Feb. 15, 1944. G. E. FROELICH 2,341,537

PIVOTAL MOUNTING FOR DRAFTSMEN'S DRAWING BOARD ON DRAFTSMEN'S DRAWING TABLE

Filed March 19, 1942

Fig. 1

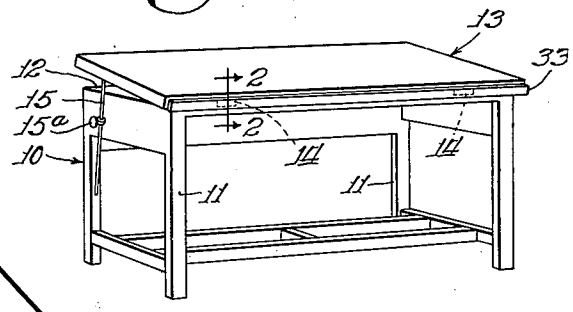


Fig. 2

Fig. 4

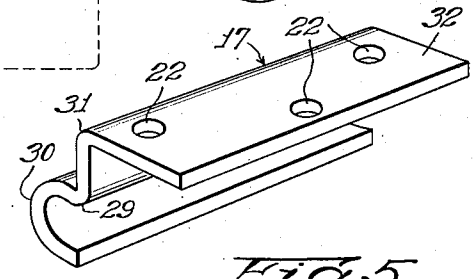


Fig. 3

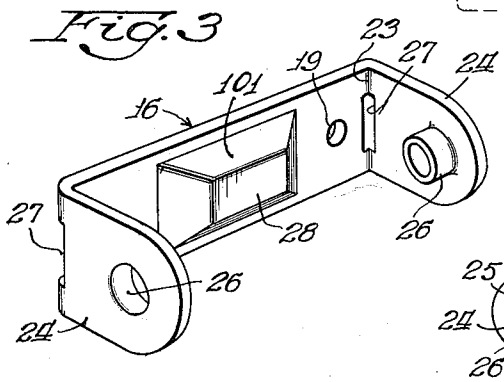


Fig. 5

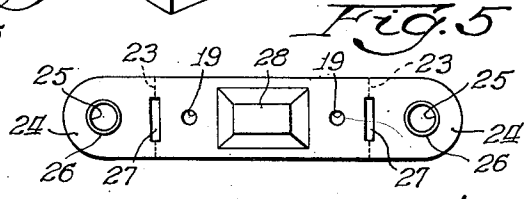
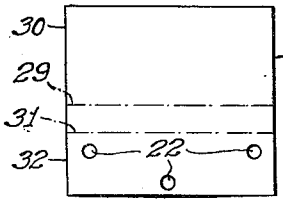


Fig. 6



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PIVOTAL MOUNTING FOR DRAFTSMEN'S DRAWING BOARDS ON DRAFTSMEN'S DRAWING TABLES

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2 Claims. (Cl. 16—172)

This invention relates to a pivotal mounting for draftsmen's drawing boards on draftsmen's drawing tables.

By use of the present invention, a large drawing board may be pivotally mounted on a table for ready adjustment of the angle of the board with respect to the table, and the board may be easily and quickly removed from the table when it is desired to use the latter as a desk, for example, the means therefor provided by the present invention being markedly simple and highly efficient for these purposes, and contributing to a greater production of drafting room work with economy of time and effort.

The hinge of the present invention is particularly adapted to be made from sheet metal, the parts so made providing the equivalent of both a hinge knuckle and a hinge pin without extraneous parts.

These and other objects and advantages will be apparent from the following description, taken together with the accompanying drawing, in which—

Figure 1 is a perspective view of a drawing table or other similar piece of furniture with a large drawing board associated therewith by the use of the present invention;

Figure 2 is an enlarged fragmentary cross-section taken on the line 2—2 of Fig. 1, showing in full lines an angular position of the drawing board with respect to the table and in broken lines another angular position, in which latter position the board may be readily removed from the table;

Figure 3 is a separated view of one of the hinge components here disclosed;

Figure 4 is a separated view of another of the components;

Figure 5 is a development view of the component shown in Fig. 3 as it may be formed from sheet metal in the flat and indicating the formation of the parts by bending and cutting; and

Figure 6 is a similar view of the component shown in Fig. 4.

Referring in detail to the illustrative embodiment of the invention shown in the drawing, the numeral 10 indicates generally an example of a draftsman's drawing table which has the legs 11 and useful flat top 12 upon which it may be desired to pivotally mount the drawing board 13 when it is desired by the draftsman to provide a drawing surface inclined at varying degrees from the horizontal, for enhanced efficiency and comfort. The angle of the board may be adjusted on hinges 14, presently described more particularly, pivotally connecting the drawing board 13 and table 10 along their proximate margins and by the aid of the usual articulated rod 15 and clamping device 15a, as is well known.

Turning now more particularly to my improved hinge 14 for this purpose and in accordance with the present invention, components of the hinge are a bracket 16 and a knuckle 17 which are adapted to be secured respectively to the table 10 and drawing board 13, the table and board being commonly of wood. The bracket 16 may be secured as by wood screws 18 passing through screw holes 19 in the bracket and into the wood of the table, thus securely fastening the bracket in this instance to the front face 20 of the table, one of the brackets preferably adjacent each front corner of the table as indicated in Fig. 1. The knuckles 17 are secured to the under side of the drawing board 13 as in this instance by wood screws 21 passing through screw holes 22 in the knuckle 17, and the knuckles are aligned from front to rear of the table with the brackets 16 respectively.

The bracket 16 may be formed from an initially flat sheet metal strip, as indicated in Fig. 5, in which the screw holes 19 may be conveniently punched in the usual way. Adjacent its ends, the strip may be bent as along the lines 23 to form the outwardly projecting bracket arms 24 and in these arms may be formed perforations 25, the metal of the perforations being desirably drawn away from the plane of the strip to form the cylindrical bearing portions 26 which, as indicated in Fig. 3, extend toward each other from and between the arms 24 and together provide the equivalent of a hinge pin. Cuts or slots 27 may be made along the lines 23 so as to assist in bending the strip as described. Centrally of the main portion of the bracket, and desirably between the screw holes 19, the metal is struck away from the body of the strip as at 28 to project into the space between the arms 24 to provide a stop lug, for a purpose presently described.

Similarly, the knuckle 17 may be formed from a rectangular sheet metal plate, as indicated in Fig. 6, the screw holes 22 being punched therein in the usual way along one side thereof. The plate is then bent at its other side along the line 29 and this side arched to form the semi-cylindrical knuckle proper 30 which is of a length just to fit between the bracket arms 24 and to rest on the bearing members 26. The plate from which the knuckle is formed is again bent along the line 31 to the form indicated in Fig. 4

and providing a mounting leaf part 32 of the knuckle in which are the screw holes 22. The mounting leaf part 32 may thus be secured to the under side of the board as shown in Fig. 2 with the open side of the semi-cylindrical part 30 of the knuckle facing downwardly, when the board is in the position shown in broken lines in Fig. 2.

When, now, the bracket and knuckle are secured to the table and board respectively, the board may be pivotally associated with the table as next described. The rod 15 at this time being removed from the clamping device 15a, the board is initially hung onto the table by first raising it above the table with the plane of the board vertical as indicated in broken lines in Fig. 2, and then lowering it until the semi-cylindrical knuckle part 30 of each knuckle is disposed between the arms 24 of each bracket and brought to rest on the bearings 26. Thereupon the board may be rotated on these bearings to the position indicated in full lines in Fig. 2, or to the position indicated in Fig. 1, the rod 15 being then associated with the clamping device 15a for adjustment of this angle, as desired.

Since the semi-cylindrical part 30 of the knuckle 17 is open along its lower side it is freely movable onto or off of the bearings 26 when the board is vertical or at an angle of ninety degrees with the table. When, however, the board is rotated on the table to an angle of less than ninety degrees with the table, as indicated in full lines in Fig. 2, the stop projection 28 of the bracket then acts as a detent to prevent movement of the semi-cylindrical part 30 of the knuckle away from the bearings 26 and to prevent separation of the board and table.

So constructed and arranged, the bracket and knuckle have interengaging means permitting them to be readily separable in one relative rotative position while preventing their separation in another relative rotative position.

The proximate edge of the board may carry the usual auxiliary edge board 33 spaced away from the main part of the board and providing both a pencil groove 34 on its upper side and a finger grip 35 on its under side which latter is of utility in locating the board on the table or in removing it therefrom as explained. When the board is removed from the table, top 12 of the latter may be used as an ordinary table top for any purpose.

The stop 28 is desirably frusto-conical as shown, and particularly has a bevel surface 101 along its upper edge for camming the knuckle toward a line joining the bearing means 26 to facilitate assembly as described.

It is thought that the construction, utility and advantage of the invention will now be apparent to those skilled in the art, and such changes may be made as fall within the scope of the claims without departing therefrom.

Having described my invention, I claim:

1. In a pivotal mounting for a draftsman's drawing board on a draftsman's drawing table, the board being provided with a rod articulated thereto and separably slidably received in a clamping device carried by the table for angular adjustment of the board on the table, that improvement therein including a separable hinge embodying a semi-cylindrical knuckle open along one side, an angular mounting leaf part integral with the knuckle, one of the angular portions of said mounting leaf part being extended from but angularly to one of the walls of the knuckle and a second angular portion of the mounting leaf part extended from but angularly to the first mentioned angular portion, a bearing bracket comprising a main strip-like body portion having its ends extending right angularly outwardly and having integral extruded cylinder-like bearing means extending from said ends toward each other upon which the knuckle rests for rotation thereon, the bracket and knuckle being readily separable in one relative rotative position of the knuckle and bearing means when the rod and clamping device are separated, an offset stop part extending from the bracket body portion centrally of said ends to project toward but short of a line joining said bearing means to prevent separation of the knuckle and bearing means except in said relative rotative position, screw apertures in the bracket body portion adjacent each end of the offset stop part for mounting the bracket on the table, and screw apertures in the said second angular mounting leaf portion for securing the knuckle to the under side of the drawing board whereby when the drawing board is held vertically the knuckle and bearing means may be associated together to effect said mounting.

2. In a pivotal mounting for a draftsman's drawing board on a draftsman's drawing table for angular adjustment of the board on the table, that improvement therein including a separable hinge embodying a semi-cylindrical knuckle open along one side, a mounting leaf part integral with the knuckle, a bearing bracket comprising a main strip-like body portion having its ends extending right angularly outwardly and having integral extruded cylinder-like bearing means extending from said ends toward each other upon which the knuckle rests for rotation thereon, the bracket and knuckle being readily separable in one relative rotative position of the knuckle and bearing means when the drawing board and table are being separated, a stop part carried by the bracket body portion centrally of said ends to prevent separation of the knuckle and bearing means except in said relative rotative position, the said stop part having a bevel surface along its upper edge for camming the knuckle toward the bearing means to facilitate assembly, and attachment means for securing, respectively, the bracket to the table and the mounting leaf part to the drawing board, whereby the knuckle and bearing means may be associated together to effect said mounting.

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