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(54) **ADJUSTABLE ARMCHAIR TRAY**

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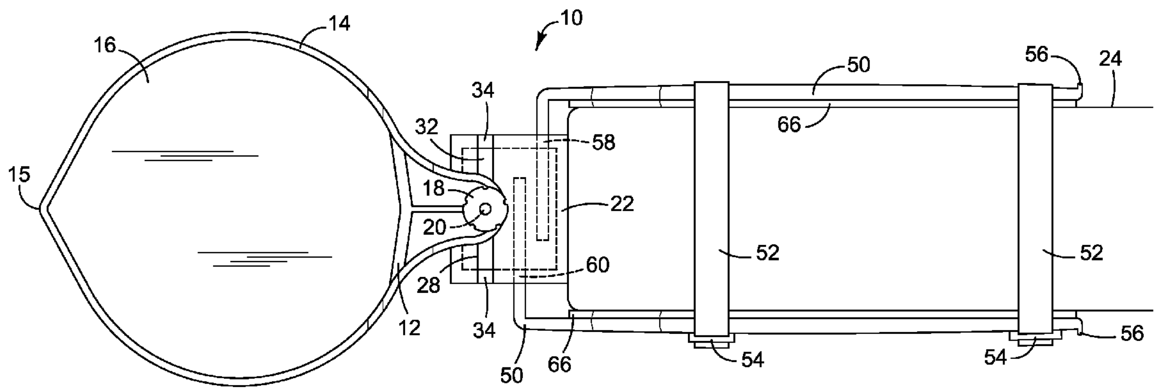
(57) **ABSTRACT**

A multi-functional adjustable tray that mounts on the arm of a chair to provide a comfortably accessible work surface to support a computer mouse and other IO devices.



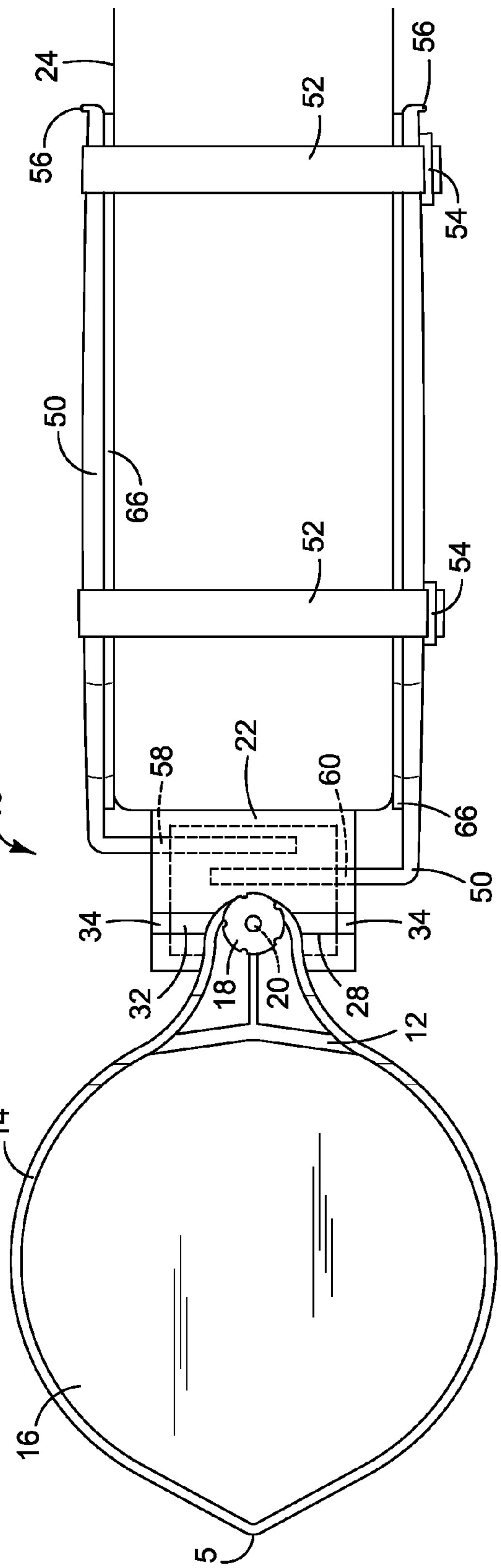

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FIG. 1

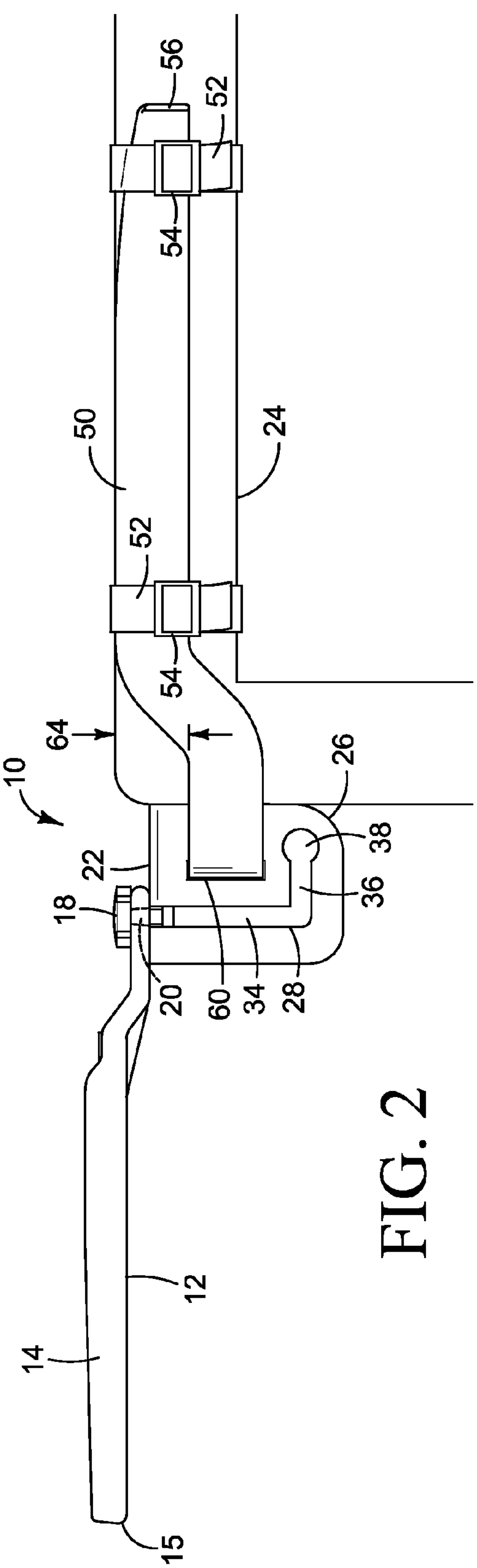
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FIG. 2

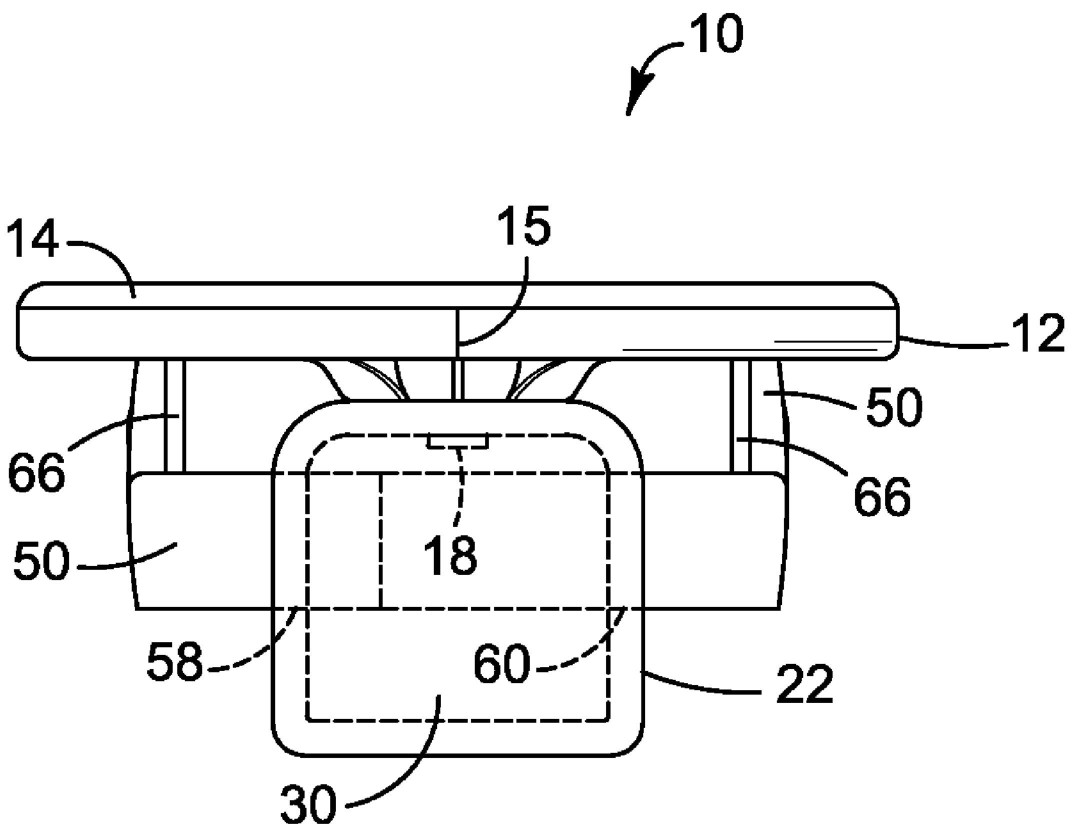

FIG. 3

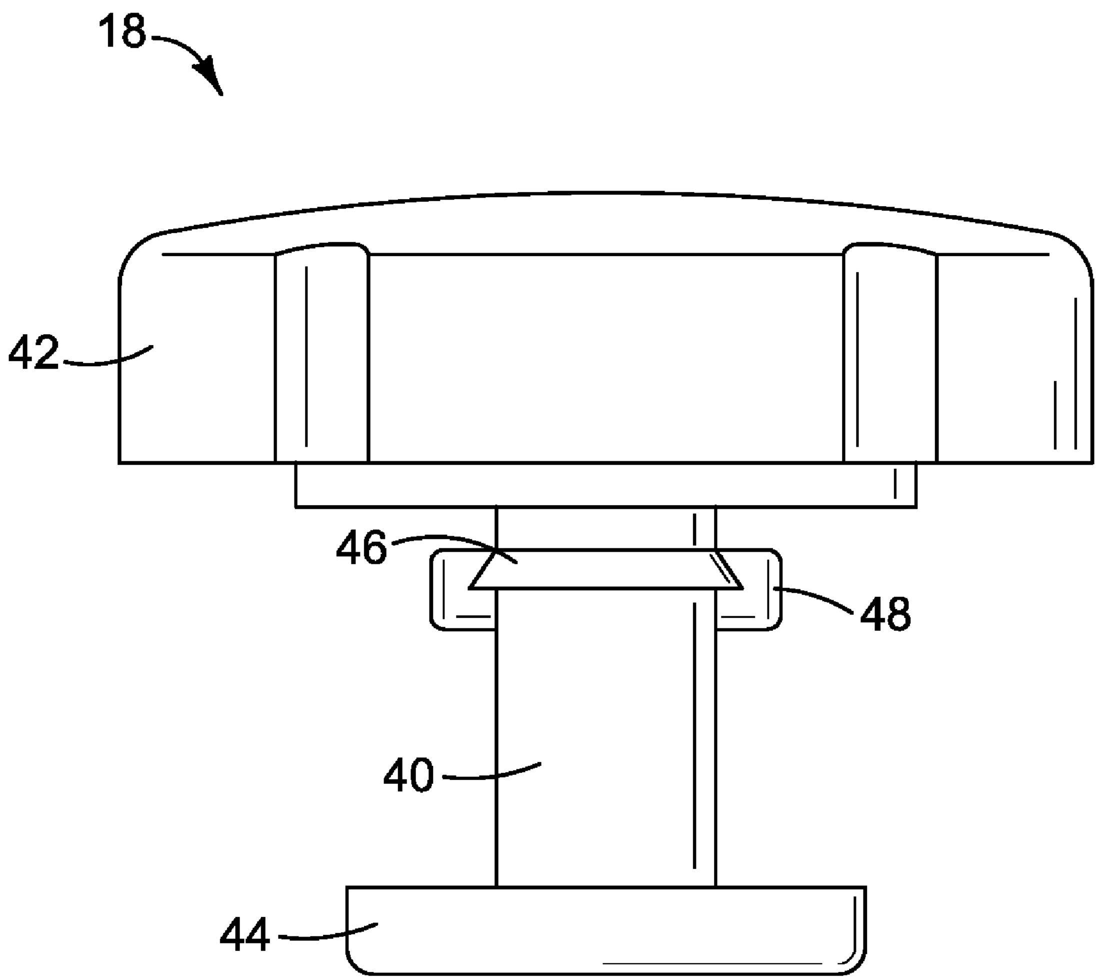

FIG. 4

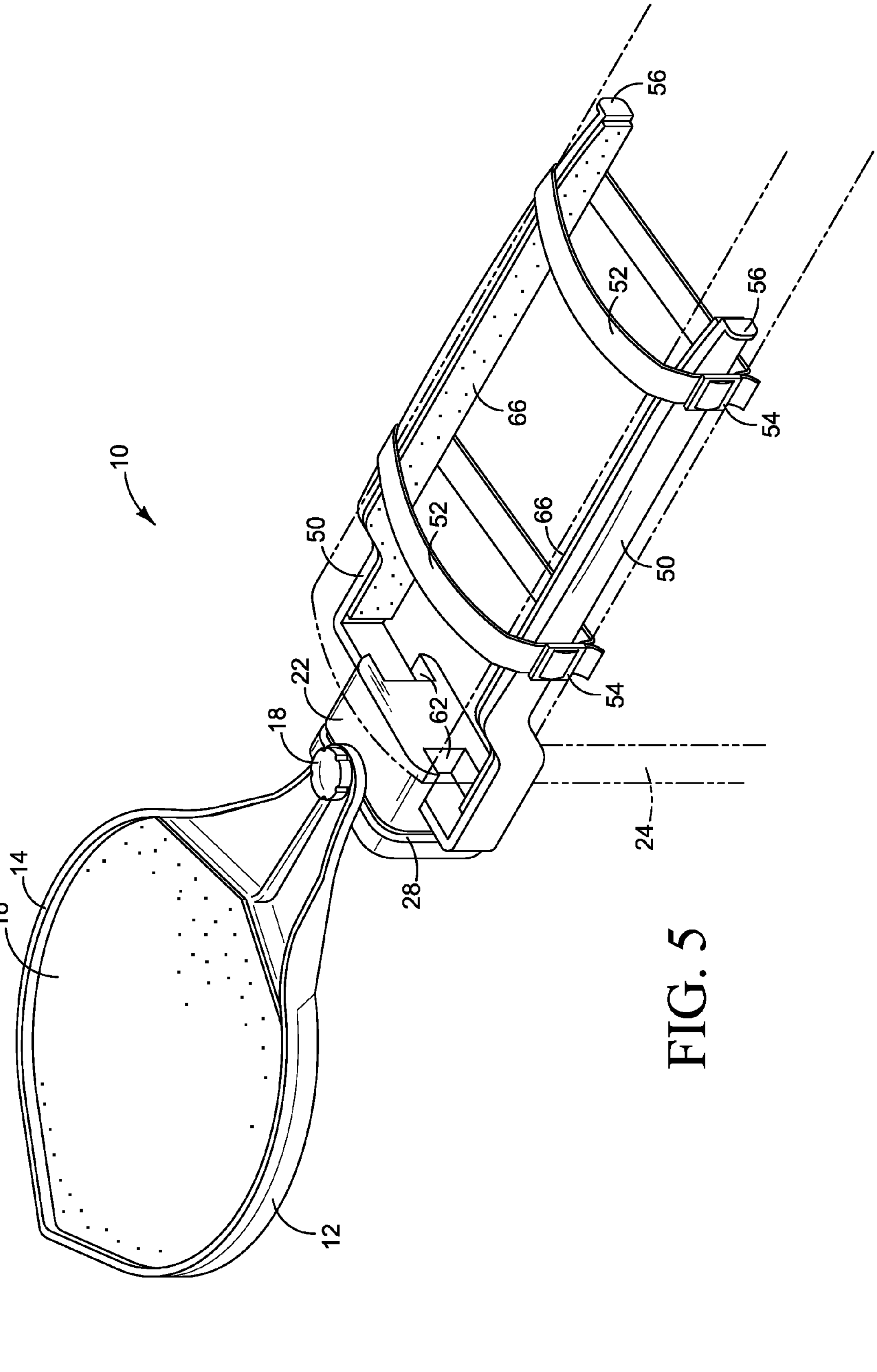

FIG. 5

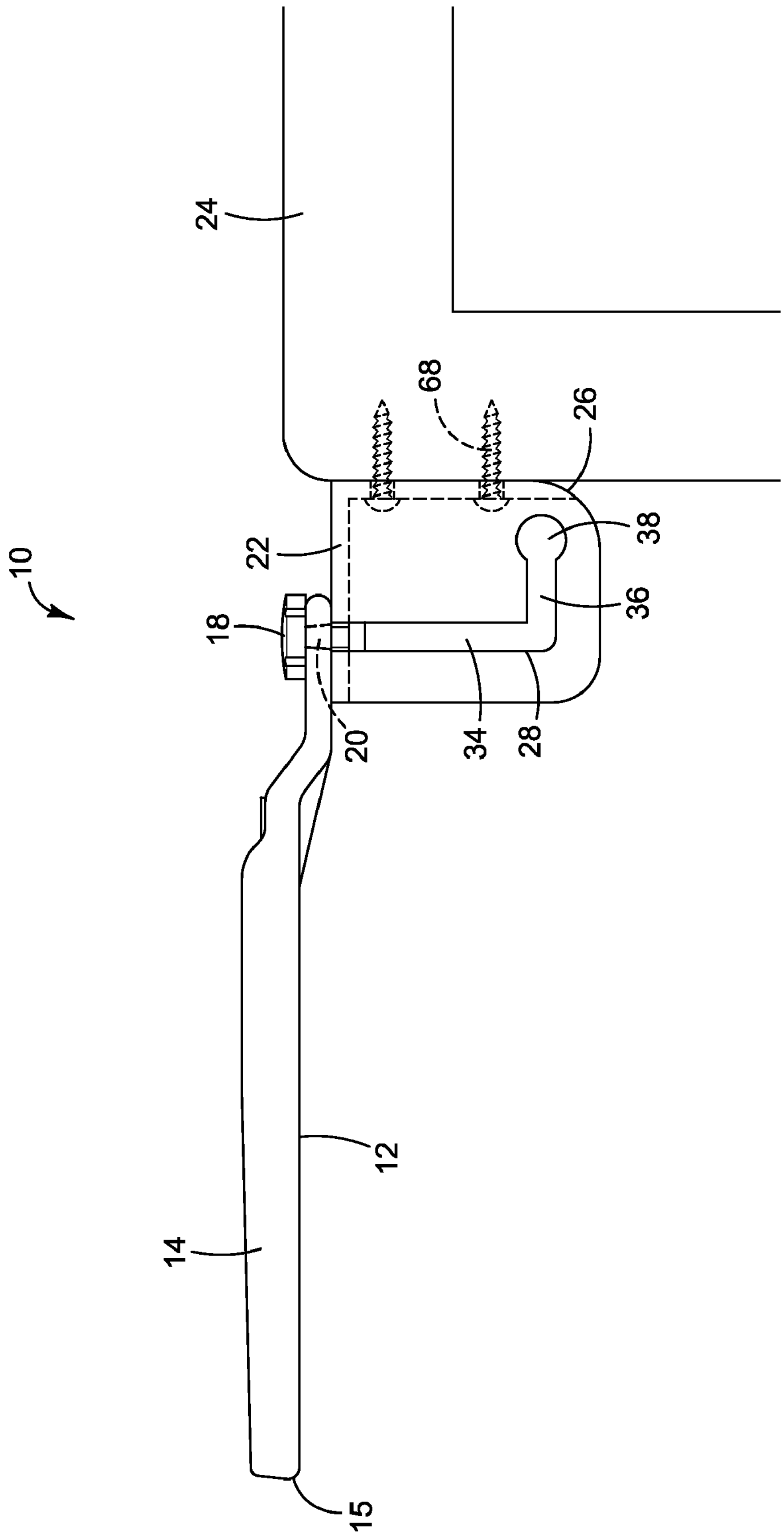

FIG. 6

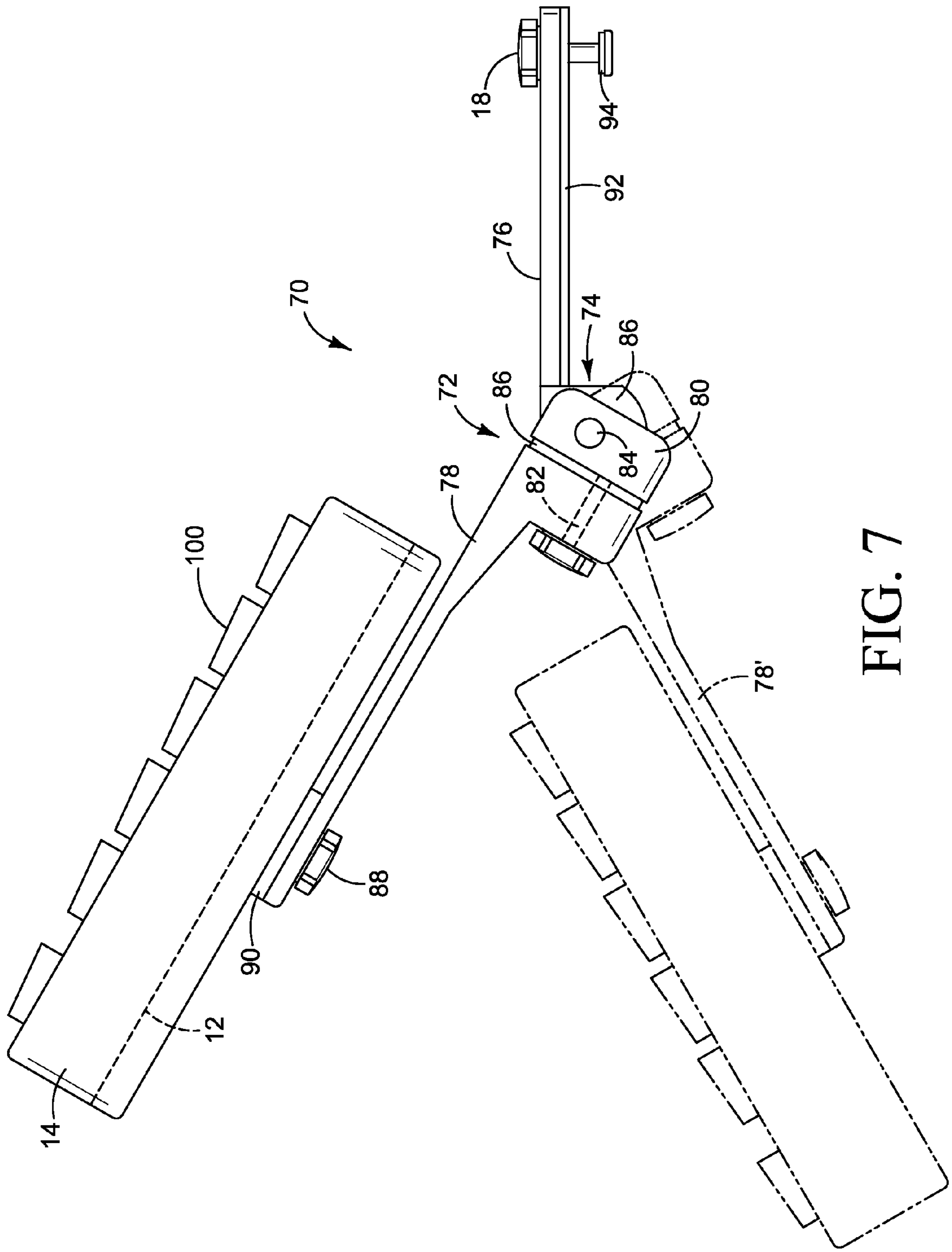

FIG. 7

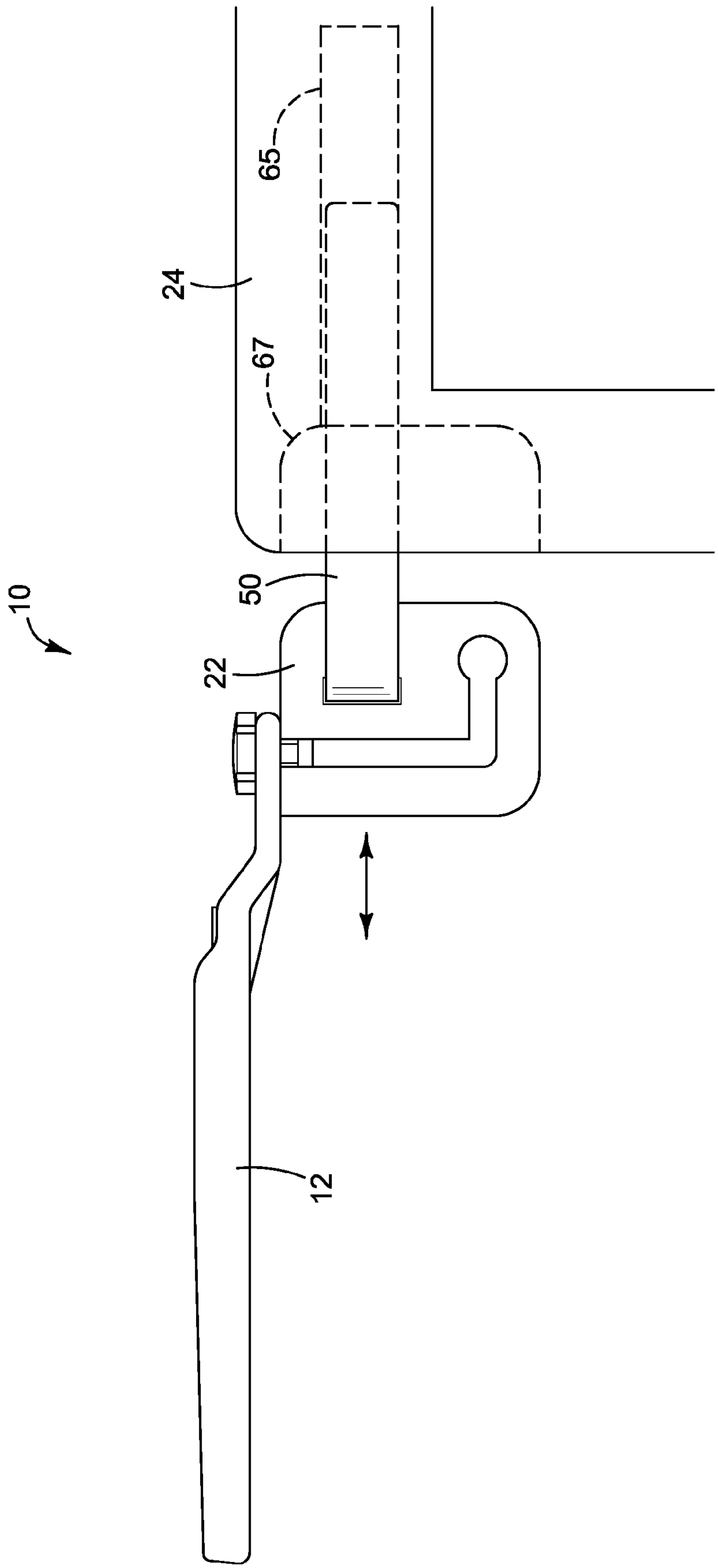

FIG. 8

ADJUSTABLE ARMCHAIR TRAY

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is divisional of application Ser. No. 11/281,572 filed on Nov. 16, 2005 which was a continuation-in-part of application Ser. No. 11/250,654 filed on Oct. 13, 2005, which was a continuation-in-part of application Ser. No. 10/921,540 filed on Aug. 18, 2004 which issued as U.S. Pat. No. 7,131,688 on Nov. 7, 2006, the priorities of which are claimed and the disclosures of which are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present invention generally relates to the field of computer accessories. More particularly, the present invention provides an adjustable tray that may be easily mounted to the arm of a chair to provide a generally planar working surface to support a computer mouse and other accessories, devices and objects.

BACKGROUND OF THE INVENTION

[0003] Computers are operated through the use of peripheral systems and devices such as a keyboard, roller mouse or optical mouse, pen, joystick, keyboard, keypad, roller ball, trackball, personal digital assistant, cell phone, or similar device or other device, referred to collectively as IO devices. IO devices enable a user to interact with a computer or network to send or receive information, make decisions, and carry out various other functions. Direct physical contact with, and therefore close proximity to, these devices are essential to their operation.

[0004] However, in most circumstances a computer user works at a desk and leans forward or sideways from a comfortable sitting position to reach a keyboard or mouse on a desk or other flat surface. Reaching for the keyboard or the mouse in this way makes it very difficult to maintain proper posture and operate the computer comfortably. Use of IO devices on a desktop stresses the back, shoulder and the wrist. For wrist stress and carpal tunnel syndrome, numerous products, such as ergonomically shaped mice and wrist supports, attempt to address the symptoms of this stress without addressing the awkward positioning that often causes strain.

[0005] Additionally, persons with debilitating injuries may find that reaching to a desk to use IO devices is difficult or painful. Accordingly, there is a need for a surface for supporting one or more IO devices that maintains a position so that the user may maintain ergonomically correct posture and wrist position.

SUMMARY OF THE INVENTION

[0006] The physical stresses resulting from the awkward positioning and use of IO devices on a desktop may be remedied by mounting an adjustable tray to the left or right arm of a chair in order to facilitate the operation of a mouse or other IO device as a natural extension of a person's arm from a comfortable seated position. An adjustable tray that can be quickly and efficiently mounted to the arm of a chair may facilitate comfortable use of a computer keyboard on a person's lap without reaching for other IO devices, or use of a keyboard on the platform, further correcting the hunched forward position of many computer users. Multiple trays may be used simultaneously; for example, with a keyboard and a mouse, or split keyboards adapted for use with the left and right hands.

[0007] As used herein, the adjustable armchair tray is referred to simply as an adjustable tray. The adjustable tray includes a platform that provides a generally planar working surface particularly suited for operation of IO devices. The platform is rotatably fastened to a chair arm attachment body, which is adjustable to fit various styles, widths, and lengths of chair arms.

[0008] The platform also preferably includes retainers around its perimeter to prevent devices from sliding off the platform, and retainers to retain a pad on the platform when the platform is rotated and stored to the side of the chair.

[0009] The main components of the chair arm attachment body are an armchair stop, guides and one or more compression elements. The armchair stop supports the platform for use and storage, and connects the platform to the guides that mount on the arm of a chair. The armchair stop preferably defines a groove, cavity or interconnecting groove by which the armchair stop is pivotally connected by a fastener to the platform through one of the slots in the platform. This interconnection allows the platform to slide and rotate within the horizontal plane for use, and within the vertical plane for storage of the platform to the side of a chair.

[0010] The adjustable tray includes guides for allowing the adjustable tray to be mounted to the chair arm. The manner of attachment presents various embodiments of the adjustable tray. In some embodiments, the guides are slidably interconnected to the armchair stop and fixed against the chair arm by at least one securing device. The securing device is preferably a strap with a buckle for easy attachment. In other embodiments, the guides retract into corresponding cavities in the chair arm.

[0011] The adjustable tray is preferably adjustable to various sizes of chair arms. The adjustable tray may also include a pad disposed on the platform and retained by a retainer around the periphery of the platform or, one or more discrete pad retainers. Cushioning material may be used on the armchair stop, the plurality of guides, the plurality of vertical guides and the bottom support member to prevent movement of the adjustable tray or marring of the chair during use.

[0012] In other embodiments, the armchair stop is securely attached directly to the chair arm, eliminating the adjustable guides while still allowing the platform to be placed in a generally horizontal plane for use and a generally vertical plane for storage. In still other embodiments, a rotatable joint may be used to tilt or angle the platform to accommodate the user's wrist rotation, which is particularly useful for ergonomic use of keyboards.

[0013] The purpose of the foregoing Abstract is to enable the United States Patent and Trademark Office and the public generally, and especially the scientists, engineers, and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection, the nature and essence of the technical disclosure of the application. The Abstract is neither intended to define the invention, which is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

[0014] Still other features and advantages of the present invention will become readily apparent to those skilled in this art from the following detailed description wherein only the preferred embodiments of the invention will be described and shown, simply by way of illustration of the best modes contemplated to manifest the invention. As will be realized, the invention is capable of modification in various obvious respects all without departing from the invention. Accordingly, the drawings and description of the preferred embodiments are to be regarded as illustrative in nature, and not as restrictive in nature.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. **1** is a top view of an embodiment of the invention.

[0016] FIG. **2** is a side view of the embodiment of FIG. **1**, as mounted on a chair arm.

[0017] FIG. **3** is a front view of the embodiment of FIG. **1**.

[0018] FIG. **4** shows a fastener according to an embodiment of the invention.

[0019] FIG. **5** is a perspective view of another embodiment of the invention.

[0020] FIG. **6** is a side view of an embodiment of the invention where the armchair stop is secured directly to the chair arm.

[0021] FIG. **7** is a side view of an embodiment having a rotatable joint.

[0022] FIG. **8** is a side view of an embodiment having a slideable guide.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0023] While the invention is susceptible to various modifications and alternative constructions, certain illustrated embodiments thereof have been shown in the drawings and will be described below in detail. It should be understood, however, that there is no intention to limit the invention to the specific forms disclosed; on the contrary, the invention is to cover all modifications, alternative constructions, and equivalents falling within the spirit and scope of the invention as defined in the claims.

[0024] Embodiments of the present invention include an adjustable tray that may be mounted on various types of chair arms. Although many different uses are available for the present invention as there are uses for chairs, the present invention will commonly be referenced as an adjustable tray. FIG. **1** shows a top view of an embodiment of the adjustable tray **10**. The adjustable tray **10** includes a platform **12**, which provides a generally planar surface for **10** devices and other writing utensils. Additionally, the platform **12** may be used to write notes, secure a remote control, hold food or a beverage, or facilitate other similar uses. The adjustable tray **10** may be used on any device or location that is equipped with a chair arm or substantially equivalent structure. For example, many automobile seats are now equipped with armrests that the adjustable tray **10** would easily adapt to fit for the previously mentioned uses.

[0025] The shape defined by the perimeter **12** may vary with the application, including square, rectangular, circular, or other shapes. The chairs to which the adjustable tray **10** may be attached are often mounted on rollers. In normal operation, the user may roll the chair and cause the platform **12** to contact a desk or other external object. To avoid being captured between the external object and the chair arm, the perimeter of the platform **12** may be shaped generally as an oval or an ellipse in some embodiments, and preferably modified by a peak **15**. Peak, in this context, means a region of the perimeter that converges more sharply than an oval or ellipse. The overall oval shape of the platform **12** allows the platform **12** to rotate to either side of the chair arm and slide along the object as the object gently pushes it aside. The peak **15** insures that the platform **12** swings to one side or the other, rather than being captured along the long axis of the chair arm. The perimeter of the platform **12** need not be perfectly elliptical; rather, the perimeter of the platform **12** preferably curves smoothly along the sides, and curving more sharply on the end.

[0026] The platform **12** and other parts of the adjustable tray **10** may be built or molded of any material that allows for strength and ease of use such as wood, plastic or other similar materials. The platform **12** may incorporate at least one retainer **14**, preferably located around the periphery of the platform **12**, to allow a mouse pad, or other devices to be retained within the perimeter of the platform **12**. The retainer **14** provides a boundary that prevents **10** devices or other materials from falling off the platform **12**. In some embodiments, one or more discrete retainers **14** may be placed on all sides of the platform **12** to assure that a device does not fall off any side of the platform.

[0027] A pad **16** or other similar material may be positioned on top of the platform **12** and configured to be easily replaced when worn out. The pad **16** is preferably made of materials similar to those used for basic stand-alone computer mouse pads, typically neoprene. Additionally, the pad **16** may be rubber, plastic or other material that facilitates the operation of a roller ball mouse, optical mouse or other similar computer-interfacing device. To prevent the pad **16** from falling when the platform **12** is placed in a stored or disengaged position, pad **16** may be held in place by glue or restraining tabs (not shown) protruding from the retainer **14**. In other embodiments, the pad retainers may be a molded part of the platform or clamps, tie downs, hook and loop fasteners, snaps or other elements that could similarly maintain the correct positioning of the pad **16** on the platform **12**.

[0028] In some embodiments of the present invention, IO devices may be rigidly attached to the platform **12**, eliminating the need for retainer **14**. Alternatively, the platform **12** may be integrated with the case of the IO device, so that the platform **12** and the IO device are presented to the user as a unit.

[0029] A movable fastener **18** passes through a hole **20** in the platform **12**, pivotally securing the platform **12** to an armchair stop **22**. As herein defined, the movable fastener **18** is a threaded nut and bolt, a pin connection with a threaded end for tightening purposes, or any other element that provides a rotational pivot for the angular adjustment of the platform **12**, while still interconnecting the platform **12** with the armchair stop **22**. In the embodiment of movable fastener **18** shown in FIG. **4**, the movable fastener **18** includes a threaded bolt **40**. Threaded nut **42** screws onto the shank of bolt **40**, capturing the platform **12** between threaded nut **42** and the head **44** of bolt **40**. Tightening the nut **42** secures the platform **12** and prevents it from rotating; loosening nut **42** slightly releases the platform **12** enough to allow rotation to a comfortable position. [check whether should talk about neoprene retainer, **51**, **52**]

[0030] The movable fastener **18** is preferably ergonomically designed or covered so that it does not interfere with the user during use of devices on the adjustable tray **10**. This may be accomplished by incorporating a rounded or other shape that allows it to be easily tightened while simultaneously maintaining user comfort. Rounded, in this context, means that the nut has no sharp edges exposed to the user when installed.

[0031] Referring now to FIG. 2, a side view of the embodiment of FIG. 1, the armchair stop 22 is shaped to be positioned directly against a chair arm 24 while preventing the platform 12 from sliding toward the back of the chair. On some chairs, that position will be where the armrest transitions from horizontal to vertical. The adjustable tray 10 will also work on different styles of arms and chairs with the only general compatibility requirement being that the chair has an armrest equivalent. The armchair stop 22 has a curved or slanted region 26 to accommodate any curvature of chair arm 24. When the region 26 of armchair stop 22 abuts the chair arm 24, the chair arm 24 provides additional support to the adjustable tray 10.

[0032] In a preferred embodiment, the platform 12 is constructed on two levels: a first level that supports an IO device, and a second level lower than the first level through which the fastener 18 passes. This two-tier structure allows the first level to be generally level with the chair arm, so that the user's wrist is approximately straight when using the input device without interference by the fastener 22. Optionally, a wrist pad or cover (not shown) may be placed on the second level to help support the user's wrist.

[0033] FIG. 3 is a front view of the embodiment shown in FIG. 1. Referring to FIGS. 1, 2, and 3, the movable fastener 18 flexibly secures the platform 12 to armchair stop 22 by passing through the hole 20 in the platform 12, through a slot 28 in the armchair stop 22, and into a cavity 30 (FIG. 3) in armchair stop 22. The slot 28 in the armchair stop 22 has a generally horizontal top leg 32 (FIG. 1) having curved regions on each end and connecting to two generally vertical legs 34 on either side of armchair stop 22 (FIG. 2). The slot 28 has additional generally horizontal side legs 36 on either side of armchair stop 22, terminating in an enlarged hole 38. The shape of slot 28 allows the platform 12 to be positioned on the top of armchair stop 22 for use, or positioned to either side of chair arm 24 by sliding the fastener 18 from horizontal leg 32 into one of vertical legs 34. Vertical legs 34 need not be precisely vertical: they may slope fore and aft or side-to-side to accommodate chair arms of various shapes. Similarly, horizontal side legs 36 need not be precisely horizontal.

[0034] As a result, a person may use the adjustable tray 10 with the platform horizontal and then rotate the platform and the movable fastener 18 within the slot 28 so that the platform 12 is in a vertical storage position. The transition is easily made by loosening the movable fastener 18 slightly, and then sliding the movable fastener 18 and the connected platform 12 within the slot 28 from the horizontal plane to the vertical plane. In another embodiment, the slot 28 has only one vertical leg 34 so that the platform 12 may be stored only on one side of the chair arm 24.

[0035] Referring to FIG. 2, the platform 12 may be removed from the armchair stop 22 by sliding the movable fastener 18 along the leg 36 of the slot 28 to enlarged hole 38. Hole 38 is sufficiently large to allow an end of movable fastener 18 to pass through, releasing the movable fastener 18 and the platform 12 from the armchair stop 22.

[0036] The embodiment of the movable fastener 18 shown in FIG. 4 has a threaded bolt 40 and an ergonomically shaped threaded nut 42. Bolt 40 has a head 44 that is small enough to pass through enlarged hole 38, yet still engage legs 32, 34, and 36 of slot 28. An embodiment of bolt 40 has a frustoconical ring 46 circumvolving the shank of bolt 40 and one or more bosses 48 protruding from the shank of bolt 40.

[0037] The hole 20 in the platform 12 may be sized to allow the bolt 40 with the ring 46 to pass through as a press fit. After the ring 46 passes through the hole 20 (FIG. 2), the bolt 40 is captured on the topside of the platform 12 by the ring 46 and on the bottom side by head 44, while still allowed to move a short distance in an axial direction. The hole 20 may optionally be made of a smaller diameter at the upper end, to allow the ring 46 to easily pass through during assembly, while still capturing the bolt 40 during operation. In another embodiment, annular ring may be replaced with one or more barbs.

[0038] One or more bosses 48 engage corresponding axial grooves or similar features in the hole 20 to prevent rotation of the bolt 40 relative to the platform 12 when the nut 42 is tightened, eliminating the need for a washer and facilitating tightening of the nut 42 to secure the platform 12. While the bosses 48 are depicted as cylinders, the bosses 48 may be of any shape that engages the grooves and prevents rotation, including a polyhedron or hemisphere.

[0039] The adjustable tray 10 further includes one or more guides 50 connected to the armchair stop 22. Viewed from above as shown in FIG. 1, the guides 50 are approximately L-shaped on each end, and one leg of each guide is inserted into a hole 58 and a hole 60 in the armchair stop 22. Holes 58 and 60 are offset, permitting the legs inserted into the slot to be relatively long, accommodating both wide chair arms and narrow chair arms, where the legs overlap each other in the slots. In an embodiment shown in FIG. 5, the rear of the armchair stop 22 may include one or more recesses 62 sized to accommodate guides 50, allowing guides 50 to be adjusted to accommodate a chair arm 24 narrower than armchair stop 22.

[0040] In a preferred embodiment depicted in FIG. 5, the guides 50 are compressed against the sides of the chair arm by at least one securing device 52. The securing device 52 as herein defined includes, but is not limited to, a clamp, tape, bungee cords, string, tie cords, or straps. Each securing device 52 preferable passes around the chair arm 24 and guides 50 and is preferably fastened by a fastener 54. Fastener 54 may be a Velcro fastener, a Tabler buckle, a clip, or similar buckling device. The compression force of the devices 52 presses the guides 50 against the chair arm and into the armchair stop, effectively securing the adjustable tray 10. This embodiment provides the advantage of simplicity and allows the adjustable tray 10 to be quickly and easily mounted to the chair arm with ease.

[0041] Another embodiment may include at least one strap slot or loop in each guide 50 in which to thread the securing devices 52 to compress and secure the guides 50 to the chair arm. The strap slots preferably run a substantial length of the guides 50 allowing the securing devices 52 to be slid or moved to accommodate the configuration of the chair arm and particularly the support members.

[0042] In a preferred embodiment, the guides 50 each have a tab 56 on the end furthest from the armchair stop 22 to prevent securing devices 52 from slipping off the ends of guides 50. Guides 50 may also be tapered to better conform to curved chair arms.

[0043] Referring to FIG. 3, the guides 50 may curve downward in the region 64 nearest the armchair stop 22 so that the platform 12 is approximately level with the uppermost surface of guides 50. Without the curved region 64, the platform 12 would be positioned above the chair arm 24, causing the user's wrist to flex upward when using a mouse or other IO device, potentially causing carpal tunnel stress within the wrist. In another embodiment, a shallower or deeper curve positions the platform **12** above or below the chair arm **24**, respectively, which may be comfortable for some users. Curved region **64** need not be smoothly curved in the S-shape shown; it may descend sharply in a Z-shape or with perpendicular angles.

[0044] Adjustable tray **10** may include multiple sets of guides **50**, each set tapered, curved, and including features that best fit a class of chair arms. The user may then select the set of guides that best fits the user's chair.

[0045] In another embodiment, shown in FIG. **8**, each guide **50** may be inserted into a corresponding cavity **65** in chair arm **24**. The walls of the cavity support the guide **50**, which in turn supports the armchair stop **22**. Each guide **50** may slide in and out of the cavity, allowing the user to place the platform **12** a comfortable distance away from the chair arm **24**. In some embodiments, the chair arm **24** has an additional cavity **67** adapted to accept the armchair stop **22**, so that the armchair stop **22** may be retracted into the chair arm **24** and out of the way of the user. In some embodiments, only one guide **50** is required, because there is no need to adapt the adjustable tray **10** to fit the width of the chair arm **24**.

[0046] Guides **50** may be eliminated by securing armchair stop **22** directly to chair arm **24**, as shown in FIG. **6**. Armchair stop **22** may be secured with one or more permanent fasteners **68**, such as screws or glue, or removable fasteners, such as key and slot hangers. Using a key and slot hanger, one or more keys attached to armchair stop **22** engage slots in chair arm **24**. Each slot has an enlarged region so that the key may be disengaged from the slot, allowing removal of the armchair tray. It is preferable to install the slots on chair arm **24**, rather than the key, so that the key does not protrude from chair arm **24** when armchair stop **22** is removed.

[0047] The armchair stop **22**, the guides **50**, and the securing devices **52** are preferably lined with a cushioning material **66**. The cushioning material **66** allows the guides **50** and the armchair stop **22** to be tightened against the surface of a chair without scratching or other marring of the chair. Cushioning material **66** also provides a non-slip surface that prevents movement during the use of the adjustable tray **10**. Cushioning material **66** may be any material such as rubber, plastic or cloth that prevents slippage and marring of the arm of the chair. In a preferred embodiment, the cushioning material **66** is neoprene or other non-skid rubberized material used to form traditional stand-alone mouse pads.

[0048] FIG. **7** shows an embodiment of the invention having rotatable joints that allow the platform **12** to be tilted to comfortably accommodate a user's hand and wrist position while using a keyboard or other IO device. In particular, a keyboard that is split into two parts, one for the left hand and one for the right hand, allows each keyboard segment to be rotated to fit the user's hand when the user's arm is resting on the chair arm or held comfortably above it. The left keyboard segment is preferably tilted or rotated counter-clockwise from the user's perspective; the right keyboard segment is preferably tilted or rotated clockwise. The angle of rotation varies with the user, the layout of the chair arm, and the size and configuration of the keyboard. Referring to FIG. **7**, the platform **12** is attached to an arm **70** that is divided into three segments by a first rotatable joint **72** and a second rotatable joint **74**. An inboard segment **76** of the arm **70** is attached to the armchair stop **22** by the movable fastener **18**, and an outboard segment **78** of the arm **70** is attached to the platform **12**. A middle segment **80** connects rotatable joints **72** and **74**. In a preferred embodiment, the outboard segment **78** rotates on a first pin **82**, and the middle segment **80** rotates about a second pin **84**. FIG. **7** shows the outboard segment **78** in an exemplary first position where the user's wrist extends upward, designated as **78**, and an exemplary second position where the user's wrist flexes downward, designated as **78'**. The rotation of segment **78** about joint **74** is not limited to the positions shown and may extend to wider or narrower angles.

[0049] The outboard segment **78** may be prevented from rotating beyond the desired angle by static frictional contact between the middle segment **80** and the outboard segment **78**. The static friction may be overcome by applying a manual moment to the outboard segment of the arm **70**. The ease of rotation may be controlled by using a bolt, machine screw, or lag screw with a knurled head as the pin **82** so that the bolt may be tightened or loosened to control the friction between the segments. An optional rotational control device **86** may be used to control rotation, such as a rubber washer, fiber washer, toothed surfaces on segments **78** and **80**, or other suitable rotation controlling device. Rotation of joint **74** may be controlled in a similar manner, including use of a rotation control device **86** between the surfaces of middle segment **80** and inboard segment **76**.

[0050] The embodiment shown in FIG. **7** allows the platform to be rotated about the long axis of the arm **70** via rotatable joint **72**. In other embodiments, the arm **70** or the joint **72** may be angled from the long axis of the arm **70** to allow the platform to rotate about an arbitrary axis. Alternatively, the rotatable joint **70** may be combined with a universal joint to increase flexibility when positioning the platform **12**. It may also be recognized that some applications require only one rotatable joint, so that platform **12** has only one axis of rotation.

[0051] In some embodiments, the platform **12** is connected to the arm **70** by an adjustable fastener **88**. The adjustable fastener **88** may be a bolt with a knurled head, a pin connection with a threaded end for tightening purposes, or any other element that provides a rotational pivot for rotational adjustment of the platform **12**. A friction element **90** may be placed between the arm **70** and the platform **12** to prevent rotation of the platform **12** when the adjustable fastener **88** is tightened. The friction element **90** may be a rubber washer, fiber washer, star washer, or other frictional device capable of resisting the rotation of platform **12**. Alternatively, the arm **70** may be permanently affixed to the platform **12**.

[0052] While the rotatable joint **72** is particularly useful with keyboard applications, it is not limited to keyboard applications and may be used, by way of example, with other IO devices such as trackballs. In embodiments employing rotatable joint **72**, it is preferable to insure that the size of the retainer **14** is adequate to retain the IO device when the platform **12** is tilted away from a level position. As shown in FIG. **7**, the retainer **14** is sized to accommodate a keyboard **100**.

[0053] FIG. **7** also shows an alternative embodiment for controlling the rotation of fastener **18**. Flexible material **92** may be affixed to the inboard segment **76**. The fastener **18** passes through the flexible material **92** so that the frictional contact with the material prevents easy rotation of the fastener **18**. Flexible material **92** may also cushion the inboard arm **76** where it contacts the armchair stop **22** and may prevent rotation of the inboard arm **76** relative to the chair arm. Flexible material **92** may be neoprene, rubber, or similar material capable of lightly gripping the shank of fastener **18**, frictionally preventing rotation of the inboard arm **76**, or cushioning the inboard arm **76**. Optionally, a friction element **94** may be placed on the shaft of fastener **18** so that it contacts armchair stop **22** when fastener **18** is tightened, as in FIG. **2**. The friction element **94** may be a rubber washer, fiber washer, star washer, or other frictional device capable of resisting the rotation of fastener **18**.

[0054] While there is shown and described the present preferred embodiments of the invention, it is to be distinctly understood that this invention is not limited thereto but may be variously embodied to practice within the scope of the following claims. From the foregoing description, it will be apparent that various changes may be made without departing from the spirit and scope of the invention as defined by the following claims.

I claim:

1. An adjustable tray configured for connection to chair arm having a top surface and a width dimension, said adjustable tray comprising:

an armchair stop fastened to said chair arm;

a platform defining a securing hole, said platform comprising an arm defining the securing hole and having a first rotatable joint, wherein the rotatable joint allows the generally planar surface to be rotated around a first axis; and

a movable fastener having body and a head, the body passing through the securing hole into the armchair stop, wherein the platform is rotatably connected to the armchair stop by the movable fastener, and wherein the platform is movable from an approximately horizontal plane to an approximately vertical plane.

2. The adjustable tray of claim **1**, wherein the arm further comprises a second rotatable joint, wherein the second rotatable joint allows the generally planar surface to be rotated around a second axis.

3. An adjustable tray configured for connection to chair arm having a top surface and a width dimension, said adjustable tray comprising:

an armchair stop;

a platform;

a first arm attached to the platform;

a second arm defining a securing hole;

a joint rotatably connecting the first arm and the second arm, wherein the platform may be rotated by rotating the first arm relative to the second arm; and

a fastener having a body and a head, the body passing through the securing hole into the armchair stop, wherein the second arm is rotatably connected to the armchair stop by the movable fastener.

4. The adjustable tray of claim **3**, wherein the armchair stop further comprises:

a generally horizontal surface defining a first slot, the first slot adapted to retain the head of the movable fastener and to allow the body of the movable fastener to pass therethrough; and

a generally vertical surface defining a second slot, the second slot connected to the first slot and adapted to retain the head of the movable fastener and to allow the body of the movable fastener to pass therethrough;

wherein the movable fastener passes from the first slot to the second slot and vice-versa, allowing the platform to be positioned in an approximately horizontal plane and an approximately vertical plane.

5. The adjustable tray of claim **4**, wherein the vertical surface further defines:

a third slot in the vertical surface, the third slot connected to the second slot and adapted to allow the body of the movable fastener to pass therethrough and adapted to retain the head of the movable fastener; and

a hole connected to the third slot and adapted to allow the head of the movable fastener to pass therethrough;

whereby the platform may be released from the armchair stop by passing the movable fastener through the third slot and passing the head through the enlarged region.

6. The adjustable tray of claim **3**, further comprising:

an elongated guide adjustably connected to the armchair stop, wherein the elongated guide supports the armchair stop, the elongated guide is adjustable to fit the adjustable tray to the width dimension of the chair arm, and the elongated guide has a first end and a second end; and

a compression element circumvolving the chair arm and the elongated guide to secure the elongated guide to the chair arm.

7. The adjustable tray of claim **6**, wherein the armchair stop further defines a hole adapted to receive the first end of the elongated guide, and wherein the first end of the elongated guide is slideable within the hole to adjust the adjustable tray to fit the width dimension of the chair arm.

8. The adjustable tray of claim **6**, wherein the elongated guide further defines at least one slit; wherein the compression element passes through the slit to secure the elongated guide to the chair arm.

9. The adjustable tray of claim **6**, wherein the elongated guide is shaped in an S-curve to maintain the generally planar working surface approximately level with the top of the chair arm.

10. The adjustable tray of claim **6**, wherein the elongated guide further comprises a tab connected to the second end, wherein the tab is adapted to keep the compression element between the first end and the second end.

11. The adjustable tray of claim **6**, wherein the compression element is a strap.

12. The adjustable tray of claim **3**, wherein the armchair stop is rigidly affixed to the chair arm.

13. The adjustable tray of claim **3**, further comprising a retainer affixed to the platform to retain objects on the platform.

14. The adjustable tray of claim **3**, further comprising a cushioning material disposed on the platform, on the elongated guide, and on the armchair stop.

15. The armchair tray of claim **3**, wherein the platform is rotatably attached to the first arm.

16. The armchair tray of claim **3**, wherein the platform is adapted to accommodate a mouse.

17. The adjustable tray of claim **3**, wherein the platform further comprises an IO device.

18. The adjustable tray of claim **17**, wherein said IO device comprises a keyboard.

19. The adjustable tray of claim **3**, further comprising an elongated guide connected to the armchair stop, wherein the elongated guide supports the armchair stop, wherein the chair arm defines a first cavity adapted to movably accept the elongated guide, and whereby the position of the armchair stop relative to the chair arm may be adjusted by moving the elongated guide within the first cavity.

20. The adjustable tray of claim **19**, wherein the chair arm further defines a second cavity adapted to receive the armchair stop.

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