

C. No.

2388252

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Whereas

CARL J. CRANE,

of

Sacramento,

California,

PRESENTED TO THE COMMISSIONER OF PATENTS A PETITION PRAYING FOR THE GRANT OF LETTERS PATENT FOR AN ALLEGED NEW AND USEFUL IMPROVEMENT IN

SLIDE MEMBERS FOR MEASURING AND MARKING DEVICES,

A DESCRIPTION OF WHICH INVENTION IS CONTAINED IN THE SPECIFICATION OF WHICH A COPY IS HERETO ANNEXED AND MADE A PART HEREOF, AND COMPLIED WITH THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED, AND

Whereas UPON DUE EXAMINATION MADE THE SAID CLAIMANT IS ADJUDGED TO BE JUSTLY ENTITLED TO A PATENT UNDER THE LAW.

NOW THEREFORE THESE LETTERS PATENT ARE TO GRANT UNTO THE SAID

Carl J. Crane, his heirs

OR ASSIGNS

FOR THE TERM OF SEVENTEEN YEARS FROM THE DATE OF THIS GRANT

THE EXCLUSIVE RIGHT TO MAKE USE AND VEND THE SAID INVENTION THROUGHOUT THE UNITED STATES AND THE TERRITORIES THEREOF.



Attest:

E. A. Rogers
Law Examiner

In testimony whereof, I have hereunto set my hand, and caused the seal of the Patent Office to be affixed, at the City of Washington this sixth day of November, in the year of our Lord one thousand nine hundred, and forty-five, and of the Independence of the United States of America the one hundred and seventieth.

Casper W. Rogers
Commissioner of Patents

Nov. 6, 1945.

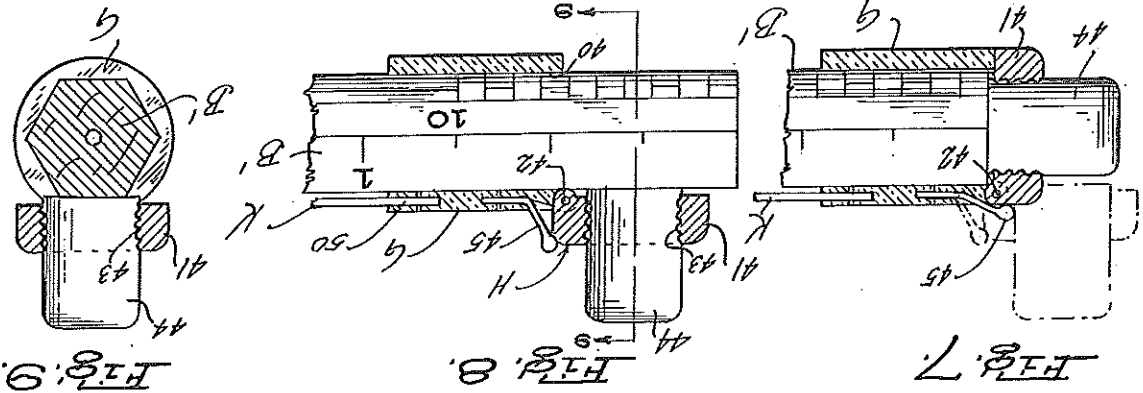
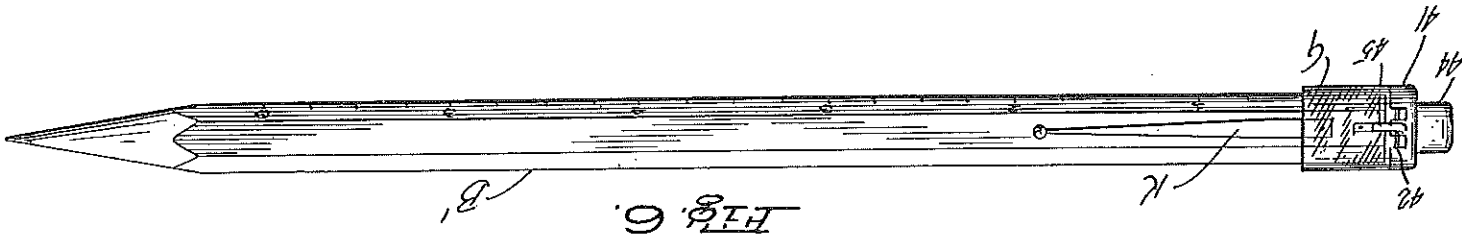
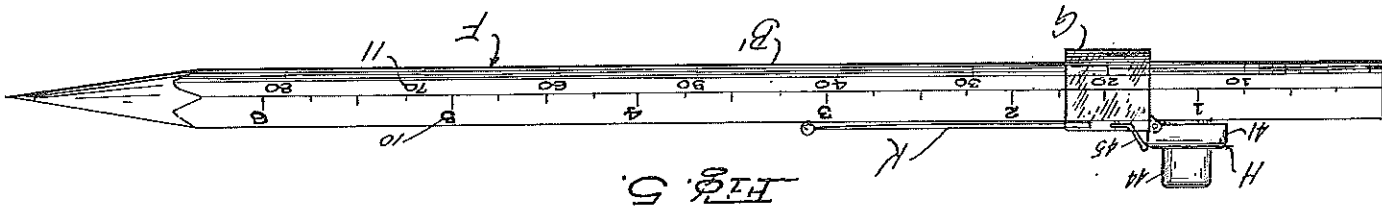
C. J. CRANE

2,388,252

SLIDE MEMBER FOR MEASURING AND MARKING DEVICES

Filed Jan. 26, 1943

2 Sheets-Sheet 2



INVENTOR.
Carl J. Crane.

BY *[Signature]*
Lawrence, Allen & Conrad
ATTORNEYS.

Nov. 6, 1945.

C. J. CRANE

2,388,252

SLIDE MEMBER FOR MEASURING AND MARKING DEVICES

Filed Jan. 26, 1943

2 Sheets-Sheet 1

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FIG. 1.

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FIG. 3.

INVENTOR.
Carl J. Crane.

BY /s/ Samonte, Alamo and Formel
ATTORNEYS

Patented Nov. 6, 1945

2,388,252

UNITED STATES PATENT OFFICE

2,388,252

SLIDE MEMBER FOR MEASURING AND
MARKING DEVICES

Carl J. Crane, Sacramento, Calif.

Application January 26, 1943, Serial No. 473,657

15 Claims. (Cl. 33-107)

This invention relates to improvements in slide members for measuring and marking devices, such as pencils, rulers, etc. adapted to be supported in a pocket of a garment.

The primary object of this invention is the provision of a novel indicator slide in combination with a calculating scale and pencil construction.

A further object of this invention is the provision of a combination measuring pencil and indicator slide so arranged as to provide facile means for measuring map distances on various scales, etc.

A further object of this invention is the provision of an improved combination pencil and indicator slide wherein the pencil is provided with one or more scales and the slide provides an indicator or depth gauge in relation to the scales.

A further object of this invention is the provision of a pencil or other carrying medium having scales thereon and an indicator slide sleeve and with which a body of rubber is associated for the purpose of holding the slide in predetermined relation upon the pencil, the said body extending laterally of the sleeve and being additionally useful as an eraser and as a fulcrum or pivot upon which the carrying member can be supported and turned in map-scribing and scale measuring and marking operations.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawings, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a side elevation of a pencil and slide member combined and arranged in accordance with a preferred form of the invention.

Figure 2 is a view of the pencil and slide member taken at right angles to the view of Figure 1.

Figure 3 is a side elevation of a transparent slide-sleeve and associated rubber body in section.

Figure 4 is a cross sectional view taken substantially on the line 4-4 of Figure 1.

Figure 5 is a modified form of invention showing a different construction of sleeve, clip, and rubber body associated with a scale-bearing pencil.

Figure 6 is a plan view of the combination taken at right angles to the view of Figure 5.

Figures 7 and 8 are cross sectional views showing the associated relation of the rubber body with the sleeve and pencil.

Figure 9 is a cross sectional view taken substantially on the line 9-9 of Figure 8.

In the drawings, wherein for the purpose of illustration are shown preferred and modified forms of the invention, the letter A may generally designate the preferred form of invention. It consists of pencil B and a slide assembly carried by the pencil and comprising a slide-sleeve C, a rubber body D, and a clip E. The pencil B is shown with a body or sheath of polygonal cross section but for the purposes of the invention the cross section of the pencil-body can be cylindrical or other desired shape. The pencil serves also as a medium to carry scale graduations whereby it may be used as a ruler or measuring device as well as a scribing or marking device. The scale graduations extend longitudinally of the pencil-body and may be so arranged to form one or more scales. In a multiple scale arrangement, the scales may vary in number and nature and may be disposed in related or unrelated positions with respect to each other. In the example shown, the pencil B is provided with scales 10 and 11; the scale 10 being a conventional inch-scale and the scale 11 being a map scale graduated to indicate statute miles. The transparent slide member C is intended to function as an indicator in relation to the graduations of the scale or scales and to this end each terminal edge of the sleeve is disposed in a plane normal to the axis of the sleeve and scale-bearing pencil for use as an index to register with a reading to be taken from a selected scale. When the scales are marked as shown in the drawings, the edge at the rear or left of the sleeve in Figure 1 is used as the index. In other scale arrangements, the opposite or forward edge of the sleeve may serve as an index in a manner well known to those skilled in the art. This slide member C is preferably formed of some transparent plastic, such as a synthetic resin, and includes the hollow cylindrical end portions 15 and 16, and the intermediate magnifying bulbous portion 17 thru which the delineation upon the scale or scales are viewed, as shown in Figure 1 of the drawings. The plastic sleeve C embraces the scale-bearing pencil B with a loose sliding fit and has a forward portion 16 of segmental cross section for the purpose of providing an aperture exposing a surface area of the scale-bearing pencil B in the circumferential zone of this apertured segmental portion 16, as shown in Figure 3 of the drawings, so that the body of the rubber may cooperatively grip the pencil for holding the indicator slide in a predetermined relation upon the pencil B. The rubber body D may have various

shapes. In the main, the same consists of an annular portion having a passageway 25 there-
 thru adapted to receive the pencil B and the for-
 ward segmental portion 16 of the slide C therein.
 Preferably, the annular portion of the rubber
 body is provided with diametrically opposed pro-
 tuberances 20 and 21. The protuberances respec-
 tively converge to a point outwardly of the an-
 nular portion of the rubber body, as shown in
 Figures 3 and 4, and hence have their pointed
 ends respectively located a substantial distance
 away from the pencil and the slide. There is no
 objection to having these extensions annularly
 about the entire rubber body except that by hav-
 ing them in opposed relation, the pencil and slide
 may be more conveniently placed flat upon a map
 or other object for distance measuring. It will
 be noted from Figure 3 of the drawings that the
 diameter of the passageway 25 of the rubber body
 is less than the diameter or lineal cross distance
 thru the pencil B, so that the rubber body is in a
 deformed and strained condition when in place
 upon the sleeve D with the result that the por-
 tion of the elastic body which lies within the cut-
 away part of the slide extension 16 will be con-
 tracted into surface engagement with the pencil
 B and by friction will hold the rubber body and
 the sleeve in predetermined position upon the pen-
 cil. To further secure the rubber body D in place
 upon the sleeve C, the outer surface of the por-
 tion 16 of the sleeve is provided with a series of
 minute projections or bosses 30, which will bite
 into the material of the rubber body and hold
 the latter in position upon the sleeve. As a con-
 venient means for supporting the slide-carrying
 pencil in a pocket of a garment, the retaining clip
 E is provided. The clip E is of a well known and
 conventional design and following standard prac-
 tice comprises a substantially flat slender body
 of spring metal shaped to provide a tapered fin-
 ger-like portion having a spherical knob at its
 smaller end and a flat rectangular portion 35 at
 its wider end. For purposes of the present in-
 vention, the end 35 of the clip is molded, as an
 insert, in the portion 16 of the sleeve C in a rela-
 tion shown in Figures 3 and 4 of the drawings,
 with the finger-like portion of the clip extend-
 ing endwise beyond the sleeve and flexed to cause
 the spherical end of the clip to engage the pencil.
 Hence, when the pencil is placed in a pocket with
 the outer wall of the pocket engaged between the
 pencil and the clip the pressure of each against
 the other results in the outer wall of the pocket
 being frictionally grasped therebetween.

In the form of invention shown in Figures 5 to
 9 inclusive, designated by the letter F, the pencil
 B' and the scale arrangement may be assumed
 of the same nature as the pencil B above described
 for the preferred embodiment of invention, and
 the same reference characters apply to the scales
 thereof as for the pencil B. Associated with the
 pencil B' is a slide sleeve K, having an improved
 friction slide-stop assembly H associated there-
 with, and a clip K likewise associated therewith.
 The slide member G may be made of transparent
 plastic material, such as a phenolic resin, and it is
 provided with a passageway 40 therethru adapted
 to receive the scale-bearing pencil B' with a loose
 sliding fit therein. The sleeve G has a terminal
 edge, such as the left hand edge in Figure 5, dis-
 posed in a plane normal to the axis of the sleeve
 and scale-bearing pencil and usable as an index
 in the same manner as described in connection
 with the corresponding edge of the sleeve C of
 the preferred form. The slide-stop assembly H

consists of a supporting ring 41 pivoted, as at 42,
 upon an end of the elastic sleeve G; the said
 sleeve G and member 41 being provided with bar-
 rel-like projections, shown in Figures 5 and 6 of
 the drawings, to enable the pintle pivot 42 to be
 properly inserted and retained. The ring 41 is
 preferably of the same external diameter as the
 slide sleeve G, and it is provided with an inter-
 nally threaded passageway 43 therethru adapted
 to receive a cylindrical-shaped body 44 of rubber.
 The body 44 threaded into the passageway 43 to
 the proper depth so that when the supporting
 ring 41 is swung laterally from the axis of the
 pencil to a position adjacent the side thereof as
 shown in Figure 8, the body 44 will have its de-
 pending lower end or base resting upon and fric-
 tionally engaging a side surface of the pencil for
 retaining the sleeve G and clip K in a predeter-
 mined position upon the pencil. A spring 45 is
 preferably molded in an end of the sleeve and en-
 gages the outer surface of the ring 41 for the
 purpose of normally urging the same into a posi-
 tion in which the ring and the rubber body car-
 ried thereby is axially aligned with the slide sleeve
 and pencil. This spring will also assist in main-
 taining engagement between the pencil and the
 base of the rubber body and in increasing the
 frictional contact between the parts engaged for
 holding the slide in a predetermined relation upon
 the pencil especially when the parts are in the
 position shown in Figure 8. It will be noted from
 Figure 7 that when the sleeve G is on the extreme
 end of the pencil, the spring 45 will urge the ring
 41 and rubber body 44 into normal position at the
 end of the pencil opposite the writing end. The
 clip K is similar to the clip E of the preferred
 form of the invention and is molded, as shown at
 50, into the plastic slide G and cooperates with
 the pencil in the same manner as described in
 connection with the clip E for retention of the
 pencil when it is pocketed.

The combination of pencil, scale, and slide thus
 described is advantageous in that each element
 of the combination functions in cooperation and
 coordination with the other elements to produce
 in various ways a desired result. Thus, the slide
 sleeve provides a cursor or indicator-slide for
 taking readings from the scale and also serves as
 a carrier for the clip which is positioned along
 the pencil or other scale-provided medium in
 accordance with the instant position of the slide-
 indicator relative to the scale. The slide-carry-
 ing rubber body functions as a slide-stop which, by
 its frictional contact with the pencil or other
 scale-bearing medium, serves to yieldably main-
 tain the slide and clip at any given setting along
 the scale whether the pencil is pocketed or un-
 pocketed. In map scribing and scale measuring
 and marking operations, the scale-bearing pen-
 cil and associated slide assembly together provide
 a measuring and marking device and it will be
 noted that in both forms of the invention the
 rubber body extends laterally of the slide sleeve.
 Hence, the portion of the rubber body extending
 away from the pencil can be used as a rubber
 snubber or fulcrum to be pressed against the sur-
 face of the map for holding its position thereon
 and upon which the pencil can be turned to cause
 the marking point of the pencil to engage and
 mark the map surface, as when striking an ar-
 thereon or when comparing radial distances from
 a selected central point. For example, when ur-
 ing the device for spacing off equal distances
 along a given flight line on an aeronautical chart
 or map, the slide is moved along the pencil and

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pivoted, as at 42, sleeve G; the said provided with bar-figures 5 and 6 of the pivot 42 to be

The ring 41 is diameter as the with an inter- body 44 of rubber, passageway 43 to in the supporting on the axis of the will have its de- upon and fric- of the pencil for K in a predeter-

1. A spring 45 is the sleeve and en- ring 41 for the same into a posi- rubber body car- with the slide sleeve so assist in main- the pencil and the in increasing the parts engaged for ined relation upon e parts are in the will be noted from is on the extreme will urge the ring mal position at the writing end. The E of the preferred olded, as shown at d cooperates with er as described in r retention of the

scale, and slide thus that each element in cooperation and elements to produce Thus, the slide indicator-slide for e and also serves as e is positioned along provided medium in position of the slide- The slide-carried slide-stop which, by one pencil or other to yieldably main- given setting along is pocketed or un- and scale measuring scale-bearing pen- sibly together provide vice and it will be the invention the of the slide sleeve ber body extending e used as a rubber sed against the sur- its position thereon n be turned to cause pencil to engage and then striking an arc adial distances from example, when us- off equal distances a aeronautical chart long the pencil until

the rubber body is positioned a distance back of the pencil point corresponding to the equal dis- tances to be marked off, which equal distances usually are not in excess of twenty-five miles each as measured from the border scale of statute miles on the map or chart. In the construction shown in Figure 1, the distance from the point of the pencil to the 4-inch scale mark on the inch scale 10 corresponds, by actual measurement, to twenty-five statute miles, approximately, on a map or chart having the scale 1:500,000. In the construction shown in Figure 5, the same amount of statute miles is represented by the distance from the point of the pencil to the half-way mark, approximately, between the 4-inch and 5-inch graduations of the inch scale. Hence, when the rubber body D, in Figure 1, is substan- tially centered over the 4-inch graduation of scale 10, a line drawn from the point of the pen- cil to the tip of either projection 20 or 21 and representing the surface of the map or chart will be at such an angle to the axis of the pencil as will permit the pencil point to touch the surface on which it is intended to make a mark. When the rubber body is thus positioned on the pencil and either projection 20 or 21 is firmly engaged with the map surface at or adjacent one end of the given flight line to serve as an anchor point or pivot for the pencil, the portion of the pencil extending rearwardly of the slide is serv- iceable as a handle to hold and manipulate the pencil to cause a mark or arc to be scribed on the flight line at the required distance forwardly of the pivot by the scribing point of the pencil. Each scribed mark or arc determines the new position of the fulcrum or pivot for marking or laying off the next space or distance along the flight line. The device of Figure 5 is similarly operative when the rubber body 44 is substan- tially centered over the half-way mark between the 4-inch and 5-inch graduations of the corre- sponding inch scale. Moreover, it is obvious that the dimensions of the rubber body can be changed or varied to provide that extent of use, as a snubber or fulcrum, in a range of miles or other linear measurement that may be desired. The rubber body has functional advantages in cooperation with the sleeve and scale-bearing member additional to those incident to its uses as a slide-stop and fulcrum in that the laterally projecting portion of the rubber body provides a convenient handle or finger-grip for moving the sleeve and clip along the scale. Moreover, the rubber body is so formed and associated with the slide and pencil, as shown in the drawings, that the laterally projecting portion thereof has util- ity as an eraser in any position of the sleeve along the pencil or scale. The scale-bearing pencil and slide assembly may be used within the limits of its scale range as a gauge for measuring heights and depths in addition to its employment as a linear scale for use with maps. When used as a gauge, the pencil is placed in parallelism with and within or against the object to be measured for height or depth with one end of the pencil at the bottom or lower extremity of the object and the other and extending beyond the top or higher extremity of the object. The indi- cator-sleeve preferably being in a preset position on the scale remote from the top of the object, is then shifted along the scale until its lower edge is in coincidence with or abuts the top of the object. The height or depth of the object is read at the intersection of the lower edge of the sleeve with the graduations of the scale.

Various changes in the shape, size, and ar- rangement of parts shown upon the forms of the invention shown herewith may be departed from within the scope of the invention and the ap- pended claims.

I claim:

1. In a combination measuring and marking device, the combination of an elongated scribing element having a marking point at an end there- of and provided with a scale longitudinally there- of, a member slidable along the scribing element and having an index to register with the read- ing to be taken from the scale, and a body of rubber operatively associated with the member for movement therewith longitudinally of the scribing element with the body extending lat- erally of the scribing element and having a sur- face in frictional contact with a surface of the scribing element and having a surface portion laterally remote from the scribing element.

2. In a combination measuring and marking device, the combination of an elongated scribing element having a marking point at an end thereof and provided with a scale longitudinally thereof, a slide-sleeve movable along the scribing element and having an index to register with the read- ing to be taken from the scale, and a body of rub- ber operatively associated with the slide-sleeve for sliding movement therewith longitudinally of the scribing element with the body extending lat- erally of the scribing element and having a sur- face in frictional contact with a surface of the scribing element to resist displacement of the slide sleeve and index from a preset position relative to the scale and having a surface dis- posed laterally remote from the scribing element to serve as a fulcrum upon which the scribing element can be supported on a surface to be marked and upon which the said element can be turned to cause the marking point to engage and mark the surface.

3. A marking device comprising an elongated scribing element having a marking point at one end thereof, a slide mounted on the scribing ele- ment for movement longitudinally thereof and having an aperture exposing a side area of the scribing element along its path of movement, and a body of rubber operatively associated with the slide for movement therewith along the scrib- ing element with a portion of the body fric- tionally contacting the side of the element through the aperture in the slide, said body extending outwardly of the slide to provide a lateral projec- tion upon which the scribing element may be supported on a surface to be marked and on which the scribing element can be turned to cause the marking point to engage and mark the said surface.

4. A marking device comprising an elongated scribing element having a marking point at an end thereof, a slide embracing the scribing ele- ment and movable longitudinally thereof, said slide having an aperture exposing an area of the scribing element, and a body of rubber oper- atively associated with the slide for sliding move- ment therewith along the scribing element with a portion of the body extending through the said aperture into frictional contact with the exposed area of the scribing element and with another portion of the body extending outwardly of the slide to provide a lateral projection serving as an eraser and as a fulcrum upon which the said scribing element may be supported on a surface to be marked and upon which the scribing ele-

ment can be turned to cause the marking point to engage and mark the surface.

5. A measuring device comprising a scale-bearing member, a sleeve on the said member having a loose fit thereon and having an index to register with the reading to be taken from a scale on the member, and a body of rubber connected with and carried by the sleeve with a portion of the body in frictional contact with the scale-bearing member for releasably holding the sleeve in a given position relative to the scale and another portion of the body extending outwardly of the sleeve and away from the scale-bearing member to provide a lateral projection thereon.

6. A measuring device comprising a scale-bearing member, a slide sleeve having a loose fit on the said member and provided with an index to register with the reading to be taken from a scale on the said member, and a body of rubber separably connected with said sleeve at an end thereof and with a base portion of the body in frictional contact with the scale-bearing member for releasably holding the sleeve in a given position relative to the scale, said body having a portion extended outwardly of the base portion to provide a lateral projection on the said sleeve.

7. A measuring device comprising a scale-bearing member, a slide sleeve of transparent plastic material embracing the scale-bearing member with a loose sliding fit thereon and provided with an index to register with a reading to be taken from a scale on the member, and a body of rubber secured to and supported by the sleeve with a portion of the rubber in frictional contact with the scale-bearing member to resist the displacement of the slide from a preset position relative to the scale-bearing member and another portion of the body extending outwardly of the sleeve and away from the member to provide a lateral projection thereon.

8. A measuring device comprising a scale-bearing member, a sleeve embracing the member and movable longitudinally thereof, said sleeve having an index to register with the reading to be taken from the scale-bearing member and also having an aperture beyond the index to expose a surface of the scale-bearing member, and a body of rubber operatively associated with the sleeve and extending laterally thereof with a part protruding inwardly through and beyond the aperture into frictional contact with the scale-bearing member and with another part extending outwardly of and beyond the aperture to form a lateral projection on the sleeve.

9. A slide for a carrying medium—such as a pencil or ruler—comprising a sleeve of plastic material having a passageway therethrough to receive the carrying medium with a loose sliding fit, and a body of rubber operatively associated with said sleeve to frictionally engage a surface of the carrying medium to retain the sleeve in a predetermined position on the carrying medium, said body having a protuberant portion extending laterally with respect to the sleeve.

10. A measuring device comprising a scale-bearing member, a transparent sleeve embracing the scale-bearing member with a loose sliding fit and having an index to register with a reading to be taken from a scale on the said member, said sleeve having a section of segmental cross section for exposing a circumferential area of the said member, and a body of rubber having an annular portion embracing the segmental section of the member and in frictional contact

with the said exposed circumferential area of the member to releasably hold the sleeve in a given position on the member, said annular portion having elements thereof extending away from the scale-bearing member to provide diametrically opposed projections.

11. A measuring device comprising a scale-bearing member, a sleeve of transparent plastic material embracing the scale-bearing member with a loose sliding fit and having an annular enlarged bulbous magnifying portion, a section of the said sleeve beyond the magnifying portion being of segmental cross section to expose a circumferential area of the scale-bearing member, an index associated with the sleeve to register with a reading to be taken from the scale-bearing member, and means releasably holding the sleeve in a given position on the scale-bearing member comprising an annular rubber body embracing the segmental section of the sleeve and in frictional contact with the said exposed area of the scale-bearing member, said body having protuberant portions extending laterally of the sleeve and respectively converging to a point at a substantial distance away from the sleeve.

12. A slide for a carrying medium—such as a pencil or ruler—comprising a sleeve of transparent plastic material provided with an annular enlarged bulbous magnifying portion and having a passageway therethrough to receive the carrying medium with a loose sliding fit, said sleeve also having a segmental section laterally of the bulbous portion for exposing a side area of the carrying medium, and a body of rubber having an annular portion embracing the segmental section of the sleeve and contracted thereon to frictionally engage a subjacent exposed area of the carrying medium, said annular portion having an integral protuberant component thereof extending laterally with respect to the said sleeve and converging to a point at a substantial distance away from the sleeve.

13. In a measuring device, the combination of a scale-bearing member, a slide sleeve having a loose fit on the said member and provided with an index to register with a reading to be taken from a scale on the member, a ring hinged upon an end of said sleeve for movement into and out of axial alignment with the sleeve, a cylindrical body of rubber carried by the ring and having portions extending beyond the opposite faces of the ring, and spring means normally urging said ring into axial alignment with the said sleeve to maintain an extended portion of the body in frictional contact with the scale-bearing member and thereby yieldably hold the sleeve in a given position on the scale-bearing member.

14. In a measuring device, the combination of a scale-bearing member, a slide sleeve having a loose fit on the said member and provided with an index to register with a reading to be taken from a scale on the member, an internally screw-threaded ring hinged upon an end of the said sleeve for movement into and out of axial alignment with the sleeve about an axis tangent to the sleeve, a cylindrical body of rubber screwed in said ring and extending beyond opposite faces of the ring, and spring means normally urging said ring into axial alignment with the said sleeve to maintain an axial alignment with the said sleeve to maintain an extended portion of the body in frictional contact with the scale-bearing member and thereby to yieldably hold the sleeve in a given position on the scale-bearing member.

15. A slide for a carrying medium—such as a pencil or ruler—comprising a sleeve having a

passageway there medium with a screw-threaded sleeve for movement with the said to the sleeve and the latter into a

