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STORING LAMP FIXTURES

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Fig 1

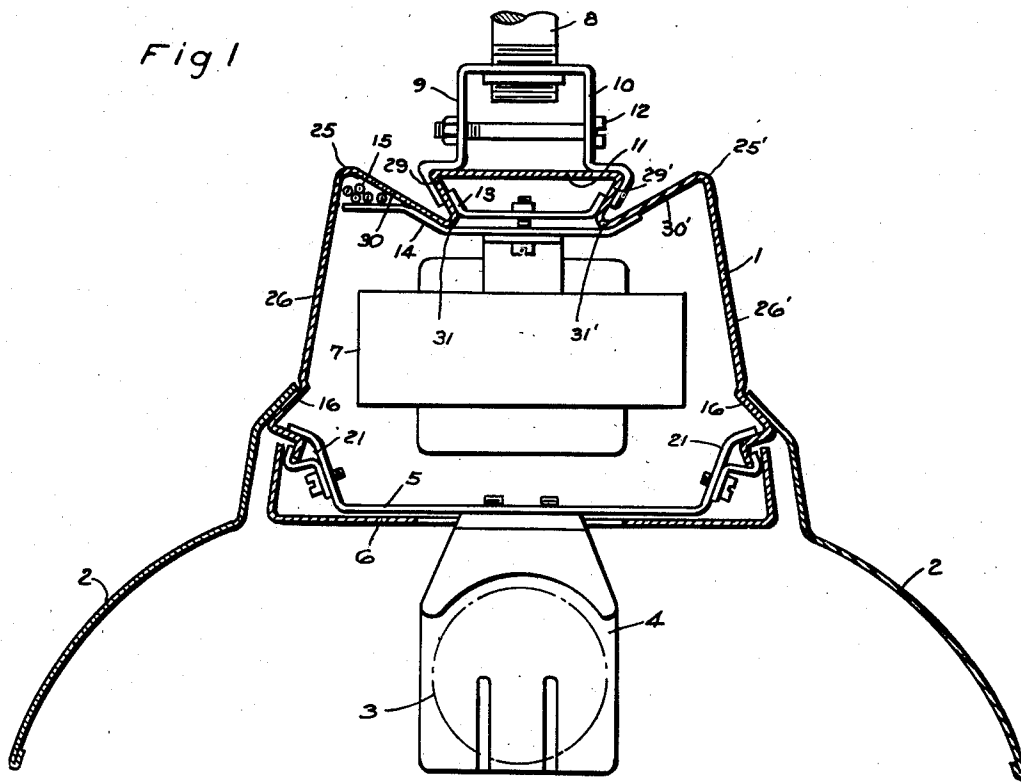
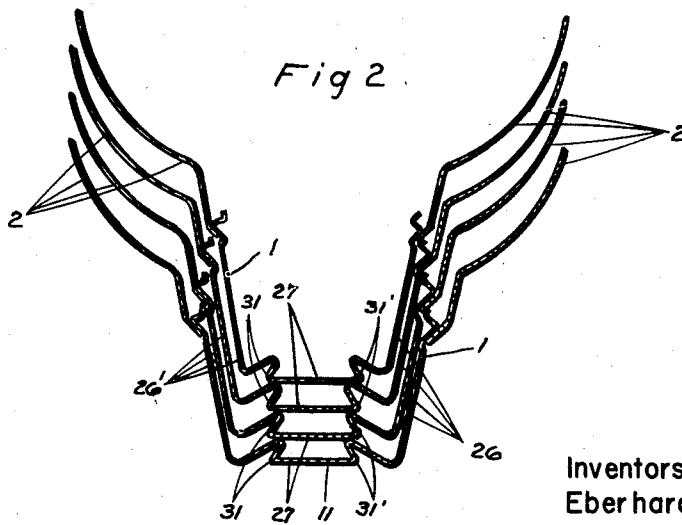


Fig 2



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STORING LAMP FIXTURES

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Original application October 2, 1950, Serial No. 187,872,
now Patent No. 2,734,995, dated February 14, 1956.
Divided and this application August 30, 1955, Serial
No. 531,562

2 Claims. (Cl. 240—51.11)

This invention relates to lamp fixtures intended to be used for fluorescent lamps of considerable length, and it relates more particularly to shaping and accommodating such lamp fixtures in a way greatly reducing space requirements, thus greatly reducing the cost of storage and of transportation.

This application is a division of our co-pending patent application Ser. No. 187,872, filed October 2, 1950, for Multilamp Fixtures for Illuminating Systems of Considerable Length, now United States Patent 2,734,995, issued February 14, 1956.

Normally, lamp fixtures intended to be used for fluorescent lamps of considerable length require a relatively large space for storage and shipment thereof. The bulk to price ratio of such fixtures being relatively large, the cost of storage and transportation tend to greatly increase the price which must be paid by the ultimate consumer of the fixtures.

It is, therefore, one object of this invention to provide means enabling to accommodate lamp fixtures for fluorescent lamps of considerable length in a minimum of space.

Another object of this invention is to assemble a large number of lamp fixtures in a package of predetermined size in such a way as to greatly reduce the space requirements per fixture.

Another object of the invention is to provide packages of lamp fixtures for fluorescent lamps of considerable length, the constituting fixtures of which have such a shape that their bending strength is high when installed and in service, and which fixtures nevertheless can be readily flexed for the purpose of packing for storage and shipment.

A further object of the invention is to provide means enabling to drastically reduce the cost of handling large quantities of lamp fixtures for fluorescent lamps of considerable length.

The novel features which are characteristic of the invention are set forth in particular in the appended claims. The invention itself, however, both as to structure and operation together with additional objects and advantages thereof will best be understood from the following detailed description of a preferred embodiment thereof when read in connection with the accompanying drawing in which—

Fig. 1 is substantially a cross-section of a single lamp fixture for fluorescent lamps of considerable length and Fig. 2 is a transverse section across a stack of fixtures of the type shown in Fig. 1.

Referring now to the drawing, and more particularly to Fig. 1 thereof, reference numeral 1 has been applied to indicate a housing or casing which may be provided with lateral reflectors 2. Casing 1 has substantially the shape of a trough and the cross-section thereof is substantially in the shape of a U. The length of housing or casing 1 may be a plural of that of a straight tubular fluorescent lamp. The cross-section of such a lamp has been indicated in Fig. 1 by reference numeral 3. Reference numeral 4 indicates a lamp holder of which one pair is asso-

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ciated with each lamp. Each lamp holder 4 is attached to housing 1 by means of a lamp holder support 5. A ballast choke 7 is arranged inside of housing or casing 1. The latter is attached to the ceiling (not shown) by a hanger rod 8. The lower end of rod 8 is screw-threaded for supporting a substantially U-shaped clamp element or clamp strap 9, 10. The ends of the sides 9 and 10 of clamp element 9, 10 are bent to form a dovetail-shaped clamp adapted to be tightened by means of a transverse bolt 12 and a tightening nut riding on a screw-threaded end of bolt 12. The above dovetail-shaped clamp is adapted to slide on a straight rail 11 forming an integral part of the top of housing 1 and extending substantially along the entire length thereof. While the upper or outer side of rail 11 is engaged by parts 9, 10, 12, the lower or inner side of rail 11 is engaged by another supporting clamp 13, 14 which is likewise substantially dovetail-shaped to conform with the shape of rail 11. The top of housing or casing 1 and an extension of strap 14 forming an integral part of clamp 13, 14 define jointly a short passage or duct supporting cables or leads 15. The center portion of supporting clamp 13, 14 carries ballast choke 7 and may also be used, if desired, to carry another piece of auxiliary equipment. Housing or casing 1 is provided on the lateral side thereof with diverging edge strips 16. If desired a pair of concave reflectors 2 may be secured to these edge strips 16. Lamp holder support 5 is provided at the opposite lateral ends thereof with clamping means 21 in cooperative engagement with the Z-shaped ends of edge strips 16. Lamp holder support 5 carries also the bottom cover plate 6.

Casing 1 forms outer lateral edges 25, 25' between the top portion and the sides 26, 26' thereof. The top portion consists of a plurality of angularly bent elements including two lateral pairs of elements 29, 30 and 29', 30' and a median element 27 (see Fig. 2), arranged between said two lateral pairs of elements. Each element of that plurality of elements 30, 29, 27, 29', 30' encloses an acute angle with the element immediately adjacent thereto, i. e. elements 30 and 29 enclose an acute angle, elements 29 and 27 enclose an acute angle, elements 27 and 29' enclose an acute angle and elements 29' and 30' enclose an acute angle. The angles enclosed between side 26 and element 30 and the angle enclosed between side 26' and element 30' are less than 90 degrees. The median element 27 lies substantially flush with the plane defined by edges 25 and 25' and forms jointly with elements 29, 29' the hollow rail 11, dovetail-shaped in cross-section. Rail 11 is recessed within the general outline of casing 1 and is hugged externally by the clamping means 9, 10, 12 and internally by clamping means 13, 14, as has been stated above. Reference numerals 31 and 31' have been applied to indicate the inner edges formed between elements 29 and 30, and 29' and 30', respectively. Surface element 30 slants from edge 25 to rail edge 31 and surface element 30' slants from edge 25' to rail edge 31'. The above described geometry of housing or casing 1 provides a high degree of bending strength of the top thereof coupled with a high degree of flexibility of sides 26, 26' in a direction transversely of casing 1. The degree of transversal flexibility of sides 26, 26' is so high as to enable stacking of fixture casings in the way shown in Fig. 2. As shown in Fig. 2, pairs of edges 31, 31' are arranged in abutting relation with the median elements 27 of tops of contiguously stacked fixtures. Fig. 2 shows also that pairs of sides of contiguously stacked fixtures are progressively bent farther apart.

The high degree of transverse flexibility required for stacking the fixtures is achieved, as has been mentioned above, by the geometrical configuration of the casing of

each fixture, including the angular relation of the constituent parts thereof, and more particularly by the geometrical configuration of the top portions of the casings of the fixtures. Each casing 1 is in effect a metal bellow combining a high degree of transverse flexibility with a high degree of longitudinal bending strength.

All parts normally housed within casing or troughs 1 are removed to enable stacking of casings 1 and these parts are stored and shipped separately. The lamp fixtures or luminaires are completely assembled at the point where they are intended to be installed.

While, in accordance with the patent statutes, we have disclosed the specific details of one embodiment of our invention, it is to be understood that these details are merely illustrative and that variations in their precise form will not only be desirable but necessary in certain instances. It is our desire, therefore, that the language of the accompanying claims shall be accorded broadest reasonable construction and shall be limited only by what is expressly stated therein and by the prior art.

We claim the following as our invention:

1. A stack comprising a plurality of casings of lamp fixtures stacked to facilitate storage and shipping thereof with a minimum of bulk, each of said plurality of casings being substantially channel-shaped and having a top and a pair of sides, said top and pair of sides forming a pair of lateral edges at the loci of intersection of the planes thereof, said top consisting of five angularly bent integral elements each enclosing an acute angle with the element situated immediately adjacent thereto, said five elements comprising a median element and two lateral pairs of elements, the loci of intersection of the planes of said two lateral pairs of elements forming a pair of edges recessed within said casing, contiguous casings within said stack being arranged in abutting relation with said pair of re-

cessed edges of one casing engaging the median element of a contiguously stacked casing, and the sides of contiguously stacked casings being progressively farther bent apart.

2. In combination a plurality of identical troughs of sheet material for lamp fixtures for straight fluorescent lamps of considerable length, each of said plurality of troughs comprising a top having a relatively high degree of longitudinal bending strength and a pair of spaced sides diverging from a pair of outer lateral edges of said top and having a relatively large degree of transverse flexibility, said top of each of said plurality of troughs being formed by a hollow rail dove-tail shaped in cross-section having a pair of inner lateral edges recessed behind the plane defined by said pair of outer lateral edges, said top of each of said plurality of troughs comprising a pair of surface elements each slanting from one of said pair of outer lateral edges to one of said pair of inner lateral edges, and said plurality of troughs being stacked in such a way that said pair of inner lateral edges of said rail abut against the outer surface of said top of a contiguous trough forming part of said plurality of troughs.

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