Sept. 25, 1928. **1,685,620**

E. C. WHITE

ELECTRIC LIGHTING FIXTURE

Filed Nov. 6, 1926

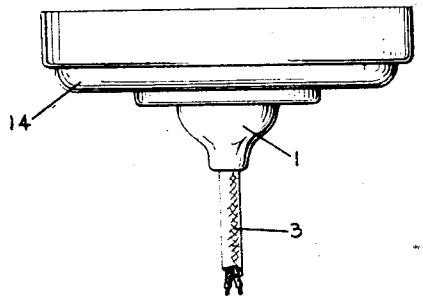


FIG 1

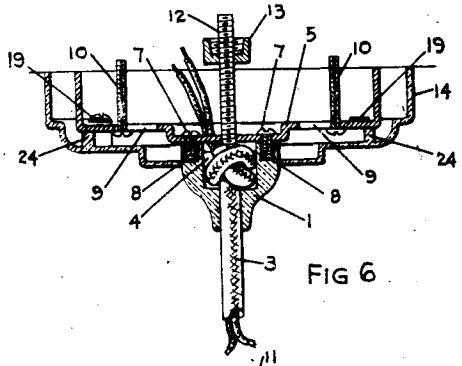


FIG 6

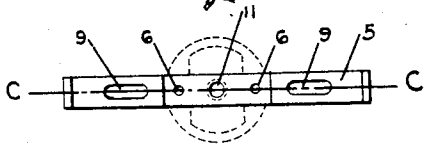


FIG. 5.

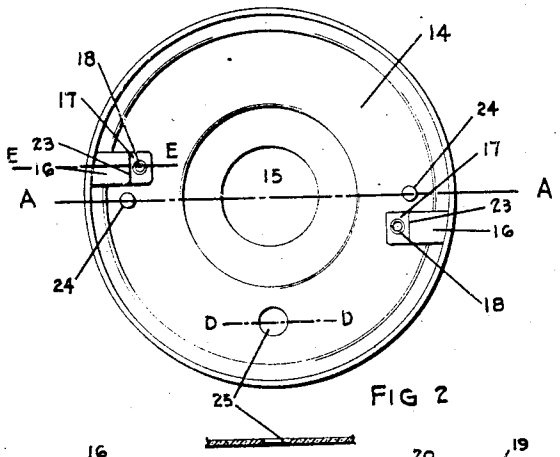


FIG 2

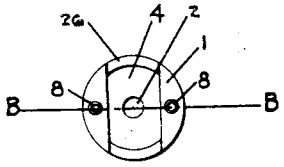


FIG 4

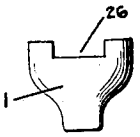


FIG 3

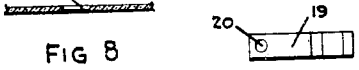


FIG 8

FIG 9

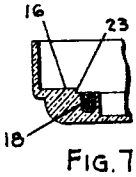


FIG. 7

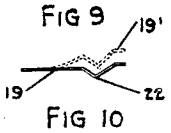


FIG 10

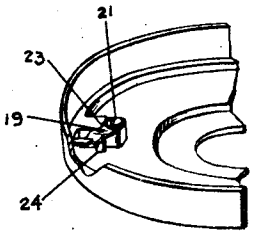


FIG. 11

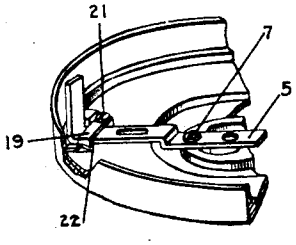


FIG 12

Ernest Castel White
INVENTOR

Patented Sept. 25, 1928. 1,685,620

UNITED STATES PATENT OFFICE.

ERNEST CANTELO WHITE, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO R. FENTON FISHER, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC-LIGHTING FIXTURE.

Application filed November 6, 1926. Serial No. 146,730.

My invention relates to the construction of all types of electric lighting fixtures for use on ceilings.

One of the objects of my present invention is to provide for the rapid attachment of fixtures to ceiling outlets. Another object is to provide an easier access to the supply wires and fixture wires for the purpose of making the necessary joints after a fixture is attached to the ceiling. Another object is to provide a canopy or cover which may be very quickly adjusted and as quickly removed without set screws or other visible means which mar the finished appearance of many fixtures. Another object is to provide a suitable support for what is known in the trade as type SJ electric cable in order that this may be conveniently used as a supporting member of a hanging fixture. The use of type SJ cable for this purpose was unknown in the trade until the applicant invented suitable means for utilizing it in a convenient manner. Some of these means have been set forth in my copending application Serial No. 139,991, filed October 7th, 1926, and other means are herein described.

In the accompanying drawings Fig. 1 is a side view of an electric hanging fixture with the lower portion of the cable and all parts supported thereby omitted; Fig. 2 is a top view of the canopy or ceiling plate without the clips which support it in place; Fig. 3 is a side view of the cable supporting member; Fig. 4 is a top view of the cable supporting member; Fig. 5 is a top view of one of the alternate means for attaching the cable supporting member to a ceiling outlet box; Fig. 6 is a vertical cross section on the lines A—A of Fig. 2, B—B of Fig. 4 and C—C of Fig. 5 of the parts shown in Fig. 1 with the addition of some screws and supporting parts; Fig. 7 is a vertical cross section of a portion of the ceiling plate on the line E—E of Fig. 2; Fig. 8 is a cross section of a portion of the ceiling plate on the line D—D; Fig. 9 is a top view of one of the resilient supporting clips; Fig. 10 is a side view of one of the supporting clips showing its displaced position in dotted lines; Fig. 11 is a perspective view of a portion of the ceiling plate showing the supporting clip in place; Fig. 12 is a similar perspective view with the addition of the cable holder and the cross bar supporting the same.

In carrying out my invention according to the illustrated embodiment thereof I provide a cable holder 1 of moulded insulating material having an opening 2 for the passage of type SJ 2-conductor electric cable 3 and a chamber 4 adapted to accommodate a knot in the cable as shown in Fig. 6. I also provide a steel cross bar 5 with holes 6 to slip screws 7 which fit threaded inserts 8 moulded into the cable holder 1 for attaching the cable holder to the cross bar. The cross bar is provided with slotted openings 9 to accommodate supporting screws 10 for attaching the cross bar to the threaded lugs of outlet boxes or to any suitable ceiling support. In case it is desired to support the cross bar on the fixture stud of an outlet box the cross bar is provided with a threaded opening 11 adapted to receive a threaded stud 12 onto which is screwed a stud cap 13 having an internal thread adapted to screw onto a fixture stud. The majority of fixture studs have a center opening adapted to slip the threaded stud 12 so that the stud cap may be screwed onto the fixture stud and the threaded stud 12 then screwed into the cap as far as desired. A cross bar 5 may then be screwed onto the thread stud 12 until the ends of the cross bar seat against the ceiling. It will be observed that the cross bar 5 has upturned ends designed to bear against the ceiling so as to space the cable holder at a standard distance from the ceiling and that the cross bar may be drawn up to this standard position when it is attached to the ceiling by means of the screws 10 or by means of the threaded stud 12.

When assembling the parts above described the cable is drawn through the opening 2 of the cable holder, a knot tied in the upper end and the knot drawn down into the chamber 4. The cross bar is then attached to the cable holder by the means described leaving the end of the cable emerging from the top of the cable holder on one or both sides of the cross bar. The cross bar is then attached to the ceiling by any suitable means including those described, and the ends of the two conductors forming part of the cable joined to the proper supply wires of the outlet by any approved means. The canopy or ceiling plate 14 which has been previously slipped over the cable is then lifted up to the ceiling and locked in place with a slight turn through the provision of means adapted to this purpose and which are described below.

The ceiling plate 14 is moulded of insulating material with a central opening 15 of the

proper diameter to give a slip fit over the outside of the cable holder 1. This ceiling plate has two bosses 16 having depressed portions 17 in which are located threaded inserts 18 moulded into the plate. I also provide two bronze clips 19 having holes 20 by means of which the clips are attached by screws 21 to the inserts 18. These clips are bent downward at one end and then upwardly so as to form a spring catch 22. The vertical distance between the top edge of the ceiling plate and the surface 17 is approximately equal to the vertical distance from either end of the cross bar 5 to the top surface of the adjacent horizontal portion of the cross bar so that when the cross bar is drawn up against the ceiling the ceiling plate may be raised into position and rotated so that the corners 22 of the spring clips 19 are engaged by the cross bar. By turning the canopy until the side of the cross bar is stopped by the sides of the lugs 16 the portion 22 of the spring clip passes over the cross bar into the position shown in Fig. 12. As the ends of the cross bar and the top edge of the ceiling plate are practically in contact with the ceiling, this locks the canopy against accidental rotation with respect to the cross bar, but by a slight exertion of force the canopy may be rotated by hand against the opposition of the spring clips and as soon as the clips have passed out of contact with the cross bar the ceiling plate may be lowered.

In order to lock the canopy in position when the ends of the cross bar are not bearing against any flat surface, the ceiling plate is provided with two bosses 24 having a top surface lower than the surface 17 by a distance approximately equal to the thickness of the cross bar 5. These bosses provide a loose bearing against the bottom of the cross bar when the parts are assembled as shown in Fig. 12 to prevent the ceiling plate being accidentally raised and disengaged from the spring clips without first rotating the ceiling plate with respect to the cross bar against the resistance of the spring clips as already described.

In order to facilitate the use of canopy switches I provide a recess 25 in the ceiling plate of sufficient depth to leave only a very thin wall of material between the bottom of the recess and the lower side of the ceiling plate. This thin wall of material may be easily pushed out and the threaded portion of a standard canopy switch inserted through the opening and held therein by a lock-nut on the outside so that the canopy switch is supported by the ceiling plate and the pull chain or cord thereof emerging from the threaded stem of the canopy switch is available for use in the usual way. The recess 25 is located at the most remote angular point from the normal position of the cross bar so as to give plenty of room to rotate the ceiling plate with respect to the cross bar as above described. One of the great advantages of this construction is that the relatively slight rotation of the ceiling plate necessary for attaching it makes it possible to assemble the parts without undue twisting of the leads to a canopy switch. I do not show a canopy switch in the drawings as these parts are known and their application understood by all electricians. My invention in this respect consists of providing the recess 25 in such mechanical relation to all the other parts that a standard canopy switch may be utilized or not as desired and in such a manner that no apparent provision for a canopy switch is visible from the finished side of the ceiling plate when a canopy switch is not used.

It should also be observed that the shoulders 23 forming the side of the depressed portion 17 of the bosses 16 are straight and so spaced from the inserts 18 that one side of the spring clips 19 is held against this straight shoulder so that the clips may be held in place with one screw to each clip and the said shoulders 23 prevent the clips from turning.

It should also be noted that the opening 2 in the cable holder 1 is a long cylindrical opening of such diameter as to give a fairly close slip fit to the outside of the type SJ cable used. The length of this cylindrical opening is important because of the fact that the cable is supported on a knot and the normal engagement of this knot with the bottom of the chamber 4 tends to bend the portion of the cable immediately below the knot slightly out of a perpendicular position. Thus if the cable passed immediately out of the opening 2 it would show a slight curvature instead of hanging perfectly straight. By providing the long cylindrical opening 2 the cable emerges from the bottom end of the cable holder in perfect alignment and the supporting knot in the cable adjusts itself accordingly. This same improvement in fixture construction has been illustrated in my co-pending application Serial No. 139,991, filed October 7th, 1926, but was first invented in constructing the cable holder 1. By this means the use of type SJ cable for support by knots in the cable is made thoroughly practical without any resulting distortion of line or lack of neatness.

The parts 1 and 14 may also be constructed of other material than moulded insulation and still retain many of the practical advantages described but the invention of these improvements in a form which can be carried out in moulded insulating material provides a degree of safety, lightness and permanency of finish best obtainable by using the material described so that the mechanical novelty of this construction lies partly in the fact that the two integral moulded parts are so formed that they may be taken out of a mould practically ready for use without any machining

operations or bench work on the individual pieces.

It will be understood, of course, that the cable holder may also be formed as a lamp socket cover without materially changing its relation to the ceiling plate and to the cross bar and a material part of my invention still remain even though the cable be dispensed with and that various other modifications may be made.

The invention herein described includes what I claim as new, which is:

1. An electric lighting fixture including a cross bar adapted to bear against the ceiling, a supporting member for the electric cable formed of moulded insulating material and attached to the cross bar, a canopy having a central opening to accommodate the supporting member and spring clips carried by the canopy and adapted to engage the cross bar for supporting the canopy.

2. An electric lighting fixture including a cross-bar, means to attach said cross-bar to a ceiling outlet, a supporting member for the electric cable centrally connected with said cross-bar in depending relation thereto, a canopy having a central opening to slip exteriorly over said supporting member, and means carried by said canopy operable by rotation of the latter to engage the cross-bar to support the canopy in fixed assembled relation to and around said supporting member.

3. An electric lighting fixture including a cross-bar, means to attach said cross-bar to a ceiling outlet, said cross-bar having abutments to engage the ceiling to space said cross-bar therebeneath, a supporting member for the electric cable having a chamber to accommodate a knot in said cable and a close-fitting cable passage leading downwardly and outwardly from said chamber, means to connect said supporting member to said cross-bar to depend therefrom, a canopy having a central opening to slip over said supporting member, and means carried by said canopy operable by rotation of the latter to engage the cross-bar to support the canopy in fixed assembled relation to and around said supporting member.

4. An electric lighting fixture including a cross-bar, means to attach said cross-bar to a ceiling outlet, said cross-bar having abutments to engage the ceiling to space said cross-bar therebeneath, a supporting member for the electric cable having a chamber to accommodate a knot in said cable and a close-fitting cable passage leading downwardly and outwardly from said chamber, means to connect said supporting member to said cross-bar to depend therefrom, a canopy having a central opening to slip over said supporting member, and spring attachment clips carried within said canopy and engageable over said cross-bar by rotation of the latter.

Signed at New York, N. Y., on this 5th day of November, 1926.

ERNEST CANTELO WHITE.