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G. E. MATTOS

2,257,529

DRAWING INSTRUMENT

Filed May 18, 1940

Fig. 1.

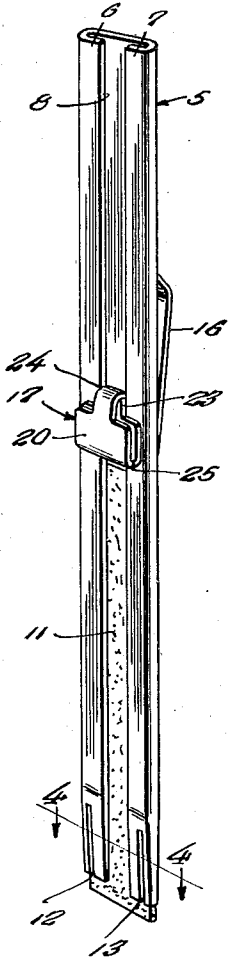


Fig. 2.

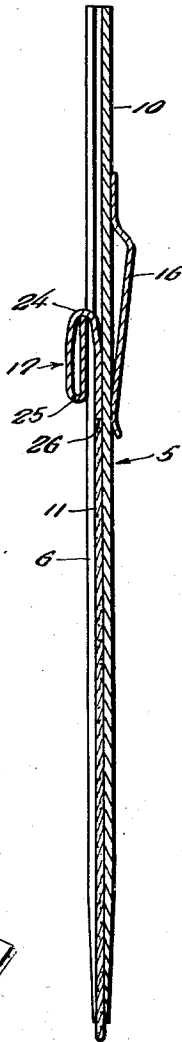


Fig. 3.

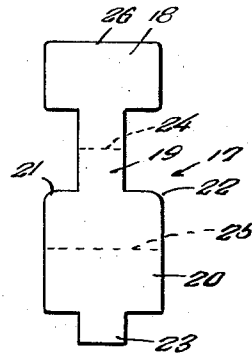


Fig. 4.

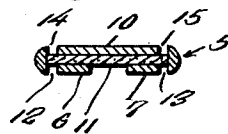
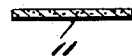


Fig. 5.



Inventor

George E. Mattos

By

Clarence A. O'Brien
and Hyman Berman
Attorneys

UNITED STATES PATENT OFFICE

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DRAWING INSTRUMENT

George E. Mattos, Oakland, Calif.

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2 Claims. (Cl. 120—19)

My invention relates to improvements in drawing instruments such as drafting pencils, knife-edged pencils, carpenters' pencils, and steel workers' soap-stone pencils, and the like, and in the writing media used therein, and an important object of the invention is to provide arrangements of this character involving simplified and superior means for holding, positioning, and feeding a relatively thin, flat writing medium relative to the holder.

Other important objects and advantages of my invention will be apparent from a reading of the following description and the appended drawing, wherein a preferred embodiment of the invention is shown.

In the drawing:

Figure 1 is a perspective view of the embodiment.

Figure 2 is an enlarged vertical transverse sectional view therethrough.

Figure 3 is a plan view of the slide.

Figure 4 is a horizontal sectional view taken through Figure 1 approximately on the line 4—4 and looking downwardly in the direction of the arrows.

Figure 5 is a perspective view of the relatively thin flat writing medium.

Figure 6 is a transverse sectional view taken through Figure 5.

Referring in detail to the drawing, the numeral 5 generally designates the holder which comprises a metal or other suitable material plate or sheet bent or pressed along longitudinal lines to provide a C-shaped cross section providing laterally inwardly directed flanges 6 and 7, respectively, which have laterally inward edges spaced to define a slot 8 in which the slider 17 works.

Slidable in the space between the flanges 6 and 7 and the web 10 of the holder is the relatively thin flat writing medium 11 which is shorter than the holder so as to be topped by the slide in a manner to be described. The writing medium 11 is in the form of a thin relatively wide flat plate of suitable material to provide the type of marks desired, the same being substantially uniform in width and thickness throughout the length thereof as clearly indicated in Figures 5 and 6.

The lower end portion of the holder is smaller than the writing medium 11 and provided with vertical expansion slots 12 and 13 in the flanges 6 and 7, and 14 and 15, respectively, in the flanges and the web, with the material of the holder bent inwardly at these points to make strong fric-

tional engagement with the writing medium and thereby assist in holding the writing medium in the desired adjusted position in the holder. The upper portion of the holder is large enough to easily and freely admit the writing medium so that the same is freely slidable in this portion of the holder. The web of the holder is equipped with an exterior clip 16 which is attached to the upper part thereof for convenient carrying connection of the device in the pocket of the user.

The slide or slider 17 is formed from a blank of spring material of the shape shown in Figure 3, and comprises the transversely elongated rectangular part 18, the longitudinally elongated narrow connecting part 19, and the substantially square larger part 20, the latter having rounded corners 21 and 22 on one end thereof and the rectangular centralized tab 23 on the opposite end thereof.

The material of the blank 17 is of substantially the same thickness and width as the writing medium 11 so that the part 18 slides freely in the holder 5 with the side portions thereof behind the flanges 6 and 7, and with the connecting portion 19 extending outwardly through the slot 8 with its edges in close proximity to the edges of this slot. The connecting part 19 is bent downwardly approximately on the dotted line 24, and the lower portion of the part 20 is bent upwardly approximately on the dotted line 25. In this arrangement the then upper end of the tab 23 engages the right portion of the bend 24, as shown in Figure 2. In this arrangement the side portions of the inturned portion of the part 20 bear frictionally against the outer surfaces of the flanges 6 and 7, in opposition to the pressure exerted by the part 18 on the web 10 and on the backs of the flanges 6 and 7, the bends 24 and 25 being sufficiently spread to provide this action. In this way, considerable pressure is required to be exerted in an inward direction upon the portion 20 of the slide to release the slide to enable adjusting its position along the holder. In the absence of such manual pressure, the edge 26 of the slide, when abutted with the upper end of the writing medium 11, acts to hold the writing medium against shifting under writing pressure on the lower end thereof. The slide 17 also acts to project the writing medium so as to feed the same from the lower end of the holder as required, when the slide is pushed downwardly relative to the holder proper.

Soapstone and commercial pencil graphite for writing and drawing are conveniently commercially obtainable in five-inch lengths. I may

utilize in the present holder graphite and soap-stones of this length trimmed to widths of between one-quarter to one-half inch and to thicknesses of between twenty-thousandths (20/1000) of an inch and forty-thousandths (40/1000) of an inch.

In writing media having a thickness of between 20/1000 and 30/1000, the ratio of width as compared to thickness is structurally and functionally critical in full line work on wood or metal, and the width must be not less than one-quarter inch with a 20/1000 writing medium. Needed strength is absent on narrower and/or thinner sections. The most practical thickness for general use and desirable strength are between 25/1000 and 30/1000.

Although I have shown and described herein a preferred embodiment of the invention, it is to be definitely understood that I do not wish to limit the application of my invention to the precise structural details set forth, except as may be required by the scope of the subjoined claims.

Having described the invention, what is claimed as new is:

1. A device of the character described, said device comprising a tube formed in one side with

a longitudinal slot defining spaced flanges, a frictional slide having a first part extending through and movable along said slot, a second part connected to said first part and sliding behind said flanges and engageable with the upper end of said rod, and a third part connected to said first part and frictionally bearing against the outer side of said flanges, said first, second, and third parts being integral portions of a single piece of flat spring material.

2. A device of the character described, said device comprising a tube formed in one side with a longitudinal slot defining spaced flanges, a frictional slide having a first part extending through and movable along said slot, a second part connected to said first part and sliding behind said flanges and engageable with the upper end of said rod, and a third part connected to said first part and frictionally bearing against the outer side of said flanges, said third part comprising a convolution under spring tension to engage the outer side of said flanges in opposition to the engagement of said second part with the inner sides of said flanges.

GEORGE E. MATTOS.