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(54) **ELEMENT FOR A WORK SURFACE, AND AN ARRANGEMEN**

(71) Applicant: **Ergo Unit Oy**, Helsinki (FI)

(72) Inventors: **Maija INKEROINEN**, Helsinki (FI); **Aimo INKEROINEN**, Helsinki (FI)

(73) Assignee: **Ergo Unit Oy**, Helsinki (FI)

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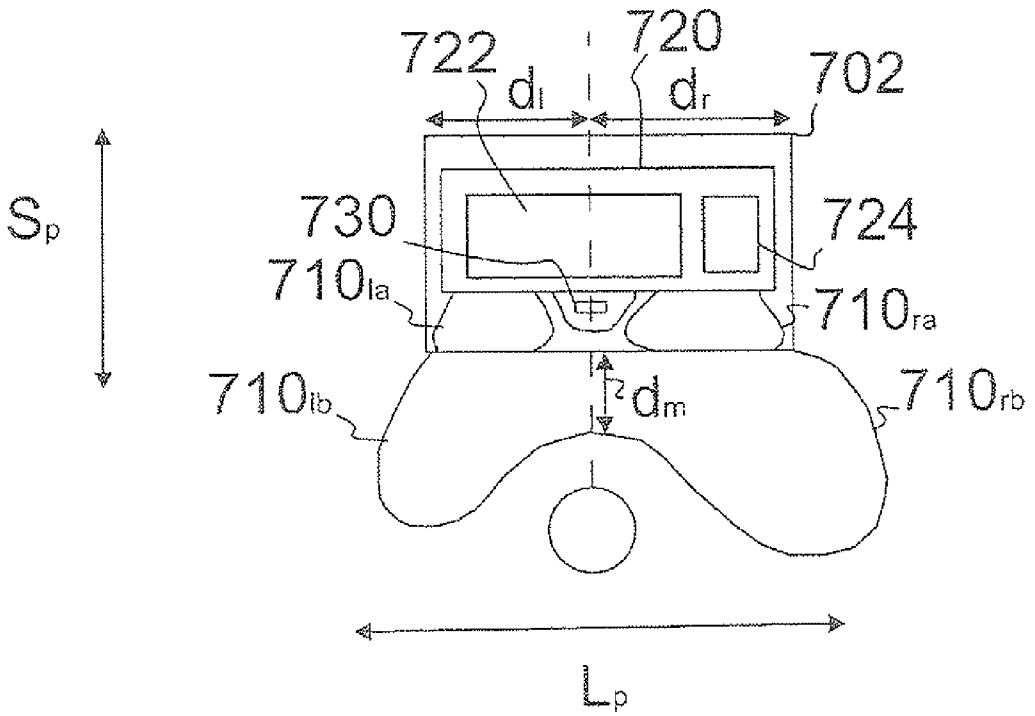
(57) **ABSTRACT**

There is provided an element for a work surface and an arrangement including one or more elements. The element comprises opposite faces and the element is being arranged to be installed in a first position with respect to the work surface and in a second position with respect to the work surface, in which first position and second position different opposite faces are out on the work surface. The element comprises screen work accessories on one of the opposite faces, whereby in the first position of the element the screen work accessories are out on the work surface and in the second position of the element the screen work accessories reside underneath the work surface.



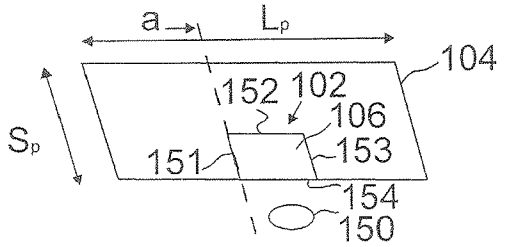


Fig. 1a

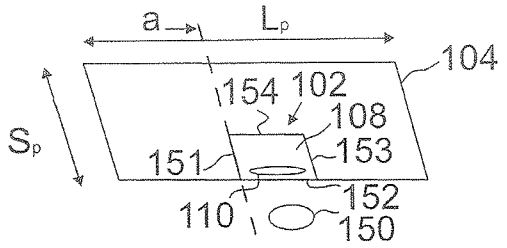


Fig. 1b

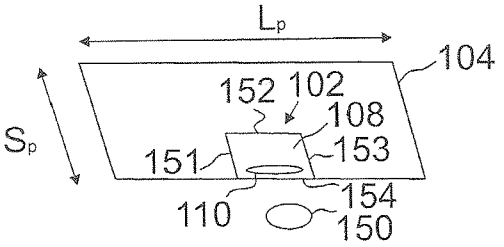


Fig. 1c

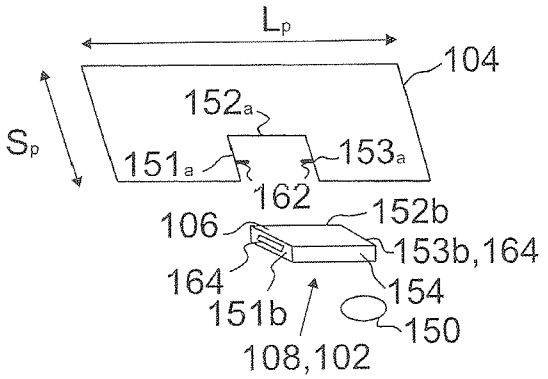


Fig. 1d

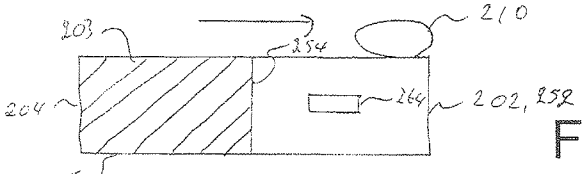


Fig. 2a

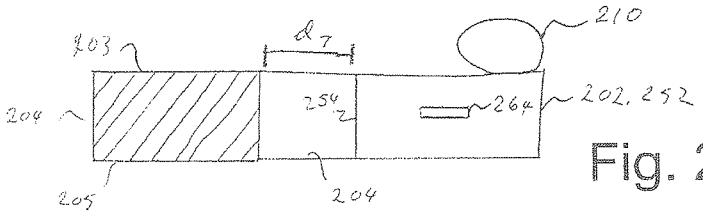


Fig. 2b

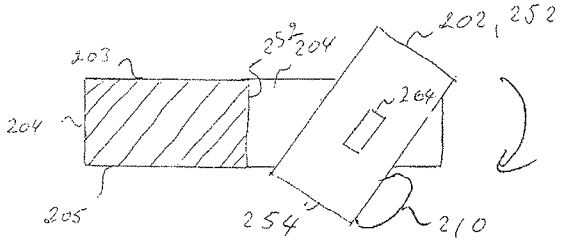


Fig. 2c

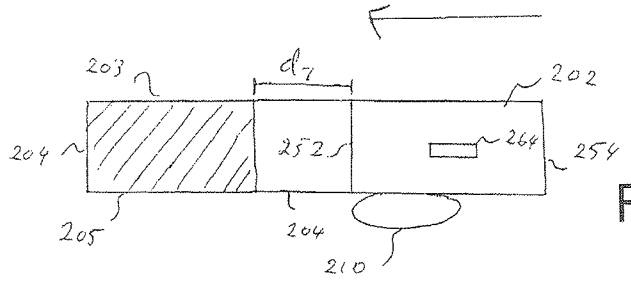


Fig. 2d

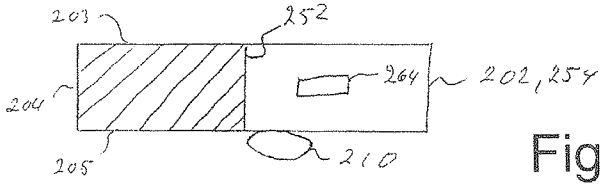


Fig. 2e

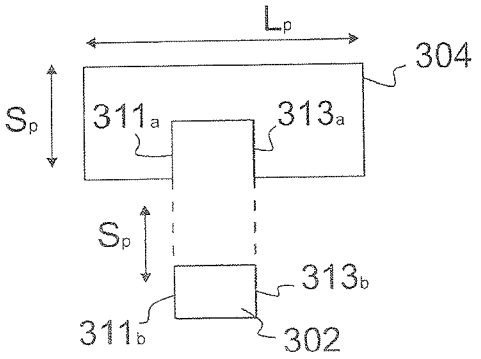


Fig. 3

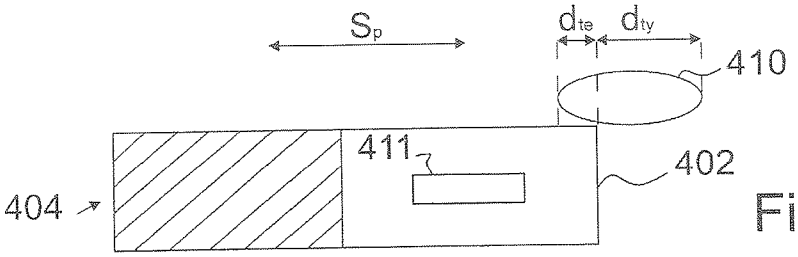


Fig. 4a

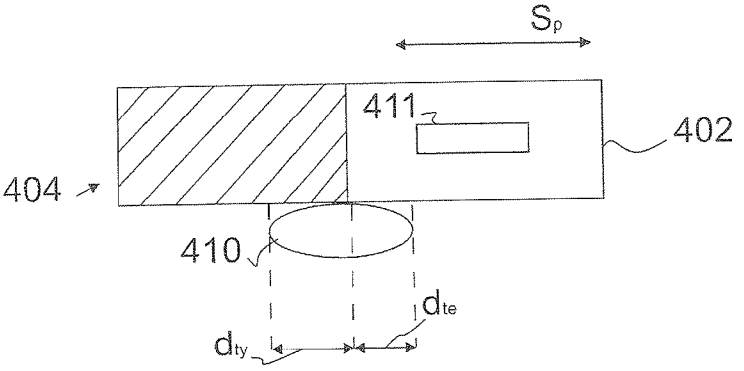


Fig. 4b

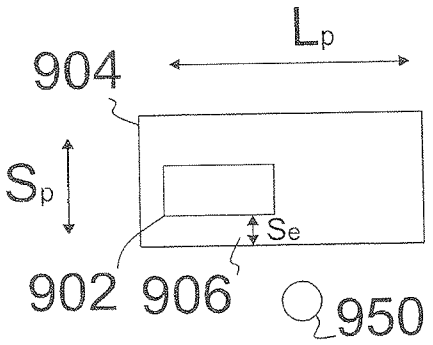


Fig. 9

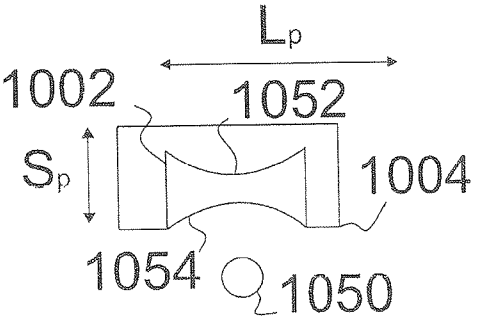


Fig. 10

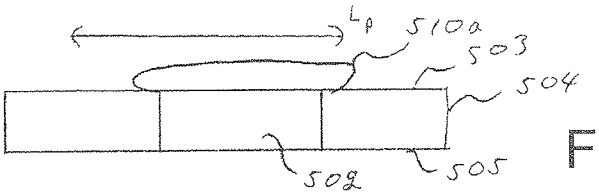


Fig. 5a

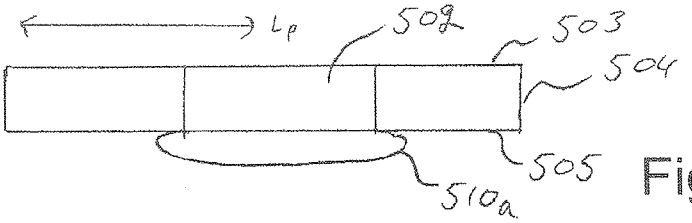


Fig. 5b

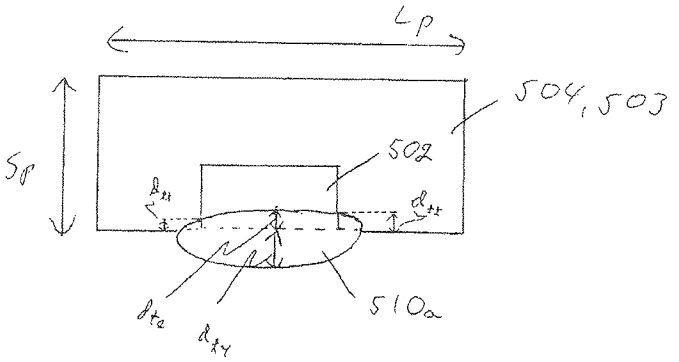


Fig. 5c

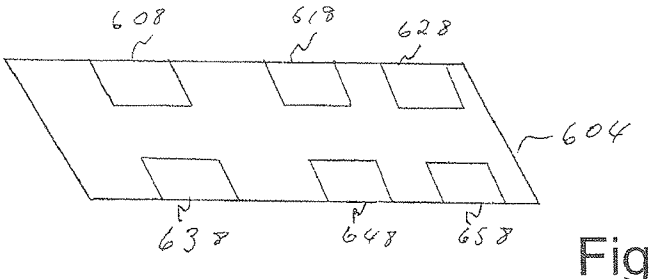


Fig. 6

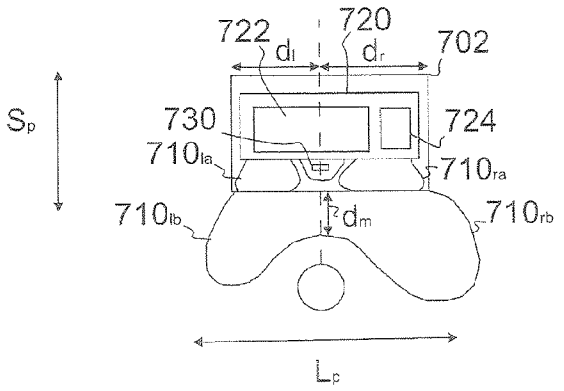


Fig. 7

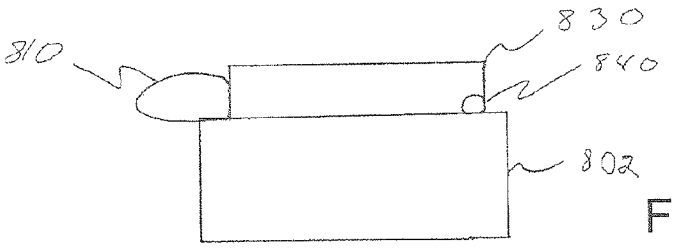


Fig. 8a

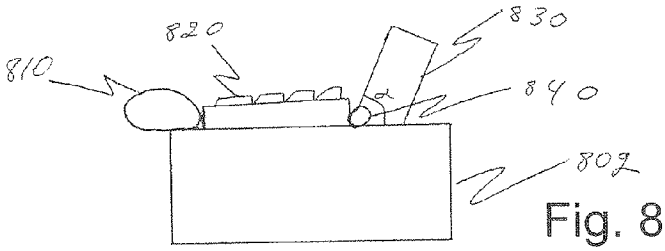


Fig. 8b

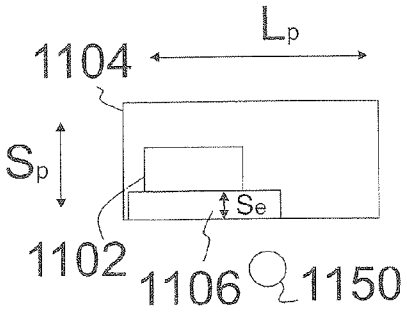


Fig. 11

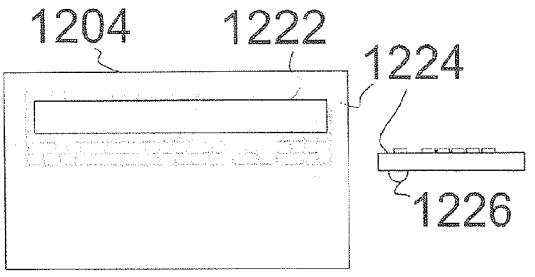


Fig. 12

ELEMENT FOR A WORK SURFACE, AND AN ARRANGEMEN

BACKGROUND

[0001] The invention relates to a work surface, and particularly to an element for a work surface.

[0002] In screen work, the health of a worker is greatly affected by the ergonomics of a workstation. Good ergonomics enables the worker's musculoskeletal ill-health to be reduced or even prevented. Common disorders or diseases in those performing screen work include back diseases, arthrosis, polyarthritis or sequela thereof, rheumatoid arthritis, knee arthritis, hip arthritis, chronic back syndrome, and chronic neck-shoulder area pain.

[0003] In screen work, the worker's wrists and elbow joints are subject to strain and stress when the worker uses a keyboard or a mouse controller. Consequently, the worker's wrists and elbow joints may become painful.

[0004] Screen work is the typical kind of work carried out in office spaces. The efficiency of space utilization of office spaces influences companies'operating costs, which are to be kept low. Absence from workstations on account of workers being on sick leaves or business trips reduces the efficiency of office spaces. Conference rooms and other spaces which, when unused, reduce the efficiency of the particular space also contribute to the efficiency of the space utilization of office spaces.

BRIEF DESCRIPTION OF EMBODIMENTS

[0005] An object of the invention is thus to provide an apparatus so as to enable at least some of the aforementioned problems to be solved. The object of the invention is achieved by an arrangement and an element for a work surface which are characterized by what is stated in the independent claims. Preferred embodiments of the invention are disclosed in the dependent claims.

[0006] The idea underlying the invention is that an arm rest may be hidden or brought out onto a work surface. Thus, the work surface may have more than one and at least two modes of use. In a first mode of use, the work surface makes screen work accessories available to a user while in a second mode of use the screen work accessories are hidden from the user. The screen work accessories enable a screen work station to be provided on the work surface, wherein the work station is capable of taking into account screen work requirements, such as ergonomics, and thus of helping in preventing the worker from developing musculoskeletal disorders or diseases.

[0007] According to an aspect of the invention, there is provided an element for a work surface, the element comprising opposite faces and the element being arranged to be installed in a first position with respect to the work surface and in a second position with respect to the work surface, in which first position and second position different opposite faces are out on the work surface, wherein the element comprises screen work accessories on one of the opposite faces, whereby in the first position of the element the screen work accessories are out on the work surface and in the second position of the element the screen work accessories reside underneath the work surface.

[0008] According to another aspect of the invention, there is provided an arrangement comprising an element according to an aspect.

[0009] An advantage of the arrangement and element according to the invention is that the use of arrangements, such as work surfaces, including the element becomes more versatile. Since the modifiability of the work surface makes it possible to use the work surface in different modes of use, the use of the office space provided with the work surface may be modified from screen work to other forms of work which do not necessitate accessories, such as an arm rest, a data processing device controller and/or a reading stand, contained in the element. Further, since the arrangement and the element provide an arm rest, the use of office spaces may be enhanced taking the ergonomics of the work stations into account. Arrangements that include many elements according to the invention enable the arrangement to be utilized simultaneously for screen work as well as for other work wherein the accessories, such as an arm rest, a data processing device controller and/or a reading stand, contained in the element are hidden from the user.

BRIEF DESCRIPTION OF THE FIGURES

[0010] The invention is now described in closer detail in connection with preferred embodiments and with reference to the accompanying drawings, in which

[0011] FIG. **1***a* shows an element installed in a position with respect to a work surface, in which position an arm rest is hidden from a user, according to an embodiment;

[0012] FIGS. **1***b* and **1***c* show an element installed in a position with respect to the work surface, in which position the arm rest is out on the work surface, according to some embodiments;

[0013] FIG. **1***d* shows an element and a work surface, according to an embodiment;

[0014] FIGS. **2***a* to **2***e* show movement of an element with respect to a work surface when the position of the element is changed with respect to the work surface without detaching the element from the work surface, according to an embodiment;

[0015] FIG. **3** shows movement of an element with respect to a work surface when the position of the element is changed with respect to the work surface by detaching it from the work surface, according to an embodiment;

[0016] FIGS. **4***a* and **4***b* show an element in different positions with respect to a work surface when an arm rest extends farther than a face of the element in a depth direction of the work surface, according to an embodiment;

[0017] FIGS. **5***a*, **5***b*, and **5***c* show an element in different positions with respect to a work surface when an arm rest extends farther than a face of the element in a width direction of the work surface, according to some embodiments;

[0018] FIG. **6** shows an arrangement comprising a plurality of elements for a work surface, according to an embodiment;

[0019] FIG. **7** shows an arm rest and a controller for a data processing device, installed in an element for a work surface, according to an embodiment;

[0020] FIGS. **8***a* and **8***b* show an arm rest, a controller for a data processing device, and a reading stand, installed in an element for a work surface, according to an embodiment;

[0021] FIG. **9** shows an element and a work surface, according to an embodiment;

[0022] FIG. **10** shows an element and a work surface, according to an embodiment;

[0023] FIG. **11** shows an element and a work surface, according to an embodiment;

[0024] FIG. **12** shows an element according to an embodiment, arranged to receive screen work accessories.

DETAILED DESCRIPTION OF EMBODIMENTS

[0025] In the embodiments set forth, ergonomics of screen work is improved by means of an arm rest. Typical arm rests used in screen work are padded e.g. with foam plastic upholstered with fabric or leather.

[0026] Referring to FIGS. **1***a* to **1***d*, an element **102** for a work surface **104** is shown in different positions with respect to a work surface. The element comprises opposite faces **106**, **108**, an arm rest **110** being installed on one **108** of the faces. The element is installable in two different positions with respect to the work surface, in each different position a different opposite face being out on the work surface. In FIGS. **1***a* and **1***d*, the element **102** is shown installed in a position with respect to the work surface **104**, in which position the arm rest **110** is hidden from a user. In FIGS. **1***b* and **1***c*, the arm rest is out on the work surface. The arm rest is fastened to the element e.g. by screws or other fastening means available to those skilled in the art such that the arm rest stays fastened to the element when the arm rest is used in screen work and the element is turned into different positions.

[0027] In FIGS. **1***a* to **1***d*, the element comprises edges **151**, **152**, **153**, and **154** at which it confines itself to the work surface in a depth direction S_p and in a width direction L_p of the work surface. On both its sides **151**, **153**, the element is flanked by the work surface in the width direction of the work surface. An edge of the element **150** closest in the depth direction of the work surface is not confined by the work surface, in which case the edge is free.

[0028] In FIGS. **1***a* to **1***d*, the depth direction S_p of the work surface is determined from the user **150** in front of the element perpendicularly towards the work surface including the element. The width direction L_p of the work surface is perpendicular to the depth direction. The width direction and the depth direction are both in a plane determined by a face of the work surface. The width direction and the depth direction of the work surface may be determined in the same way in all embodiments set forth.

[0029] When the element is in a position where the arm rest is hidden from the user, the face **108** of the element to which the arm rest **110** is fastened is downwards. In such a case, the arm rest resides under the work surface and discernible underneath the work surface. The arm rest is hidden from the user when it is not out on the work surface.

[0030] When the element is in a position where the arm rest **110** is out on the work surface, the face **108** of the element to which the arm rest **110** is fastened is upwards. In such a case, the arm rest resides on the work surface and out on the upper face of the work surface.

[0031] A face of the element is upwards when it is on the same side of the work surface as is the face of the work surface on which the weight of objects, e.g. a coffee cup, to be laid on the face of the work surface is supported. A face of the element is downwards when it is on a side of the work surface opposite to the face of the work surface on which the weight of objects to be laid on the face of the work surface is supported.

[0032] The element **102** comprises a part to be installed in the work surface, a face **106**, **108** of the part settling in the same plane as the face of the work surface does when the arm rest is hidden. In such a case, the work surface may be used as a work surface with a uniform surface but no element.

[0033] When the arm rest **110** is out on the work surface, the element is in a position with respect to the work surface enabling ergonomic screen work. In the screen work position, the face **108** of the element may be placed in the same plane as the face of the work surface, but it is also possible to place it in another plane. The arm rest may comprise one or more rests installed at a front edge of the work surface, which is closest to the user **150** when the arm rest is out on the work surface. The arm rest may comprise: an elbow rest, a wrist rest or a combined elbow and wrist rest. An ordinary arm rest has a thickness of 5 cm or less, in which case it lifts the user's hand to a height of a data processing device controller to be placed on the element.

[0034] In FIG. **1***b*, the element **102** is shown installed in a position with respect to the work surface wherein the arm rest **110** is out on the work surface, according to an embodiment. In FIG. **1***b*, the arm rest is installed on the face of the element and close to the edge **152** of the element close to the user **150** when the user is at a desk. In such a case, the edge **154** of the element opposite in the depth direction S_p of the desk to the edge **150** close to the user is farthest from the user.

[0035] In an embodiment, the position of the element may be changed with respect to the work surface from the position of FIG. **1***a* to the position of FIG. **1***b*. In such a case, the element is reversed in the depth direction S_p of the work surface. The work surface may be reversed by turning it by 180 degrees, for instance. When the element **104** is turned from the position of FIG. **1***b* to the position of FIG. **1***a* with respect to the work surface, the edge **152** of the element, at which the arm rest is provided in FIG. **1***b*, turns according to FIG. **1***a* farther from the user than the edge **154** closest to the user in the depth direction S_p of the work surface in FIG. **1***a*. In such a case, the arm rest **110** turns to be hidden and far away from the user, as is shown by the location of the edge **152** in FIG. **1***a*.

[0036] Since in FIG. **1***a* the arm rest **110** of the element is installed at the edge **152**, which in the depth direction S_p of the work surface is far away from the user **150** when the element has been turned into the position of FIG. **1***a*, wherein the arm rest is hidden, the user's leg room underneath the work surface is kept as large as possible. Although the arm rest is downwards, the leg room experienced by the user may thus be kept substantially as before as compared with the position of the element in FIG. **1***b*, wherein the arm rest is out on the work surface. Thus, no need exists for the user to change the ergonomically set height of his or her chair as a result of the turning of the element, enabling unergonomic chair height to be avoided.

[0037] In an embodiment, the position of the element **102** may be changed with respect to the work surface from the position of FIG. **1***c* to the position of FIG. **1***a*. When the element **104** is turned from the position of FIG. **1***c* into the position of FIG. **1***a* with respect to the work surface, the edge **154** of the element at which the arm rest is in FIG. **1***b* turns and becomes hidden according to FIG. **1***a*, and remains close to the user **150**.

[0038] It is to be noted that the above-disclosed examples of changing the position of the element with respect to the work surface, wherein the arm rest is either hidden underneath the work surface or brought out on the work surface, may be carried out in both directions, i.e. to bring the arm rest out or to hide the arm rest.

[0039] The work surface may be e.g. a desk or another work surface enabling screen work. Screen work comprises work

carried out by using data processing devices, such as computers, mobile telephones, tablet computers and/or various controllers for data processing devices, including for instance mouse controllers and keyboards. Ordinarily, work surfaces are made out of wood, for instance. The material of the element may be selected to be the same as the material of the work surface.

[0040] In an embodiment, the material of the element may be selected to be a transparent material, such as glass. This enables the user to see, through the element, the arm rest turned to be hidden underneath the work surface. Thus, preferably, the glass used is sufficiently clear to enable visibility through the element. Owing to the transparency, it is possible for the user to see the hidden arm rest, in which case it is possible to discern the arm rest even if it is turned underneath the work surface. Since the user is thus capable of discerning the arm rest even if it is turned to be hidden, the element becomes easier to use, enabling directions necessary for using the element to be reduced.

[0041] FIG. **1***d* shows an element and a work surface according to an embodiment. The element and work surface of FIG. **1***d* illustrate the element and work surface of FIG. **1***a* to **1***c* in closer detail. In FIG. **1***d*, the work surface comprises a recess formed by edges **151***a* and **153***a* in the depth direction as well as an edge **152***a* in the width direction. The edge **152***a* of the work surface in the width direction forms a rear edge of the recess, defining a depth at which the element is to be installed in the work surface. The recess formed by the edges **151***a*, **152***a*, and **153***a* is rectangular, but it is to be noted that recesses of other shapes are also feasible.

[0042] Preferably, the size of the recess formed by the edges **151***a*, **152***a*, and **153***a* is as similar as possible to the size of the element **102**, in which case when the element resides in the recess, supported by fastening means **162** and **164**, the work surface and the element form a surface which is as uniform as possible. In such a case, the edges **151***a* and **153***a* of the work surface in the depth direction meet the corresponding edges **151***b* and **153***b* of the element, and the edge **152***a* of the work surface in the width direction meets the corresponding edge **152***b* of the element. Thus, the use of the work surface when the element is in the position where the arm rest is turned to be hidden corresponds as well as possible with the use of the work surface with no element.

[0043] The fastening means **162**, **164** enable the position of the element **102** to be changed with respect to the work surface **104**. The element comprises fastening means **164** at the edges **151***b* and **153***b* parallel with the depth S_p of the work surface. The work surface comprises fastening means **162** at the edges **151***a* and **153***a* parallel with the depth of the work surface. The fastening means **164** support the element on the fastening means **164** of the work surface.

[0044] In an embodiment, the fastening means support the element on the work surface to be moved with respect to the work surface in the direction of the depth S_p of the work surface. Movement of such an element with respect to the work surface is illustrated in FIG. **3**.

[0045] In FIG. **3**, the position of an element **302** is changed with respect to the work surface **304** by detaching the element from the work surface, according to an embodiment. The edges of the element and the work surface **311***a*, **311***b*, **313***a*, **313***b* are provided with fastening means enabling movement in the depth direction of the work surface by means of rails, for instance. In such a case, the position of the element **320** may be changed with respect to the work surface **304** from the situation of FIG. **1***a*, wherein the arm rest is hidden, to the situation of FIG. **1***c*, wherein the arm rest is out on the work surface, by pulling the element **302** off the work surface. Referring to FIGS. **1***a* and **1***c*, upon pulling the element the direction of movement is towards the user **150**.

[0046] The element becomes detached from the work surface when the fastenings between the element and the work surface no longer support the element on the work surface. When rail fastening is used between the element and the work surface, the element becomes detached when the rails end. When the element is off the work surface, as in FIG. **3**, it may be reversed in the width direction of the work surface, in which case the arm rest is brought out on the work surface or hidden away from top of the work surface, depending on the initial position. Next, the element is pushed back in place in the work surface, in which case the fastening means provided at the edges support the element with respect to the work surface. The element may be turned in the manner described above from the position of FIG. **1***a* to the position of FIG. **1***c*, or vice versa.

[0047] Referring again to FIG. **1***d*, in an embodiment the fastening means **162** and **164** may fasten the element to be rotatable around an axis of the desk in the width direction. Such a fastening may be achieved e.g. when the fastening means **162**, **164** comprise an axis via which the element at the edges **151***b*, **153***b* becomes fastened to the edges **151***a*, **153***b* of the work surface. The fastening allows the element to rotate such that the arm rest can be turned underneath the work surface from top of the work surface, or vice versa. In addition, when the arm rest is hidden, the upper face of the element resides in the same plane as the upper face of the work surface. Preferably, the fastening means enable the element to rotate by 180 degrees, in which case the turning of the arm rest to be hidden and out is carried out by reverse rotational movements. It is to be noted that the fastening means may also enable rotation by more than 180 degrees, e.g. 360 degrees.

[0048] In an embodiment, the fastening means **162** and **164** fasten the element to the work surface to be moved in the depth direction of the work surface and rotatable with respect to the work surface. The movement in the depth direction of the work surface and the rotation may take place as described above. The rotation may thus be arranged around an axis of the work surface in the width direction formed by the fastening means.

[0049] When the arm rest is hidden, it is not visible on the work top of the work surface, in which case the work surface may be used unhindered by accessories necessary for screen work, such as the arm rest. The hiding of the arm rest thus enables the work surface to be used in a versatile manner. Consequently, the office space, such as a room, in which the work surface is located may serve both as a screen work space and as space for other purposes, such as work necessitating unhindered desk surface, e.g. graphic design or hobby activities.

[0050] FIGS. **2***a* to **2***e* show movement of an element **202** with respect to a work surface **204** when the position of the element is changed with respect to the work surface without detaching the element from the work surface, according to an embodiment. Fastening means **264** fasten the element to the work surface to be moved in the depth direction of the work surface and rotatable with respect to the work surface. The rotation may take place around an axis of the work surface in the width direction formed by the fastening means.

[0051] In FIGS. **2***a* to **2***e*, the movement of the element is shown in cross section 'a' designated in broken line in FIGS. **1***a* and **1***b*. The movement of the element from the situation of FIG. **1***b* to the situation of FIG. **1***a* may take place as shown in FIGS. **2***a* to **2***e*. FIG. **2***a* shows an initial situation corresponding to FIG. **1***b*, wherein the arm rest **210** is out on the work surface **203** and the element is installed in the front edge **252** of the element, which is close to the user of the work surface. The rear edge **254** of the element contacts or is as close as possible to the work surface **204**. Thus, no gap exists between the work surface and the element to enable objects to fall off the work surface therethrough. From the situation of FIG. **2***a*, the position of the element changes with respect to the work surface via the phases of FIG. **2***b* to **2***d* to a final situation of FIG. **2***e*, wherein the arm rest is downwards, on the side of the lower face **205** of the work surface. The situation of FIG. **2***e* thus corresponds to the situation of FIG. **1***a*. It is to be noted that the movement shown in FIGS. **2***a* to **2***e* may also take place when the situation of FIG. **2***e* is the initial situation, in which case the movement of the element with respect to the work surface proceeds via FIGS. **2***d*, **2***c*, **2***b* to the situation of FIG. **2***a* by following directions of movement reverse with respect to the directions of movement shown by arrows in FIGS. **2***a* to **2***e*.

[0052] FIG. **2***b* shows the position of the element with respect to the work surface when the element has been moved from the situation of FIG. **2***a* by pulling the element outwards from the work surface in a direction shown by the arrow in FIG. **2***a*. The element has thus been moved in the direction of depth S_p of the work surface. Preferably, the element has been moved at least to a distance d_1 from the work surface. The distance d_1 may be set to be such that the element is allowed to move by rotating around an axis formed by the means **264** fastening the element to the work surface. In an embodiment, the distance d_1 is selected according to the dimensions of the arm rest. For instance, d_1 may be determined to be the length of the arm rest in the depth direction of the work surface. Examples of arm rest lengths in the depth direction of the work surface are shown in FIGS. **4***a*, **4***b*, **5***a*, and **5***b*.

[0053] In an embodiment, the element **202** comprises an arm rest **210** which is superimposed with the work surface **204** when the element is in the position of FIG. **2***a* with respect to the work surface, providing an ergonomic work station for screen work, or in the position of FIG. **2***b* with respect to the work surface, forming a uniform surface with the work surface. In such a case, the distance d_1 may correspond to a distance the element has to move in the depth direction of the work surface in order for the arm rest no longer to be superimposed with the work surface. The work surface may be underneath the arm rest e.g. in the situation of FIG. **5***a*, wherein the arm rest extends, superimposed with the work surface, in the width direction of the work surface. Further, FIG. **2***e* describes a situation wherein the arm rest is superimposed with the work surface.

[0054] In an embodiment, the fastening means are arranged on the basis of the distance d_1 to allow the element to rotate while it is fastened to the work surface. The fastening means may comprise rails, whose length is selected on the basis of the distance d_1.

[0055] In FIG. **2***c*, the element is rotated clockwise, supported by the fastening means **264**, in which case the arm rest **210** moves from top of the work surface underneath the work surface, to be hidden.

[0056] In FIG. **2***d*, the element has rotated into a position wherein the opposite faces of the element are in parallel to a plane determined by the work surface, in which case the element is moved into place by pushing it inwards into the work surface. The element is thus moved in the depth direction S_p of the work surface.

[0057] In FIG. **2***e*, the element contacts or is as close as possible to the work surface in the depth direction of the work surface. In such a case, the arm rest resides underneath the work surface, hidden therein, in which case the work surface has been modified from the work station of FIG. **2***a* providing ergonomics for screen work to a work station suitable for other tasks. When the arm rest extends along the element either in the width direction L_p and/or in the depth direction S_p of the work surface, in the position of FIG. **2***e* with respect to the work surface the arm rest is superimposed with the work surface, supporting the element on the work surface. When the work surface is again to be used for screen work, the work surface may again be modified to suit screen work, in which case the element is moved with respect to the work surface from the situation of FIG. **2***e* via FIGS. **2***d*, **2***c*, **2***b* to the situation of FIG. **2***a* by following directions of movement reverse with respect to the directions of movement shown by arrows in FIGS. **2***a* to **2***e*.

[0058] FIGS. **4***a* and **4***b* show an element **402** in different positions with respect to a work surface **404** when the arm rest extends farther than the face **403**, **405** of the element in the depth direction of the work surface, according to an embodiment. FIG. **4***a* shows cross section 'a' in FIG. **1***b* while FIG. **4***b* shows cross section 'a' in FIG. **1***a*. In FIGS. **4***a* and **4***b*, the arm rest **410** extends onto the element to a distance d_{te} in the depth direction S_p of the work surface, and farther than the element in the depth direction of the work surface by a distance d_{ty}. Fastening means **411** support the element to be moved into different positions with respect to the work surface, in which case the arm rest **410** may be turned out, into the position of FIG. **4***a*, with respect to the work surface, and to be hidden, into the position of FIG. **4***b*, with respect to the work surface, as explained above in connection with FIGS. **2***a* to **2***e*. Since the arm rest extends farther than the element by the distance d_{ty}, the arm rest is superimposed with the work surface when it has been turned to be hidden underneath the work surface in the position according to FIG. **4***b* of the element with respect to the work surface.

[0059] In an embodiment, the element rotates by more than 180 degrees, e.g. 360 degrees, in the depth direction of the work surface. In such a case, the work surface may rotate as shown in FIGS. **2***b* and **2***d*, and the distance d_1 may be selected on the basis of the distance d_{ty} shown in FIGS. **4***a* and **4***b*, so as to correspond to the distance d_{ty}, for instance.

[0060] FIGS. **5***a* to **5***c* show an element **502** in different positions with respect to a work surface **504** when an arm rest **510***a*, **510***c* extends farther than the face of the element in the width direction L_p of the work surface, according to some embodiments. Thus, the arm rest **510***a*, **510***c* fastened to the element **502** extends, superimposed with the work surface, in the width direction L_p of the work surface. The situation of FIG. **5***a* corresponds to the situation of FIG. **1***b* as shown from the front of the work surface from the direction of the user **150** but with the arm rest **510***a* extending onto the work surface in the width direction of the work surface. The situation of FIG. **5***b* corresponds to the situation of FIG. **1***a*, as shown from the front of the work surface from the direction of the user **150** but with the arm rest **510***a* extending under the lower face **505** of

the work surface in the width direction of the work surface. In the situation of FIG. **5***a*, the arm rest is superimposed with the work surface and on top of the upper face **503** of the work surface. In the situation of FIG. **5***b*, the arm rest is superimposed with the work surface and underneath the lower face **505** of the work surface.

[0061] FIG. **5***c* illustrates the dimensions of the arm rest **510***c* with respect to the element **502** and the work surface **504** when the arm rest extends farther than the face of the element in the width direction L_p of the work surface, as in FIGS. **5***a* and **5***b* and, in addition, in the depth direction S_p of the work surface. Thus, the arm rest **510***c* fastened to the element **502** extends, superimposed with the work surface, in the width direction, as the arm rest **510***a* in FIGS. **5***a* and **5***b*, as well as in the depth direction. In the figure, parts remaining underneath the element and the arm rest of the work surface are shown in broken line within an area inside the arm rest. The arm rest **510***c* extends farther than the element in the depth direction S_p of the work surface and exceeds the front edge of the element over the distance d_{ty} and extends onto the element over the distance d_{te}, as in FIGS. **4***a* and **4***b*.

[0062] The arm rest **510***a*, **510***c* of FIGS. **5***a* to **5***c* extends onto the work surface in the width direction Lp of the work surface. Over this section, the arm rest extends onto the element in the depth direction of the work surface by a distance d_{tt}. The arm rest may be shaped so that $d_{tt}=d_{te}$.

[0063] The element **504** of FIGS. **5***a* to **5***c* may be turned into another position as shown in FIGS. **2***a* to **2***e* when in the embodiments shown in FIGS. **2***a* to **2***e*, d_1 is selected on the basis of d_{tt} and at least equals d_{tt}. When $d_{tt}<d_{te}$, d_1 may be selected on the same grounds. Thus, in the series of movements of FIGS. **2***a* to **2***e*, the element does not have to be moved over the depth of the entire element out of its place in the work surface.

[0064] FIG. **7** shows an arm rest $\mathbf{710}_{la}$, $\mathbf{710}_{lb}$, $\mathbf{710}_{ra}$, $\mathbf{710}_{rb}$ and a controller **730**, **720** for a data processing device, installed in an element **702** for a work surface, according to an embodiment. The element may be the element shown in FIGS. **1***a* to **1***d*, for instance. The arm rest comprises separate wrist rests for the left **710***la* and the right **710***ra* hand as well as forearm rests for the left **710***lb* and the right hand **710***rb*. The data processing device controller may comprise a keyboard **720** and/or a mouse controller **730**. The keyboard **720** comprises a part comprising the alphabet, an alphabet part, **722** and a number keyboard **724** for entering numbers and computing simple arithmetic basic equations with one hand.

[0065] The arm rest may be symmetrical or asymmetrical. The dimensions of a symmetrical arm rest in the depth direction S_p of the work surface are symmetrical, in which case the dimensions of the arm rest are the same for the left hand and the right hand of a user **750**. In an embodiment, the arm rest is shaped asymmetrically with respect to the keyboard **720** such that the shortest length d_m of the elbow rest in the depth direction of the work surface resides in the middle of the alphabet part of the keyboard, in which case the arm rest, which provides support for both the alphabet part and the number keyboard, is wider d_r on the right side as viewed from the user than on the left side d_l as viewed from the user. This makes it possible for the user to come close to the alphabet part of the keyboard, enabling the users arms to be supported during use of both the alphabet part and the number keyboard.

[0066] The element **702** may be installed in the work surface as shown in the previous embodiments. When the data processing device controllers are installed in the element, the users of portable data processing devices, such as tablet computers, mobile telephones or other small computers, may be provided with ergonomic accessories by turning the side of the element containing the arm rest and the controller out. Thus, irrespective of the smallness of the data processing device, its user may now use an ordinarily-sized keyboard which can be installed in the element, and an arm rest which provides occupational ergonomics.

[0067] FIGS. **8***a* and **8***b* show an arm rest **810**, a controller for a data processing device **820**, and a reading stand **830** installed in an element **802** for a work surface, according to an embodiment. The element may be the element shown in FIGS. **1***a* to **1***d*, for instance. The element comprises the arm rest **810** and the reading stand **830**, which is hinged to the element **802** by a hinge **840**. The reading stand is in FIG. **8***a* in a closed position while in FIG. **8***b* the reading stand is in an opened position. Owing to the hinged fastening, the reading stand may be turned between the positions of FIGS. **8***a* and **8***b*. In the closed position, the reading stand encloses the data processing device controller **820**, e.g. a keyboard, a mouse controller or a combined keyboard and mouse controller, as in FIG. **7**. In the closed position, the leg room taken by the reading stand underneath the work surface is as small as possible when the element has been turned into a position wherein the arm rest is hidden.

[0068] In FIG. **8***b*, the reading stand is in the opened position, wherein the reading stand is in use, enabling an item to be read, for instance a book or a data processing device, such as a tablet computer, mobile telephone, to be placed thereon. In the opened position, the reading stand is supported at an angle α with respect to the work surface, in which case the reading stand provides support for the item to be read. In the opened position of the reading stand, the screen work accessories, such as the keyboard and the mouse, covered by the reading stand in FIG. **8***a* are out. In such a case, in addition to the arm rest and the keyboard, the element provides ergonomics for screen work also by the reading stand, which enables the text or display to be read to be set in an easily readable position. In addition, when the reading stand is in the closed position, it protects the keyboard e.g. from the user at the work surface inadvertently pushing the keyboard, which could otherwise harm the keyboard.

[0069] FIG. **6** shows an arrangement comprising a plurality of elements **608**, **618**, **628**, **638**, **648**, **658** for a work surface **604**, according to an embodiment. The elements may be arranged in the work surface as shown in the embodiments described above. The arrangement may comprise a building, a room or a work surface, such as a desk. The elements of the arrangement form a number of work stations corresponding to the number of the elements, wherein the purpose of use of the work stations may be changed by changing the position of an element from screen work, when the arm rest is out on the work surface, to be suitable for other work, when the arm rest is hidden.

[0070] The arrangement may be a room, e.g. a conference room, wherein the purpose of use of the conference room may be broadened from conferences to be suitable for screen work, when the arm rest is out on the work surface. The broadening of the purpose of use enables the conference room to be used for screen work outside conference hours in a manner taking screen work ergonomics into account. This enables the efficiency of office spaces to be improved by taking the screen work ergonomics into account, whereby

possible detrimental effects of making the use of office spaces more efficient on the workers' occupational ergonomics may be minimized.

[0071] The arrangement **604** may be a work surface, such as a desk, wherein the desk may provide a number of work stations corresponding to the number of elements, each work station enabling the arm rest to be brought out or hidden as shown in the embodiments described above.

[0072] FIG. **9** shows an element **902** and a work surface **904**, according to an embodiment. The element may be an element shown in the previous embodiments. The element is shown from above and turned into a position with respect to a work surface, wherein an arm rest installed in the element resides underneath the work surface. The element is embedded in the work surface, in which case the work surface surrounds the element. In such a case, the work surface surrounds the element both in the depth direction S_p of the work surface and in the width direction L_p of the work surface. Preferably, the element is above and below free from the work surface, as in the above-described embodiments. A section of the work surface **906** remains between the element and the user **950** of the work surface, the dimension of the section in the depth direction being illustrated by a measurement S_e in FIG. **9**. The element **902** may be turned into another position with respect to the work surface by fastening the element to the work surface rotatably e.g. through an axis, as described in the previous embodiments. Since the work surface surrounds the element at the edges of the work surface in the width and depth directions, the user may lean on the work surface on every side of the element. It is to be noted that since in the embodiment of FIG. **9** the work surface surrounds the element, the element may be fastened to be rotatable with respect to the work surface, e.g. through an axis, either in the width direction or the depth direction of the work surface.

[0073] FIG. **10** shows an element **1002** and a work surface **1004**, according to an embodiment. The element may be an element shown in the previous embodiments. The element is shown from above and turned into a position with respect to a work surface, wherein an arm rest installed in the element resides underneath the work surface. Edges **1052**, **1054** of the element in the width direction L_p of the work surface are mirror images of one another, in which case the edges of the element in both its positions relate to the work surface in the same manner. The edges of the element may be straight, as described in the previous embodiments. Referring to FIG. **10**, the edges **1052** and **1054** may be curved. The edge **1054** closest to the user of the work surface may curve away from the user in the depth direction of the work surface. Thus, the element forms a recess, enabling the user to come dose to the work surface. When the user is as dose to the work surface as possible, the work surface may at least partly surround the user and provide support in the width direction of the work surface. The edge **1054** is a mirror image of the edge **1052** residing closest to the user, and the edge **1054** curves towards the opposite edge **1052**.

[0074] FIG. **11** shows an element **1102** and a work surface **1104**, according to an embodiment. The element may be an element shown in the previous embodiments. The element is shown from above and turned into a position with respect to a work surface, wherein screen work accessories installed in the element reside underneath the work surface. The screen work accessories may comprise one or more of the group consisting of: an arm rest, a data processing device controller, a reading stand, and a combination thereof.

[0075] In FIG. **11**, the element is embedded in the work surface, in which case the work surface surrounds the element. In such a case, the work surface surrounds the element both in the depth direction S_p of the work surface and in the width direction L_p of the work surface. Preferably, the element is above and below free from the work surface, as in the above-described embodiments. A section of the work surface **1106** remains between the element and the user **1150** of the work surface, the dimension of the section in the depth direction being illustrated by a measurement S_e in FIG. **11**.

[0076] In an embodiment, the section of the work surface remaining between the user and the element comprises an arm rest **1106**. Preferably, the arm rest may be embedded in the work surface so that it forms a substantially uniform work top with the work surface. Thus, when the element and the screen work accessories therein have been turned underneath the work surface, the arm rest interferes as little as possible with other work to be carried out on the work surface not necessitating screen work accessories. The arm rest may be asymmetrical or symmetrical, as described above. The arm rest may also be embedded so as to protrude upwards from the work surface, in which case the height of the arm rest from the work surface may be set according to the screen work accessories used in order to achieve the best ergonomics when the screen work accessories have been turned out, onto the work surface.

[0077] The element **1102** may be turned into another position with respect to the work surface by fastening the element to the work surface rotatably e.g. through an axis, as described in the previous embodiments. Since the work surface surrounds the element at the edges of the work surface in the width and depth directions, the user may lean on the work surface on every side of the element. It is to be noted that since in the embodiment of FIG. **11** the work surface surrounds the element, the element may be fastened to be rotatable with respect to the work surface, e.g. through an axis, either in the width direction or the depth direction of the work surface.

[0078] FIG. **12** shows an element **1204** according to an embodiment, which is arranged to receive screen work accessories **1224**. The element may be used in work surfaces as shown in the embodiments described above. The element comprises a groove **1222** arranged to receive at least part of the screen work accessories **1224***a*, **1224***b*, such as the keyboard. The groove runs across the element over its entire extent or part thereof, as shown in FIG. **12**. The screen work accessories may cover the groove when the screen work accessories reside on the element. The bottom of the screen work accessories may be provided with a protrusion **1226**, which is shown in a side profile **1224***b* of the screen work accessories. When the screen work accessories have been placed on the element, the protrusion settles in the groove. Such a protrusion is typical e.g. in wireless keyboards, where batteries or accumulators reside in the bottom of the keyboard, thus forming a protrusion. The protrusion may also be brought out or hidden, as are e.g. legs that are commonly used in the bottoms of keyboards for computers and that may be brought out, in which case they protrude from the bottom, and hidden, in which case they do not protrude from the bottom. Preferably, the groove is directed to run in the width direction L_p of the work surface when the element is fastened to the work surface. In such a case, the protrusions typical in keyboards in particular become placed in the element such that the keyboard settles symmetrically with respect to the user of the work surface.

[0079] It is to be noted that the groove may be arranged according to the type of the protrusion. A plurality of grooves may also be provided. For instance, the element may be provided with recesses corresponding to the size and number of the legs of a keyboard.

[0080] When the screen work accessories **1226***a* have been placed on the element **1204**, the protrusion settles itself in the groove of the element, in which case the screen work accessories can be supported more firmly on the face of the element than if the element were not provided with a groove for a protrusion. Further, the groove of the element enables keyboards in particular to be placed on the element such that the angle between the keyboard and the element is very small and even non-existent. Preferably, the depth of the groove is arranged to enable the protrusion to fit entirely in the groove when the keyboard has been placed on the element. Thus, a keyboard with a protrusion can be placed on an element directly, irrespective of the protrusion, in which case the effect of the protrusion on the position of the keyboard on the element may be eliminated and occupational ergonomics may be adapted user-specifically, irrespective of the protrusion.

[0081] It is possible to fasten the screen work accessories and the element to one another, in which case the screen work accessories may be turned together with the element when the element is turned into different positions with respect to the work surface. The fastening may be implemented using stick-on tape, for instance. The stick-on tape may be applied to a surface of the screen work accessories residing against the element, to a surface of the element residing towards the screen work accessories, or both.

[0082] In an embodiment, the groove of the element and the protrusion of the screen work accessories to be arranged therein are provided with stick-on tape. The stick-on tape may be applied in to the groove, to the protrusion, or both.

[0083] Stick-on tapes suitable for fastening the element and the screen work accessories comprise e.g. so-called textile "hook-and-loop" stick-on tapes manufactured by Velcro, for instance. Typically, such "hook-and-loop" stick-on tapes include two strip-like parts to be detachably attached to one another. When the strip-like parts are pressed against one another, they become detachably attached together. Typically, the surfaces of the strip-like parts to be attached to one another comprise loops and hooks such that the hooks attach to the loops. Typically, separating the parts from one another makes a scratchy noise. The parts of the stick-on tape may be fastened fixedly e.g. with glue to pieces that are to be detachably fastened to one another by means of the stick-on tape. In an embodiment, the element comprises an arm rest with a padding made out of a vegetable-oil-based foam plastic. Thus, the recyclability of the arm rest is improved.

[0084] An embodiment comprises a method of manufacturing an element for a work surface. The method comprises removing from the work surface a part from which the element is to be made. The removed part is worked up to be installed in different positions with respect to the work surface, in which positions opposite surfaces of the part are parallel to a plane determined by the work surface. To the removed part, an arm rest is also fastened. The installability of the removed part into different positions may be implemented by an axis and/or rails, for example. The axis enables the removed part to turn into different positions with respect to the work surface, in which case the arm rest enabling screen work ergonomics may be brought out when a data processing device is used on the work surface, and the arm rest can be hidden underneath the work surface when no data processing device is needed. It will be apparent to a person skilled in the art that as technology advances, the basic idea of the invention may be implemented in many different ways. The invention and its embodiments are thus not restricted to the above-described examples but they may vary within the scope of the claims.

1. An element for a work surface, the element comprising opposite faces and the element being arranged to be installed in a first position with respect to the work surface and in a second position with respect to the work surface, in which first position and second position different opposite faces are out on the work surface, wherein the element comprises screen work accessories on one of the opposite faces, whereby in the first position of the element the screen work accessories are out on the work surface and in the second position of the element the screen work accessories reside underneath the work surface.

2. The element as claimed in claim **1**, wherein the element comprises fastening means for fastening the element to the work surface to be moved in a depth direction of the work surface and rotatable with respect to the work surface.

3. The element as claimed in claim **1**, wherein the element comprises screen work accessories which in the first and the second position are superimposed with the work surface.

4. The element as claimed in claim **1**, wherein the element is arranged to be moved between the first and the second position in the depth direction of the work surface by a distance corresponding to a distance over which the screen work accessories are superimposed with the work surface.

5. The element as claimed in claim **1**, wherein edges of the element in a width direction of the work surface are mirror images and curve towards one another in the depth direction of the work surface.

6. The element as claimed in claim **1**, wherein the element comprises screen work accessories installed to extend farther than the element in the depth direction and/or in the width direction of the work surface.

7. The element as claimed in claim **1**, wherein the element comprises screen work accessories comprising an arm rest, such as an elbow rest, a wrist rest or a combined elbow and wrist rest, and/or a controller for a data processing device, such as one or more of the group consisting of: a mouse controller and a keyboard.

8. The element as claimed in claim **1**, wherein the element comprises a reading stand and one or more controllers for a data processing device, the reading stand being placeable in a closed position, wherein the reading stand encloses the one or more controllers for a data processing device, and in an opened position, wherein the reading stand enables an item to be read to be placed thereon.

9. The element as claimed in claim **1**, wherein the element is made out of a transparent material, for example glass.

10. The element as claimed in claim **1**, wherein the screen work accessories comprise an arm rest with a padding made out of a vegetable-oil-based foam plastic.

11. The element as claimed in claim **1**, wherein the element comprises a groove arranged to receive one or more protrusions provided in a bottom of the screen work accessories, the depth of the groove being adapted such that the protrusion fits entirely in the groove when the screen work accessories have been placed on the element and the screen work accessories

have been fastened to the element by means of stick-on tape, for instance, applicable in to the groove, for instance.

12. An arrangement, wherein the arrangement comprises one or more elements, said element comprising opposite faces and the element being arranged to be installed in a first position with respect to the work surface and in a second position with respect to the work surface, in which first position and second position different opposite faces are out on the work surface, wherein the element comprises screen work accessories on one of the opposite faces, whereby in the first position of the element the screen work accessories are out on the work surface and in the second position of the element the screen work accessories reside underneath the work surface.

13. The arrangement as claimed in claim **12**, wherein the arrangement comprises a work surface or a room.

14. The arrangement as claimed in claim **12**, wherein the work surface surrounds the element in a depth direction of the work surface and in a width direction of the work surface.

15. The arrangement as claimed in claim **14**, wherein a section of the work surface remaining between a user and the element comprises an arm rest.

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