earlier.

The main object of the present invention is to provide a ring binder for collection and/or display of information carriers such as sheets, flat envelopes of transparent plastic or the like, whereby the aforesaid problems are solved.

Another object of the invention is to provide a binder, by means of which the display of arbitrarily chosen sheets can be accomplished while one or several sheets are left out and/or turned back without disturbing the consecutive order of the inserted sheets or necessi-

tating to take them out individually from the binder.

These and other objects are attained according to the invention with a ring binder for collection and/or display of information carriers, which are devised so that the sheets permanently remain in the binder and can be transferred between a position of collection and a position for display. Other advantages and characteristics of the invention will become evident from the subsequent claims.

The information will hereinafter be described nearer in connection with an embodiment shown in the attached drawings. Fig. 1 is a perspective view of the ring binder according to the invention in collapsed position, e.g. for keeping and transportation of the information carriers. Fig. 2 is a perspective view of the ring binder according to Fig. 1 in opened position, e.g. for display. Fig. 3 shows a section following the line III-III in Fig. 2. Fig. 4 shows a view from below of the ring binder of Figs. 1 and 2.

The ring binder shown in the drawings consists of a base or bottom part 10 and two binder covers 12, 14, which by means of back parts 16, 18 are connected with the bottom part 10. It is evident that in the shown embodiment the binder cover 14 extends over substantially the whole bottom part 10, whereas the binder cover 12 is shorter and mainly intended to serve together with the back part in conventional manner as a closure of the end of the binder opposite to the back part 18. For this purpose the binder cover 12 is provided also with an edge reinforcement not denoted here more specifically. The various parts of the binder are interconnected in conventional manner, glued together, for example, by means of a thin fabric sheet or the like so that they can be turned upwards from the collapsed position shown in Fig. 1 to the opened position shown in Fig. 2, where all parts of the binder are positioned in the same plane. To keep the binder in the closed position shown in Fig. 1, there may be provided a lock not illustrated nearer, such as a spring lock, a zipper lock or the like.

In the position shown in Fig. 2 the binder covers 12, 14 together with the back parts 16, 18 form supporting areas, on which the inserted information carriers rest, as will be described nearer in the following. The bottom part 10 is provided with a display aperture 20, the dimensions of which preferably correspond to the standard dimensions of the lighted picture pane in an overhead projector. The aperture may be totally free or be covered by transparent material such as plastic, for example. Secured to two opposite sides of the bottom part 10 abutting on the back parts 16, 18 are according to the invention two ring mechanisms 22, 24. As the ring mechanisms are identically alike, only one of them will be described in detail. Thus, the ring mechanism 24 consists of two stationary, curved hoops 26, 28 and two movable hoop parts 30 and 32, which are made in one piece with, or secured onto, a spindle 34 which extends through bearings 36 on the bottom part 10 to one edge thereof. Thus, by revolving of the spindle 34 the movable hoop parts 30, 32 can be brought in the manner usual with ring mechanism into, and out of, engagement with the stationary, curved hoop parts 26, 28.

According to the invention, the movable parts 30, 32 of the two ring mechanisms are coupled together in such a manner that, for example, the right-hand mechanism in Fig. 2 normally is closed while the other ring mechanism is open. Thus, the spindles 34 at the end 36 facing the one longitudinal edge of the bottom part 10, are provided each with a swivel arm 38 coupled to a common draw back bar 40 which is mounted part-rotatably in a U-shaped bow 42 fixed onto the bottom part 10. Disposed between the shanks of the bow 42 and around the bar 40 is a pressure spring 44, which with its one end rests against one shank of the bow 42 and with its other end bears against a stop washer 46 affixed to the bar. In this way the bar 40 is loaded in right-hand direction in Fig. 2 and thereby the arms 38 turn the spindles 34 in a turning direction that keeps the right-hand ring mechanism 24 in Fig. 2 closed whereas the

left-hand mechanism 22 is open. Rigidly attached to the left-hand spindle 34 is a curved, operating handle 48, by means of which it is possible to part-rotate against the pressure of the spring 44 the left-hand spindle 34 and over the bar 40 the right-hand spindle 34 also so as to cause the left-hand ring mechanism 22 to close and the right-hand ring mechanism 24 to open. Above the elongated bow 42, the bar 40 and the spring element 44, there may be placed a casing 50, which covers substantially the whole transfer mechanism just described.

The device described above functions in the following way:

Under and after collection and transport, the information carriers, which preferably consist of sheets having perforations along two opposite edge portions, rest on the bottom part 10 and are retained by the right-hand ring mechanism 24 of Fig. 2, which is kept closed by the spring force. The opposite, perforated edge portion of the information carriers then is in engagement with the open hoops 30, 32 of the opposite ring mechanism 22. Although many operations are possible with the described ring binder, it shall be assumed for the sake of simplicity, that it is desired to pick out from a pack of inserted sheets resting on the bottom part 10 one sheet located in approximately the middle portion of the pack for display in the aperture 20. By means of the operating handle 48 the ring mechanism 22 is closed and a number of sheets (not displayed) including the sheet that is to be displayed are turned over in the ring mechanism so that the sheets come to rest on the opened cover part 12 and back part 16. The operating handle 48 is set free, whereby the ring mechanism 24 is closed, and the remaining sheets of the inserted pack are turned over towards the binder cover 14 and the back part 18. The operating handle 48 is actuated again so that the ring mechanism 22 is closed and the selected sheet now can be laid down against the display aperture, while at the same time the opposite edge portion is brought

into engagement with the ring mechanism 24. Thus, when the operating handle 48 is set free, the sheet to be displayed is positioned in the ring mechanism 24 ready for display and without its position in the pack having been disturbed in any way.

From the preceding description it is evident that it is possible without being compelled to remove the sheets from the binder to display them in any arbitrary sequence while at the same time retaining the primary grouping of the sheets. It is obvious that the shown embodiment is an example only of the invention and that it can be varied to the widest extent within the scope of the subsequent claims. Thus, even if the invention has been described in connection with a ring binder for both collection and display of the sheet-shaped information carriers, it is of course possible to dispense with the binder covers if it is desired only to use the device according to the invention for display purposes with the advantages which are obtained with the specific design of the binder mechanism.

CLAIMS

1. Device for display of sheet-shaped information carriers and comprising an aperture or window for the display and ring mechanisms for retaining the sheet-shaped information carriers, c h a r a c t e r i z e d in that mounted on a bottom plate (10) delimiting the display aperture (20) are on two opposite sides of said aperture (20) two openable ring mechanisms (22, 24) for retaining the information carriers provided with double perforations along the one and the other of two opposite edges, which, while being retained simultaneously by one of the ring mechanisms (22, 24) can be turned over away from the display aperture (20) in one or the other of two opposite directions.

2. Device according to claim 1, c h a r a c t e r i z e d in that the ring mechanisms are coupled to a transfer device (34, 38, 40), which transfer device can be acted upon by means of an operating handle (48).

3. Device according to claim 2, c h a r a c t e r i z e d in that the ring mechanisms (22, 24) are coupled together by means of the transfer device (34, 38, 40) in such a manner that the one ring mechanism (22) is open when the other ring mechanism (24) is closed and vice versa.

4. Device according to claim 3, c h a r a c t e r i z e d in that the ring mechanisms (22, 24) comprise an openable part (30, 32) which is adapted to become operated by means of a shaft (34), the shafts of each of the ring mechanisms being provided with a swivel arm (38) which arms are coupled together by means of a bar (42), a spring (44) loading said bar and therewith the openable parts of the ring mechanisms in such a direction that the one ring mechanism (22) is open, while the other (24) is closed, said bar being adapted to be actuated in an opposite direction by means of the operating handle (48).

5. Device according to any of the claims 2-4, c h a r a c t e r i z e d in that the transfer device is covered by a protective casing (50).

6. Device according to any of the claims 1-5, c h a r a c t e r i z e d in that the bottom plate (10) adjacent the ring mechanisms (22, 24) is provided with foldabl. binder covers (12, 14) for forming a collection and display binder for the information carriers.

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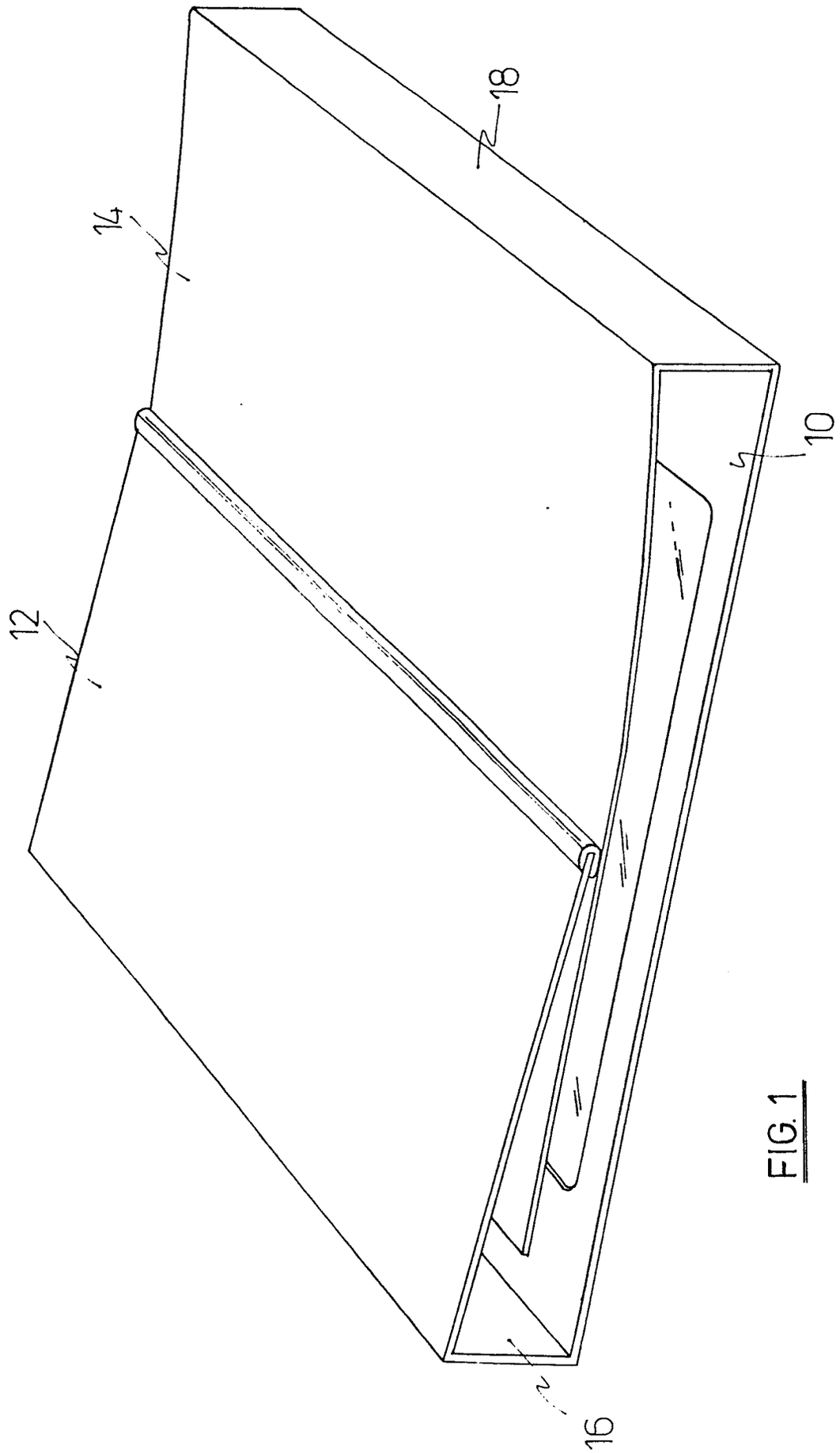

FIG. 1

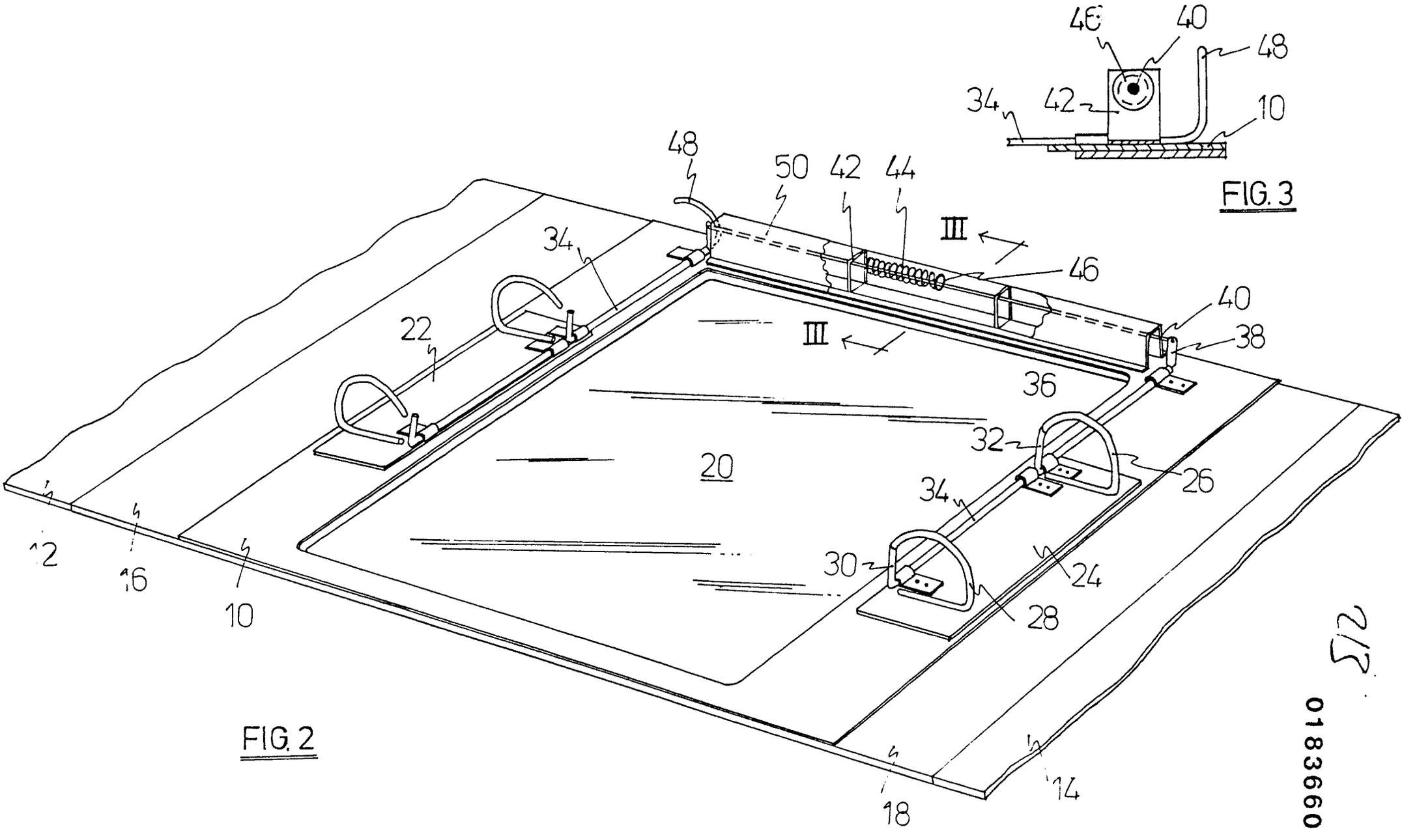

FIG. 2

FIG. 3

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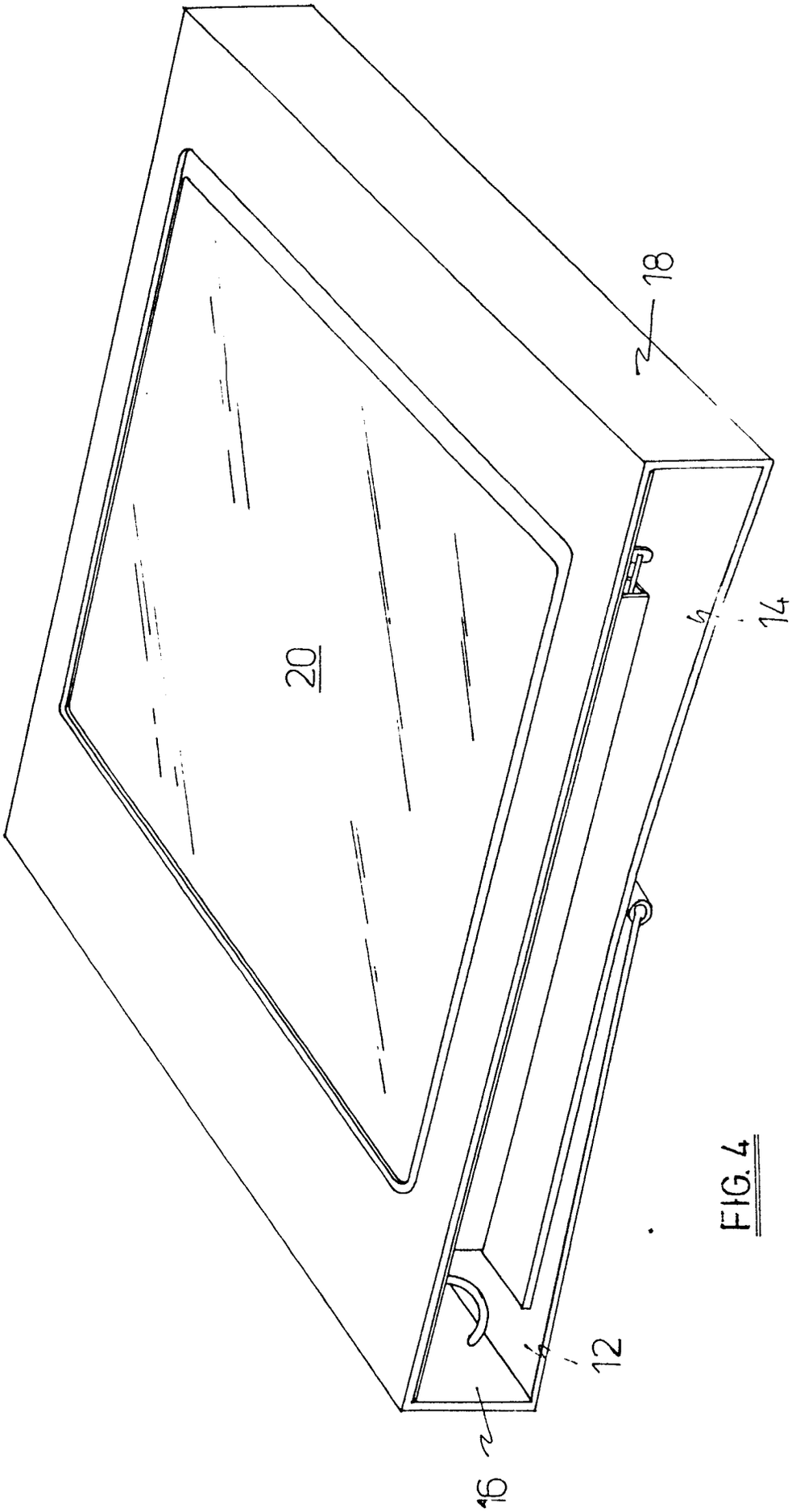

FIG. 4