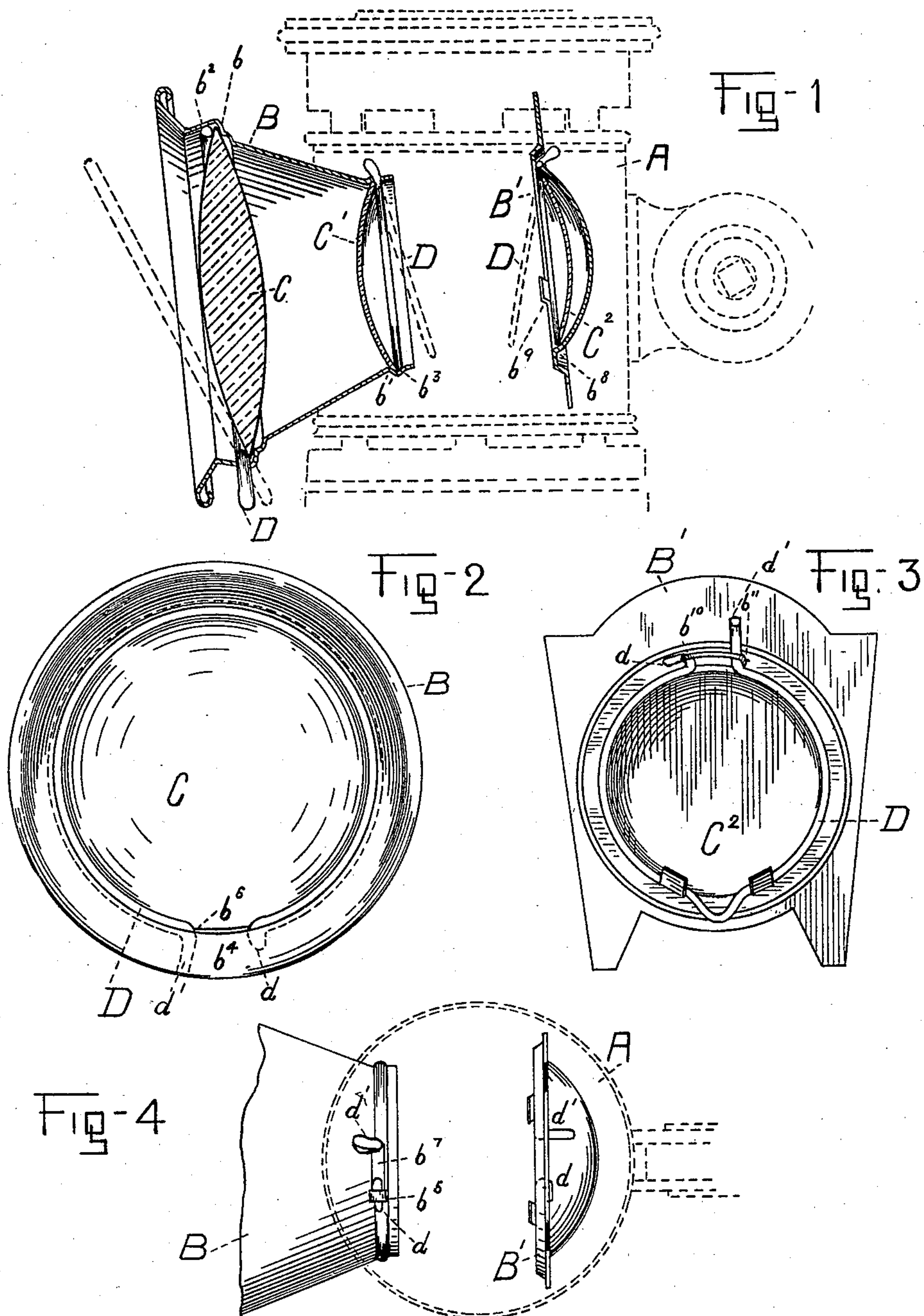


(No Model.)

F. RHIND.
CYCLE LANTERN.

No. 581,139.

Patented Apr. 20, 1897.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK RHIND, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
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CYCLE-LANTERN.

SPECIFICATION forming part of Letters Patent No. 581,139, dated April 20, 1897.

Application filed February 19, 1897. Serial No. 624,227. (No model.)

To all whom it may concern:

Be it known that I, FRANK RHIND, a citizen of the United States, residing at Bridgeport, Fairfield county, Connecticut, have invented a new and useful Improvement in Cycle-Lanterns, of which the following is a specification.

My invention relates to bicycle or other lanterns, lamps, or similar articles in which a removable portion, as a glass, lens, reflector, or other part, is detachably secured in position by means of a locking wire or band engaging with a socket.

In the accompanying drawings, Figure 1 represents in vertical section so much of a bicycle-lantern as is necessary to show my invention. Fig. 2 is a front elevation of the same. Fig. 3, also in front elevation, shows a modification. Fig. 4 is a top plan view of a part of the device shown in Fig. 1.

The same letters refer to like parts in the several views.

A designates a lantern-body; B, a lens-cone provided with annular flanges b b' , sockets b^2 b^3 , catches b^4 b^5 , and guides b^6 b^7 ; B', a reflector also provided with annular flanges b^8 , socket b^9 , catch b^{10} , and guides b^{11} ; C C' C², removable portions; D, a locking-ring formed with locking end d and bent free end d' .

In the example of my invention shown in Figs. 1, 2, and 4 of the drawings the lantern-body A may be of any desired form. I have shown a form of construction adapted to a bicycle or the like, but this is a matter of indifference. The lens-cone B is provided near its outer end with an annular seat or flange b , adjoining and in front of which is a socket b^2 . In the construction shown the flange b and the socket b^2 are opposite internal sides of an external bead formed in the lens-cone B. In the socket b^2 is formed a catch b^4 , near which is a guide b^6 , shown as an aperture or slot. Within the open larger end of the cone B is a removable portion C, here shown as a double-convex lens, bearing against the flange b . A locking-ring D, shown as of ordinary round wire formed into an annulus with bent ends, is sprung into the socket b^2 . By its resiliency it tends toward the greatest diameter of the socket b^2 , and hence acts to secure the lens C against the

shoulder b . One end, d , of the ring D is secured permanently or detachably in the catch b^4 in the socket b^2 , the other free end, d' , projecting radially through the slot-shaped aperture or guide b^6 . At the inner or smaller end of the lens-cone B is another removable portion C', shown as a concavo-convex glass shield held in place against a flange b' by a second ring D, resiliently fitting into a socket b^3 , having its end d secured in a catch b^5 and its free end d' passing through a guide or aperture b^7 . So in the reflector B' a similar shield C² is held against a seat b^8 by a third ring D. I have here shown the socket b^9 as consisting of a lug or lugs struck up from the rim of the flange b^8 . The catch b^{10} , in which the end d of the ring D is locked, differs slightly in form from the others shown, and the free end d' of the ring which passes through the guide b^{11} is bent backward for more convenient handling.

In Fig. 3 I have shown another modification, in which the ring D is bent out of the annular form at its middle point to engage between the lugs which form the socket b^9 . The catch b^{10} and the guide b^{11} , as here shown, are parts of an integral wire loop, at one end of which the end d of the ring D is locked and under which the free end d' of the ring may play to disengage the ring.

The operation of my device will be readily understood from an inspection of the drawings. In each case a removable portion is held in place against a seat by means of a locking-ring. This ring is of a form to bear against the removable portion, preferably near its periphery. It is resiliently expandible and acts against the inclined socket in which it engages to press the removable portion to its seat. One end of the ring is secured, and the other end is free to move in a direction to decrease the diameter of the ring and to free it from its socket. The ring may then be tilted forward, as shown in Fig. 1 of the drawings, and the lens or other part removed for cleaning or the like.

My present device is an improvement on that shown in United States Patent No. 560,174, granted on my application May 12, 1896. The construction shown in that patent is similar to the present device, except that

in the former construction both ends of the locking-ring pass out through a slot in the socket and are free to move. This is found in practice somewhat inconvenient to manipulate with numb fingers or gloved hands when in cold weather it is desired to wipe the vapor off the glass on lighting the lamp. My present device is much more easily managed, as a pressure on the single projecting end *d'* of the ring D serves both to release it from the socket and to tilt it forward to its open position.

I have shown various forms of securing the fixed end of the ring and of bending the free end to indicate that I do not wish to be limited to any particular form of construction. Neither do I wish to be limited to the retention in position of a glass lens or shield, as other removable parts may be advantageously secured in a lantern or other article by my device.

What I claim as my invention, and desire

to secure by Letters Patent of the United States, is as follows:

1. In a lantern in combination a fixed portion provided with a seat, a socket, a catch and a guide, a removable portion adapted to bear against said seat and an expansible locking-ring in said socket adapted to bear against said removable portion said ring having one of its ends secured in said catch and the other end free to move within said guide, substantially as described.

2. In a lantern in combination, a seat, a removable portion adapted to bear against said seat, a locking-ring, means for holding said ring against said removable portion, a catch adapted to secure one end of said ring and a guide adapted to limit the motion of the free end of said ring, substantially as described.

FRANK RHIND.

Witnesses:

GEO. L. COOPER,
C. R. AYRES.