

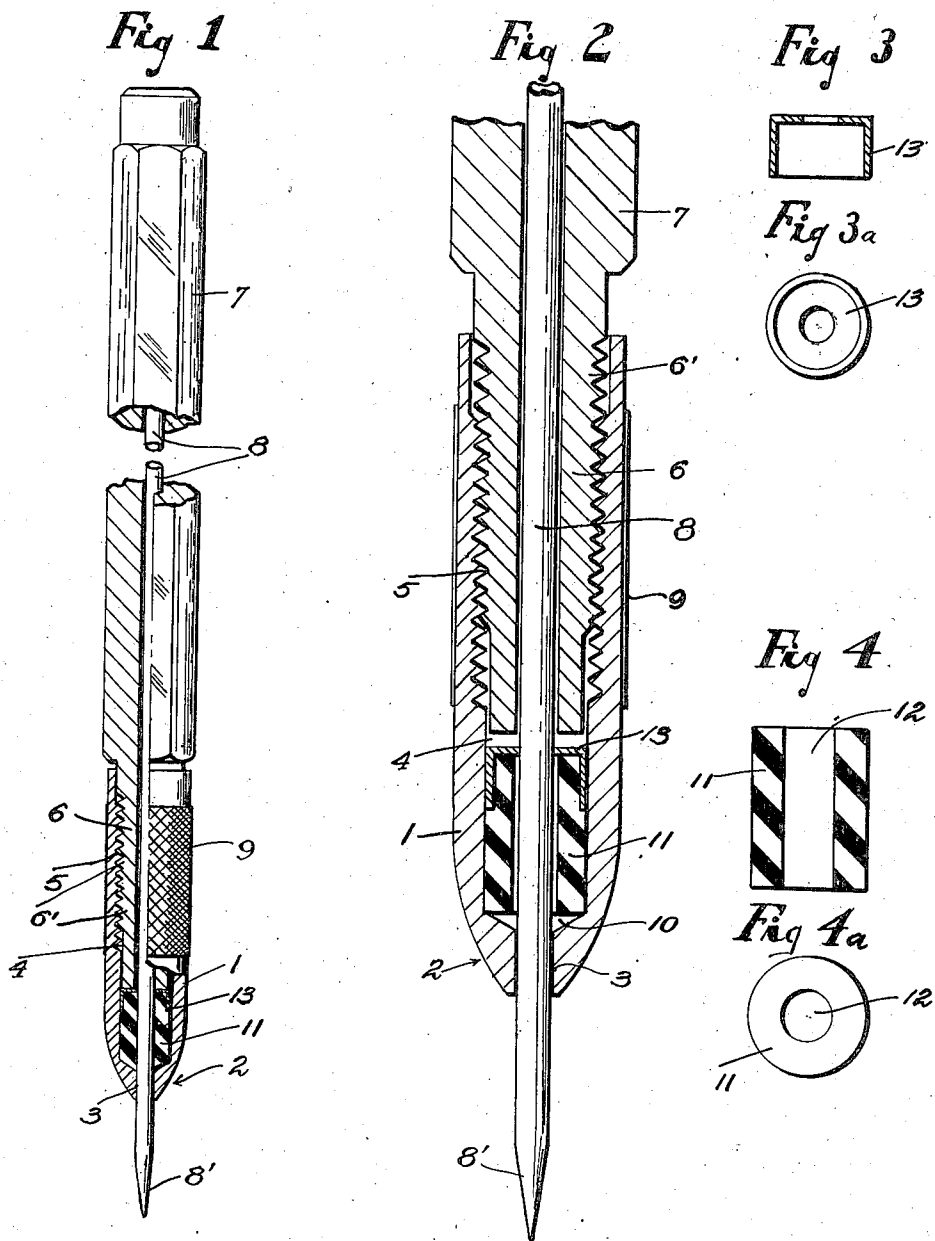
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PENCIL HOLDER

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PENCIL HOLDER

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My invention relates to a holder for pencils and other articles and it has especial reference to means for securing slender cylinders or strips of material in a holder whereby they may be held against displacement.

One of the chief objects of this invention is to provide a holding means for pencils or other articles in which the effective grip thereon is evenly exerted over the entire area of the article encompassed, in a resilient manner, thereby to eliminate localized strains and stresses tending to break the pencil or to render it readily susceptible to breakage.

Another object of the invention is to provide a pencil holder in which no hard elements or members are employed to grip the same and in which the pencil is always preserved against nicking or any other impairment of its strength, regardless of the pressure caused to be exerted thereagainst.

Another object of the invention is to provide a pencil holder in which the holding means is variably adjustable and in which the pencil may be positively gripped and held immovable, but resiliently in position of adjustment, thus insuring the exposed lead or pencil against slippage or easy breakage.

The invention has also for its objects to provide a pencil of simple construction and few parts that are easily assembled and disconnected, and economical of manufacture, and one that is extremely light and may be made very slender to meet the requirement of comfort and convenience of the user.

These and other objects will appear more fully in the following specification in connection with the accompanying drawing, which is illustrative merely and of a preferred form of embodiment of the invention, which is subject to many modifications, without departing from the spirit of the invention.

In the drawing, like reference characters designate similar parts throughout the several views.

Fig. 1 is an enlarged elevational view partly in section.

Fig. 2 is an enlarged fragmentary sectional elevation.

Fig. 3 is a sectional elevational detail of the ferrule or cap.

Fig. 3a is a plan view of the cap or ferrule.

Fig. 4 is a sectional elevational detail of the gripper and,

Fig. 4a is a plan view of same.

The invention which is illustrated in enlarged or magnified form for the sake of clearness, in a general sense, includes a body in which a cylinder or strip of lead or other pencil is contained and through which it is adapted to extend to present a portion thereof for use in writing or drawing, the pencil being held in its projected or extended position by means subject to cross-sectional de-

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formation by pressure exerted thereagainst. Such means is an elastic body formed completely to surround a portion of the pencil and comprises a substantially cylindrical unit the inner perimeter of which is normally greater than the outer circumference of the pencil, thereby to enable the pencil to pass freely through the elastic body to adjust the pencil to any desired extent. The elastic body is deformable by longitudinal pressure exerted against the ends thereof and such deformation exerts a uniform and even lateral pressure on and against the entire area of the pencil enclosed by said body, the lateral pressure of deformation of said elastic body being regulated entirely by the longitudinal pressure applied to said body. When the pencil is so subjected to the gripping pressure of the elastic body, it is securely held in position, but resiliently, and hence the area of the pencil gripped is not subjected to any injurious strains and stresses, such as attend the employment of metallic elements or spring means. By reason of this device, no hard bodies encounter the pencil, no insecurity of the grip is experienced and no elaborate and expensive manufacture is involved.

The reference to the adaptation of this invention to pencils is, it will be understood, exemplary merely. The invention is applicable in any instance where it is desired to restrain the free movement of a body or element by the deformation pressure of an elastic body.

The body 1, in the drawing, may be a hollow tip, such as usually forms the complement of a pencil or lead holder. It is tapered at the extreme end, as seen at 2, and is provided with an axial bore 3, which communicates with the hollow cylindrical space 4 in said tip 1. This space 4 is threaded intermediate its length, as shown at 5, for co-operation with the externally threaded extension 6 of a companion body 7, that constitutes a handle or hand-piece. The hand piece is bored to receive the major length of a pencil 8, the pointed or sharpened end 9 of which, as seen in Figs. 1 and 2, extends through the coaxial bore 3 in, and beyond the tip 2, the distance required for the convenient use of the user. The exterior of the body 7 is preferably of a shape or form to afford an easy hold and the tip 2 is provided exteriorly with a knurled portion 9 for a similar purpose.

It will be observed that the threads 6 of the extension 6 terminate short of the end thereof and that the end thereof terminates within the space of the tip 2 above the bottom thereof, providing thereby a pocket or space 10. In this space 10 is positioned a body 11, of elastic material, such as rubber, that is provided with a longitudinal central bore 12, the diameter of which is greater than that of the pencil which passes through the bore. This diametral difference pro-

vides for the easy and ready passage of the pencil relative thereto. The diameter of the elastic body 11, is substantially equal to the diameter of the pocket or space 10 in the tip 2, within which said elastic body 11 is contained, so that said body may be readily dropped or placed in position and removed therefrom when desired.

Since the bodies 1 and 7 are threadedly or otherwise interconnected for movement relative to each other, it is obvious that the rotation of the body 7 relative to the tip 2, which is held stationary, will cause the extension 6 to move closer to the bottom of the pocket or space 10 in said tip. During this relative movement, the end of the extension 6 engages the top of the elastic body 11, which, as the pressure thereagainst continues with the movement of said extension, undergoes longitudinal deformation toward and against the entire area of the lead or pencil enveloped by it, eventually gripping it firmly. The gripping pressure of said elastic body 11 is controlled, as stated, by the longitudinal pressure exerted by the movement of the extension 6. Release of the pressure on said elastic body, and restoration to normal form, with release of the grip on the pencil, is effected by the operation of the body 7 in the opposite direction. When the restoration of the elastic body to normal is complete, as indicated in Fig. 2, the pencil 8 is free and may be adjusted relative to the tip or a new one supplied. It will be noted that the elastic body 11, when compressed to grip the pencil, behaves in much the manner of a resilient cushion, which being applied too near the exposed end of the pencil, effectively protects the pencil point against breakage, when said point is subjected to unusual strain, as occurs, for instance, when the pencil is dropped.

The elastic body 11 may be provided with a ferrule 13, to eliminate torsional effect on said body and provide an anti-friction surface during the compressing action thereon by the rotation of said extension 6. The ferrule 13 provides a thrust surface and may be formed as unitary with the elastic body or the body may be forced into the ferrule, as shown.

It will be noted from the drawing that the pocket 10 and the compressible body 11 therein are both cylindrical so that, upon release of said body from endwise pressure, the same readily expands to effect release of the pencil for free sliding thereof. It will be further noted that the central aperture of the ferrule 13 is smaller than the bore or passage 12 in body 11 and that said aperture guides the pencil to hold the same out of frictional engagement with the body 11 until the latter is compressed endwise.

What I claim is:

1. A body member having an axial bore and a reduced portion provided intermediate its length with external threads, said portion having a reduced cylindrical end extending beyond the area of the threads thereon, a tip having a cylindrical pocket and a bore in the end thereof, said tip having internal threads at a point above said pocket to engage the external threads on the reduced portion of said body member, a cylindrical body of compressible material loosely fitting within said pocket and provided with a longitudinal bore larger than a pencil extending there-through, a ferrule fitting over the top of said body and having an aperture coaxial with the bore therein and having a sliding fit with said pencil, said ferrule being engageable by said reduced

cylindrical portion when said body member and tip are moved relatively to each other to compress said cylindrical body of compressible material about the pencil extended through the longitudinal bore of the body and tip.

2. A body member having an axial bore and provided at one end thereof with external threads, a tip having a cylindrical pocket and a bore in the end thereof, said tip having internal threads above said pocket to engage the external threads of said body member, a cylindrical body of compressible material loosely fitting within said pocket and having a longitudinal passage coaxial with the bore in said body member, said passage being larger than a pencil extending therethrough, a ferrule fitting over the top of and surrounding a portion of said cylindrical body and having an axial aperture for sliding passage of said pencil and being engageable with the end of said body member when said body member and tip are moved relatively to each other to compress the material of the cylindrical body about a pencil extended through the longitudinal bore of the body and tip.

3. A pencil holder comprising threadedly connected members having aligned bores slidably holding a pencil adapted to project from the end of one of said members, said members being relatively adjustable endwise, one of said members having a cylindrical pocket therein defined endwise by a transverse seat in said latter member and an end of the other member, a compressible cylindrical body in the pocket and having a longitudinal bore larger than the pencil extending therethrough, and a ferrule on said body having a hole aligned with the latter bore for sliding engagement with said pencil, whereby, upon longitudinal extension of the threadedly connected members, the pencil is guided for free sliding movement by the bores of said members and the hole in the ferrule and, upon longitudinal contraction of said members, the compressible body will be contracted between transverse seat of one member and the opposed end of the other member to compress the wall of the bore in said body to frictionally seize the pencil.

4. In a pencil holder, a cylindrical elastic and compressible body having a longitudinal passage larger than a pencil extending therethrough, longitudinally adjustable holder members embodying a cylindrical pocket in which said body resides and formed with aligned bores through which the pencil extends, and a rigid non-distortable centrally apertured element at one end of said body and slidably engaged with the cylindrical walls of the pocket to hold its aperture centrally aligned with the mentioned pocket and bores and thereby hold the pencil in non-engaging and freely movable position with respect to the passage in the body, whereby, upon contraction of the compressible body by endwise contraction of the holder members, the wall of said passage will frictionally seize the pencil.

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