

CONTAINER FOR RETICLE

BACKGROUND OF INVENTION

1. FIELD OF INVENTION

The present invention relates to a container for a reticle and, more particularly, to a container including an easy-to-dismantle locking unit.

2. RELATED PRIOR ART

Referring to Fig. 1, a conventional container includes a base 13 for supporting a reticle 14, a cover 11 for covering the reticle 14 and four buckles 12 for locking the cover 11 to the base 13. The base 13 includes four recesses 131 defined therein corresponding to the buckles 12. The cover 11 includes four cylinders 111 extended from an internal side corresponding to the buckles 12. A threaded bolt 122 is driven in a screw hole defined in each of the cylinders 111 and a related one of the buckles 12 through a crossbar 121. In use, the reticle 14 is located on the base 13. The cover 11 is mounted on the base 13. The buckles 12 are inserted in the recesses 131 so that the cover 11 is locked to the base 13. Thus, the reticle 14 is locked in the container. To take the reticle 14 from the container, the container is located on a machine 15 including robots for turning the buckles 12 from the recesses 131. Thus, the cover 11 can be moved from the base 13. Therefore, the reticle 14 can be taken from the container. However, the container would be stuck on the machine 15 should the latter fail. That is, the reticle 14 is stuck in the container. A user has to experience a lot of troubles to take away some parts of the machine 15 to release the container from the machine 15.

1 Later, the user can manually turn the buckles 12 from the recesses 131,
2 remove the cover 11 from the base 13 and take the reticle 14 from the
3 container.

4 The present invention is therefore intended to obviate or at least
5 alleviate the problems encountered in prior art.

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7 **SUMMARY OF INVENTION**

8 It is the primary objective of the present invention is to provide a
9 container including an easy-to-dismantle locking unit.

10 According to the present invention, a container includes a base for
11 supporting a flat object, a cover for covering the base and at least one
12 locking unit for locking the cover to the base. The base includes at least
13 one recess defined therein. The cover includes at least one aperture
14 defined therein. The locking unit includes a latch and at least one
15 fastener. The latch is disposed in the cover and can be inserted in the
16 recess so that the cover is locked to the base. The fastener is driven in
17 the latch through the aperture. Thus, the latch is pivotally connected to
18 the cover. Moreover, the fastener can easily be disconnected from the
19 latch with a tool from the exterior of the cover.

20 Other objectives, advantages and features of the present invention
21 will become apparent from the following description referring to the
22 attached drawings.

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24 **BRIEF DESCRIPTION OF DRAWINGS**

25 The present invention will be described via the detailed illustration of
26 the preferred embodiment in view of prior art referring to the drawings.

1 Fig. 1 is a perspective view of a conventional container for a reticle
2 and a machine for maneuvering a locking unit of the container.

3 Fig. 2 is an exploded partial view of a container for a reticle
4 according to the preferred embodiment of the present invention.

5 Fig. 3 is an exploded view of the container shown in Fig. 2.

6 Fig. 4 is a bottom view of the container shown in Fig. 3.

7 Fig. 5 is a perspective view of a machine for maneuvering a locking
8 unit of the container shown in Fig. 3.

9 Fig. 6 is a side view of the container shown in Fig. 3.

10 Fig. 7 is a side view of the container in another position than that is
11 shown in Fig. 6.

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13 **DETAILED DESCRIPTION OF PREFERRED EMBODIMENT**

14 Referring to Fig. 3, a container includes a base 7 for supporting a
15 reticle, an internal cover 6 for covering the reticle, an external cover 2 for
16 covering the internal cover 6 and locking units 3 for locking the external
17 cover 2 to the base 7 according to the preferred embodiment of the
18 present invention. The base 7 includes two recesses 71 in an edge and
19 two other recesses 71 in an opposite edge. The internal cover 6 is made
20 of metal and used as a shield against static discharge.

21 Referring to Fig. 2, the external cover 2 includes four apertures 21
22 each defined in a corner, two cutouts 22 defined in an edge, two other
23 cutouts 22 defined in an opposite edge and four cylinders 23 (Fig. 3)
24 extended from an internal side. Each of the apertures 21 is in
25 communication with a tunnel defined in a related one of the cylinders 23.
26 The cutouts 22 are located corresponding to the recesses 71.

1 Each of the locking units 3 includes a latch 31, an elastic element 32,
2 a restraining element 4 and a fastener 5. The latch 31 includes a ring
3 311 formed at an end, a tongue 312 formed at an opposite end, a slot 311
4 defined in the tongue 312 and a recess 314 defined therein between the
5 ring 311 and the tongue 312. The elastic element 32 is a torque spring
6 including a helical body and two substantially rectilinear arms extended
7 from the helical body.

8 The restraining element 4 includes a stem 41 formed thereon and a
9 nut 42 embedded therein. The nut 42 may be replaced with a screw hole
10 defined in the restraining element 4.

11 The fastener 5 is a threaded bolt includes an enlarged head in which a
12 hexagonal recess is defined for receiving an Allen key.

13 In assembly, the locking units 3 are disposed in the cover 2. The
14 rings 311 are provided on the cylinders 23. The fasteners 5 are inserted
15 through the apertures 21 and the rings 311 and engaged with the nuts 42.
16 Regarding each of the locking units 3, the helical body of the elastic
17 element 32 is provided on the stem 41, and one of the rectilinear arms of
18 the elastic element 32 is located against the latch 31 within the recess 314
19 while the other rectilinear arm is located against the internal side of the
20 external cover 2.

21 Referring to Fig. 4, the tongues 312 are retained in the recesses 71 by
22 the elastic elements 32 so that the external cover 2 is locked to the base 7.

23 Referring to Figs. 5 and 6, the container is located on a machine 9 for
24 maneuvering the locking units 3. Although not shown, the machine 9
25 includes four pins inserted in the slots 313. When the pins are moved,
26 the tongues 312 are removed from the recesses 71. Hence, the external

1 cover 2 can be removed from the base 7, and the reticle can be taken from
2 the container.

3 Referring to Fig. 7, should the machine 9 fails, a tip of an Allen key
4 could be inserted in the hexagonal recess of each of the threaded bolts 5
5 so that the threaded bolt 5 could be disengaged from a related one of the
6 nuts 42 by operating the Allen key. Thus, the locking units 3 could be
7 dismantled. The external cover 2 could therefore be removed from the
8 base 7, and the reticle from the container.

9 The locking units 3 of the container according to the present
10 invention could easily be dismantled with a tool such as an Allen key
11 should the machine 9 fail. It is obviously easier to dismantle the locking
12 units 3 than the machine 9.

13 The present invention has been described via the detailed illustration
14 of the preferred embodiment. Those skilled in the art can derive
15 variations from the preferred embodiment without departing from the
16 scope of the present invention. Therefore, the preferred embodiment
17 shall not limit the scope of the present invention defined in the claims.

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1 **CLAIMS**

2 1. A container comprising:

3 a base for supporting a flat object, the base comprising at least one
4 recess defined therein;

5 a cover for covering the base, the cover comprising at least one
6 aperture defined therein; and

7 at least one locking unit comprising:

8 a latch disposed in the cover for insertion in the recess so that the
9 cover is locked to the base; and

10 at least one fastener driven in the latch through the aperture so
11 that the latch is pivotally connected to the cover and that the fastener
12 can easily be disconnected from the latch with a tool from the
13 exterior of the cover.

14 2. The container according to claim 1, wherein the locking unit
15 comprises an elastic element provided between the latch and the
16 cover.

17 3. The container according to claim 2, wherein the elastic element is a
18 torque spring comprising a helical body and two rectilinear arm.

19 4. The container according to claim 3, wherein the latch comprises a
20 recess for receiving one of the rectilinear arms of the torque spring.

21 5. The container according to claim 3, wherein the locking unit
22 comprises a restraining element engaged with the fastener and formed
23 with a stem inserted in the helical body of the torque spring.

24 6. The container according to claim 1, wherein the latch comprises a
25 tongue at an end for insertion in the recess and a ring at an opposite
26 end for receiving the fastener.

- 1 7. The container according to claim 6, wherein the base comprises at
2 least one cylinder formed on an internal side for receiving the fastener
3 and for insertion through the ring.
- 4 8. The container according to claim 1, wherein the fastener is a threaded
5 bolt.
- 6 9. The container according to claim 8, wherein the locking unit
7 comprises a nut engaged with the threaded bolt.
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