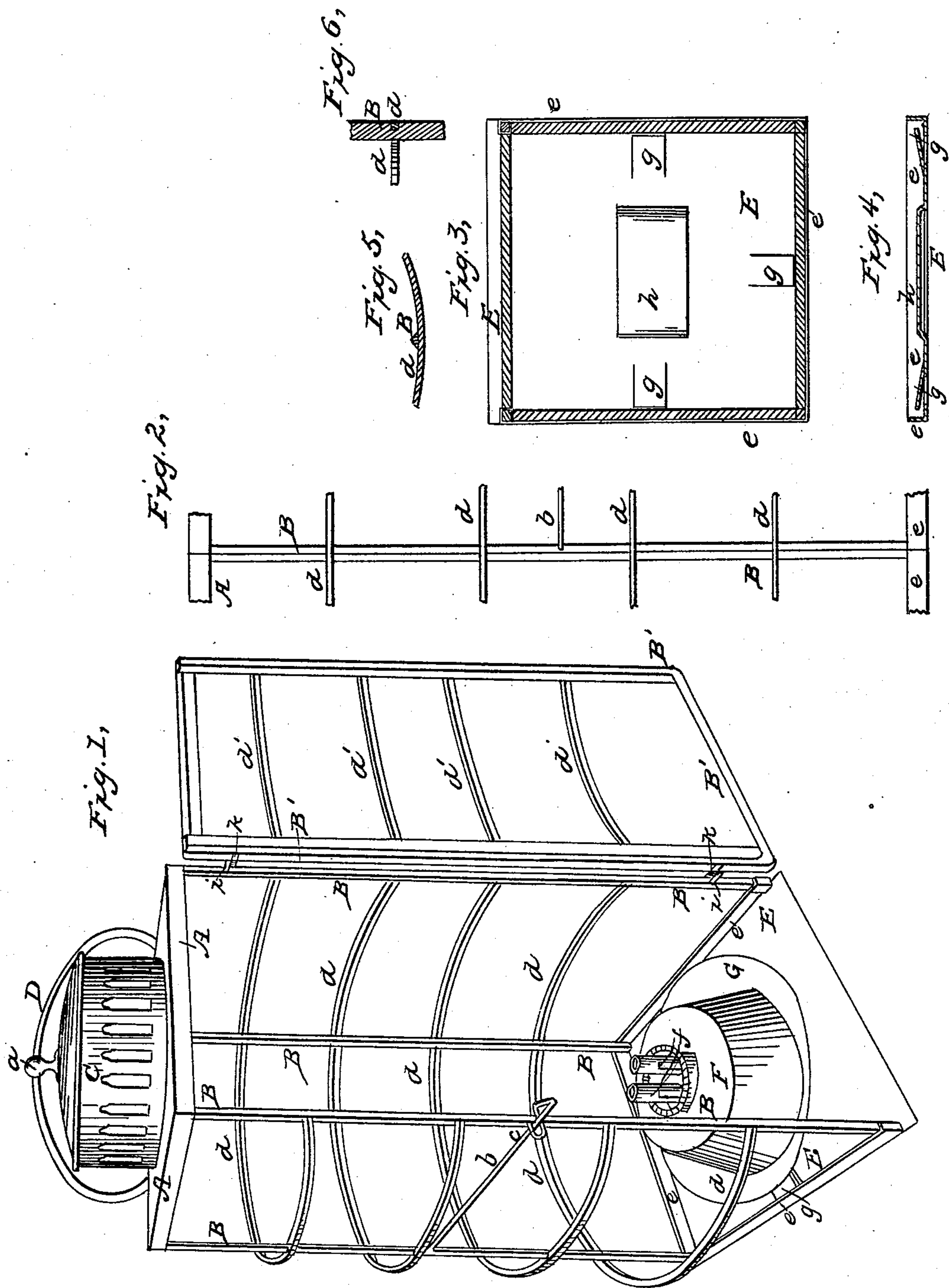


J. H. ROHRMAN.

Lantern.

No. 18,105.

Patented Sept. 1, 1857.



UNITED STATES PATENT OFFICE.

JOSEPH H. ROHRMAN, OF PHILADELPHIA, PENNSYLVANIA.

LANTERN.

Specification of Letters Patent No. 18,105, dated September 1, 1857.

To all whom it may concern:

Be it known that I, JOS. HALL ROHRMAN, of Philadelphia, county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Lanterns; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists of certain improvements in square frame lanterns, as hereafter described.

To enable those skilled in the art, to make and use my invention, I will proceed to describe its construction and operation, referring by letters to the accompanying drawings, where—

Figure 1, represents a perspective view of my lantern; Fig. 2, partial corner view, showing the arrangement of the guard wires; Fig. 3, bottom view or plan; Fig. 4, vertical section through the center of bottom plate; Fig. 5, horizontal section through one of the guard and corner wires; Fig. 6, partial vertical section through one of the guard and corner wires.

E is the base or bottom of the lantern, three edges of which are bent upward at right angles, about one quarter of an inch. The remaining edge, (being the one adjacent the door) is doubled under and flattened.

A is the top plate, which is of the same dimensions as the bottom or base, and is similar, with the exception of having all four edges bent as three of the bottom plates are, and having a round hole cut through its center to accommodate the chimney C, which consists, simply, of a perforated rim, furnished with a suitable top piece or covering, to the center of which is attached a ring or other conveniently shaped handle.

B are the four corner or frame wires, which are made of straight pieces of square wire, cut to correspond in length, and being of a suitable thickness (probably one eighth of an inch).

d are the guard wires, which are represented as square, and about one half the thickness of the corner wires B. The ends of the said guard wires are firmly secured to the two corner wires adjacent the door, and pass around the frame of the lantern in the arc of a circle, passing through slots or grooves, cut in the external corners of the

other two corner wires to accommodate them, wherein they are allowed to give or spring upon receiving a blow. The guard wires *d*, may be increased or diminished in number, as may be deemed expedient. I have represented in the drawings four.

The door frame of my improved lantern, is constructed of one piece B', of square wire bent in U form, best seen at Fig. 1, having its ends connected by a strip of tin about one quarter of an inch in width. On the adjacent sides of the perpendicular portions of said frame are soldered two U shaped strips or troughs, made of sheet tin, into which the plate of glass slides. The latter when placed in position, rests upon the bottom of said door frame, or the horizontal portion of wire B'.

d' are the door guard wires, which are of the same material, and thickness as the guard wires before described, and which have their ends firmly secured in the external edges of the door frame B, being of such length or so curved, that when the said door is closed, they shall apparently form a continuation of the wires *d*, making a complete circle in a horizontal plane. The ends of said door guard wires, as well as those of the before described guard wires, are dovetailed in dovetailing grooves, cut in the sides of the corner wires or uprights.

g, are tongues which are formed in the bottom and plate of the lantern by simply cutting through the tin on three sides of a rectangle, as seen at Fig. 3, allowing the cut which is adjacent to the edge of the plate, in all instances, to be such a distance from the said edge, as to admit the thickness of the glass between the latter, and the end of the tongue *g*, when said tongue shall be elevated or vibrated to the required extent, which is done by simply pressing said tongue into the desired position, by the thumb or finger; the glass being kept from falling outwardly by means of the projecting rim O, formed by bending at right angles, a portion of each edge of the top and bottom plates, as before described; the construction and operation of the tongues *g*, is readily understood by reference to Figs. 3 and 4 of the drawings. Although I have represented these tongues only in the bottom plate; and in the top, supplied their places with flanges, I may deem it expedient to use them, both at the top and bottom.

The guard wire *d*, it will be perceived by

reference to Fig. 5, passes through the external corner of the upright wire, in a horizontal section, and (by reference to Fig. 6) is embedded (in a vertical section) equal to the thickness of the said guard wire; and in a dovetailing manner in the uprights to which its ends are secured.

b, is a simple piece of wire forming a spring catch for the door, the end being bent at right angles, and secured in the upright immediately back of the front edge of the door, the other being bent in a lip form, as seen at Fig. 1.

F, represents the lamp, of which *f*, *f*, are the tubes, and *G*, the dish or receptacle for retaining any oil which may run down the sides of the lamp, but as there is no feature of novelty in the lamp, it needs no detailed description here, on its bottom is soldered a tongue or projecting strip, which slides under the strip or staple *h*, whereby the lamp is retained in position in the bottom of the lantern.

The door is hinged to one of the corner uprights *B*, by means of eyes *i*, which are dovetailed and secured in the side of the wire *B*, in the same manner as the guard wires *d*, and by corresponding ones *k*, which are in like manner dovetailed and secured in one side of the door frame wire *B*.

Some of the great advantages of my lantern are its lightness combined with strength, the fact (by its peculiar construction) of its casting but little or no shadow, and its great cheapness.

To render more comprehensible the economical and desirable construction which my lantern embraces, I will briefly illustrate the practical construction thereof, or manner in which the article is manufactured.

The top and bottom plates are cut out, their edges bent up, and the tongues *g*, formed as represented, by means of dies; the guard wires *d*, are cut from the coil, of the required length, and then the ends of them are annealed, and struck in dies by which they receive the necessary dovetailing shape. Said guard wires then receive their desirable shape or curvature, by being bent upon a drum. The corners or uprights are of square wire, and are straightened and cut off from the coil by machinery; after the uprights have been so straightened and cut off, they are taken to a series of rotating saws, and slotted or grooved so as to accommodate the guard wires, but the uprights in which the ends of the guard wires are to be embedded, are passed through a further process, of having their grooves or slots dressed out into dovetailing shape, by means of machinery.

When the parts are all ready, the top *A*, and bottom *E*, are placed in opposite ends of a skeleton box, which revolves upon horizontal axes, when one of the corner wires *B*,

having previously had its ends first dipped in an acidulated solution of muriate of zinc, and then into grain solder, about the coarseness of gunpowder (which adheres to the wire in just sufficient quantity to effect the soldering) is then laid into the lower corner of the said box, and consequently rests in the internal corners or angles of the top and bottom plate, to both of which corners, the ends of said wires are simultaneously soldered by means of two jets of burning gas or flame, which are brought to bear upon them; the skeleton box is then partially rotated on its axes until the next corner is brought down, when another corner wire is inserted and secured in the same manner, as above described; the grain solder it will be observed, adheres to the wetted end of the wire upright, on all four sides of the square, and when the wire, so charged, is laid in the lower corner of the skeleton box in order to be soldered, the two upper sides of the square wire, from inclined planes, down which the grain solder thereon runs into the joints at each end on the application of the heat, thus I am enabled through the use of square uprights, not only to produce a square lantern casting little or no shadow, but to effect the soldering in a very economical, simple, and substantial manner, and to reduce in a manner, the soldering of sixteen points (which are necessary to be soldered when sheet tin, instead of square wires is used for the four corners or uprights of a square lantern) to what is equivalent to eight points.. After the parts thus secured together have been removed from the skeleton box, the guard wires before described, are now placed around the corner wires or uprights, in the slots or grooves cut therein to receive them, and secured to the same at their ends, by embedding or dovetailing into the two uprights adjacent the door; the connections being simultaneously soldered by jets of burning gas or flame, as aforementioned.

The wire *B'*, is bent by machinery into the required form, when its ends are connected by the strip *m*, and the troughs *p*, soldered to its internal edges; its external edges, having first received their dovetailing slots or grooves after the manner before described; when the said door is hinged to the upright *B*, of the frame of the lantern by means of the eyes *i*, *k*, which are secured to their respective uprights, as before described.

The chimney *C*, is made and secured to the top of the lantern. The tongues (*g*) having been forced inward, the glasses are placed in their positions by being forced over said tongues, which, acting as spring stops, allow them to pass, and then keep them firmly in their places. The openings formed around these tongues (*g*) serving as

inlets for the air necessary for the combustion of the lamp.

Having fully described the construction and operation of my improved lantern, what
5 I claim as new therein, and desire to secure by Letters Patent, is—

1. Constructing square frame lanterns, with the corner uprights of square wire or metal rods, and the door frame of a single
10 square wire or rod bent in (U) form, secured at its ends by a strip; the whole arranged as, and for the purposes hereinbefore described.

2. I claim, in combination with square
15 wire corner uprights, the peculiar attachment of the guard wires, by simple grooves

and dovetailed ends, as described, the whole constructed as, and for the purposes set forth.

3. Forming tongues (*g*) in the bottom 20 and top plates, or either, for spring stops to secure the glasses in position and also for the admission of air, necessary to the combustion of the lamp flame, substantially in the manner above set forth. 25

In testimony whereof I have hereunto set my hand this seventeenth day of July of the year eighteen hundred and fifty-seven.

JOSEPH H. ROHRMAN.

Witnesses:

JAMES B. FREEMAN,
EDWARD G. WOOD.