UNITED STATES PATENT OFFICE

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DRAFTSMAN'S INSTRUMENT RACK

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5 Claims. (Cl. 120 — 1)

This invention relates to instrument racks for draftsmen. The term "instrument" is used in a broad sense to include not only such instruments as ruling pens, spring bow compasses and dividers, but also erasers, thumb tacks, scales, drawing pens and pencils, and lead pencil pointers such as pencil files and paper pads used in shaping the lead to the desired point or to a chisel shaped end.

The principal object of the invention is to provide a rack which does not occupy much space on the drawing board, yet may support a great number and a varied assortment of instruments, so as to facilitate the rendering of drawings and promote cleanliness and order at the drafting board.

Another object of the invention is to provide a rack which may be attached to the drawing board by suction, so that it will not readily become displaced or slide on the board when the latter is tilted or when using the pencil pointers.

A further object of the invention is to provide a rack which may be made of suitable material, such as molded rubber, wire and pressed metal or molded plastic in forming the base, the support for such instruments as pencils, pens, scales and other slender objects, and a service or table portion for supporting pencil pointers, erasers, thumbtacks, etc.

A still further object is to provide a rack which is inexpensive to manufacture, easily assembled, and neat in appearance, as well as compact.

Other objects and advantages of the invention will appear in the following detailed description of the preferred embodiment of my invention, taken in connection with accompanying drawings, forming a part of this specification, and in which drawings:

Fig. 1 is a perspective view of the rack.

Fig. 2 is a vertical sectional view on substantially the line 2 — 2 of Fig. 1, looking in the direction of the arrows, the pencil pointers, however being shown removed to disclose details.

Fig. 3 is a vertical sectional view on substantially the line 3 — 3 of Fig. 1.

Fig. 4 is a bottom plan view of the base with a fragment of a suitable pressure plate and retaining device shown also in bottom plan.

Fig. 5 is a plan view of the pressure plate.

Fig. 6 is a plan view of a wire rack forming element.

Fig. 7 is a view partly in horizontal section and partly in plan of the rack, on substantially the line 1 — 1 of Fig. 2, but showing the pencil pointers in place.

Fig. 8 is a bottom plan view of a pencil pointer such as a file.

Fig. 9 is a bottom plan view of another pencil pointer such as a paper pad.

The rack preferably comprises a base 16; a wire rack unit 11; a table service portion 12 mounted upon the base and an intermediate portion of the rack unit 11; pencil pointers 13 and 14 on the service portion 12; and means 15 for securing the unit 11 and service portion 12 to the base, and also preferably cooperating with the pencil pointers 13 and 14 to removable retain them against displacement on the service portion 12.

The base 16 is preferably horizontally slotted soft rubber suction cup, having a front side wall 16, a rear side wall 17, end walls 18 and a top wall 19 defining a cavity 20 in which a partial vacuum may be created in the well known manner, when the lower margins of the walls 16, 17 and 18 engage the surface of a drawing board, or material mounted thereon, to prevent sliding of the rack with respect to the surface it engages and to prevent movement of the rack when either pencil pointer 13 or 14 is being used. The top wall 19 is preferably provided with an upstanding longitudinal rib or step 21 extending adjacent the rear side wall 17, thus presenting a lower flat surface 22, a riser 23 and an upper flat surface 24.

For a purpose to be subsequently set forth the top wall 19 is provided with a plurality of vertical ways 25 open to the cavity 20 and the surface 22, and a plurality of vertical ways 25 open to the cavity 20 and the surface 24.

While I have disclosed the base 16 as preferably in the nature of a suction cup, it is to be understood that certain advantages of the invention may be had using a different type of base, which does not preclude the use of a solid base or one of sufficient weight to maintain the stability of the rack on the drawing board under ordinary conditions and such forces to which it may be subjected, as when pointing pencils, or placing or removing instruments with respect to certain parts of the rack.

The wire rack 11 unit preferably comprises a generally sinusoid major body part 28 shown in plan in Fig. 6, and a coiled minor part 29 which may be like or similar to the ordinary coiled spring pen and pencil rack, receiving instruments between the convolutions thereof in the well known manner.

The body part 28 is preferably made of a continuous piece of wire or the like, having spaced upright terminal portions or standards 30 to which the end portions of the horizontally dis-
posed coiled minor part 29 are secured, such as by soldering or welding, at 31. The continuous section 32 of wire between the lower portions of the standards 30 is sinuous as shown in Fig. 6, to provide an even number of relatively long, parallel sections 33, disposed transversely of the base 10 and front and rear bight sections 34 and 35, joining the front and rear ends of the parallel sections 33, respectively. Each wire section 33, as shown more particularly in Figs. 3 and 6, has an end portion 36 to engage the base 10, as follows: a horizontal sub-section 36 to engage surface 24, a vertical sub-section 37 to engage raiser 23, and a horizontal sub-section 38 to engage surface 22. These various sub-sections 36, 37 and 38 constitute a retaining portion of the rack 11 clamped between the base 10 and table service portion 12. From portion 39, the section 33 is then bent downwardly to provide a portion 39 in obtuse angular relation thereto, and then upwardly to provide a portion 40 in substantially right angular relation to portion 39. The bight sections 34 join the end portions of adjacent sections 33 starting with the outermost of said sections 33, and the bight sections 35 join the rear portions of the sections 33, and also engage the surface 24 of base 10. The portions 33 and 40 may serve as a support for any suitable instrument, such as a scale or other long or slender tool.

In the example shown the base 10 has three vertical ways 25 and three vertical ways 26 and it is therefore preferred to provide three pairs of wire sections 33, as shown partly by full lines and partly by dotted lines in Fig. 7, and to have the sections 33 of each pair somewhat closely adjacent one another and spaced an equal distance to each side of the axes of adjacent ways 25 and 26 so as to render the mean 15 very effective in retaining the wire rack unit 11 against displacement, as hereinafter described. It is to be understood, however, that these characteristics of the wire rack unit herein described are by way of example, since the shape of the sections and other characteristics may be varied without departing from the spirit of the invention, which, instead of the wire rack unit, is to provide a support for instruments at the front and to the rear of the device as a whole.

The table service portion 12 may be formed from sheet metal, such as aluminum alloys or molded or otherwise formed of plastic material and comprises, for engagement with portions of the base 10, the following: a lower step portion 42 for surface 22, a riser 43 for raiser 23, and an upper step portion 44 for surface 24. Then, in addition it comprises a riser 45 along the rear margin of step portion 44, which may engage and steady the standards 30; a major trough section 46 extending along the front margin of step portion 42; a communicating trough section 47 extending along one end margin of step portion 42; and, a tray 48 extending adjacent the other end margin of step portion 42 as well as along the adjacent ends of riser 43 and upper step portion 44, the tray being connected to the lower step portion by a vertical web 50. The tray 48 is useful as a receptacle for erasers, thumbtacks, etc. The trough sections 46 and 47 are to receive carbon divided pencil supporting portions and are preferably open at ends so that the dust may be caused to slide therefrom when the rack as a whole is removed from the drawing board and tilted, or to facilitate removal of the dust by use of a cloth or other suitable medium. The step portions 42 and 44 may be provided with perforations 51 and 52 aligned with the vertical ways 25 and 26, respectively, to accommodate parts of the means 15. The lower step portion 42 receives the pencil pointer 13, which may be a metal file coextensive therewith, and provided with recesses 53 open at its bottom, axially aligned but of greater diameter than the perforations 51.

The upper step portion 44 receives the pencil pointer or burnisher 14, which may comprise a card board base 54 carrying strips of paper 55 or other suitable material arranged in scratch pad fashion, the base 54 being coextensive with step portion 44 and provided with perforations 57 open at the bottom of the base, these perforations being axially aligned with but of a diameter greater than the perforations 52. The means 15 preferably comprises sets of bolts 58 and 59 provided with nuts 60 and 61, respectively and a pressure plate 62 shown more particularly in Fig. 5, provided with perforations 53 and 64 which axially align with the vertical ways 25 and 26, respectively. The bolts 58 have heads 65 which are accommodated in the recesses 53 of pencil pointer 13 and bear upon the top of step portion 42, while the shanks 66 extend thru the perforations 51, between adjacent sections 33 of the wire rack unit, and thru the vertical ways 25 of the base 10 and perforations 53 of plate 62. The bolts 59 have heads 67 which are accommodated in the recesses or perforations 51 of pencil pointer 14 and bear upon the top of step portion 44, while the shanks 68 extend thru the perforations 52, between adjacent sections 33 and near the bight sections 35 of wire rack unit 11, and thru the vertical ways 26 of the base 10 and perforations 64 of plate 62. When the nuts 60 and 61 are turned tight against the plate 62 portions of the parallel sections 33 of the wire rack 11 are embedded in the base 10 and the table service portion is firmly secured to the base.

When using the rack, it will be noted that carbon dust incidental to use of the pointer 13 will not find its way to any instrument resting on the front part of rack 11 because of the trough section 46; that carbon dust resulting from use of the pointer 13 will drop into the trough sections or may be jarred thence in by tapping the rack; that the pointer or burnisher 14 is sufficiently above the pointer 13 that the hand of the draftsman is not likely to be injured by the pointer 13; and that the coil spring instrument rack portion 23 is well above the pointers 13 and 14 so that any instruments held thereby are well above the pointers so as to not interfere with use thereof. The pointers 13 and 14 may be readily removed for cleaning and replacement yet are firmly held in place while in use.

While I have herein described in detail the preferred embodiment of my invention, changes in details and proportions of parts may be resorted to without departing from the spirit of the invention as set forth in the following claims.

I claim:
1. An instrument rack, a soft rubber base, having upper upper and side faces; a wire rack unit, comprising an instrument rack supporting portion, extending outwardly from the plane of one of said faces, and a retaining portion, disposed upon said base; means to provide a table service portion, and a pressure plate for said retaining portion to press against said retaining portion to cause said retaining portion to imbed into said rubber base, including a plate portion of rigid material disposed upon said retaining portion.
and said upper face; and means to draw said plate portion toward and against said upper face and said retaining portion.

2. In an instrument rack, a soft rubber base, having outer upper and side faces; a wire rack unit, comprising an instrument-supporting portion, extending outwardly of the planes of said upper face and one of said side faces, and a retaining portion, disposed upon said base, and comprising spaced-apart wire sections, means to provide a table service portion and a pressure plate for said retaining portion to press against said retaining portion to cause said retaining portion to imbed into said rubber base, including a plate portion of rigid material disposed upon said retaining portion and said upper face; and means to draw said plate portion toward and against said upper face and said retaining portion, including bolts with their shanks extending between adjacent of said portions and extending through said plate portion and base, and nuts for said bolts.

3. In an instrument rack, a base having an upper outer face, an outer face extending downwardly therefrom and an upstanding rib extending from said upper face, and a service portion comprising a lower step portion disposed upon said upper face, an upper step portion disposed upon said rib, a riser joining said step portions and in face contact with an upstanding face of said rib, and a trough section substantially normal to said rib and extending outwardly of the vertical plane of said second-named face and having a portion closely adjacent said second-named face and said rib, riser turning movement as well as transverse movement in one direction of said service portion with respect to said base.

4. In an instrument rack, a base having an upper outer face, an outer face extending downwardly therefrom and an upstanding rib extending from said upper face, and a service portion comprising a lower step portion disposed upon said upper face, an upper step portion disposed upon said rib, a riser joining said step portions and in face contact with an upstanding face of said rib, and a trough section substantially parallel to said second-named face, whereby said trough section riser, and upper step portion, with said second-named face and said rib, resist turning movement as well as transverse movement in one direction of said service portion with respect to said base.

5. In an instrument rack, a rubber base having an upper outer face, and an end outer face extending downwardly therefrom, and an upstanding rib extending from said upper face remote from said side outer faces and in parallelism therewith, and a service portion of rigid material comprising a lower step portion disposed upon said upper face, an upper step portion disposed upon said rib, a riser joining said step portions and in face contact with an upstanding face of said rib, and a trough section, substantially L-shaped in top plan, with one portion thereof paralleling said rib and extending from said lower step portion outwardly of the vertical plane of said side outer face and closely adjacent said side outer face, and with its other portion extending from said lower step portion outwardly of the vertical plane of said end outer face and closely adjacent said end outer face, whereby said trough section, riser and upper step portion, with said end and side outer faces and said rib resist turning movement of said service portion as well as transverse movement in one direction and longitudinal movement in one direction of said service portion with respect to said base.

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