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PERSPECTIVE DRAWING INSTRUMENT

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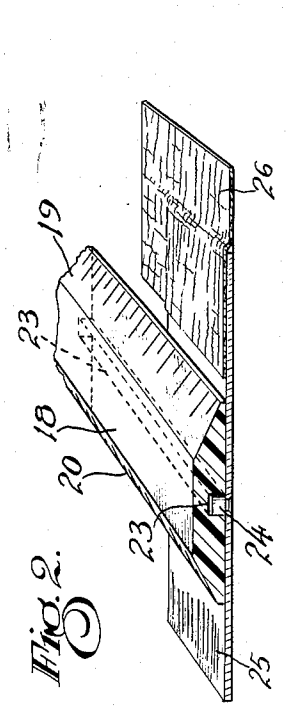


Fig. 2.

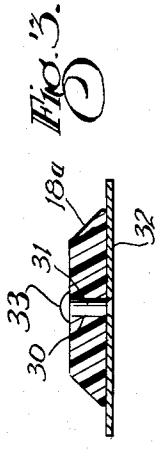


Fig. 3.

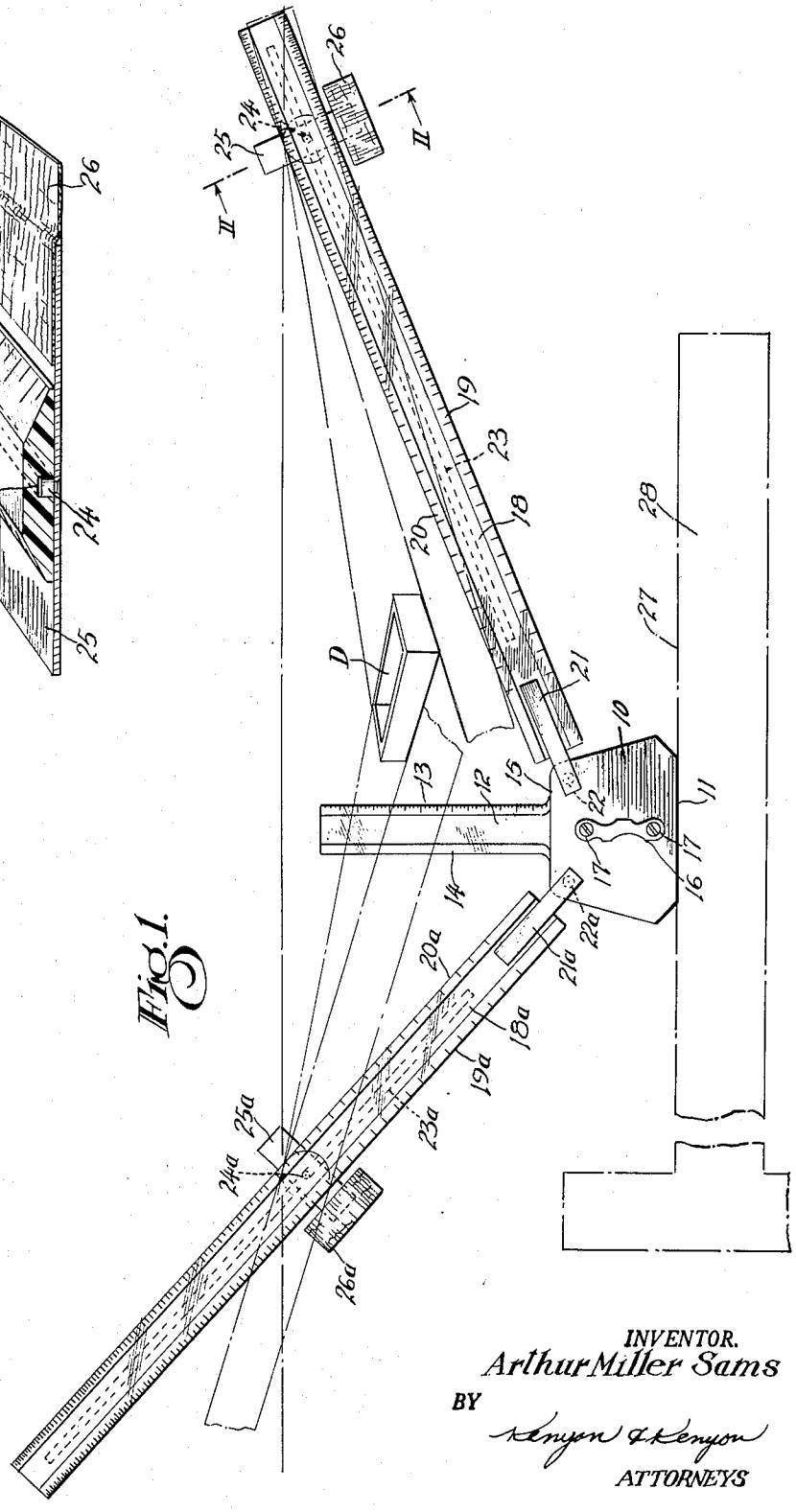


Fig. 1.

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PERSPECTIVE DRAWING INSTRUMENT

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1 Claim. (Cl. 33—77)

This invention relates to drafting instruments for use in drawing perspective-like views.

Principal objects and features of this invention are to provide a very simply constructed, inexpensive and easily manipulated instrument that may be used by a draftsman for drawing perspective views, anywhere on a drawing surface.

Other objects and features of the invention are the provision of a simple drafting instrument for making perspective drawings wherein elements determining selectively positioned vanishing points for such a drawing may be applied removably at any location on the drawing surface without the use of any other tools and other parts of the instrument positioned freely on the surface for operation relative to the established vanishing points and as freely removed from and replaced upon said surface in operating relationship relative to the established vanishing points.

Further objects and features of the invention are the provision of an effective perspective drawing instrument having few parts that are simple and cheap to manufacture and assemble and which has long life and provides accurate, simple means for making perspective drawings while permitting ready use of other instruments on the drawing surface as required.

Other objects and features of the invention will become apparent from the following specification and the accompanying drawings, wherein:

Fig. 1 is a plan view of a drawing instrument embodying the invention, also illustrating the manner of its use;

Fig. 2 is a sectional perspective view taken along line II—II of Fig. 1; and

Fig. 3 is a sectional view of a modified construction.

Referring to the drawing, **10** denotes a base element that in the embodiment shown has substantially trapezoidal shape with its widest or base edge **11** at the bottom. An arm **12** having parallel beveled side edges **13** and **14** is secured to or integrally formed with the base element **10** extending from the upper edge **15** of the base element **10** with said side edge perpendicularly disposed relative to said base edge **11**. One edge **13** or, if desired, both beveled edges **13** and **14** have an appropriate scale, for example, in inches embedded or otherwise marked thereon. The base element **10** and arm **12** may, for example, be of transparent plastic composition similar to that conventionally used for drafting triangles and the like. They may be of other suitable materials.

A handle **16** is secured, for example, by screws **17** or the like to the upper face of the base element **10**. This handle has suitable shape for hand manipulation of the base element **10** if the device is intended to be used with a T-square, or may have required shape to provide attachment to a conventional drafting machine (not shown).

A pair of straight edge arms **18** and **18***a* each having

parallel side beveled edges **19**, **20**, **19***a* and **20***a* are secured to the respective elements **21**, **21***a*. The elements **21**, **21***a* are either integrally formed with the arms **18** and **18***a* or permanently secured thereto in any desirable way. The arms **18** and **18***a* and elements **21** and **21***a* are preferably of the same material as base element **10**. The elements **21** and **21***a* are rotatively supported from pivots **22**, **22***a* on the base element **10** so that the two arms **18** and **18***a* may swing independently on their respective pivots relative to said base for any desired angular adjustment relative thereto and to the opposite sides of the fixed arm **12**. Outwardly diminishing scales are appropriately provided on beveled edges **19**, **20**, **19***a* and **20***a* of the pivoted arms **18** and **18***a*.

The elements **21** and **21***a* support the respective arms **18** and **18***a* so that the under faces of said arms are coplanar or parallel with the bottom faces of the base element **10** and of the arm **12**. The arms **18** and **18***a* have the respective longitudinally extending slots or grooves **23**, **23***a* which extend in parallelism with the beveled side edges **19**, **20**, **19***a* and **20***a* of the said arms **18** and **18***a*.

Anchor pins **24**, **24***a* secured respectively to project perpendicularly from the upper faces of anchor plates **25**, **25***a* are provided. The pins **24**, **24***a* are dimensioned to fit slidably in the respective grooves **23**, **23***a* of said arms **18** and **18***a* from the under face of each arm. The pins **24**, **24***a* and anchor plates **25**, **25***a* are preferably of stainless steel or other suitable material. The plates are very thin so that they will not unduly space the bottom faces of arms **18** and **18***a* from the drawing surface when in use. Each anchor plate is adapted to be removably fixed on the surface of the drawing paper on which a perspective view is to be drawn by the use of strips **26**, **26***a* of conventional drafting tape with the pins **24**, **24***a* extending slidably into the corresponding grooves latter.

To use the instrument, the respective anchor plates **25** and **25***a* are fixed to the drawing surface at selected locations so that their pins **24**, **24***a* will serve respectively to determine desirably located vanishing points for a perspective drawing, for example, the drawing D of Fig. 1. The base element **10** and its pivotally carried arms **18** and **18***a* are then placed on the drawing surface so that the pins **24**, **24***a* lie in the respective grooves **23**, **23***a* of the arms **18**, **18***a* and so that the base edge **11** of element **10** rests slidably on the edge **27** of a T-square **28**. Such position of base element **10** maintains the arm **12** of said base element **10** in a perpendicular position relative to the T-square edge **11**. The arms **18** and **18***a* because of their groove sliding engagement with anchor pins **24**, **24***a* and because of their pivotal support on pivots **22** and **22***a* from the base element **10** are free for angular adjustment.

Drawing D is then readily drawn by sliding edge **11** of base element **10** along the upper edge **27** of the T-square **28** to draw the required perpendicular lines of said drawing. Similarly, the parallel edges **19**, **20** and **19***a*, **20***a* of respective arms **18** and **18***a* are utilized to draw the respective rightwardly and leftwardly converging lines of said drawing D. Because of the predetermined fixed positions of the vanishing points as controlled by the locations of anchor pins **24**, **24***a*, all rightwardly directed lines will converge toward a vanishing point determined by the fixed right anchor pin **24** and all leftwardly directed lines will converge towards a vanishing point determined by the fixed anchor pin **24***a*. The drawing D is readily completed by vertical shift of the T-square **28** and by horizontal shift of the base element **10** along the edge **27** of said T-square. The dimensions of various parts of the drawing D are determined readily by use of the scales on the arm **12**

and the outwardly diminishing scales on the arms 18 and 18*a*. The perspective instrument described, at any time during drawing of the drawing D, may be lifted from the drawing surface without disturbing the anchor plates 25 and 25*a* so that other instruments, if desired, may be utilized in preparing the drawing D or other figures on the drawing surface. The perspective drawing instrument may be returned for use on the drawing surface with the same vanishing points simply by re-engaging the pins 24, 24*a* in the grooves of the arms 18 and 18*a*. If the perspective drawing instrument is attached to a drafting machine by means of its member 16, the operation is substantially the same except that the need for one T-square 28 is eliminated.

Different vanishing points for other drawings are easily and quickly established by stripping tapes 26, 26*a* from the anchor plates 25, 25*a* and drawing surface and repositioning the plates at selected new locations with fresh strips 26, 26*a* of drafting tape.

If desired, the guide slots or grooves 23, 23*a* may be replaced by guide slots 30 extending the full depth of arms 18 or 18*a*. The pins 31 like pins 24 or 24*a* on anchor plates 32 like plates 25 or 25*a* are lengthened to project entirely through the slots and are provided with heads 33 at their upper ends to effect a permanent attachment between the anchor plates 25, 25*a* and arms 18, 18*a*. The pins 31, however, remain slidable in the guide slots 30 and operation of this modification is the same as that of the first. With such embodiment possible loss or misplacement of anchor plates 32 is avoided.

In both modifications, when the instrument is to be used with a drafting machine, the handle is in the form of a chuck block that fits conventional drafting machines. If used with a T-square, an additional knob is attached to the handle or to arm 12.

In connection with operation of either modification, the need for a drafting machine or a T-square to maintain the arm 12 vertical can be eliminated if vertical guide lines appear, for example, under tracing paper upon which perspective drawings are to be made.

In making some drawings, also, the arm 12 need not be maintained in vertical condition. Also, during inking, since the arms 18 and 18*a* are removable from their pivotal supports, one of these arms at a time may be utilized. The inking in of a drawing or the use of lettering instruments is simple because all the arms 12, 18 and 18*a* remain in any desired position on the drawing surface and there is no tension whatever on any part.

While specific embodiments of the invention have been disclosed, variations in structural detail within the scope of the claim are possible and are contemplated. There is no intention, therefore, of limitation to the exact details shown and described.

What is claimed is:

A drafting instrument for making perspective-like drawings comprising a base element having substantially trapezoidal shape and including a pair of parallel edges, a handle secured to said base element for moving the latter over a drawing surface, an arm secured directly to said base element in fixed relationship thereto and extending perpendicularly from one of said pair of parallel edges, a pair of arms supported pivotally from said base element and adjustable independently to different angular positions relative to said first-named arm on opposite side edges thereof, each of said pivotally supported arms having a longitudinally extending guide groove located in its under face and extending only partially through each such arm, all under faces of said arms and said base elements being substantially coplanar, and a pair of plate-like anchor members each independently and removably attachable to a drawing surface, each anchor member including a vertically upstanding pin for slidable engagement in the groove of respective onces of said pair of arms, whereby the respective pins provide selectively positionable pivot points for the arms to facilitate the preparation of perspective-like drawings, and tape means for temporarily securing each of said plate-like anchor members to said drawing surface.

References Cited in the file of this patent

UNITED STATES PATENTS

1,691,118	Lissy	Nov. 13, 1928
2,073,881	Ronnquist	Mar. 16, 1937
2,478,751	De Postels	Aug. 9, 1949
2,515,357	Reeves	July 18, 1950
2,590,252	Hurst et al.	Mar. 25, 1952

FOREIGN PATENTS

300,974	Italy	Sept. 23, 1932