Sept. 22, 1970 J. FRIEDMAN ET AL 3,530,289

LIGHT REFRACTING FIXTURE

Filed Aug. 19, 1968 2 Sheets-Sheet 1

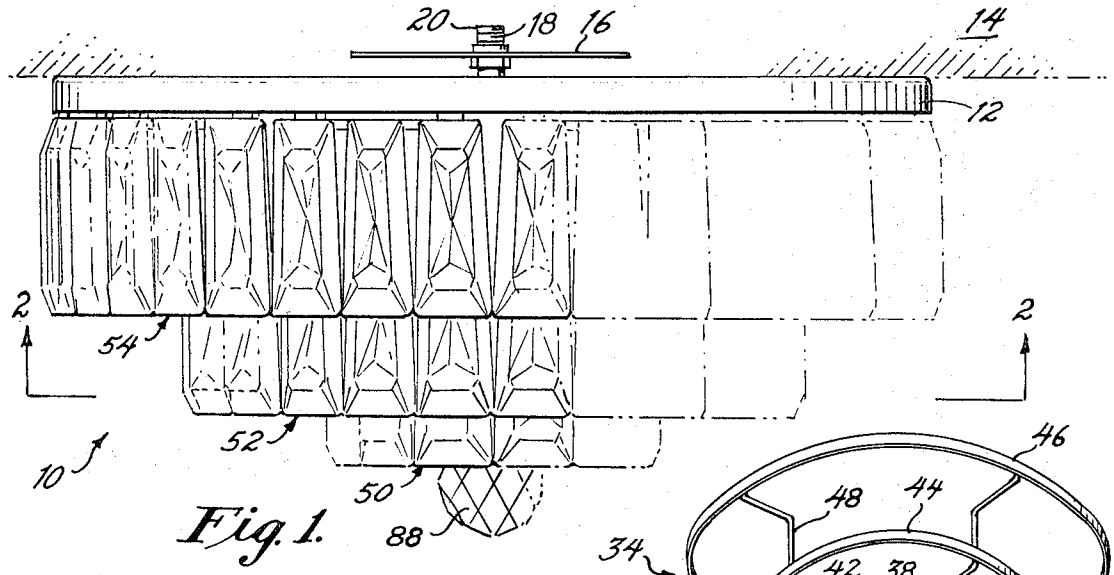


Fig. 1.

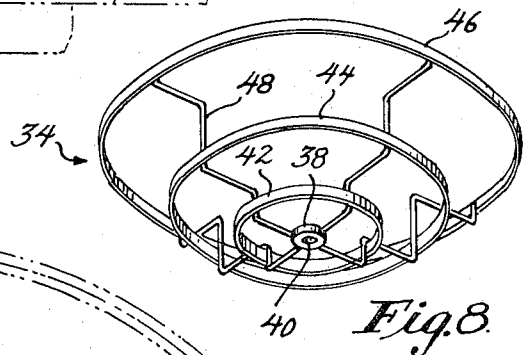


Fig. 8.

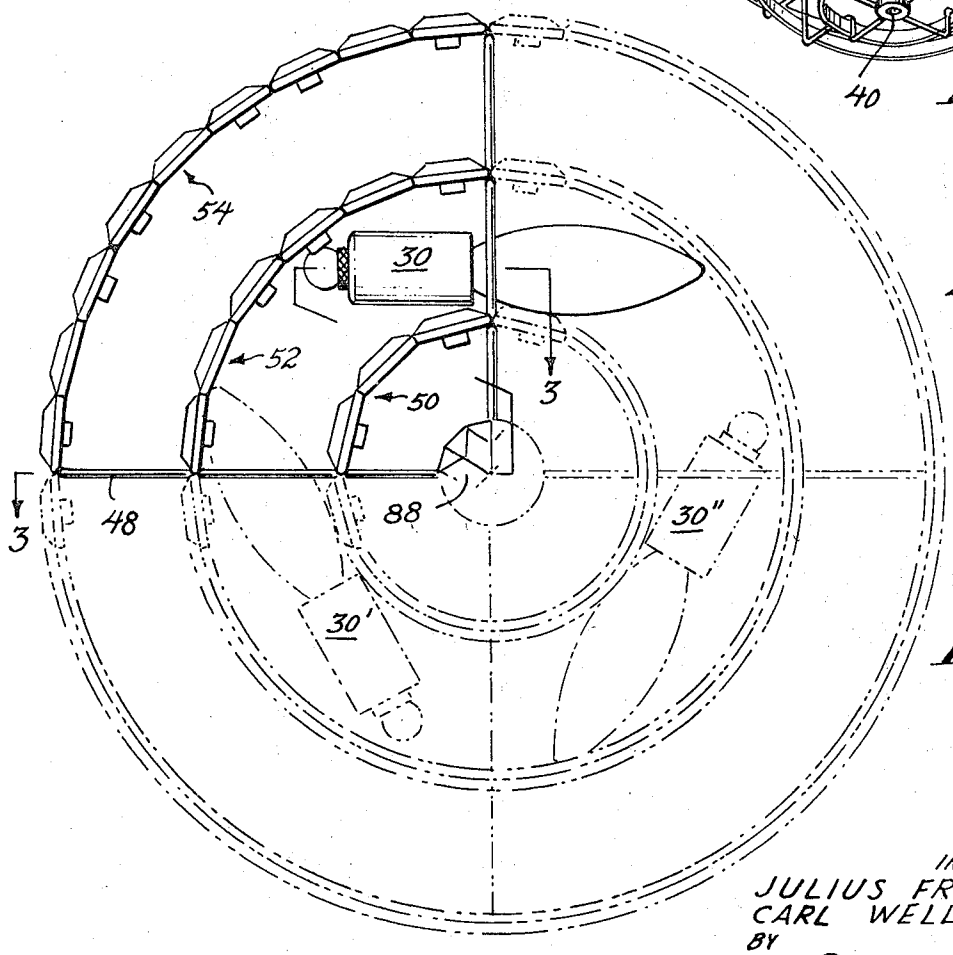


Fig. 2.

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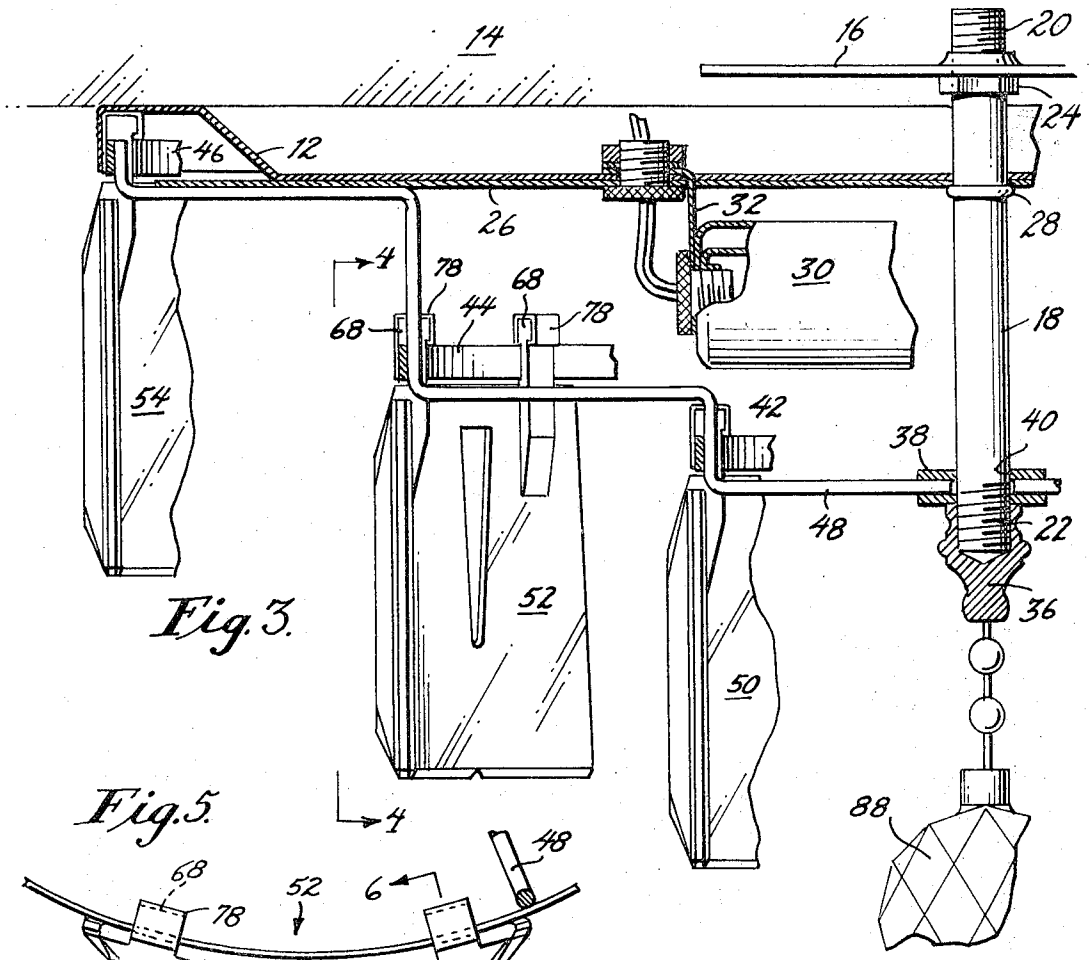


Fig. 3.

Fig. 5.

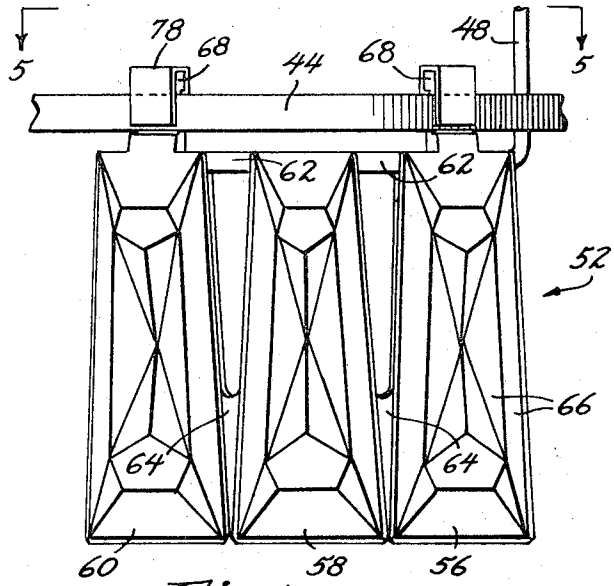


Fig. 4.

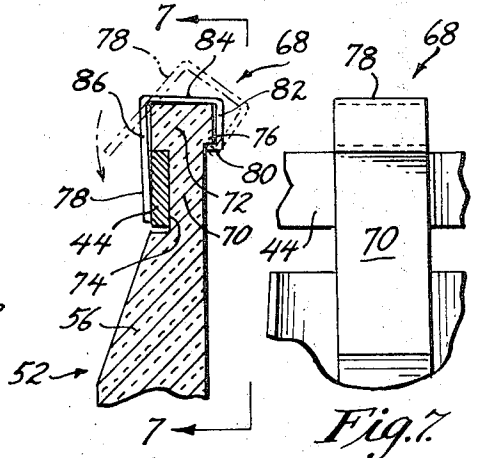


Fig. 7.

Fig. 6.

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LIGHT REFRACTING FIXTURE

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U.S. Cl. 240—108 10 Claims

ABSTRACT OF THE DISCLOSURE

A light fixture having faceted pendants are coupled to a frame adjacent a light source to form a refracting fixture of crystal-like appearance. The faceted pendants are supported on the frame by hook elements which have a light for receiving the frame. The hook element is fastened to the frame by a resilient clip. The pendant member may comprise several discrete pendant elements and may be supported by a number of hook elements.

This invention relates to a light refracting fixture, and more particularly, to an easily assembled lighting fixture, made to simulate the appearance of crystal fixtures.

Numerous constructions have been suggested for light refracting fixtures. For example, in one well-known prior art construction, individual faceted stones of stepped size are strung on wires arranged around a light source in a basket-like configuration. Another familiar construction uses vertically hanging prisms or pendants disposed in circular array about the light source. Characteristically, crystal fixtures are difficult to manufacture, since they call for individual mounting of numerous small parts.

The present novel lighting fixture closely simulates the appearance of conventional crystal lighting fixtures, but permits rapid assembly with a minimum number of manipulations. Moreover, lighting fixtures in accordance with the present invention are so constructed that the refracting elements may be formed of durable and inexpensive transparent plastic material.

In view of the foregoing, it is an object of the present invention to provide a simply constructed refracting lighting fixture.

It is another object of this invention to provide a simply constructed simulated crystal lighting fixture.

It is still another object of this invention to provide a refracting lighting fixture wherein pendant-forming members are removably coupled to a frame by resilient clips.

It is another object to provide a lighting fixture wherein several optical elements are incorporated in a single pendant member.

Other objects will appear hereinafter.

The foregoing and other objects of this invention are realized, in a preferred form, by a lighting fixture comprising a frame having a bar member thereon for supporting pendant members, faceted pendant members being coupled to the bar member. The bar member may take the form of a ring, in which case, the pendant members are coupled substantially about the periphery of the ring. Resilient clip elements retain the pendant members on the ring. Several concentric and axially spaced rings may be provided in order to provide a desired decorative effect.

FIG. 1 is a side elevation view, partially in phantom, showing a refracting lighting fixture in accordance with the invention;

FIG. 2 is a bottom plan view, partially in phantom;

FIG. 3 is a partial sectional side elevation view, taken along the line 3—3 in FIG. 2;

FIG. 4 is a partial side elevation view taken along the line 4—4 in FIG. 3;

FIG. 5 is a partial top plan view taken along the line 5—5 in FIG. 4;

FIG. 6 is a partial cross-sectional view taken along the line 6—6 in FIG. 5;

FIG. 7 is a detail view taken along the line 7—7 in FIG. 6;

FIG. 8 is a perspective view showing a structural element of a lighting fixture in accordance with the invention.

Referring now to the drawings in detail, wherein like numerals indicate like elements, there is seen in FIGS. 1 and 3 a lighting fixture designated generally by the reference numeral **10**.

The illustrated fixture **10** is a ceiling-mounted unit. Thus, a ceiling pan **12** is supported in contact with the ceiling **14**. For this purpose, a conventional mounting strap **16**, recessed in the ceiling **14**, may be provided. A stud **18**, having threaded ends **20** and **22** is received in the mounting strap **16**. A lock nut **24** may be provided to lock the stud **18** to the mounting strap **16**.

A downwardly facing reflector plate **26** is juxtaposed to the ceiling pen **12**. An angular abutment **28**, seen in FIG. 3, may be provided on the stud **18**. The abutment **28** retains the ceiling pan **12** and reflector plate **26** in suspended relation with respect to the ceiling **14**. A conventional bulb-receiving socket **30** is coupled to the ceiling pan **12**. The socket **30** may be coupled to the ceiling pan **12** by a bracket **32** extending through the pan and reflector plate **26**. The fixture **10** may be provided with any desired number of sockets. For example, referring to FIG. 2, the illustrated preferred form contains three sockets, **30**, **30'** and **30''**.

Referring again to FIG. 3, a lower end of the stud **18** supports a frame, designated generally by the reference numeral **34**, and seen in perspective in FIG. 8. The frame **34** is retained on the threaded end **22** of stud **18** by a finial **36**, best seen in FIG. 3.

Referring to FIG. 8, the frame **34** comprises a central bushing **38**. The bushing **38** has an aperture **40** adapted to receive threaded end **22** of the stud **18**. Concentric rings **42**, **44** and **46**, interconnected by radially extending stepped spokes **48**, complete the frame **34**. The rings **42**, **44** and **46**, in the illustrated embodiment are concentrically mounted with respect to the bushing **38** and each other, and moreover, are spaced from each other axially along their common axis, as is perhaps most clearly seen in FIG. 3. Ring **46**, the largest of the rings, is preferably slightly smaller in diameter than the outer skirt portion of the ceiling pan **12**.

The rings **42**, **44** and **46** provide support for crystal-simulating pendant members. For example, referring to FIGS. 1 and 3, pendant members **50** are coupled to the ring **42**; pendant members **52** are coupled to the ring **44**; and pendant members **54** are coupled to the ring **46**. If desired, pendant members **50**, **52** and **54** may be disposed about the entire periphery of their respective supporting rings **42**, **44**, and **46**.

Referring to FIGS. 4, 5 and 6, the pendant member **52**, typical in construction of the pendant members **52**, **54** and **50**, will now be described in detail.

Pendant member **52** contains three discrete pendant elements **56**, **58** and **60**. The pendant elements **56**, **58** and **60** are thus discrete optical elements, simulating the appearance of the individual pendants in conventional lighting fixture constructions. Web portions **62**, **64** interconnect the individual pendant elements **56**, **58** and **60**. The pendant members **50**, **52** and **54** are preferably molded of clear plastic polymeric material, and provided with light refracting facets **66** on their respective outer faces.

Molded integrally with the pendant member **52** are hook elements **68**. The hook elements **68** provide support means for the pendant member **52**. As is seen in FIGS. 6 and 7, the hook elements **68** include a narrow throat portion **70** and an enlarged head portion **72**. The

throat portion **70** and head portion **72** define part of a bight **74** for receiving the ring **44**. An abutment shoulder **76** is preferably provided on one side of the head **72**, opposite from the location of the bight **74**.

A resilient clip **78** serves to retain ring **44** in the bight **74**.

In the illustrated embodiment, the clip **78** is generally J-shaped in cross section. The clip **78** includes a short leg portion **80** adapted to engage the abutment shoulder **76**. The clip **78** also includes intermediate leg portions **82** and **84**, and an elongated leg portion **86** adapted to project, when in an operative position, into juxtaposition with the bight **74**. In a preferred form, the short leg portion **80** normally extends in generally perpendicular relation to the elongated leg portion **86**. When the clip **78** is in its operative position, the elongated leg portion **86** overlies the ring **44**, thereby coupling the pendant member **52** to the ring **44**.

The dotted line portions in FIG. 6 illustrate the manner in which the clip **78** may be secured to the pendant member **52** to couple the pendant member to the ring **44**. The leg portion **80** is initially engaged with the abutment shoulder **76**. Clip **78** can then be rotated in a counter-clockwise direction as seen in FIG. 6. Clip **78** undergoes deformation as it is rotated. As the clip **78** approaches its operative position overlying the ring **44**, it tends to return to its initial, undeformed shape. A slight amount of deformation of the clip **78** in the operative position is desirable. Thus, the resilience of the clip **10** keeps it in frictional and gripping engagement with the head **72**, and assures proper alignment of the pendant member **52**. The above description of the relationship between the resilient clip **78**, hook element **66**, bight **74** and ring **44** is typical of the manner in which the various pendant members **50**, **52** and **54** are coupled to their respective supporting rings **42**, **44**, **46**.

In the illustrated and above-described embodiment, the members **42**, **44** and **46** are described as "rings." It should be apparent that shapes other than the preferred rings can be employed. Thus, as used hereinafter, the members **42**, **44** and **46** and their equivalents may be referred to generically as bar members for supporting the pendant members.

As is evident from FIG. 5, in a preferred form of the invention, the plan shape of the pendant members conforms to the plan shape of the bar members from which they are supported.

Referring again to FIGS. 1 and 3, ornamentation other than the above-described pendant members may be applied to the fixture **10**. Thus, for example, a pendant **88** may be supported by the finial **36**.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

We claim:

1. A lighting fixture comprising a support frame having a bar member thereon, means on said support frame for coupling said frame to a support surface, a plurality of pendant members coupled to said bar member, support means on said pendant members adapted to engage said bar members, and resilient clip means adapted to be coupled to said bar member and said support means on said pendant members to couple said pendant members to said bar member, said pendant members comprising a plurality of discrete faceted pendant elements in side-by-side relation.

2. A lighting fixture in accordance with claim **1**, said support frame having a plurality of bar members thereon, and pendant members coupled to each of said bar members.

3. A lighting fixture in accordance with claim **2** wherein said bar members are generally concentric ring members, said pendant members being coupled around substantially the entire periphery of said ring members.

4. A lighting fixture in accordance with claim **3**, said pendant members being of about equal length, and said ring members being spaced along their common axis in stepped relation.

5. In a lighting fixture comprising a frame having a bar member thereon for supporting pendants, a faceted pendant member having support means thereon adapted to engage said bar member, said support means comprising a hook element having a head portion and a bight for receiving said bar member, and a resilient clip element for retaining said bar member in said bight, said clip element having a first leg portion adapted to engage said head portion, and a second leg portion adapted to project into juxtaposition with said bight so that said bar member is retained in said bight.

6. In a lighting fixture in accordance with claim **5**, an abutment shoulder on said head portion remote from said bight, said clip element having a further leg portion engageable with said abutment shoulder, said further leg portion normally extending in a direction generally perpendicular to said second leg portion.

7. In a lighting fixture in accordance with claim **5**, said bar member being a ring, said pendant member having a curvature complemental with said ring, and a plurality of said hook elements in spaced relation on said pendant member for receiving spaced portions of said ring therein.

8. In a lighting fixture in accordance with claim **7**, the head portions of said hook elements having an abutment shoulder thereon remote from said bight, said clip elements having a further leg portion engageable with said abutment shoulder.

9. In a lighting fixture in accordance with claim **5**, said pendant member comprising a plurality of discrete interconnected pendant elements, and said pendant member having a plurality of said hook elements coupled thereto.

10. In a lighting fixture in accordance with claim **9**, the head portions of said hook elements having an abutment shoulder thereon remote from said bight, said clip elements having a further leg portion engageable with said abutment shoulder.

References Cited

UNITED STATES PATENTS

2,513,565	7/1950	Johnson	240—108 X
2,937,265	5/1960	Blitzer	240—9
3,167,257	1/1965	Harper	240—108 X

FOREIGN PATENTS

706,647	3/1954	Great Britain.
923,687	4/1963	Great Britain.

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