Title: CHAIR WITH A TABLE

Abstract: A connector is formed on the chair frame or chair frame column. A rotary member on which a table support member is formed is coupled to the connector, and a table is coupled to the table support member. The opening/closing and folding operations can be accomplished in the table. The table opening/closing operation is defined as the operation when the table is rotated within a predetermined range about the axis of the table support member to support the table and thereby a user can sit in/leave the chair. The table folding operation is defined as the operation when a connector is formed on a part of the chair frame column or chair frame and thus the structure of the table support member including the table is folded by means of the rotary member which is coupled rotatably to the connector. In the present invention, the opening/closing and folding device is defined as a device that can carry out both of aforementioned opening/closing and folding operations.
CHAIR WITH A TABLE

Technical Field
The present invention relates to a chair with a table, and more particularly to a chair integrated with a table provided with an opening/closing structure to open/close the table configured two left and right halves and a folding structure that allows the table in the chair to be folded, in order to maximize table area and for a user to easily sit in/leave the chair.

Background Art
As shown in Fig. 1, the conventional table 2 is installed at the left or right side of the folding chair 1. The conventional table can be folded, and the table folding proceeds simultaneously with the chair folding. That is, when the sitting plate 5 of the chair to which table 2 is coupled by means of the interlock member 3 is lifted up, the chair and the table are folded simultaneously by means of the sitting plate and the interlock member. The conventional table, however, cannot provide a table with a wide area. If the table area of such a chair is increased, the chair exhibits a structurally unstable shape. As shown in Fig. 1A, the conventional table 6 installed at one side of the chair can be folded through a slider 9, a slider support 10 and a folding member 7. Alternately, the chair can be folded by installing a support member 13 at the lower part of the chair frame column as shown in Fig. 1B.

Disclosure of Invention
The present invention relates to a chair integrated with a table. The present invention is specialized into split tables in which a table is split into right and left halves to obtain maximum table area. One object of the present invention is to achieve a configuration with which a user can easily sit in/leave the chair integrated with a table and the chair requires a minimum space for safekeeping, by providing the table opening/closing function for user’s passage into/out of the chair, a table folding structure with which the table can be folded, and a configuration that allows easy folding of the table folding structure. Another object of the invention is to allow the user to adjust a table position as required by providing a structure in which the table can move horizontally forward and backward.

In order to achieve the aforementioned objects, the chair integrated with a table in accordance with one embodiment of the invention employs split tables which are formed at the right and left side of the table to maximize table area, and a configuration which permits easy opening/closing and folding operation of the split tables. A chair integrated with a table in accordance with another embodiment of the invention can be configured so that the split tables and the chair can be simultaneously folded so as to easily move the chair, and thereby minimizing the space for safekeeping the chair.
Now, the operation "opening/closing" and "folding" commonly used in the present invention are defined. In the present invention, a connector is installed on a chair frame or chair frame column, while a rotary member is coupled to the connector, and the table is coupled to a table support member, wherein the table support member is formed on the rotary member. As such, the table opening/closing operation is defined as the operation when the table is rotated about the axis made by the table support member to support the table within a predetermined range, for allowing a user to sit in/leave the table. The folding operation in the present invention is defined as the procedure of the structure of the table support member including the table is folded by means of the rotary member, wherein a connector is installed at a part of the chair frame column or chair frame, and the rotary member is rotatably coupled with the connector. The opening/closing and folding device in accordance with the invention is an arrangement configured to execute both of the opening/closing and folding operations defined above. When the split tables are used in the present invention, at least one of the split tables is configured to be opened/closed to allow a user to sit in/leave the chair.

Hereinafter, for clarity, it is referred to an "opening/closing structure" and a "folding structure", but those skilled in the art will recognize that a user can move the tables and sit on the sitting plate of the chair although only one of aforementioned structures is installed. That is, the user can sit in/leave the chair by means of the rotary "opening/closing" structure, for example, as shown in Fig. 6. In another example, it is possible to ensure a space through which the user can sit in/leave the chair by means of the structure (not shown) in which a table support member is horizontally rotated with respect to a chair frame.

The present invention is characterized by forming a folding structure for folding the table and a table opening/closing structure for allowing a user to sit in/leave the chair. The split tables in accordance with the invention has two types of one-table or both-table opening/closing depending on the opening/closing of the table. These days, since it is essential to use laptop computers, the need for enlarged table size has been raised, but the conventional chair combined with a table has a definite limitation in increasing table size. The present invention can increase the size by splitting the table into right and left halves. That is, the present invention discloses a table consisting of two split tables for overcoming disadvantages of the chair provide with a conventional table. However, there exists a problem that must be solved when configured two split tables, that is, a consideration for a user to easily sit in/leave the chair. For the passage of a user to the chair through split tables, a configuration must be embodied in which the user can open at least one of the split tables. To this end, the present invention discloses the techniques in various embodiments.

A chair with which a table is integrated in accordance with one aspect of the invention comprises: a table consisting of two split tables respectively supported by table support members coupled to the right and left frames of the chair respectively; and a table moving means for moving at
least one of the split tables from a use position to another position and vice versa in order to provide a passage for sitting in/leaving the chair so that a user may easily sit in or leave the chair.

The split tables, which may move along the table support members, are coupled and supported by the table support members, respectively, and then applied to a folding chair. One of the split tables is fixed to the chair frame and the table moving means is installed only to the other split table, and the tables can be then attached to a folding chair. Alternately, the table moving means can be installed to both of the split tables respectively, which can be then attached to a folding chair. The split tables, which may move along the table support members, are coupled and supported by the table support member respectively, and then attached to a fixed chair. One of the split tables is fixed to the chair frame and only the other split table is provided with the table moving means, and the tables can be then attached to a fixed chair. In addition, the table moving means may be installed to both of the split tables respectively, which can be then attached to a fixed chair.

The split tables, which may move along the table support members, are coupled and supported by the table support members, respectively, and then attached to an electric chair. One of the split tables may be fixed to the chair frame, and only the other split table may be provided with the table moving means, and the tables can be then applied to an electric chair. Alternately, the table moving means may be installed to both of the split tables respectively, which are then attached to an electric chair.

The table moving means comprises a table opening/closing means for keeping the split tables in a use position and for rotating it by a specified angle with respect to the table support member. The table opening/closing means may comprise a hinge for rotatably coupling at least one of the split tables to a corresponding table support member.

The table opening/closing means comprises a cylindrical sliding part that is fixedly connected to a split table and rotatably and concentrically coupled to the cylindrical part of the table support member for rotatably coupling at least one of the split tables to a corresponding table support member, and a guide groove and guide pin means for limiting the rotation range of the sliding part and for maintaining the split tables in horizontal balance.

The sliding part is of a hollow cylindrical shape, and the cylindrical part of the table support member is inserted into the hollow of the sliding part. The guide groove is formed on the sliding part, and one end of the guide pin is fixed to the table support member. At least a part of the table support member is a hollow cylindrical shape, and the cylindrical sliding part is inserted into the hollow of the table support member. The guide groove is formed on the table support member, and both ends of the guide pin are fixed to the sliding part and a split table, respectively.

The chair in accordance with the invention further comprises a table folding means for rotating the table support member with respect to the chair frame. The table folding means comprises a
connector which is fixedly coupled to at least one of the frames respectively, and rotatably coupled to a corresponding table support member respectively, and a locking means for restricting rotation of the table support member with respect to the connector and releasing the restriction to initiate the rotation.

The locking means may comprise a buttress member for propping the table support member against the frame, or a joint movement arrangement configured to include a part of the table support member or the chair frame as a joint, or a ratchet gear. Alternately, the locking means may comprise a power supply, a motor connected to the power supply and a locking device connected to the motor. While, an unlocking device may be an electric switch to allow the locking device to be shifted to the unlocked position by supplying power to the motor.

The table moving means comprises a table folding means for rotating the table support member with respect to the chair frame.

Alternately, the table moving means comprises an integrated opening/closing and folding means, wherein the integrated opening/closing and folding means comprises a table opening/closing means configured to horizontally keep and to rotate the split tables by a specified angle with respect to the table support member, and a table folding means for rotating the table support member with respect to the chair frame. The table folding means is interlocked with the table opening/closing means in order to initiate the rotation of the table support member through the rotation of the split table.

In one aspect of the split tables in accordance with the invention, the two split tables may each have a different size and at least a part of the larger split table may overlap the smaller split table in a use position, and a fixing means may be formed on the top at the end of at least one of the two split tables for holding the other split table.

One aspect of the invention is a chair with which a table is integrated. The chair comprises a table which is supported by a table support member on at least one of right and left frames of the chair, and an integrated opening/closing and folding means for shifting the table from a use position to a different position. The integrated opening/closing and folding means comprises a table opening/closing means configured to horizontally keep and to rotate the table by a specified angle with respect to the table support member, and a table folding means for rotating the table support member with respect to the chair frame. The table folding means is interlocked with the table opening/closing means in order to initiate the rotation of the table support member through the rotation of the table.

Each table which may move along the table support members can be coupled with and supported by the table support member, respectively.

The integrated opening/closing and folding means is configured to initiate folding, when the
table is rotated about 45° from the use position or 90° from the use position, or simultaneously with the initiation of the rotation of the table.

In one aspect of the present invention, the integrated opening/closing and folding means can comprise: a table fixing plate for fixedly coupling at least one of the split tables to a corresponding table support member; a stopper fixedly installed to the frame; and a rotation range limiter fixedly coupled to the table support member, the rotation range limiter restricting the rotation of the table support member with respect to the frame when contacting with the stopper and allowing free rotation of the table support member by releasing the contact with the stopper when the table fixing plate rotates.

In another aspect of the invention, the integrated opening/closing and folding means can comprise: a table fixing plate for fixedly coupling at least one of the split tables to a corresponding table support member; a stopper fixedly installed to a frame; a cylindrical sliding part fixedly coupled to the table fixing plate, the action plate being concentric with the cylindrical part of the table support member and rotatable in the circumferential direction of the table support member; and a rotation range limiter fixedly coupled to the sliding part, the rotation range limiter restricting the rotation of the table support member with respect to the frame when contacting with the stopper and allowing free rotation of the table support member by releasing the contact with the stopper when the table fixing plate rotates.

In further another aspect of the present invention, the integrated opening/closing and folding means can comprise: a table fixing plate for fixedly coupling at least one of the split tables to a corresponding table support member; a stopper fixedly installed to a frame; and a hollow cylindrical sliding part fixedly coupled to the table fixing plate, the sliding part being concentric with the cylindrical part of the table support member and rotatable in the circumferential direction of the table support member. When the sliding part contacts stopper, the rotation of the table support member with respect to the frame is restricted, and when the table fixing plate rotates, the contacts between the sliding part and the stopper is released, which in turn, allows free rotation of the table support member. The sliding part can be configured to move along the axis of the table support member through the rotation of the table fixing plate, which in turn, releases the contact between the sliding part and the stopper.

In another aspect of the present invention, the sliding part is formed with a narrow section at the portion contacting with stopper. The narrow section is configured to have a first width in which rotation is restricted by contacting with the stopper, and a second width in which the contact with the stopper is released. The positions of the first and second widths of the narrow section varies according to the rotation of the table fixing plate, so as to release the contact with the stopper.
In another aspect of the present invention, the integrated opening/closing and folding means comprises: a cylindrical sliding part fixedly coupled to a split table and rotatably and concentrically coupled to the cylindrical part of the table support member concentrically, in order to rotatably couple at least one of the split tables to a corresponding table support member, respectively; a guide groove and guide pin means for limiting the rotation range of the sliding part and horizontally keeping the split table; a connector fixedly coupled to at least one of the frames respectively, and rotatably coupled to the corresponding table support member, respectively; and a locking means for restricting the rotation of the table support member with respect to the connector and allowing the initiation of the rotation. The locking means can be configured to be unlocked by means of the rotation of the sliding part.

Herein, the table support member is rotatably coupled with respect to a first rotation pin which is detachably fixed to the connector.

The sliding part is of a hollow cylindrical shape, and the cylindrical part of the table support member is inserted into the hollow of the sliding part. The guide groove is formed on the sliding part, and one end of the guide pin is fixed to the table support member.

At least a part of the table support member is of a hollow cylinder shape, and the cylindrical sliding part is inserted into the hollow of the table support member. The guide groove is formed on the table support member, and both ends of the guide pin are fixed to the sliding part and the split table, respectively.

The guide groove comprises a combination of a linear movement guide groove formed parallel to the axial direction of the table support member and a rotation guide groove formed perpendicular to the axial direction of the table support member, or comprises at least a partially curved shape.

The locking means comprises: a second rotary pin fixedly installed to the connector; a hook caught and supported by both the connector and the table support member, the hook being rotatably installed to the second rotary pin, so as to restrict the rotation of the table support member with respect to the rotary pin; a push rod for pushing and rotating the hook through linear motion in the axial direction of the table support member resulting from the rotation of the sliding part; and a resilient member for returning the hook to the previous position when the pushing force by the push rod is not applied.

In another aspect of the present invention, the locking means comprises: an insertion hole formed on the first rotary pin; a locking hole formed on the part adjacent to the first rotary pin of the table support member; a locking pin, a part of which is projected inside/outside of the insertion hole to be inserted into the locking hole, for restricting the rotation of the table support member with respect to the first rotary pin when a part of the locking pin is inserted into the locking hole; a push
rod for pushing the locking pin completely into the insertion hole through linear motion in the axial direction of the table support member resulting from the rotation of the sliding part; and a resilient member for returning the locking pin by making a part of the locking pin projected again and inserted into the locking hole, when the pushing force by the push rod is not applied and the locking hole is positioned adjacent to the insertion hole.

In another aspect of the present invention, the locking means comprises: an insertion hole formed on the connector; a locking hole formed on the part adjacent to the connector of the table support member; a locking pin, a part of which is projected inside/outside of the insertion hole to be inserted into the locking hole, for restricting the rotation of the table support member with respect to the first rotary pin when a part of the locking pin is inserted into the locking hole; a push rod having a cam structure for pushing the locking pin completely into the insertion hole through linear motion in the axial direction of the table support member resulting from the rotation of the sliding part; and a resilient member for returning the locking pin by making a part of the locking pin projected again and inserted into the locking hole, when the pushing force by the push rod is not applied and the locking hole is positioned adjacent to the insertion hole.

The sliding part is installed on the external part of the table support member, the push rod is installed in the space communicated with the locking hole within the table support member, and the sliding part and the push rod are connected through the guide groove formed on the table support member by means of the guide pin.

In another aspect of the invention, the locking means comprises a power supply, a motor connected to the power supply, a rotation restriction means for the table support member that is connected to the motor, and a switch that causes the rotation restriction means to be released. The switch is activated through the rotation of the sliding part to cause the rotation restriction means to be released, and the connector is removably fixed to the frame.

Hereinafter, the construction and operation of the present invention will be described in detail by way of various embodiments and examples of the invention. It will be apparent to those skilled in the art that the following embodiments, however, are for illustration only, not for limiting the scope of the invention. Therefore, simple variants and modifications can be recognized by those skilled in the art, and those variants and modifications fall within the true spirit and scope of the invention.

**Brief Description of the Drawings**

These and other features, aspects, and advantages of the present invention will help better understanding, in conjunction with following description, appended claims, and accompanying drawings, in which:

- Fig. 1 is a perspective view of a prior art folding chair with a table;
Fig. 2a is a perspective view of a folding chair having an opening/closing and folding device in accordance with the invention, formed at both left and right tables;

Fig. 2b is a perspective view of a folding chair having an opening/closing and folding device in accordance with the invention, formed at only one of the left and right tables;

Fig. 2c is a perspective view of a fixed chair having an opening/closing and folding device in accordance with the invention, formed at both left and right tables;

Fig. 2d is a perspective view of a fixed chair having an opening/closing and folding device in accordance with the invention, formed at only one of the left and right tables;

Fig. 2e is a perspective view of an electric chair having an opening/closing and folding device in accordance with the invention, formed at both left and right tables;

Fig. 2f is a perspective view of an electric chair having an opening/closing and folding device in accordance with the invention, formed at only one of the left and right tables;

Fig. 3 is a perspective view of an embodiment of the opening/closing and folding device according to the invention;

Fig. 4 is a sectional view of the opening/closing and folding device of Fig. 3;

Fig. 5 is a perspective view of an embodiment illustrating right and left tables formed on the opening/closing and folding device;

Fig. 6 is a perspective view showing the opening of the right table of the embodiment of Fig. 5;

Fig. 7 is a perspective view showing the folding of the right table of the embodiment of Fig. 5;

Figs. 8 to 10 are embodiments of the split tables in accordance with the invention;

Fig. 11 is a perspective view of an embodiment showing a table formed on the chair frame column by means of the opening/closing and folding device;

Fig. 12 is a perspective of another embodiment showing a table formed on the chair frame column by means of the opening/closing and folding device;

Fig. 13 is a perspective view of an embodiment of an sliding part and guide groove;

Fig. 14 is a perspective view of an embodiment of an integrated opening/closing and folding device in which the table support member is automatically folded through the rotation of the table;

Fig. 15 is a sectional view of the integrated opening/closing and folding device of Fig. 14;

Figs. 16 and 17 are sectional views illustrating the operation of the integrated opening/closing and folding device of Fig. 14;

Figs. 18 and 19 shows another embodiment of the integrated opening/closing and folding device;

Fig. 20 is a partially detailed drawing of the embodiment shown in Figs. 18 and 19;
Figs. 21 and 22 show yet another embodiment of the integrated opening/closing and folding device;

Figs. 23 to 25 are perspective views of embodiments of the integrated opening/closing and folding device having a stopper formed thereon; and

Figs. 26 to 29 shows embodiments of the integrated opening/closing and folding device having a stopper formed thereon.

**Best Mode for Carrying out the Invention**

Hereinafter, preferred embodiments of the present invention will be described in detail with reference to the accompanying drawings.

Fig. 2a to 2f shows embodiments of the present invention.

Fig. 2a is a perspective view of a folding chair having right and left tables formed therein. To increase the table area, the table is split into the right and left halves. The tables split into the right and left halves as such are referred to as split tables in the present invention. The split table is thusly named because one table is split into the right and left tables, resulting in a widened available table area, and a user can also sit in/leave the chair while keeping things on one table by rotating the other table on which nothing is placed.

The right table 15 and the left table 16 are coupled with the right chair frame column 18 and the left chair frame column 20 of the folding chair 14, respectively, by means of the opening/closing and folding device 17 and 19. Fig. 2b shows one of the two split tables which is fixedly installed to the folding chair. In order to increase the solidity of the table, it is possible to fixedly install any one of the split tables.

Figs. 2c and 2d are perspective views of a fixed chair having an opening/closing and folding device in accordance with the invention, respectively, formed at both left and right tables and at only one of the left and right tables. Figs. 2e and 2f are perspective views of an electric chair having an opening/closing and folding device in accordance with the invention, respectively, formed at both left and right tables and at only one of the left and right tables.

Fig. 3 shows an embodiment of the opening/closing and folding device in accordance with the invention that allows opening/closing and folding of the split tables. In this embodiment, the opening/closing and folding device is provided at the side of the chair frame column. To this end, a connector 25 is coupled to the chair frame column 26, and a rotary member 24 is then coupled to the side of the connector 25. A table support member 23 is coupled to the rotary member 24, and an sliding part 22 configured to rotate about the axis of the table support member 23 is formed on the table support member 23. To limit the rotation range of the sliding part 22, the sliding part is formed with a guide groove 28, within which a guide 29 is formed. If the guide groove 28 is formed in a
spiral form, the table can also move forward and backward in the axial direction of the table support member when the sliding part is rotated by external force. Into the sliding part, a table fixing plate formed with threaded holes for fixing the table is combined. A hinge can be formed on the table support member, instead of the sliding part which rotates the table about the axis of the table support member. The structure to fix the table with the hinge and then to rotate the table is also within the scope of the present invention. A buttress member 30 is used to connect the table support member with the chair frame column, so that the table support member can be kept in a horizontal state. To allow the table support member to be folded, a slot is formed on the table support member or the chair frame column. Through the slot, the buttress member can slide. In Fig. 3, a slot 31 is formed on the chair frame column, but it is also possible to form the slot on the table support member similarly. The configuration that can keep the table support member in a horizontal state and allows the table to be folded can be implemented by a joint movement arrangement, a ratchet gear, or a locking device controlled by an electric switch, etc., other than the buttress member through the slot.

Fig. 4 is a sectional view of the opening/closing and folding device of Fig. 3. The connector 25 is formed to be fixed to the chair frame column 26, and a rotary member 24 to which the table support member is connected is formed on the side of the connector. A hole is formed through the rotary member and the connector. Through the hole, the rotary member is rotatably connected by means of the rotary pin 33 and the nut 27. It is preferred to allow resilient rotary motion of the rotary member by inserting an O-ring on the rotary plane.

Fig. 5 shows an embodiment in accordance with the invention having right and left tables formed on the opening/closing and folding devices. The split tables 34 and 37 are configured on both sides of the chair through the opening/closing and folding device 35 and 38 formed on the chair frame column 36 and 39. Only one table can be formed in the chair as the case may be, and any one table can be fixed formed as necessary when both tables are formed.

Fig. 6 shows the rotation of the right table of the embodiment of Fig. 5. In the Fig. 6, there is shown the opening of the right split table by rotating the right split table 34 about the axis of the table support member, for a user to sit in/leave the chair.

Fig. 7 shows the rotation of the table support member that supports the right table of the embodiment of Fig. 5. Unlike the embodiment of the Fig. 6, there is shown the folding of the right split table by rotating only the table support member, while the right table is fixed.

Figs. 8 to 10 are embodiments of the split tables in accordance with the invention. The split tables consist of two tables, that is, right table 42 and 45 and the left table 43 and 46. It is possible that the split table can be in various types such as the case that the left table is manufactured smaller
while the right table is manufactured larger. That is, the table size can be adjusted freely when manufacturing the table. In addition, the type in which one of the two split tables is securely fixed to a chair frame also falls within the present invention. In Fig. 8, the split tables are configured such that the boundary between the right table and the left table is invisible. In this configuration, the support piece 44 is fixedly attached on top of one of the two split tables at the boundary where the right table and the left table meet, so as to make the boundary invisible. The support piece 44 can also be used as a fixing means to prevent the two tables from producing gap therebetween. Fig. 9 shows an alternative to the support piece of the fixing means of the embodiment shown in Fig. 8. Fig. 10 illustrates the configuration of overlapping split tables. In the overlapping split tables, one of the two split tables overlaps the other. This structure prevents the exposure of the boundary where two split tables meet, which, in turn, makes the table securer. Fig. 9 illustrates overlapping split tables in which the right table can overlap the left.

Fig. 11 shows an embodiment in which a table is configured on the chair frame column by means of the opening/closing and folding device. The connector 49 is formed on the chair frame column 48. While the connector is formed on the side of the chair frame in the embodiment of Fig. 3, the connector is formed on the front of the chair frame column in this embodiment. The table support member 54 is coupled to the connector through the rotary pin 49a, and the table support member is supported by the buttress member 50 that connects the table support member and the chair frame column. The sliding part 51 is formed rotatably about the axis of the table support member, and the rotary guide groove 53 is formed on the sliding part to which the table 47 is connected via the table fixing plate 47a. On the rotary guide groove 53 of the sliding part, the table support member guide 52 in the form of guide pin is formed which is connected to the table support member.

Fig. 12 shows another embodiment of a table formed on the chair frame column via the opening/closing and folding device. The opening/closing and folding device is connected to the chair frame column 59 via the connector 60. A hollow table support member 57 is coupled to the connector, and the table support member is formed with a guide groove 58 thereon. Again, the table support member is supported by the buttress member 61. An sliding part configured for rotation is installed inside the hollow table support member, a projecting sliding part pin 56 is formed on the sliding part, and a table 55 is connected to the sliding part pin 56. The sliding part pin is a guide pin for limited movement through the guide groove formed on the table support member.

Fig. 13 shows an embodiment of the sliding part and the guide groove of Fig. 12. The hollow table support member may be provided with a guide groove for the sliding part to be rotated and translated backward and forward. To provide such type of a groove, the spiral guide groove 63 is the most preferable type. As another type, the rotary and linear motion guide groove 62 can be used in which a rotary guide groove and a linear movement guide groove are configured, respectively.
Inside the hollow table support member, the sliding part 64 (on which the sliding part pin is formed) is located.

Fig. 14 shows an embodiment of an integrated opening/closing and folding device with which the table support member is automatically folded through rotation of the table, that is, table opening/closing operation. This embodiment is more advanced type than the aforementioned opening/closing and folding devices. The operation to rotate the table for opening/closing the table directly causes the table to be folded. Configurations of all types to horizontally keep the table support member are referred as a buttress member or locking means. In the present invention, the device, with which the propping or locking operation by the buttress member or locking means is released through table rotation, and thereby the folding of the table support member sequentially proceeds, is called an integrated opening/closing and folding device. That is, when the user rotates a split table, the rotation applied to the table is linked sequentially to the unlocking operation for the buttress member or locking means on the table support member (although the user does not take any action), and the unlocking operation is linked to folding of the operation. All configurations implemented in this way are involved with the mechanism of the integrated opening/closing and folding device falls within the present invention. Fig. 14 shows an embodiment of the integrated opening/closing and folding device of the present invention. Locking or unlocking of the buttress member or locking means can be controlled by an electric motor. In this embodiment, a hook is employed as a means to retain the table support member. In the present invention of an integrated opening/closing and folding device, the integrated opening/closing and folding device can be configured on both of the split tables, or one of the split tables can be a fixedly installed to the chair in another type. Fig. 14 shows an embodiment of a table formed with the integrated opening/closing and folding device. The integrated opening/closing and folding device is coupled to the chair frame column by means of the connector 70. That is, the rotary member having the table support member formed thereon is connected to the connector, and the sliding part 66, or hinge, is configured on the table support member, rotatably about the axis of the table support member. The table 65 for opening/closing is coupled to the sliding part. On the sliding part, a spiral guide groove 67 is formed to limit the rotation range of the table 65 and to allow forward/backward movement of the table. Inside the spiral guide groove 67, a table support member guide 68 is formed that is fixed to the table support member. The table 65 moves forward or backward through the guide of the spiral guide groove as the table rotates, and forward/backward movement of the table causes the push rod 69 to move forward/backward. As illustrated in this embodiment, the rotary motion of the sliding part is converted into linear motion via the push rod through the spiral guide groove. In another way, a cam structure is formed at one end of the sliding part, thereby allowing the rotary motion of the sliding part to be converted into linear motion and then transferred to the push rod. Various embodiments
can be made within the invention. In yet another embodiment, the rotation of the table activates an electric switch, and motor operation by the switch releases the locking operation of the locking means or buttress member that props the table support member. For example, the motor operation by the activation of the electric switch initiates hook rotation. It is preferred that this embodiment is applied to a chair provided with a motor such as an electric wheelchair. In this embodiment, the buttress member is configured to be a hook. The present invention allows the user to sit in/leave the chair by rotating the table 65, but the user can more easily sit in/leave the chair if the rotation of the table is made simultaneously with folding thereof. It is sometimes convenient to keep the table in a folded state by means of the integrated opening/closing and folding device, if not used. That is, if the table is folded, the user can easily sit down on the chair, and the user can shift the folded table to the position to be used if required.

Fig. 15 is a partial sectional view of the integrated opening/closing and folding device of Fig. 14. In this configuration, the table support member 75 is horizontally kept with the hook 73 and the propping state is released by the rotation of the hook. The hook is rotated about the hook rotation pin 77 which is fixed to the connector, and the hook is also elastically supported counterclockwise by the spring supported by the spring support pin 81 which is fixed to the connector. The hook motion restriction pin 76 which is fixed to the connector restricts the rotation of the hook within a predetermined range, the hook being rotated by the spring. The table support member 75 is coupled to the rotary member, which is rotated by the rotary member rotation pin 79. On the rotary member, the hook stop 80 is formed to allow the rotary member to be caught by the hook. The hook stop is caught by the hook stopping part of the hook 78. The rotary member is coupled to the connector via the rotary member rotation pin 79, and the connector is coupled to the chair frame column 74. It is possible to fix the connector onto the chair frame column or the chair frame by way of welding or bolting. The push rod 69 served to convert rotary motion of the sliding part into linear motion, thereby pushing the hook. If the guide groove/guide pin structure is properly combined with a cam structure, the rotation and/or linear motion of the sliding part can result in the rotation and/or linear motion of the push rod 69, or transfer rotation and/or linear motion to the hook.

Figs. 16 and 17 illustrate the operation of the integrated opening/closing and folding device having a hook of Fig. 15 formed thereon, which is one embodiment of the integrated opening/closing and folding device. In Fig. 16, the rotary motion of the table about the axis of the table support member is converted into linear motion in the push rod which rotates the hook 73. In this case, the hook rotates clockwise about the hook rotation pin 77, and such rotary motion releases the engagement of the hook stop 80 and the hook stopping part 78. If the engagement is released as such, the table support member 75 can be rotated about the rotary member rotation pin 79. As can be seen from Fig. 17, if the push rod 69 is pushed against the hook 73, the hook 73 rotates clockwise,
which, in turn, causes the table support member 75 to rotate counterclockwise about the rotary member rotation pin 79 for carrying out folding.

Figs. 18 and 19 show another embodiment of the integrated opening/closing and folding device. The connector 97 is coupled to the chair frame column 98, wherein the connector can be removably coupled to the chair frame column with a bolt. The rotary member 96 is rotatably coupled to the connector by means of the rotary member rotation pin 95 with an embedded locking pin. The table support member 100 is coupled to the rotary member 96, and an sliding part 101 consisting of a pipe is formed on the external portion of the table support member. In addition, a table fixing plate 103 is coupled to the sliding part 101. The movement of the sliding part is guided by means of the connection bolt 102 in the form of a guide pin which is guided by the guide groove formed on the table support member. A locking pin 99 is elastically supported by means of a spring and embedded into the rotary member rotation pin 95. Fig. 19 is a sectional view of Fig. 18. The connector 97 is removably coupled to the chair frame column 98 by means of a bolt 115. The rotary member 96 is rotatably coupled to the connector by means of the rotary member rotation pin 95 with the embedded locking pin. The locking pin 99 which is elastically supported by a spring is embedded into the rotary member rotation pin 107 with an embedded locking member. One end of the spring is supported by a ball 106. The cylindrical rotary member is formed with a circular groove thereon into which the table support member of a hollow pipe is inserted to be welded. As a result, the locking pin 99 can extend into/out of the hollow pipe of the table support member. The sliding part 101 is configured in the form of a pipe on the external portion of the table support member, and the push rod 110 is formed within the table support member. The sliding part 101 and the push rod 110 are combined with the connection bolt 109 through the guide groove formed on the table support member. The rotary member rotation pin with the embedded locking pin fixes the connector completely in order not to allow rotation. In this embodiment, the locking pin 99 is configured to lock/unlock the rotation pin 107 and the rotary member 96. Alternately, the locking pin 99 can also be configured to lock/unlock the connector 97 and the rotary member 96. That is, the configuration on the rotation pin 107 is applied to the connector 97 and a cam structure is applied to the end of the push rod 110. In this case, the cam structure is configured so that it can convert the linear motion of the push rod 110 into perpendicular direction and then push the locking pin 99. The configuration not mentioned is equal to that for locking the rotation pin and the rotary member.

Fig. 20 is a partially detailed view of Figs. 18 and 19. The push rod 110 is placed inside the table support member 100. The sliding part 101 is placed on the external portion of the member 100. The table support member is formed with a guide groove 119 thereon. The connection bolt 118 whose motion is restricted by the guide groove 119 is combined into a connection bolt hole 122 of the sliding part. With such a connection bolt, the push rod and the sliding part are coupled. When the
sliding part is rotated by the rotation via opening/closing the table, the connection bolt is rotated along the guide groove 119 formed on the table support member while moving forward/backward in the axial direction of the table support member. Since the push rod is coupled by the connection bolt which is a guide pin inserted into the guide groove, the push rod moves identically along with the connection bolt. At this moment, the movement of the push rod pushes the locking pin 99 elastically supported by a spring. When the locking pin is pushed inward, the rotary member rotates, so as to cause the table to be folded.

Various types of movement can be achieved depending on the shape of the guide groove, That is, the guide groove comprises a spiral guide groove and a linear guide groove. In the spiral guide groove, the push rod can also move forward/backward following table rotation, however, in case of the linear guide groove, the push rod does not move even when the table is rotated. Using such movement characteristics, it is possible to link and control the table rotation and the unlocking operation of the locking means. Generally, the table is rotated about 90° through the opening/closing operation thereof: If the guide groove is configured only in the form of a spiral, the push rod moves all the way through the rotary motion of the table by 90°. If the linear guide groove is formed on a section of the rotary motion path through 90°, however, the push rod makes only rotation but linear movement forward/backward. With such characteristics, it is possible to easily set the section where the table folding operation is linked to the opening/closing operation of the table. That is, it is possible to configure such that the unlocking operation of the table initiates simultaneously with the rotation of the table so as to cause the rotation of the table to be linked to the table folding operation.

It is also possible to configure such that the unlocking operation of the table initiates simultaneously with the completion of the rotation through 90° of the table so as to cause the rotation of the table to be linked to the table folding operation. Alternately, it is also possible to configure such that the unlocking operation of the table initiates simultaneously with the rotation through 45° or so of the table so as to cause the rotation of the table to be linked to the table folding operation.

Figs. 21 shows further embodiment of the integrated opening/closing and folding device. The connector 131 is removably installed to the chair frame column 123 by means of bolts. The rotary member rotation pin 125 having locking pin 126 embedded therein is directly installed to the connector via bolts. The rotary member 124 is coupled rotatably with respect to the rotary member rotation pin having a locking pin embedded therein. A table support member 130 is coupled to the rotary member. An sliding part 129 is formed on the external portion of the table support member and the push rod 128 is formed inside the table support member. The sliding part 129 and the push rod 128 are combined by means of the connection bolt 127 that is a guide pin arranged to move along the guide groove formed on the table support member.
Figs. 22 shows further embodiment of the integrated opening/closing and folding device. The connector 131 is removably installed to the chair frame column 123 by means of bolts. The locking pin 126 is embedded in the connector. The rotary member 124 is directly coupled rotatably with the connector. A table support member 130 is coupled to the rotary member 124. A sliding part 129 is formed on the external portion of the table support member and the push rod 128 is formed inside the table support member. The sliding part 129 and the push rod 128 are combined by means of the connection bolt 127 that is a guide pin arranged to move along the guide groove formed on the table support member.

Figs. 23 to 25 show embodiments of an integrated opening/closing and folding device having a stopper formed thereon. A stopper 143 that can support the table support member is configured on the chair frame column 145. The stopper is coupled to the rotary member 140 by means of the rotary member rotation pin 144. The rotary member is provided with a table support member 142 in the form of a elongated shaft. A table fixing plate 138, which is supported by a spring 139 for example, is coupled to the table support member in order to be able to move forward/backward. The table support member is further provided with a rotation range limiter 141 installed thereon that can be rotated along with the table fixing plate. The rotation range limiter is restricted by the stopper, in its movement.

Fig. 24 shows the table fixing plate 138 that moves forward/backward in the axial direction of the table support member 142. In general embodiments in accordance with the invention, the table fixing plate can be moved forward/backward in the axial direction of the table support member as shown in Fig. 24, if necessary. Fig. 25 illustrates the rotation range limiter 141 which is rotated simultaneously with the table fixing plate 138 formed on the table support member 142. If the rotation range limiter is disengaged from the stopper, the structure of the table support member including the table is rotated about the rotary member rotation pin 144, and thereby achieving the folding operation.

In Figs. 23 to 25, the rotation range limiter is formed on the table support member, however, it is possible to form the rotation range limiter on the sliding part. It is also an embodiment of the invention that the motion of the rotation range limiter formed on the sliding part is restricted by the stopper, thereby controlling the folding operation.

Figs. 26 to 29 show embodiments of an integrated opening/closing and folding device having a stopper formed thereon. Herein, the term 'stopper' used in the present invention is defined as follows. The stopper can be configured in various types depending on the respective embodiments, but the stopper is mainly fixed to a chair frame column or chair frame. In this regard, the stopper can be regarded a variant of a connector. The stopper serves to restrict the motion of the rotary member, the table support member or the sliding part.
In Fig. 26, an elongated sliding part 152 with the table fixing plate 154 is formed along the axis of the table support member 153 on the external of the table support member 153. As the table fixing plate 154 is rotated, the sliding part moves forward/backward in the axial direction of the table support member 153 along the movement groove. The sliding part is supported by the stopper 155, which in turn maintains the table in the horizontal state while the table is being used. Then, the sliding part is separated from the stopper due to the forward movement of the sliding part when the table is rotated. Such configuration will be further described in Fig. 27. That is, while the table is being used, the table can be kept in a horizontal state since the sliding part 152 formed on the table support member 153 is placed on the stopper 155. If the table is rotated to be opened, the sliding part 152 moves forward. Accordingly, the stopper cannot restrict the sliding part any more, and thereby allowing the folding operation of the table. As such, it is possible to fold the table automatically by moving the sliding part forward/backward, however, automatic folding can be achieved by only the rotation of the sliding part without any forward/backward movement thereof if a narrow part is formed on the sliding part. Fig. 28 illustrates the sliding part provided with a narrow part formed thereon. An sliding part is configured on the external of the table support member 163, and a narrow part 162, a portion of which is of narrow width, is formed on the sliding part. The stopper 161 keeps the sliding part in a horizontal state by restricting the sliding part, but can not restrict the sliding part if the table is rotated and the narrow part 162 of the sliding part is moved to the location where the narrow part contacts the stopper. Accordingly, the table folding can be made. In Figs. 26 to 28, the horizontal state of the table is kept while the sliding part is put on the stopper. Fig. 29 illustrates the table support member 165 kept in the horizontal state owing to the rear side of the sliding part 166 bearing against the front side of the stopper 167. If the sliding part 168 is moved forward by table rotation, the sliding part and the stopper are moved apart, and thereby the stopper cannot keep the sliding part in the horizontal state any more. As a result, the table support member 165 is rotated about the rotation pin 170 and table folding is subsequently made. In addition, it should be noted that the embodiments of the integrated opening/closing and folding device by means of a stopper can be realized in various forms. Such variants are also contemplated to fall within the scope of the present invention.

In the present invention, the opening/closing and folding device is configured on a folding or fixed chair to allow a user to open/close the table installed on the chair to sit in/leave the chair, and to permit the user to sit in/leave the chair more easily by folding the table. In case of a folding chair, since the chair with a table can be folded and kept, space saving and convenient carriage or transportation can be achieved. In addition, table folding can be achieved with the rotation of the table for opening/closing by means of the integrated opening/closing and folding device in accordance with the invention.
The present invention has been described in detail. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, and various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from the detailed description.
Claims

1. A chair with which a table is integrated, comprising:
   a table consisting of two split tables supported by respective table support members coupled
to the right and left frames of the chair, respectively; and
   a table moving means for moving at least one of the split tables from a use position to
   another position and returning to the use position again, to provide a user with passage for sitting
   in/leaving the chair.

2. The chair as claimed in claim 1, wherein the split tables which can move along the
   table support members are coupled and supported by the table support members, respectively, split
   tables being then applied to a folding chair.

3. The chair as claimed in claim 1, wherein one of the split tables is fixed to the chair
   frame, and the table moving means is provided only to the other split table, the split tables being then
   applied to a folding chair.

4. The chair as claimed in claim 1, wherein each of the two split tables is provided
   with the table moving means, the split tables being then applied to a to a folding chair.

5. The chair as claimed in claim 1, wherein the split tables which can move along the
   table support members are coupled and supported by the table support member, respectively, the split
   tables being then applied to a fixed chair.

6. The chair as claimed in claim 1, wherein one of the split tables is fixed to the chair
   frame, and the table moving means is provided only to the other split table, the split tables being then
   applied to a fixed chair.

7. The chair as claimed in claim 1, wherein each of the two split tables is provided
   with the table moving means, the split tables being then applied to a to a fixed chair.

8. The chair as claimed in claim 1, wherein the split tables which can move along the
   table support members are coupled and supported by the table support member, respectively, the split
   tables being then applied to an electric chair.
9. The chair as claimed in claim 1, wherein one of the split tables is fixed to the chair frame, and the table moving means is provided only to the other split table, the split tables being then applied to an electric chair.

10. The chair as claimed in claim 1, wherein each of the two split tables is provided with the table moving means, the split tables being then applied to an electric chair.

11. The chair as claimed in one of the claims 1 to 10, wherein the table moving means comprises a table opening/closing means for rotating the split tables by a predetermined angle with respect to the table support member.

12. The chair as claimed in claim 11, wherein the table opening/closing means comprises a hinge means for rotatably coupling at least one of the split tables to a corresponding table support member.

13. The chair as claimed in claim 11, wherein the table opening/closing means comprises:

   a cylindrical sliding part fixedly coupled to the split tables and rotatably coupled to the table support member concentrically with the cylindrical part of the table support member, for rotatably coupling at least one of the split tables to a corresponding table support member; and

   a guide groove and guide pin means for limiting the rotation range of the sliding part and keeping the split tables horizontally.

14. The chair as claimed in claim 13, wherein the sliding part is of a hollow cylindrical shape; the cylindrical part of the table support member is inserted into the hollow of the sliding part; the guide groove is formed on the sliding part; and one end of the guide pin is fixed to the table support member.

15. The chair as claimed in claim 13, wherein at least a part of the table support member is of a hollow cylindrical shape; the cylindrical sliding part is inserted into the hollow of the table support member; the guide groove is formed on the table support member; and both ends of the guide pin are fixed to the sliding part and the split table, respectively.

16. The chair as claimed in claim 13, further comprising a table folding means for
rotating the table support member with respect to the chair frame,

wherein the table folding means comprises: one or more connectors fixedly coupled to at least one of the frames, respectively, and rotatably coupled to a corresponding table support member respectively; and a locking means for restricting rotation of the table support member with respect to the connector and unlocking the restriction to initiate the rotation of the table support member.

17. The chair as claimed in claim 16, wherein the locking means comprises a buttress member for propping the table support member against the frame.

18. The chair as claimed in claim 16, wherein the locking means comprises a joint movement arrangement configured to comprise a part of the table support member or a part of the chair frame as a joint.

19. The chair as claimed in claim 16, wherein the locking means comprises a ratchet gear.

20. The chair as claimed in claim 16, wherein the locking means comprises a power supply, a motor connected to the power supply, and a locking device connected to the motor,

wherein the unlocking is made via an electric switch to allow the locking device to move to an unlocked position by supplying power to the motor.

21. The chair as claimed in one of the claims 1 to 10, wherein the table moving means comprises a table folding means for rotating the table support member with respect to the chair frame.

22. The chair as claimed in one of the claims 1 to 10, wherein the table moving means comprises an integrated opening/closing and folding means,

wherein the integrated opening/closing and folding means comprises: a table opening/closing means configured to horizontally keep the split tables and to rotate the split tables by a predetermined angle with respect to the table support member; and a table folding means for rotating the table support member with respect to the chair frame, and

wherein the table folding means is interlocked with the table opening/closing means so as to initiate the rotation of the table support member through the rotation of the split table.

23. The chair as claimed in one of the claims 1 to 10, wherein the two split tables each have a different size, and at least a part of the larger split table overlaps a part of the smaller split
24. The chair as claimed in one of the claims 1 to 10, wherein a fixing means is formed on the top of an end of at least one of the two split tables for holding the other split table.

25. A chair with which a table is integrated, comprising:
   a table supported by a table support member on at least one of the right and left frames of the chair; and
   an integrated opening/closing and folding means for moving the table from a use position to a different position,
   wherein the integrated opening/closing and folding means comprises: a table opening/closing means configured to horizontally keep the table and to rotate the table by a predetermined angle with respect to the table support member; and a table folding means for rotating the table support member with respect to the chair frame,
   wherein the table folding means is interlocked with the table opening/closing means so as to initiate the rotation of the table support member through the rotation of the table.

26. The chair as claimed in claim 25, wherein the integrated opening/closing and folding means is configured to initiate table folding, simultaneously with the initiation of the table rotation, or when the table is rotated through about 45° from the use position or 90° from the use position.

27. The chair as claimed in claim 25, wherein the integrated opening/closing and folding means comprises:
   a table fixing plate for fixedly coupling at least one of the split tables to the corresponding table support member;
   a stopper fixedly installed to the frame; and
   a rotation range limiter fixedly coupled to the table support member, for restricting the rotation of the table support member with respect to the frame when the limiter contacts the stopper, and for causing the table support member to rotate freely when the limiter disengages from the stopper by the rotation of the table fixing plate.

28. The chair as claimed in claim 25, wherein the integrated opening/closing and folding means comprises:
23. A table fixing plate for fixedly coupling at least one of the split tables to the corresponding table support member;

a stopper fixedly installed to the frame;

a cylindrical sliding part fixedly coupled to the table fixing plate, and rotatably coupled to the table support member concentrically with the cylindrical part of the table support member; and

a rotation range limiter fixedly coupled to the sliding part, for restricting the rotation of the table support member with respect to the frame when the limiter contacts the stopper, and for causing the table support member to rotate freely when the limiter disengages from the stopper by the rotation of the table fixing plate.

29. The chair as claimed in claim 25, wherein the integrated opening/closing and folding means comprises:

a table fixing plate for fixedly coupling at least one of the split tables to a corresponding table support member;

a stopper fixedly installed to the frame; and

a hollow cylindrical sliding part fixedly coupled to the table fixing plate, and rotatably coupled to the table support member concentrically with the cylindrical part of the table support member,

wherein the rotation of the table support member with respect to the frame is restricted when the limiter contacts the stopper, and the table support member can rotate freely when the limiter disengages from the stopper by the rotation of the table fixing plate.

30. The chair as claimed in claim 29, wherein the sliding part is configured to move along the axis of the table support member through the rotation of the table fixing plate, and accordingly to disengages from the stopper.

31. The chair as claimed in claim 29, wherein the sliding part has a narrow part on the portion of contacting with the stopper,

wherein the narrow part has a first width in which rotation is restricted due to the contact of the stopper, and a second width in which the contact of the stopper is released,

wherein the positions of the first and second widths vary depending on the rotation of the table fixing plate.

32. The chair as claimed in claim 25, wherein the integrated opening/closing and folding means comprises:
a cylindrical sliding part fixedly coupled to the split tables and rotatably coupled to the table support member concentrically with the cylindrical part of the table support member, for rotatably coupling at least one of the split tables to a corresponding table support member; a guide groove and guide pin means for limiting the rotation range of the sliding part and horizontally keeping the split tables; a connector fixedly coupled to at least one of the frames respectively, and rotatably coupled to a corresponding table support member; and a locking means for restricting the rotation of the table support member with respect to the connector and unlocking the restriction to initiate the rotation of the table support member, wherein the locking means is configured to be unlocked through the rotation of the sliding part.

33. The chair as claimed in claim 32, wherein the table support member is rotatably coupled with respect to a first rotation pin which is removably fixed to the connector.

34. The chair as claimed in claim 32, wherein the sliding part is of a hollow cylindrical shape; the cylindrical part of the table support member is inserted into the hollow of the sliding part; the guide groove is formed on the sliding part; and one end of the guide pin is fixed to the table support member.

35. The chair as claimed in claim 35, wherein at least a part of the table support member is of a hollow cylinder shape; the cylindrical sliding part is inserted into the hollow of the table support member; the guide groove is formed on the table support member; and both ends of the guide pin are fixed to the sliding part and the split table, respectively.

36. The chair as claimed in claim 32, wherein the guide groove comprises a combination of a linear movement guide formed parallel to the axial direction of the table support member and a rotation guide groove formed perpendicular to the axial direction of the table support member, or comprises at least a partially curved shape.

37. The chair as claimed in claim 36, wherein the locking means comprises:
a second rotary pin fixedly installed to the connector;
a hook caught and supported by both the table support member and the connector and rotatably installed with respect to the second rotary pin, for restricting the rotation of the table support member with respect to the rotary pin;
a push rod installed for pushing and rotating the hook through linear motion in the axial direction of the table support member resulting from the rotation of the sliding part; and

a resilient member for returning the hook to the previous position when the pushing force by the push rod is not applied.

The chair as claimed in claim 36, wherein the locking means comprises:
an insertion hole formed on the first rotary pin;
a locking hole formed on the part adjacent to the first rotary pin of the table support member;
a locking pin, a part of which is projected inside/outside of the insertion hole to be inserted into the locking hole, for restricting the rotation of the table support member with respect to the first rotary pin when a part the locking pin is inserted into the locking hole;
a push rod for pushing the locking pin completely into the insertion hole through linear motion in the axial direction of the table support members resulting from the rotation of the sliding part; and

a resilient member for returning the locking pin by making a part of the locking pin projected again and inserted into the locking hole, when the pushing force by the push rod is not applied and the locking hole is positioned adjacent to the insertion hole.

The chair as claimed in claim 36, wherein the locking means comprises:
an insertion hole formed on the connector;
a locking hole formed on the part adjacent to the connector of the table support members;
a locking pin, a part of which is projected inside/outside of the insertion hole to be inserted into the locking hole, for restricting the rotation of the table support member with respect to the first rotary pin when a part of the locking pin is inserted into the locking hole;
a push rod having a cam structure for pushing the locking pin completely into the insertion hole through linear motion in the axial direction of the table support member resulting from the rotation of the sliding part; and

a resilient member for returning the locking pin by making a part of the locking pin projected again and inserted into the locking hole, when the pushing force by the push rod is not applied and the locking hole is positioned adjacent to the insertion hole.

The chair as claimed in one of the claims 37 to 39, wherein the sliding part is installed on the external part of the table support member; the push rod is installed in the space communicated with the locking hole within the table support member; and

the sliding part and the push rod are connected through the guide groove formed on the table
support member by means of the guide pin.

41. The chair as claimed in claim 32, wherein the locking means comprises a power supply, a motor connected to the power supply, a rotation restriction means for the table support member that is connected to the motor, and a switch that causes the rotation restriction means to be released,

wherein the switch is activated through the rotation of the sliding part to cause the rotation restriction means to be released.

42. The chair as claimed in claim 32, wherein the connector is removably fixed to the frame.

43. The chair as claimed in claim 25, wherein each of the tables which can move along the table support members is coupled to and supported by the table support member.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A47B 3/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 A47B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

KOREAN PATENTS AND APPLICATIONS FOR INVENTIONS SINCE 1975
KOREAN UTILITY MODELS AND APPLICATIONS FOR UTILITY MODELS SINCE 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

KIPASS (KOREAN INTELLECTUAL PROPERTY OFFICE PATENT SEARCH SYSTEM)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tbody>
<tr>
<td>A</td>
<td>US 4591206 A (ELVERN G. Pribble) 27 May 1986 (27.05.1986) See the whole document</td>
<td>1, 25</td>
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See patent family annex.

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