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Fastening and adjusting device, particularly for draughtsman compasses.

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Description

The present invention relates to fastening and adjusting device, particularly for draughtsman compasses.

The draughtsman compasses of the known art are generally constituted by two hinged rods each having a point at its lower end; usually one of the two points can be substituted by a lead holder or a drawing pen, according to the case (see e.g. GB-A-145216 and GB-A-1 279 195).

Usually, in these types of compasses one of the two rods is shorter and a fastening member is hinged at its lower end for the lead holder or drawing pen element.

The fastening member is substantially constituted by a pair of jaws that can be tightened by a screw and by a knurled ring; furthermore, the fastening member is hinged with some friction in order to keep the selected angle during its use.

The fastening member has to be pivoted to the rod in order to vary its angle with respect to the rod because otherwise, when the compass aperture increases, the lead holder or the drawing pen would work at an excessive angle to operate correctly.

This very common type of mechanism has a rather satisfactory operation but it is susceptible to improvements.

In the known compasses in fact, the pivoting point of the fastening member is rather high, therefore the working aperture of the compass is greatly reduced relatively to the length of the fixed point rod.

Moreover, the rotation of the fastening member is not easy because of the friction, thus rendering difficult those jobs where it is required a particularly precise aperture adjusting.

Also the locking of the lead holder or of the drawing pen can be improved, mainly regarding the speed of execution.

Main aim of the present invention is that of providing a fastening device for the lead holder or the drawing pen in a compass, having a rapid and easy operation and furthermore with an improved aperture with respect to the known ones.

Within this aim, an object of the invention is that of providing a device easily manufactured from a productive point of view and hence economically competitive.

This aim as well as these and other objects which will be more apparent later, are achieved by a fastening and adjusting device, particularly for draughtsman compasses comprising a pair of upwardly hinged rods, characterized in that it comprises a U-shaped element hinged at the lower end of at least one of said rods, said lower end having a substantially curved surface, said U-shaped element defining a cavity between its legs and said surface, a support member being inserted in said cavity and locked against said

surface by means of an adjustable abutment member, said support member being adapted to support a lead holder, a drawing pen, a point or similar.

Further characteristics and advantages of the invention will be more apparent by the following description of an embodiment of the invention, illustrated, by way of example, in the enclosed drawings wherein:

Figure 1 is an elevated side view of the compass according to the invention;

Figure 2 is a view similar to the preceding one but wherein the compass is more open;

Figure 3 is an isometric enlarged view of the locking device.

With reference to the cited figures, a compass 1, according to the invention, comprises two rods 2 and 3, upwardly hinged to a block 4 having a hand grip 5, in a per se known manner.

A U-shaped element 6 has two legs 7 hinged to the lower end of each of the rods 2, 3 in order to define a cavity 15 between its legs 7 and the surface 10 of the rod end.

A threading 8 is provided on the element 6, partially covering also the legs 7, for a locking ring 9.

A support element can be inserted in the cavity 15 for such elements as a lead holder, a drawing pen a point or similar.

In the figures, a support element 14 for a point, applied to the lower end of rod 3, is schematically illustrated by dashed lines.

At the lower end of the other rod 2 is instead applied a support element 11, advantageously constituted by a single body comprising a drawing pen 12 juxtaposed to a lead holder 13.

The operation of the device is the following: as the desired aperture of the compass is set, the rings 9 are loosened to allow the U-shaped elements to rotate and to set them at the most suitable angle with respect to the working surface.

At this point it is sufficient to again tighten the rings 9 to lock the U-shaped elements at the selected angle, and at the same time, to lock the support elements of the point and of the lead holder and drawing pen.

The abutment surface 10 of the lower ends of the rods 2 and 3 is a curved surface for easing the continuous locking of the support elements.

If it is desired to use the drawing pen instead of the lead holder, it will suffice to loosen the ring 9, in order to extract the support 11, and to again insert it into the cavity 15 from its opposite end.

It has been practically observed how the invention achieves the intended aim and objects by providing a device that allows the points' and lead holder's or drawing pen's inclination to be adapted to the various apertures, through a rapid and easy operation and also increasing the maximum working aperture of the compass.

An advantage of the invention is that of allowing to incline and lock the end organs by the one easy operation of tightening a ring.

A further advantage of the device according to the invention is that of always ensuring a safe locking that depends on the tightening strength of the ring, which is adjustable at will and therefore does not suffer after some time from the wearing out of hinges or similar, as in the known compasses.

The device according to the invention may have numerous modifications and variations, all within the inventive concept; furthermore, all the details may be substituted with technically equivalent elements.

The materials employed, as well as the dimensions, may be any according to the specific needs and the state of the art.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. Fastening and adjusting device, particularly for draughtsman compasses having a pair of upperly hinged rods (2,3), comprising a U-shaped element (6) hinged at the lower end of at least one of said rods, said lower end having a substantially curved surface (10), said U-shaped element defining a cavity (15) between its legs (7) and said surface, a support member (11,14) being inserted in said cavity and locked against said surface by means of an adjustable abutment means (9), said support member being adapted to support a lead holder (13), a drawing pen (12), a point or similar.
2. Device, according to claim 1, characterized in that each of said rods (2,3) has a U-shaped element (6).
3. Device, according to claim 1 or 2, characterized in that said support member (11) comprises a lead holder (13) and a drawing pen (12) arranged juxtaposed on the same axis.
4. Device, according to one or more of the preceding claims, characterized in that said adjusting abutment means comprises a threaded ring (9) screwed on said U-shaped element, said U-shaped element being provided with an external threading (8).

Patentansprüche

1. Regel- und Feststelleinrichtung, insbesondere für Zeichnerzirkel, mit einem Paar von oben gelenkig verbundenen Stäben (2,3), enthaltend ein U-förmiges Element (6), das am unteren Ende mindestens einer der Stäbe gelenkig angebracht ist, wobei das untere Ende eine im wesentlichen gekrümmte Oberfläche (10) aufweist und das U-förmige Element einen Hohlraum (15) zwischen seinen Schenkeln (7) und der Oberfläche begrenzt, und ein Trägermittel (11, 14), das in den Hohlraum eingeführt und mittels eines einstellbaren Widerlagers (9) gegen die genannte Oberfläche gedrückt ist und einen Bleistiftminenhalter (13), eine Ziehfeder (12), eine Spitze oder dergleichen aufnehmen kann.
2. Einrichtung nach Anspruch 1, dadurch gekennzeichnet, daß jeder der Stäbe (2,3) ein U-förmiges Element (6) aufweist.
3. Einrichtung nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß das Trägermittel (11) einen Bleistiftminenhalter (13) und eine Ziehfeder (12) aufweist, die in der gleichen Achse einander gegenüberliegend angeordnet sind.
4. Einrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das einstellbare Widerlager einen Gewinding (9) umfaßt, der auf das mit einem Außengewinde (8) versehene U-förmige Element aufgeschraubt ist.

Revendications

1. Dispositif de fixation et de réglage, en particulier pour des compas de dessinateur, comportant deux branches (2, 3) articulées par leurs extrémités supérieures comprenant un élément en forme de U (6) articulé à l'extrémité inférieure d'au moins une desdites branches, ladite extrémité inférieure ayant une surface sensiblement courbe (10), ledit élément en forme de U délimitant une cavité (15) située entre ses joues (7) et ladite surface, un élément support (11, 14) étant introduit dans la cavité et bloqué contre ladite surface au moyen d'un élément de butée réglable (9), l'élément support étant conçu pour supporter un porte-mine (13), un tire-ligne (12), une pointe ou analogue.
2. Dispositif selon la revendication 1, caractérisé en ce que chacune desdites branches (2, 3) porte un élément en forme de U (6).

3. Dispositif selon la revendication 1 ou 2, caractérisé en ce que ledit élément support (11) comprend un porte-mine (13) et un tire-ligne (12) placés en opposition sur le même axe.

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4. Dispositif selon l'une quelconque des revendications précédentes, caractérisé en ce que l'élément de butée réglable comprend une bague filetée (9) vissée sur ledit élément en forme de U qui porte un filet extérieur (8).

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