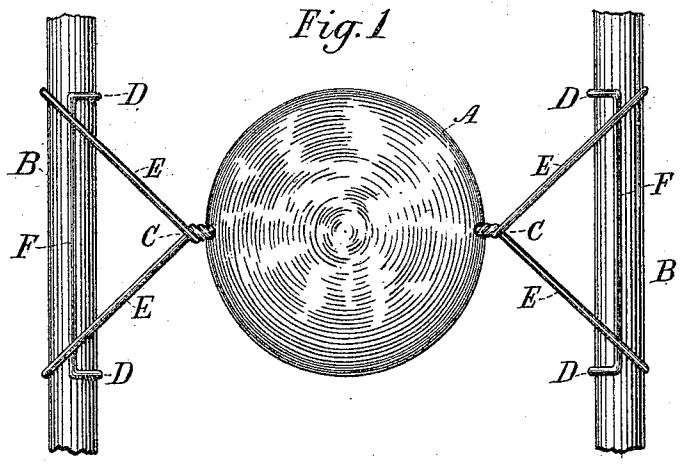
(No Model.)

A. L. FRANCE.

LENS ATTACHMENT FOR TUBULAR LANTERNS.

No. 457,990. Patented Aug. 18, 1891.

Fig. 1



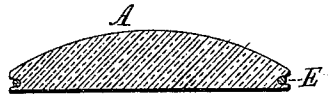


Fig. 2

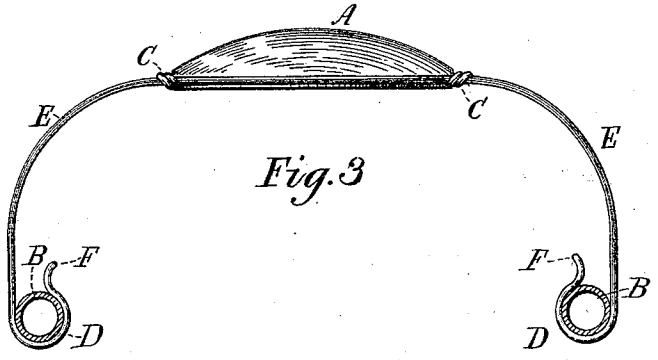


Fig. 3

Witnesses:
John. P. Jones.
Richard L. Thomas.

Inventor,
Albert L. France By
Wm Griffith his Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERT L. FRANCE, OF MILLDALE, ASSIGNOR TO THE KENTON CAN COMPANY, OF COVINGTON, KENTUCKY.

LENS ATTACHMENT FOR TUBULAR LANTERNS.

SPECIFICATION forming part of Letters Patent No. 457,990, dated August 18, 1891.

Application filed December 20, 1890. Serial No. 375,395. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. FRANCE, of Milldale, Kenton county, and State of Kentucky, have invented certain new and useful Improvements in Lens Attachments for Tubular Lanterns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My improvement has relation to appliances for use in connection with a tubular lantern; and it consists, first, in making a lens that will have a furrow or groove in the center of its edge and on the periphery of said lens; secondly, in wrapping the top and bottom wires of the frames once only around said lens and in said groove and twisting said wires together tight on each side of the lens, then turning one wire up, the other down, and both back, forming a semicircular or semi-elliptical spring-frame, the ends being hooked, so as to grasp the two side tubes of the lantern. By this my improvement I save the wire, as only one wire goes around the lens.

The object of the invention is to provide a simple, cheap, strong, durable, and convenient lens that can be attached cheaply to a spring-frame, such as may be readily adjusted, attached, and detached upon a tubular lantern of any size and securely connected therewith and when used will powerfully increase or intensify the light evolved.

In the accompanying drawings, Figure 1 represents a front view of the lens and frame and the two side tubes of the lantern. Fig. 2 represents a section of the lens. Fig. 3 represents a top view of the lens, the frame, and section of the lantern side tubes.

Similar letters of reference indicate similar parts in all the figures.

A is the lens; B, the side tubes of the lantern.

C shows the twist of the top and bottom wires on each side of the lens to rigidly hold it.

D are the hooks of the spring-frame to clasp the side tubes B B of the lantern.

E is the spring-frame; F, the vertical wires for connecting the top and bottom wires of the spring-frame.

What I claim is—

A detachable spring-wire lens-holding frame consisting of top and bottom wires, each extending half around the lens, the two meeting centrally on each side and there twisted tightly together, one end of each wire then extending up and the other down, then both extending backward to form a semicircular spring-frame, said wires having hooks on their ends joined together by vertical connecting-wires, substantially as shown and described.

ALBERT L. FRANCE.

Witnesses:
MARTIN SCHOPP,
B. P. HOLLEN.