March 11, 1941. H. L. DE LISLE 2,234,467

DRAFTSMAN'S MOBILE STRAIGHTEDGE

Filed Jan. 6, 1940

Fig. 1

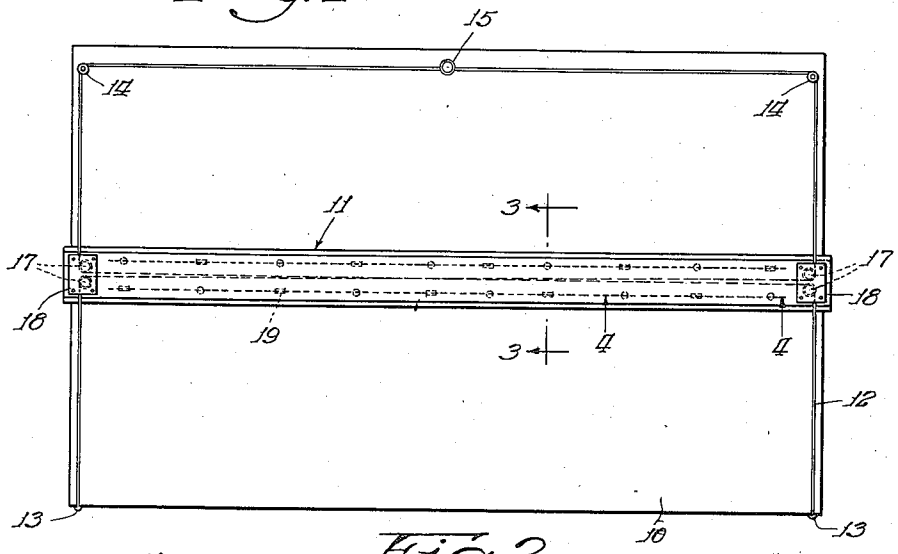


Fig. 2

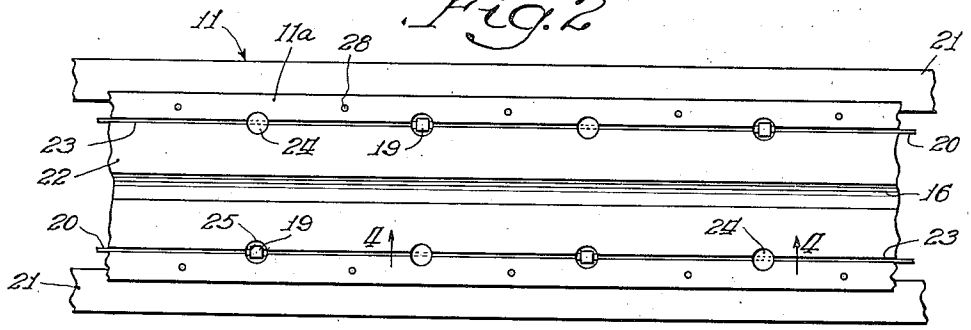


Fig. 3

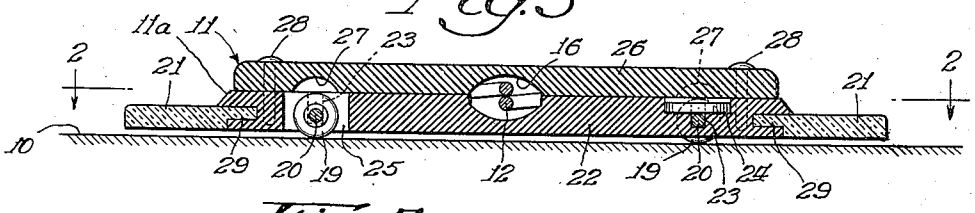


Fig. 4

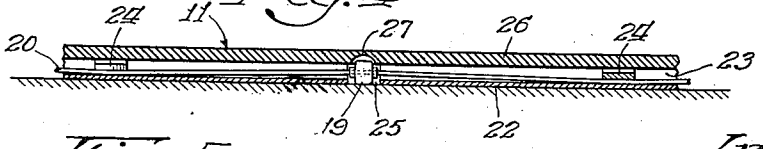
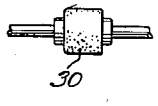


Fig. 5



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DRAFTSMAN'S MOBILE STRAIGHTEDGE

Harold L. De Lisle, Sheboygan, Wis.

Application January 6, 1940, Serial No. 312,701

4 Claims. (Cl. 33—109)

This invention relates to draftsman's mobile straightedge.

Among other objects, the invention aims to provide an improved device of this type which is simple in operation and construction, and affords a minimum of obstruction to the drawing operations of the draftsman.

In an important aspect the invention contemplates a mobile straightedge which may be used for drawing parallel lines either when used alone or when used in connection with conventional parallel rule attachments for drawing boards.

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

Figure 1 is a plan view of a drawing board with which the present invention is associated;

Figure 2 is an enlarged fragmentary plan view of the straightedge shown in Fig. 1 with the top strip removed, and being a section taken on the line 2—2 of Fig. 3;

Figure 3 is an enlarged cross-section taken on the line 3—3 of Fig. 1;

Figure 4 is a fragmentary axial section taken on the line 4—4 of Fig. 1; and

Figure 5 is an enlarged view of one of the rollers.

Referring in detail to the illustrative construction of the drawing, there is shown the conventional drawing board 10 upon which is superimposed my improved straightedge 11, the straightedge in this instance having run therethrough the guide cord 12. This guide cord, as is well known in the art, may have its free ends clipped to the lower edge of the board as at 13, 13, whereupon the cord runs upwardly to the blade 11*a*, through the center thereof and crossing in opposite directions, and upwardly to the upper edge of the board where it passes about direction changing studs 14 and is secured by clamping stud 15. The middle runs of the cord which move relatively to the blade and therethrough through the channel 16 may pass about pulleys 17 carried by insert plates 18 mounted at the ends of the blade.

In accordance with my present invention the blade 11*a* does not normally bear directly upon the drawing board 10, but is carried on the board through the intermediation of the rollers 19, thus providing improved accuracy of parallel lining, for example, together with ease of movement and the avoidance of smudging of the drawing.

For this purpose the blade 11*a* has inserted therein a pair of parallel shafts 20 running lengthwise of the blade adjacent each of the edge transparencies 21 respectively. In this instance, the body 22 of the blade, which is desirably of non-porous and non-warping phenolic condensation material, has a pair of parallel longitudinal grooves 23 in its upper face into which the shafts 20 are laid. At intervals the grooves 23 are enlarged and plugs 24 are pressed into these enlargements to retain the shafts in the grooves. At other intervals the body 22 has apertures 25 therethrough opening into its lower face intersecting the grooves 23 and in which apertures the shafts carry the rollers 19. The rollers are advantageously spaced apart on say four-inch centers so as to afford a considerable number of rollers on each shaft at each side of the blade. The rollers are desirably staggered on the two shafts so that a roller on one shaft is transversely opposite a plug on the other shaft.

The shafts 20 are desirably of wire or of light flexible resilient character and the top strip 26 which finishes the blade may then be recessed as at 27 over each of the rollers so that if the blade be pressed upon by the draftsman, the rollers being thus retractile will withdraw into the recesses 27 so as not to mar the paper or other drawing surface, the blade itself in that case being pressed into contact with the drawing surface and the shafts 20 yielding upwardly between the plugs 24 for this purpose.

The top finishing strip 26, which may be of like material to that of the body 22, may be secured to the body by any suitable means such as the drive pins 28. It will be understood also that the channel 16 for the cords may be formed partly in the top strip 26 and partly in the body 22, as best shown in Fig. 3. Thus, neither the rollers nor the cord are seen at the top surface of the blade, this top surface being relatively smooth and unobstructed while being at the minimum of distance from the drawing board so as to keep the blade as flat as possible.

The edge transparencies 21 may be secured to the body as by being dove-tailed therein as at 29.

Where it is desired to use the straightedge for a parallel ruling device in itself without the cord 12, the rollers 19 may be fixed on the shafts to rotate with the shafts 20 and the shafts may have a slight play under the plugs 23 so that the shafts and rollers will rotate together instead of the rollers being free upon their shafts. Thus, when the rollers are fixed on the shafts and when the blade is transversely moved on the board the rollers will rotate simultaneously and being of equal size, instead of slipping will cause

the blade to move by translation, retaining its relative parallel positions so that a series of parallel lines can be drawn with the aid of the blade even without the parallel rule attachment which is inclusive of the cord 12. Where the straightedge is used as a parallel rule device without the cord 12, particularly, the surfaces of the rollers may be slightly roughened as at 30 (Fig. 5) for example, by being sand blasted to further prevent slippage.

Where the cord 12 is used as shown in Fig. 1, it will be understood that the straightedge will move by translation to respective parallel positions so long as the cord is held from movement by the clamp 15, and that if it is desired to change the angle of the straightedge the clamp 15 may be loosened, a new angle given the straightedge, and then the clamp re-tightened upon which the straightedge will move by translation to respective parallel positions at the new angle, as is well known in the art. In any case, by the use of a wire shaft as I have here disclosed and by spacing the holding points 24 of the wire relatively far from the apertures 25, the rollers are individually resiliently mounted so as readily to accommodate themselves to pressure on the blade anywhere along its length while still being carried throughout the length of the blade by a common shaft.

Having described my invention, I claim:

1. A draftsman's mobile straightedge comprising a blade having a body and a top strip, a groove in the upper face of said body, a wire shaft in said groove, apertures through said body at spaced apart intervals along and intersecting said groove, rollers of non-resilient material in said apertures normally projecting slightly below the lower face of said body and carried by said shaft, said shaft being held in said groove for said normal position of the rollers at points spaced relatively far from said apertures and being resilient to permit yielding upward movement of the rollers and shaft between said holding points, and said top strip being secured over said shaft and rollers.

2. The structure of claim 1 wherein the top strip is slightly recessed on its under face to receive said rollers when pressed upwardly.

3. The structure of claim 1 wherein there are two shafts with rollers so arranged in parallel in the blade and wherein the groove is enlarged at intervals to snugly receive holding plugs interposed between the blade body and top strip and wherein the rollers are staggered on the shafts whereby a roller on one shaft is transversely opposite a plug on the other shaft.

4. A draftsman's mobile straightedge comprising a blade, a pair of parallel wire shafts carried by the blade, a plurality of at least four relatively short rollers at relatively distantly spaced apart intervals on each shaft and normally projecting slightly below the lower face of the blade, and a plurality of holding means for each shaft spaced along the shaft substantially midway between the rollers on said shaft whereby the shaft may be flexed from points materially distant from a roller and on each side thereof to cause the roller to be retracted into the blade upon pressure thereon.

HAROLD L. DE LISLE.