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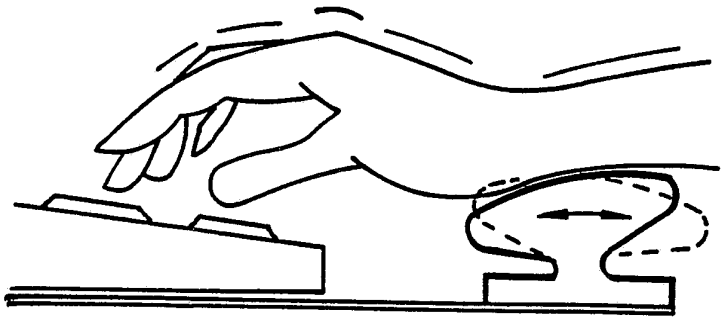
(54) Title: WRIST SUPPORT



(57) Abstract

The invention relates to a wrist support especially for computer work, comprising a plate like part (1) coming under the keyboard and a pillow part (2) which moves with the movements of the hand.

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Wrist support

This invention relates to a wrist support and especially to such a wrist support which is used to support a person's hand, arm or wrist when typing with a typewriting machine and especially with a keyboard of a computer or when using the mouse of a computer.

Recently it has been noticed that writing with a computer and using of a mouse of a computer is, despite of its apparent easiness, work that causes high stress to certain parts of one's arm. Inflammations of the tendon and other complaints which are caused by static stress are often very painful and invalidating.

To help the work with a computer there have been developed wrist supports of which a model which has the widest use includes a plate like member which lies under the keyboard and on the front part of which there is attached a pillow of foam plastics, on which the wrist can rest continuously or when needed. This solution is good and it has relieved the situation in respect of getting complaints but the same has couple of disadvantages. Namely, the hand is by no means on its place during typing but tends to move forward and backward, normally however, only quite little. Moving along the support surface causes, of course, galls on the part of the skin which is against the support surface and on the other hand the stresses of the shoulder area maintain nearly as severe as before because the muscles of the upper arm work to move the arm and the friction along the support surface resists the movement.

US Patent specification 5,050,826 tries to solve this problem with a horizontal shaft having rotatable cylindrical support pads which can be moved along the shaft. Even though the apparatus has some advantages it, however, has also disadvantages. One of the main disadvantages is that the apparatus is quite expensive to manufacture. Another disadvantage is that the same is inevitably quite heavy as it is aimed to rest on a desk or table as it is. The support pads are also short and so the user of the pads must always relocate the pads to be in right position is respect of the wrists.

It is the aim of this invention to achieve such a solution in the wrist support

which is steady enough in the desired directions, but however, gives space to move the arms resting on it, whereby all extra stresses which would be directed to the hands of the person typing or using the mouse are minimized. The present invention gives a support that is also inexpensive to manufacture and always ready for use without any excessive steps to relocate any pads. The solution of the present invention is suitable to be used both when typing and when using of a mouse of a computer.

The advantages of the invention have been achieved with a solution, the characterizing features of which have been given in the accompanying patent claims.

The invention is described now in more detail with reference to the accompanying patent drawings, in which:

Figure 1 shows one embodiment of the invention as a side view;

Figure 2 shows another embodiment of the invention as a same kind of side view as in Figure 1 in the connection of a mouse;

Figure 3 shows a third embodiment of the invention as a same kind of side view as before; and

Figure 4 shows the movements of the solution, which is of the type shown in Figure 1, when the hand moves resting on the same.

Figure 1 thus shows the first embodiment of the invention where a pillow like support part 2 has been attached in a plate like part 1. The keyboard 3 of a comptuter is located at least partly on the plate 1 and is at a small, adjustable distance from the pillow 2.

The pillow 2 has been designed, according to the invention, so that its upper part 6 is separated from the lower part 7 by a narrow neck 4. In other words the pillow 2 has been notched 5 on each side of the same so that the neck 4 remains between the notches 5. This kind of pillow construction allows the hand/wrist resting on it to be moved forward and backward (right and left in the figure) so that the contact point between the pillow and the hand changes only by "rolling" the pillow along the lower surface of the wrist.

This happens so that the upper part 6 of the pillow 2 moves to certain extent and on the other hand inclines bending in the neck 4.

Figure 2 shows another embodiment of the invention showing an analogous solution to figure 1 but the pillow has been constructed in another way. In this figure the mouse has been designated with the reference number 3 which mouse is moved by the hand resting on support to thereby move an arrow or another pointer on the computer's monitor. The flexibility of the upper part 6 of the pillow 2 is effected so that there is a hollow 8 in the pillow which is extended nearly from one side to the other whereby there remains quite narrow necks 4 on both sides of the hollow. By making the hollow 8 suitably large the upper part 6 may move in a suitable way.

Figure 3 shows a third alternative of the invention wherein the pillow 2 has been supported on springy members 9 on the plate like part 1 whereby the whole pillow 2 may move forward and backward following the movements of the arm resting on it. The members 9 may be for instance metal springs or plate like parts made of plastics having springy properties.

Firure 4 shows how the wrist support according to one embodiment of the invention yeilds and moves following the movements of the wrist when the fingers type using the keyboard.

The invention has been described above only schematically and for that reason the persons skilled in the art may find in the embodiments shown in the drawings many parts which may be modified. So the design or form of the pillow 2 is irrelevant in respect of the invention. The pillow 2 may be designed with round or angular forms or as is seen suitable.

It is possible to choose materials for the invention in many ways. Foam plastics have been used widely and the same is suitable also for this purpose. The materials are chosen separately to fit the case. It is also possible to use combinations of several materials and in certain cases it is recommended to do so. So the upper part of the pillow may be made of material which does not induce perspiration of the hand resting on it and the lower part and especially the part 4 between the upper and the lower parts is made of suitably springy and firm material which does not loose its properties but gives, for long periods, a form which is resilient and returns flexibly to its original form.

Claims

1. Wrist support intented to be as a support fot the hand, arm or wrist for a person working with computer terminal like typing with a keyboard or using a mouse or in corresponding situations where the wrist needs support, comprising a plate like base (1) and a support pillow (2) or the like fixed to the same, **characterized of** resilient parts (4, 9) with the assistance of which the upper part of the support pillow (2) has been connected to its lower part or directly to the base (1) so that the forward and/or backward movement of the upper part of the pillow with the hand is possible.

2. Support according to claim 1, **characterized** in that the pillow (2) is formed of an upper part (6) and a lower part (7) which are connected by a quite narrow, springy neck (4), which makes the movement of the part (6) in respect of the part (7) possible.

3. Support according to claim 1, **characterized** in that the pillow (2) has a hollow (8) so that necks (4) are formed on both sides of the hollow, which necks make the movement of the upper part (6) in respect of the lower part possible.

4. Support according to claim 1, **characterized** in that the pillow (2) has been connected to its base (1) with the assistance of a spring (9) which makes the movement of the pillow in respect of the base possible.

5. Support according to claim 1, **characterized** in that it comprises two kinds of material, one kind of material being for the upper part (6) of the pillow and being comfortable against the skin and other kind of material being for the lower part of the pillow and having good springy or toughness properties.

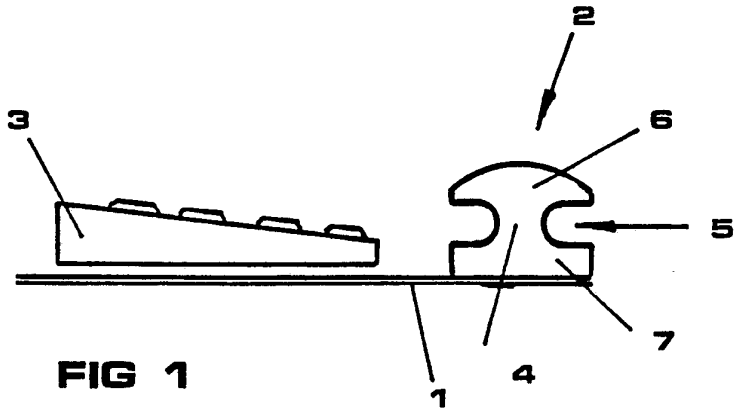

FIG 1

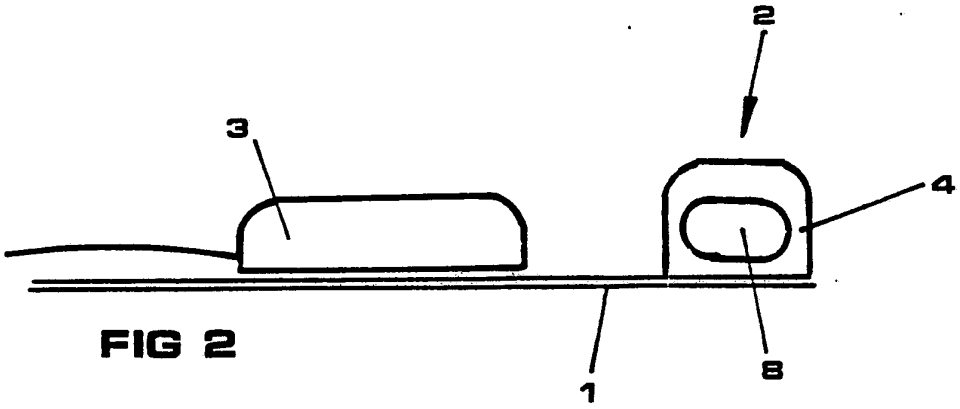

FIG 2

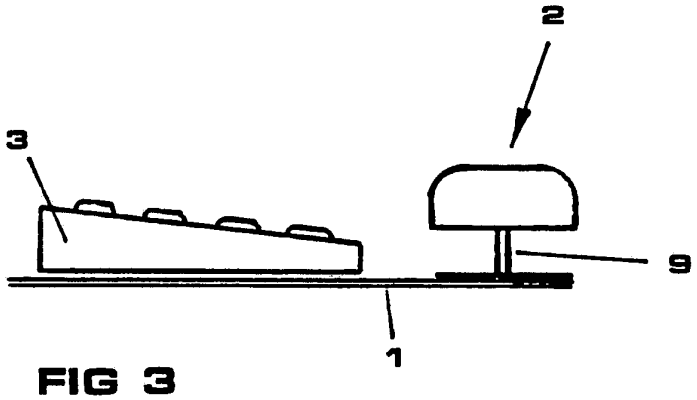

FIG 3

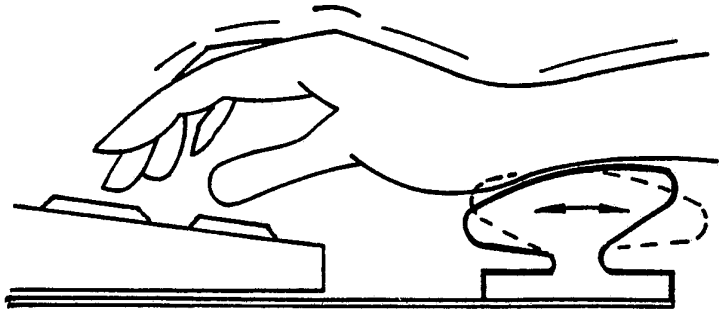

FIG 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI 93/00142

A. CLASSIFICATION OF SUBJECT MATTER

IPC5: B41J 29/00, B43L 15/00
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC5: B41J, B43L

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

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US, A, 4545554 (LATINO ET AL), 8 October 1985 (08.10.85), column 2, line 23 - line 35, figures 1, 4,5	1,5
Y	US, A, 4996977 (TIEDEKEN), 5 March 1991 (05.03.91), column 1, line 57 - line 60; column 6, line 30 - line 60, figures 1-7	1,5
Y,P	US, A, 5108057 (DANDY, III ET AL), 28 April 1992 (28.04.92), column 3, line 5 - column 4, line 26, figure 1	1,5

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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