

[54] **QUARTZ GLASS PINCH SEAL OF INCREASED COMPRESSIVE STRENGTH**

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[58] Field of Search **313/220, 317, 318**

[56] **References Cited**
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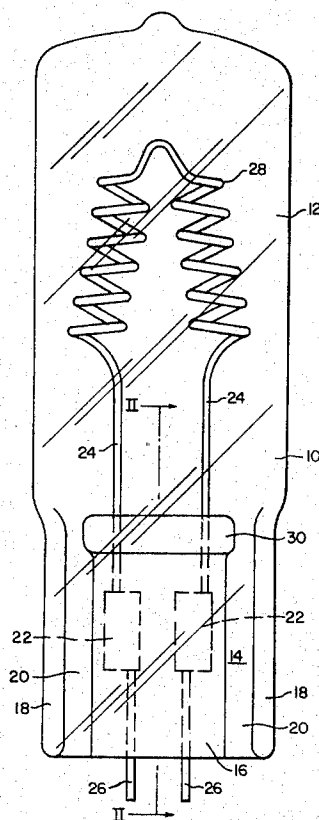
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[57] **ABSTRACT**

An electric incandescent lamp of the halogen type including an envelope of quartz glass having an external press seal composed of a flat mid-section limited by two plane parallel faces and two flanges extending parallel to the lamp axis and enclosing the mid-section so that the cross section of the seal in a plane perpendicular to the lamp axis is of I-shape. The lamp is provided with leads sealed into the press seal in the form of metal foil seals with outer lead wires protruding from the bottom end of the press seal as base contacts and including in the press seal, where it merges with the envelope body, a transverse depression or corrugation extending across substantially the entire width of the press seal.

4 Claims, 3 Drawing Figures



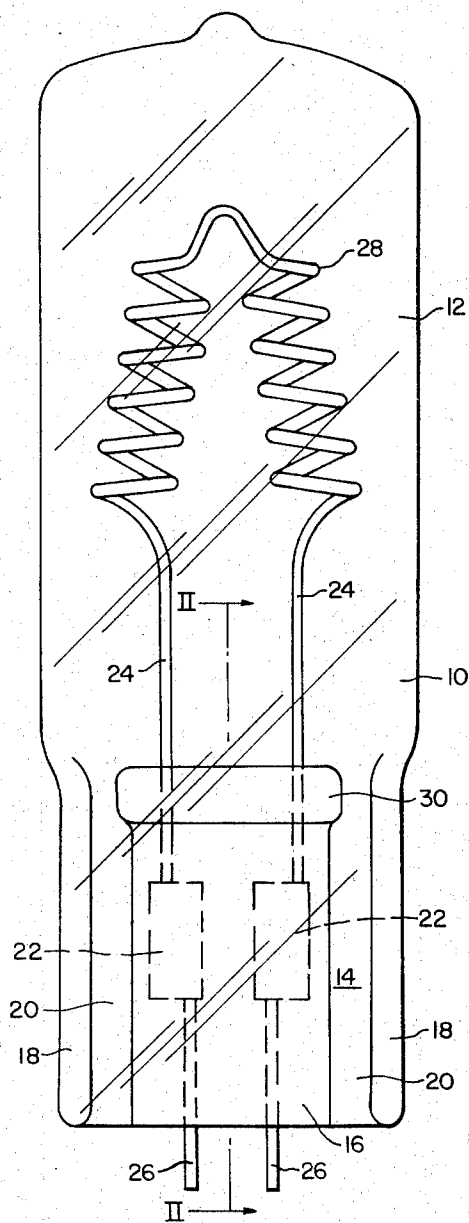


FIG. 1.

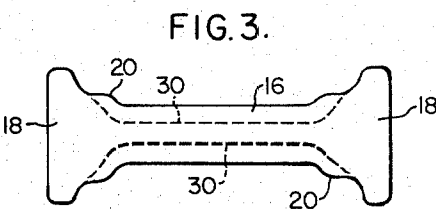


FIG. 3.

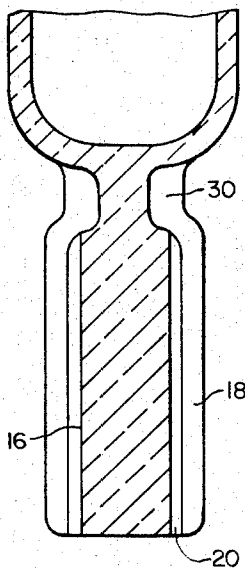


FIG. 2.

QUARTZ GLASS PINCH SEAL OF INCREASED COMPRESSIVE STRENGTH

BACKGROUND OF THE INVENTION

The conventional halogen type incandescent lamp includes an envelope of quartz glass and an external press seal designed to constitute the base. The leads for the lamp are sealed into the press seal in the form of foils and outer lead wires protrude at the bottom end as base contacts and the inner lead wires extend into the envelope space and are connected to the lamp filament. In a quartz press seal of this type, bursting or leakage of the lamp at the end of its useful life frequently occurs due to lack of compressive strength at the seal. In order to avoid this bursting or leakage, various alternative steps have been taken. Primarily, these steps have included efforts to adjust the pinching and the burners, in order to obtain an increased compressive strength at the seal. However, none of these measures has led to the production of a satisfactory press seal which is free from the aforesaid deleterious bursting or leakage problems as the lamp approaches the end of its useful life.

SUMMARY OF THE INVENTION

The above described drawbacks have been obviated by providing in an electric incandescent lamp comprising a light transmitting envelope body having an external press seal at least at one end thereof, and a pair of foil type lead-in conductors sealed therein and connected within said envelope to a filament; the improvement which comprises a transverse depression extending across the press seal adjacent the juncture of the press seal with the envelope body to thereby provide an area of substantially increased cold compressive strength to said press seal.

BRIEF DESCRIPTION OF THE DRAWINGS

The many attendant advantages of this invention will become more readily apparent and better understood as the following detailed description is considered in connection with the accompanying drawings, in which:

FIG. 1 is a front elevational view of an incandescent lamp constructed in accordance with this invention.

FIG. 2 is a sectional view of the pinch seal taken along the line II—II of FIG. 1; and

FIG. 3 is a bottom end view of the pinch seal of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now in detail to the drawings, wherein like reference characters represent like parts throughout the several views, there is illustrated in FIG. 1 an electric incandescent lamp of the invention generally designated 10. The lamp 10 includes a light transmitting envelope of conventional construction including the envelope portion 12 and a press seal portion 14. The press seal is generally of I-shaped cross section perpendicular to the lamp axis as can be best seen from FIG. 3. The pinch seal is formed by a mid-section 16 limited by two plane parallel faces constituting a web portion and by flanges 18 enclosing the web and extending parallel to the lamp axis. Flanges 18 are merged via steps 20 into

the web or mid-section 16 whereby the great difference in thickness between the web and flange is bridged. The lamp leads in the form of metal foils 22 are sealed into the web in combination with the inner lead wires 24 and the outer lead wires 26. The outer lead wires 26 protrude at the bottom end of the pinch seal as base contacts while the inner lead wires 24 extend into the envelope body and have an incandescent filament 28 connected therebetween.

To prevent bursting or leakage of the lamp due to lack of compressive strength at the seal a corrugation or depression 30 extending transversely across the entire web portion of the pinch seal, and limited by the two flanges is provided. The depression or corrugation 30 reduces the cross section of the web portion of the pinch seal to approximately one-half the remaining thickness of the web portion 16 and results in an area of increased cold compressive strength of at least 20 atmospheres absolute pressure which thus prevents a bursting or leakage of the lamp. The depression or corrugation 30 may be provided by a specially designed pinching jaw which causes the pinching pressure at the place of corrugation or depression to be increased relative to the other portions of the press seal.

I claim as my invention:

1. In an electric incandescent lamp comprising a light transmitting envelope body having an external press seal at at least one end thereof, said external press seal being substantially I-shaped in cross section and including two plane parallel faces constituting a web portion lying between a pair of spaced parallel flange portions, and a pair of foil type lead-in conductors sealed therein and connected in said envelope to a filament, the improvement comprising, a transverse depression extending across said web portion between said flange portions adjacent the juncture of said press seal with said envelope body.

2. An incandescent lamp according to claim 1 wherein the thickness of said web portion is approximately twice the thickness at said depression.

3. An electric incandescent lamp of the halogen type comprising: a lamp body having an envelope and a press seal portion; a pair of outer lead wires extending into said press seal portion; a pair of inner lead wires extending out of said press seal portion and extending into said envelope portion; a lamp filament connected between said inner lead wires within said envelope portion; metal foil leads connected between said outer lead wires and said inner lead wires within said press seal, said press seal being substantially I-shaped in cross-section and including two plane parallel faces constituting a web portion lying between a pair of spaced parallel flange portions; and a transverse corrugation extending across said web portion between said flange portions at a location between said foil leads and said envelope portion, thereby providing an area of substantially increased cold compressive strength to said press seal.

4. An electric incandescent lamp according to claim 3 wherein the cross sectional thickness of said press seal at said web portion is approximately twice the cross sectional thickness at said corrugation.

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