



US 20030085639A1

(19) **United States**

(12) **Patent Application Publication**
Ming-Hwa

(10) **Pub. No.: US 2003/0085639 A1**

(43) **Pub. Date: May 8, 2003**

(54) **COMPUTER MONITOR SUPPORT**

(52) **U.S. Cl. 312/223.3**

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(57) **ABSTRACT**

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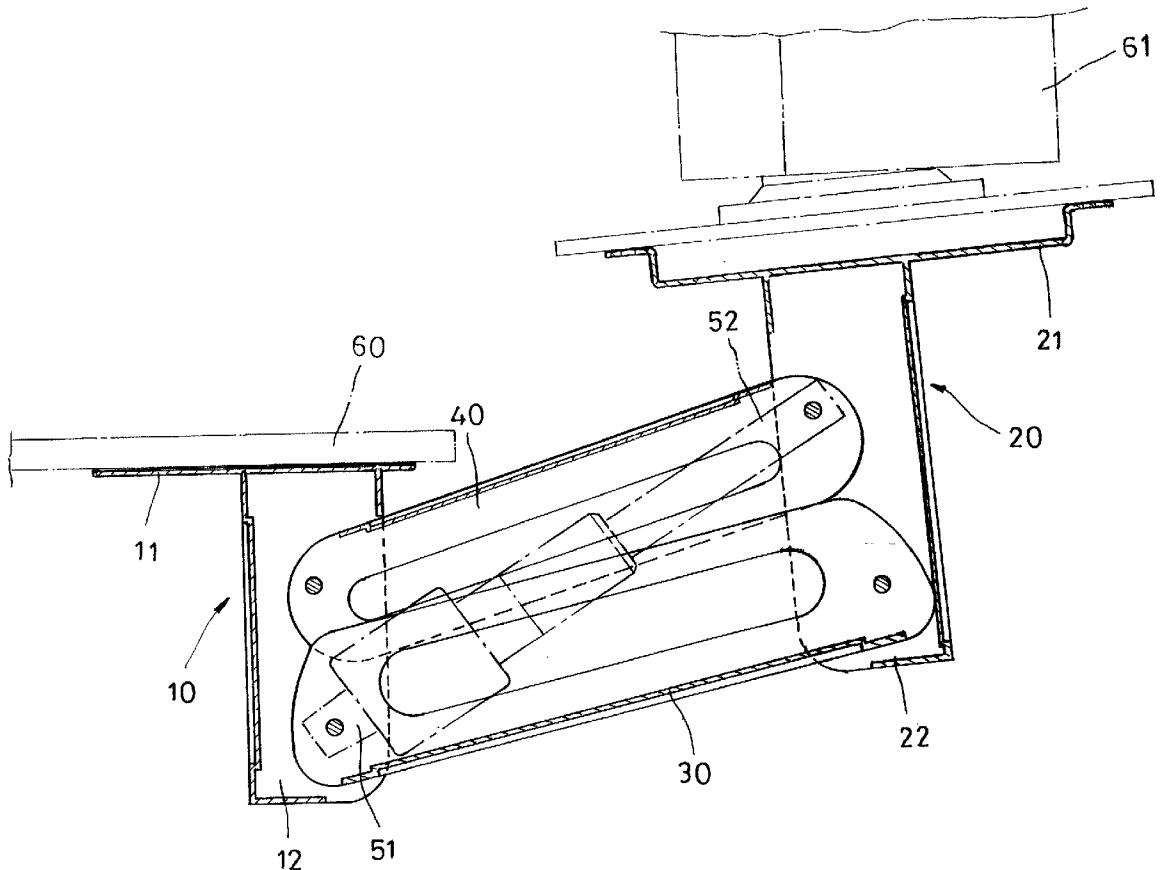
A computer monitor support includes a first support immovably connected to a lower side of a desktop, and a second support pivotally connected to the first support via an upper and a lower link to movably located in front of the first support for supporting a computer monitor thereon. The first and the second support, and the upper and the lower link together form a four-bar linkage. A lifting mechanism is connected to the four-bar linkage to lift or lower the second support and to incline the second support downward or upward, respectively, at the same time, so that any user may set the computer monitor on the second support to a vertical position and an angle of elevation most suitable for the user to look at a display on the monitor comfortably and clearly.

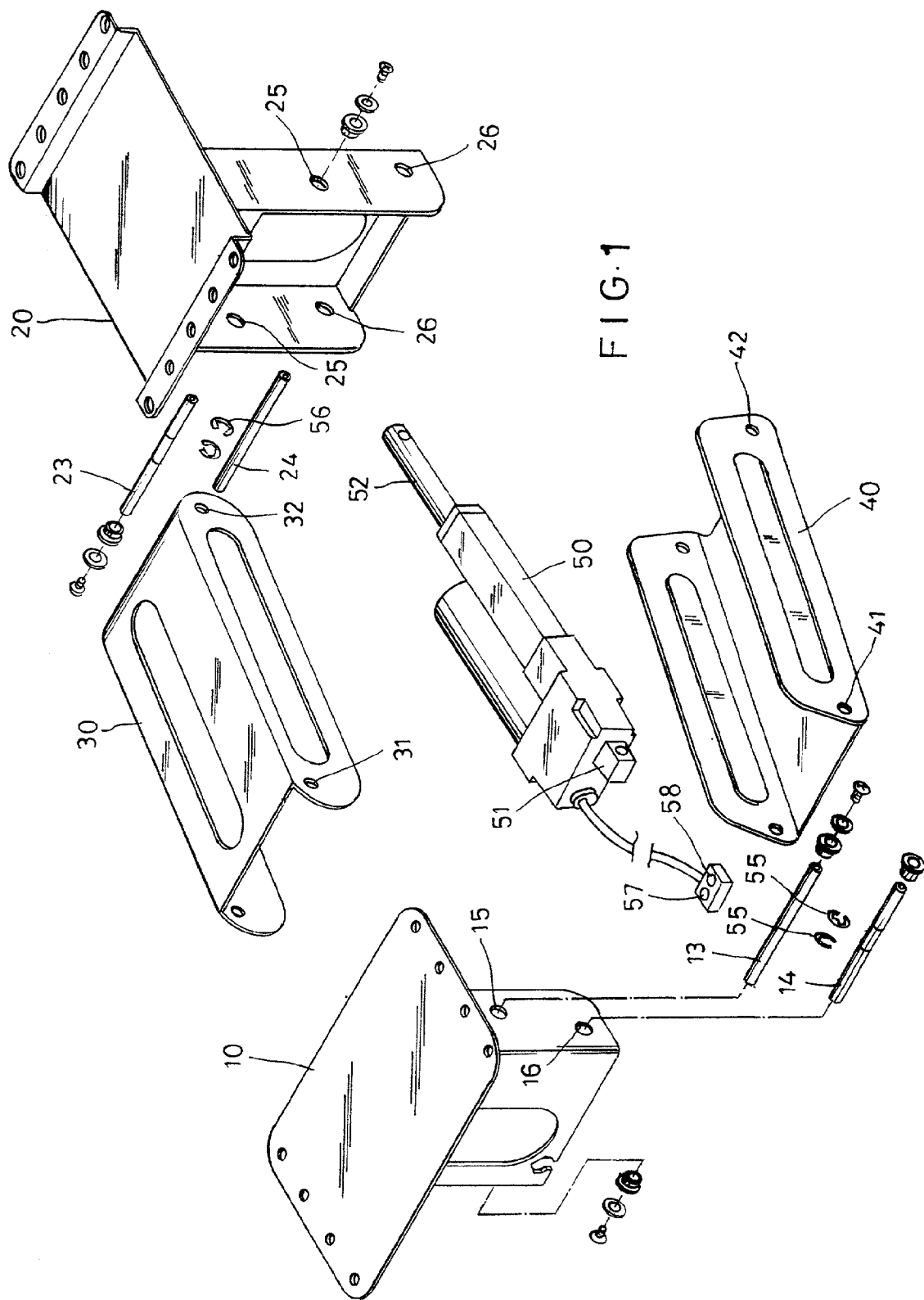
(21) **Appl. No.: 10/008,165**

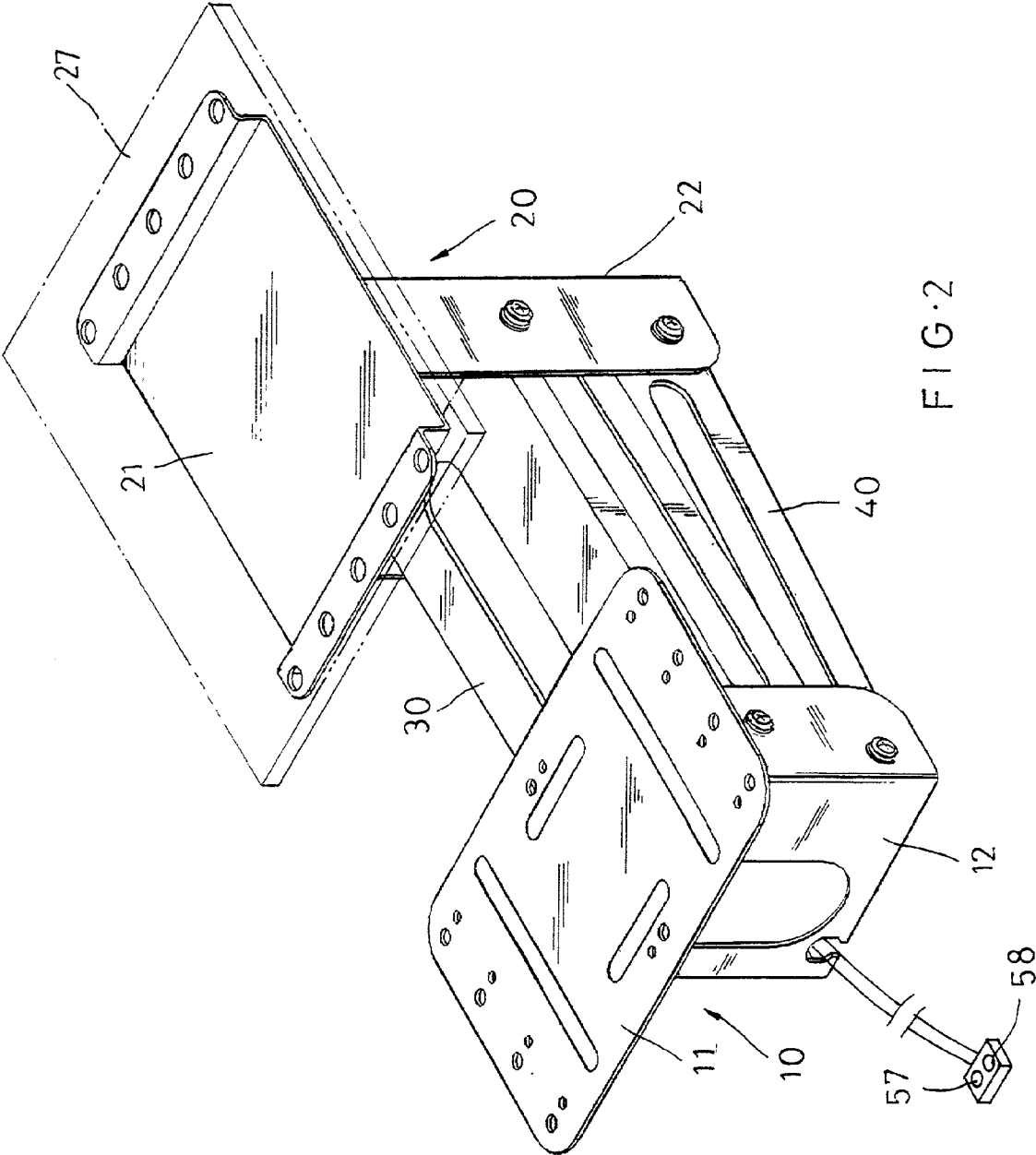
(22) **Filed: Nov. 2, 2001**

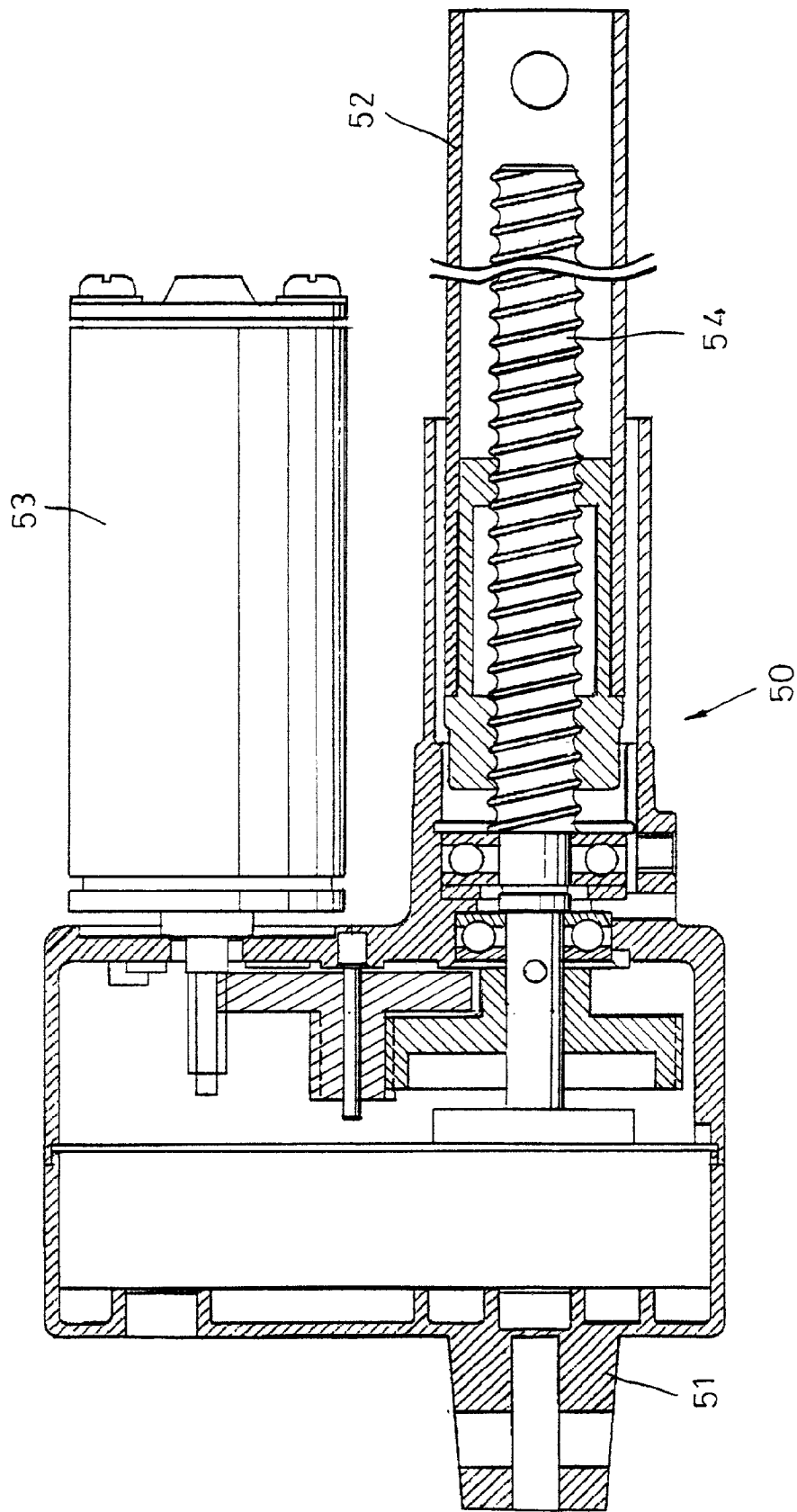
Publication Classification

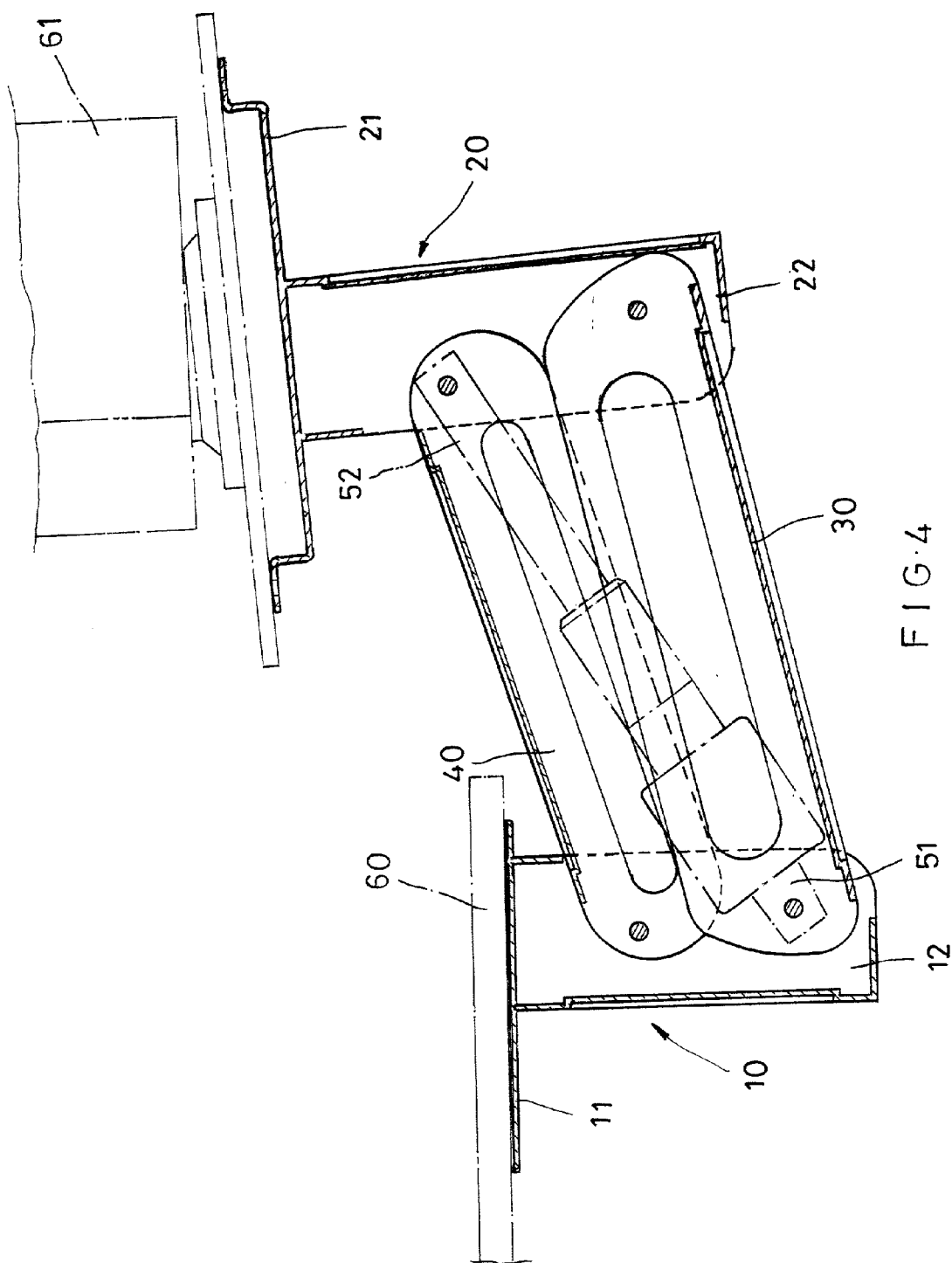
(51) **Int. Cl.⁷ A47B 97/00**

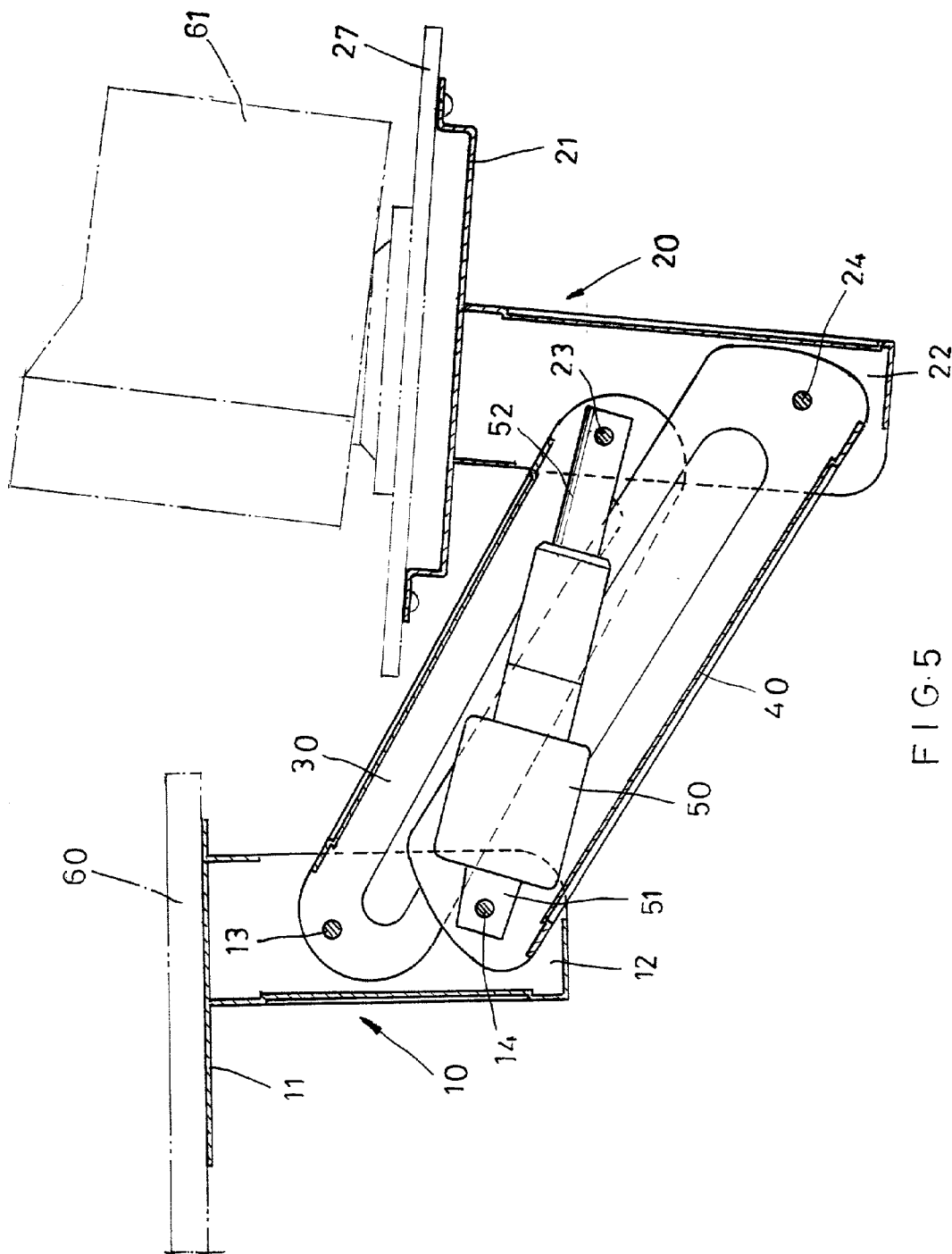












COMPUTER MONITOR SUPPORT

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a computer monitor support that enables adjustment of vertical position and angle of elevation of a computer monitor at the same time, so that a user may look at the monitor at a most comfortable angle of view.

[0002] With the highly developed electronic and information technologies, computers have become a prerequisite tool for most people in working, doing leisure activities, playing games, reading, and handling many general affairs. Computers and related apparatuses could be found in almost every family, office, and business place.

[0003] To enable users having different heights to look at the display on the computer monitor at an angle of view most suitable for them, the computer monitor usually has a base enabling adjustment of the monitor to different angles of elevation. However, a vertical position of the monitor relative to a desktop on which the monitor is positioned is also very important for users to look at the display comfortably.

[0004] For a high user or a user who stands before the monitor to look at a display on the monitor in an attempt to soften the stiffened legs and back muscles due to sitting before the computer over a prolonged time, the monitor might not be at a suitable height and angle of elevation for the user to clearly read information shown on the display. In a worse condition, the user might even misread the information to result in serious problems.

SUMMARY OF THE INVENTION

[0005] It is therefore a primary object of the present invention to provide a computer monitor support that enables adjustment of vertical position and angle of elevation of the monitor at the same time to meet the needs of different users.

[0006] The computer monitor support of the present invention mainly includes a first support immovably connected to a lower side of a desktop, and a second support pivotally connected to the first support via an upper and a lower link to movably located in front of the first support for supporting a computer monitor thereon. The first and the second support, and the upper and the lower link together form a four-bar linkage. A lifting mechanism is pivotally connected at a rear locating block to a pivot shaft connecting the first support to the lower link, and at an outer end of an extension tube thereof to a pivot shaft connecting the second support to the upper link, so that the extension tube lifts or lowers the second support when it is driven to extend forward or to retreat.

[0007] In the computer monitor support of the present invention, a distance between two connection holes at two ends of the lower link is slightly larger than a distance between two connection holes at two ends of the upper link, and a distance between two connection holes on the second support is slightly larger than a distance between two connection holes on the first support, allowing the extension tube to incline the second support downward or upward while lifting or lowering, respectively, the second support.

[0008] Therefore, any user may set the computer monitor on the second support to a vertical position and an angle of elevation most suitable for the user to look at the display on the monitor comfortably and clearly.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The structure and the technical means adopted by the present invention to achieve the above and other objects can be best understood by referring to the following detailed description of the preferred embodiments and the accompanying drawings, wherein

[0010] **FIG. 1** is an exploded perspective view of a computer monitor support according to the present invention;

[0011] **FIG. 2** is an assembled perspective view of the computer monitor support according to the present invention;

[0012] **FIG. 3** is an enlarged, sectioned side view of a lifting mechanism forming a part of the computer monitor support of the present invention;

[0013] **FIG. 4** is a vertical section of the computer monitor support of the present invention in a lifted state; and

[0014] **FIG. 5** is another vertical section of the computer monitor support of the present invention in a lowered state.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0015] Please refer to **FIGS. 1 and 2** that are exploded and assembled perspective views, respectively, of a computer monitor support of the present invention. As shown, the computer monitor support mainly includes a first support **10** having a first top plate **11** and a first upright bracket **12** fixedly connected to a lower surface of the first top plate **11**; a second support **20** having a second top plate **21** and a second upright bracket **22** fixedly connected to a lower surface of the second top plate **21**; a first link **30**; a second link **40**; and a lifting mechanism **50**. All of the first and the second upright brackets **12, 22** and the first and the second links **30, 40** have a U-shaped cross section and include two sidewalls and a sideward opening.

[0016] The first support **10** is immovably connected at the first top plate **11** to a lower side of a desktop **60** (see **FIGS. 4 and 5**) with the sideward opening of the first upright bracket **12** facing forward as viewed from a user sitting before the desktop **60**. The first upright bracket **12** is provided at the two sidewalls with a first pair of upper connection holes **15** and a first pair of lower connection holes **16**.

[0017] The second support **20** is pivotally connected to the first support **10** via the links **30, 40** to locate in front of the first support **10**, and has a resting plate **27** connected to a top of the second top plate **21** for a computer monitor **61** to seat thereon (see **FIGS. 4 and 5**). The second upright bracket **22** is provided at the two sidewalls with a second pair of upper connection holes **25** and a second pair of lower connection holes **26**. And, the sideward opening of the second upright bracket **22** is oriented to face toward the sideward opening of the first upright bracket **12**.

[0018] The first link **30** is vertically located above the second link **40**, so that their sideward openings face toward

each other. The first link **30** is provided on its two sidewalls near a rear and a front end with a first pair of rear connection holes **31** and a first pair of front connection holes **32**, respectively, so that the first link **30** is pivotally connected at two ends to the first and the second upright bracket **11, 21** by extending a first upper pivot shaft **13** and a second upper pivot shaft **23** through the first pair of upper connection holes **15** on the first upright bracket **12** and the first pair of rear connection holes **31** on the first link **30**, and the second pair of upper connection holes **25** on the second upright bracket **22** and the first pair of front connection holes **32** on the first link **30**, respectively. Similarly, the second link **40** is provided on its two sidewalls near a rear and a front end with a second rear connection holes **41** and a second pair of front connection holes **42**, respectively, so that the second link **40** is pivotally connected at two ends to the first and the second upright bracket **11, 21** by extending a first lower pivot shaft **14** and a second lower pivot shaft **24** through the first pair of lower connection holes **16** on the first upright bracket **12** and the second pair of rear connection holes **41** on the second link **40**, and the second pair of lower connection holes **26** on the second upright bracket **22** and the second pair of front connection holes **42** on the second link **40**, respectively. Therefore, the first and the second link **30, 40** and the first and the second upright bracket **12, 22** together form a four-bar linkage.

[0019] The lifting mechanism **50** is known in the art. FIG. 3 is an enlarged, sectioned side view of the lifting mechanism **50**, showing the same includes a motor **53**, a lead screw **54** driven by the motor **53** to rotate, an extension tube **52** screwed at an inner end to the lead screw **54**, and a locating block **51** provided at a position corresponding to a rear end of the lead screw **54**. When the motor **53** drives the lead screw **54** to rotate, the extension tube **52** is caused to extend forward or to retreat, depending on a direction in which the lead screw **54** rotates.

[0020] The lifting mechanism **50** is located between the first and the second link **30, 40** with the locating block **51** facing toward the first support **10** and the extension tube **52** pointing toward the second support **20**. The first lower pivot shaft **14** that pivotally connects the first upright bracket **12** to the second link **40** also extends through the locating block **51**, and the second upper pivot shaft **23** that pivotally connects the second upright bracket **22** to the first link **30** also extends through an outer end of the extension tube **52**. Two first C-clamps **55** may be clamped on the first lower pivot shaft **14** to confine the locating block **51** of the lifting mechanism **50** to the shaft **14** between the two first C-clamps **55**. Similarly, two second C-clamps **56** may be clamped on the second upper pivot shaft **23** to confine the outer end of the extension tube **52** of the lifting mechanism **50** to the shaft **23** between the two second C-clamps **56**.

[0021] Please refer to FIG. 4. The first support **10** is immovably fixed to the lower side of the desktop **60**, and the second support **20** is supported by the first and the second link **30, 40** and the lifting mechanism **50** to movably locate in front of the first support **10**. When the lifting mechanism **50** is actuated and the extension tube **52** is driven to extend forward, the second support **20** connected at the second upright bracket **22** to the lifting mechanism **50** via the second upper pivot shaft **23** is lifted by the extended extension tube **52** to move the monitor **61** to a higher position relative to the desktop **60**. On the contrary, when the

lifting mechanism **50** is actuated and the extension tube **52** is driven to retreat, the second support **20** is lowered by the retreated extension tube **52** to descend the monitor **61**, as shown in FIG. 5. In brief, the second support **20** and the monitor **61** seated thereon are lifted or lowered by extending or retreating, respectively, the extension tube **52** of the lifting mechanism **50**.

[0022] The lifting mechanism **50** is controlled to operate via a lifting push button **57** and a lowering push button **58**, depressing of lifting and lowering push buttons **57** and **58** enables the extension tube **52** to lift and lower, respectively, the second support **20**. Thus, the computer monitor support of the present invention can be very easily operated. Moreover, the lifting and the lowering push button **57, 58** enable stepless fine adjustment in lifting and lowering the second support **20**.

[0023] It is to be noted that the first link **30** has an inner width at the sideward opening slightly larger than an outer width at the sideward opening of the second link **40**, so that the second link **40** may upward extend its two sidewalls into the sideward opening of the first link **30** without frictionally contacting with the two sidewalls of the first link **30**.

[0024] It is also to be noted that a distance between the rear and the front connection holes **41, 42** on the second link **40** is slightly larger than that between the rear and the front connection holes **31, 32** on the first link **30**, and a distance between the second pair of upper connection holes **25** and the second pair of lower connection holes **26** on the second upright bracket **22** is slightly larger than that between the first pair of upper connection holes **15** and the first pair of lower connection holes **16** on the first upright bracket **12**, such that the first upper pivot shaft **13**, the first lower pivot shaft **14**, the second upper pivot shaft **23**, and the second lower pivot shaft **24** form four vertexes of a quadrilateral having two groups of unequal opposite sides, as can be seen in FIGS. 4 and 5.

[0025] With the above arrangements, when the extension tube **52** of the lifting mechanism **50** is extended forward, it not only lifts the second support **20** but also causes the second support **20** to slightly incline downward toward the first support **10** at the same time, as shown in FIG. 4, so that a short user may comfortably look at a display on the monitor **61** at an upward angle of view. For a high user or a user standing before the monitor **61**, the lifting mechanism **50** may be actuated to retreat the extension tube **52** and thereby lowers the second support **20** and causes the same to slightly incline away from the first support **10** at the same time, as shown in FIG. 5, so that the display of the monitor **61** is slightly turned upward to face the user's eyes looking downward.

[0026] The purpose of providing U-shaped upright brackets **12, 22** and first and second links **30, 40** is to facilitate forming of laterally symmetrical connection hole pairs **15, 16, 25, 26, 31, 32, 41** and **42** on the two sidewalls of these brackets and links for the pivot shafts **13, 14, 23** and **24** to extend therethrough.

[0027] The computer monitor support of the present invention enables stepless adjustment of the vertical position and the angle of elevation of the computer monitor **61** on the second support **20** relative to the first support **10** that is immovably fixed to the lower side of the desktop **60**, so that

any user could look at the display on the monitor **61** at an angle of view most suitable for the user. The present invention is therefore ideal and practical for use.

What is claimed is:

1. A computer monitor support, comprising:

- a first support including a first top plate immovably connected to a lower side of a desktop, and a first upright bracket fixedly connected to a bottom of said first top plate; said first upright bracket having a U-shaped cross section to include two sidewalls and a sideward opening that is oriented forward, and being provided on said two sidewalls with a first pair of upper connection holes and a first pair of lower connection holes;
- a second support being located in front of said first support, and including a second top plate on which a computer monitor is seated, and a second upright bracket fixedly connected to a bottom of said second top plate; said second upright bracket having a U-shaped cross section to include two sidewalls and a sideward opening that is oriented toward said first support, and being provided on said two sidewalls with a second pair of upper connection holes and a second pair of lower connection holes;
- a first link having a U-shaped cross section to include two sidewalls and a sideward opening that is oriented downward; said first link being provided on said two sidewalls near two ends thereof with a first pair of rear connection holes and a first pair of front connection holes;
- a second link being located below said first link, and having a U-shaped cross section to include two sidewalls and a sideward opening that is oriented upward; said second link being provided on said two sidewalls near two ends thereof with a second pair of rear connection holes and a second pair of front connection holes; and
- a lifting mechanism including an extension tube being driven by a motor and a lead screw of said lifting mechanism to extend forward or retreat;

said first link being pivotally connected at a rear end to said first upright bracket by extending a first upper pivot shaft through said first pair of upper connection holes on said first upright bracket and said first pair of rear connection holes on said first link, and at a front end to said second upright bracket by extending a second upper pivot shaft through said second pair of upper connection holes on said second upright bracket and said first pair of front connection holes on said first link;

said second link being pivotally connected at a rear end to said first upright bracket by extending a first lower pivot shaft through said first pair of lower connection holes on said first upright bracket and said second pair of rear connection holes on said second link, and at a front end to said second upright bracket by extending a second lower pivot shaft through said second pair of lower connection holes on said second upright bracket and said second pair of front connection holes on said second link; and

said first lower pivot shaft connecting said first upright bracket to said rear end of said second link also extending through a rear locating block of said lifting mechanism, and said second upper pivot shaft connecting said second upright bracket to said front end of said first link also extending through an outer end of said extension tube.

2. The computer monitor support as claimed in claim 1, wherein a distance between said second pair of rear connection holes and said second pair of front connection holes on said second link is slightly larger than a distance between said first pair of rear connection holes and said first pair of front connection holes on said first link.

3. The computer monitor support as claimed in claim 1, wherein a distance between said second pair of upper connection holes and said second pair of lower connection holes on said second upright bracket is slightly larger than a distance between said first pair of upper connection holes and said first pair of lower connection holes on said first upright bracket.

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