

FILING IMPLEMENT AND LOCKING DEVICE THEREOF

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a technology for a filing implement including a binder of documents and the like, and for a locking device provided on an open/close portion thereof.

2. Description of the Related Art

A file with a double-open cover, a box file with one open face, a pocketbook, a notebook, an album, and the like have been widely known as filing implements each of which includes a binder of documents and the like.

Documents containing contents such as confidential information and personal information, which are desired to be kept confidential from persons other than a specific user, are often filed in this type of filing implement. As countermeasures to keep such confidentiality, filing implements have been conventionally developed as described in Japanese Utility Model Laid-open publication No. Sho 49-58409, JP 05-309987 A, and JP 3584322 B, in each of which a locking device (a key-locking device) for inhibiting an open/close portion of the filing implement from easily opening is provided on the open/close portion.

In Japanese Utility Model Laid-open publication No. Sho 49-58409, there is described a technology, in which, in an open/close

portion of an album, an engagement piece of a coupling band (tongue piece) provided on a back cover is inserted into a body of a key-locking device provided on a front cover side in a state where the coupling band is folded to the front cover side, and a dial is turned to lock the album.

In JP 05-309987 A, there is described a technology for a container body fitted with an electronic locking apparatus, in which a locking pin provided on an upper cover is inserted into a hole with a lock lever provided on a body of a box file of which one face (upper cover) is opened/closed, to lock the container body.

In JP 3584322 B, there is described a technology for a binder, in which a locking section of a belt provided on an open portion side of a box container is inserted into a lock hole of a dial lock, to lock the box container.

However, the conventional filing implements described above have the following problems to be solved.

(1) Since such a filing implement has a structure in which a body portion including an operation unit of the key-locking device is exposed to the outside of the file body, a third party can easily touch the body portion including an operation unit of the key-locking device. Hence, the filing implement is formed into a shape in which the body portion including the operation unit is prone to be broken by an external force.

(2) Since the key-locking device itself is formed to be thick, the

locking device becomes an obstacle to the filing of the documents and the like depending on an arranged position thereof.

(3) Since the key-locking device is made of metal or formed to have a structure including electronic parts, the structure is complicated, and the number of parts is large, thus making it difficult to achieve cost reduction.

SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide a technology for a filing implement and a locking device thereof, which makes it difficult to access to the whole of the locking device from the outside, can enhance a protection function provided by the locking device by using a dedicated lock release tool, and further, can adopt a thin and simple structure for the whole of the locking device.

In order to achieve the above-described object, the present invention adopts the following means.

A filing implement of the present invention comprise: a file body including an open portion for documents and the like to be taken out therefrom and housed therein; an open/close plate coupled to the file body by a hinge and capable of opening/closing at least one part of the open portion; a locking device provided between the open/close plate and the file body; and a key plate which releases a locking state of the locking device, wherein the locking device

includes: an engagement piece provided at a free end of the open/close plate; and a body member including an engagement groove to be locked by insertion of the engagement piece, the body member being provided on an inner face of the file body.

According to the present invention, such a structure is adopted that the engagement piece is provided at the free end of the open/close plate, and the body member including the engagement groove to be locked by the insertion of the engagement piece is provided on the inner face of the file body. Accordingly, the body member of the locking device can be disposed in the inside of the file body at a position difficult to be seen from the outside and at a region difficult to be accessed from the outside. Further, in the locked state, a mode is established, in which the engagement piece inserted into the engagement groove is also located in the inside of the file body, and is covered with the open/close plate. Thus, the whole of the locking device is constructed difficult to be accessed from the outside, and the dedicated key plate is used as a locking release tool, thus making it possible to remarkably enhance the protection function provided by the locking device. Further, such a structure is adopted that the engagement piece is inserted into the engagement groove to bring the locked state thereof, and the locked state is released by the key plate, thus making it possible to constitute the whole of the locking device to be thin and simple.

Here, it is preferable that the key plate includes a plate

body serving as a grasp portion and an insertion piece to be inserted into the engagement groove, a through hole for inserting the insertion piece of the key plate into the engagement groove is provided between the open/close plate and the engagement piece, and the locked state be released when the insertion piece is inserted into the engagement groove in the locked state of the locking device.

In the case of adopting such structure, the insertion piece is inserted into the engagement groove from the outside of the open/close plate by using the through hole, thus making it possible to release the locked state of the locking device. Thus, even if the body member of the locking device is disposed at the position difficult to be seen from the outside and the region difficult to be accessed from the outside, an operation to release the locking state can be performed easily if the dedicated key plate is used.

In the present invention, it is preferable that a recessed portion to be engaged with an open edge of the through hole in a state where the insertion piece of the key plate is inserted into the engagement groove is provided in the insertion piece. In the case of adopting such structure, if an operation to pull out the key plate while the engagement plate is inserted into the engagement groove and the recessed portion is engaged with the open edge of the through hole is performed, both of the operations to release the locking device and to rotate the open/close plate together with the engagement piece can be performed in series.

In the present invention, it may be structured that a hook portion protruding into the engagement groove is provided in the body member, a hole allowing the hook portion to make an entry thereinto in the engagement groove is provided in the engagement piece, and a guide portion for displacing the hook portion in a direction to be retracted from the engagement groove by insertion of the engagement piece into the engagement groove is provided in the hook portion. In the case of adopting such structure, the hook portion and the engagement hole turn into a locked state simply by inserting the engagement piece into the engagement groove. When the insertion piece of the key plate is inserted into the engagement groove, the hook portion is disengaged from the hole of the engagement piece by a function of the guide portion, and the locked state is released. Hence, it becomes possible to constitute a simple locking device.

In the present invention, it is preferable that, in the engagement groove, one face of both faces opposite to each other in a groove width direction thereof is formed of a portion of the inner face of the file body. The reason for this is that a face material forming the one face opposite to the other in the groove width direction of the engagement groove becomes unnecessary, resulting in that the whole of the locking device can be structured to be thinner correspondingly.

In the present invention, it may be so structured that the

file body includes a spine cover having a binder provided on an inner face thereof, and a front cover and a back cover which are coupled to both sides of the spine cover by hinges, the open/close plate is coupled to any one cover of the front cover and the back cover by a hinge, and the locking device is provided between the other cover and the open/close plate. With such structure, there can be obtained a filing implement in which the locking device is provided in a file body with front/back covers opening in a lateral direction.

Here, it may be so structure that the open/close plate also serves as a part of a coupling band for coupling free ends of the front cover and the back cover to each other. In such a way, a mode can be adopted, in which only one part of the open portion of the file body is closed into a band shape. Accordingly, it becomes possible to enhance an appearance design of the filing implement itself.

Further, it may be so structure that the file body is formed into a box shape having an open portion on one face, and the open/close plate also serves as a lid member for opening/closing the open portion. In such a way, a mode can also be adopted, in which, among the open portion of the file body, only the open/close plate also serving as the lid member can be opened/closed. Accordingly, it becomes possible to obtain a filing implement in which airtight of the file body is enhanced.

In the present invention, it is preferable that the open/close plate and the engagement piece are formed integrally with the file body. With such structure, the filing implement can be simply fabricated by integral molding, mold molding, and the like, which use resin and the like, and accordingly, cost reduction can be achieved by enhancing fabrication efficiency.

In the present invention, it may be so structure that coupling holes for coupling the open/close plate and the body member to each other by a key-locking device fitted with a coupling tool such as a padlock are provided in the open/close plate and the body member. In the case of adopting such structure, a double-locking structure can be made.

The present invention is a locking device provided between a file body and an open/close plate which opens and closes at least a part of an open portion of a filing implement, comprising: an engagement piece provided on the open/close plate; a body member provided on an inner face of the file body and including an engagement groove the engagement piece is inserted therein; and a key plate including an insertion piece inserted into the engagement groove and releasing an engagement state between the engagement piece and the engagement groove.

In this case, it may be so structure that a hook portion protruding into the engagement groove is provided in the body member, a hole allowing the hook portion to make an entry therein in the

engagement groove is provided in the engagement piece, and a guide portion for displacing the hook portion in a direction to be retracted from the engagement groove by insertion of the engagement piece into the engagement groove is provided in the hook portion. Further, with regard to the engagement groove, it may also be structure that one face of both faces opposite to each other in a groove width direction thereof is formed in a portion of the inner face of the file body.

According to the present invention, it may be so structure that it is difficult to access to the whole of the locking device from the outside, thus making it possible to enhance the protection function provided by the locking device. Further, the structure is made such that the locked state is released by the dedicated key plate as the locking release tool, and accordingly, the protection function of the locking device can also be enhanced from this point. Further, it may be structured that the engagement piece is inserted into the engagement groove to provide the locked state, and the locked state is released by the key plate, thus making it possible to structure the whole of the locking device to be thin and simple.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective diagram showing an external appearance of a filing implement including a locking device according to the present invention.

FIG. 2 is a perspective diagram showing an external appearance of the locking device according to the present invention in a locking release state.

FIG. 3 is a partially enlarged perspective diagram of the locking device according to the present invention in the lock release state.

FIG. 4 is a development diagram of a base constituting a file body according to the present invention.

FIG. 5 is a perspective diagram showing a body member of the locking device according to the present invention.

FIG. 6 is a plan view showing the body member of the locking device according to the present invention.

FIG. 7 is a front view showing the body member of the locking device according to the present invention.

FIG. 8 is a sectional view taken along a line a-a of FIG. 7.

FIG. 9 is a sectional view taken along a line b-b of FIG. 7.

FIG. 10 is a sectional view taken along a line c-c of FIG. 7.

FIG. 11 is an explanatory diagram of an example of coupling the body member of the locking device according to the present invention and an open/close plate to each other by a key-locking device.

FIG. 12 is a perspective diagram showing a key plate of the locking device according to the present invention.

FIG. 13 is a partial sectional view explaining a function of

the locking device according to the present invention.

FIG. 14 is a partial sectional view explaining the function of the locking device according to the present invention.

FIG. 15 is a partial sectional view explaining the function of the locking device according to the present invention.

FIG. 16 is a partial sectional view explaining the function of the locking device according to the present invention.

FIG. 17 is a perspective view showing an external appearance of a filing implement according to the present invention.

FIG. 18 is a development view of a base constituting a file body according to the present invention.

FIG. 19 is a development view of another base constituting the file body according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A description will be made below of preferred embodiments of the present invention with reference to the drawings.

FIG. 1 is a perspective view showing an external appearance of a filing implement including a locking device according to an embodiment of the present invention. FIG. 2 is a perspective view showing an external appearance of the locking device in a lock release state. FIG. 3 is a partially enlarged perspective view of the locking device in the lock release state. FIG. 4 is a development view of a base constituting a file body. FIG. 5 is a perspective view showing

a body member of the locking device.

(Embodiment 1)

A filing implement 1 of this embodiment comprise a file body 3 having an open portion 2 for documents S and the like are taken out and housed therethrough, a belt plate-like open/close plate 4 which is coupled to the file body 3 by a hinge and capable of opening/closing partially the open portion 2, a locking device 5 provided between the open/close plate 4 and the file body 3, and a key plate 6 as a lock release tool which releases a locked state of the locking device 5.

The locking device 5 includes an engagement piece 7 provided at a free end of the open/close plate 4, and a body member 8 having an engagement groove 81 to be locked by insertion of the engagement piece 7. The body member 8 is provided on an inner face 33a of the file body 3. The key plate 6 includes a plate body 61 serving as a grasp portion, and insertion pieces 62 and 62 to be inserted into the engagement groove 81 of the body member 8.

Subsequently, a description will be made of details of the above. The file body 3 includes a spine cover 31 having a binder (not shown) provided on an inner face thereof, and a front cover 32 and a back cover 33 which are coupled to both sides of the spine cover 31 by hinges. Then, the open/close plate 4 is coupled to a free end of the front cover 32 by a hinge, and the engagement piece 7 of the locking device 5 is coupled by a hinge to the free end

of the open/close plate 4. The body member 8 of the locking device 5 is attached by rivets and the like onto the inner face 33a near a free end of the back cover 33 by using attachment holes 89 provided near both ends of the body member 8.

Although no particular limitations are imposed on a material of the file body 3, the file body 3 of this embodiment is formed of a resin-made sheet with a thickness of a few millimeters. Further, the open/close plate 4 and the engagement piece 7 are formed integrally with the file body 3. For example, a plate-like base K composed of a resin-made sheet formed into a shape of a development view as shown in FIG. 4 is used.

In the base K, there are individually provided slot-like through holes 41 and 41, cavity holes 71 and 71 serving as engagement holes, thin hinge portions 3a, 3b, 4a, and 7a shown by broken lines in the drawing, and the like. Between the thin hinge portions 3a and 3a, a plurality of attachment holes 3c through which the metal-made binder (not shown) is attached by fastening tools and the like are provided. A long coupling hole 42 to which a padlock or the like to be described later can be attached is provided near a side edge of the open/close plate 4.

The through holes 41 and 41 provided between the open/close plate 4 and the engagement piece 7 are holes provided so that the insertion pieces 62 and 62 of the key plate 6 can be inserted into the engagement groove 81 from the outside. Thus, a structure is

adopted so that the locked state of the locking device 5 can be released when the insertion pieces 62 and 62 are inserted into the engagement groove 81 by using the through holes 41 and 41 in the locked state of the locking device 5.

As shown in FIGS. 5 and 6, the body member 8 of the locking device 5 is formed into a flat rectangular shape. Then, the engagement groove 81 is provided on a center portion of the body member 81. In the engagement groove 81, one face of both faces opposite to each other in a groove width direction thereof is formed of a portion of the inner face of the file body 3 (a portion of the inner face 33a of the back cover 33). Hence, in the body member 8, there is provided a recessed portion 81a with a shape recessed in a direction away from the inner face of the back cover 33 and extended along the inner face of the back cover 33. Thus, the engagement groove 81 open to the free end of the back cover 33 is formed. The other face of the engagement groove 81 is formed of a wall surface of the recessed portion 81a.

As shown in FIGS. 6 and 8, in the body member 8, hook portions 82 and 82 protruding into the engagement groove 81 are provided at an interval in a longitudinal direction of the body member 8 (a direction shown by an arrow A in FIG. 5). The hook portions 82 and 82 are individually provided on free ends of elastic pieces 84 and 84 to which elasticity is given by U-shaped cutouts 83 and 83. The hook portions 82 and 82 are formed as long slender hooks

which are thin in a thickness direction of the body member 8 (a direction of an arrow B) and are extended in the longitudinal direction. Hence, the slot-like cavity holes (engagement holes) 71 and 71 of the engagement piece 7 are formed as rectangular long holes which allow the hook portions 82 and 82 to make an entry thereinto in the engagement groove 81.

In the hook portions 82 and 82, there are individually provided guide portions 85 and 85 for displacing the hook portions 82 and 82 in a direction to be retraction the engagement groove 81 by insertion of the engagement piece 7 and the insertion pieces 62 into the engagement groove 81. As shown in FIG. 8 (a section along a line a-a of FIG. 7), the guide portions 85 and 85 are formed as slant faces which go downward to the inner face of the back cover 33 as going toward a direction of inserting the insertion pieces 62. A groove width of the engagement groove 81 is set slightly larger than a total thickness of a thickness of the engagement piece 7 and a thickness of the insertion pieces 62.

With such structure, the hook portions 82 and 82 enter the engagement holes 71 and 71 to be a locked state only by inserting the engagement piece 7 into the engagement groove 81. Meanwhile, in the case of inserting the insertion pieces 62 and 62 of the key plate 6 into the engagement groove 81, the hook portions 82 and 82 are disengaged from the engagement holes 71 and 71 of the engagement piece 7 by a function of the guide portions 85, and the locked state

is released. Note that, on an open edge of the engagement groove 81, a tapered face 86 for facilitating the insertion pieces 62 to be inserted thereinto is formed.

Near one end of the body member 8 in the longitudinal direction, there is provided a lock fixing member 88 provided with a coupling hole 87, which is to be used for coupling and locking the engagement piece 7 and the body member 8 by a key-locking device 100 fitted with a U-shaped coupling tool 101 such as the padlock (refer to FIG. 11). As shown in FIG. 9 (a section along a line b-b of FIG. 7) and FIG. 10 (a section along a line c-c of FIG. 7), the lock fixing member 88 is formed to be thin, and is composed so that, during an unused time thereof, can be folded by a hinge portion 881, housed in a housing portion 882, and temporarily fixed. As shown in FIG. 10, temporarily fixing means is composed of hook-shaped small protrusions 883 and 883 which are provided on both side faces of the housing portion 882 and engaged with both side edges of the lock fixing member 88.

A setting is made so that the coupling hole 42 provided in the open/close plate 4 and the coupling hole 87 of the lock fixing member 88 can be positionally aligned with each other in a state where the lock fixing member 88 is bent by approximately 90 degrees and in a state where the locking device 5 is locked as shown in FIG. 1. Thus, there is also adopted such a structure that it is possible to perform locking by using the key-locking device 100.

As shown in FIG. 12, in the insertion pieces 62 and 62 of the key plate 6, there are provided recessed portions 63 to be engaged with open edges of the through holes 41 and 41 in a state where the insertion pieces 62 and 62 are inserted into the engagement groove 81. The recessed portions 63 are provided pair by pair at mutually opposite positions of base end portions of the insertion pieces 62 and 62. An interval α between the insertion pieces 62 and 62 is set slightly larger than an interval between the through holes 41 and 41. Meanwhile, an interval β between the recessed portions 63 and 63 is set larger than the interval α . Note that the recessed portions 63 may also be provided one by one for the insertion pieces 62 and 62. In this case, it is preferable that the recessed portions 63 and 63 are provided on the insides of the two insertion pieces 62 and 62 or the recessed portions 63 and 63 are provided on the outsides of the two insertion pieces 62 and 62.

Hence, the key plate 6 is slid to some extent in a direction of the interval β in a state where the insertion pieces 62 and 62 of the key plate 6 are inserted into the engagement groove 81 by using the through holes 41, thus making it possible to engage the recessed portions 63 concerned with the open edges of the through holes 41. Hence the open/close plate 4 can be rotated in an opening direction together with the engagement piece 7 when an operation to pull out the key plate 6 is performed.

FIGS. 13 to 16 are explanatory diagrams of functions in the case of performing an operation to release the locking device 5 by using the key plate 6. FIG. 13 shows a state where the engagement piece 7 is inserted into the engagement groove 81 to be locked. In this state, each insertion piece 62 of the key plate 6 is inserted into a gap between the engagement piece 7 and each elastic piece 84 in the engagement groove 81. Then, as shown in FIG. 14, as each insertion piece 62 is entering the gap, each hook portion 82 is pushed out from the inside of the engagement groove 81 by the function of each guide portion 85, and the locked state is released (see FIG 15). In this state, the engagement piece 7 can be easily pulled out from the inside of the engagement groove 81. As a matter of course, if the operation to pull out the key plate 6 is performed while engaging the open edge of the through hole 41 with any one of the recessed portions 63 of the insertion piece 62, as shown in FIG. 16, then the open/close plate 4 can be easily opened together with the engagement piece 7.

(Embodiment 2)

FIG. 17 is a perspective view showing an Embodiment 2 of the present invention. Note that, in this Embodiment 2, the same reference numerals are assigned to basically the same constituting as those of the Embodiment 1 described above, and a description thereof is simplified.

In this Embodiment 2, the locking device is applied to a

box-shaped file body 3 having an open portion on one face. Specifically, in a filing implement 1 of this embodiment, closing plates (side plates) 36, 37, and 38 are provided on portions corresponding to the open portion 2 excluding the open/close plate 4 in the open portion 2 of the file body 3 of the Embodiment 1, and the back cover 33 is structured to be open and closable so that the documents and the like can be taken out therefrom and housed therein. Hence, the back cover 33 of this embodiment also serves as a lid member of the box-shaped file body 3 in which one face is opened and closed. Further, the open/close plate 4 also serves as a coupling band. Note that the open/close plate 4, the engagement piece 7 and the body member 8 of the locking device 5, and the like are structured as that of the Embodiment 1.

FIG. 18 shows a development view of a plate-like base constituting the file body 3 and the like. As it is clear from this drawing, differences thereof from the development view of FIG. 4 are that the closing plates 36, 37 and 38 are provided to be formed into the box-shaped file body 3. Note that, as shown in FIG. 19, the file body 3 may also be structured as a box-shaped file body in which the front cover 32 is openable and closable.

Note that, in the present invention, the open/close plate 4 may be coupled to the free end of the back cover 33 by a hinge, and the body member 8 may be attached to an inner face of the front cover 32. Further, the engagement piece 7 may be formed as an

independent member, and may be fixed or coupled by a hinge to the open/close plate 4. Still further, the open/close plate 4 and the engagement piece 7 may be formed as an integrally formed independent member, and the open/close plate 4 may be fixed or coupled through a hinge portion to any of the right and left covers. Still further, the locking device of the present invention can be applied not only to the filing implement but also to other box-shaped containers fitted with lids, and the like.

WHAT IS CLAIMED IS:

1. A filing implement, comprising:

a file body including an open portion for documents and the like to be taken out therefrom and housed therein;

an open/close plate coupled to the file body by a hinge and capable of opening/closing at least one part of the open portion;

a locking device provided between the open/close plate and the file body; and

a keyplate which releases a locking state of the locking device, wherein the locking device includes:

an engagement piece provided at a free end of the open/close plate; and

a body member including an engagement groove to be locked by insertion of the engagement piece, the body member being provided on an inner face of the file body,

Wherein the engagement piece inserted into the engagement groove is located on the inside of the file body, and when the keyplate is inserted into the engagement groove where the engagement piece is inserted, a locked state of the locking device is released.

2. The filing implement according to claim 1, wherein:

the key plate includes a plate body serving as a grasp portion and an insertion piece to be inserted into the engagement groove;

a through hole for inserting the insertion piece of the key

plate into the engagement groove is provided between the open/close plate and the engagement piece; and

the locking state is released when the insertion piece is inserted into the engagement groove in the locking state of the locking device.

3. The filing implement according to claim 2, wherein a recessed portion to be engaged with an open edge of the through hole in a state where the insertion piece of the key plate is inserted into the engagement groove is provided in the insertion piece.

4. The filing implement according to any one of claims 1 to 3, wherein:

a hook portion protruding into the engagement groove is provided in the body member;

a hole allowing the hook portion to make an entry thereinto in the engagement groove is provided in the engagement piece; and

a guide portion for displacing the hook portion in a direction to be retracted from the engagement groove by insertion of the engagement piece into the engagement groove is provided in the hook portion.

5. The filing implement according to any one of claims 1 to 4, wherein, in the engagement groove, one face of both faces opposite

to each other in a groove width direction thereof is formed of a portion of the inner face of the file body.

6. The filing implement according to any one of claims 1 to 5, wherein;

the file body includes a spine cover having a binder provided on an inner face thereof and a front cover and a back cover which are coupled to both sides of the spine cover by hinges, wherein:

the open/close plate is coupled to any one cover of the front cover and the back cover by a hinge; and

the locking device is provided between the other cover and the open/close plate.

7. The filing implement according to claim 6, wherein the open/close plate also serves as a part of a coupling band for coupling free ends of the front cover and the back cover to each other.

8. The filing implement according to claim 1, wherein:

the file body is formed into a box shape having an open portion on one face; and

the open/close plate also serves as a lid member for opening/closing the open portion.

9. The filing implement according to any one of claims 1 to

8, wherein the open/close plate and the engagement piece are formed integrally with the file body.

10. The filing implement according to any one of claims 1 to 9, wherein coupling holes for coupling the open/close plate and the body member to each other by a key-locking device fitted with a coupling tool such as a padlock are provided in the open/close plate and the body member.

11. A locking device provided between a file body and an open/close plate that opens and closes at least a part of an open portion of a filing implement, comprising:

an engagement piece provided on the open/close plate;

a body member provided on an inner face of the file body and including an engagement groove to be locked by insertion of the engagement piece ; and

a key plate including an insertion piece inserted into the engagement groove and releasing an engagement state between the engagement piece and the engagement groove, wherein the engagement piece inserted into the engagement groove is located on the inside of the file body, and when the keyplate is inserted into the engagement groove where the engagement piece is inserted, a locked state of the locking device is released.

12. The locking device according to claim 11, wherein:

a through hole for inserting the insertion piece of the key plate into the engagement groove from an outer face side of the engagement piece is provided in the engagement piece; and

a recessed portion to be engaged with an open edge of the through hole is provided in the insertion piece.