DESCRIPTION

BINDER AND FILING INSTRUMENT

FIELD OF THE INVENTION

The present invention relates to a binder for binding sheets, which is comprised of a flexible binding leg provided on a file cover and a presser for sandwiching the binding leg.

DESCRIPTION OF RELATED ART

In general, a binder in which a flexible binding leg is fixed in position by a presser is widely used. For example, in a binder using a screw-like binding leg, the binding leg is held upright, so sheets can be pierced through and removed from the binding leg with ease. However, the screw-like binding leg cannot be easily fixed to the presser, and the sheets bound easily become loose.

In view of this, there has been disclosed a technique according to which, when sandwiching a screw-like binding leg by a presser, the binding leg is fixed in position through engagement of the binding leg with a serrated portion (see, for example, Japanese Utility Model Examined Publication No. Sho 36-14415). As shown in Figs. 10 and 11, in the technique as disclosed in the above-mentioned publication, a file 166 has a cover to which a binding member 168 is mounted, and the binding member 168 is provided with screw-like

tubular members 170, 172. A presser 174 is provided with binding holes 176, 178 into which the screw-like tubular members 170, 172 are to be inserted, and stoppers 180, 182 and serrated portions 184, 186 for fixing the screw-like tubular members 170, 172 in position. The screw-like tubular members 170, 172 are fixed in position by being held between the stoppers 180, 182 and the serrated portions 184, 186.

SUMMARY OF THE INVENTION

When, in sandwiching a screw-like binding leg by a presser, the binding leg is fixed in position through engagement of the binding leg and a serrated portion, the sheets bound cannot be said to be secured in position to a sufficient degree; the fixation of the binding leg becomes rather loose when the sheets are turned over for perusal and due to the load of the sheets, and there is a fear of the sheets not being filed in an appropriate manner.

When, for example, the gaps between the stoppers and the serrated portions are diminished so that the holding force of the presser may be exerted more strongly to thereby enhance the fixing force for the binding legs, an operability of the binder deteriorates, and the binding legs become subject to breakage.

In view of the above problems in the prior art, it is an object of the present invention to provide a binder in which the binding leg is fixed in position more reliably and which exhibits a

satisfactory operability at the time of binding.

To achieve the above object, according to the present invention, there is provided a binder of the type in which sheets are bound by sandwiching a binding leg between a base member and a slide member, in which the binding leg is fixed in position in a state where it is bent inside an elongated groove provided in the base member. With this arrangement, it is possible to suppress as much as possible displacement of the binding leg within the elongated groove.

In detail, according to the present invention, a binder for binding sheets is characterized by including: a base member having an elongated groove extending in a predetermined direction; a binding leg extending through a through-hole provided in the elongated groove to be passed through the base member and having flexibility; a slide member sliding on the base member in the predetermined direction and sandwiching the binding leg within the elongated groove according to a sliding position of the slide member; and retaining means for retaining the binding leg within the elongated groove in a bent state when sandwiching the binding leg within the elongated groove through sliding of the slide member.

In the above-described binder, when the slide member slides, with the binding leg extending through the through-hole to be passed through the base member, the binding leg is brought into a state in which it is sandwiched in the elongated groove. By utilizing a frictional force generated between the binding leg thus sandwiched,

and the base member and the slide member, it is possible to bind sheets through which the binding leg is passed.

In this case, the predetermined direction in which the elongated groove provided in the base member extends is a direction which allows the binding leg to be sufficiently accommodated within an interior of the elongated groove; by causing the slide member to slide in the predetermined direction, the binding leg is gradually drawn into the elongated groove until the binding leg is finally sandwiched between the base member and the slide member. Thus, this elongated groove may extend in any direction as long as its volume is large enough to accommodate the binding leg; the direction is determined taking into consideration the convenience, etc. of the binder.

The binder is characterized in that retention of the binding leg by retaining means is effected when the binding leg is sandwiched in by the base member and the slide member. When the binding leg is retained in a bent state within the elongated groove by the retaining means, it is possible to increase a frictional force generated between the binding leg, and the base member and the slide member due, for example, to concentration of stress on a portion where a bent portion of the binding leg is in contact with the elongated groove. As a result, the binding leg is fixed in position more reliably, and the fixation of the binding leg does not easily become loose by the load of the sheets when the sheets bound by the binding

leg are perused. Further, the fixation of the binding leg itself is effected by the sliding motion of the slide member, so the operability at the time of binding is satisfactory.

In this case, the retaining means may have an extruding portion caused to extend into the elongated groove through sliding of the slide member, and a dent portion opposed to the extruding portion and provided at a predetermined position in the elongated groove. That is, when the extruding portion is caused to extrude, the flexible binding leg and the extruding portion are brought into contact with each other. The binding leg thus brought into contact with the extruding portion is received by the dent portion, whereby the binding leg is retained in the elongated groove in a bent state. As a result, due to the frictional force generated by bringing the bent binding leg into contact with the extruding portion and the dent portion, it is possible to fix the binding leg in position more reliably as described above.

In this case, the predetermined position where the dent portion is provided is a position which is opposed to the extruding portion and at which the binding leg brought into contact with the extruding portion is received.

Further, in a case where the elongated groove has two side wall portions opposed to each other, the extruding portion may be provided on one side wall portion of the two side wall portions, the dent portion may be provided on another side wall portion of

the two side wall portions, and when the slide member slides on the base member, a part of the slide member may come into contact with the extruding portion to cause the extruding portion to extrude into the elongated groove. With this construction, the side walls of the elongated groove opposed to each other can be effectively functioned as the retaining means described above.

In this case, the dent portion may be comprised of at least two swollen portions provided in the elongated groove at a predetermined interval and swollen into the elongated groove. The dent portion may also be comprised of a sunken portion formed by a surface further sunken from a position of a wall surface of the elongated groove. That is, by providing swollen portions or a sunken portion in the elongated groove, a configuration of the elongated groove is caused to meander, making it possible to retain the flexible binding leg in a bent state through sliding motion of the slide member.

Further, rather than the aspect as described above about the retaining means, it is possible to apply the following retaining means. That is, in a case where the slide member slides on the base member in a state where the slide member covers the elongated groove, the retaining means may have: a protrusion provided on a wall surface of the slide member opposed to a bottom surface of the elongated groove and protruding into the elongated groove; and a bottom dent portion provided on the bottom surface of the elongated groove.

That is, when the slide member slides, the protrusion comes into contact with the flexible binding leg. The binding leg thus brought into contact with the protrusion is received by the bottom dent portion, whereby the binding leg is retained in the elongated groove in a bent state. As a result, due to the frictional force generated by bringing the bent binding leg into contact with the protrusion and the bottom dent portion, it is possible to fix the binding leg in position more reliably as described above.

In this case, the bottom dent portion may be comprised of at least two swollen portions provided on the bottom surface of the elongated groove at a predetermined interval and swollen from the bottom surface. The bottom dent portion may also be comprised of a sunken portion formed by a surface further sunken from the position of the bottom surface of the elongated groove. That is, by providing swollen portions or a sunken portion on the bottom surface of the elongated groove, a configuration of the elongated groove is caused to meander, making it possible to retain the flexible binding leg in a bent state through sliding motion of the slide member.

Further, in the binder described above, it is possible for the binding leg to be of a screw-like structure. With this structure, when the binding leg is retained in a bent state by the retaining means, a structure near the bent portion is bitten between lines of the screw-like structure. As a result, due to this biting in addition to the above-mentioned frictional force, it is possible

to fix the binding leg in position more reliably. For example, when the dent portion of the retaining means is formed by the sunken portion, the swollen portions, etc. mentioned above, an edge of the swollen portions or the sunken portion is bitten between the lines of the screw-like structure, whereby the fixing force for the binding leg is further enhanced.

Further, in the binder described above, it is possible to form the binding leg of metal, and to form the base member and the slide member of resins. By thus forming the binding leg of metal, the binding leg is held firmly upright when the binding leg is passed through sheets, so the binding of the sheets are facilitated. Further, through appropriate selection of a metal material, it is possible to form a flexible binding leg. Further, by forming the base member and the slide member of the resins, the shaping of these members is facilitated and the production cost can be kept low; further, by utilizing the elasticity of the resin, it is possible to enhance the intimacy with which the binding leg and the slide member, etc. are held in contact with each other without applying an excessive load to the binding leg, thus making it possible to further enhance the fixing force for the binding leg.

In this case, in a filing instrument for filing sheets, which is equipped with a binder of the above-described screw-like structure, the binding leg of the screw-like structure is inserted into a hole provided in a cover forming the filing instrument, and a diameter

of at least a part of a screw-like structure portion of the binding leg is made larger than a diameter of the hole. That is, the diameter of most of a region of the screw-like structure portion is made smaller than the diameter of the hole, and the diameter of a part thereof is made larger than the diameter of the hole. Since the binding leg has a screw-like structure, it is possible to insert the binding leg into the hole whose diameter is smaller than that of the binding leg, along the line of the screw-like structure thereof. Since the diameter of the hole is smaller than the diameter of the binding leg, it is possible to suppress detachment of the binding leg connected to the filing instrument. By filing sheets by using this filing instrument, the fixation of the binding leg does not easily become loose due to the load of the sheets when the sheets bound by the binding leg are perused.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic structural view of a binder according to a first embodiment of the present invention in an open state.

Fig. 2 is a schematic structural view of the binder according to the first embodiment of the present invention in a fixed state.

Fig. 3 is a diagram showing binding legs used in the binder according to the first embodiment of the present invention.

Fig. 4 is a diagram showing in detail a structure of a base member used in the binder according to the first embodiment of the

present invention.

Fig. 5 is a diagram showing in detail a structure of a slide member used in the binder according to the first embodiment of the present invention.

Fig. 6 is a diagram showing a relationship between the base member, the slide member, and the binding leg when the binder according to the first embodiment of the present invention is in the fixed state.

Fig. 7 is a diagram showing another structure of the base member for sandwiching the binding leg in an elongated groove in a bent state in the binder according to the first embodiment of the present invention.

Fig. 8 is a schematic structural view of a filing instrument equipped with a binder according to the first embodiment of the present invention.

Fig. 9 is a schematic structural view of a binder according to a second embodiment of the present invention in a fixed state.

Fig. 10 is a first schematic structural view of a conventional binder.

Fig. 11 is a second schematic structural view of the conventional binder.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In this case, embodiments of a binder and a filing instrument

of the present invention will be described with reference to the drawings.

<Embodiment 1>

Fig. 1 is a perspective view of a binder 1 according to the present invention in an open state, and Fig. 2 is a diagram showing the binder 1 in a fixed state. In this case, the term "open state" refers to a state in which no binding of sheets is effected by the binder 1, and the term "fixed state" refers to a state in which the binding of sheets by the binder 1 is possible.

The binder 1 is comprised of a thin and narrow base member 2, and a slide member 3 slidably mounted to the base member 2. The base member 2 and the slide member 3 are formed of a resin, such as polypropylene.

In this case, the base member 2 is provided with an elongated groove 4 extending in a longitudinal direction thereof. The elongated groove 4 has side portions 4a, 4b forming side surfaces on both sides thereof, and a bottom portion 4c forming the bottom surface thereof. Further, two through-holes 5 extending from the back surface to the front surface of the base member 2 are provided at positions each spaced apart from either end by a distance corresponding to approximately one third of the length of the elongated groove 4. The through-holes 5 are also open on the side portion 4a side of the elongated groove 4 (see Fig. 4 for how the through-holes 5 are open). The through-holes 5 are not open on the

side portion 4b side of the elongated groove 4.

Next, as shown in Fig. 3, two binding legs 7 are provided on the cover of a filing instrument. The binding legs 7 are formed of a metal such as iron in the form of coil-like springs. The distance between the two binding legs 7 is the same as the distance between the two through-holes 5 provided in the elongated groove 4. The binding legs 7 are held upright with respect to the cover; since they are metal springs, they are flexible, that is, if an external force is applied thereto, they are restored to a former state as soon as the external force is removed.

The binding legs 7 are caused to pass through sheets each having two holes; further, the binding legs 7 are respectively caused to pass through the through-holes 5 of the binder 1. At this time, the base member 2 and the slide member 3 are in the open state as shown in Fig. 1. When, in this state, the slide member 3 slides in the direction which the elongated groove 4 is extending, the binding legs 7 are gradually drawn into the elongated groove 4 until the binding legs 7 are sandwiched between the base member 2 and the slide member 3 (This state is the fixed state as shown in Fig. 2). As a result, the sheets through which the binding legs 7 are caused to pass are filed. In the following, structures of the base member 2 and the slide member 3 will be described in detail, and the binding of sheets by the above-described binder 1 will be described in more detail.

Fig. 4 shows the structure of the base member 2 in detail. Fig. 4(a) is a front view of the base member 2, Fig. 4(b) is a rear view of the same, Fig. 4(c) is a sectional view of the same (taken along the line A-A of Fig. 4(a)), and Fig. 4(d) is a side view of the same. Figs. 1 and 2 are perspective views in which mainly the front side of the base member 2 shown in Fig. 4(a) is visible.

As shown in Fig. 4(a), there is provided on an upper side of the base member 2 the elongated groove 4 in which the binding legs 7 are accommodated as the slide member 3 slides. In the vicinity of each of the through-holes 5 open on the side portion 4a side, there are provided an L-shaped arm 8 and swollen portions 9a, 9b. One end 8a (hereinafter referred to as "connected end") of each L-shaped arm 8 is connected to the side wall 4a side, and the other end thereof constitutes a free end 8b facing the elongated groove 4. Further, a corner portion 8c of the L-shaped arm 8 somewhat protrudes outwardly from the outer wall surface of the side wall 4a. Thus, when an external force is applied from outside to the corner portion 8c of the L-shaped arm 8 toward the interior of the elongated groove 4, the L-shaped arm 8 rotates about the connected end 8a of the L-shaped arm toward the elongated groove 4, and the free end 8b thereof protrudes into the elongated groove 4.

Further, at a position of the side portion 4b side opposed to the free end 8b of each L-shaped arm 8, there are provided two swollen portions 9a, 9b swollen into the elongated groove 4. More

specifically, at the position of the side portion 4a side opposed to a portion substantially midway between the swollen portion 9a and the swollen portion 9b, there is situated the free end 8b of each L-shaped arm 8. Thus, due to the swollen portions 9a, 9b, the configuration of the elongated groove 4 extending in the longitudinal direction of the base member 2 is caused to somewhat meander.

Next, as shown in Fig. 4(b), on the back side of the base member 2, there are provided four slide grooves 10 in total on the right-hand side and the left-hand side of the side portion 4a and the side portion 4b, and, when the base member 2 is engaged with the slide member 3 as shown in Figs. 1, 2, slide portions 15 (see Fig. 5) on the slide member 3 slide in the slide grooves 10. When the slide member 3 is situated at the left-hand ends of the slide grooves 10 as seen in Fig. 4, the binder is in the open state as shown in Fig. 1, and when the slide member 3 is situated at the right-hand ends of the slide grooves 10 as seen in Fig. 4, the binder is in the fixed state as shown in Fig. 2.

Further, in each of the slide grooves 10 on the side portion 4b side, there is provided a protrusion 11 near the left-hand end thereof which somewhat protrudes into the slide groove 10. With this construction, when the slide member 3 is engaged with the base member 2 as shown in Figs. 1, 2, the movement of the slide portions 15 of the slide member 3 is hindered if slightly by the protrusions 11. Thus, when the base member 2 and the slide member 3 are in the

open state shown in Fig. 1, this open state is maintained by the protrusions 11. Naturally, when a relatively large external force is applied to the slide member 3, the slide member 3 easily climbs over the protrusions 11, so the sliding movement of the slide member 3 is not made markedly difficult by the protrusions 11.

Fig. 4(c) is a sectional view taken in the vicinity of the L-shaped arm 8 mentioned above. Fig. 4(d) shows the side surface on the side portion 4b side of the base member 2.

Next, Fig. 5 shows the structure of the slide member 3 in detail. Fig. 5(a) is a front view of the slide member 3, Fig. 5(b) is a side view of the same, Fig. 5(c) is a rear view of the same, Fig. 5(d) is a sectional view of the same (taken along the line C-C of Fig. 5(b)), and Fig. 5(e) is a sectional view of the same (taken along the line B-B of Fig. 5(a)). Figs. 1 and 2 are perspective views in which mainly the front side of the slide member 3 shown in Fig. 5(a) is visible.

As shown in Fig. 5(a), the slide member 3 has two pressing portions 12 connected to each other by a connecting portion 13. The connecting portion 13 connects to each other one-side end portions of the two pressing portions 12. Fig. 5(e) is a sectional view of the pressing portion 12 taken along the line B-B. As shown in the drawing, each pressing portion 12 has two side surfaces 12a, a back surface 12b connecting them to each other, and slide portions 15 described below.

The pressing portions 12 are portions which, in the state in which the base member 2 and the slide member 3 are combined with each other as shown in Fig. 1 or 2, allow imparting of an external force by a finger or the like to cause the slide member 3 to slide on the base member 2. In view of this, in order that the external force may be efficiently transmitted by a finger or the like, a plurality of protrusions 14 are formed on the pressing portions 12 so as to provide continuous surface asperities as shown in Fig. 5(b).

Further, as shown in Fig. 5(c), at four corners of each pressing portion 12, there are provided slide portions 15 adapted to slide relative to the corresponding slide grooves 10 of the base member 2. That is, the four slide portions 15 of each of the two pressing portions 12 slide relative to the slide grooves 10 of the base member 2. When the slide member 3 slides on the base member 2, the slide portions 15 come into contact with the end portions of the slide grooves 10 to restrict the sliding of the sliding member 3, whereby it is possible to prevent the slide member 3 from being easily detached from the base member 2.

As shown in Figs. 5(d) and 5(e), two longitudinally extending thin and narrow swollen portions 16 are provided on the front side of the back surface 12b coming into contact with the base member 2 when the slide member 3 is combined with the base member 2. Between the swollen portions 16, there is formed a recess 17 extending in

the longitudinal direction of the slide member 3. A distance between the two swollen portions 16 is substantially the same as a width of the above-mentioned elongated groove 4. That is, the binding legs 7 accommodated in the elongated groove 4 as the slide member 3 slides are retained between the elongated groove 4 and the recess 17 of the slide member 3.

In this case, by combining the base member 2 shown in Fig. 4 with the slide member 3 shown in Fig. 5 such that the slide grooves 10 and the slide portions 15 slide relative to each other, the binder 1 as shown in Fig. 1 or 2 is formed. In this case, it will be illustrated with reference to Fig. 6 how the binding legs 7 are held when the slide member 3 is caused to slide to bring the binder from the open state shown in Fig. 1 into the fixed state.

Fig. 6 shows how the binding legs 7 are held between the base member 2 and the slide member 3 within the elongated groove 4 by causing the slide member 3 to slide to be brought into the fixed state. As described above, in this fixed state, the slide member 3 pushes in the corner portions 8c of the L-shaped arms toward the elongated groove 4 side. As a result, the free ends 8b of the L-shaped arms 8 are brought into contact with the binding legs 7 accommodated in the elongated groove 4. Then, the binding legs 7 pressed by the free ends 8b are bent so as to be convex on the side portion 4b side; the swollen portions 9a, 9b are provided on the right-hand and left-hand sides of each free end 8b, the binding legs 7 are

bent while held in contact with the swollen portions 9a, 9b and the free ends 8b.

Thus, when the slide member 3 is brought into the fixed state as shown in Fig. 6, the binding legs 7 are brought into contact with the end portions of the free ends 8b and the end portions of the swollen portions 9a, 9b so as to be pierced thereby, so a relatively large stress is exerted in the contact portions. As a result, the frictional force when the binding legs 7 are held between the base member 2 and the slide member 3 is relatively large, and the fixation of the binding legs 7 becomes more reliable.

As stated above, the binding legs 7 are composed of coil-like springs, so the end portions of the free ends 8b and the end portions of the swollen portions 9a, 9b may get caught between the lines of the springs. In particular, in the regions encircled by dotted lines in Fig. 6, such the catching by the springs is likely to occur. When such the catching by the springs occurs, there is generated, apart from the above-mentioned frictional force, a force firmly fixing the binding legs 7 in position. When transition of the slide member 3 from the fixed state to the open state occurs, the force applied to the binding legs 7 is weakened, so such the catching by the springs is eliminated.

In this case, Fig. 7 shows a plurality of concrete examples of a structure of the base member 2 for sandwiching the binding legs 7 in the elongated groove 4 in a bent state. A structure shown

in Fig. 7(a) is the same as that of the base member 2 described above. Using a base member 20 as shown in Fig. 7(b) instead of the base member 2 also proves effective. The base member 20 is characterized in that it has an L-shaped arm 28 whose direction is opposite to that of the L-shaped arm 8 shown in Fig. 7(a). When the slide member 3 is placed in the fixed state, it comes into contact with a free end 28b of the L-shaped arm 28, with the result that the L-shaped arm 28 rotates about a connected end 28a, with a corner portion 28c thereof protruding into the elongated groove 4. As a result, the binding legs 7 accommodated in the elongated groove 4 are retained in the elongated groove 4 in a state in which they are bent by the swollen portions 9a, 9b and the corner portion 28c.

Using a base member 30 as shown in Fig. 7(c) instead of the base member 2 shown in Fig. 7(a) also proves effective. The base member 30 is characterized in that it is provided with a T-shaped arm 38. In addition to a connected end 38a connected to the side portion 4a, the T-shaped arm 38 has two free ends 38b, 38c. One free end 38b is situated on the side opposite to the elongated groove 4, and its end surface somewhat protrudes from the outer wall surface of the side portion 4a. The other free end 38c is situated on the elongated groove 4 side. Thus, when the slide member 3 is placed in the fixed state, it comes into contact with the free end 38b of the T-shaped arm 38, with the result that the T-shaped arm 38 rotates about the connected end 38a, with the free end 38c protruding

into the elongated groove 4. As a result, the binding legs 7 accommodated in the elongated groove 4 are retained in the elongated groove 4 in a state in which they are bent by the swollen portions 9a, 9b and the free end 38c.

Further, use of a base member 40 shown in Fig. 7(d) instead of the base member 2 shown in Fig. 7(a) also proves effective. The base member 40 is characterized in that it is provided with a sunken portion 41 at a position of the side portion 4b opposed to the L-shaped arm 8. That is, in the base member 40, instead of the swollen portions 9a, 9b shown in Fig. 7(a), there is provided the sunken portion 41 somewhat sunken from the wall surface of the side wall. By using the base member 40, transition of the slide member 3 to the fixed state results in its coming into contact with the corner portion 8c of the L-shaped arm 8, with the result that the L-shaped arm 8 rotates about the connected end 8a, with the free end 8b thereof protruding into the elongated groove 4. As a result, the binding legs 7 accommodated in the elongated groove 4 are retained in the elongated groove 4 in a state in which they are bent by the sunken portion 41 and the free end 8b.

Fig. 8 shows a filing instrument 50 utilizing the binder 1 as described above. The filing instrument 50 has a front cover 51, a spine cover 52, a binding margin 53, and a back cover 54, which are formed by folding a single polypropylene sheet, with a hinge being formed at the boundary. In one surface of the binding margin

53, there are formed two holes for the binding legs 7; after inserting the binding legs 7 into these holes, the binding margin 53 is fixed in position by ultrasonic fusion-bonding.

In this case, as stated above, the binding legs 7 are composed of coil-like springs. A diameter of those coils is larger than a diameter of the above-mentioned holes. Thus, the insertion of the binding legs 7 into the holes is effected along the coil lines. Thus, it is possible to prevent detachment of the binding legs 7 from the holes provided in the binding margin 53. It is also possible for most of the coil region to have a diameter smaller than that of the holes, with the diameter of a part of the coil being larger than that of the holes. This also helps to prevent detachment of the binding legs 7 from the holes.

<Embodiment 2>

Fig. 9 shows a binder according to a second embodiment of the present invention. In the binder of this embodiment, a function of fixing the binding legs in position in a bent state is realized in a mode different from that of the first embodiment. In the following, this will be described in detail; the components that are the same as those of the first embodiment are indicated by the same reference symbols, and a detailed description thereof will be omitted.

Fig. 9(a) is a top view of the binder of this embodiment in the fixed state. Fig. 9(b) is a sectional view of the binder taken

in the longitudinal direction of the base member 2. In this embodiment, a protrusion 61 is provided at a position on the surface of the slide member 3 opposed to the bottom portion 4c of the elongated groove 4 of the base member 2. Further, on the bottom portion 4c of the elongated groove 4 of the base member 2, there are provided two swollen portions 62a, 62b extending in the width direction of the bottom portion 4c. The swollen portions 62a, 62b are positioned such that when the slide member 3 is placed in the fixed state, the protrusion 61 is situated substantially between the swollen portions 62a, 62b.

In this binder, constructed as described above, when the slide member 3 undergoes transition from the open state to the fixed state, each of the binding legs 7 is retained in the elongated groove 4 in a state in which the binding leg 7 is pressed and bent toward the bottom portion 4c of the elongated groove 4 by the protrusion 61 as shown in Fig. 9(b). Thus, as in the first embodiment, a relatively large stress is exerted at the positions where the protrusion 61, the swollen portions 62a, 62b, and each of the binding legs 7 are held in contact with each other. As a result, the frictional force when the binding legs 7 are sandwiched between the base member 2 and the slide member 3 is relatively large, thereby making the fixation of the binding legs 7 more reliable. Further, as stated above, the binding legs 7 are composed of coil-like springs, so when the protrusions 61 and the swollen portions 62a, 62b get caught

by these springs, there is generated, apart from the above-mentioned frictional force, a force sandwiching the binding legs 7 more firmly.

INDUSTRIAL APPLICABILITY

As described above, it is possible to provide a binder in which fixation of binding legs is effected more reliably and which exhibits a satisfactory operability at the time of binding.

CLAIMS

1. A binder comprising:

a base member having an elongated groove extending in a predetermined direction;

a binding leg extending through a through-hole provided in the elongated groove to be passed through the base member and having flexibility;

a slide member sliding on the base member in the predetermined direction and sandwiching the binding leg within the elongated groove according to a sliding position of the slide member; and

retaining means for retaining the binding leg within the elongated groove in a bent state when sandwiching the binding leg within the elongated groove through sliding of the slide member.

2. A binder according to Claim 1,

wherein the retaining means has:

an extruding portion caused to extrude into the elongated groove through sliding of the slide member; and

a dent portion provided at a predetermined position in the elongated groove opposed to the extruding portion.

3. A binder according to Claim 2,

wherein the elongated groove has two side wall portions opposed to each other,

the extruding portion is provided on one side wall portion of the two side wall portions,

the dent portion is provided on another side wall portion of the two side wall portions, and

when the slide member slides on the base member, a part of the slide member comes into contact with the extruding portion to cause the extruding portion to extrude into the elongated groove.

4. A binder according to Claim 2 or 3,

wherein the dent portion is comprised of at least two swollen portions provided in the elongated groove at a predetermined interval and swollen into the elongated groove.

5. A binder according to Claim 2 or 3,

wherein the dent portion is comprised of a sunken portion formed by a surface further sunken from a position of a wall surface of the elongated groove.

6. A binder according to Claim 1,

wherein the slide member slides on the base member in a state where the slide member covers the elongated groove, and

wherein the retaining means has:

a protrusion provided on a wall surface of the slide member opposed to a bottom surface of the elongated groove and protruding

into the elongated groove; and

a bottom dent portion provided on the bottom surface of the elongated groove.

7. A binder according to Claim 6,

wherein the bottom dent portion is comprised of at least two swollen portions provided in the bottom surface of the elongated groove at a predetermined interval and swollen from the bottom surface.

8. A binder according to Claim 6,

wherein the bottom dent portion is comprised of a sunken portion formed by a surface further sunken from a position of the bottom surface of the elongated groove.

9. A binder according to any one of Claims 1 through 8,

wherein the binding leg is of a screw-like structure.

10. A binder according to any one of Claims 1 through 9,

wherein the binding leg is formed of metal, and the base member and the slide member are formed of resins.

11. A filing instrument for filing sheets, comprising the binder according to Claim 9,

wherein the binding leg of a screw-like structure is inserted into a hole provided in a cover forming the filing instrument, and a diameter of at least a part of the screw-like structure portion of the binding leg is larger than a diameter of the hole.