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☑ Description : paged ..1..... to paged ....17....
☑ Claim(s) : paged ..18.... to paged ..19.....
☑ Drawing(s) : paged ..10... to paged ..11/11...
☑ Abstract : paged ..20.... to paged .....
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# DESCRIPTION

FILE FOLDER

## TECHNICAL FIELD

This invention relates to a file folder provided with a fastener for securing a stack of documents or the like in the folder.

## BACKGROUND ART

Fig. 12 shows a conventional file folder F, which is made of a sheet of cardboard and comprises a front cover F1, a spine strip F2 and a rear cover F3, with a front or upper folded cover portion F4 formed between the front cover F1 and the spine strip F2 by folding a portion of the front cover F1 adjacent the spine strip F2 inwardly and a rear folded portion F5 formed between the rear cover F3 and the spine strip F2 by folding a portion of the rear cover F3 adjacent the spine strip F2 inwardly.

A pair of binding prongs 41 are attached to the rear folded portion F5 so as to extent toward the front folded cover portion F4, on the upper surface of which an elongated fastener 10 is fixed. The fastener 10 is provided with a pair of right and left holes 20 corresponding to the pair of binding prongs 41, and a pair of fastening members 30 at the outer side of the holes 20. The prongs 41 are passed through corresponding holes formed in the upper folded cover portion F4 and through the holes 20 in the fastener 10 so that the outer free end portions of the prongs 41 project from and stand upright on the fastener 10 as shown by real lines in Fig. 12.

The documents, through which the prongs are passed,

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are placed between the front and rear folded cover portions F4 and F5 so as to be bound therebetween. Then the outer end portions of the prongs 41 are bent toward the upper and lower edges F1u, F3u and F1b, F3b of the front and rear covers F1 and F3 and engaged by the fastening member 30, whereupon the operation of binding the documents in the file folder F has been completed.

Fig. 13 shows another conventional folder F', which is of the same structure as the folder F in Fig. 12 and also comprises a front cover F1, a spine strip F2, a rear cover F3, a front folded portion F4 and a rear folded portion F5. The fastener 10' of the folder of Fig. 13, however, is different from that of Fig. 12.

In particular, the fastener 10' which is made of an elongated rectangular plate, is provided with a pair of holes 20 spaced a distance apart from each other and at the opposite lateral sides with a pair of guide grooves 40 formed by bending the opposite lateral edge portions of the plate. The fastener is further provided between the holes 20 with a pair of slidable fastening members 50 having their respective opposite lateral edges fitted slidably in the opposite guide grooves 40 of the plate. Each of the fastening members 50 has a portion upwardly bulged to form an aperture facing outwardly toward the upper or lower edges F1u, F3u or F1b, F3b of the front and rear covers F1 and F3.

With the prongs 41 projecting upward through the holes 20 of the fastener 10', as the fastening members 50 are slid outward in opposite directions, they push the prongs

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41 down toward the upper and lower edges F1u, F3u and F1b, F3b of the front and rear covers F1 and F3 as far as the prongs are fastened by the members 50, with the bent portions of the prongs having been drawn in through the apertures of the upwardly bulged portions of the fastening members and lie flat therein.

With the above conventional arrangements, there is a problem that the quantity of documents that can be bound is limited. In order for the folders F and F' to bind a large stack of documents, the width of the spine strip F2 and the length of the prongs 41 may be increased. However, with the spine strip F2 widened and the prongs 41 lengthened to increase the thickness of the stack of documents that can be filed, when a thin stack of documents is to be filed, not only the widened spine strip F2 is likely to be folded and project outwardly, but also the outer portions of the bent prongs 41 project outside the upper and lower edges F1u, F3u and F1b, F3b of the front and rear covers F1 and F3, thereby deteriorating the appearance of the file. It is therefore difficult to design the folder F or F' so as to enable filing of a thick stack of documents. In particular, in a folder having a relatively short length between the upper and lower edges F1u, F3u and F1b, F3b of the front and rear covers F1 and F3, since there is only a short distance between the positions at which the prongs are fixed to the folded portion of the rear cover of the folder and the upper and lower edges F1u, F3u and F1b, F3b of the covers F1 and F3, it is difficult to increase the thickness of the stack of documents that the folder can

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accommodate.

**DISCLOSURE OF THE INVENTION**

This invention has been accomplished in an effort to solve the above problems, and provides a file folder which can file a thin stank of documents without the spine of the filed documents being deformed or bulged or the prongs projecting out of the edges of the front and rear covers of the folder, and which can be easily set to a thick stack of documents to be filed.

The file folder of the invention comprises a cover made of a suitable material such as, e.g., cardboard and consisting of a pair of front and rear cover portions, a spine portion provided between the inner ends of the front and rear cover portions, the width of the spine portion being variable, a pair of binding prongs attached to the inner end of one of the front and rear cover portions or a folded portion connected to the inner end so as to stand upright from the inner surface thereof, and a fastener provided on a folded portion formed at the inner end of the other cover portion so as to be able to engage and bend the prongs in the direction toward the outer end of the cover.

In the folder of the invention, it is possible to change the width of the spine portion of the cover in accordance with the thickness of the stack of documents to be filed, so that it is possible to file stacks of documents of different thicknesses without deteriorating the appearance of the spine of the folder. Since the binding prongs are bent not in the direction toward the upper or lower edge of the cover but in the direction

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toward the outer or lateral edge thereof, the prongs can have a sufficient length regardless of the distance between the positions at which the prongs are fixed to the cover and the upper or lower edge thereof. In a file folder provided with a plurality of binding prongs, the distance between the positions where the prongs are anchored to the cover and the lateral or outer edge thereof is far greater than the distance between those positions and the upper or lower edge of the cover. Therefore, in accordance with the invention it is possible to make the prongs longer and file a thicker stack of documents than in the conventional folder of the type, without the inconvenience that the outer ends of the bent prongs project out of the edges of the cover when a relatively thin stack of documents has been bound.

In order to make the width of the spine of the cover variable, either one of the front and rear cover portions is made of double-layer construction or shaped like an envelope with an opening at the inner end of the cover portion, while an area adjacent one end of the spine portion of the cover is slidably inserted into the envelope through the opening, with the other end of the spine portion being fixed to the inner end of the other cover portion. In this arrangement, that area of the spine portion of the cover which is not used is contained in the envelope of the front or rear cover portion so as not to be exposed outside.

In a different embodiment of the invention as defined in claim 3, the file folder has not a spine but comprises a

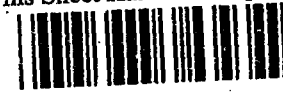
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pair of front and rear cover portions, a pair of binding prongs projecting from the inner surface of the inner end of one of the cover portions or from a folded portion formed at the inner end, and a fastener provided on a folded portion formed at the inner end of the other cover portion so as to be able to engage and bend the prongs in the direction away from the inner ends of the cover portions. This arrangement has much the same advantages as the arrangements of claims 1 and 2 except that the filed stack of documents is exposed at the spine which is covered in the arrangements of claims 1 and 2.

To enable speedy fastening and unfastening of the prongs, the fastener comprises an elongated guide member attached to the folded portion of the other cover portion and provided with holes for the prongs to be passed through and a fastening member slidably mounted on the guide member longitudinally relative thereto so that the prongs inserted through the holes in the guide member may be bent and fastened at one and the same time by sliding the fastening member relative to the guide member.

To this end, as defined in claim 5, the fastening member may be provided with windows through which the prongs passed through the holes in the guide member are passed, a slit formed in communication with each of the windows for holding the bent portion of the corresponding one of the prongs, and an oblique guide edge for bending the prong passed through each of the windows and guiding the bent prong into the associated slit as the fastening member is slid relative to the guide member. In

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particular, as defined in claim 6, the windows are shaped like a right-angled triangle in top plan view, the oblique side of which constitutes the oblique guide edge.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a partly cut-out perspective view of one embodiment of the invention;

Fig. 2 is a partly cut-out perspective view of the fastener and prongs shown in Fig. 1;

Fig. 3 is a view similar to Fig. 2 showing the fastener and prongs in a different operative condition;

Fig. 4 is a sectional view taken along line A-A in Fig. 3;

Fig. 5 is a sectional view taken along line B-B in Fig. 3;

Fig. 6 is a sectional view taken along line C-C in Fig. 3;

Fig. 7 is a bottom view of the fastening member of Fig. 3;

Fig. 8 is a perspective view of the folder in which a stack of documents is filed;

Fig. 9 is a perspective view similar to Fig. 1 showing a second embodiment of the invention;

Fig. 10 is a perspective view similar to Fig. 1 showing a third embodiment of the invention;

Fig. 11 is a perspective view similar to Fig. 1 showing a fourth embodiment of the invention;

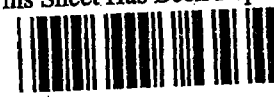
Fig. 12 is a perspective view of a conventional folder; and

Fig. 13 is a perspective view of another conventional folder.

**BEST MODE OF EMBODYING THE INVENTION**

Figs. 1 to 8 show one embodiment of the invention, Fig. 1 being a partly cut-out perspective view of a file

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folder Fa. The folder Fa comprises a cover made of a suitable material, e.g., a cardboard and consisting of a front cover portion F1, a rear cover portion F3, a spine portion F2 provided between the inner ends F1k and F3k of the front and rear cover portions F1 and F3, the width of the spine portion F2 being variable, a rear folded portion F5 provided at the inner end F3k of the rear cover portion F3 with a pair of binding prongs 41 being passed through the folded portion F5, and a front folded portion F4 provided at the inner end F1k of the front cover portion F1 with the prongs 41 being passed through the folded portion F4, and a fastener 1 provided on the front folded portion F4 for bending the prongs 41 passed through the fastener 1 so that the free ends 41s of the bent prongs 41 are positioned away from the inner ends F1k and F3k of the front and rear cover portions F1 and F3.

In particular, the rear cover portion F3 has adjacent the inner end F3k an area of double-layer construction with an opening F3o at the end F3k. The spine portion F2 has its one end F2k integrally connected to the inner end F1k of the front cover portion F1 and an area at its opposite end F2s slidably inserted into the opening F3o of the rear cover portion F3. Stated otherwise, the rear cover portion F3 is in the form of an envelope, in the inner end F3k of which the opening F3o is formed. The rear cover portion F3 is made of a single sheet of cardboard bent and folded into two layers lying one upon another, which are adhered along the upper and lower edges F3u and F3b to leave the opening F3o at the inner end F3k, where the rear folded portion F5

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is formed integral with the inner or upper layer of the rear cover portion F3. The front cover portion F1, the front folded portion F4 and the spine portion F2 are made of a single sheet of cardboard, which is so bent and folded that the folded portion F4 is formed at the inner end F1k of the front cover portion F1 integrally therewith and the spine portion F2 extends from the front folded portion F4. The spine portion F2 is provided with a plurality of longitudinally extending parallel bending lines 5 to make it easier than otherwise to fold the spine portion F2 at a desired position.

A prong means 4 is attached to the folded portion F5 of the rear cover portion F3. As shown in Fig. 2, the prong means 4 comprises an elongated base plate 42 provided near the opposite ends thereof with a pair of binding prongs 41 made of a flat strip of resiliently flexible material and extending in the same plane from the same surface of the plate 42 perpendicularly thereto. Each of the prongs 41 has an outer end portion 41s tapered toward a free end, which is thickened on one of its flat lateral surfaces to form a catch hook 43. Each of the prongs 41 is provided at its opposite lateral sides adjacent its lower end with a lower hook 44, which defines a relatively constricted end portion 45 between the hook 44 and the upper surface of the base plate 42. The prong means 4 is fixed to the folder Fa by passing the prongs 41 through holes formed in the rear folded portion F5 from its underside, with the relatively constricted portions 45 of the prongs 41 occupying the holes and the lower hooks 44

preventing the prongs 41 from falling off therefrom.

The prong means 4 is made of a synthetic resin, and the prongs 41 and the base plate 42 are molded integrally into a single member by injection molding. As the synthetic resin that can be used, polyvinyl chloride, polyethylene, polypropylene, etc. are preferred. Any other suitable materials, if flexible, may also be used.

In the illustrated embodiment, the binding prong means 4 is composed of the binding prongs 41 and the base plate 42. It is not restricted to the illustrated shape and structure, but the whole of the prong means may be composed of a single strap or string. The base plate 42 may be omitted, and the binding prongs 41 alone may be fixed directly to the rear folded portion F5 of the folder F.

The fastener 1 comprises an elongated guide member 2 and a fastening member 3 slidably mounted on the guide member 2. The guide member 2 consists of an elongated plate made of a relatively rigid suitable material such as a hard synthetic resin. The upper portion of each of the opposite lateral sides of the guide member 2 is formed into a laterally projecting guide rail 21 running the whole length of the guide member 2. The guide member 2 is provided with a pair of holes 22, one of which is formed adjacent one end (the left end in the figure) of the member while the other is spaced a distance from the opposite end (the right end in the figure) of the member toward the center thereof. The holes 22 are provided to fix the guide member 2 to the front folded portion F4 of the folder Fa by means of a rivet passed through each of the holes.

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In the guide member 2, adjacent the above-mentioned holes 22 toward the right thereof and on that lateral side of the longitudinal center line of the member 2 which is adjacent the spine portion F2 of the folder, there are formed another pair of holes 23 through which the binding prongs 41 are to be inserted. The distance between the two holes 23 is substantially equal to that between the two binding prongs 41. On the upper surface of the guide member 2 at the lateral side of each of the holes 23 remote from the spine F2 of the folder F there is formed an engaging projection 24 extending longitudinally of the member 2 a distance slightly longer than the longitudinal dimension of the holes 23.

The fastening member 3 is an elongated member of a suitable material shaped like the letter of C in transverse section with its opening facing downward. In the opposite lateral inner surfaces of the elongated fastening member 3, a pair of longitudinally extending guide grooves 31 complementary to the previously described guide rails 21 of the guide member 2 are formed defining a pair of longitudinally extending banks or shelves 31a. With the rails 21 complementarily engaging the grooves 31, the fastening member 3 is longitudinally slidable along the rails 2.

In the opposite end portions of the upper wall of the fastening member 3 there are formed a pair of right-angled triangular windows 32 each having an oblique side positioned at the left and one of the other two sides open in the lateral or front wall of the member 3 toward the

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documents to be bound. The windows 32 are formed in correspondence to the holes 23 in the guide member 2 at such positions that with the fastener 3 slid leftward a short distance relative to the guide member 2 as shown in Fig. 2, the portions adjacent the vertices of the triangles of the windows 32 coincide with the holes 23 in the guide member 2.

In the above-mentioned lateral or front wall of the fastening member 3 there is formed a slit 36 extending leftward from the previously mentioned one open side of the triangle of each of the windows 32. The slits 36 are formed in correspondence to the holes 23 in the guide member 2 at such positions that with the guide member 2 completely contained in the fastening member 3 as shown in Fig. 3, the slits 36 in the fastening member 3 are laterally aligned with the holes 23 in the guide member 2. With the binding prongs 41 inserted through the holes 23 in the guide member 2 and the windows 32 in the fastening member 3 as shown in Fig. 2, as the fastening member 3 is slid on the guide 2 toward the right in the figure, the oblique sides 32a of the triangular windows 32 bend the prongs 41 forwardly and guide them into the slits 36 as shown in Fig. 3, wherein those portions of the upper wall of the fastening member 3 at the left side adjacent the oblique sides of the windows 32 completely cover the holes 23 of the guide member 2.

As shown in Fig. 4, in the inner surface of the top wall of the fastening member 3 at the opposite longitudinal ends thereof, there are formed a pair of grooves 33 in

correspondence to the linear engaging projections 24 on the upper surface of the guide member 2 so that as the two members 2 and 3 are slid relative to each other, the projections 24 engage the grooves 33 thereby to prevent mutual interference between the ceiling of the member 3 and the projections 24.

As shown in Figs. 5 and 7, below each of the windows 32 and communicating therewith there is formed a cavity or space 34 for accommodating one of the binding prongs 41 which covers one of the holes 23 and one of the linear projections 24 under the condition that the fastening member 3 is displaced relative to the guide member 2 as shown in Fig. 2 and also under the condition that the guide member 2 is completely contained in the fastening member 3 as shown in Fig. 3. As shown in Figs. 6 and 7, between the right and left cavities 34 there is formed a relatively large cavity 35 having a ceiling a little higher than the upper surface of the guide member 2. The previously mentioned banks or shelves 31a defining the grooves 31 do not extend along the cavity 35.

The guide member 2 and the fastening member 3 are made of a suitable hard synthetic resin by injection molding. The resin may be selected from hard polyethylene, hard polypropylene, polyvinyl chloride, polystyrene, acrylonitrile styrene, acrylonitrile butadiene styrene, polymethyl metacrylate, polyvinylidene chloride, polyethylene terephthalate, polyamide, polyacetal, polycarbonate, polybuthylene terephthalate, etc. Any other materials having suitable hardness and rigidity may also be

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used.

The device of the invention is used to bind documents D in the following manner. As shown in Fig. 2, the fastening member 3 is slid on the guide member 2 so that the holes 23 in the member 2 coincide with and are exposed in the windows 32. The binding prongs 41 that have been passed through perforations in the documents D are inserted upward through the holes 23 and the windows 32 from the underside of the guide member 2 so that the upper portions of the prongs stand upright above the fastening member 3. The area of the spine portion F2 to appear between the front and rear cover portions F1 and F3 is adjusted to a proper width by adjusting the area of the spine portion to be inserted into the envelope of the rear cover portion F3.

Then as the fastening member 3 is slid on the guide member 2 to the upper right in Fig. 3, the oblique sides of the windows 32 push and bend the prongs 41 laterally or substantially perpendicularly to the longitudinal direction of the fastening member 3 and the guide member 2 until the prongs 41 are introduced into the slits 36 from within the windows 32 and lie flat on the documents D that have just been bound by the fastener.

Under the condition that the fastening member 3 completely coincides with the guide member 2, the prongs 41 laterally project from the slits 36 of the windows 32 of the fastening member 3 so as to lie on the documents D, with the projections 24 on the upper surface of the guide member 2 engaging the step-like projections 43a formed on that lateral surface of each of the prongs 41 which faces

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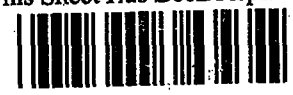


downward, thereby preventing the prongs 41 from being pulled out of the fastening member 3 even when a force is applied to the documents D to remove them from the binding device.

The above state is shown in Fig. 8, wherein the documents D placed on the inner surface of the rear cover portion F3 of the folder F are bound by the prongs 41 fixed to the folded portion F5 of the folder and pressed and held by the device within the folder, with the outer bent portions of the prongs lying on the documents D in the direction away from the ends F1k, F3k, of the cover portions F1 and F3.

In the file folder of the invention, since the width of the exposed area of the spine portion F2 can be changed in accordance with the thickness of the stack of documents to be bound, the folder can file stacks of documents of various thicknesses without deforming or deteriorating the proper appearance of the file. Since the prongs 41 are bent not in the direction toward the upper or lower edges F1u, F3u or F1b, F3b of the front and rear cover portions F1 and F3 but in the direction away from the inner ends F1k or F3k of the cover portions, the prongs 41 can have a sufficient length regardless of the distance between the positions at which the prongs are anchored to the folded portion of the rear cover portion and the upper or lower edges F1u, F3u or F1b, F3b of the cover portions. In other words, the prongs can be long enough to bind a thicker stack of documents than with the conventional file folders without causing an inconvenience that the outer ends of the

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bent prongs project out of the edges of the file cover when a thin stack of documents is bound.

This is a particular advantage in case the dimension between the upper and lower edges F1u, F3u and F1b, F3b of the front and rear cover portions F1 an F3 approximates to the length of the fastener 1 as in the file folder Fb shown in Fig. 9. In particular, in the folder Fb of the shape and dimension shown in Fig. 9 the prongs 41 bent along the length of the fastener 1 would have their outer ends projecting out of the front and rear cover portions F1 and F3. In accordance with the invention, however, the prongs 41 can have a desired length within the dimension between the inner and outer ends F1k, F3k and F1s, F3s of the front and rear cover portions F1, F3, so that the thickness of the stack of documents that the file folder of the invention can accommodate can be increased with ease.

The arrangement that makes it possible to adjust the width of the spine portion F2 of the folder is not restricted to the illustrated one, but there may be various other arrangements. For example, in the folder Fc shown in Fig. 10, an inner area of the rear cover portion F3 at the side of the spine portion F2 is made of double-layer construction by means of a band F3m adhered at its opposite edges to the upper and lower edges of the rear cover portion F3 so that the area of the spine portion F2 that is not to be exposed may be slidably inserted beneath the band F3m.

The spine portion F2 may be omitted as shown in Fig. 11 if there is no need to cover the spine of the filed

stack of documents. In particular, the file folder Fd comprises a front cover F1, a rear cover F3, a pair of binding prongs 41 fixed to a folded portion F5 connected to the inner end F3k of the rear cover F3 so as to project on the inner surface of the rear cover F3, and a fastener 1 provided on a folded portion F4 connected to the inner end F1k of the front cover F1 so as to engage and bend the prongs 41 in the direction away from the inner ends of the covers. The components of the arrangement of Fig. 11 corresponding to those of the arrangement shown in Figs. 1 to 8 are designated by the same reference numerals and there will be given no description of the components.

**POSSIBILITY OF USE IN INDUSTRY**

The file folders in accordance with the invention are suitable for use to file and accommodate a stack of papers, photograph mounts, or catalogue or the like.

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## CLAIMS

1. A file folder comprising: a cover consisting of a pair of front and rear cover portions; a spine portion provided between said front and rear cover portions; the width of the area of said spine portion that is exposed between said front and rear portions being variable; a plurality of binding prongs attached to the inner end of one of said front and rear cover portions or a folded portion formed at said inner end so as to project inside said cover; and a fastener provided at a folded portion formed at the inner end of the other of said pair of front and rear cover portions for bending said prongs in the direction away from the inner ends of said cover portions.

2. The folder of claim 1, wherein said one of said front and rear cover portions is of double-layer construction with an opening formed at said inner end of said one cover portion, and said spine portion has its one end connected to said inner end of said other cover portion and its opposite end portion slidably inserted into said opening of said one cover portion.

3. A file folder comprising: a cover consisting of a pair of front and rear cover portions; a plurality of binding prongs attached to the inner end of one of said front and rear cover portions or a folded portion formed at said inner end so as to project inside said cover; and a fastener provided at a folded portion formed at the inner end of the other of said pair of front and rear cover portions for bending said prongs in the direction away from the inner ends of said cover portions.

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4. The folder as defined in any one of the preceeding claims, wherein said fastener comprises an elongated guide member attached to said folded portion of said other cover portion and provided with holes for said prongs to be passed through, and a fastening member slidably mounted on said guide member longitudinally of said guide member, so that upon sliding of said fastening member relative to said guide member, said prongs passed through said holes in said guide member are bent and fastened by said fastening member at one and the same time.

5. The folder of claim 4, wherein said fastening member is provided with windows trough which said prongs passed through said holes in said guide member are passed, a slit communicating with each of said windows for holding the bent portion of the corresponding one of said prongs, and an oblique guide edge for bending one of said prongs passed through each of said windows so as to guide said bent prong into said slit upon sliding of said fastening member relative to said guide member.

6. The folder of claim 5, wherein said window are shaped like a right-angled triangle in top plan view, the oblique side of which constitutes said oblique guide edge.

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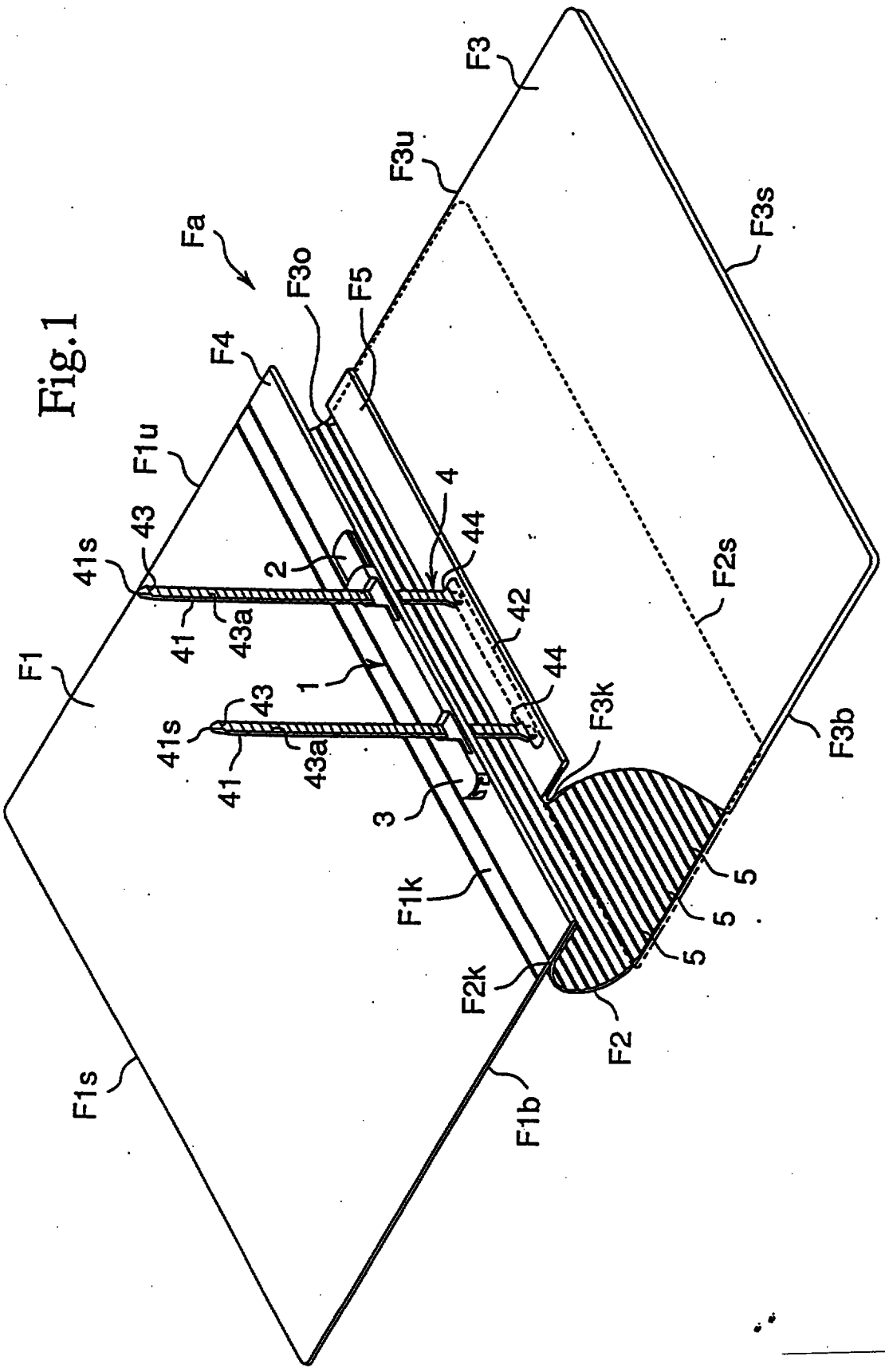
## ABSTRACT OF THE INVENTION

A file folder is provided comprising: a cover consisting of a pair of front and rear cover portions, a spine portion provided between the front and rear cover portions, the width of the area of said spine portion that is exposed between said front and rear portions being variable; a plurality of binding prongs attached to the inner end of one of said front and rear cover portions or a folded portion formed at said inner end so as to project inside said cover; and a fastener provided at a folded portion formed at the inner end of the other of said pair of front and rear cover portions for bending said prongs in the direction away from the inner ends of said cover portions.

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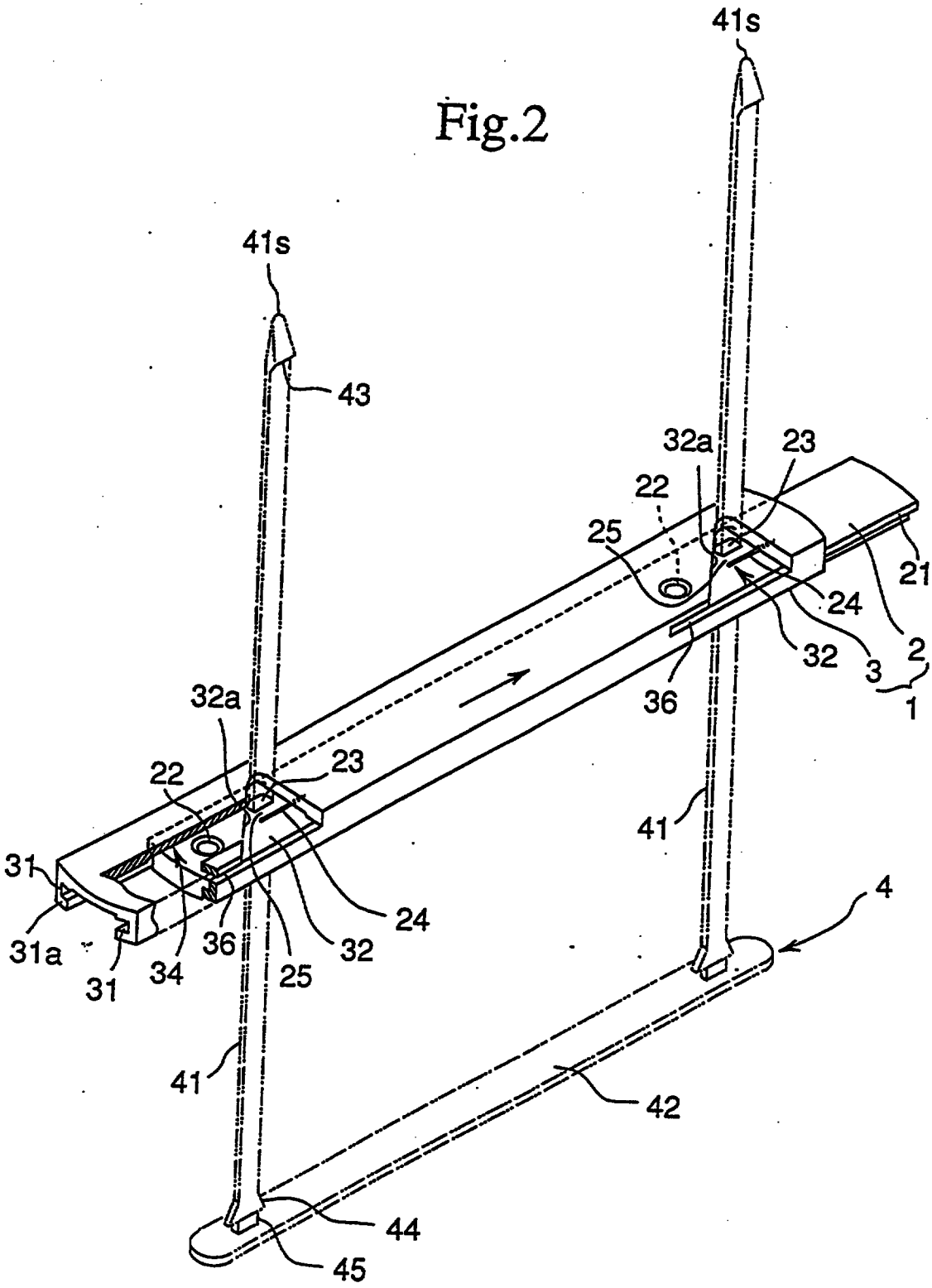


Fig.1



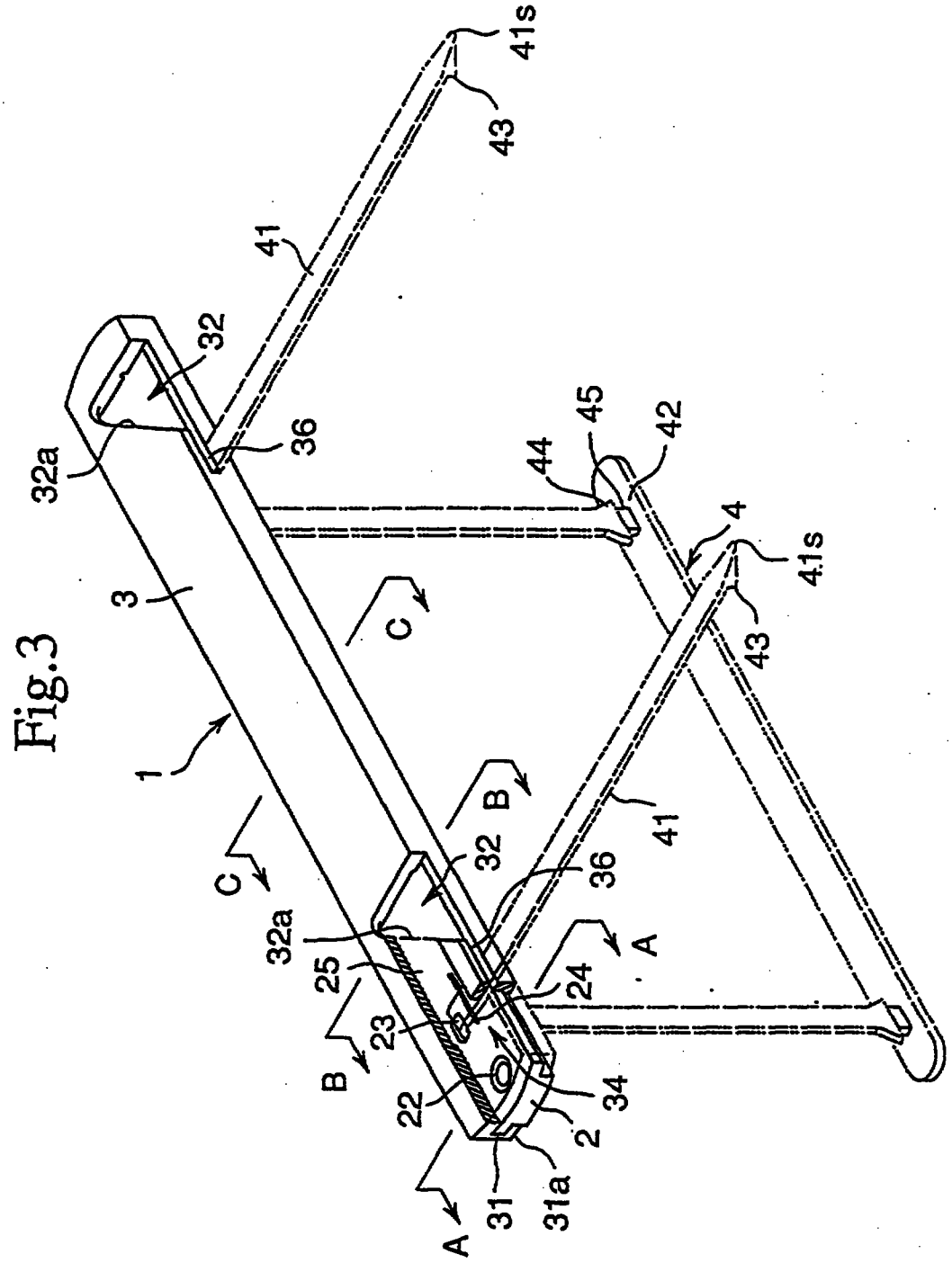

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Fig.2




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Fig.3




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Fig.4

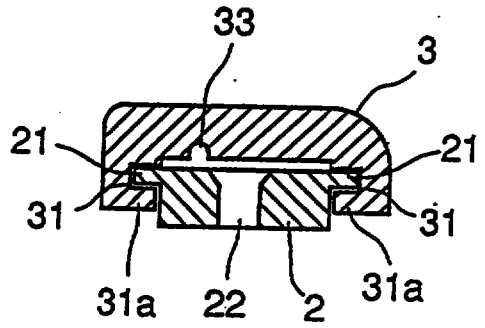



Fig.5

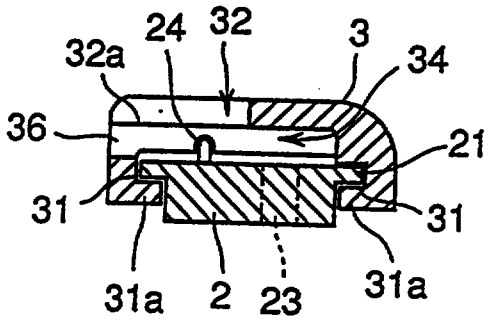
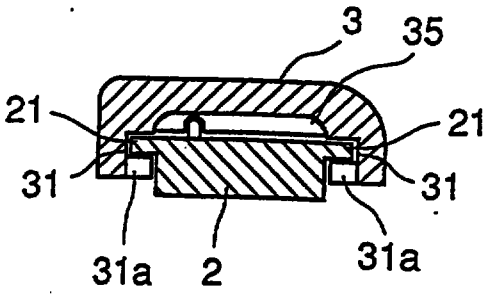
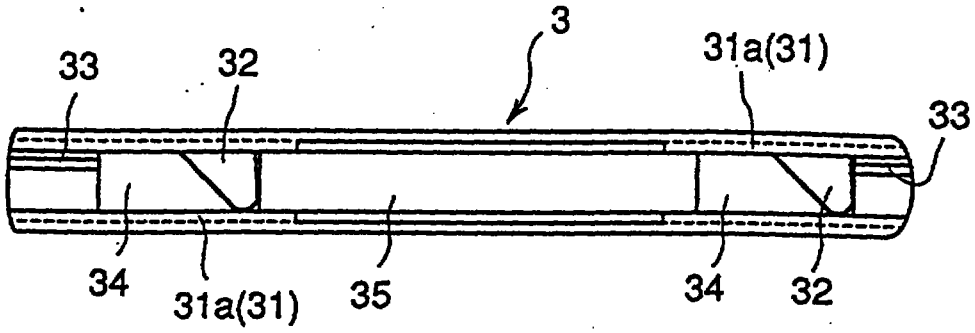



Fig.6



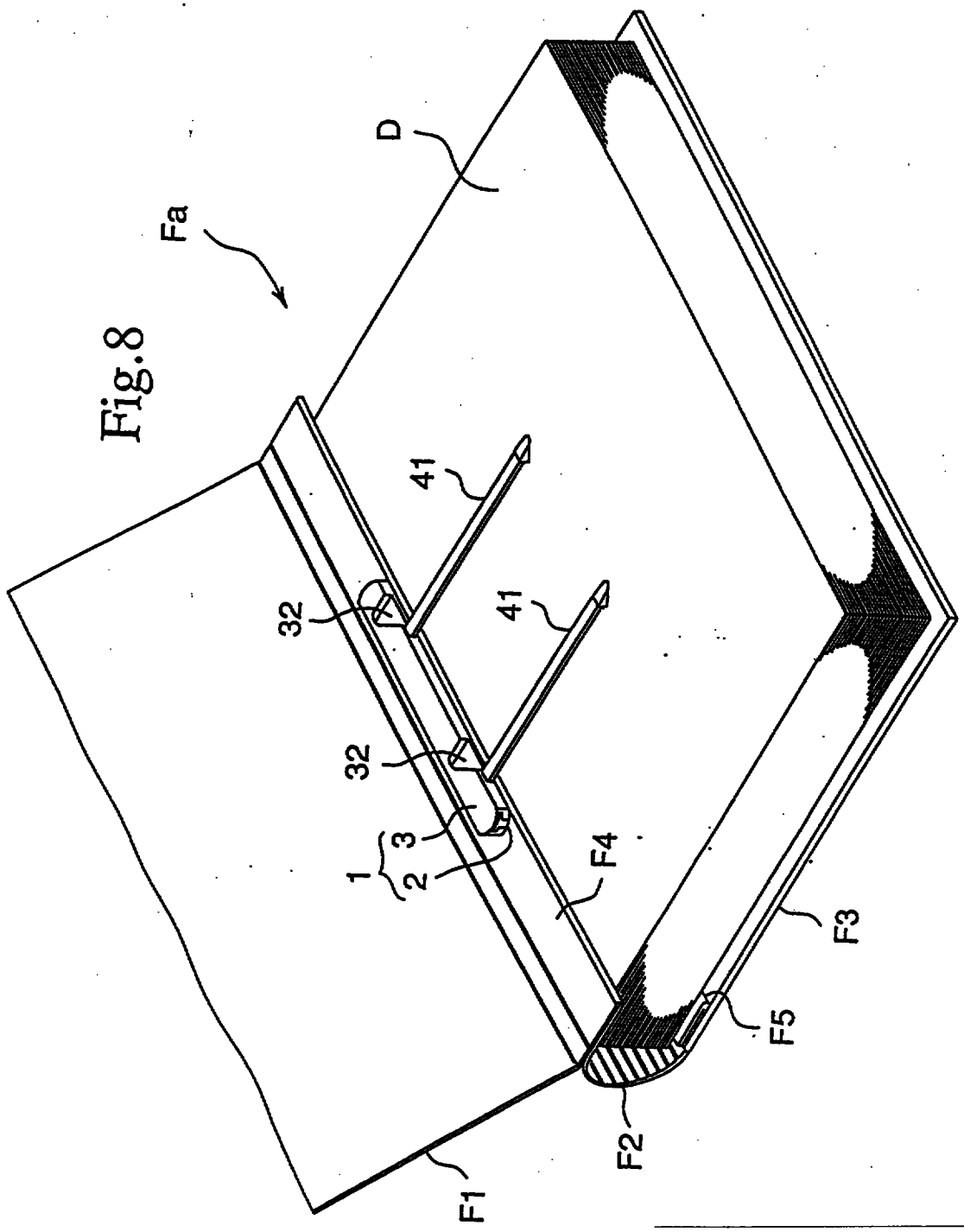

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Fig.7



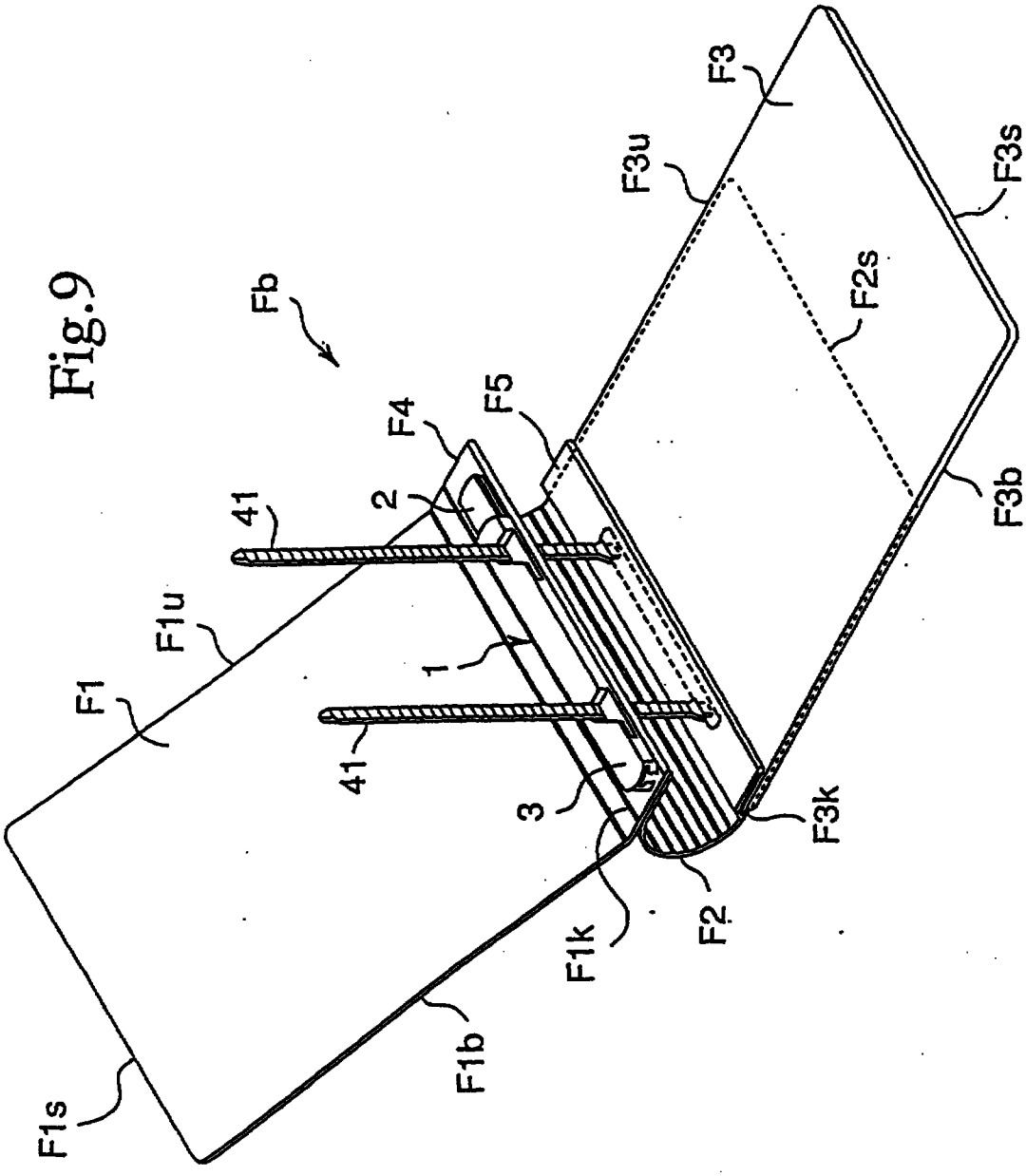

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Fig.8



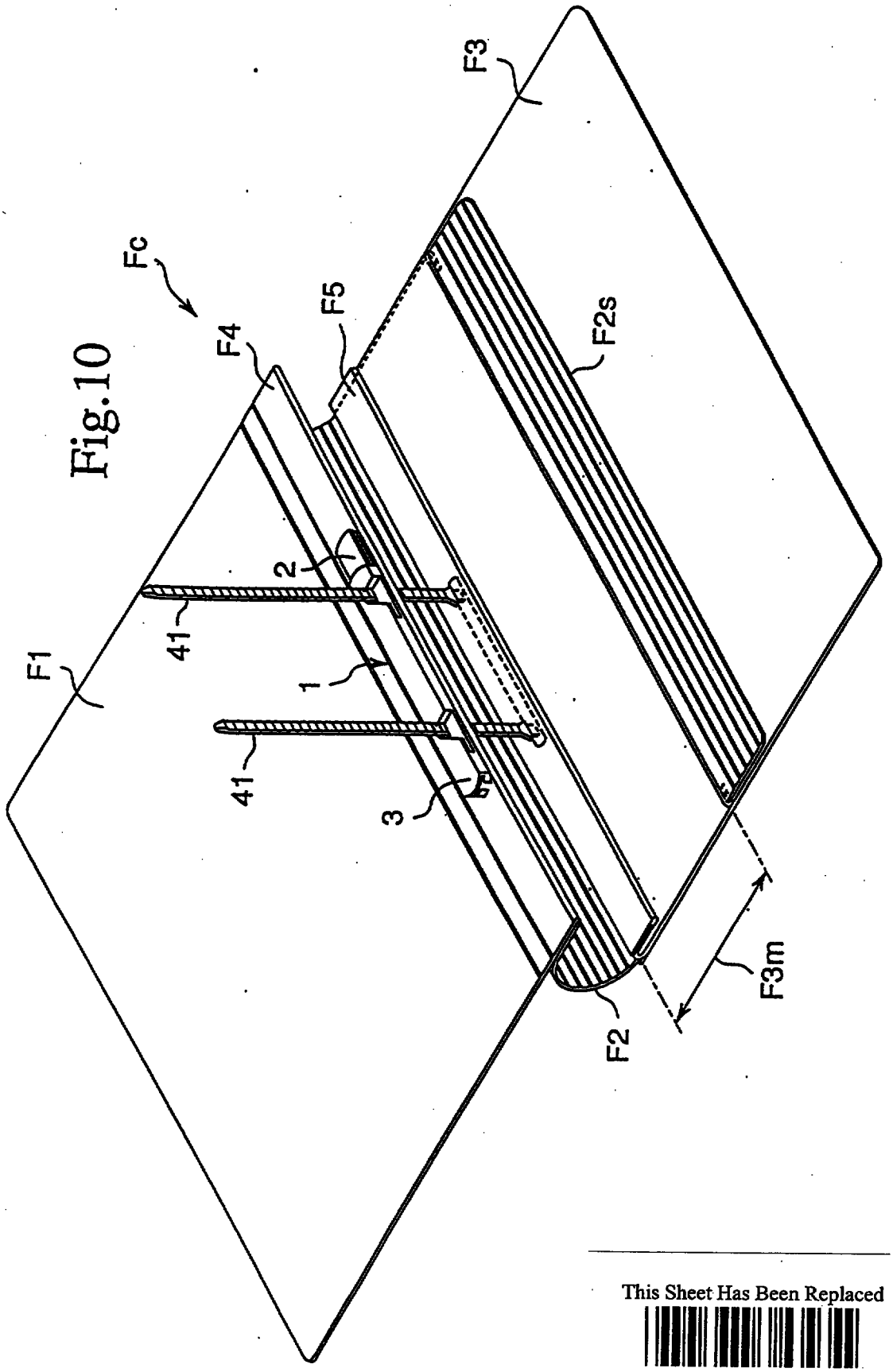

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Fig.9



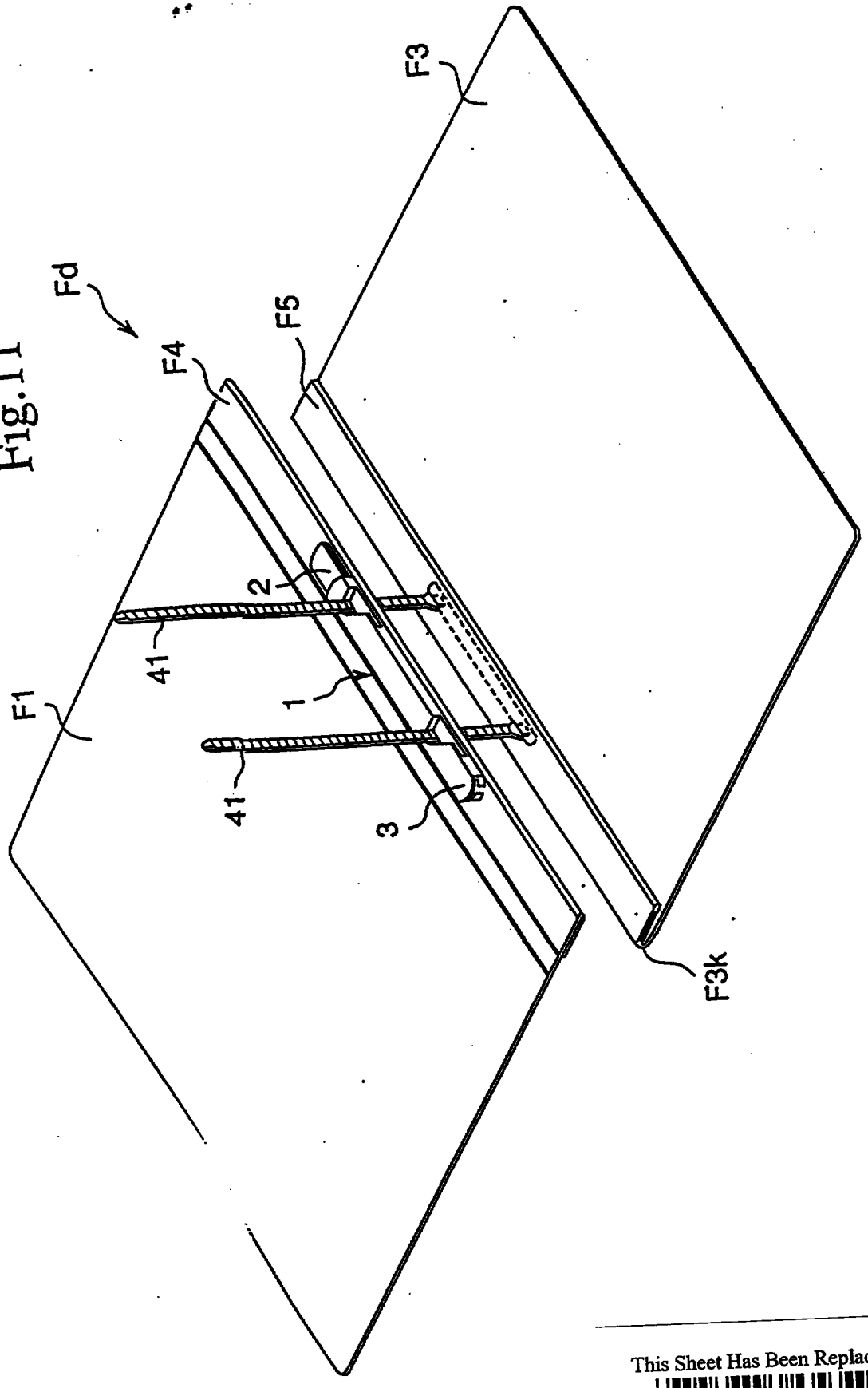

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Fig.10




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Fig.11




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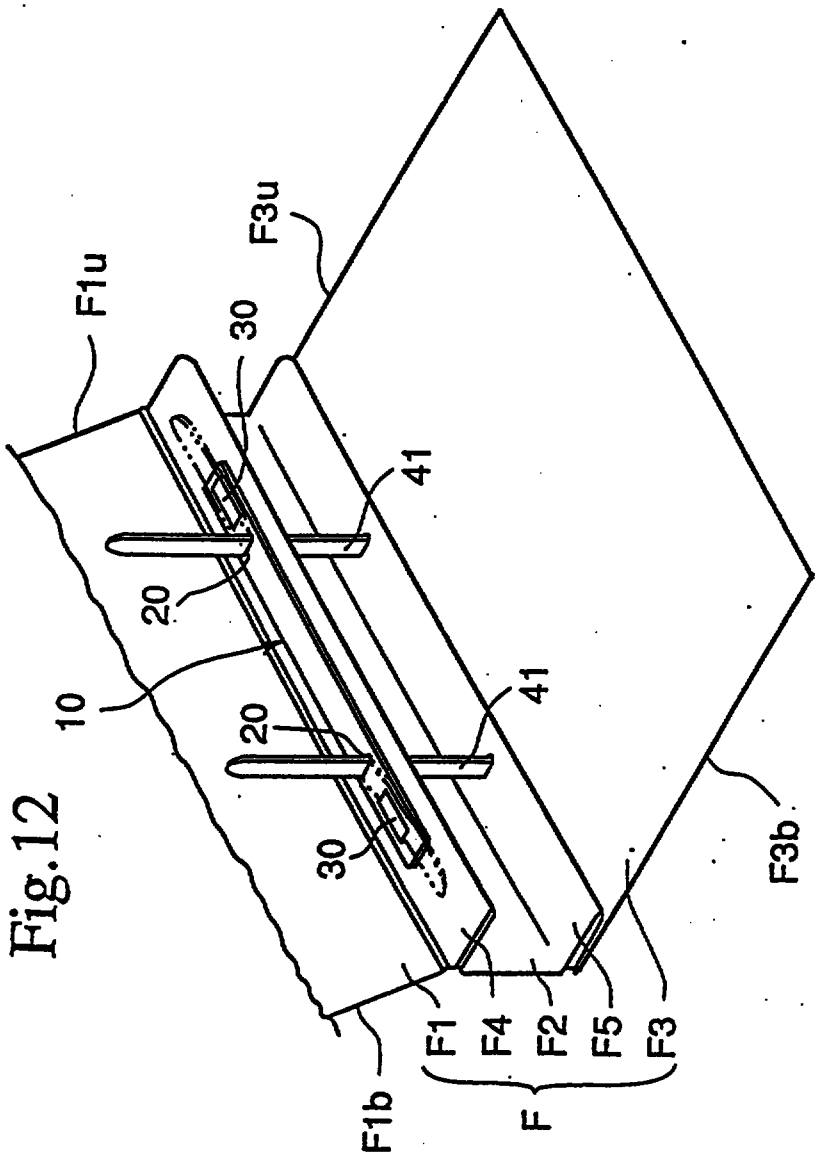



Fig.12

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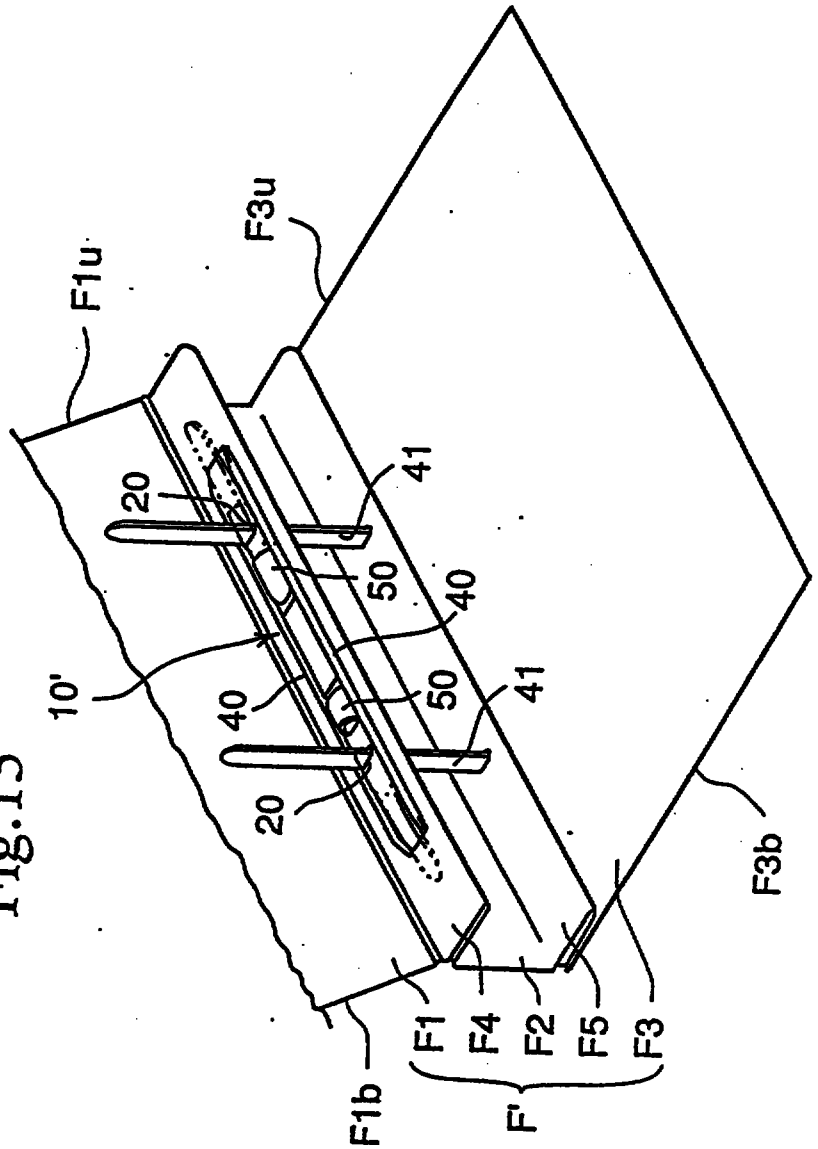



Fig.13

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REPLACEMENT SHEET
28 NOV 1996



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☑ Description : paged ..1.. to paged ..17.
☑ Claim(s) : paged ..15.. to paged ..16..
☑ Drawing(s) : paged ..16.. to paged ..17/18
☐ Abstract : paged ..19.. to paged ....
DATE OF RECEIPT ..28/11/96..

## DESCRIPTION

FILE FOLDER

**TECHNICAL FIELD**

This invention relates to a file folder provided with a fastener for securing a stack of documents or the like in the folder.

**BACKGROUND ART**

Fig. 12 shows a conventional file folder F, which is made of a sheet of cardboard and comprises a front cover F1, a spine strip F2 and a rear cover F3, with a front or upper folded cover portion F4 formed between the front cover F1 and the spine strip F2 by folding a portion of the front cover F1 adjacent the spine strip F2 inwardly and a rear folded portion F5 formed between the rear cover F3 and the spine strip F2 by folding a portion of the rear cover F3 adjacent the spine strip F2 inwardly.

A pair of binding prongs 41 are attached to the rear folded portion F5 so as to extent toward the front folded cover portion F4, on the upper surface of which an elongated fastener 10 is fixed. The fastener 10 is provided with a pair of right and left holes 20 corresponding to the pair of binding prongs 41, and a pair of fastening members 30 at the outer side of the holes 20. The prongs 41 are passed through corresponding holes formed in the upper folded cover portion F4 and through the holes 20 in the fastener 10 so that the outer free end portions of the prongs 41 project from and stand upright on the fastener 10 as shown by real lines in Fig. 12.

The documents, through which the prongs are passed,

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REPLACEMENT SHEET
28 NOV 1996



are placed between the front and rear folded cover portions F4 and F5 so as to be bound therebetween. Then the outer end portions of the prongs 41 are bent toward the upper and lower edges F1u, F3u and F1b, F3b of the front and rear covers F1 and F3 and engaged by the fastening member 30, whereupon the operation of binding the documents in the file folder F has been completed.

Fig. 13 shows another conventional folder F', which is of the same structure as the folder F in Fig. 12 and also comprises a front cover F1, a spine strip F2, a rear cover F3, a front folded portion F4 and a rear folded portion F5. The fastener 10' of the folder of Fig. 13, however, is different from that of Fig. 12.

In particular, the fastener 10' which is made of an elongated rectangular plate, is provided with a pair of holes 20 spaced a distance apart from each other and at the opposite lateral sides with a pair of guide grooves 40 formed by bending the opposite lateral edge portions of the plate. The fastener is further provided between the holes 20 with a pair of slidable fastening members 50 having their respective opposite lateral edges fitted slidably in the opposite guide grooves 40 of the plate. Each of the fastening members 50 has a portion upwardly bulged to form an aperture facing outwardly toward the upper or lower edges F1u, F3u or F1b, F3b of the front and rear covers F1 and F3.

With the prongs 41 projecting upward through the holes 20 of the fastener 10', as the fastening members 50 are slid outward in opposite directions, they push the prongs

REPLACEMENT SHEET
28 NOV 1996

41 down toward the upper and lower edges F1u, F3u and F1b, F3b of the front and rear covers F1 and F3 as far as the prongs are fastened by the members 50, with the bent portions of the prongs having been drawn in through the apertures of the upwardly bulged portions of the fastening members and lie flat therein.

With the above conventional arrangements, there is a problem that the quantity of documents that can be bound is limited. In order for the folders F and F' to bind a large stack of documents, the width of the spine strip F2 and the length of the prongs 41 may be increased. However, with the spine strip F2 widened and the prongs 41 lengthened to increase the thickness of the stack of documents that can be filed, when a thin stack of documents is to be filed, not only the widened spine strip F2 is likely to be folded and project outwardly, but also the outer portions of the bent prongs 41 project outside the upper and lower edges F1u, F3u and F1b, F3b of the front and rear covers F1 and F3, thereby deteriorating the appearance of the file. It is therefore difficult to design the folder F or F' so as to enable filing of a thick stack of documents. In particular, in a folder having a relatively short length between the upper and lower edges F1u, F3u and F1b, F3b of the front and rear covers F1 and F3, since there is only a short distance between the positions at which the prongs are fixed to the folded portion of the rear cover of the folder and the upper and lower edges F1u, F3u and F1b, F3b of the covers F1 and F3, it is difficult to increase the thickness of the stack of documents that the folder can

REPLACEMENT SHEET
28 NOV 1996

accommodate.

**DISCLOSURE OF THE INVENTION**

This invention has been accomplished in an effort to solve the above problems, and provides a file folder which can file a thin stank of documents without the spine of the filed documents being deformed or bulged or the prongs projecting out of the edges of the front and rear covers of the folder, and which can be easily set to a thick stack of documents to be filed.

The file folder of the invention comprises a cover made of a suitable material such as, e.g., cardboard and consisting of a pair of front and rear cover portions, a spine portion provided between the inner ends of the front and rear cover portions, the width of the spine portion being variable, a pair of binding prongs attached to the inner end of one of the front and rear cover portions or a folded portion connected to the inner end so as to stand upright from the inner surface thereof, and a fastener provided on a folded portion formed at the inner end of the other cover portion so as to be able to engage and bend the prongs in the direction toward the outer end of the cover.

In the folder of the invention, it is possible to change the width of the spine portion of the cover in accordance with the thickness of the stack of documents to be filed, so that it is possible to file stacks of documents of different thicknesses without deteriorating the appearance of the spine of the folder. Since the binding prongs are bent not in the direction toward the upper or lower edge of the cover but in the direction

REPLACEMENT SHEET
28 NOV 1996

toward the outer or lateral edge thereof, the prongs can have a sufficient length regardless of the distance between the positions at which the prongs are fixed to the cover and the upper or lower edge thereof. In a file folder provided with a plurality of binding prongs, the distance between the positions where the prongs are anchored to the cover and the lateral or outer edge thereof is far greater than the distance between those positions and the upper or lower edge of the cover. Therefore, in accordance with the invention it is possible to make the prongs longer and file a thicker stack of documents than in the conventional folder of the type, without the inconvenience that the outer ends of the bent prongs project out of the edges of the cover when a relatively thin stack of documents has been bound.

In order to make the width of the spine of the cover variable, either one of the front and rear cover portions is made of double-layer construction or shaped like an envelope with an opening at the inner end of the cover portion, while an area adjacent one end of the spine portion of the cover is slidably inserted into the envelope through the opening, with the other end of the spine portion being fixed to the inner end of the other cover portion. In this arrangement, that area of the spine portion of the cover which is not used is contained in the envelope of the front or rear cover portion so as not to be exposed outside.

In a different embodiment of the invention as defined in claim 3, the file folder has not a spine but comprises a

REPLACEMENT SHEET
28 NOV 1996

pair of front and rear cover portions, a pair of binding prongs projecting from the inner surface of the inner end of one of the cover portions or from a folded portion formed at the inner end, and a fastener provided on a folded portion formed at the inner end of the other cover portion so as to be able to engage and bend the prongs in the direction away from the inner ends of the cover portions. This arrangement has much the same advantages as the arrangements of claims 1 and 2 except that the filed stack of documents is exposed at the spine which is covered in the arrangements of claims 1 and 2.

To enable speedy fastening and unfastening of the prongs, the fastener comprises an elongated guide member attached to the folded portion of the other cover portion and provided with holes for the prongs to be passed through and a fastening member slidably mounted on the guide member longitudinally relative thereto so that the prongs inserted through the holes in the guide member may be bent and fastened at one and the same time by sliding the fastening member relative to the guide member.

To this end, as defined in claim 5, the fastening member may be provided with windows through which the prongs passed through the holes in the guide member are passed, a slit formed in communication with each of the windows for holding the bent portion of the corresponding one of the prongs, and an oblique guide edge for bending the prong passed through each of the windows and guiding the bent prong into the associated slit as the fastening member is slid relative to the guide member. In

REPLACEMENT SHEET
28 NOV 1996



particular, as defined in claim 6, the windows are shaped like a right-angled triangle in top plan view, the oblique side of which constitutes the oblique guide edge.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a partly cut-out perspective view of one embodiment of the invention;

Fig. 2 is a partly cut-out perspective view of the fastener and prongs shown in Fig. 1;

Fig. 3 is a view similar to Fig. 2 showing the fastener and prongs in a different operative condition;

Fig. 4 is a sectional view taken along line A-A in Fig. 3;

Fig. 5 is a sectional view taken along line B-B in Fig. 3;

Fig. 6 is a sectional view taken along line C-C in Fig. 3;

Fig. 7 is a bottom view of the fastening member of Fig. 3;

Fig. 8 is a perspective view of the folder in which a stack of documents is filed;

Fig. 9 is a perspective view similar to Fig. 1 showing a second embodiment of the invention;

Fig. 10 is a perspective view similar to Fig. 1 showing a third embodiment of the invention;

Fig. 11 is a perspective view similar to Fig. 1 showing a fourth embodiment of the invention;

Fig. 12 is a perspective view of a conventional folder; and

Fig. 13 is a perspective view of another conventional folder.

**BEST MODE OF EMBODYING THE INVENTION**

Figs. 1 to 8 show one embodiment of the invention, Fig. 1 being a partly cut-out perspective view of a file

REPLACEMENT SHEET
28 NOV 1996

folder Fa. The folder Fa comprises a cover made of a suitable material, e.g., a cardboard and consisting of a front cover portion F1, a rear cover portion F3, a spine portion F2 provided between the inner ends F1k and F3k of the front and rear cover portions F1 and F3, the width of the spine portion F2 being variable, a rear folded portion F5 provided at the inner end F3k of the rear cover portion F3 with a pair of binding prongs 41 being passed through the folded portion F5, and a front folded portion F4 provided at the inner end F1k of the front cover portion F1 with the prongs 41 being passed through the folded portion F4, and a fastener 1 provided on the front folded portion F4 for bending the prongs 41 passed through the fastener 1 so that the free ends 41s of the bent prongs 41 are positioned away from the inner ends F1k and F3k of the front and rear cover portions F1 and F3.

In particular, the rear cover portion F3 has adjacent the inner end F3k an area of double-layer construction with an opening F3o at the end F3k. The spine portion F2 has its one end F2k integrally connected to the inner end F1k of the front cover portion F1 and an area at its opposite end F2s slidably inserted into the opening F3o of the rear cover portion F3. Stated otherwise, the rear cover portion F3 is in the form of an envelope, in the inner end F3k of which the opening F3o is formed. The rear cover portion F3 is made of a single sheet of cardboard bent and folded into two layers lying one upon another, which are adhered along the upper and lower edges F3u and F3b to leave the opening F3o at the inner end F3k, where the rear folded portion F5

REPLACEMENT SHEET
28 NOV 1996

is formed integral with the inner or upper layer of the rear cover portion F3. The front cover portion F1, the front folded portion F4 and the spine portion F2 are made of a single sheet of cardboard, which is so bent and folded that the folded portion F4 is formed at the inner end F1k of the front cover portion F1 integrally therewith and the spine portion F2 extends from the front folded portion F4. The spine portion F2 is provided with a plurality of longitudinally extending parallel bending lines 5 to make it easier than otherwise to fold the spine portion F2 at a desired position.

A prong means 4 is attached to the folded portion F5 of the rear cover portion F3. As shown in Fig. 2, the prong means 4 comprises an elongated base plate 42 provided near the opposite ends thereof with a pair of binding prongs 41 made of a flat strip of resiliently flexible material and extending in the same plane from the same surface of the plate 42 perpendicularly thereto. Each of the prongs 41 has an outer end portion 41s tapered toward a free end, which is thickened on one of its flat lateral surfaces to form a catch hook 43. Each of the prongs 41 is provided at its opposite lateral sides adjacent its lower end with a lower hook 44, which defines a relatively constricted end portion 45 between the hook 44 and the upper surface of the base plate 42. The prong means 4 is fixed to the folder Fa by passing the prongs 41 through holes formed in the rear folded portion F5 from its underside, with the relatively constricted portions 45 of the prongs 41 occupying the holes and the lower hooks 44

REPLACEMENT SHEET
28 NOV 1996



preventing the prongs 41 from falling off therefrom.

The prong means 4 is made of a synthetic resin, and the prongs 41 and the base plate 42 are molded integrally into a single member by injection molding. As the synthetic resin that can be used, polyvinyl chloride, polyethylene, polypropylene, etc. are preferred. Any other suitable materials, if flexible, may also be used.

In the illustrated embodiment, the binding prong means 4 is composed of the binding prongs 41 and the base plate 42. It is not restricted to the illustrated shape and structure, but the whole of the prong means may be composed of a single strap or string. The base plate 42 may be omitted, and the binding prongs 41 alone may be fixed directly to the rear folded portion F5 of the folder F.

The fastener 1 comprises an elongated guide member 2 and a fastening member 3 slidably mounted on the guide member 2. The guide member 2 consists of an elongated plate made of a relatively rigid suitable material such as a hard synthetic resin. The upper portion of each of the opposite lateral sides of the guide member 2 is formed into a laterally projecting guide rail 21 running the whole length of the guide member 2. The guide member 2 is provided with a pair of holes 22, one of which is formed adjacent one end (the left end in the figure) of the member while the other is spaced a distance from the opposite end (the right end in the figure) of the member toward the center thereof. The holes 22 are provided to fix the guide member 2 to the front folded portion F4 of the folder Fa by means of a rivet passed through each of the holes.

REPLACEMENT SHEET
28 NOV 1996



In the guide member 2, adjacent the above tioned holes 22 toward the right thereof and on that al side of the longitudinal center line of the member 2 ch is adjacent the spine portion F2 of the folder, th are formed another pair of holes 23 through which th inding prongs 41 are to be inserted. The distance betw the two holes 23 is substantially equal to that between two binding prongs 41. On the upper surface of the g e member 2 at the lateral side of each of the holes remote from the spine F2 of the folder F there is formed engaging projection 24 extending longitudinally of he member 2 a distance slightly longer than the longi dinal dimension of the holes 23.

The fastening member 3 is an elongated member f a suitable material shaped like the letter of C in transverse section with its opening facing downward. In the opposite lateral inner surfaces of the elongated fastening member 3, a pair of longitudinally extending guide grooves 31 complementary to the previously described guide rails 21 of the guide member 2 are formed defining a pair of longitudinally extending banks or shelves 31a. With the rails 21 complementarily engaging the grooves 31, the fastening member 3 is longitudinally slidable along the rails 2.

In the opposite end portions of the upper wall of the fastening member 3 there are formed a pair of right-angled triangular windows 32 each having an oblique side positioned at the left and one of the other two sides open in the lateral or front wall of the member 3 toward the

REPLACEMENT SHEET
28 NOV 1996

documents to be bound. The windows 32 are formed in correspondence to the holes 23 in the guide member 2 at such positions that with the fastener 3 slid leftward a short distance relative to the guide member 2 as shown in Fig. 2, the portions adjacent the vertices of the triangles of the windows 32 coincide with the holes 23 in the guide member 2.

In the above-mentioned lateral or front wall of the fastening member 3 there is formed a slit 36 extending leftward from the previously mentioned one open side of the triangle of each of the windows 32. The slits 36 are formed in correspondence to the holes 23 in the guide member 2 at such positions that with the guide member 2 completely contained in the fastening member 3 as shown in Fig. 3, the slits 36 in the fastening member 3 are laterally aligned with the holes 23 in the guide member 2. With the binding prongs 41 inserted through the holes 23 in the guide member 2 and the windows 32 in the fastening member 3 as shown in Fig. 2, as the fastening member 3 is slid on the guide 2 toward the right in the figure, the oblique sides 32a of the triangular windows 32 bend the prongs 41 forwardly and guide them into the slits 36 as shown in Fig. 3, wherein those portions of the upper wall of the fastening member 3 at the left side adjacent the oblique sides of the windows 32 completely cover the holes 23 of the guide member 2.

As shown in Fig. 4, in the inner surface of the top wall of the fastening member 3 at the opposite longitudinal ends thereof, there are formed a pair of grooves 33 in

REPLACEMENT SHEET
28 NOV 1996

correspondence to the linear engaging projections 24 on the upper surface of the guide member 2 so that as the two members 2 and 3 are slid relative to each other, the projections 24 engage the grooves 33 thereby to prevent mutual interference between the ceiling of the member 3 and the projections 24.

As shown in Figs. 5 and 7, below each of the windows 32 and communicating therewith there is formed a cavity or space 34 for accommodating one of the binding prongs 41 which covers one of the holes 23 and one of the linear projections 24 under the condition that the fastening member 3 is displaced relative to the guide member 2 as shown in Fig. 2 and also under the condition that the guide member 2 is completely contained in the fastening member 3 as shown in Fig. 3. As shown in Figs. 6 and 7, between the right and left cavities 34 there is formed a relatively large cavity 35 having a ceiling a little higher than the upper surface of the guide member 2. The previously mentioned banks or shelves 31a defining the grooves 31 do not extend along the cavity 35.

The guide member 2 and the fastening member 3 are made of a suitable hard synthetic resin by injection molding. The resin may be selected from hard polyethylene, hard polypropylene, polyvinyl chloride, polystyrene, acrylonitrile styrene, acrylonitrile butadiene styrene, polymethyl metacrylate, polyvinylidene chloride, polyethylene terephthalate, polyamide, polyacetal, polycarbonate, polybuthylene terephthalate, etc. Any other materials having suitable hardness and rigidity may also be

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28 NOV 1996



used.

The device of the invention is used to bind documents D in the following manner. As shown in Fig. 2, the fastening member 3 is slid on the guide member 2 so that the holes 23 in the member 2 coincide with and are exposed in the windows 32. The binding prongs 41 that have been passed through perforations in the documents D are inserted upward through the holes 23 and the windows 32 from the underside of the guide member 2 so that the upper portions of the prongs stand upright above the fastening member 3. The area of the spine portion F2 to appear between the front and rear cover portions F1 and F3 is adjusted to a proper width by adjusting the area of the spine portion to be inserted into the envelope of the rear cover portion F3.

Then as the fastening member 3 is slid on the guide member 2 to the upper right in Fig. 3, the oblique sides of the windows 32 push and bend the prongs 41 laterally or substantially perpendicularly to the longitudinal direction of the fastening member 3 and the guide member 2 until the prongs 41 are introduced into the slits 36 from within the windows 32 and lie flat on the documents D that have just been bound by the fastener.

Under the condition that the fastening member 3 completely coincides with the guide member 2, the prongs 41 laterally project from the slits 36 of the windows 32 of the fastening member 3 so as to lie on the documents D, with the projections 24 on the upper surface of the guide member 2 engaging the step-like projections 43a formed on that lateral surface of each of the prongs 41 which faces

REPLACEMENT SHEET
28 NOV 1996



downward, thereby preventing the prongs 41 from being pulled out of the fastening member 3 even when a force is applied to the documents D to remove them from the binding device.

The above state is shown in Fig. 8, wherein the documents D placed on the inner surface of the rear cover portion F3 of the folder F are bound by the prongs 41 fixed to the folded portion F5 of the folder and pressed and held by the device within the folder, with the outer bent portions of the prongs lying on the documents D in the direction away from the ends F1k, F3k, of the cover portions F1 and F3.

In the file folder of the invention, since the width of the exposed area of the spine portion F2 can be changed in accordance with the thickness of the stack of documents to be bound, the folder can file stacks of documents of various thicknesses without deforming or deteriorating the proper appearance of the file. Since the prongs 41 are bent not in the direction toward the upper or lower edges F1u, F3u or F1b, F3b of the front and rear cover portions F1 and F3 but in the direction away from the inner ends F1k or F3k of the cover portions, the prongs 41 can have a sufficient length regardless of the distance between the positions at which the prongs are anchored to the folded portion of the rear cover portion and the upper or lower edges F1u, F3u or F1b, F3b of the cover portions. In other words, the prongs can be long enough to bind a thicker stack of documents than with the conventional file folders without causing an inconvenience that the outer ends of the

REPLACEMENT SHEET
28 NOV 1996



bent prongs project out of the edges of the file cover when a thin stack of documents is bound.

This is a particular advantage in case the dimension between the upper and lower edges F1u, F3u and F1b, F3b of the front and rear cover portions F1 an F3 approximates to the length of the fastener 1 as in the file folder Fb shown in Fig. 9. In particular, in the folder Fb of the shape and dimension shown in Fig. 9 the prongs 41 bent along the length of the fastener 1 would have their outer ends projecting out of the front and rear cover portions F1 and F3. In accordance with the invention, however, the prongs 41 can have a desired length within the dimension between the inner and outer ends F1k, F3k and F1s, F3s of the front and rear cover portions F1, F3, so that the thickness of the stack of documents that the file folder of the invention can accommodate can be increased with ease.

The arrangement that makes it possible to adjust the width of the spine portion F2 of the folder is not restricted to the illustrated one, but there may be various other arrangements. For example, in the folder Fc shown in Fig. 10, an inner area of the rear cover portion F3 at the side of the spine portion F2 is made of double-layer construction by means of a band F3m adhered at its opposite edges to the upper and lower edges of the rear cover portion F3 so that the area of the spine portion F2 that is not to be exposed may be slidably inserted beneath the band F3m.

The spine portion F2 may be omitted as shown in Fig. 11 if there is no need to cover the spine of the filed

stack of documents. In particular, the file folder Fd comprises a front cover F1, a rear cover F3, a pair of binding prongs 41 fixed to a folded portion F5 connected to the inner end F3k of the rear cover F3 so as to project on the inner surface of the rear cover F3, and a fastener 1 provided on a folded portion F4 connected to the inner end F1k of the front cover F1 so as to engage and bend the prongs 41 in the direction away from the inner ends of the covers. The components of the arrangement of Fig. 11 corresponding to those of the arrangement shown in Figs. 1 to 8 are designated by the same reference numerals and there will be given no description of the components.

**POSSIBILITY OF USE IN INDUSTRY**

The file folders in accordance with the invention are suitable for use to file and accommodate a stack of papers, photograph mounts, or catalogue or the like.

REPLACEMENT SHEET
28 NOV 1996

* C L M S *

## CLAIMS

1. A file folder comprising: a cover consisting of a pair of front and rear cover portions; a spine portion provided between said front and rear cover portions; the width of the area of said spine portion that is exposed between said front and rear portions being variable; a plurality of binding prongs attached to the inner end of one of said front and rear cover portions or a folded portion formed at said inner end so as to project inside said cover; and a fastener provided at a folded portion formed at the inner end of the other of said pair of front and rear cover portions for bending said prongs in the direction away from the inner ends of said cover portions.

2. The folder of claim 1, wherein said one of said front and rear cover portions is of double-layer construction with an opening formed at said inner end of said one cover portion, and said spine portion has its one end connected to said inner end of said other cover portion and its opposite end portion slidably inserted into said opening of said one cover portion.

3. A file folder comprising: a cover consisting of a pair of front and rear cover portions; a plurality of binding prongs attached to the inner end of one of said front and rear cover portions or a folded portion formed at said inner end so as to project inside said cover; and a fastener provided at a folded portion formed at the inner end of the other of said pair of front and rear cover portions for bending said prongs in the direction away from the inner ends of said cover portions.

REPLACEMENT SHEET
28 NOV 1996

* C L M S *

4. The folder as defined in any one of the preceeding claims, wherein said fastener comprises an elongated guide member attached to said folded portion of said other cover portion and provided with holes for said prongs to be passed through, and a fastening member slidably mounted on said guide member longitudinally of said guide member, so that upon sliding of said fastening member relative to said guide member, said prongs passed through said holes in said guide member are bent and fastened by said fastening member at one and the same time.

5. The folder of claim 4, wherein said fastening member is provided with windows trough which said prongs passed through said holes in said guide member are passed, a slit communicating with each of said windows for holding the bent portion of the corresponding one of said prongs, and an oblique guide edge for bending one of said prongs passed through each of said windows so as to guide said bent prong into said slit upon sliding of said fastening member relative to said guide member.

6. The folder of claim 5, wherein said window are shaped like a right-angled triangle in top plan view, the oblique side of which constitutes said oblique guide edge.

REPLACEMENT SHEET

28 NOV 1996

# FILE FOLDER

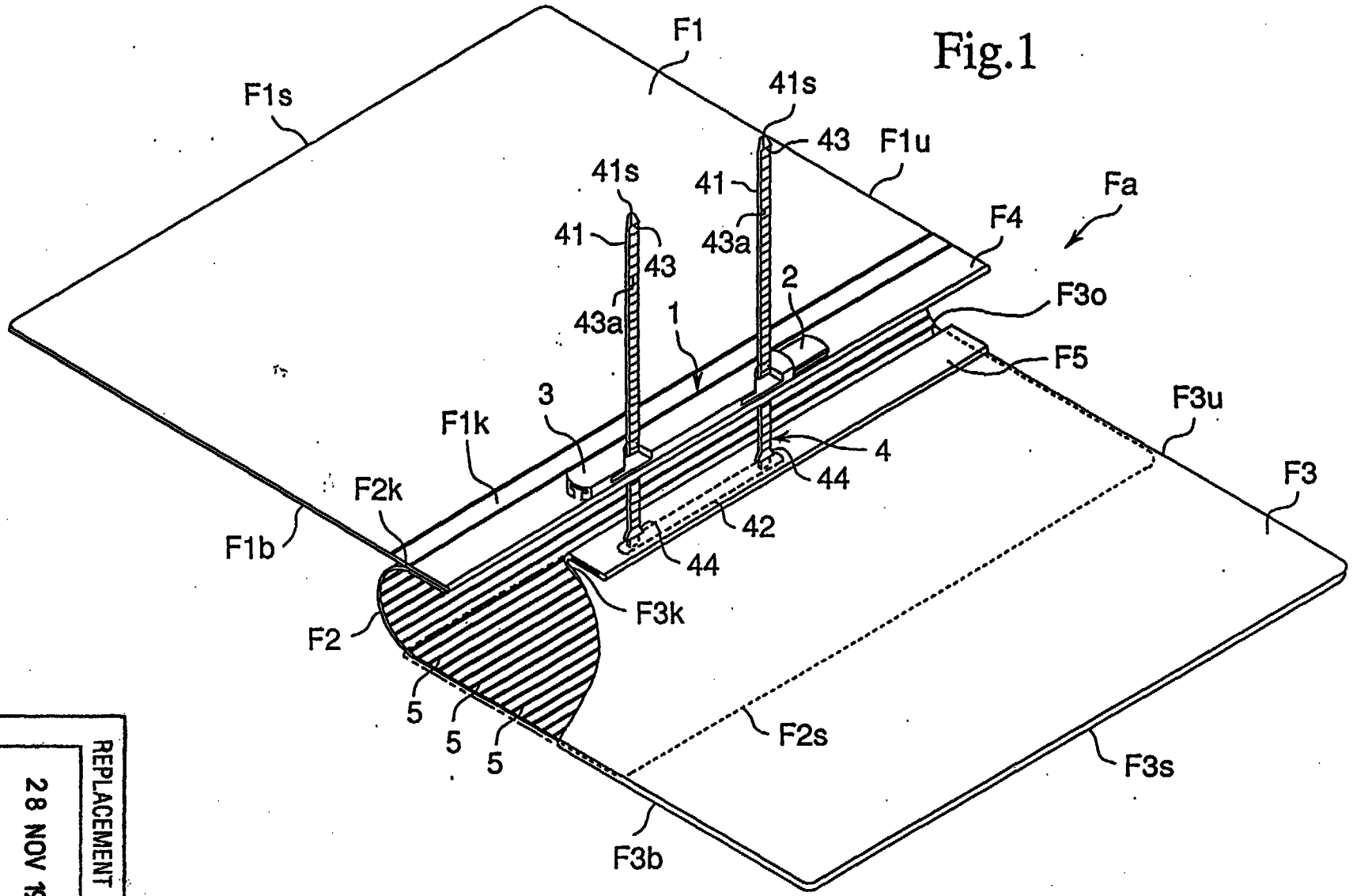
## ABSTRACT OF THE INVENTION

A file folder is provided comprising: a cover consisting of a pair of front and rear cover portions, a spine portion provided between the front and rear cover portions, the width of the area of said spine portion that is exposed between said front and rear portions being variable; a plurality of binding prongs attached to the inner end of one of said front and rear cover portions or a folded portion formed at said inner end so as to project inside said cover; and a fastener provided at a folded portion formed at the inner end of the other of said pair of front and rear cover portions for bending said prongs in the direction away from the inner ends of said cover portions.

FIGURE 1.

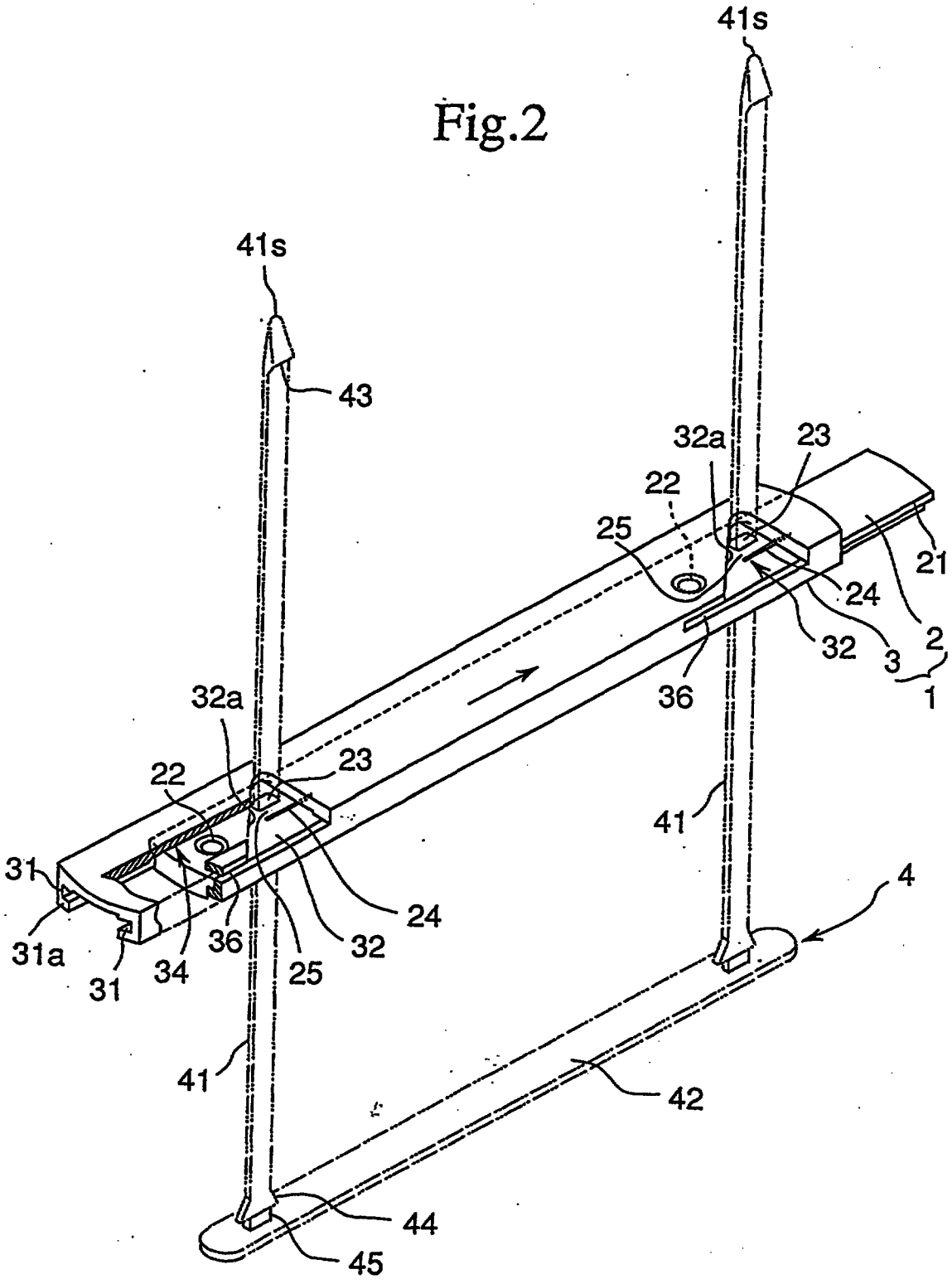
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Fig.1



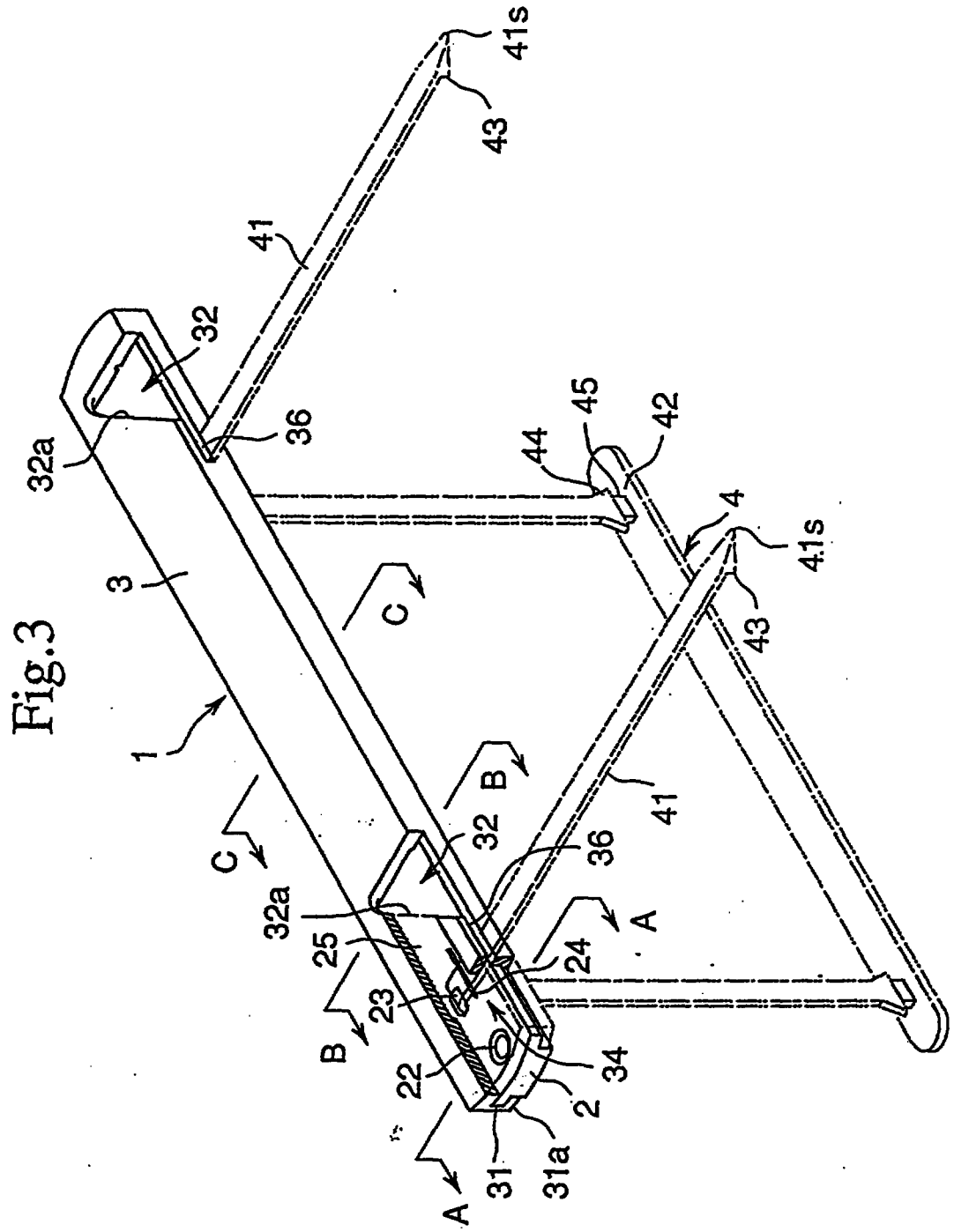

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Fig.2




REPLACEMENT SHEET
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Fig.3




REPLACEMENT SHEET
28 NOV 1996

Fig.4

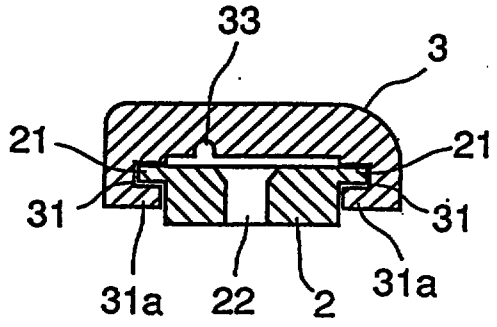



Fig.5

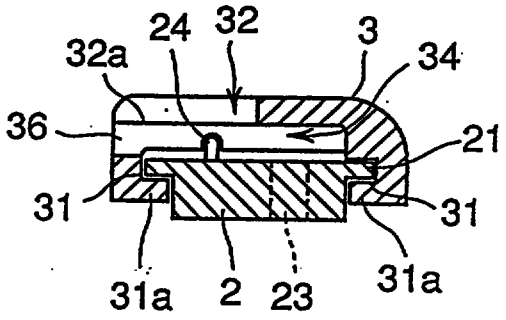
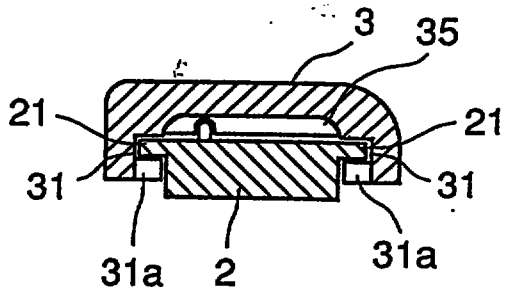
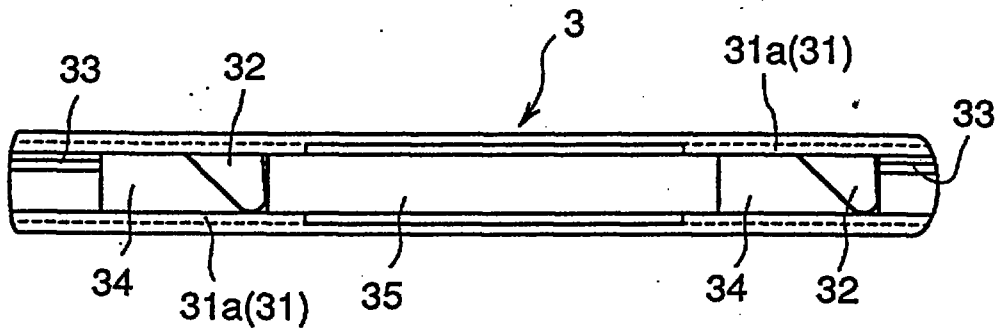



Fig.6



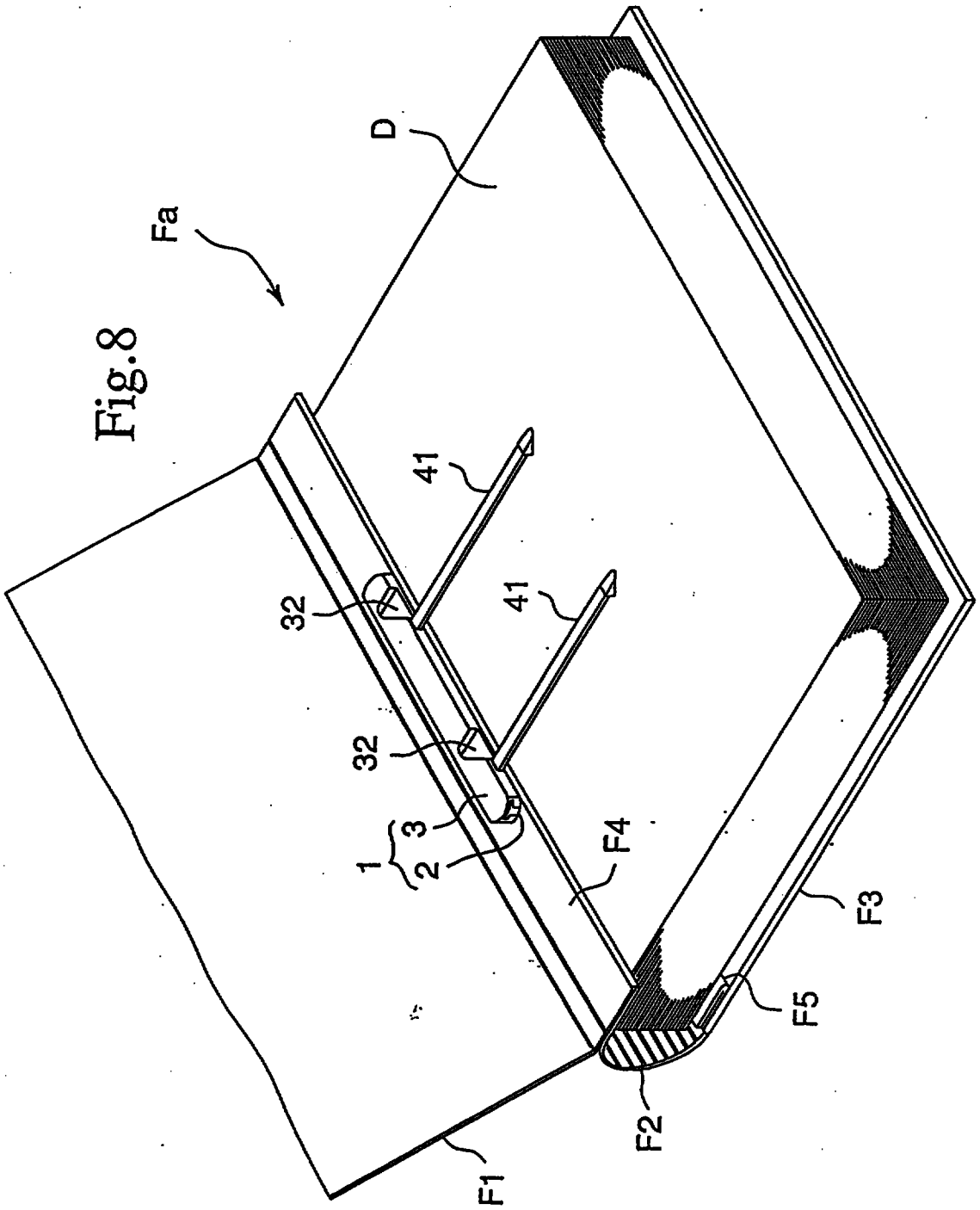

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Fig.7



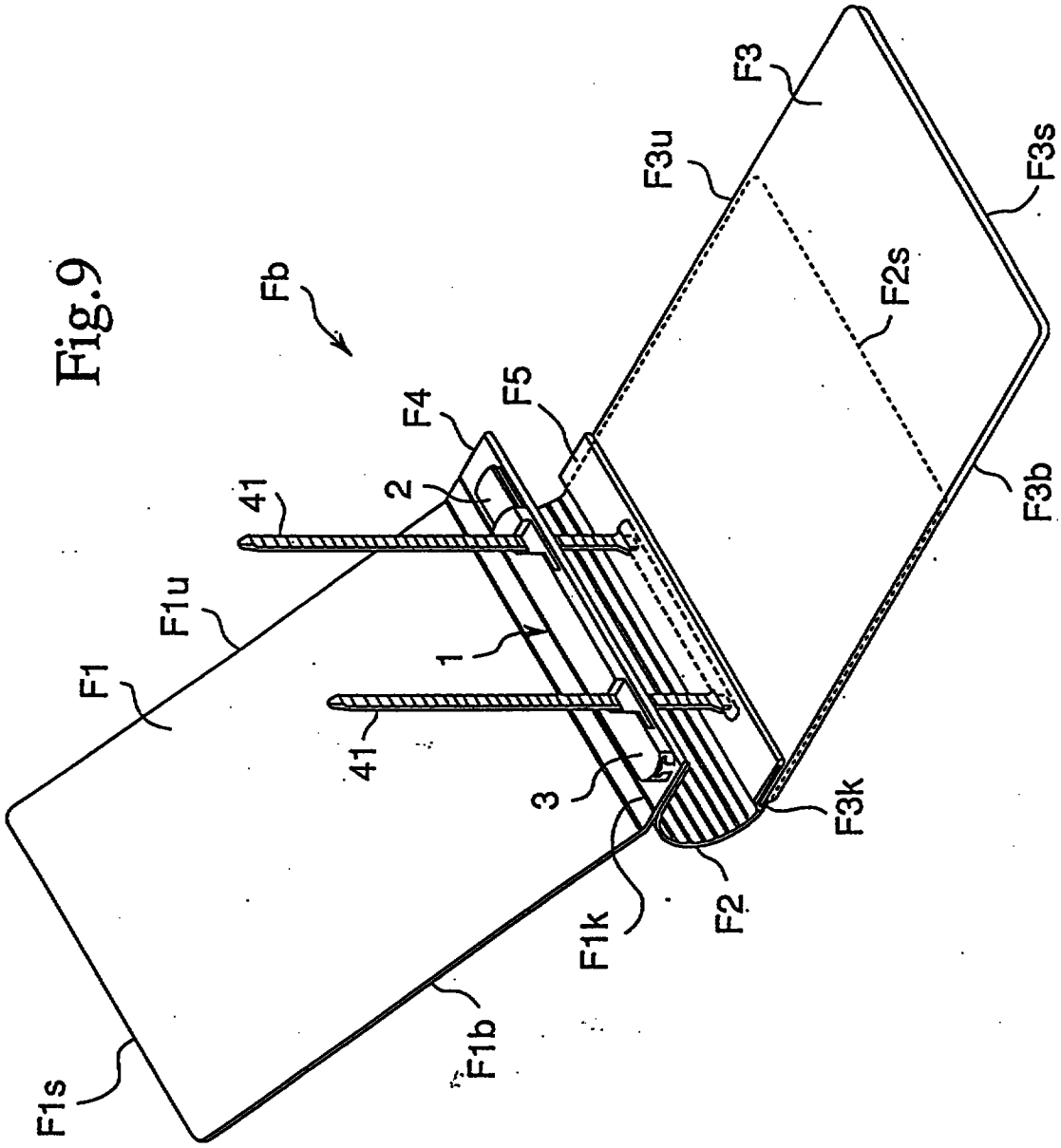

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Fig.8



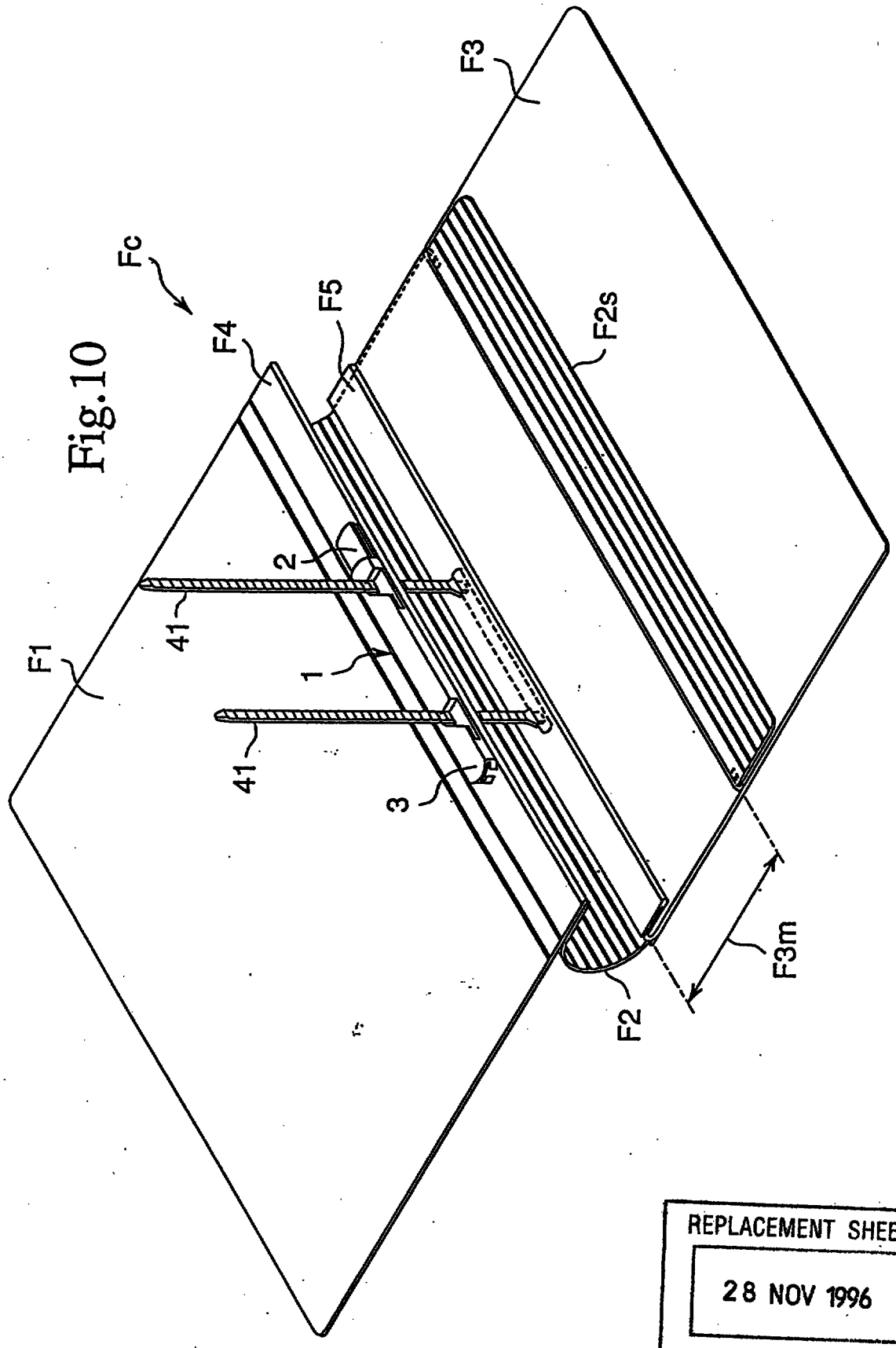

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Fig.9



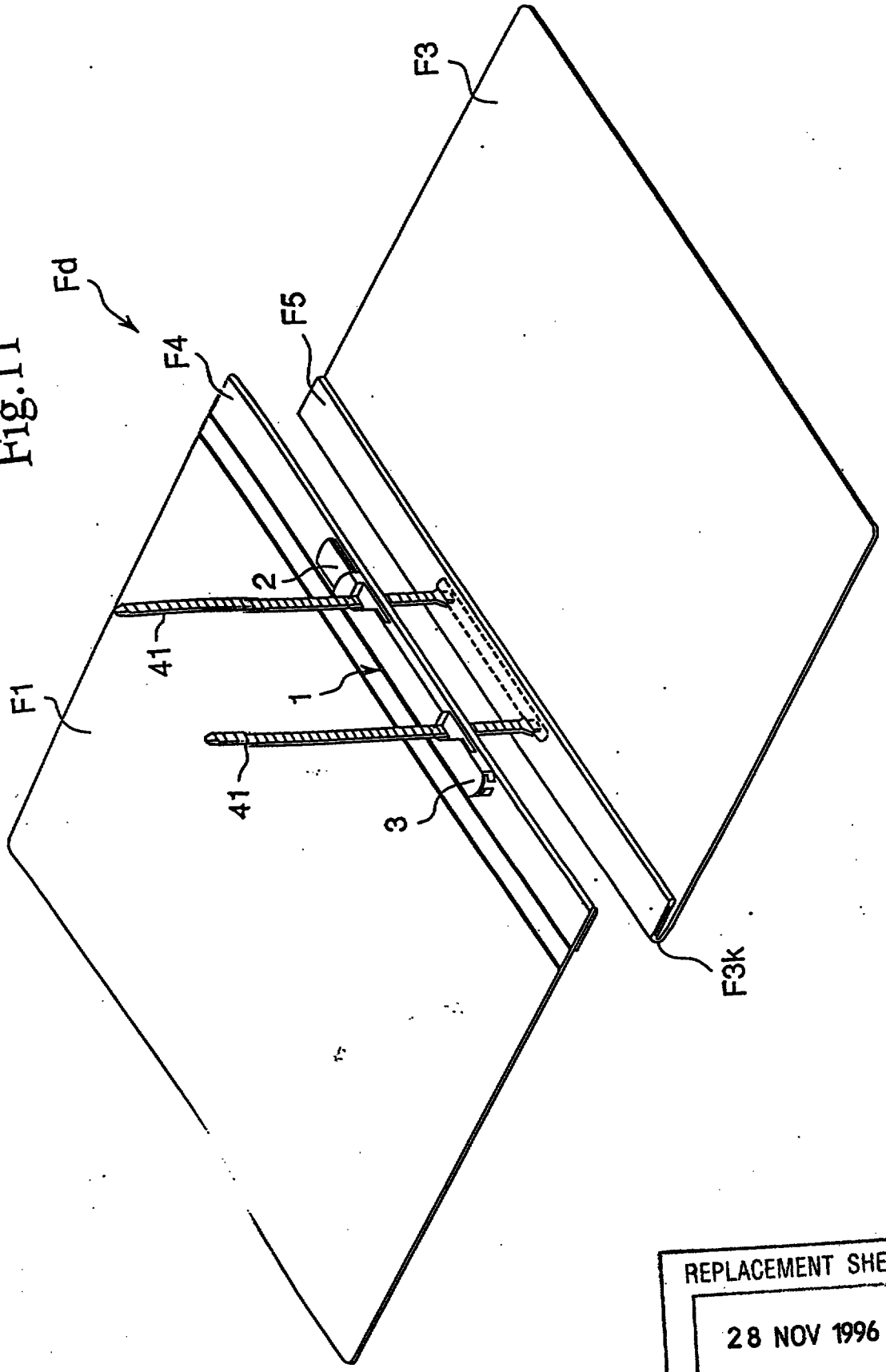

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Fig.10




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Fig.11




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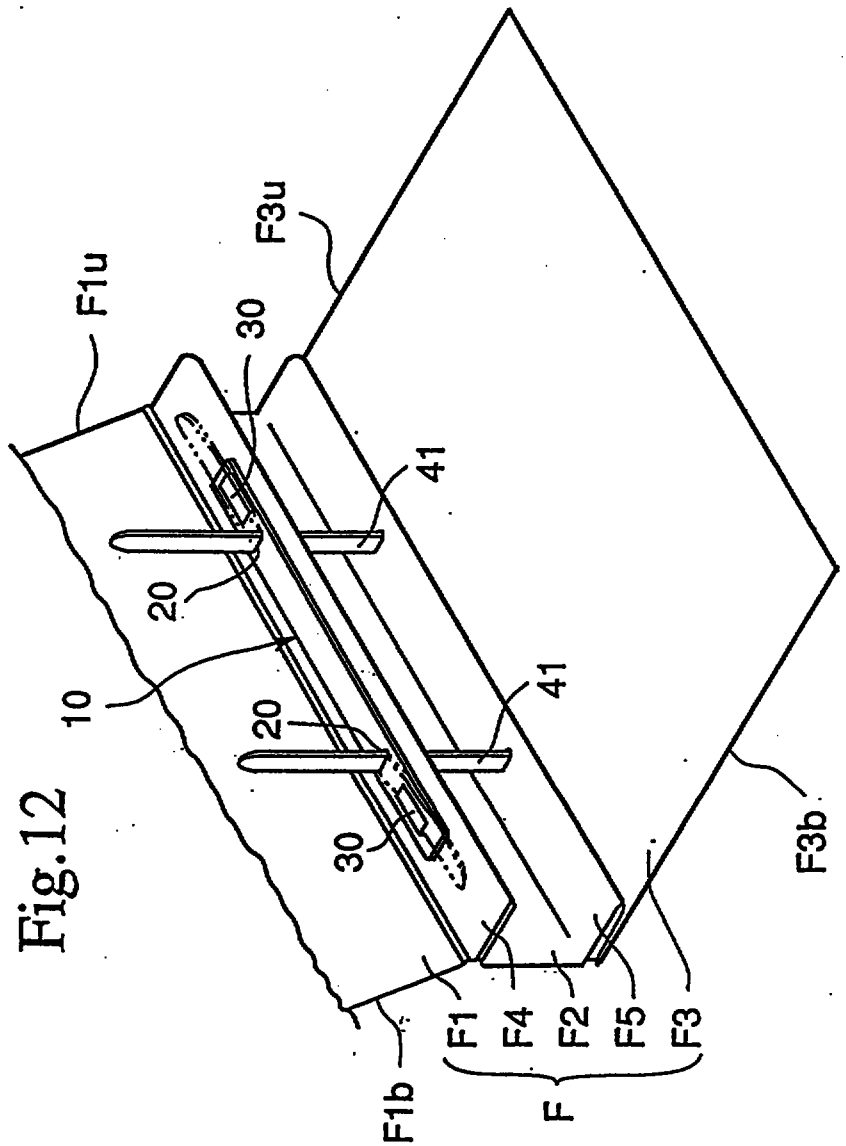
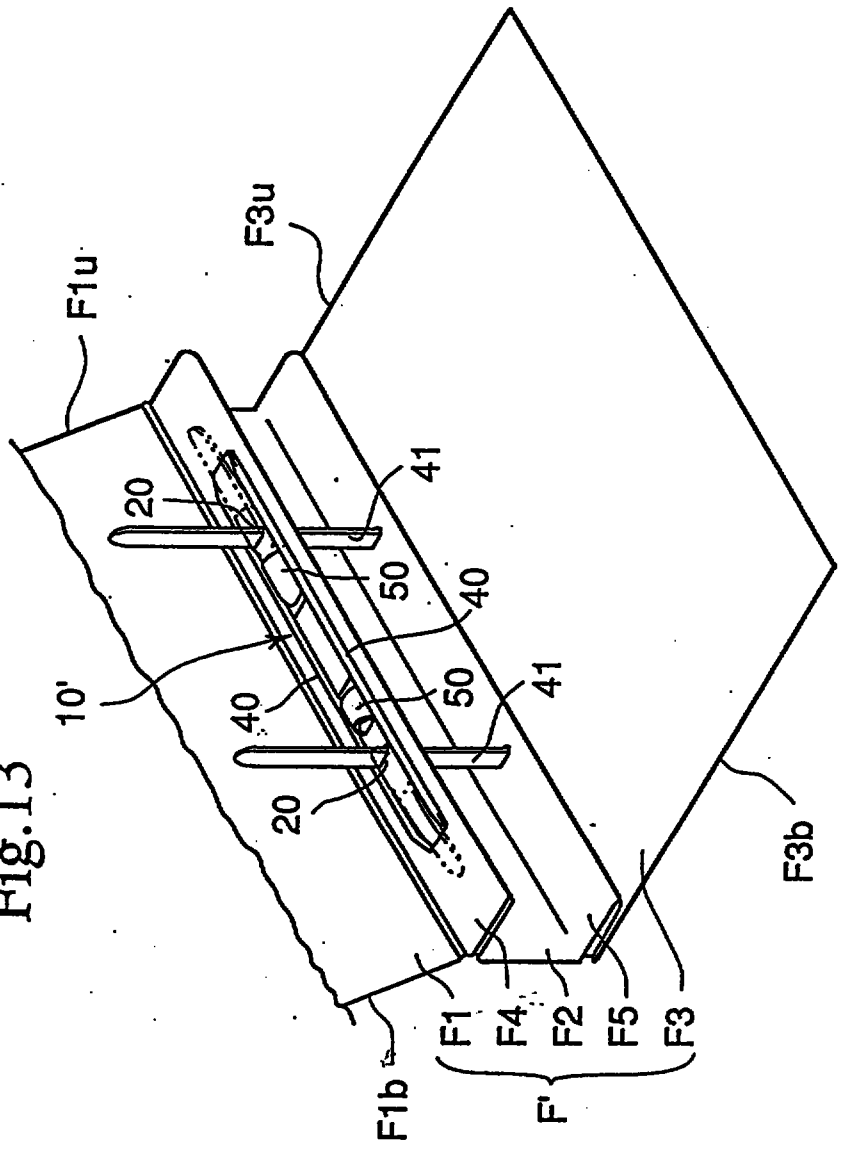



Fig.12

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Fig.13




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