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DRAFTING MACHINE

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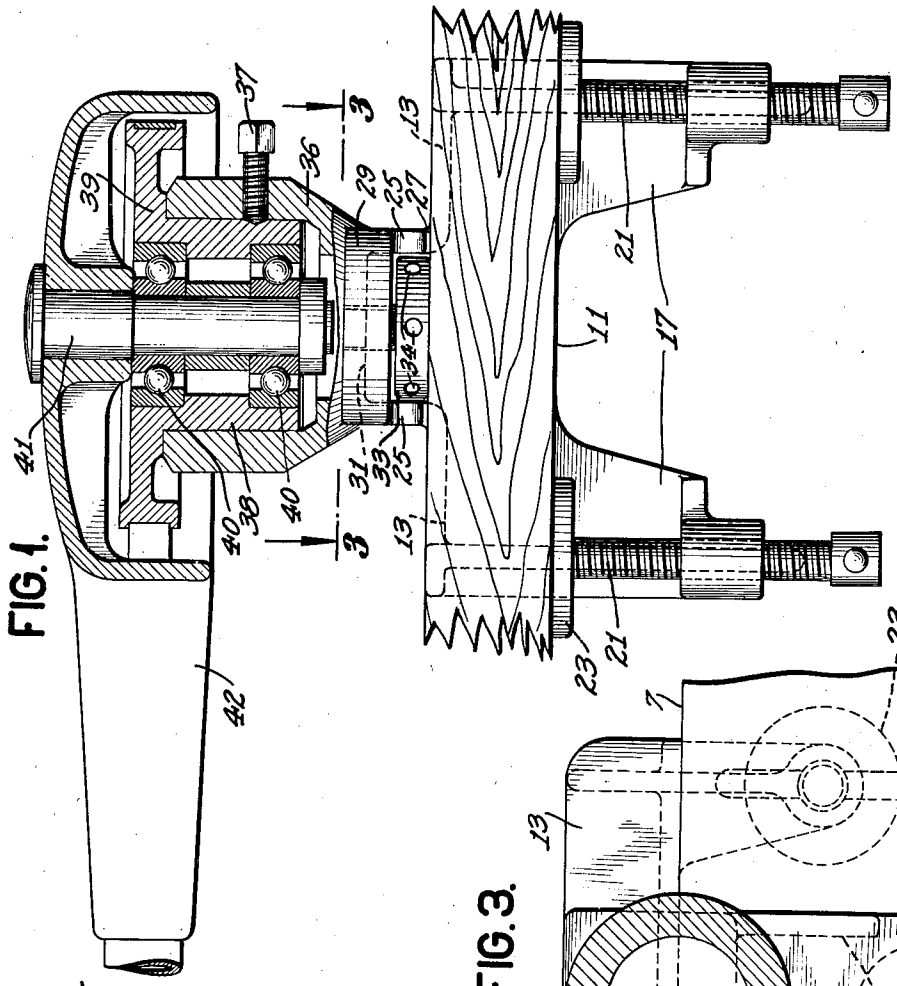


FIG. 1.

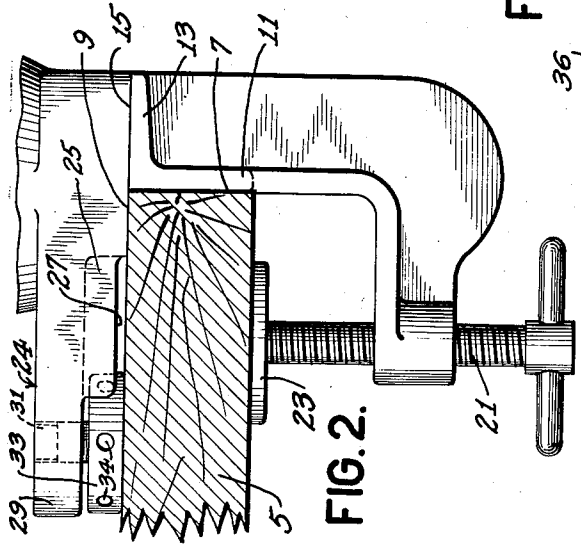


FIG. 2.

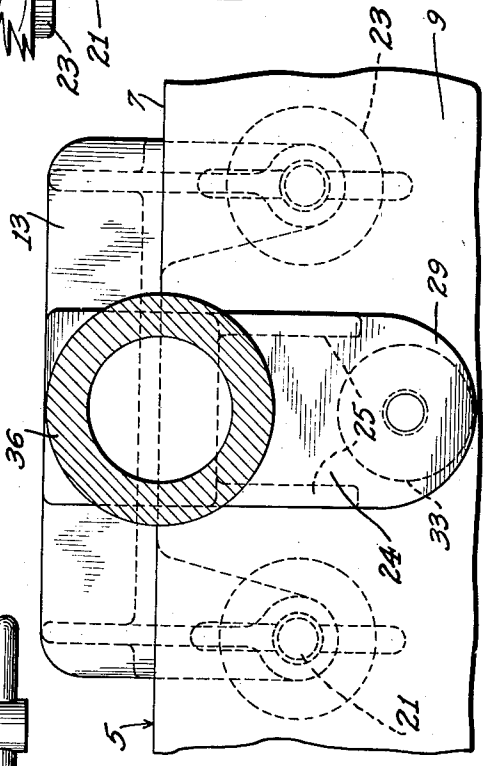


FIG. 3.

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DRAFTING MACHINE

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6 Claims. (Cl. 33—79)

This invention relates to parallel motion drafting devices of the kind in which the several tools the draftsman handles most frequently are embodied, in principle, in one unit to obviate the necessity of a draftsman reaching about for a required tool, thereby enabling the draftsman to keep his attention concentrated directly upon the drawings.

Drafting devices of this character have heretofore been proposed in which adjacent ends of two arms are pivoted together, the free end of one arm being secured to the remote side of the drafting board while the free end of the other arm is provided with a protractor and straight edges which are in fixed angular relation to move about the center of the protractor as an axis. The means which has heretofore anchored the free end of the arm to the drafting board has occupied a considerable amount of space which has been either useable space on the drafting board or space transversely of the drafting board immediately beyond the edge thereof. In either case, however, such anchor has interfered with the free movement of the straight edges and there has been a substantial area of the drawing board in front of the anchor which could not be reached by the straight edge because of the fact that the end of the straight edge was obstructed in its movement by the anchor.

The primary object of the present invention is an anchor for a drafting device whereby minimum interference with the straight edges is provided.

Another object of the invention is an anchor for a drafting device wherein the clamping instrumentalities securing the anchor to the drawing board may be spaced widely apart to afford the maximum degree of rigidity and stability and adjustability.

Still another object of the invention is to utilize the clamping means of an anchor for a drafting device for adjustment of the instrument with respect to the drawing board.

In carrying the invention into effect, the anchor has a portion of a relatively narrow width, transversely, adapted to rest upon the surface of the drafting table. Transversely extending portions therebelow and to the rear thereof are so disposed as to be beneath the plane of the drawing surface of the table so as not to obstruct the free movement of the straight edges. Being below the drawing surface, this portion of the anchor may be extended whereby clamping devices at the respective ends thereof may engage the under surface of the table at widely spaced points, in the interest of stability and maximum adjustment.

It is also an object of the invention to provide an anchor which is practical from the standpoint of simplicity in manufacture and effectiveness in use.

These and other objects of the invention and the means for their attainment will be more apparent from the following detailed description, taken in connection with the accompanying drawing illustrating one embodiment by which the invention may be realized, and in which:

Figure 1 is a view in elevation showing the anchor of this invention secured to a drafting board, parts being broken away to show details of construction;

Figure 2 is a fragmentary view in side elevation showing the anchor clamped to the edge of the drawing board; and

Figure 3 is a transverse sectional view taken in the plane indicated by the line 3—3 of Figure 1 and looking in the direction of the arrows.

Referring first to Figure 2, a fragmentary portion of the drafting board 5 is shown whereof the remote edge is indicated at 7 and the drawing surface at 9.

The anchor has been illustrated conveniently as a casting and has, generally, a transverse member or web 11 disposed in a vertical plane and which terminates in spaced horizontal webs 13, so that it may be considered an angle member 11, 13 extending transversely of the drawing board with the web 11 positioned in contact with the edge 7 of the drafting board and the upper surface 15 of the web 13 lies substantially in the plane of or at least not disposed above the plane of the top surface 9 of the drafting board. The web 11 is of substantial length so that downwardly depending bracket members 17 at the ends of the web 11 are widely spaced and serve as brackets for clamping screws 21 each having a large head 23 adapted to engage the underneath surface of the drafting table 5.

Intermediate the brackets 17 is an upper clamping member 24 formed by a pair of spaced parallel flanges 25 rising upwardly from the webs 13. The parallel flanges 25 are disposed relatively closely together, as shown in Figure 3. Flanges 25 extend forwardly for a distance sufficient to overlie and rest upon the upper surface 9 of the table. Still further forwardly, these flanges 25 are cut away, as at 27, so as not to contact with the surface of the table and still further forwardly are united with a semi-circu-

lar end portion 29, the upper wall 31 of which serves as a bearing for the threaded screw 30 of an adjusting disc 33 adapted to rest upon the table. The disc 33 is apertured, as at 34, in its periphery to receive an adjusting pin whereby the anchor may be leveled.

Rising from the upper clamping member 24 is a tubular cup-shaped member 36 in which is secured, as by screw 37, the tubular sleeve 38 of the fixed pulley 39. The sleeve 38 supports anti-friction devices 40 in which the pivot pin 41 of the arm 42 turns.

It will be readily recognized, as viewed in Figure 3, that the two lower clamps 21 widely spaced with respect to one another afford, with the upper clamp 33, a particularly rigid mounting. At the same time, substantially all of the anchor in contact with the drafting board, that is, the elongated angle member 11, 13 is below the surface of the board while that which is above the surface of the board and offering an obstruction to movement of a straight edge is relatively narrow and extends only a short distance over the board.

The upper adjusting member 33 permits adjustment in a perpendicular plane through what may be considered a perpendicular line on the drawing preferably while the two clamping screws 21 are loosened. The two clamping screws 21 afford adjustment in a plane at right angles to the first named plane, so that maximum adjustment is afforded whereby the axis of the pin may be maintained perpendicular to the plane of the drawing surface. This adjustment may be accomplished by loosening slightly one clamping screw 21 and tightening the other clamping screw until the upper clamping member 24 has rocked about its longer axis until that clamping screw which has been loosened is held tightly against the bottom of the drafting board. Thus the means which clamps the anchor to the board is utilized to level the instrument with respect to the drafting surface in contradistinction to prior attempts wherein separate devices were required to accomplish clamping and levelling.

Various modifications will occur to those skilled in the art in the composition, configuration and disposition of the component elements going to make up the invention as a whole as well as in the selection and combination of features to accomplish the results sought, and no limitation is intended by the phraseology of the foregoing description or illustrations in the accompanying drawing, except as indicated in the appended claims.

What is claimed is:

1. In a drafting machine, an anchor for attachment to a side of a drafting table and having means to support a drafting machine arm and comprising a first portion having a supporting surface adapted to rest upon the surface of a drafting table, a second portion and means supporting the second portion from the first portion with the upper surface of the second portion below the plane of the said supporting surface, the first portion being relatively narrow in the direction of that side of the drafting table to which the anchor is attached and materially less than that dimension of the second portion in the aforesaid direction and means to secure the anchor to a drafting table comprising means on the second portion to engage areas disposed on the under surface of the drafting table in spaced relation in the aforesaid direction and on either side of the first portion.

2. In a drafting machine, an anchor for attachment to a side of a drafting table and having means to support a drafting machine arm and comprising a first portion having a supporting surface adapted to rest upon the surface of a drafting table, a second portion and means supporting the second portion from the first portion with the upper surface of the second portion below the plane of the said supporting surface, the first portion being relatively narrow in the direction of that side of the drafting table to which the anchor is attached and materially less than that dimension of the second portion in the aforesaid direction and adjustable means at the respective ends of the second portion spaced from one another in the aforesaid direction on either side of the first portion and adapted to engage the under side of the table to clamp the table between the first portion and said adjustable means.

3. In a drafting machine, an anchor for attachment to a side of a drafting table and having means to support a drafting machine arm and comprising a first portion having a supporting surface adapted to rest upon the surface of a drafting table, a second portion and means supporting the second portion from the first portion with the upper surface of the second portion below the plane of the said supporting surface, the first portion being relatively narrow in the direction of the side of the drafting table to which the anchor is attached and materially less than that dimension of the second portion in the aforesaid direction and adjustable means at the respective ends of the second portion adapted to engage the under side of the table to clamp the table between the first portion and said adjustable means, the lateral dimension of said first portion being sufficiently less than the lateral spacing of the respective adjustable clamping means and said first portion being substantially intermediate thereof and inwardly spaced therefrom.

4. In a drafting machine, an anchor for attachment to a side of a drafting table and having means to support a drafting machine arm and comprising a first portion having a supporting surface adapted to rest upon the surface of a drafting table, a second portion and means supporting the second portion from the first portion with the upper surface of the second portion below the plane of the said supporting surface, the first portion being elongated in a direction perpendicular to the side of the drafting table to which it is attached and relatively narrow transversely and materially less than that dimension of the second portion in the direction of the side of the drafting table to which the anchor is attached and means on the second portion on either side of the first portion to clamp the anchor to portions of a drafting table.

5. In a drafting machine, an anchor for attachment to the side of a drafting table and having means to support a drafting machine arm and comprising a first portion having a supporting surface adapted to rest upon the surface of a drafting table, a second portion and means supporting the second portion from the first portion with the upper surface of the second portion below the plane of the said supporting surface, the first portion being relatively narrow in the direction of the side of the drafting table to

which it is attached and materially less than the lateral dimension of the second portion in the aforesaid direction, an area of the supporting surface of the first portion being upwardly offset, adjusting means beneath the offset surface to engage the drafting table to level the anchor in a plane normal to the side of the drafting table to which it is attached and means to clamp the anchor to a drafting table.

6. In a drafting machine, an anchor for attachment to the side of a drafting table and having means to support a drafting machine arm and comprising a first portion having a supporting surface, a second portion and means supporting the second portion from the first portion with the upper surface of the second portion below the said supporting surface, the first portion being relatively narrow in the direction of the side of the drafting table to which it is attached and materially less than the lateral dimension of the second portion, the extremity of the first portion having an area of the supporting surface upwardly offset, an adjusting disc disposed therebeneath to rest on the drafting table and means adjustable in the first portion and engaging the disc to level the anchor in a plane normal to the side of the drafting table to which it is attached and means to clamp the anchor to a drafting table.

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