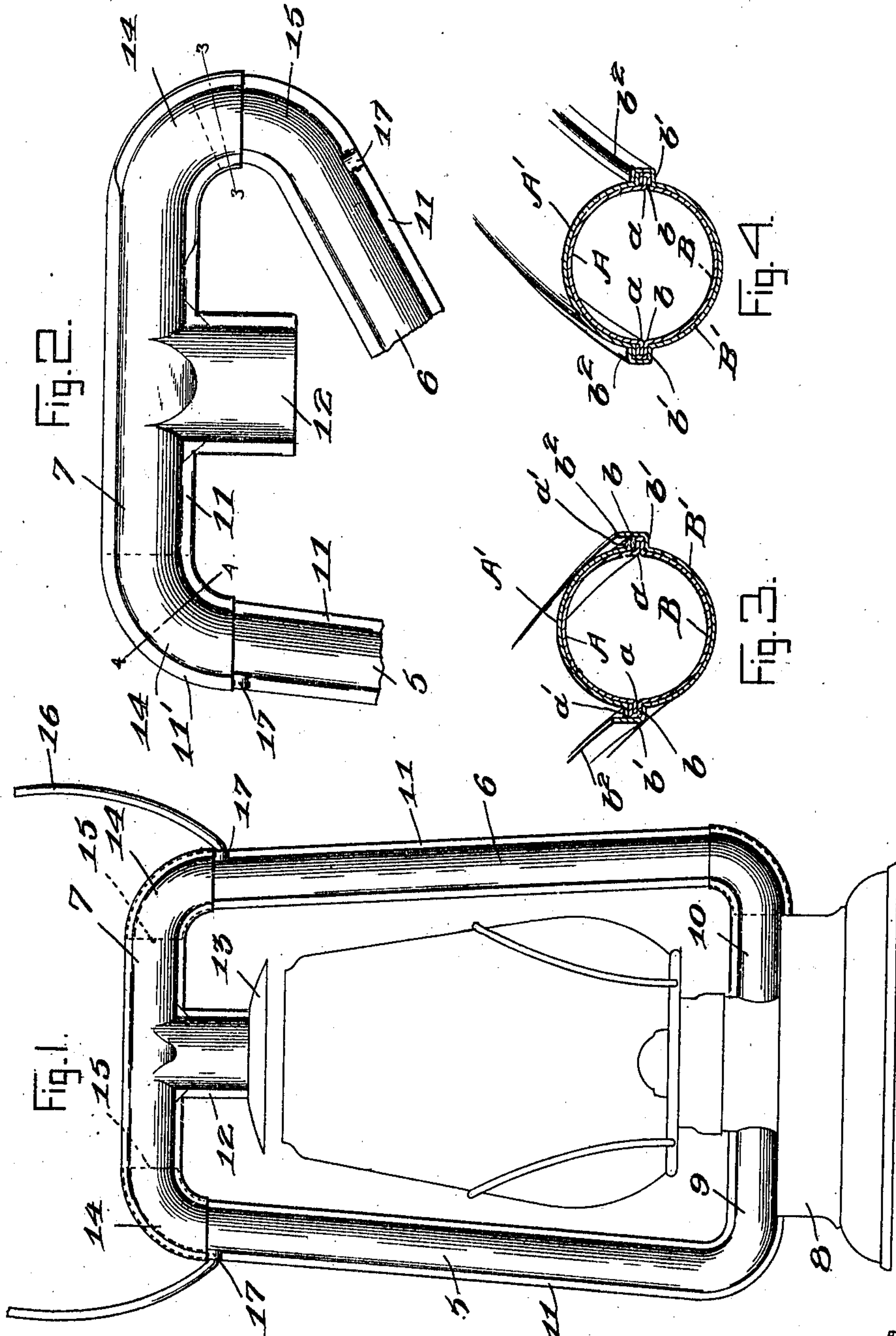


E. H. MINNS.
TUBULAR LANTERN.
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978,328.

Patented Dec. 13, 1910.



Witnesses

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To all whom it may concern:

Be it known that I, EARNEST H. MINNS, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Tubular Lanterns; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The present invention relates to improvements in tubular lantern frames.

It comprehends, primarily, a frame of the type specified, so constructed that the side and top members, when assembled, are rigidly locked together at their points of connection without requiring the employment of solder or other extraneous fastening means hitherto necessary.

A structural embodiment of the invention is illustrated in the accompanying drawing wherein—

Figure 1 is a front elevation of a tubular lantern, the frame of which is constructed in accordance with said invention. Fig. 2 is a fragmental detail view of the frame on an enlarged scale, showing a completed joint between one of the side members of the frame and the adjacent end of the top member thereof, and an incomplete joint between the other side member and the opposite end of said top member. Figs. 3 and 4 are enlarged transverse sectional views taken, respectively, on the lines 3—3 and 4—4 of Fig. 2.

Tubular lantern frames, as is generally understood, are composed essentially of a top and two side members connected together at their meeting ends, the latter members being inclined slightly toward each other and having their lower ends in-turned and rigidly fastened to the lamp base. This construction is followed out in the lantern illustrated in the drawings, 5 and 6 designating respectively, the left and right-hand side members of the frame, 7 the top member thereof, and 8 the font, the element last specified having the in-turned lower ends 9 and 10 of the sides 5 and 6 suitably attached thereto. This

attachment, however, is effected subsequent to the connection of the side and top members.

Each side member is composed of two semi-cylindrical sections or halves A and B constructed of thin sheet metal, said halves being substantially mates, as will be understood. Their meeting longitudinal edges are continuously connected together throughout their entire extent. In the construction illustrated, the edges of one section or half, in the present instance, the section A, are formed with continuous out-turned flanges *a*. The corresponding edges of the opposite section or half B are likewise formed with out-turned flanges as indicated by the reference letter *b*, but these flanges are substantially trough-shaped in cross-section, whereby the two wings thereof are enabled to receive the flanges *a* therebetween the joint being subsequently completed by the clenching of said wings against said flanges. It will be seen, therefore, that the construction above described contemplates, in effect, the formation of diametrically opposite longitudinal ribs on each side member of the frame, the ribs being constituted by the interlocking flanges *a* and *b*, and being designated by the numeral 11.

The top member 7 of the frame is composed in like manner of a pair of mating halves A' and B' which are formed intermediate their ends with depending extensions said extensions uniting to form the post 12 to which the cap or deflector 13 is suitably attached. The ends 14 of member 7 have a slight downward curvature, while the upper ends of the side members 5 and 6 have a corresponding inward curvature, as indicated by the numeral 15, the dimensions of the latter ends being slightly less than those of the former ends, to permit them to fit therein. The construction of the top member is practically similar to that of the side members; that is to say, this member also is formed with a pair of diametrically opposite ribs 11' which are constituted by the longitudinal flanges *a'* and *b'* provided upon the edges of the sections A' and B', these flanges being overlapped to form continuous joints in the same manner as the corresponding parts of the side members. There

is this difference, however, that while the resultant ribs 11' are trough-shaped in cross-section, the distance between the walls of the trough is sufficiently great to admit of the insertion of the ribs 11 therein, during the assembling of the frame members, as hereinafter described.

It has been stated above that the curvature of the ends 14 of the top member 7 is the same as that of the ends 15 of the side members 5 and 6. Owing to this construction, and to the relative dimensions of said ends, the ends of said side members may be readily inserted in those of the top member, as will be apparent from an inspection of the right-hand portion of Fig. 2, wherein an incomplete joint is illustrated. When such insertion is made, it will be seen that the flanges a' of the section or half A' rest directly against the outer or free wing portions of the flanges b of section B, or, in other words, against the adjacent faces of the ribs 11; the outer edge portions b^2 of the flanges b' are however, not bent over and clenched against the flanges a' at this time, except at the central portions of member 7, but remain in the position shown in Fig. 2, (right-hand side) and in Fig. 3. This bending and clenching operation does not take place in fact, until the curved ends 15 have been inserted to their farthest extent in the curved ends 14. The said outer portions b^2 are then treated in the manner just specified, whereupon the various parts occupy the positions shown in Fig. 4, thus completing the joint. The lower ends 9 and 10 of the side members are then fastened in any desired manner to the font.

On the completion of the joints as above described, it will be seen that the in-turned ends 15 of the side members of the frame will be rigidly locked in the corresponding ends 14 of the top member. This is due both to the co-action between curved walls of said ends, which precludes any outward spreading of said side members, or movement thereof away from each other, and to the interlocking engagement of the ribs 11 and 11' whereby any turning movement of the members referred to is prevented. It will be seen, therefore, that there is no occasion for the use of solder, or of any other additional fastening means or medium since the locks are complete in themselves.

The bail or handle 16, with which the lantern is ordinarily provided, has its in-turned terminals received in recesses 17 formed in the side members 5 and 6. These recesses are preferably located at the points where the curvature of the ends 15 commence, so that the edges of the ends 14 of the top member 7 will bear against the bail ends, as shown in Fig. 1. This arrangement offsets any

tendency of the ends of the side members toward further inward movement within the corresponding ends of the top member.

For purposes of illustration I have selected and described the meeting ends of the side and top members as secured together by the interlocking engagement of the ribs but it is obvious and to be understood that the invention is not restricted thereto because the invention is the same in its scope if the side members are attached to the end members in the manner described whether the end members be at the top of the side tubes or be at the bottom where the side tubes are attached to the oil font, or whether the same construction be used at both top and bottom of the side tubes. This is obvious and an illustration of the construction at one end of the side tubes is sufficient for a full illustration of the invention.

Having described my invention and set forth its merits what I claim is:

1. A lantern frame comprising separate tubular parts arranged for telescopic engagement at their mutually-adjacent ends, one of said parts being formed with longitudinal channels and the other part with longitudinal ribs conformably fitted in said channels.

2. A lantern frame comprising separate tubular parts having their mutually adjacent ends curved and arranged for telescopic engagement, one of said parts being formed with longitudinal channels, and the other part with longitudinal ribs conformably fitted in said channels whereby the co-action between the curved walls and the channels and ribs of said ends will prevent lateral and rotatory movement of said ends with respect to each other.

3. A lantern frame comprising separate tubular parts arranged for telescopic engagement at their mutually adjacent ends each of said parts being constructed of mating halves formed at their longitudinal edges with out-turned flanges, the flanges of one half of each part being interlocked with those of the other half to form ribs, the ribs of one of said parts overlying and being interlocked with those of the other part.

4. A lantern frame comprising separate tubular parts arranged for telescopic engagement at their mutually-adjacent ends, each of said parts being constructed of mating halves formed at their longitudinal edges with out-turned flanges, the flanges of one half of one of said parts being clenched around those of the other half, and the flanges of the other part being arranged against and clenched around the clenched flanges of the first-named part.

5. A tubular lantern frame having the ends of its side members inserted in those

of its top member, and having said members formed with oppositely-located longitudinal ribs, the ribs on the ends of said side members being locked in those of said top member.
5

6. A tubular lantern frame having the meeting ends of its side and end members curved, and arranged for telescopic engagement with each other, said curved ends be-

ing formed with inter-engaged locking devices. 10

In testimony whereof I affix my signature in presence of two witnesses.

EARNEST HILLIARD MINNS.

Witnesses:

T. W. RUSSELL,
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