FIELD OPTIC MAINTENANCE KIT

A portable field optics maintenance kit fit into the form of a cloth wallet. An easily portable compact wallet accessory to properly maintain and clean optics that are used in the field away from where most optics cleaning kits are stored.
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CROSS-REFERENCES TO RELATED APPLICATIONS


FIELD OF THE INVENTION

[0002] This disclosure relates to the maintenance of portable field optics.

BACKGROUND OF THE INVENTION

[0003] Field optics may require thorough cleaning while in use in. When field optics become dirty they may become unusable until properly cleaned. In particular those field optics include eyeglasses, sunglasses, binoculars, scopes, cameras, computer screens, and rifle scopes. These devices need to maintain efficiency not only for everyday use but also during outdoor activities such as hunting, hiking, fishing, and snow mobiling. If improperly cleaned the quality of the field optics may become compromised. A field optics maintenance and cleaning device with the necessary equipment to achieve a thorough and proper cleaning and that is small enough and easily portable so as to be able to comfortably carry on your person for everyday use would be desirable.

SUMMARY OF THE INVENTION

[0004] The proposed invention is a complete field optics maintenance kit enclosed in a cloth wallet. Accordingly, the maintenance kit must be sufficiently portable for the user to easily carry for everyday use and provide the cleaning reliability for outdoor activities. In addition to portability the present invention provides a maintenance kit that is small and light and sufficiently compact so as to comfortably fit into a person’s pocket. The cloth wallet generally includes a wallet with a foldable fabric insert. In one embodiment the exterior of the wallet may be connected to an elastic retainer to ensure the contents of the maintenance kit remain enclosed in the maintenance kit during the outdoor activities. In one aspect the wallet may also include pouches to dispose of maintenance equipment. The maintenance equipment can be easily removed for use from the exterior pouches of the maintenance kit. In one embodiment the maintenance equipment stored in the cavities comprises a cleaning brush, cotton swabs, and a cleaning solution dispenser. The proposed invention is a compact and light optics cleaning kit and may be referred to as a pocket optics cleaning kit.

[0005] The wallet geometry is suitable for outdoor activities to easily fit into pockets of the user during the said activities. Securement of the wallet-shaped maintenance kit within the user’s pocket allows for easy access and will prevent accidental dislodgement or loss. In one embodiment, the kit may be secured to one or more keys or a key chain.

[0006] In addition to the maintenance devices described herein, the proposed invention proposes a portable method for cleaning and properly maintaining field optics devices. This method includes the proper use of the cleaning brush, the cleaning solution, cotton swabs, and the cleaning fabric or cotton swabs.

[0007] The more important features of the invention have thus been outlined in order that the more detailed description that follows may be better understood and in order that the present contribution to the art may better be appreciated. Additional features of the invention will be described hereinafter and will form the subject matter of the claims that follow.

[0008] Many objects of this invention will appear from the following description and appended claims, reference being made to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

[0009] Before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

[0010] As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a front elevation of a wallet accessory fully open and unfolded according to one embodiment of the field optic maintenance kit.

[0012] FIG. 2 is a side elevation of the wallet accessory of FIG. 1.

[0013] FIG. 3 is a rear elevation of the wallet accessory of FIG. 1.

[0014] FIG. 4 is a front perspective view of the wallet accessory of FIG. 1.

[0015] FIG. 5 is a rear perspective view of the wallet accessory of FIG. 1.

[0016] FIG. 6 is a front elevation of one embodiment of a cleaning solution dispenser for use with the present invention.

[0017] FIG. 7 is an exploded side elevation of the dispenser of FIG. 6.

[0018] FIG. 8 is an exploded rear view of the dispenser of FIG. 6.

[0019] FIG. 9 is a top plan view of the dispenser of FIG. 6.

[0020] FIG. 10 is an exploded plan view of the dispenser of FIG. 6.

[0021] FIG. 11 is a front elevation of one embodiment of a brush for use with the present invention.

[0022] FIG. 12 is a sectional view of the brush of FIG. 11.

[0023] FIG. 13 is a front elevation of one embodiment of a brush case for use with the present invention.

[0024] FIG. 14 is a rear elevation of the brush case of FIG. 13.

[0025] FIG. 15 is a sectional view of the brush case of FIG. 13.

[0026] FIG. 16 is a perspective view of a brush assembly formed by the brush of FIG. 11 nested within the brush case of FIG. 13.

[0027] FIG. 17 is a top plan view of the brush assembly of FIG. 16.
FIG. 18 is a front elevation of one embodiment of a field optic maintenance kit according to the teachings of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

A field optics maintenance kit herein presented offers features with the different illustrative embodiments. It should be noted that the articles “a”, “an”, and “the”, as used in this specification, include plural referents unless the context clearly dictates otherwise.

FIGS. 1-5 show several views of the wallet accessory 100 of the optics field maintenance kit. The wallet accessory 100 may be a bi-fold wallet and may comprise materials such as fabrics. According to one embodiment the wallet accessory 100 may include an elastic retainer 113 to partially encase the wallet when the cleaning fabric 111 and wallet exterior 112 are in a folded disposition. In another embodiment the elastic retainer 113 may wrap around the wallet accessory 100 to fasten the wallet accessory 100 together. Additionally the pouches 114 may be connected to the cloth wallet accessory 100 for securment and storage of maintenance equipment. In one embodiment the pouches 114 are formed by an interior cloth member fastened to the wallet exterior 112 and may be disposed on the interior side of the cloth wallet accessory 100 while in another embodiment the pouches maybe disposed on the exterior of the cloth wallet accessory 100. In one embodiment the cleaning fabric 111 is adhered to the wallet accessory 100 by stitching the cleaning fabric 111 to the wallet accessory 100. Additionally the cleaning fabric 111 may be sewn to the interior hinge of the wallet accessory 100, where the connection from the cleaning fabric 111 extends along the majority of the length of the wallet accessory 100.

Other embodiments of the wallet accessory 100 may include a tri-fold wallet, a rolled wallet, and such. In one embodiment the wallet accessory 100 may be retained in a folded position by an elastic retainer 113. The elastic retainer 113 may be a sleeve, pocket, band, and the like retain or fold the wallet. Additionally the elastic retainer 113 may be sewn to the wallet accessory 100. In one embodiment the elastic retainer 113 may be sewn to the interior of the wallet accessory. In another embodiment (not shown) the elastic retainer 113 may be sewn to the exterior of the wallet accessory. Depending upon the embodiment of the elastic retainer 113 to maintain a folded position of the wallet accessory the elastic retainer 113 may be pulled over the back of the wallet exterior 112 to engage the closed position of the wallet accessory 100.

Additionally the connections between the cleaning fabric 111 and the wallet exterior 112 are sewn together rather than using other means that may defect such as Velcro, buttons, ties, pull strings, and the such to limit the possibility of sudden loss of use of the optic field maintenance kit while performing the outdoor activity. The cleaning fabric 111 may be folded within the wallet accessory 100 and therefore fill less volume than being bunched into a ball.

The wallet accessory 100 may have an attachment 115 secured to the edge; a loop, snap, clip, key chain, and such. The attachment shown in FIG. 18 is a cord loop 115. In one embodiment this attachment 115 may secure objects to the cloth accessory while in another embodiment the attachment 115 may attach the wallet accessory 100 to an object. In various embodiments the of wallet accessory 100 an object may be joined to the attachment 115. In the embodiment shown in FIG. 18, a snap clip is representative of the joining object 116. In this embodiment the joining object 116 may be used to join the wallet accessory with a variety of places for the user to secure securment while otherwise engaged. It is appreciated that the exemplary loop attachment 115 and joining clip 116 are one embodiment of the present invention.

The wallet exterior 112 may be made of any fabric material suitable to withstand temperature and humidity conditions. In another embodiment, the solution container 211 may dispense the solution by spraying or misting. While outdoors it is preferred to have a material that can repel excess water from saturating the cleaning fabric 111. In one embodiment the cleaning fabric 111 may be made of any material suitable for cleaning optical lenses such as microfiber cloths. In one embodiment the wallet exterior 112 may be a neoprene fabric in another embodiment the wallet exterior 112 may be a microfiber cloth.

FIGS. 6-10 illustrate several views of the cleaning solution dispenser according to one aspect of the field optic maintenance kit. According to one embodiment the cleaning solution dispenser 200, is disposed within the exterior pouch 114. In one embodiment the solution dispenser 200 comprises a solution container 211, a nozzle tip 212, and a nozzle cap 213. Additionally the nozzle cap 213 may screw on the nozzle tip 212 actuating a closed orientation of the solution container 211 to prevent cleaning solution leakage.

In one embodiment the solution container 211 may dispense a liquid while in another embodiment it may dispense a gel or a paste. In one embodiment the solution container 211 may dispense the solution in drops. In another embodiment the solution container 211 may dispense the solution in a stream. The solution container 211 may be made of suitable materials that are squeezable, able to hold liquid, and are light; such as plastics and metals. In one embodiment suitable materials for the nozzle tip 212 and the nozzle cap 213 are of similar materials to the solution container, in another embodiment the materials are altered for more preferable results.

FIGS. 11-17 illustrate several views of the brush assembly according to one aspect of the field optic maintenance kit. The brush assembly 300 comprises of the brush 310 and the brush case 320. Details of the brush 310 are more easily seen in the sectional view of the brush FIG. 12. The brush grip 312 is used to extend or retract the brush with in the brush case 320. The brush body 313 is disposed within the brush case and is connected to the brush handle and the brush bristles 314. The brush bristles 314 extend beyond the brush case 320 when in the fully extended position allowing for use of the brush bristles 314. When contracted the brush bristles 314 are fully encased within the brush case 320. The brush case 320 can be seen in the sectional view FIG. 15 and the bottom view FIG. 14. Two views of the brush assembly 300 with the brush fully enclosed within the brush case are the angled view FIG. 16 and the top view FIG. 17. In another embodiment (not shown) the brush 310 is not disposed within a brush case 320. In yet another embodiment of the present invention the brush 310 is exposed from the brush case 320 by another mechanism other than sliding out; opening, twisting, clicking, and such.

In one aspect the brush assembly 300 is to remove unwanted debris from the field optic lens being cleaned. In this aspect suitable materials for the brush bristles 314 are materials that are stiff enough to remove the debris, but are
also not damaging to the optic lens being cleaned. Further suitable materials for the brush case 320, brush grip 312, and the brush body 313 are materials that are sturdy and light. 

Although the present invention has been described with reference to preferred embodiments, numerous modifications and variations can be made and still the result will come within the scope of the invention. No limitation with respect to the specific embodiments disclosed herein is intended or should be inferred.

1 claim:

1. A field optic maintenance kit comprising:
an exterior member resembling the geometry of a wallet;
an elastic enclosing device attached to the exterior member;
an interior cloth member attached along the majority of one edge to the exterior member;
at least one internal member attached to the exterior member, thereby forming at least one pouch; and
at least one portable optic cleaning tool.

2. The field optic maintenance kit of claim 1 wherein the exterior member is made of a material selected from the set of materials comprising neoprene and microfiber.

3. The field optic maintenance kit of claim 1 wherein the at least one internal member is made of a material selected from the set of materials consisting of neoprene, elastic fabric, and microfiber.

4. The field optic maintenance kit of claim 1 wherein the interior cloth member is made of microfiber material.

5. The field optic maintenance kit of claim 1 wherein the interior cloth member is water retaining.

6. The field optic maintenance kit of claim 1 wherein cloth accessory may be folded up disposing the interior cloth member within the exterior member in a manner resembling a wallet and then may be unfolded revealing the interior cloth member.

7. The field optic maintenance kit of claim 1 wherein the portable at least one optic cleaning tools is selected from the set of tools consisting of a brush, a cleaning solution dispenser, and cotton swabs.

8. The field optic maintenance kit of claim 7 wherein the at least one optic cleaning tool fits within the at least one pouch.

9. A cloth accessory comprising:
an exterior member resembling the geometry of a wallet;
and
an elastic enclosing device attached to the exterior member; and
an interior cloth member attached along the majority of one edge to the exterior member; and
at least one internal member attached to the exterior member, thereby forming at least one pouch.

10. The field optic maintenance kit of claim 9 wherein the exterior member is made of a material selected from the set of materials comprising neoprene and microfiber.

11. The field optic maintenance kit of claim 9 wherein the at least one internal member is made of a material selected from the set of materials consisting of neoprene, elastic fabric, and microfiber.

12. The field optic maintenance kit of claim 9 wherein the interior cloth member is made of microfiber material.

13. The field optic maintenance kit of claim 9 wherein the interior cloth member is water retaining.

14. The field optic maintenance kit of claim 9 wherein cloth accessory may be folded up disposing the interior cloth member within the exterior member in a manner resembling a wallet and then may be unfolded revealing the interior cloth member.