July 4, 1939. W. W. SMITH 2,164,433

ADJUSTABLE ERASER ATTACHMENT

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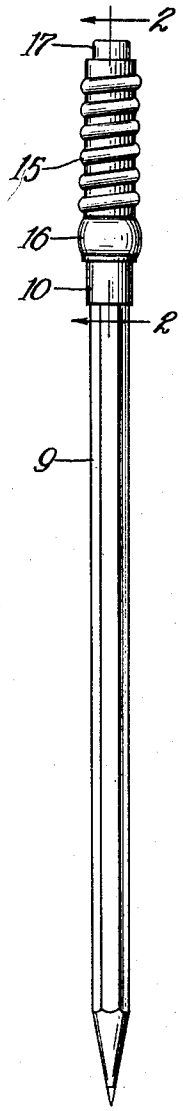


Fig. 1

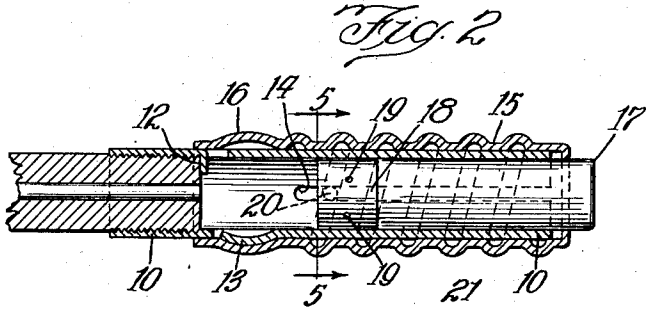


Fig. 2

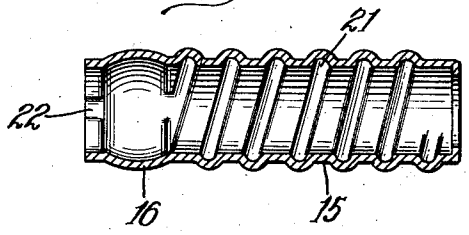


Fig. 3

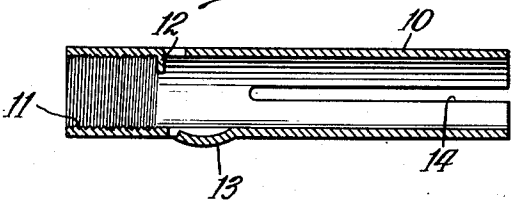


Fig. 4

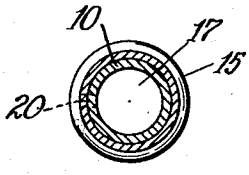


Fig. 5

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ADJUSTABLE ERASER ATTACHMENT

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6 Claims. (Cl. 120—38)

My invention is an adjustable eraser attachment, and has for its general object the production of a simple and efficient device which may be easily applied to any pencil or other body.

One specific object is to provide an eraser adjusting nut into which the eraser may be withdrawn, which nut may be conveniently removed from its support for the insertion of another eraser when the previous one is worn down so as to be no longer convenient or useful.

A second object is to produce an adjusting device, the parts of which are yieldingly retained in operative relationship, with the result that they are assembled by simply applying them to each other with a slight pressure, and are disassembled by a slight strain in the opposite direction.

In the accompanying drawing,

Fig. 1 is an elevation of the device mounted upon a pencil;

Fig. 2 is an enlarged section on line 2—2 of Fig. 1, the metal being shown in abnormal thickness for clearness of illustration;

Fig. 3 is a section of the nut detached;

Fig. 4 is a section of the tubular body detached; and

Fig. 5 is a transverse section on line 5—5 of Fig. 2.

In said drawing, 10 is a tube having threads 11 at its lower end of a size adapted to be screwed upon the upper end of a plain lead pencil or other body 9. On one side, the tube is cut in a well known manner, and a portion is bent inward as shown to form a stop 12 which will limit the position of the device on the pencil.

At a convenient point, which may be opposite the stop 12, there is another cut, and a portion of the tube is bent outward to form a spring bulge 13. The upper end of the tube 10 has a longitudinal slot 14 which may extend to about the position shown in Fig. 4.

Mounted on the tube 10 is a sleeve 15 which has a portion bulged outward as shown at 16 to form an inner annular recess adapted to receive the spring bulge 13 on tube 10. These parts are so related to each other that when the sleeve 15 is pushed over the upper end of the tube 10, the bulge 13 will be pressed inward to let the parts assume the position shown in Fig. 2. In this position, the sleeve may be turned freely on the tube, and the spring 13 will act to prevent the longitudinal displacement of the sleeve on the tube. The spring 13, however, will yield to a moderate force and permit the sleeve to be withdrawn when such act is desired.

There is provided an eraser 17 of a diameter which will fit easily into the tube 10. On the inner end of the eraser is a thin metal ferrule or cap 18 which may be secured in place in any convenient manner, as by indentations 19. On the exterior of the ferrule is a projection or tooth 20 which may be a separate piece or may be a portion of the ferrule cut and bent outward. This projection projects thru the slot 14 in tube 10 and engages screw threads 21 formed in the interior of the sleeve 15. These screw threads merge into the interior concave of the bulge 16, and a small channel 22 is formed in the interior of the lower end of sleeve or nut 15 to allow for the passage of projection 20 when withdrawing the sleeve or returning it to place. The ferrule is in fact simply a connecting means for securing the projection 20 to the eraser 17.

In assembling the parts, the eraser is placed in the tube with the projection 20 extending thru slot 14, and resting at the bottom end thereof. The sleeve 15 is then placed over the tube and turned until the groove or channel 22 comes to the projection 20 and said projection passes therethru. This movement of the sleeve causes it to embrace the spring 13.

In operation, the sleeve or nut 15 is turned to cause the eraser 17 to project more or less as may be desired. When the eraser is worn down until it is no longer satisfactory, the sleeve is pulled off over the slight resistance of spring 13, and the remnant of the eraser is thrown away. A new eraser is then substituted in the manner before described. This operation involves only a few seconds of time. When the pencil becomes too short for convenience, the tube 10 is unscrewed and attached to a new pencil.

From the foregoing it will be evident that the present device is extremely simple, consisting of no more than two tubular pieces yieldingly retained together, and an eraser having a projection by which said eraser is longitudinally adjusted by merely turning one tubular piece with respect to the other. Also, that the normal friction between the spring bulge 13 and the interior of the bulge 16 on sleeve 15 will serve to prevent pressure on the eraser from causing it to recede in the tube 10 when being used for erasing.

What I claim is:

1. An eraser provided with a projection on its side, a tube adapted to receive said eraser and having an open ended guide for receiving said projection, and a nut adapted to engage said projection and move it in said guide.

2. An eraser provided with a projection on its

side, a stationary guide in the form of a slot with its upper end open for receiving said projection, and a rotatable sleeve mounted upon said guide and having an internal thread engaging said projection to move it.

3. A tube adapted to be secured to a pencil and having an intermediate part thereof bent to form a spring, means rotatably mounted upon said tube and engaging said spring so as to be yieldingly retained from axial movement thereon, and an eraser supported within the tube and axially adjustable by turning said means on the tube.

4. In an adjusting device, a sleeve having an interior screw thread merging into an interior enlargement near one end and a channel beyond the enlargement to permit a tooth to pass from the outside of the device to said thread, a tube within said sleeve and having a portion thereof bent to form a spring retaining device located within said enlargement, and an adjustable body located within the tube and having a tooth extending thru an opening in the tube to engage the screw thread in said sleeve.

5. In an adjusting device, an adjustable body having a projection secured on a side thereof, an enclosing tube having an open ended slot thru which said projection extends, and a rotatable sleeve mounted upon the tube and having a helical groove engaged by said projection, said slot being open at one end and the groove being open at the opposite end to permit said parts to be assembled.

6. A tube adapted to be secured to an ordinary pencil and having an intermediate part thereof bent to form a spring, an eraser supported within said tube, and means controlled by said spring and extending over the principal length of the tube for engaging the eraser and reciprocating it within the tube.

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