The present invention provides desks with which layout can be changed easily and accurately without disturbing the order of a work space and an entire office. The desk includes a base extending in a predetermined direction, a movable supporting member supported so as to be movable along the base, and a top board supported by the movable supporting member so as to be turnable in the horizontal direction.
FIG. 6

(B-1)

(B-2)

(B-3)
FIG. 27

4JX
4JY
4J31a
4J31b
4J31
4J32
4J31a
4J31b
4J31
4J3
4J
4J11a
4J11
4J1
4J12
4J12b
4J12
4J12a
4J2s
4J2
4J21
4J22
4J23
4J4
4J42
4J41a
4J41
4J43
4JPa
4JP
411da
411da
DESK AND OFFICE CONSTRUCTION SYSTEM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a desk suitably used in an office or the like and to an office construction system using a plurality of desks.

[0003] 2. Background Art

[0004] Hitherto a desk has been developed with which layout of any of various work spaces, such as a work space in which an individual worker can concentrate in his/her work and a work space suitable for group communication such as a conference or meeting where a plurality of people gather in an office space or the like, can be properly changed as the scale becomes greater or the organization changes, or according to the use or purpose, and an office construction system using a plurality of such desks has been developed.

[0005] An example of such a technique is desks disposed on the floor independently of each other and freely moved by workers, thereby enabling various work spaces to be formed (refer to, for example, Japanese Unexamined Patent Publication No. H9-299167).

[0006] Another example is a desk constructed by forming a plurality of screw holes or fitting holes at predetermined pitches in a top board supporting unit provided on the floor, screwing or fitting screws or insertion parts provided directly or indirectly for one end of the top board to the screw holes or fitting holes, and making a leg standing on the floor support the other end of the top board. The attachment position of the top board in the top board supporting unit of the desk can be changed by changing the screw holes or fitting holes to which the screws or insertion parts are screwed or fitted.

[0007] In the former case, however, since the desks can be moved independently of each other, each work space and an entire office tend to look unattractive and disorganized after a layout change. There is a problem such that the desk is not suitable as a component of a work space and an office in which layout is frequently changed.

[0008] In the latter case, at the time of changing the attachment position of the top board in the top board supporting unit, the screwed or fitted state between the screws or insertion parts provided at one end of the top board and the screw holes or fitting holes has to be changed. After that, the screws or insertion parts have to be screwed or fitted in different screw holes or fitting holes. Such a work is troublesome. In some cases, the user has to ask the work for a specialist. There is a problem that the layout cannot be changed easily and accurately.

SUMMARY OF THE INVENTION

[0009] The present invention has been achieved in view of such problems and an object of the invention is to provide a desk with which layout of a work space and a whole office can be easily and accurately changed without causing disorder and an office construction system using a plurality of such desks.

[0010] A desk of the present invention includes: a base extending in a predetermined direction; a movable supporting member supported so as to be movable along the base; and a top board supported by the movable supporting member.

[0011] With such a desk, the movement range of the top board supported by the movable supporting member is restricted by the base. A work space and an entire office can be prevented from becoming disorganized upon or after a layout change, and the desk is suitable as a component of a work space and an office in which layout is changed frequently. Moreover, since the movable supporting member is movable along the base, it becomes unnecessary to perform the conventional work, which is done each time the layout is changed, of once cancelling the screw state or the fit state between the screws or insertion parts and the screw holes or fitting holes and screwing or fitting again the screws or insertion parts to different screw holes or fitting holes. Therefore, the layout change can be easily and accurately performed by a worker himself/herself without asking the work for a specialist.

[0012] The “top board supported by the movable supporting member” concept includes a “top board supported by being put on the movable supporting member”.

[0013] Another desk according to the present invention includes a base extending in a predetermined direction; a movable supporting member supported so as to be movable along the base; and a top board supported by the movable supporting member. The movable supporting member can move along the base together with the top board in a state where the movable supporting member supports the top board.

[0014] With the desk as well, effects similar to those of the above-described desk can be obtained. In addition, at the time of changing the position of the top board relative to the base, the work of detaching the top board from the movable supporting member and attaching the top board again is unnecessary, so that the operability is excellent. The “top board supported by the movable supporting member” similarly denotes concept including a “top board supported by being put on the movable supporting member”.

[0015] In particular, when the top board is supported so as to be movable in the horizontal direction by the movable supporting member, the angle and posture of the top board with respect to the base can be selected from a posture in which the longitudinal direction of the top board is almost parallel with that of the base, a posture in which the longitudinal direction of the top board is almost orthogonal to that of the base, and the like. Variations of selectable layouts increase.

[0016] When the desk has a leg member for supporting a region different from a region supported by the movable supporting member, in the top board, and a movable body capable of moving on a floor is provided at a lower end of the leg member, by movement (sliding) of the movable body along the floor at the time of changing layout, the top board can be smoothly moved along the base without being lifted.

[0017] To smoothly and reliably move the movable supporting member along the base, it is sufficient to provide the base with a guide for guiding movement of the movable supporting member, and provide the movable supporting member with a guided part which is guided by the guide. In this case, preferred embodiments include a mode in which the guide is a rail formed along an extension direction of the base and a mode in which the guided part has a rolling member capable of rolling along the rail formed in the base.
Further, when the desk further includes a stationary supporting member supported by the base and not being able to slide, and a stationary top board supported by the stationary supporting member, by supporting the movable supporting member and the stationary supporting member by the base in common and supporting the movable top board and the stationary top board by each of the supporting members, the desk having the movable top board and the stationary top board is achieved. Consequently, an area adapted to the environment in which layout is changed frequently and an area adapted to the environment in which layout is not frequently changed can be formed in a single desk, and the desk can be flexibly used in various layouts.

It is sufficient that the stationary supporting member is supported so as not to be able to slide along the base. For example, a stationary supporting member fixed to the base by screwing or the like or a stationary supporting member movable in a state where a part of it is in contact with or is pressed against the base may be used. That is, the stationary supporting member which is not positively moved along the base but is movable along the base mainly at the time of attaching/detaching the member to/from the base is preferable.

To realize a desk adapted to various work styles by setting one of areas adjacent thereto sandwiching the base as a boundary as a work space in which the layout can be changed and setting the other area as a work space in which layout cannot be changed, the desk is provided with a pair of upright faces facing each other along the longitudinal direction. One of the upright faces is provided with a guide for guiding movement of the movable supporting member, and the other upright face is provided with an attachment part for attaching the stationary supporting member. In this case, when the guide and the attachment part are rails of the same shape, the rails can be commonly used. As compared with the mode in which the guide and the supporting member have different shapes, the structure of the base is more simplified.

In addition, when the stationary top board is cantilevered by the stationary supporting member, the leg member for supporting the stationary top board is unnecessary, and the space below the stationary top board can be assured widely.

An office construction system of the invention includes a plurality of desks producing the above-described effects, and layout can be changed according to the kind of a work or the like.

With such an office construction system, by changing the position and posture of the top board with respect to the base, a closed environment in which a worker can concentrate on his/her work or an open environment can be freely created, and a work space and an office adapted to various kinds of works and work forms can be easily created. Moreover, since the layout is based on the bases of the desks, a work space and an entire office can be optimized without becoming disordered as a whole. Improvement in the work efficiency of a worker working in a work space and an office formed by the office construction system can largely contribute to improvement in the productivity of not only workers but also the entire office.

According to the present invention as described above, since the position/posture of the top board is changed using the base as a reference, without making a work space and an entire office disordered, the layout can be easily and accurately changed by a worker himself/herself without asking the work for a specialist while maintaining the order of the work space and the entire office at a predetermined level.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a general schematic diagram of a desk and an office construction system using the desk according to an embodiment of the invention;

FIGS. 2A to 2C are plan views showing layout examples which can be made with the desks of the embodiment and the office construction system using the desks;

FIG. 3 is a diagram schematically showing other layout examples A-1 to A-3;

FIG. 4 is a diagram schematically showing other layout examples A-4 to A-6;

FIG. 5 is a diagram schematically showing other layout examples A7 and A8;

FIG. 6 is a diagram schematically showing other layout examples B-1 to B-3;

FIG. 7 is a diagram schematically showing other layout examples B-4 and B-5;

FIG. 8 is a diagram schematically showing other layout examples C-1 to C-3;

FIG. 9 is a diagram schematically showing other layout examples C-4 and C-5;

FIG. 10 is a diagram schematically showing other layout examples C-6 and C-7;

FIG. 11 is a diagram schematically showing other layout examples D-1 to D-3;

FIG. 12 is a diagram schematically showing other layout examples E-1 to E-3;

FIGS. 13A, 13B and 13C are diagrams showing layout examples using desks each having a stationary top board, and an office construction system using the desks corresponding to FIGS. 2A, 2B and 2C, respectively;

FIG. 14 is a general schematic diagram of a desk according to a second embodiment of the invention;

FIG. 15 is an exploded perspective view of a top board in the second embodiment;

FIG. 16 is an exploded perspective view of a supporting member in the second embodiment;

FIG. 17 is a partly-cutaway schematic side view of a desk having a switching mechanism which is in a movement restricted state in the second embodiment;

FIG. 18 is an enlarged side view of a main part of a desk having the switching mechanism which is in the movement restricted state in the second embodiment;

FIG. 19 is an enlarged plan view of a supporting member having the switching mechanism which is in the movement restricted state in the second embodiment;

FIG. 20 is an enlarged bottom view of a main part of the supporting member having the switching mechanism which is in the movement restricted state in the second embodiment;

FIG. 21 is an enlarged view of the cutaway region in FIG. 17;

FIG. 22 is a partly-cutaway schematic side view of a desk having the switching mechanism in a movement permitted state in the second embodiment;

FIG. 23 is an enlarged side view of a main part of a desk having the switching mechanism in the movement permitted state in the second embodiment;
FIG. 24 is an enlarged plan view of a main part of a supporting member having the switching mechanism which is in the movement permitted state in the second embodiment;

FIG. 25 is an enlarged bottom view of a main part of the supporting member having the switching mechanism which is in the movement permitted state in the second embodiment;

FIG. 26 is a plan view of a turn stopper rail in the second embodiment;

FIG. 27 is an exploded perspective view of a gripping mechanism in the second embodiment;

FIG. 28 is a diagram for explaining action;

FIG. 29 is an enlarged view of a cutaway region in FIG. 22;

FIG. 30 is a partly-omitted plan view of a desk according to the second embodiment;

FIG. 31 is a partly-omitted plan view of a desk according to the second embodiment in which the swivel angle of the top board is changed;

FIG. 32 is a partly-omitted cross section taken along a line x-x in FIG. 30;

FIG. 33 is a partly-omitted cross section taken along a line y-y in FIG. 31;

FIGS. 34A to 34C are diagrams showing layout examples using a movable top board and a stationary top board in the second embodiment; and

FIG. 35 is an enlarged side view of a main part of a desk for showing an attachment form of a stationary supporting member to a base in the second embodiment.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The base supporting members 3 support both ends of the base 2. Each of the base supporting members 3 has, for example, a pillar shape whose depth is almost equal to the short-side dimension of the base 2. In the office construction system according to the embodiment in which a plurality of desks 1 are linked so that their bases 2 are continuous in the longitudinal direction, auxiliary base supporting members 3a are integrally assembled to, at least, the base supporting members 3 positioned at both ends of the office construction system among a plurality of base supporting members 3, thereby realizing excellent self-standing performance and stability of the office construction system.

The movable supporting member 4 has, as shown in FIG. 4, a top board receiving part 41 for supporting the top board 5a (or 5b) and a guided part 42 guided by the top board guide 2A. The top board receiving part 41 directly or indirectly supports a predetermined region on one end side of the top board 5a (or 5b) from below. The guided part 42 has an insertion part which can be inserted in the rail 2a and a rolling element (not shown) provided at the tip of the insertion part and being able to roll along the rail.

Each of the top boards 5a and 5b is a board having a gourd shape (ellipse shape whose center portion is narrowed) or a rectangular shape in plan view, and is designed so that the maximum longitudinal dimension is almost equal to or smaller than the longitudinal dimension of the base 2. One end of each of the top boards 5a and 5b is supported by the movable supporting member 4 so as to be turnable in the horizontal direction. A concrete mode of supporting turnable the top board 5a or 5b to the movable supporting member 4 is, for example, a simple uniaxial structure using a single axis. In the embodiment, the under face of each of the top boards 5a and 5b is positioned slightly upper than the top face 22 of the base 2, thereby avoiding interference between the top board 5a or 5b and the base 2 at the time of horizontal turn of the top board 5a or 5b. Although a part of the top board 5a or 5b and the top face 22 of the base 2 overlap each other with a gap of a predetermined dimension in the height direction, it is designed so that a part of the top board 5a or 5b does not overlap the optional member guide 2B formed in the top face 22 of the base 2, thereby avoiding interference between a part of the optional member guided by the optional member guide 2B and a part of the top boards 5a and 5b.

The leg member 6 has a leg member body 61 directly supporting the other end of the top board 5a or 5b and a caster 62 as a moving member of the invention provided at the lower end of the leg member body 61. Obviously, the top board 5a or 5b whose both ends are
supported by the movable supporting member 4 and the leg member 6 is designed to be parallel to the flat floor face in a normal use state.

[0067] In the desk 1 having such a configuration, by making the top board 5a or 5b slide along the longitudinal direction of the base 2, the position of the top board 5a or 5b relative to the base 2 can be changed. The turn angle posture of the top board 5a or 5b relative to the base 2 such as a posture in which the longitudinal direction of the top board 5a or 5b is almost parallel with the longitudinal direction of the base 2, or a posture in which the longitudinal direction of the top board 5a or 5b is almost orthogonal to the longitudinal direction of the base 2 can be properly selected.

[0068] In the office construction system according to the embodiment in which two desks 1 are linked, as shown in FIGS. 1 and 2A, the top boards 5a and 5b are set in a posture that their longitudinal direction is almost orthogonal to the longitudinal direction of the bases 2, and are positioned on the sides apart from the other base 2 (the sides opposite to the connection end), thereby allowing workers to use the top boards 5a and 5b back to back. In such a manner, a first layout forming a work space and an office in which each worker can concentrate on his/her work can be set. In FIGS. 2A to 2C, a pattern is formed in the base 2. As shown in FIG. 2B, the top boards 5a and 5b are set in a posture that their longitudinal direction is almost orthogonal to the longitudinal direction of the bases 2, and are positioned on the side of connecting the top boards 5a and 5b to the other base 2 (the connection end side), thereby enabling a second layout in which workers using the top boards 5a and 5b face each other to be set. In the second layout, a work space and an office in which workers can work while communicating with each other are formed. Further, as shown in FIG. 2C, the top boards 5a and 5b are set in a posture that their longitudinal direction is almost parallel with the longitudinal direction of the bases 2, and the top boards 5a and 5b are arranged side by side in the longitudinal direction. In such a manner, a third layout in which workers using the top boards 5a and 5b sit side by side can be set. The third layout forms a work space and an office in which workers can concentrate on their works while communicating with each other. By moving an optional member along the base 2 by using the optional member guide 2B corresponding to each layout, a work space and an office having excellent workability can be formed. A layout properly selected from at least layouts in three patterns can be set. In FIG. 1 and FIGS. 2A to 2C, a partition P partitioning work spaces of the workers is disposed. In the embodiment, an attachment member Pa for attaching the partition P to the base 2 is provided for a part of the partition P (refer to FIG. 1). According to choice of a worker, a layout using no partition P may be employed. At the time of integrally linking the desks 2, it is sufficient to use not-shown connecting means for integrally connecting one base 2 to another base 2. Examples of the connecting means include means using an engagement part provided for each end cap and capable of engaging (fitting or hooking) with (to) a end cap adjacent thereto, means using an engagement part provided at an end of the base and capable of engaging (fitting or hooking) with (to) an end of a base adjacent thereto, and means using a fastening member such as a screw for fastening the bases 2.

[0069] In the case of changing any of the layouts to another layout, by giving an operating force for moving the top board 5a or 5b along the base 2 or an operating force for making the top board 5a or 5b turn in the horizontal direction about the base 2, the top board 5a or 5b can be set in a desired position or posture. In particular, in the embodiment, since the easter 62 is provided for the leg member 6 supporting the other end of the top board 5a or 5b, the top board 5a or 5b can be slid or horizontally turned about the base 2 with relatively small force.

[0070] Such an office construction system using a plurality of desks 1 can be set or changed in various layouts corresponding to a business style or the kind of a work on the individual or organization unit basis as shown in FIG. 3 and subsequent figures. In each of the layouts shown in the figures, the position and angle posture of the top plate 5 relative to the base 2 can be easily grasped from the figures. Therefore, detailed description of each of the layouts will not be given.

[0071] Various layouts A-1 to A-8 shown in FIGS. 3 to 5 are suitable for, for example, work spaces and offices for office-based workers (such as managers).

[0072] Various layouts B-1 to B-5 shown in FIGS. 6 and 7 are suitable for, for example, work spaces and offices for call centers performing reception works using telephone lines and network lines.

[0073] Various layouts C-1 to C-7 shown in FIGS. 8 to 10 are suitable for, for example, work spaces and offices for planners and consultants.

[0074] Various layouts D-1 to D-3 shown in FIG. 11 are suitable for, for example, work spaces and offices for sales departments and reception rooms to have a meeting with a customer.

[0075] Various layouts E-1 to E-3 shown in FIG. 12 are suitable for, for example, work spaces and offices performing group communications such as a meeting, a group work and presentation.

[0076] In FIGS. 3 to 12, in addition to the top board having a gourd shape or rectangular shape in plan view as a top board, a top board whose one end has a polygonal shape and whose other end partly has an arc shape in plan view, an L-shaped top board, or a square-shaped top board is applied. Irrespective of the shape, the reference numeral “55” is assigned to all of the top boards. FIGS. 3 to 12 are provided to mainly show the positions and postures of the top boards 5 relative to the base 2. Consequently, the movable supporting members and the leg members are not shown, and the patterns are shown in the bases 2 in a manner similar to FIGS. 2A to 2C.

[0077] Although FIGS. 1 and 2A to 2C show modes in which a single top board 5a (or 5b) is provided for a single base 2, FIGS. 3 to 12 show modes in which a plurality of top boards 5 are provided for a single base 2 in accordance with a business style, the kind of a work, the number of people, and the like. Concretely, the figures illustrate the mode of disposing the top boards 5 via the movable supporting members 4 to the facing parts (the upright faces 21 shown in FIG. 1) in the longitudinal direction in the bases 2 and a mode of disposing the plurality of top boards 5 to one upright face 21 via the movable supporting members 4 (refer to A-1 in FIG. 3). When the movable supporting member 4 is detachably supported by the base 2 (for example, the movable supporting member 4 can be inserted/attached in a state where the end cap 2C is detached from the end of the base 2), the number of top boards 5 attached to a single base 2 can be properly selected by the user himself/herself. As
shown in A-1, A-2 in FIG. 4 and the like, the top board 5 can be set across bases 2 adjacent thereto. On the other hand, as shown in C-5 and C-6 in FIG. 9 and the like, a layout including the base 2 to which no top board 5 is attached may be also employed. As shown in A-3 in FIG. 3, B-2 in FIG. 6, and the like, a layout of disposing the desks 1 so that the bases 2 are linked to each other in the short size direction.

[0078] As shown in B-5 in FIG. 7, C-2 in FIG. 8, and the like, a layout in which the turn angle of the top board 5 relative to the base 2 is set to an angle other than 90 degrees (for example, 45 degrees) can be also employed.

[0079] Since the desk 1 according to the embodiment has the base 2 extending in a predetermined direction, the movable supporting member 4 movably supported to the base 2, and the top board 5 (5a, 5b) supported by the movable supporting member 4 as described above, the top board 5 (5a, 5b) supported by the movable supporting member 4 can move along the base 2. Thus, the layout can be changed easily. Because the movement range of the top board 5 (5a, 5b) is restricted by the base 2, the order of a work space and an entire office using the base 2 as a reference can be maintained. Moreover, the movable supporting member 4 is able to slide along the base 2. It is consequently unnecessary to perform the conventional work, which is done each time the layout is changed, of once cancelling the screw or the like between the screws or insertion parts and the screw holes or fitting holes and re-attaching or re-fitting the screws or insertion parts to different screw holes or fitting holes. Therefore, the layout change can be easily and accurately performed by a worker himself/herself without asking the work for a specialist.

[0080] In particular, since the top board 5 (5a, 5b) is supported so as to be turnable in the horizontal direction by the movable supporting member 4, only by changing the direction of the top board 5 (5a, 5b) without changing the installation direction of the desk 1 itself, variations of selectable layouts dramatically increase.

[0081] In addition, the caster 62 is provided for the leg member 6 supporting the other end of the top board 5 (5a, 5b). Consequently, by the sliding of the caster 62 on the floor at the time of changing the layout, the top board 5 (5a, 5b) can smoothly move or turn in the horizontal direction relative to the base 2 without lifting the top board 5 (5a, 5b).

[0082] Further, since the base 2 is provided with the top board guide 2A for guiding movement of the movable supporting member 4 and the movable supporting member 4 is provided with the guided part 42 to be guided by the top board guide 2A, the movable supporting member 4 can be accurately moved relative to the base 2. In particular, the top board guide 2A is the rail 2a formed along the extension direction of the base 2 and the guided part 42 has a rolling member capable of rolling along the rail 2a. Consequently, the top board guide 2A and the guided part 42 can be realized with a simple structure at low cost.

[0083] In the office construction system using a plurality of desks 1 according to the embodiment, by making the top board 5 (5a, 5b) move or turn in the horizontal direction relative to the base 2 by the worker at the time of scale enlargement, organization change, or the like, an individual work area or common work area can be properly formed. A closed environment in which a worker can concentrate on his/her work or an open environment can be freely created. Moreover, the layout can be changed without causing disorder, and a work space and an entire office can be optimized. Improvement in the work efficiency of a worker working in a work space and an office formed by the office construction system can largely contribute to improvement in the productivity of not only workers but also the entire office.

[0084] In the desk 1 according to the embodiment and the office construction system using a plurality of desks 1, as shown in FIGS. 13A to 13C, a stationary top board 5X whose relative position cannot be changed is attached to the base 2.

[0085] The stationary top board 5X is supported by one or more stationary supporting members 4X supported to the base 2 so as not to be able to slide. In the embodiment, the stationary top board 5X having an almost rectangular shape in plan view and whose longitudinal dimension is almost the same as that of the base 2 is used. The stationary supporting members 4X are integrally attached to both ends of the stationary top board 5X and are supported by the base 2, thereby receiving the load applied on the stationary top board 5X by the stationary supporting members 4X and the base 2. That is, one side of the stationary top plate 5X is supported by the base 2 via the stationary supporting members 4X.

[0086] The stationary supporting member 4X can be attached to the rail 2a formed in the upright face 21 of the base 2. That is, the rail 2a plays the role of an “attachment part” for attaching the stationary supporting member 4X. The stationary supporting member 4X is properly fixed in a state where an installation part provided at one end is inserted in the rail 2a. In the embodiment, such stationary fixing members 4X are provided for both sides of the stationary top board 5X, and the stationary top board 5X is supported only by the stationary supporting members 4X.

[0087] In such a manner, in the embodiment, the movable supporting member 4 and the stationary supporting member 4X can be attached to the base 2 using the rails 2a having the same shape and the same structure. Although FIGS. 13A to 13C show the mode in which the end on the base 2 side of the stationary top board 5X is positioned close to or in contact with the upright face 21 of the base 2, a mode in which the end on the side of the base 2 of the stationary top board 5X is apart from the upright face 21 of the base 2 by a predetermined distance may be employed. In FIGS. 13A to 13C, chairs disposed for the stationary top boards 5X are not shown.

[0088] As described above, the desk 1 according to the embodiment can be provided with the stationary supporting member 4X supported by the base 2 so as not to be able to slide and the stationary top board 5X supported by the stationary supporting member 4X. Therefore, as shown in FIGS. 13A to 13C, an area in which the layout can be changed by using the base 2 in common and an area in which the layout cannot be changed can be formed in the area of a single desk 1. The invention can be applied to both of an environment in which the layout is changed frequently and an environment in which the layout is not changed.

[0089] Further, by setting one or more desks adjacent thereto using the base 2 as a border as a work space in which the layout can be changed and setting the other area as a work space which is not suitable for a layout change, the invention can be flexibly adapted to various work styles.

[0090] In particular, the movable supporting members 4 can be moved relative to the bases 2 using the rails 2a having the same shape and the stationary supporting members 4X.
can be attached to the bases 2. Therefore, at the time of selecting or changing a desired mode from a mode using one of areas across the base 2 as a border as a work space in which the layout can be changed and using the other area as a work space in which the layout cannot be changed, a mode of setting both of the areas as areas in each of which the layout can be changed, and a mode of setting both of the areas as areas in each of which the layout cannot be changed, the common rails 2 can be used without changing the rails 2.

[0001] In addition, one side of the stationary top board 5X is supported by the stationary supporting member 4X, so that a leg member is unnecessary. Thus, the space below the stationary top board 5X can be assured wide.

Second Embodiment

[0002] The desk 1 according to a second embodiment is based on the technical idea similar to that of the desk 1 according to the first embodiment, and their parts are further embodied. In the following description, reference numerals of members in the second embodiment and those of the members in the first embodiment are given separately. In some cases, the same reference numeral is given to different members.

[0003] A desk 1 according to the second embodiment has, as shown in FIG. 14, a base 2 extending in the horizontal direction, a base supporting member 3 for supporting the base 2, a movable supporting member 4 supporting so as to be able to slide along the base 2, a top board 5 whose one end is supported by the movable supporting member 4, a leg member 6 supporting the other end of the top board 5 and standing on the floor, a stationary supporting member immovably supported by the base 2, and a stationary top board whose one side is supported by the stationary supporting member. FIG. 14 shows an office construction system formed by linking two such desks 1.

[0004] The base 2 has, as shown in FIGS. 14, 17, 18 and the like, an almost quadrangular pillar shape extending almost linearly. Rail grooves 21 and 22 functioning as top board guides for guiding movement of the movable supporting member 4 are formed in a pair of vertical faces 2A facing each other in the longitudinal direction of the base 2. In the embodiment, a pair of rail grooves 21 and 22 extending in the longitudinal direction of the base 2 in parallel with each other so as to be apart from each other by a predetermined pitch in the height direction are formed in each of the upright faces 2A. In the following description, the rail groove formed relatively upper will be called an "upper rail groove 22" and the rail groove formed relatively lower will be called a "lower rail groove 21". The upper and lower rail grooves 21 and 22 have almost the same shape, and the height of the internal space (internal space height) is set to be larger than that of the opening (opening height). In the following description, with respect to upright walls facing each other in the rail grooves 21 and 22, upright walls on the opening side will be called "opening-side upright walls" ("opening-side upright wall 21a of the upper rail groove 21" and "opening-side upright wall 22a of the lower rail groove 22"), and upright walls on the deeper side will be called "deeper-side upright walls" ("deeper-side upright wall 21b of the upper rail groove 21" and "deeper-side upright wall 22b of the lower rail groove 22"). The opening-side upright walls 21a and 22a extend downward from the upper edge of the rail grooves 21 and 22.

[0005] In a top face 2B of the base 2, a rail groove functioning as an optional member guide for guiding movement of an optional member not shown is formed. In the embodiment, in the top face 2B, a plurality of (five in the diagram) rail grooves 23 apart from each other in a predetermined pitch in the short size direction of the base 2 and extending parallel with each other are formed. By making an optional member (not shown) slide along the optional member guide, the position of the optional member relative to the base 2 can be changed. As the optional member, a desktop panel and task light are applied.

[0006] Each of the rail grooves 21, 22, and 23 is formed so as to extend from one end of the base 2 to the other end. An end cap 2C is detachably attached to each of the both ends of the base 2 (refer to FIG. 14) (each of FIGS. 17 and 18 and FIGS. 22 and 23 to be described later shows the base 2 from which the end cap 2C is detached).

[0007] As shown in FIG. 14, the base supporting members 3 support both ends of the base 2. Each of the base supporting members 3 has, for example, a pillar shape or square pipe shape whose depth is almost equal to the short dimension of the base 2. In the office construction system in which a plurality of desks 1 are linked so that their bases 2 are continuous in the longitudinal direction, first auxiliary base supporting members 31 are integrally assembled to, at least, the base supporting members 3 positioned at both ends of the office construction system among a plurality of base supporting members 3 by proper means, and second auxiliary base supporting members 32 are integrally assembled to the other base supporting members 3 by proper means, thereby realizing excellent self-standing performance and stability of the office construction system. In FIGS. 17 and 18 and FIGS. 22 and 23 to be described later, the auxiliary base supporting members 31 and 32 are not shown.

[0008] The movable supporting member 4 has, as shown in FIGS. 16 to 19 and the like, a supporting member body 41 for supporting the top board 5 and a slide device 42 being able to slide along the rail grooves 21 and 22.

[0009] The supporting member body 41 supports a predetermined region on one end side of the top board 5 from below. The supporting member body 41 according to the second embodiment has a frame body 411 and priority supports 412 projecting from the top face of the frame body 411 and coming into contact with the lower face of the top board 5 before the frame body 411.

[0100] The frame body 411 is obtained by rigidly integrating, by welding or the like, a pair of facing frames 411a almost orthogonal to the longitudinal direction of the base 2 and facing each other, a front-end frame 411b positioned at the front end side of the facing faces 411a, and a pair of connection frames 411c connecting the front end parts of the facing frames 411a and the ends of the front-end frame 411b in a state where the frames are supported by the base 2. The top faces of the frames 411a, 411b, and 411c are almost flush with each other. A reinforcement frame 411d is integrally rigidly connected between the inner faces at the base ends of the facing frames 411a. The top face of the reinforcement frame 411d is set to be lower than the top faces of the other frames 411a, 411b, and 411c. Each of the frames 411a, 411b, 411c, and 411d has an angular cylindrical shape.

[0101] The priority supports 412 are constructed as support pins projected from the top face of the frame member 411 in the embodiment. In the embodiment, the top board 5 is horizontally turnable about the movable supporting mem-
The mounting positions of the plurality of priority supports 412 are set so that the top board 5 can be supported at plural points irrespective of the angle of the top board 5 relative to the movable supporting member 4. Concretely, total four priority supports 412 are provided in positions near the front end and the base ends of the facing frames 411a (more concretely, positions near the joint parts of the reinforcement frame 411d). Each of the priority supports 412 is constructed by a nut 412a fixed to the top face of the frame body 411 and a pin body 412b which can screw in the nut 412a (see FIG. 18).

The slide device 42 has, as shown in FIGS. 16 to 20, a slider body 421, a pair of switching units 422, an interlocking mechanism 423 making the switching units 422 operate so as to interlock, and an operating part 424 for performing a predetermined operation.

The slider body 421 has a body part 4211 extending along the longitudinal direction of the base 2 and a reinforcement member 4212 disposed so as to have a predetermined gap with the body part 4211 and almost parallel with the body part 4211 (see FIGS. 19 and 20).

The body part 4211 has an upright piece 4211a facing the upright face 2A of the base 2, a pair of side pieces 411b extending forward from both ends of the upright piece 4211a, and an upper piece 4211c and a lower piece 4211d extending forward from the upper and lower edges of the upright piece 4211a. In the embodiment, by bending a single steel plate, the upright piece 4211a, side pieces 4211b, upper piece 4211c, and lower piece 4211d are formed. A reinforcement piece 4211e for preventing deformation of the body part 4211 is provided between the upper piece 4211c and the lower piece 4211d at both ends of the body part 4211 (see FIGS. 16 and 18).

A pair of first connection stays 43 extending in the direction almost orthogonal to the longitudinal direction of the body part 4211 are integrally attached in positions near both ends of the body part 4211 by welding or the like. Between the inner faces of the first connection stays 43, the reinforcement member 4212 is provided. A second connection stay 44 is integrally attached by welding or the like between the top face of the rear end of the first connection stay 43 and the under face of the front end of the facing frame 411a of the frame body 411 (see FIGS. 16 and 18 and the like).

The reinforcement member 4212 has an almost U shape in cross section and includes an upright piece 4212a facing the upright piece 4211a of the body part 4211 and an upper piece 4212b and a lower piece 4212c extending from the upper and lower edge of the upright piece 4212a toward the frame body 411 side (the side opposite to the base 2). Both ends of the reinforcement member 4212 are integrally attached to the inner faces of the first connection stay 43 by welding or the like (see FIGS. 19 and 20).

Each of the switching units 422 has, as shown in FIGS. 16 to 20, an upper contact member 4A which can come into contact with the opening-side upright wall 21a of the upper rail groove 21, a lower contact member 4B which can come into contact with the deeper-side upright wall 22b of the lower rail groove 22, an upper rolling member 4C which can be in contact with the opening-side upright wall 21a of the upper rail groove 21, a lower rolling member 4D which can be in contact with the deeper-side upright wall 22b of the lower rail groove 22, and a switching mechanism 4E capable of switching between a movement restriction state of restricting the movement of the slide device 42 and a movement permission state of permitting the movement of the slide device 42.

The upper contact member 4A is positioned nearer to the opening-side upright wall 21a side of the upper rail groove 21 than the upper rolling member 4C in the movement restriction state. In the embodiment, as the upper contact member 4A, an upward-projection piece obtained by bringing up the upper piece 4211c of the body part 4211 to the base 2 side (forward) and projecting upward is used. That is, the upper contact member 4A is formed integrally with the body part 4211 as a component of the slider body 421, is made of the steel plate, and has excellent rigidity.

The lower contact member 4B is positioned nearer to the deeper-side upright wall 22b side of the lower rail groove 22 than the lower rolling member 4D in the movement restriction state. In the embodiment, as the lower contact member 4B, a block made of a rigid material is applied. The lower contact member 4B is attached to the tip of a forward/backward moving member 4F which can go in/out in the body part 4211 of the slider body 421 (see FIGS. 18 and 20). In the embodiment, a bolt which can go in/out by the screwing action is applied as the forward/backward moving member 4F. The forward/backward moving member 4F can be screwed in a nut 4211g held by a nut holding piece 4211f provided continuously from the lower piece 4211d of the body part 4211 so as not to be rotatable, and its tip has a flange 4Fa capable of pressing the rear face of the lower contact member 4B. The lower contact member 4B has a guide member 4Ba extending rearward from the rear face. By inserting the guide member 4Ba into a guide hole (not shown) formed in the nut 4211g, forward/backward movement of the lower contact member 4B accompanying the forward/backward movement of the forward/backward moving member 4F can be accurately and smoothly performed.

The upper rolling member 4C is positioned apart from the opening-side upright wall 21a of the upper rail groove 21 more than the upper rolling member 4C in the movement restriction state. In the embodiment, a pair of rollers rotatable around the vertical axis is applied as the upper rolling members 4C. The pair of upper rotatable members 4C is supported by a common upper roller supporting member 4Ca.

The lower rolling member 4D is positioned apart from the deeper-side upright wall 22b of the lower rail groove 22 more than the lower rolling member 4D in the movement restriction state. In the embodiment, a pair of rollers capable of rotating around the vertical axis is applied as the lower contact member 4B. The pair of lower rolling members 4D is supported by a common lower roller supporting member 4Da. The upper rolling member 4C and the lower rolling member 4D function as a "guided part" of the invention.

The switching mechanism 4E can switch between the movement restriction state and the movement permission state. In the movement restriction state, the contact members 4A and 4B are allowed to come into contact with the upright walls 21a and 22b of the rail grooves 21 and 22 in priority to the rolling members 4C and 4D. In the movement permission state, the contact state between the contact
members 4A and 4B and the upright walls 21a and 22b of the rail grooves 21 and 22 is cancelled by moving the rolling members 4C and 4D relative to the contact members 4A and 4B.

[0113] In the embodiment, the slide device 42 is provided with a synchronization mechanism 4G for making the movement of the upper roller members 4C and the movement of the lower roller member 4D synchronized.

[0114] As shown in FIGS. 19 and 20, the synchronization mechanism 4G has an upper link 4G1 provided with the upper roller member 4C at its end, a lower link 4G2 provided with the lower roller member 4D at its end, and a vertical shaft 4G3 as a common rotary shaft of the upper and lower links 4G1 and 4G2. By making the upper and lower links 4G1 and 4G2 horizontally turn around the vertical shaft 4G3 as a center on the basis of an operational force applied to the operation part 424, the movement of the upper roller member 4C and the movement of the lower roller member 4D are synchronized.

[0115] The upper link 4G1 is provided with the upper roller supporting member 4Ca supporting the upper roller member 4C at its tip 4G1a. In the upper link 4G1, the tip 4G1a and a base 4G1b form a relative angle so that they are almost orthogonal to each other, and the tip 4G1a and the base 4G1b are connected via a long connection part 4G1c (see FIG. 19). An inner swirling part 4G1d which swells to the inside is provided near the tip 4G1a of the upper link 4G1, and a vertical shaft insertion hole (not shown) in which the vertical shaft 4G3 can be inserted is formed in the inner swirling part 4G1d. A long hole 4G1e is formed in the base 4G1b of the upper link 4G1. The region around the tip 4G1a of the upper link 4G1 can be mounted on the upper piece 4211e of the body part 4211 of the slider body 421.

[0116] The lower roller supporting member 4Da supporting the lower roller members 4D is provided at the tip 4G2a of the lower link 4G2 via an adjustment link 4G21. In the lower link 4G2, the tip 4G2a and a base 4G2b form a relative angle so that they are almost orthogonal to each other, and the tip 4G2a and the base 4G2b are connected via a long connection part 4G2c (see FIG. 20). The dimension in the longitudinal direction of the connection part 4G2c is set to be smaller than that of the connection part 4G1c of the upper link 4G1. It is set so that, when the lower link 4G2 and the upper link 4G1 are overlapped, the tip 4G2a of the lower link 4G2 is positioned on the inner side of the tip 4G1a of the upper link 4G1 in plan view. An outer swirling part 4G2d that swells outward is provided in a region near the tip 4G2a of the lower link 4G2. In the outer swirling part 4G2d, a vertical shaft hole which is communicated with the vertical shaft insertion hole formed in the upper link 4G1 is formed. A long hole 4G2e is formed in the base 4G2b of the lower link 4G2. The region near the tip 4G2a of the lower link 4G2 is positioned on the under face side of the lower piece 4211d of the body part 4211.

[0117] In the embodiment, a reinforcement link 4G4 is interposed between the upper link 401 and the lower link 4G2. The reinforcement link 4G4 has a plate shape and interposes in an upright posture between the upper link 4G1 and the lower link 4G2. More concretely, the reinforcement link 4G4 is interposed between the connection parts 4G1c and 4G2a of the upper and lower links 4G1 and 4G2 (see FIGS. 19 and 20). The links 4G1 and 4G2 and the reinforcement link 4G4 can be assembled by fitting a projection 4G41 of the reinforcement link 4G4 in fitting holes 4G1f and 4G2f formed in the connection parts 4G1c and 4G2c of the links 4G1 and 4G2.

[0118] The vertical shaft 4G3 can be inserted in the vertical shaft holes formed in the upper and lower links 4G1 and 4G2. In the embodiment, communication holes (not shown) communicated with the vertical shaft holes are formed also in the upper and lower pieces 4211e and 4211d of the body part 4211, and the vertical shaft 4G3 is continuously inserted also in the communication holes. The vertical shaft 4G3 is retained by having a head part of a large diameter, having a fastener such as an E ring, by caulking, or the like.

[0119] As shown in FIGS. 19 and 20, using an imaginary line passing the center of the vertical shaft 4G3 and almost orthogonal to the slide movement direction as a border, the tip 4G1a of the upper link 4G1 is positioned in one of the regions (concretely, the outside region), and the tip 4G2a of the lower link is positioned in the other region (concretely, the inside region). As a result, when the force of rotation around the vertical shaft 4G3 as a center acts on the upper and lower links 4G1 and 4G2, the upper roller member 4C provided at the tip of the upper link 4G1 moves toward the opening-side upright wall 21a of the upper rail groove 21, and the lower roller member 4D provided at the tip of the lower link 4G2 (via the adjustment link 4G21) moves toward the deeper-side upright wall 22b of the lower rail groove 22. On the other hand, when the force of reverse rotation around the vertical shaft 4G3 as a center acts on the upper and lower links 4G1 and 4G2, the upper roller member 4C provided at the tip of the upper link 4G1 moves so as to be apart from the opening-side upright wall 21a of the upper rail groove 21, and the lower roller member 4D provided at the tip of the lower link 4G2 (via the adjustment link 4G21) moves so as to be apart from the deeper-side upright wall 22b of the lower rail groove 22. With such a configuration, the movement of the upper roller member 4C and the movement of the lower roller member 4D accompanying the switching operation can be synchronized.

[0120] The slide device 42 according to the embodiment in which a pair of the switching units 422 each having such a configuration is provided in positions apart from each other in the sliding direction also has the interlocking mechanism 423 for making the switching units 422 operate so as to interlock.

[0121] As shown in FIGS. 19 and 20, the interlocking mechanism 423 has a common link interlocking member 4231 to which the bases 4G1b and 4G2b of the links 4G1 and 4G2 of the switching units 422 are connected. The interlocking mechanism 423 operates the link interlocking member 4231 on the basis of an operational force applied to the operating part 424, thereby moving the links 4G1 and 4G2 of the switching units 422 so as to interlock, and (almost) simultaneously moving the rolling members 4C and 4D provided for the tips 4G1a and 4G2a of the links 4G1 and 4G2.

[0122] The link interlocking member 4231 has an upright piece 4231a having height smaller than the dimension of a gap in the height direction between the upper link 4G1 and the lower link 4G2, a pair of side pieces 4231b extending forward from both ends of the upright piece 4231a, and an upper piece 4231e and a lower piece 4231f extending forward from the upper and lower edges of the upright piece 4231a. In the embodiment, by bending a single steel plate,
the upright piece 4231a, side pieces 4231b, upper piece 4231c, and lower piece 4231d are formed. A pair of link shaft insertion holes (not shown) are formed in the upper and lower pieces 4231c and 4231d of the link interlocking member 4231. By inserting link shafts 4232 in a state where the link shaft insertion holes and the long holes 4G1e and 4G2e formed in the links 4G1 and 4G2 of the switching unit 422 are communicated with each other, the link interlocking member 4231 and the switching unit 422 are associated with each other. Each of the link shafts 4232 is retained by having a head part of a large diameter, having a fastener such as an E ring, by caulking, or the like. The link interlocking member 4231 having such a configuration is set to be able to move forward or backward by using a space (gap) formed between the body part 4211 of the slider body 421 and the retaining member 4212 on the basis of an operating force applied to the operating part 424 to be described next.

[0123] The operating part 424 has, as shown in FIGS. 19 and 20, a sliding operation lever 4241 for applying an operating force directly from the user, a sliding operation lever shaft 4242 as the rotary shaft of the sliding operation lever 4241, and a sliding operation lever wear plate 4243 for restricting the rotational angle of the sliding operation lever 4241.

[0124] The sliding operation lever 4241 has a tongue 4241a at its tip and has a cam face 4241b in its base. The height dimension of the sliding operation lever 4241 is set to be smaller than the distance of the gap between the upper piece 4212b and the lower piece 4212c of the reinforcement member 4212 so that the sliding operation lever 4241 can be housed in the reinforcement member 4212.

[0125] The sliding operation lever wear plate 4243 has a pair of right and left contact parts 4243a with which a part of the sliding operation lever 4241 can come into contact, an upper piece 4243b connecting the upper ends of the contact parts 4243a, a lower piece 4243c connecting the lower ends of the contact parts 4243a, and a pair of side pieces 4243d extending forward from side edges of each of the contact parts 4243a. A space in which rotation within a predetermined angle range of the sliding operation lever 4241 is permitted is formed between the contact parts 4243a. In the embodiment, by bending a single steel plate, the contact parts 4243a, the upper piece 4243b, lower piece 4243c, and side pieces 4243d are formed. The height of the sliding operation lever wear plate 4243 is set to be larger than the height of the sliding operation lever 4241 and smaller than the distance of the gap between the upper piece 4212b and the lower piece 4212c of the reinforcement member 4212 so that the sliding operation lever wear plate 4243 can be housed together with the sliding operation lever 4241 in the reinforcement member 4212. The sliding operation lever wear plate 4243 is integrally attached to the rear face of the upright piece 4212c of the reinforcement member 4212 by welding or the like. A sliding operation lever shaft insertion hole (not shown) in which the sliding operation lever shaft 4242 can be inserted is formed in each of the upper and lower pieces 4212b and 4212c of the reinforcement member 4212, the upper and lower pieces 4243b and 4243c of the sliding operation lever wear plate 4243, and the base of the sliding operation lever 4241. By inserting the sliding operation lever shaft 4242 in a state where the sliding operation lever shaft insertion holes are communicated with each other, the reinforcement member 4212, sliding operation lever wear plate 4243, and sliding operation lever 4241 are associated with each other, and the sliding operation lever 4241 can rotate around the sliding operation lever shaft 4242. In the upright piece 4212a of the reinforcement member 4212, a notch for avoiding interference between the base of the sliding operation lever 4241 and the reinforcement member 4212 occurring at the time of turning of the sliding operation lever 4241 is formed.

[0126] As shown in FIGS. 15 and 21, the top board 5 connected to such a movable supporting member 4 via a hinge mechanism H has a movable top board 51 which can turn in the horizontal direction relative to the movable supporting member 4 and a turning mechanism 52 supporting turnable the movable top board 51 in the horizontal direction and connected to the movable supporting member 4 via a hinge mechanism H. In the following description of the top board 5, the base 2 side will be called a front side, and the opposite side will be called a rear side.

[0127] The movable top board 51 has a movable top board body 511 and a top board receiving part 512 supporting the movable top board body 511.

[0128] The movable top board 51 has, for example, a gourd shape (ellipse shape whose center portion is narrowed) in plan view. In the embodiment, the movable top board 51 having a relatively large size is applied. The maximum longitudinal dimension of the movable top board 51 is set to be almost the same or slightly smaller than the longitudinal dimension of the base 2.

[0129] The top board receiving part 512 has a top board receiving part body 5121 supporting the under face of the movable top board body 511 (the under face in the front half region of the movable top board body 511 in the example of the diagram), and a turn stopper rail 5122 provided so as to project downward from the top board receiving part body 5121. The turn stopper rail 5122 functions as an “object to be gripped” and its detailed shape and the like will be described later. The top board receiving part body 5121 and the turn stopper rail 5122 are integrally attached to the under face side of the movable top board body 511 by screwing or the like.

[0130] The turning mechanism 52 has a turntable 521 and a turntable receiving part 522 supporting the turntable 521.

[0131] The turntable 521 uses, for example, a thrust bearing. The radius of the turntable 521 is set to be smaller than the radius of the turn stopper rail 5122 so that the turntable 521 and the turn stopper rail 5122 do not interfere each other. The height of the turntable 521 is set to be smaller than that of the turn stopper rail 5122.

[0132] As shown in FIGS. 15 and 21, the turntable receiving part 522 has a turntable receiving part body 5221 supporting the whole region of the under face of the turntable 521 and a hinge shaft supporting body 5222 provided on the under face of the turntable receiving part body 5221. In the embodiment, the turntable receiving part body 5221 and the hinge shaft supporting body 5222 are integrally assembled with proper means such as a plurality of screws. The details of the hinge shaft supporting body 5222 will be described later. In the center of the turntable receiving part 522, a turn stopper mechanism fitting hole 5223 for providing a turn stopper mechanism 4K (see FIG. 17) is formed. The turn stopper mechanism fitting hole 5223 has a rectangular shape. It is set so that the turn stopper mechanism 4K cannot turn in the turn stopper mechanism fitting hole 5223 in a state where the turn stopper mechanism 4K is fit in the turn stopper mechanism fitting hole 5223.
The leg member 6 supporting the other end of the top board 5 has a leg member body 61 and a moving body 62 (caster in the diagram) provided at the lower end of the leg member body 61.

In the desk 1 of the embodiment, such a top board 5 and the movable supporting member 4 are coupled to each other via the hinge mechanism H.

The hinge mechanism H has, as shown in FIG. 21, a hinge shaft H1, the hinge shaft supporting body 5222 of the turntable receiving part 522, and a hinge shaft receiving body 4111 provided for the frame body 411 of the movable supporting member 4.

The hinge shaft H1 has an almost pin shape integrally including a shaft and a head having a diameter larger than that of the shaft.

As shown in FIGS. 15 and 21, the hinge shaft supporting body 5222 has a horizontal piece 5222a and a pair of trailing pieces 5222b trailing from both edges of the horizontal piece 5222a. A first insertion hole 5222c for a hinge shaft in which the hinge shaft H1 can be inserted is formed in each of the trailing pieces 5222b. The first insertion holes 5222c for the hinge shaft can support the hinge shaft H1 in a state where there is almost no play. The pair of trailing pieces 5222b is provided in a region near the rear end of the horizontal piece 5222a. In the turntable 522 obtained by integrally assembling the hinge shaft supporting body 5222 and the turntable receiving part body 5221, the pair of trailing pieces 5222b and the first insertion holes 5222c for the hinge shaft are positioned near the rear end of the turntable receiving part 522.

As shown in FIGS. 16 and 21, the hinge shaft receiving body 4111 is provided on the inner face of the front end frame 411b of the frame body 411. The hinge shaft receiving body 4111 has an upright piece 4111a in contact with the inner face of the front-end frame 411b, a pair of facing pieces 4111b extending forward from both ends of the upright piece 4111a and facing each other, and a horizontal piece 4111c extending forward from the lower end of the upright piece 4111a. In each of the facing pieces 4111b, a second insertion hole 4111d for a hinge shaft in which the hinge shaft H1 can be inserted is formed. Each of the second insertion holes 4111d for the hinge shaft can support the hinge shaft H1 with play. In the embodiment, a long hole extending in the height direction is applied as the second insertion hole 4111d for the hinge shaft. The longitudinal dimension of the pair of facing pieces 4111b is set so that the front ends are positioned on the rear side of the connection part of the facing frames 411a and the connection frame 411c of the frame body 411 (on the side opposite to the base 2, in other words, the side of the front-end frame 411b).

As a result, the second insertion hole 4111d for the hinge shaft formed in each of the facing pieces 4111b is also positioned on the rear side of the connection part of the facing frame 411a and the connection frame 411c. Accordingly, the hinge shaft H1 supported in the second insertion holes 4111d for the hinge shaft is positioned on the rear side (on the side opposite to the base 2) of the priority support 412 provided furthest from the base 2 among the plurality of priority supports 412 (refer to FIG. 21 in which the pattern is formed in the priority supports 412).

By inserting the hinge shaft H1 in the holes 5222c and 4111d in a state where the first insertion hole 5222c for the hinge shaft in the hinge shaft supporting body 5222 and the second insertion hole 4111d for the hinge shaft in the hinge shaft receiving body 4111 are communicated with each other, the top board 5 and the movable supporting member 4 are coupled to each other via the hinge mechanism H. In the coupled state, the hinge shaft H1 of the hinge mechanism H is positioned apart from the support region of the priority support 412. The hinge shaft H1 is retained by having a head part of a large diameter, having a fastener such as an E ring, by caulking, or like.

A method of using the desk 1 will be described by paying attention to, particularly, operation and action when the top board 5 and the movable supporting member 4 are allowed to slide along the base 2 or when the slide is restricted.

First, in the case of switching the switching mechanism 4E of each of the switching units 422 from the movement restriction state (see FIGS. 17 to 20) to the movement permission state (see FIGS. 22 to 25), the user grips the tongue 4241a of the sliding operation lever 4241 and performs the operation of turning the sliding operation lever 4241 in the direction of the arrow A in FIGS. 19 and 20 around the sliding operation lever shaft 4242 as a center. Accompanying the turn of the sliding operation lever 4241, the link interlocking member 4231 pressed against the cam face 4241b of the sliding operation lever 4241 moves from the reinforcement member 4212 toward the body part 4211 (see FIGS. 24 and 25). The links 4G1 and 4G2 of the switching units 422, whose bases 4G1b and 4G2b are connected to the link interlocking member 4231, turn around the link shafts 4232 as a center so as to interlock. In each of the switching units 422, the upper link 4G1 and the lower link 4G2 facing each other in the height direction turn around the common link shaft 4232 as a center, so that the upper roller member 4C provided at the tip 4G1a of the upper link 4G1 via the upper roller supporting member 4Ca moves toward the opening-side upright wall 21a of the upper rail groove 21, and the lower roller member 4D provided for the tip 4G2a of the lower link 4G2 via the adjustment link 4G21 and the lower roller supporting member 4Da moves toward the deeper-side upright wall 22b of the lower rail groove 22. As a result, as shown in FIG. 23, the switching mechanism 4E of each of the switching units 422 enters the movement permission state in which the contact state of the upper contact member 4A to the opening-side upright wall 21a of the upper rail groove 21 is cancelled, the upper roller member 4C is allowed to come into contact with the opening-side upright wall 21a in the upper rail groove 21, the contact state of the lower contact member 4B to the deeper-side upright wall 22b in the lower rail groove 22 is cancelled, and the lower roller member 4D is allowed to come into contact with the deeper-side upright wall 22b in the lower rail groove 22. In this state, the top board 5 can slide together with the movable supporting member 4 along the base 2. In the embodiment, an auxiliary rolling member 4I which can come into contact with a bottom 21 of the upper rail groove 21 is provided for the body 4211 of the slide device 42 (see FIGS. 18 and 23).

In the embodiment, the mode of moving the rolling members 4C and 4D relative to the contact members 4A and 4B, respectively, is adopted in association with the operation. Consequently, in the case of switching the switching mechanism 4E from the movement restriction state to the movement permission state, the relative angle of the movable supporting member 4 with respect to the base 2 changes, and the movable supporting member 4 is in the
angled posture such that the side opposite to the base 2 of the movable supporting member 4 is lifted (see FIGS. 22 and 23). According to the change in the angle with respect to the base 2 of the movable supporting member 4, the top board 5 is coupled to the movable supporting member 4 via the hinge mechanism H and whose other end is supported by the leg member 6 turns around the hinge shaft H1 so as to be lifted from the movable supporting member 4 as shown in FIGS. 17, 21, and 22. Since the angle of the top board 5 relative to the movable supporting member 4 is set to be changeable as described above, at the time of switching the slide device 42 from the movement restriction state to the movement permission state by the switching mechanism 4E, only the operating force of changing the angle of the movable supporting member 4 with respect to the base 2 is needed. The switching operation can be performed with the operating force much lighter than that in the mode requiring the operating force for integrally and simultaneously lifting (changing the angle of) the top board with the supporting member from the base. Further, in the case of switching the switching mechanism 4E from the movement restriction state to the movement permission state, as the relative angle between the movable supporting member 4 and the top board 5 changes, only a part of the priority support 412 closest to the hinge shaft H1 out of a plurality of priority supports 412 comes into contact with the under face of the movable top board body 511, and the contact state between the other priority supports 412 and the top board 5 is cancelled.

On the other hand, the operation of switching the switching mechanism 4E of each of the switching units 422 from the movement permission state to the movement restriction state is performed as follows. The user grips the tongue 4241α of the sliding operation lever 4241 exposed from the reinforcement member 4212 and turns the sliding operation lever 4241 around the sliding operation lever shaft 4242 as a center in the direction of the arrow B in FIGS. 24 and 25. With the turn of the sliding operation lever 4241, the link interlocking member 4231 moves toward the reinforcement member 4212, and the links 4G1 and 4G2 of the switching units 422 turn around the hinge shaft 4232 as a center. By turning the upper and lower links 4G1 and 4G2 around the common link shaft 4232 as a center in the direction opposite to that in the case of switching the switching mechanism 4E from the movement restriction state to the movement permission state, the upper rolling member 4C provided at the tip 4G1α of the upper link 4G1 moves so as to be apart from the deeper-side upright wall 21a of the upper rail groove 21, and the lower rolling member 4D provided at the tip 4G2α of the lower link 4G2 moves so as to be apart from the deeper-side upright wall 22b of the lower rail groove 22. As a result, the movable supporting member 4 moves downward by the dead load of the movable supporting member 4 itself and the dead load of the top board 5. As shown in FIG. 18, the switching mechanism 4E of each of the switching units 422 cancels the state where the upper rolling member 4C is in contact with the opening-side upright wall 21a of the upper rail groove 21, makes the upper contact member 4A come into contact with or press to the deeper-side upright wall 22b of the lower rail groove 22, and makes the lower contact member 4B come into contact with or press to the deeper-side upright wall 22b of the lower rail groove 22, thereby entering the movement restriction state. The auxiliary rolling member 411 becomes lifted from the bottom 21c of the upper rail groove 21. It restricts the sliding of the movable supporting member 4 and the top board 5 along the base 2.

In the embodiment, in the case of switching the switching mechanism 4E from the movement permission state to the movement restriction state, the top board 5 turns toward the movable supporting member 4 around the hinge shaft H1 of the hinge mechanism H according to a change in the angle of the movable supporting member 4 relative to the base 2 and is supported by the priority supports 412.

In the embodiment, to complement the sliding movement/restriction function of the switching mechanism 4E, a side lock lever 41 is provided for the slide device 42. The side lock lever 41 can turn around a side lock lever shaft 41a as a center, and switch between a state where a press face 41b provided in the base portion is pressed or in contact with the upright face 2A of the base 2 and a state where the press contact is cancelled. Further turn of the sliding operation lever 4241 in the switching operation is restricted by contact of a part of the sliding operation lever 4241 with the contact part 4243a of the sliding operation lever wear plate 4243.

In the desk 1 of the embodiment, the top board 5 can turn horizontally by the movable supporting member 4 by the action of the turning mechanism 52 as described above, and the movable supporting member 4 is provided with a gripping mechanism 4I which can be switched between a turn restriction state in which the horizontal turn of the top board 5 is restricted by gripping the turn stopper rail 5122 as the "object to be gripped" integrally provided on the under face side of the movable top board body 511 and a turn permission state in which the horizontal turn of the top board 5 is permitted by cancelling the gripping state (see FIGS. 17 and 21).

The turn stopper rail 5122 playing the role of the "object to be gripped" will be described in detail.

As shown in FIGS. 13A to 13C (plan views showing the relation between the turn stopper rail 5122 and the top board receiving part body 5121, in which the top board receiving part body 5121 and the turn shaft 5a of the top board 5 are shown by imaginary lines), the turn stopper rail 5122 has an almost annular shape in plan view and has a center angle equal to or slightly larger than the horizontal turn angle of the top board 5. In the embodiment, since the top board 5 can turn by 180 degrees, the turn stopper rail 5122 of a semicircular shape having a central angle of 180 degrees or slightly larger than 180 degrees is applied. The turn stopper rail 5122 has an almost L shape in cross section made up by the upright part 5122a almost orthogonal to the face of the top board 5 and a horizontal part 5122b horizontally extending toward the inside from the lower edge of the upright part 5122a. In the embodiment, the upright part 5122a and the horizontal part 5122b are integrally formed. The turn stopper rail 5122 is positioned on the under face in the front-half region of the top board receiving part body 5121, and the turn stopper rail 5122 and the top board receiving part body 5121 are integrally attached to the under face side of the movable top board body 511 by screwing or the like. The height of the turn stopper rail 5122 is set to be larger than that of the turntable 521.

On the other hand, as shown in FIG. 8 and FIGS. 14 to 16, the gripping mechanism 4I has: a drag member 41l
capable of turning around the horizontal axis between a position (A) capable of gripping in which the turn stopper rail 5122 (more concretely, the horizontal part 5122b) can be gripped and a grip cancellation position (B) in which the gripping state is cancelled; and an operation part 412 for applying an operating force for switching the drag member 411 between the position (A) capable of gripping and the grip cancellation position (B).

[0150] The drag member 411 has a drag member body 4111 extending in the horizontal direction and a pair of trailing pieces 4112 trailed from both ends of the drag member body 4111. In the embodiment, the drag member 411 is made of a material having high rigidity such as a metal, and integrally has the drag member body 4111 and the pair of trailing pieces 4112. A grip nail 4111a which can come into direct contact with the turn stopper rail 5122 is provided at the tip of the drag member body 4111. The grip nail 4111a is rounded corresponding to rounding of the turn stopper rail 5122. The grip nail 4111a is set so that its height is gradually decreased toward the front end. The grip nail 4111a in the drag member body 4111 is projected forward from the trailing pieces 4112 (to the base 2 side). In each of the trailing pieces 4112, a first insertion hole 4112a for the drag member rotary shaft to which a rotary shaft 41X of the drag member 411 can be inserted and a first guide hole 4112b specifying the movement rail between the position (A) capable of gripping and the grip cancellation position (B) of the drag member 411 are formed. In the embodiment, the first insertion hole 4112a for the drag rotary shaft is formed in a position deviated from the center of gravity of the drag member 411. The first guide hole 4112b is a long hole extending along a direction tilted from the drag member body 4111 by a predetermined angle.

[0151] The operation part 412 has an almost lever shape and is provided with a tongue 4121 at its tip. In the base portion, a cam face 4122 having a straight part and a curved part and a first insertion hole 4123 in which a rotary shaft 41Y of the operation part 412 can be inserted are formed. The width of the operation part 412 is set to be smaller than the distance between the outer faces of the trailing pieces 4112 of the drag member 411.

[0152] In the embodiment, the gripping mechanism 41 is provided so as to be associated with the reinforcement frame 411d in the frame body 411 in the supporting member 4. The gripping mechanism 41 has, therefore, an operation part supporting member 433 whose one end is fixed to the reinforcement frame 411d and supporting the operation part 412, and an operation part wear plate 434 provided between the reinforcement frame 411d and the operation part 412.

[0153] The operation part supporting member 433 has a pair of upright pieces 4331 whose tips are fixed to the reinforcement frame 411d by welding or the like, and a connection piece 4332 connecting the upper ends of the base portions of the upright pieces 4331. In the embodiment, by bending a single steel plate, the upright pieces 4331 and the connection piece 4332 are formed. A second insertion hole 4331a for the drag member rotary shaft, which is communicated with the first insertion hole 4312a for the drag member rotary shaft formed in the trailing piece 4112 of the drag member 411 is formed in the front end side of each of the upright pieces 4331. In an almost center portion in the longitudinal direction of each of the upright pieces 4331, a second guide hole 4331b specifying the movement locus of the operation part 412 when the operating force is applied to the operation part 412 is formed. In the embodiment, a long hole extending along the longitudinal direction of the upright pieces 4331 is applied as the second guide hole 4331b. The distance between the inner faces of the upright pieces 4331 is set to be larger than the distance between the outer faces of the trailing pieces 4112 of the drag member 411.

[0154] The operation part wear plate 434 has an almost U shape in section, including an upright piece 4341 and an upper piece 4342 and a lower piece 4343 extending forward from the upper and lower edges of the upright piece 4341. In the embodiment, by bending a single steel plate, the upright piece 4341 and the upper and lower pieces 4342 and 4343 are formed. The upper piece 4342 projected forward from the lower piece 4343 is fixed to the top face of the auxiliary frame 411d by welding or the like, and the tip of the lower piece 4343 is fixed to the rear face of the auxiliary frame 411d by welding or the like. A pair of insertion holes 4341a in which a pair of turn stopper pins 43p can be inserted are formed in the upright piece 4341. A hole 4341da capable of housing the turn stopper pin 43p is formed in the reinforcement frame 411d, and a space 4342a capable of housing the turn stopper pin 43p is formed in the base portion of the operation part 412 (see FIG. 14).}

[0155] The turn stopper pin 43p is inserted continuously in the turn stopper pin hole 4311a in the reinforcement frame 411d and the turn stopper pin hole 4341a in the operation part wear plate 434, and the front part of each of the turn stopper pins 43p is positioned in the turn stopper pin housing space 412a in the operation part 412. In the state, the second guide hole 4331b in the operation part supporting member 433, the first guide hole 4112b in the drag member 411, the first insertion hole 4123 for the operation rotary shaft in the operation part 412, and the second insertion hole 4123a for the operation part rotary shaft formed in the front end part of the turn stopper pin 43p are communicated with each other. The rotary shaft 43Y of the operation part 412 is continuously inserted in the holes 4331a, 4123a, 4123, and 4123p. On the other hand, the second insertion hole 4331a for the drag member rotary shaft in the operation part supporting member 433 and the first insertion hole 4112a for the drag rotary shaft in the drag member 411 are communicated with each other, and the rotary shaft 41X of the drag member 431 is continuously inserted in the holes 431a and 4312a. By the above operations, the gripping mechanism 41 formed by associating the reinforcement frame 411d, the drag member 411, the operation part 412, the operation part supporting member 433, and the operation part wear plate 434 is assembled integrally with the supporting member 4. The attachment position of the reinforcement frame 411d is set so as to coincide on an imaginary straight line connecting the pair of priority supports 412 provided on the base 2 side out of a plurality of priority supports 412 provided for the supporting member 4. The gripping mechanism 41 provided for the reinforcement frame 411d is positioned in or near the support area of the priority supports 412 (see FIGS. 17 and 18 which will be described later). The rotary shafts 41X and 43Y are retained by each having a head part of a large diameter, having a fastener such as an E ring, by caulking, or the like.

[0156] The operating method and the action of the gripping mechanism 41 will now be described.

[0157] When the drag member 411 is positioned in the position (A) capable of gripping, by gripping the horizontal
part 5122b of the turn stopper rail 5122 by the grip nail 4J11a of the drag member 4J1, the turn restriction state in which the horizontal turn of the top board 5 is restricted is set (see FIG. 8). In this case, the operation part 4J2 makes the linear part of the cam face 4J22 come into contact with or press to the operation part wear plate 4J4. The posture becomes generally horizontal and the maximum height of the operation part 4J2 is smaller than that of the frame body 411. The rotary shaft 4JY of the operation part 4J2 is positioned at the lower edge of the first guide hole 4J12b formed in the drag member 4J1, and also at the rear edge (the side opposite to the base 2) of the second guide hole 4J31b formed in the operation part supporting member 4J3. The rotary shaft 4JY of the operation part 4J2 is locked in a state where it is positioned at the lower edge of the first guide hole 4J12b, thereby restricting turn of the drag member 4J1 around the rotary shaft 4JX as a center, and locking the drag member 4J1 in the position (A) capable of gripping. In the case where the gripping mechanism 4J is in the turn restriction state, the under face of the movable top board body 5111 is supported by a plurality of priority supports 412.

[0158] On the other hand, to switch the gripping mechanism 4J from the turn restriction state to the turn permission state, the user grips the tongue 4J21 of the operation part 4J2 and applies the operating force of turning the operation part 4J2 downward. On the basis of the operating force, the operation part 4J2 turns downward around the rotary shaft 4JY as a center. At the time the operation part 4J2 is turned by a predetermined angle, an object to come into contact with or to be pressed against the operation part wear plate 4J4 is changed from the linear part in the cam face 4J22 of the operation part 4J2 to the curved part, and the rotary shaft 4JY of the operation part 4J2 moves forward (to the base 2 side) along the second guide hole 4J31b. As the rotary shaft 4JY moves, the drag member 4J1 turns rearward (to the base 2 side) around the rotary shaft 4JX as a center and moves to the grip cancellation position (B) where the grip nail 4J11a is apart from the horizontal part 5122b of the turn stopper rail 5122 (see FIG. 15). The turn locus between the position (A) capable of gripping and the grip cancellation position (B) of the drag member 4J1 is specified by the first guide hole 4J12b. That is, when the drag member 4J1 moves between the position (A) capable of gripping and the grip cancellation position (B), the height of the rotary shaft 4JY of the operation part 4J2 is unchanged. When the drag member 4J1 is in the position (A) capable of gripping, the rotary shaft 4JY of the operation part 4J2 is positioned at the lower edge of the first guide hole 4J12b. When the drag member 4J1 is in the grip cancellation position (B), the rotary shaft 4JY of the operation part 4J2 is positioned at the upper edge of the first guide hole 4J12b. When the drag member 4J1 is moved from the position (A) capable of gripping to the grip cancellation position (B), apart of the trailing piece 4J12 of the drag member 4J1 comes into contact with the reinforcement frame 411d, further turn in the same direction of the drag member 4J1 is restricted. Since the rotary shaft 4JX is provided in a position displaced from the center of gravity of the drag member 4J1, the movement from the position (A) capable of gripping to the grip cancellation position (B) of the drag member 4J1 can be performed by using the dead load of the drag member 4J1. By moving the drag member 4J1 from the position (A) capable of gripping to the grip cancellation position (B), the gripping mechanism 4J cancels the grip state of the turn stopper rail 5122 by the drag member 4J1 and the reinforcement frame 411d, and a turn permission state in which a horizontal turn of the top board 5 is permitted is obtained. As shown in FIGS. 17 and 18, the posture of the top board 5 at an angle with respect to the base 2 such as a posture in which the longitudinal direction of the top board 5 is almost orthogonal to that of the base 2 or a posture in which the longitudinal direction of the top board 5 is almost parallel with the longitudinal direction of the base 2 can be properly selected. FIGS. 17 and 18 show the gripping mechanism 4J in which the drag member 4J1 is in the position (A) capable of gripping and a part of the gripping mechanism 4J is not shown.

[0159] In the case where the gripping mechanism 4J is in the turn permission state, as shown in FIG. 16, the top board 5 can turn so as to be lifted from the supporting member 4J1 around the hinge shaft 411 of the hinge mechanism 411d.

[0160] By moving the drag member 4J1 from the position (A) capable of gripping to the grip cancellation position (B), the gripping mechanism 4J cancels the grip state of the turn stopper rail 5122 by the drag member 4J1 and enters the turn permission state of permitting the horizontal turn of the top board 5. As shown in FIGS. 17 and 18, the posture of the top board 5 at an angle with respect to the base 2 such as a posture in which the longitudinal direction of the top board 5 is almost orthogonal to that of the base 2 or a posture in which the longitudinal direction of the top board 5 is almost parallel with the longitudinal direction of the base 2 can be properly selected. FIGS. 17 and 18 show the gripping mechanism 4J in which the drag member 4J1 is in the position (A) capable of gripping and a part of the gripping mechanism 4J is not shown.

[0161] On the other hand, the operation of switching the gripping mechanism 4J from the turn permission state to the turn restriction state is performed by applying an operating force of returning the operation part 4J2 to the original position. Prior to the operation of switching the gripping mechanism 4J from the turn permission state to the turn restriction state, the top board 5 has to be reset to the normal use position shown in FIG. 15. When the user grips the tongue 4J21 of the operation part 4J2 and applies the operating force of turning the operation part 4J2 upward, the operation part 4J2 turns upward around the rotary shaft 4JY as a center. At the time the operation part 4J2 is turned by a predetermined angle, an object to come into contact with or to be pressed against the operation part wear plate 4J4 is changed from the curved part in the cam face 4J22 of the operation part 4J2 to the linear part, and the rotary shaft 4JY of the operation part 4J2 moves rearward (to the side opposite to the base 2) along the second guide hole 4J31b. As the rotary shaft 4JY moves, the drag member 4J1 turns forward (to the base 2 side) around the rotary shaft 4JX as a center and is positioned in the position (A) capable of gripping where the horizontal part 5122b of the turn stopper rail 5122 is gripped. By moving the drag member 4J1 from the grip cancellation position (B) to the position (A) capable of gripping, the horizontal part 5122b of the turn stopper rail 5122 is led downward (to the reinforcement frame 411d side) and the horizontal turn of the top board 5 is restricted. In association with the operation of switching the gripping mechanism 4J from the turn permission state to the turn restriction state, the drag member 4J1 of the switching mechanism 4J pushes the horizontal part 5122b of the turn stopper rail 5122 downward. By the operation, the movable
top board body 511 is pulled down together with the turn stopper rail 5122, and the under face of the movable top board body 511 is pressed against the priority support 412, thereby assuring a state where the top board 5 is excellently supported. The turn locus between the position (A) capable of gripping and the grip cancellation position (B) of the drug member 411 is specified by the first guide hole 41126 as described above. At the time of performing the operation of moving the drug member 411 from the grip cancellation position (B) to the position (A) capable of gripping, a part of the operation part 412 comes into contact with the connection piece 4132 of the operation part supporting member 4133, thereby restricting further turn of the operation part 412 in the same direction.

[0162] The gripping mechanism 4J is switched by the turn regulation state and the turn permission state by an operation as described above, thereby capable of controlling permission/restriction of the turning operation of the top board 5, and also controlling permission/restriction of a turn to lift the top board 5 using the hinge mechanism H by the gripping mechanism 4J.

[0163] In the case where the gripping mechanism 4J is in the turn restriction state, as shown in FIG. 8, the hinge mechanism H enters a turn restriction state in which the turn to lift the top board 5 up using the hinge mechanism H is restricted. On the other hand, as shown in FIG. 16, the gripping mechanism 4J enters the turn permission state in which the turn to lift the top board 5 using the hinge mechanism H is permitted. That is, the gripping mechanism 4J also functions as a top board lifting regulating mechanism of regulating the top board lifting operation.

[0164] The hinge mechanism H and the gripping mechanism 4J are both attached to the turn stopper rail 5122, and the upper face of the movable top board body 511 is pulled down together with the turn stopper rail 5122, and the under face of the movable top board body 511 is pressed against the priority support 412, thereby assuring a state where the top board 5 is excellently supported. The turn locus between the position (A) capable of gripping and the grip cancellation position (B) of the drug member 411 is specified by the first guide hole 41126 as described above. At the time of performing the operation of moving the drug member 411 from the grip cancellation position (B) to the position (A) capable of gripping, a part of the operation part 412 comes into contact with the connection piece 4132 of the operation part supporting member 4133, thereby restricting further turn of the operation part 412 in the same direction.

[0167] The desk 1 of the embodiment has the stationary top board 5X whose position relative to the base 2 cannot be changed.

[0168] For example, the longitudinal dimension of the stationary top board 5X is set to be almost equal to or slightly smaller than that of the base 2. In the embodiment, the stationary top board 5X having an almost rectangular shape in plan view is applied. The stationary top board 5X is supported by the stationary supporting member 4X.

[0169] As shown in FIG. 35, the stationary supporting member 4X has an attachment part 4X1 which can be attached to the rail grooves 21 and 22 in the base 2 and an arm 4X2 extending from the attachment part 4X1 toward the under face of the stationary top board 5X.

[0170] The attachment part 4X1 has an upper insertion part 4X11 which can be inserted in the upper rail groove 21 and a lower insertion part 4X12 which can be inserted in the lower rail groove 22. In the embodiment, the upper and lower insertion parts 4X11 and 4X12 are formed by a single steel plate and are connected to each other via a connection part 4X13.

[0171] By inserting the upper and lower insertion parts 4X11 and 4X12 in the upper and lower rail grooves 21 and 22 so as to be retained, respectively, the upper insertion part 4X11 comes into contact with or is pressed against the opening-side upright wall 21a of the upper rail groove 21 by the dead load of the stationary supporting member 4X itself, and the lower insertion part 4X12 comes into contact with or is pressed against the deeper-side upright wall 22b of the lower rail groove 22. As a result, the stationary supporting member 4X can be fixed in a state where the support strength effective to the base 2 is assured. In the embodiment, the upper insertion part 4X11 has a contact part 4X11a which directly comes into contact with or is pressed against the opening-side upright wall 21a of the upper rail groove 21 and an auxiliary contact part 4X11b which can come into contact with the bottom 21c of the upper rail groove 21. The upper and lower insertion parts 4X11 and 4X12 are allowed to come into face contact with the upright walls 21a and 22b of the rails 21 and 22, so that effective support strength can be displayed.

[0172] One end of the arm 4X2 is attached to the attachment part 4X1, and the other end is attached to the under face of the stationary top board 5X. In the embodiment, one end of the arm 4X2 is integrally attached to the connection part 4X13 of the attachment part 4X1 by welding or the like, and the other end of the arm 4X2 is integrally attached to the under face of the stationary top board 5X by welding or the like.

[0173] Such stationary supporting members 4X are provided on both sides of the stationary top board 5X, and the stationary top board 5X is supported only by the stationary supporting members 4X.

[0174] As described above, the desk 1 according to the second embodiment produces effects similar to those of the desk 1 of the first embodiment. That is, the top board 5 supported by the movable supporting member 4 can be moved along the base 2, the layout can be changed easily,
and the order of a work space and an entire office using the base 2 as a reference can be maintained by restricting the movement range of the top board 5 by the base 2. Further, since the movable supporting member 4 can slide along the base 2, it is unnecessary to perform the conventional work of once cancelling a state where screws or insertion parts are screwed or fit in screw holes or fit holes, and screwing or fitting the screws or insertion parts again to different screw holes or fit holes each time the layout is changed. The layout can be easily and accurately changed by the user himself/herself without asking for a specialist.

[0175] Since the stationary supporting member 4X supported along the base 2 so as to be able to slide and the stationary top board 5X supported by the stationary supporting member 4X, as shown in FIG. 34, an area in which the layout can be changed by using the base 2 in common and an area in which the layout cannot be changed can be formed in the single area of the desk 1. The invention can be adapted to both of the environment where the layout is changed frequently and the environment where the layout is not changed.

[0176] The movable supporting member 4 can be moved along the base 2 and the stationary supporting member 4X can be attached to the base 2 by using the rails 21 and 22 having the same shape. Consequently, at the time of selecting/changing a desired mode from a mode of using one of areas sandwiching the base 2 as a boundary as a workspace in which layout can be changed and the other area as a workspace in which layout cannot be changed, a mode of using both of the areas as work spaces in which layout can be changed, and a mode of using both of the areas as work spaces in which layout cannot be changed, the common rails 2 can be used without changing the rails 2.

[0177] In addition, since the stationary top board 5X can be supported at one end or cantilevered by the stationary supporting member 4X, the leg member is unnecessary, so that the space below the stationary top board 5X can be assured wide.

[0178] The invention is not limited to the foregoing embodiments described in detail.

[0179] For example, as the top board, a top board supported by being simply put on the movable supporting member, or a top board supported by the movable supporting member so as not to be horizontally turnable may be applied.

[0180] Although the linearly extending base has been described in the embodiments, the invention is not limited to the base. A base extended in a curved shape (circular curve or elliptic curve shape) or a base extending while meandering may be used.

[0181] It is also possible to employ a mode of supporting the top board at a plurality of positions (for example, both ends) by a plurality of (for example, two) movable supporting members supported by the same base, or a mode of supporting a part (for example, one end) of the top board by a movable supporting member supported by a base and supporting another part (for example, the other end) of the top board by a movable supporting member supported by another base.

[0182] Similarly, a mode of supporting a part (for example, one end) of the stationary top board by a stationary supporting member supported by a base and supporting another part (for example, the other end) of the stationary top board by a stationary supporting member supported by another base may be employed.

[0183] On the other hand, in the mode of supporting a part of the top board by a leg member, a leg member which is not provided with the moving body at its lower end may be applied. In this case, it is sufficient to move the top board in a state where the top board is lifted to a position at which the lower end of the leg member floats from the floor. Further, a leg member having an adjuster for correcting unevenness of the leg member or the tilt of the top board may be applied. In the case of applying a leg member having a moving member such as a caster, by providing locking means regulating rolling of the moving member, unexpected movement of the top board after layout is changed can be prevented.

[0184] The stationary top board may be supported together with the stationary supporting member by a leg member.

[0185] It is sufficient to support the movable supporting member so as to be movable along the base. The movable supporting member may be supported movably and continuously, or step by step in predetermined pitches. The movable supporting member may not be slid using the rolling member illustrated in the embodiment but may be moved in a state where a sliding member or contact member provided for the movable supporting member slides or in contact with the guide of the base. A desk having locking means which can be switched between a state where one or both of the movable supporting member and the top board can be moved and a state where one or both of them cannot be moved may be employed.

[0186] Further, an snap action mechanism for snapping and stopping the horizontal turn angle of the top board every predetermined angle may be provided between the top board and the movable supporting member. In the case where the top board is supported by the movable supporting member so as to be turnable in the horizontal direction, by providing turn locking mechanism capable of switching between a horizontal turn permission state in which horizontal turn of the top plate is permitted and a horizontal turn restriction state in which the horizontal turn of the top board is restricted between the top board and the movable supporting member, unexpected turn movement of the top board after layout is changed can be prevented.

[0187] The rail in the guide may have a groove shape or a projected shape, and the number of rails may be properly increased or decreased. Similarly, a projected rail may be applied as the rail in the attachment part, and the number of rails may be properly increased or decreased. As optional members, a socket, a wire housing member, an armored telephone stand, a tray, a display arm, and the like may be applied.

[0188] In the case where a plurality of desks are arranged so that a plurality of bases are continued in the longitudinal direction, preferably, the movable supporting member provided so as to be movable to one base can be moved from the one base to another base adjacent thereto. With such a configuration, the top board which is supported by the movable supporting member can be moved from one base to another base adjacent thereto, and variations of selectable layouts can be increased. In this case, by providing passage permission parts for permitting passage of the movable supporting member for both ends of the base or end caps attached to both ends of the base, excellent movement of the movable supporting member can be assured. Examples of
the passage permission parts are the guide itself provided for the base, and a notch or a slit formed in a part corresponding to the guide in the end cap.

Each of the top board, the stationary top board, and the like may have various shapes such as a circular shape, an ellipse shape, and a polygonal shape in plan view.

Storage furniture such as a wagon or a front panel may be disposed in a lower space formed below the under face of the base or the under face of the top board. As the base, in place of the base whose both ends are supported by the base supporting member and whose under face is separated (lifted) from the floor, the base whose under face is in contact with the floor and having an upright wall shape also functioning as an end rail may be used.

Figs. 2, 13, and 34 shows the mode of arranging the stationary top boards 5X in parallel in the longitudinal direction, so that workers using the top boards 5X sit side by side. Alternately, layout in which the longitudinal direction of the stationary top boards is orthogonal to the longitudinal direction of the base may be employed.

A mode of supporting a single stationary top board by one or three or more stationary supporting members may be employed.

Fixation of the stationary supporting member to the base and fixation between the stationary supporting member and the stationary top board may be performed by screwing.

The concrete configurations of the other parts are not limited to those of the foregoing embodiments but can be variously modified without departing from the gist of the present invention.

What is claimed is:

1. A desk comprising:
a base extending in a predetermined direction;
a movable supporting member supported so as to be movable along the base; and
a top board supported by the movable supporting member.

2. A desk comprising:
a base extending in a predetermined direction;
a movable supporting member supported so as to be movable along the base; and
a top board supported by the movable supporting member, wherein the movable supporting member can move along the base together with the top board in a state where the movable supporting member supports the top board.

3. The desk according to claim 1, wherein the top board is supported by the movable supporting member so as to be turnable in the horizontal direction.

4. The desk according to claim 1, further comprising a leg member supporting a region different from a region supported by the movable supporting member, in the top board, wherein a movable body capable of moving on a floor is provided at a lower end of the leg member.

5. The desk according to claim 1, wherein the base is provided with a guide for guiding movement of the movable supporting member, and the movable supporting member is provided with a guided part which is guided by the guide.

6. The desk according to claim 5, wherein the guide is a rail formed along an extension direction of the base.

7. The desk according to claim 6, wherein the guided part has a rolling member capable of rolling along the rail formed in the base.

8. The desk according to claim 1, further comprising: a stationary supporting member supported by the base and not being able to slide; and

a stationary top board supported by the stationary supporting member.

9. The desk according to claim 8, wherein the base has a pair of upright faces facing each other along the longitudinal direction,
one of the upright faces is provided with a guide for guiding movement of the movable supporting member, and
the other upright face is provided with an attachment part for attaching the stationary supporting member.

10. The desk according to claim 9, wherein the guide and the attachment part are rails having the same shape.

11. The desk according to claim 8, wherein the stationary top board is cantilevered by the stationary supporting member.

12. An office construction system comprising a plurality of desks according to claim 1,
wherein layout can be changed according to the kind of a work or the like.

13. The desk according to claim 2, wherein the top board is supported by the movable supporting member so as to be turnable in the horizontal direction.

14. The desk according to claim 2, further comprising a leg member supporting a region different from a region supported by the movable supporting member, in the top board,
wherein a movable body capable of moving on a floor is provided at a lower end of the leg member.

15. The desk according to claim 2, wherein the base is provided with a guide for guiding movement of the movable supporting member, and the movable supporting member is provided with a guided part which is guided by the guide.

16. The desk according to claim 15, wherein the guide is a rail formed along an extension direction of the base.

17. The desk according to claim 16, wherein the guided part has a rolling member capable of rolling along the rail formed in the base.

18. The desk according to claim 2, further comprising: a stationary supporting member supported by the base and not being able to slide; and
a stationary top board supported by the stationary supporting member.

19. The desk according to claim 18, wherein the base has a pair of upright faces facing each other along the longitudinal direction,
one of the upright faces is provided with a guide for guiding movement of the movable supporting member, and
the other upright face is provided with an attachment part for attaching the stationary supporting member.

20. The desk according to claim 19, wherein the guide and the attachment part are rails having the same shape.

21. The desk according to claim 18, wherein the stationary top board is cantilevered by the stationary supporting member.

22. The desk according to claim 19, wherein the stationary top board is cantilevered by the stationary supporting member.

23. An office construction system comprising a plurality of desks according to claim 2,
wherein layout can be changed according to the kind of a work or the like.

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