# United States Patent [19]

**James**

[11] **3,884,351**

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[54] **DRAWING CASE FOR ARCHITECTS AND THE LIKE**


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[21] Appl. No.: **480,209**

[52] **U.S. Cl.** ..... **206/225;** 40/85; 242/107 R

[51] **Int. Cl.** .. **A45c 11/24;** B65h 15/48; G09f 11/00

[58] **Field of Search** ..... 206/224, 225, 214; 242/107 R; 40/85



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*Primary Examiner*—Leonard Summer

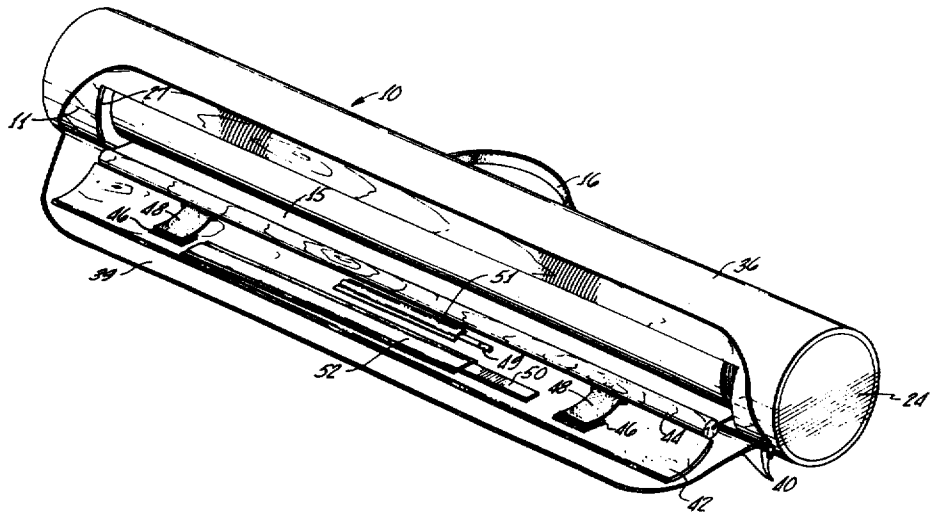
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[57] **ABSTRACT**

In a drawing case of the type including a rigid tubular body having a longitudinal slot therein, a self-winding spring-roller having an elongate sheet mounted thereabout, bracket means connected to the inside of the tubular body, at the opposite ends thereof, for supporting the ends of the roller to permit the sheet to reciprocate through the slot in the body, and first and second plugs mounted in the ends of the body for sealing same, the improvement wherein the width of the slot in the body is at least one half the diameter of the body and wherein the case includes a heavy, waterproof, sheet-like cover surrounding the body, the cover having a longitudinal slit therein, adjacent one side and the ends of the slot in the body, thereby forming a flap in the cover providing access to the slot; means for releasably attaching the flap to the cover to enclose the slot in the body; and an elongate, arcuate panel having approximately the same thickness as the tubular body and having the same dimensions as the slot therein, the panel being mounted on the inside surface of the flap so as to extend into the slot, coplanar with the body, thereby sealing the slot when the flap is attached to the cover.


**7 Claims, 5 Drawing Figures**



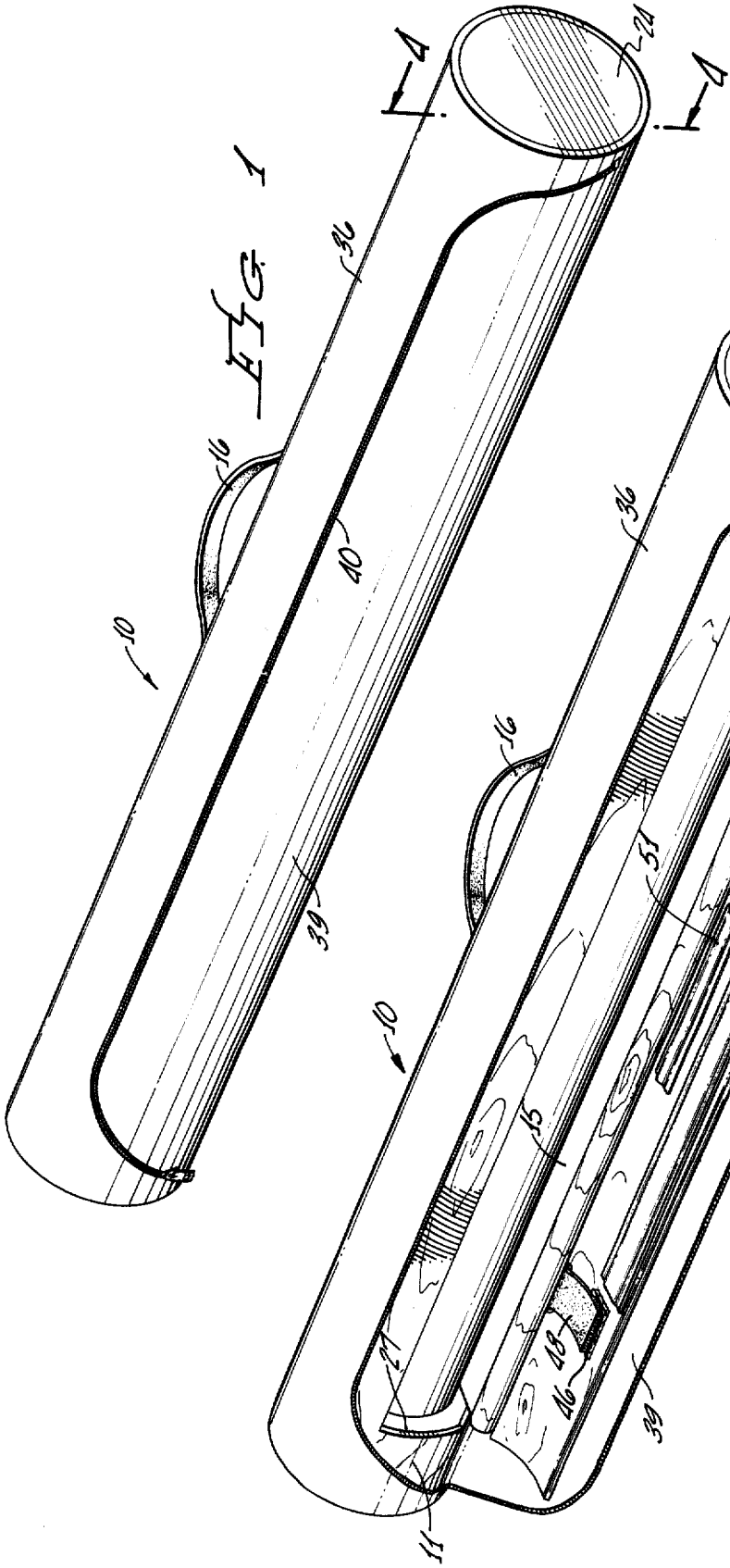

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FIG. 2

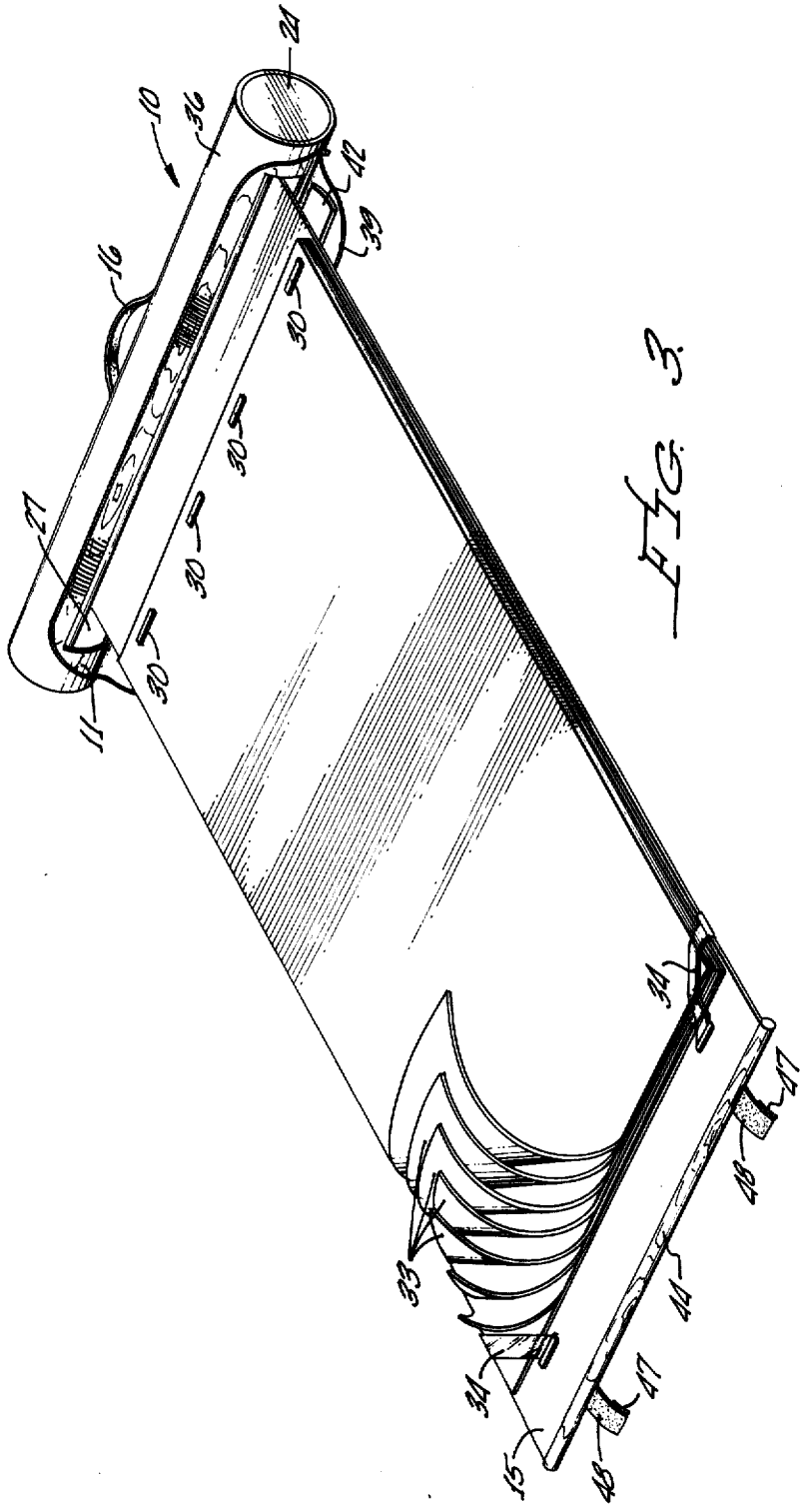



FIG. 3.

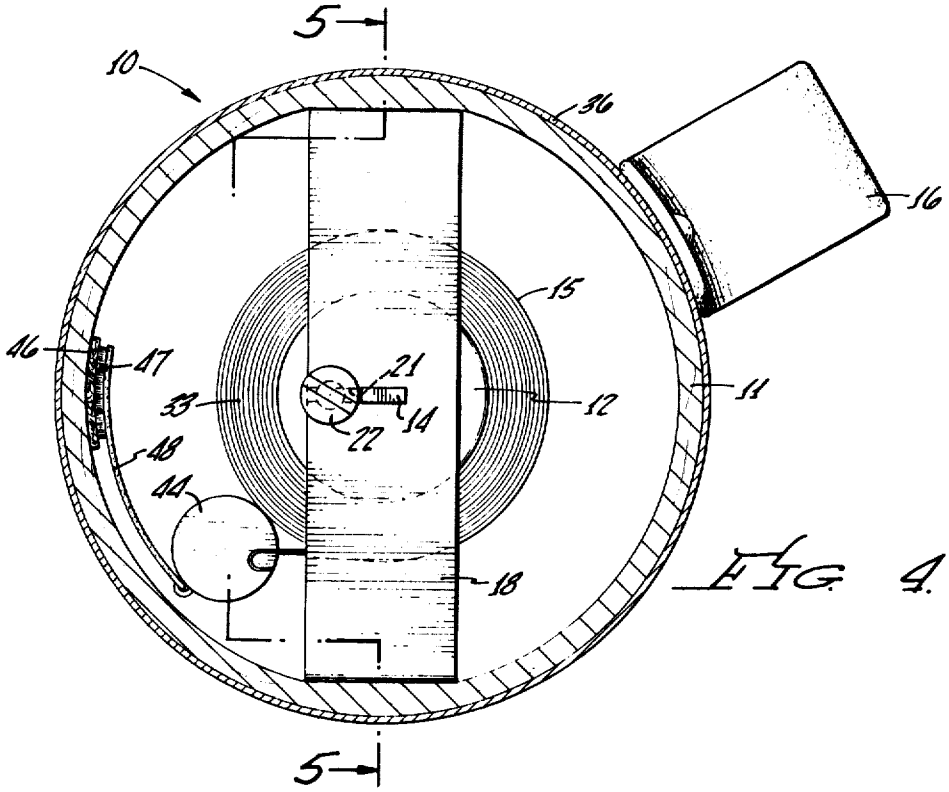

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FIG. 4.

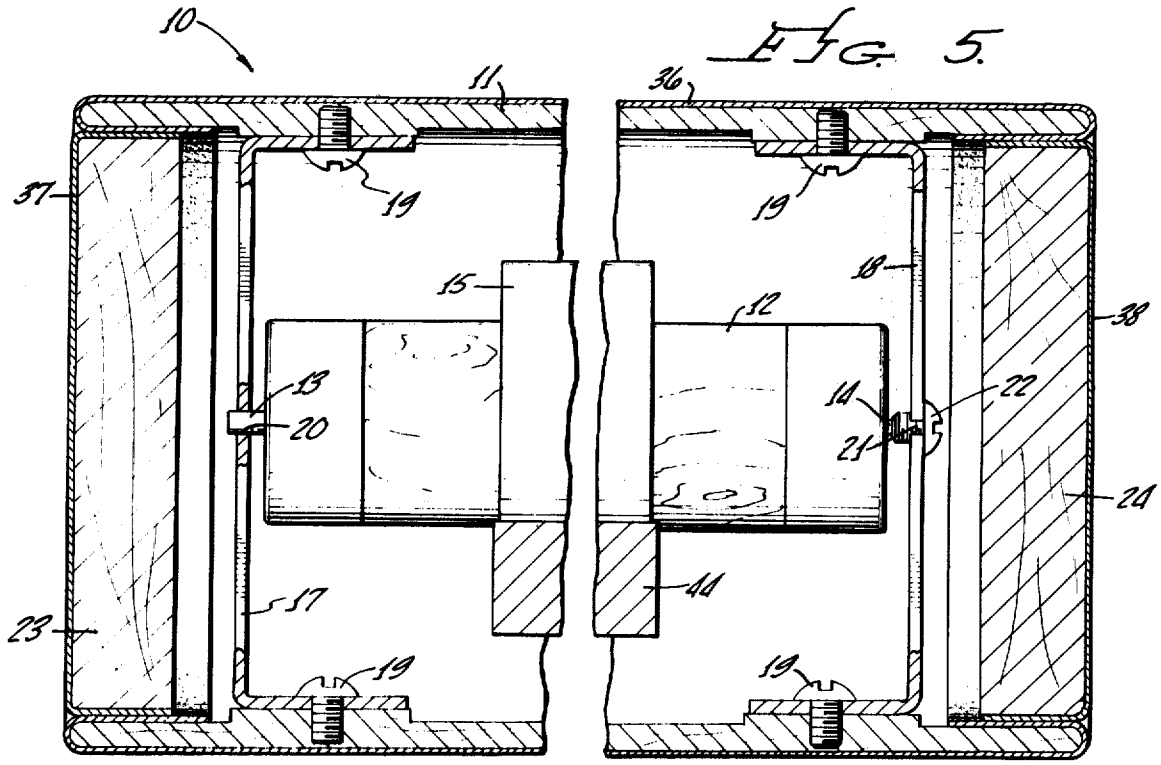

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FIG. 5.

# DRAWING CASE FOR ARCHITECTS AND THE LIKE

## BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a drawing case for architects and the like, and, more particularly, to an improved, waterproof, drawing case having the facility of carrying many and large drawings.

2. Description of the Prior Art

It has been known to provide a case for carrying drawings, maps, display articles, and the like. Such structures are disclosed in U.S. Pat. Nos. 498,187; 764,301; 764,997; 948,506; 971,319; 1,457,026; 1,614,957; 3,073,048; and 3,245,635.

As can be seen from an inspection of such patents, prior drawing cases generally include a rigid tubular body having a longitudinal slot therein, a self-winding spring-roller having an elongate sheet mounted therearound, bracket means connected to the inside of the tubular body, at the opposite ends thereof, for supporting the ends of the roller to permit the sheet to reciprocate through the slot in the body, and first and second plugs or other terminating members mounted in the ends of the body for sealing same. On the other hand, prior art drawing cases are distinguishable primarily on the basis of the purpose for which they were designed. Thus, many of the drawing cases shown in the earlier patents were primarily intended for incorporation into a cane structure which would adapt such cane for use as a receptacle for guides, maps, flags, and various other articles of display or reference. Other drawing cases were designed as mailing tubes, portable map cases, pull out display devices, and the like.

In addition to those common characteristics discussed above, all known prior drawing cases have still other characteristics which limit their usefulness to a relatively small number of applications. More specifically, none of the drawing cases designed heretofore have the capacity of carrying a large number of drawings and large drawings of the type which would be carried, for example, by an architect or builder when visiting a construction site. Furthermore, essentially all prior drawing cases have narrow slots in the body and the free end of the sheet remains outside of the body to provide ready access to the sheet. However, with such a construction, the size of the opening is simply not large enough to handle a large numder of drawings as well as not permitting ready removal of the roller for changing thereof. Furthermore, the slot in the body remains open at all times and this subjects the drawings therein to the effects of the elements. When it is recognized that an architect or builder will often take many drawings out to a construction site, under dirty or muddy conditions, with adverse weather factors, it is recognized that some means must be provided for protecting the drawings from these adverse environmental conditions. However, this has not been considered heretofore.

## SUMMARY OF THE INVENTION

According to the present invention, there is provided a drawing case which solves these problems in a manner unknown heretofore. The present drawing case has the capability of carrying a large number of drawings and a large number of large drawings of the type used for blueprints by architects, builders, geologists, surveyors, salesmen, boatsmen, and the like. This is achieved by providing a carrying case in which the width of the slot in the body is at least one half the diameter of the body to provide access for such a large number of drawings. Furthermore, the present drawing case has the facility to be completely sealed so as to protect the contents thereof from all adverse environmental conditions. Finally, the present drawing case has the capability of incorporating therein many of the instruments that an architect or builder requires when in the field.



Briefly, the present invention is an improvement in a drawing case of the type including a rigid, tubular body having a longitudinal slot therein, a self-winding spring-roller having an elongate sheet mounted therearound, bracket means connected to the inside of the tubular body, at the opposite ends thereof, for supporting the ends of the roller to permit the sheet to reciprocate through the slot in the body, and first and second plugs rigidly mounted in the ends of the body for sealing same. In the improved construction, the width of the slot in the body is at least one half the diameter of the body and the case includes a heavy, waterproof, sheet-like cover surrounding the body, the cover having a longitudinal slit therein adjacent one side and the ends of the slot in the body thereby forming a flap in the cover to provide access to the slot, a zipper for releasably attaching the flap to the cover to enclose the slot in the body, and an elongate, arcuate panel having approximately the same thickness as the tubular body and having the same dimensions as the slot therein, the panel being mounted on the inside surface of the flap so as to extend into the slot, coplanar with the body, thereby sealing the slot when the flap is attached to the cover. According to other embodiments of the present invention, the back of the sheet is made into a chalk board so that the user can make drawings and sketches in the field. Furthermore, the inside surface of the arcuate panel provides means for mounting instruments such as a pen, scale, chalk or an eraser for use by an architect or the like when in the field.

## OBJECTS

It is therefore an object of the present invention to provide a drawing case for architects and the like.

It is a further object of the present invention to provide an improved, waterproof, drawing case having the facility to carry many and large drawings.

It is a still further object of the present invention to provide a drawing case which protects the contents thereof from adverse environmental conditions.

It is another object of the present invention to provide a drawing case which provides an architect or the like with many of the drawings and instruments that he requires when in the field.

Still other objects, features and attendant advantages of the present invention will become apparent to those skilled in the art from a reading of the following detailed description of the preferred embodiment constructed in accordance therewith, taken in conjunction with the accompanying drawings wherein like numerals designate like parts in the several figures and wherein:

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a drawing case for architects and the like constructed in accordance with the teachings of the present invention, shown in the closed position;

FIG. 2 is a perspective view of the drawing case of FIG. 1 with the flap shown open;

FIG. 3 is a perspective view of the drawing case of FIG. 1 with the flap shown open and the sheet in its extended position;

FIG. 4 is an enlarged sectional view taken along the line 4—4 in FIG. 1; and

FIG. 5 is a sectional view taken along the line 5—5 in FIG. 4, with portions broken away.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, there is shown a drawing case for architects and the like, generally designated **10**. Drawing case **10** includes a rigid, tubular, cylindrical, open-ended body **11** which may be made from wood, plastic, or any other suitable material having strength and durability characteristics which are compatible with the purpose for which case **10** will be used. Since drawing case **10** is designed primarily for use by an architect, builder, geologist, surveyor, salesmen, boatsmen, and the like, for transportation of a large number of drawings, blueprints, maps, charts, and the like, body **11** preferably has an inside diameter of approximately 4 inches and a length of approximately 30 inches.

Mounted within body **11**, in a manner to be described more fully hereinafter, is a self-winding spring-roller **12** of the type generally used for window shades and the like. Thus, spring-roller **12** incorporates pins **13** and **14** at the opposite ends thereof, pin **13** having a circular cross-section and pin **14** having a rectangular cross-section. Spring-roller **12** has an elongate sheet **15** mounted therearound in the same manner as a conventional window shade is wrapped around a roller such as spring-roller **12**. In the present case, however, sheet **15** is made from a heavy duty vinyl material to support the weight of drawings mounted thereon, as will be explained more fully hereinafter.

Referring primarily to FIGS. **4** and **5**, pins **13** and **14** at the opposite ends of spring-roller **12** are supported by brackets **17** and **18**, respectively, connected to the inside of body **11**, at the opposite ends thereof. More specifically, brackets **17** and **18** may be generally U-shaped members, the opposite ends of which are connected to the inside of body **11** by conventional means, such as screws **19**. Bracket **17** has a circular hole **20** therein for receipt of pin **13** whereas bracket **18** has a slot **21** therein for receipt of pin **14**. Thus, slot **21** prevents rotation of pin **14** when spring-roller **12** is rotated, thereby actuating the internal spring mechanism, not shown. In order to prevent the undesired removal of pin **14** from slot **21**, the outer end of slot **21** may be threaded so as to receive a bolt **22**. However, it will be apparent to those skilled in the art that by removing bolt **22**, pin **14** may be removed from slot **21** permitting removal of spring-roller **12** from body **11**.

In order to seal the opposite ends of body **11**, case **10** includes first and second disc-shaped plugs **23** and **24** which have approximately the same diameters as the inside diameter of body **11**. Plugs **23** and **24** are adapted to be positioned in the ends of body **11**, adjacent brackets **17** and **18**, respectively, and to be retained therein by the friction therebetween.

As shown most clearly in FIGS. **2** and **3**, body **11** has a longitudinal slot **27** therein having approximately the same length as spring-roller **12**. As known in the prior art, spring-roller **12** permits sheet **15** to reciprocate through slot **27** in body **11**. On the other hand, and in accordance with the teachings of the present invention, the width of slot **27** in body **11** is at least one half the diameter of body **11** and significantly larger than the diameter of spring-roller **12**. Thus, with plug **24** removed from body **11** providing access to bracket **18** and removal of bolt **22** from bracket **18**, spring-roller **12** may be readily removed from body **11** through slot **27**, for reasons which will appear more fully hereinafter. The dimension of body **11** and slot **27** given previously permit drawing case **10** to be used to support a large number of drawings and large drawings of the type which would be carried, for example, by an architect or builder. In order to support such drawings on sheet **15**, sheet **15** incorporates, adjacent the end thereof attached to spring-roller **12**, suitable means for attachment to first ends of the drawings. More specifically, and as shown most clearly in FIG. **3**, sheet **15** may support a plurality of aligned fasteners **30** at the end thereof attached to spring-roller **12**, fasteners **30** being of the type including a pair of flexible, spaced arms adapted to extend into spaced holes in one or more drawings **33**. As shown in FIG. **3**, a large number of drawings **33** may be stacked together and, in this manner, connected to sheet **15**. Furthermore, in order to contain the corners of drawings **33**, sheet **15** may have connected to the front surface thereof two strips of material **34** so positioned to extend across the corners of drawings **33**.

According to the present invention, drawing case **10** includes a heavy, waterproof, sheet-like cover **36** which surrounds body **11**, cover **36** preferably being made from a heavy duty vinyl material. Cover **36** may be wrapped around and secured to body **11** in any convenient manner. Furthermore, plugs **23** and **24** would preferably be covered separately, as shown at **37** and **38**, respectively, before being inserted into body **11**.

As shown most clearly in FIG. **2**, cover **36** has a longitudinal slit therein adjacent one side and the ends of slot **27** in body **11** thereby forming a flap **39** in cover **36** providing access to slot **27**. In order to releasably attach flap **39** to cover **36** to enclose slot **27**, a zipper **40** is connected to the edges of cover **36** and flap **39**, on opposite sides of the slit.

Still referring to FIG. **2**, case **10** includes an elongate, arcuate panel **42** having approximately the same thickness as body **11** and having the same dimensions as slot **27** therein. Panel **42** is mounted on the inside surface of flap **39**, such as by gluing the two members together, panel **42** being positioned so as to extend into slot **27**, coplanar with body **11**, thereby sealing slot **27** when flap **39** is attached to cover **36** by means of zipper **40**.

Connected to the free end of sheet **15** is a stiffening member **44**, such as a cylindrical piece of wood or plastic. Stiffening member **44** permits sheet **15** to be readily grasped and pulled through slot **27**. Furthermore, drawing case **10** includes means for releasably attaching stiffening member **44** and the free end of sheet **15** to be inside surface of panel **42** to prevent the undesired unwinding of the spring mechanism within spring-

roller 12. Such releasable attaching means preferably comprises one or more pads 46 of Velcro attached to the inside surface of panel 42 and one or more matching pads 47 of Velcro attached to first ends of tabs 48, the other ends of which are connected to stiffening member 44. Thus, and as shown in FIG. 2, when sheet 15 is wound on spring-roller 12, pads 47 are aligned with pads 46 and the two may be readily interconnected. On the other hand, pads 47 may be separated from pads 46 in a manner well known to those skilled in the art.

Drawing case 10 may include a member of other features rendering it ideally suited for use by an architect, geologist, surveyor, salesmen, boatsmen, and the like in transporting blueprints, drawings, maps, charts, and the like. More specifically, body 11 may have an integral handle 16 on the side thereof opposite zipper 40. The back surface of sheet 15 may be sprayed with a chalk board paint or sheet 15 may simply be made from a black material to provide a writing surface for use by an architect or the like in making sketches and drawings when in the field. Finally, the inside surface of panel 42 provides an ideal location for mounting a pen or pencil 49 and a scale 50, which elements may be mounted by the provision of a pair of pockets 51 and 52, respectively, or other suitable mounting means. Alternatively, pockets 51 and 52 may permit the mounting of a piece of chalk and an eraser or any other convenient instrument.

## OPERATION

Because of the size of drawing case 10, it has the capability of carrying a large number of drawings 33 and drawings of the type used for blueprints by architects, builders, and the like. Such drawings 33 may be readily attached to sheet 15 by punching sets of holes therein using conventional hole punchers and by fastening drawings 33 to fasteners 30. Heavy vinyl sheet 15 readily supports the weight of twenty or more large sheets of drawings 33. Furthermore, strips 34 hold the corners of drawings 33 against sheet 15 so that spring-roller 12 may be readily operated.

Because of the size of slot 27 in body 11, the large number of drawings 33 may readily reciprocate therethrough with sheet 15. Furthermore, if an architect has a number of sets of drawings and wishes to change the set of drawings, it is possible to readily do this without removing drawings 33 from sheet 15. More specifically, by removing plug 24 from body 11, bolt 22 may be removed from bracket 18 permitting removal of pin 14 from slot 21 and subsequent removal pin 13 from hole 20 in bracket 17. Thereafter, spring-roller 12 may be removed from body 11 through slot 27 and a different spring-roller 12 with drawings already attached repositioned within body 11.

Drawing case 10 has the facility to be completely sealed so as to protect the contents thereof from all adverse environmental conditions. More specifically, in order to manipulate sheet 15 from the open position shown in FIG. 3 to the closed position shown in FIG. 2, it is only necessary to grasp stiffening member 44 and pull sheet 15 so as to release the spring mechanism within spring-roller 12. As sheet 15 is wound on spring-roller 12, stiffening member 44 readily passes through slot 27 to a position inside body 11. At this time, pads 47 on tabs 48 are aligned with tabs 46 on panel 42 and the two may be readily interconnected to releasably attach the free end of sheet 15 to panel 42. Thereafter, flap 39 is folded over the closed position, automatically extending panel 42 into slot 27 in body 11. Thereafter, zipper 40 may be manipulated to seal the slit in cover 36. Heavy vinyl cover 36 essentially seals and waterproofs body 11, protecting the contents thereof from all adverse environmental conditions. Panel 42 seals slot 27 providing a backing for cover 36 in the vicinity of slot 27, preventing an accidental puncturing of cover 36 which might occur if cover 36 had no backing in the area of slot 27.

Drawing case 10 includes a number of other features rendering it ideally suited for use by an architect or other user in transporting blueprints or other drawings 33. With sheet 15 in the open position, shown in FIG. 3, the back surface thereof provides a chalk board providing a convenient writing surface. In addition, if changes are to be made to drawings 33, pen 49 and scale 50 are readily available in pockets 51 and 52 mounted on panel 42. Finally, handle 16 provides a convenient means for holding case 10.

While the invention has been described with respect to a preferred physical embodiment constructed in accordance therewith, it will be apparent to those skilled in the art that various modifications and improvements may be made without departing from the scope and spirit of the invention. Accordingly, it is to be understood that the invention is not to be limited by the specific illustrative embodiment, but only the scope of the appended claims.

I claim:

1. In a drawing case of the type including a rigid tubular body having a longitudinal slot therein, a self-winding spring-roller having an elongate sheet mounted therearound, bracket means connected to the inside of said tubular body, at the opposite ends thereof, for supporting the ends of said roller to permit said sheet to reciprocate through said slot in said body, and first and second plugs mounted in the ends of said body for sealing same, the improvement comprising:

a heavy, waterproof, sheet-like cover surrounding said body, said cover having a longitudinal slit therein adjacent one side and the ends of said slot in said body thereby forming a flap in said cover providing access to said slot;

means for releasably attaching said flap to said cover to enclose said slot in said body; and

an elongate, arcuate panel having approximately the same thickness as said tubular body and having the same dimensions as said slot therein, said panel being mounted on the inside surface of said flap so as to extend into said slot, coplanar with said body, thereby sealing said slot when said flap is attached to said cover.

2. In a drawing case according to claim 1, the improvement wherein said means for releasably attaching said flap to said cover comprises:

a zipper connected to the edges of said cover and said flap, on opposite sides of said slit.

3. In a drawing case according to claim 1, the improvement further comprising:

means for releasably attaching the free end of said elongate sheet to the inside surface of said arcuate panel.

4. In a drawing case according to claim 3, the improvement wherein said sheet attaching means comprises:

a first pad of Velcro attached to the inside surface of said arcuate panel;

at least one tab, one end of said tab being connected to the free end of said sheet; and

a second pad of Velcro attached to the other end of said tab in position to be aligned with said first Velcro pad for attaching to said same when said sheet is wound around said spring-roller.

5. In a drawing case according to claim 1, the improvement wherein the width of said slot in said body is at least one half the diameter of said body, and wherein said ends of said roller are releasably supported by said bracket means permitting removal of said roller through said slot in said body.

6. In a drawing case according to claim 1 wherein said sheet includes a fastening means positioned adjacent the end thereof connected to said spring-roller for mounting one or more drawings on one side of said sheet, the improvement wherein the other side of said sheet is a chalk board to provide a writing surface.

7. In a drawing case according to claim 1, the improvement further comprising:

means connected to the inside surface of said arcuate panel for mounting writing instruments thereon.

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