The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

The present invention pertains to a novel quick-release holder for various objects that can be suspended, such as, for example, periscopes in combat tanks, fire extinguishers, tools and the like.

The object of the invention can best be described in connection with the periscope in a combat tank. The periscope is usually suspended in the tank in such a position that it impedes certain infrquent but necessary movements of personnel within the tank or egress from the tank. In such cases it is desirable that the periscope be quickly removable from its support and quickly replaceable in position. In the event that the exposed portion of the periscope becomes damaged, it is highly desirable to remove the periscope quickly and insert a new one. Similarly, in case the tank must be abandoned, the periscope can be carried away if it is quickly and easily releasable from its mounting.

The importance of a quick-release holder of like character for other objects such as fire extinguishers or tools will be evident.

Illustrative embodiments of the invention are illustrated in the accompanying drawings and described by use of corresponding reference numerals. In the drawings:

Figure 1 is a plan view of the holder mounted on a support;
Figure 2 is a section on the line 2—2 of Figure 1;
Figure 3 is a plan view of a modified construction;
Figure 4 is a diametrical section thereof, showing the holder in elevation, and
Figure 5 is a similar section showing the parts in open position.

The numeral 1 represents a suitable supporting member such as, for example, a horizontal wall of a combat tank through which a periscope is to be projected. It will be understood, however, that the invention is useful for supporting objects of various types as indicated above. The member 4 is formed with an opening 2 through which the periscope, in this case, is to be projected. Each of two opposite walls 3 of the opening 2 supports a quick-release holder. Inasmuch as the holders are identical, only one of them need be described in detail.

In the embodiment shown in Figures 1 and 2, a retaining member 4 is pivotally attached at 5 to the wall 3. The member 4 has an open cavity 6 beneath which is formed a projecting lip 7 for a purpose that will presently be described. The periscope 8 carries laterally extending pinnles 9 on opposite walls, and each pittle is adapted to be received in one of the cavities 6.

Adjacent to the open side of the member 4, a latch or retaining member 10 is elastically supported in a manner to move towards and away from the member. The supporting means may consist, for example, of a shoe 10' secured to the wall 3 by a pin 11 passing through a slot 11' in the latch to guide the latch in the desired movement. A spring 12 joins the latch to the support and normally moves the latch towards the member 4. The forward end of the latch 10 is also formed in the nature of a lip 13 preferably having its lower surface rounded at 14.

When the retaining member 4 is suspended as shown in dotted lines in Figure 2, the pittle 9 is readily inserted in the cavity 6. Upward pressure on the object 8 swings the member 4 upward so that the lip 7 rises on the surface 14 and moves the latch 10 rearward against the tension of the spring 12. When the lip 7 passes the surface 14, the lip 13 is drawn by the spring into interlocking engagement beneath the lip 7. The object 8 then hangs by its pittle 9 from the retaining member.

The latch 10 has a projecting portion or tab 15 extending across one of the vertical surfaces of the object 8. When the object is to be removed from the holder, it is first swung against the tab to release the latch from the lip 7 as shown in dotted lines in Figure 2. While the object is in this inclined position, a downward pull in the angular direction swings the retaining member 4 downwardly and withdraws the pittle from the cavity 6.

In the modification shown in Figures 3, 4 and 5, two retaining members 16 and 17 are pivotally mounted on the wall 3 by suitable pins or studs 18. These members are so positioned that the inward edges thereof, designated generally by the numeral 19, are normally in mutually abutting relation. Each edge is formed with a recess 20 so positioned that the recesses register with one another when the members 16 and 17 are in full abutting relation, thereby forming a closed cavity, inasmuch as the edges normally engage each other above and below the recesses as shown. Each member 16 and 17 is formed above its recess 20 with a gear segment 21. The segments are in mesh with each other so that rotation of either member will turn the other member in the
opposite direction, thereby opening or closing the cavity, as the case may be. The closed cavity is of such size as to contain a pintle 9.

Adjacent to the member 17 is pivotally mounted a latch 22 on a pin 23. The latch has a tooth 24 adapted to engage behind a shoulder 25 on the member 17 when the cavity is closed, thereby locking the members 16 and 17 in the closed position. The lower edge of the member 16 between the shoulder 25 and the recess 20 is formed as a cam 26 frictionally engageable by the latch 24 to hold the members 16 and 17 in the open position.

In the operation of the device as thus far described, it may be assumed that the parts in the open position and the pintle 9 moved upwardly into the open cavity. Pressure of the pintle against the top of either recess 20 swings the members 16 and 17 together. When the cam surface 26 passes the latch tooth 24, the latter snaps behind the locking shoulder 25 under the action of a spring 27 mounted in the support 1 and exerting pressure on the latch.

The free swinging end of the latch is formed with a tab 28 projecting across one of the vertical surfaces of the object 8. In removing the object, as in the previously described construction, the object is first swung against the tab to release the latch from the slot in the member 17 when the cavity is closed. A downward pull on the object 8 in the angular direction swings the member 17 outward, which movement also swings the member 16 outward through the gear segments 29. The latch tooth 24 then engages the surface 28 to hold the members 16 and 17 in the open position whereupon the object may be withdrawn from the open cavity. The holder is now positioned for insertion of the same or another object as already described.

The invention is not limited to the specific embodiment illustrated, and it is intended that various alterations in the details of construction may be incorporated without exceeding the scope of the invention as indicated by the annexed claims.

What I claim is:

1. In a quick-release holder, a support, a retaining member pivotally mounted thereon and having a cavity adapted to receive a pintle on an object to be supported, a latch movably mounted on said support relatively to the first member and engageable therewith in interlocking relation, resilient means normally holding the second member in interlocking engagement with said retaining member, said locking member having a portion positioned to be abutted by the supported object on swinging the latter, whereby to hold said locking member out of interlocking engagement with said retaining member.

2. In a quick-release holder, a support, a retaining member pivotally mounted thereon and having a cavity adapted to receive a pintle on an object to be suspended, a locking member movably mounted on said support relatively to said retaining member and adapted to project into engagement with a lower surface thereof to hold said retaining member against swinging downward, resilient means normally holding said locking member in its projected position relatively to said retaining member, said locking member having a portion positioned to be abutted by the supported object on swinging the latter, whereby to hold said locking member out of interlocking engagement with said retaining member.

3. In a quick-release holder, a support, a retaining member pivotally mounted thereon and having a cavity adapted to receive a pintle on an object to be suspended, a lip extending from said retaining member, a locking member movably mounted on said support relatively to said retaining member and adapted to project beneath said lip to hold said retaining member against swinging downward, resilient means normally holding said locking member in its projected position relatively to said retaining member, said locking member having a portion positioned to be abutted by the supported object on swinging the latter, whereby to hold said locking member out of interlocking engagement with said retaining member.

4. In a quick-release holder, a support, a pair of retaining members pivotally mounted on said support in normally edge-abutting relation, the abutting edges being formed respectively with registering complementary recesses therein, whereby to form a closed cavity adapted to receive a pintle on an object to be supported in the holder, said edges being spaced apart and open said cavity at the bottom for release of the pintle.

5. In a quick-release holder, a support, a pair of retaining members pivotally mounted on said support in normally edge-abutting relation, the abutting edges being formed respectively with registering complementary recesses therein, whereby to form a closed cavity adapted to receive a pintle on an object to be supported in the holder, meshing gears segments formed on said edges above recesses, a latch movably mounted on said support and adapted to interlock with one of said members, resilient means normally holding said latch against said member, said latch having a projecting portion positioned to be abutted by the supported object on swinging the latter, whereby to spread said members apart and open said cavity at the bottom for release of the pintle.

6. In a quick-release holder, a support, a pair of retaining members pivotally mounted on said support in normally edge-abutting relation, the abutting edges being formed respectively with registering complementary recesses therein, whereby to form a closed cavity adapted to receive a pintle on an object to be supported in the holder, said edges being spaced apart and open said cavity at the bottom for release of the pintle, the member adjacent to said latch having a portion engageable by said latch when in the open position, whereby to hold said members in the spread position.

ROBERT E. BIRDSALL.