No. 785,773. PATENTED MAR. 28, 1905.

A. P. STORRS.

LANTERN GLOBE.

APPLICATION FILED MAY 12, 1903.

2 SHEETS—SHEET 1.

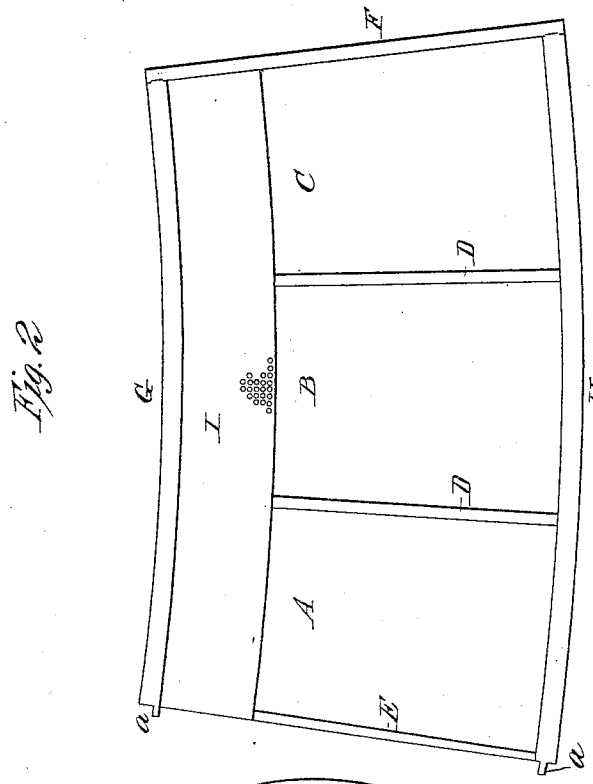

Fig. 2.

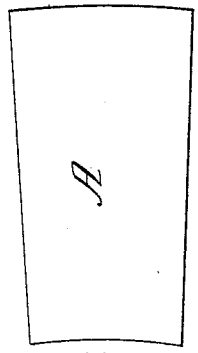

Fig. 10.

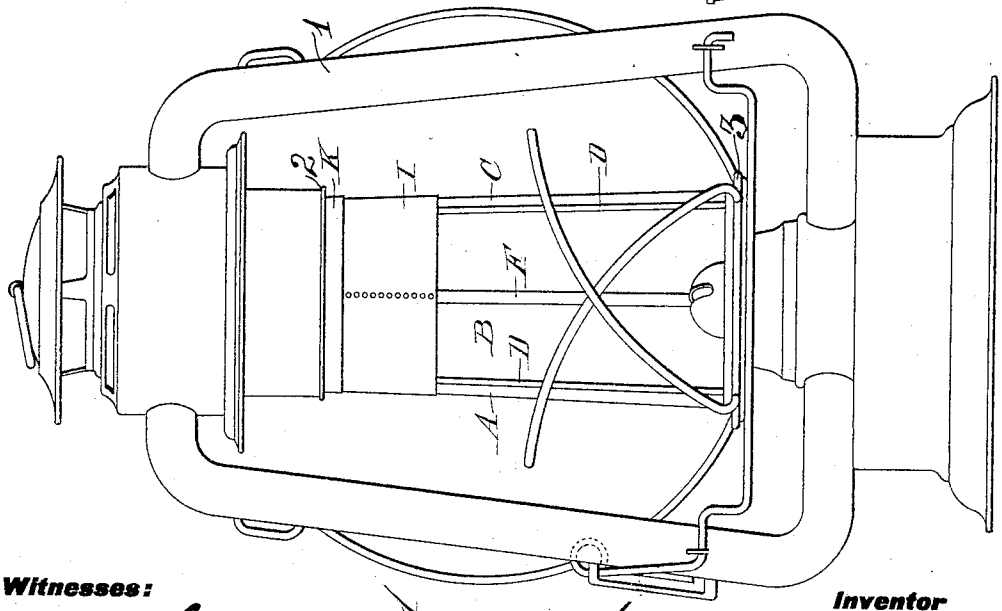

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 3

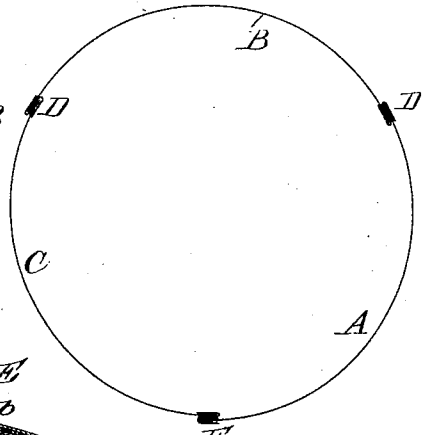


Fig. 4

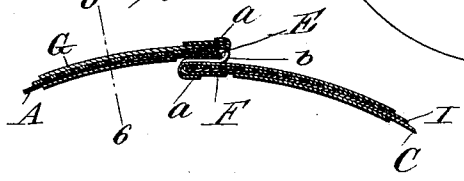


Fig. 5

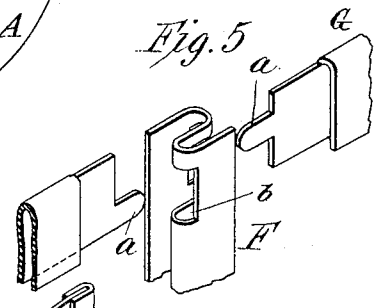


Fig. 6

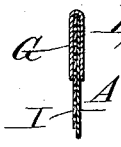
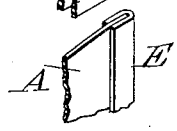


Fig. 7



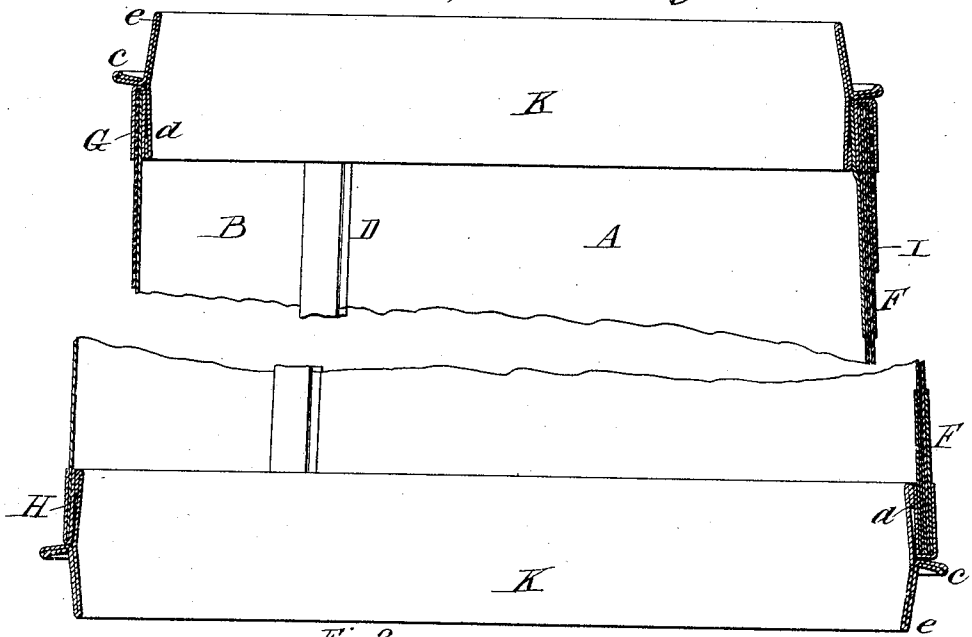


Fig. 8

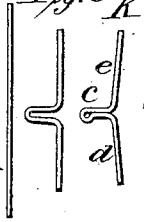
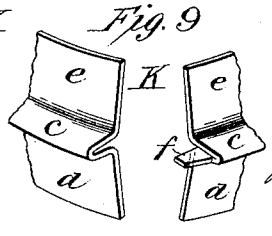


Fig. 9



Witnesses:

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No. 785,773. Patented March 28, 1905.

UNITED STATES PATENT OFFICE.

AARON P. STORRS, OF OWEGO, NEW YORK, ASSIGNOR TO STORRS MICA COMPANY, OF OWEGO, NEW YORK, A CORPORATION OF NEW YORK.

LANTERN-GLOBE.

SPECIFICATION forming part of Letters Patent No. 785,773, dated March 28, 1905.

Application filed May 12, 1903. Serial No. 156,752.

To all whom it may concern:

Be it known that I, AARON P. STORRS, a citizen of the United States, residing at Owego, in the county of Tioga and State of New York, have invented a certain new and useful Improvement in Lantern-Globes, of which the following is a description.

The object I have in view is to produce a globe for lanterns employing mica as the transparent element which will have the necessary strength and will be adapted to be received and retained by the holding devices with which lanterns are provided.

A mica lantern-globe has great advantages, especially for firemen's and brakemen's lanterns, which are subjected to exposure and rough handling; but heretofore it has not been regarded feasible to make globes of mica which would have the necessary strength to withstand the compression of the spring-holders of the lantern and the rough handling to which such globes are subjected.

Some of the constructional features of my lantern-globe are applicable also to lamp-chimneys.

In carrying out my invention I make the lantern-globe of conical form, smaller at the top than at the bottom. It is constructed of panels of mica each of the length of the globe, but occupying only a part of its circumference. These panels are secured together lengthwise of the globe by folded metal strips, which receive the edges of the mica panels and hold them together. The side edges of each mica panel are cut on straight lines which approach each other toward the top of the panel, while the top and bottom edges of the mica panels are cut on inward and outward curves, respectively, so as to form true circles at the top and bottom when the panels are bent into a conical form to complete the globe. These curved top and bottom edges of the mica panels are bound by folded strips of metal, which are folded and formed into proper curved form and are then pressed upon the edges of the mica panels and over the ends of the longitudinal strips, securing the panels together. Before the binding-strip is pressed upon the upper edge of the panels a wide band of thin perforated sheet metal having curved top and bottom edges is inserted in the fold of the binding-strip with the upper edge of the mica panels, so that the perforated metal band will be secured with the top binding and will extend down over the mica panels, preferably outside of the mica, for a portion of the length of the globe. The mica panels are made up in this way in a flat form and are then rolled into a conical form, the strips at the meeting side edges being secured together by suitable tongues made integral with the top and bottom metal bindings and passing through slots in the vertical strips. The globe made in this way has great strength, due both to its conical form and to the longitudinal metal strips between the mica panels, as well as to the wide band of perforated metal which extends from one end of the globe over a portion of its length. This wide band of perforated metal also permits the globe to be handled without danger of injury to the mica and, being perforated, does not entirely cut off the light even in that portion of the globe which is covered by it. To enable the globe to be received and retained by the holding devices of the lantern and to further strengthen it, either or each end of the globe (according to the character of the lantern-holding devices) is provided with a flanged ring of metal made by folding a metal strip upon itself and rolling it into circular form, such flanged ring having a laterally-projecting flange to rest on the globe-holding ring of the lantern, an inwardly-projecting flange which enters the lantern-globe and is secured to the metal binding of the mica panels by friction, soldering, or otherwise, and an outwardly-projecting flange which enters the globe-holding ring of the lantern, this outwardly-projecting flange having an inward bevel, so as to be readily inserted in the lantern-ring and so as to fit rings varying somewhat in size.

In the accompanying drawings, Figure 1 is an elevation of a typical form of lantern with my globe applied thereto, the perforations of the metal band at the top of the globe being

indicated by a line of perforations. Fig. 2 is an elevation showing the mica panels secured together in flat form before being rolled into conical form. Fig. 3 is a horizontal section of the globe. Fig. 4 is a horizontal section, on an enlarged scale, through the joint at the locked ends of the top or bottom binding-strip. Fig. 5 is a perspective view with the parts separated, illustrating the method of locking the ends of the binding-strips. Fig. 6 is a section on line 6 6 in Fig. 4. Fig. 7 is a vertical section of the globe broken away at the center to reduce the height of the figure. Figs. 8 and 9 are views of the preferred form of the flanged ring; and Fig. 10 is an elevation, on a reduced scale, showing a single mica panel.

The globe is made up of mica panels A B C, each of which extends the length of the globe, but only occupies a part of its circumference. These panels are cut with straight side edges, as shown in Fig. 10, the panels being, however, narrower at the top than at the bottom, so as to give the desired conical form to the globe. The top and bottom edges of the panels are cut with an inward and outward curve, respectively, so as to form true circles when the panels are bent into the conical form. The panels are secured together at their side edges by metal strips D, which are folded into an **S** form and are pressed down upon the adjoining edges of the mica panels when the same are laid flat. As many of the panels (preferably three) as are required to form a globe are secured together by the strips D in a flat form, as shown in Fig. 2. The outer side edges of the two outer panels are provided with metal bindings. One of these is a metal strip E, which is folded once upon itself and pressed on the outer edge of the outer panel A. The outer edge of the other outer panel, C, is bound by a strip F, which is folded into an **S** form and receives the edge of the panel in one of these folds. Before the strip F is pressed onto the edge of the panel C the panels are bound at their top and bottom edges by strips G H, which are made of strips of metal folded once upon themselves. These strips have the inward and outward curve shown in Fig. 2, which is produced by rolling the metal strip onto a former after it is folded upon itself. These folded strips G and H after being given this form are placed over the top and bottom edges of the mica panels and over the ends of the strips D and E and are pressed down, so as to clamp the parts in the folds. Before the top strip G is pressed upon the edge of the mica panels a wide band I, of thin perforated metal, having curved top and bottom edges, is placed in the fold of the strip G, so as to be secured by the pressing of that strip down upon the mica panels. A few only of the perforations of the band I are shown in Figs. 1 and 2 of the drawings. It will be understood, however, that the whole extent of the band is similarly perforated. The binding-strips G H have tongues *a* projecting from their ends. The longitudinal strip F is provided with a hole or slot *b*, Fig. 5, in each end. When one fold of the strip F is pressed down upon the outer edge of the mica panel C, the ends of the top and bottom bindings G H pass through the holes *b*, and the tongues *a* are bent backwardly over the strip F to hold the parts more securely together. After being made in the flat form, as shown in Fig. 2, the top and bottom bindings G H and the wide band I are rolled into a conical form, so as to bring the strips E and F together. The strip E is inserted in the unoccupied fold of the strip F, which also receives the ends of the bindings G H, the tongues *a* passing through the slots *b* and being bent backward to secure the parts together, as illustrated particularly in Fig. 4. To enable the globe to be received and retained by the globe-holding devices of the lantern, it is provided at its top and bottom ends (one or both, according to the character of the lantern) with a flanged ring K, made of folded metal rolled into a ring form and with its ends soldered together. This ring K has a lateral flange *c*, which rests on the globe-holding rings 2 and 3 of the lantern 1, an inwardly-projecting flange *d*, which is inserted in the binding G or H and is held therein by friction, by soldering, or otherwise, and an outwardly-projecting flange *e*, which enters the globe-holding ring of the lantern. The flange *e* is beveled inwardly, so as to fit rings varying somewhat in size.

The preferred construction of the flanged ring is shown in Figs. 8 and 9. The cross-sectional form is given to the ring by the steps illustrated in Fig. 8. A tongue *f* projects from one side of the fold forming the lateral flange *c* at one of the meeting ends of the ring and enters between the sides of the fold on the other end, when the fold may be pressed upon the tongue. The ring is rolled so that its meeting ends spring strongly toward each other, and the tongue *f* forms a sufficient fastening to keep the ends from moving out of alinement.

What I claim is—

1. A mica lantern-globe having at one or at each end a flanged ring for engaging the globe-holding ring of the lantern, such flanged ring having a lateral flange, an inwardly-beveled outward flange, and an inward flange secured to the globe, substantially as set forth.

2. A mica globe or chimney of conical form made up of panels of mica each occupying the entire length of the globe or chimney but only part of its circumference, such panels having straight side edges converging upwardly and curved top and bottom edges, straight folded metal strips running lengthwise of the globe or chimney and joining the mica panels together, and folded curved top

and bottom metal strips binding the mica panels at their top and bottom edges and conforming to the curves of such edges, substantially as set forth.

3. A mica globe or chimney of conical form made up of mica panels secured together by folded straight metal strips and bound at their top and bottom edges by folded curved metal strips, and provided with a wide band of perforated metal having curved top and bottom edges secured to one of the end bindings and extending inwardly therefrom over a portion of the mica, substantially as set forth.

4. A mica globe or chimney having mica panels, top and bottom rings and connecting metal strips, with a flanged ring at each end within the top and bottom rings, and a wide ring at the top outside of the mica, the said ring being perforated, substantially as set forth.

5. A mica lantern-globe of conical form composed of the mica panels A B C, longitudinal binding-strips D E F, top and bottom metal bindings G H, perforated metal band I, and flanged rings K, substantially as set forth.

6. In a mica lantern-globe, the flanged ring K having a lateral folded flange and outward and inward flanges, and provided with the tongue *f* locking the lateral flanges together, substantially as set forth.

This specification signed and witnessed this 7th day May, 1903.

AARON P. STORRS.

Witnesses:
H. G. FOSTER,
C. D. YOTHERS.