July 29, 1952 G. M. BRODIE 2,605,387

SAFETY GUARD FOR FLUORESCENT LAMPS

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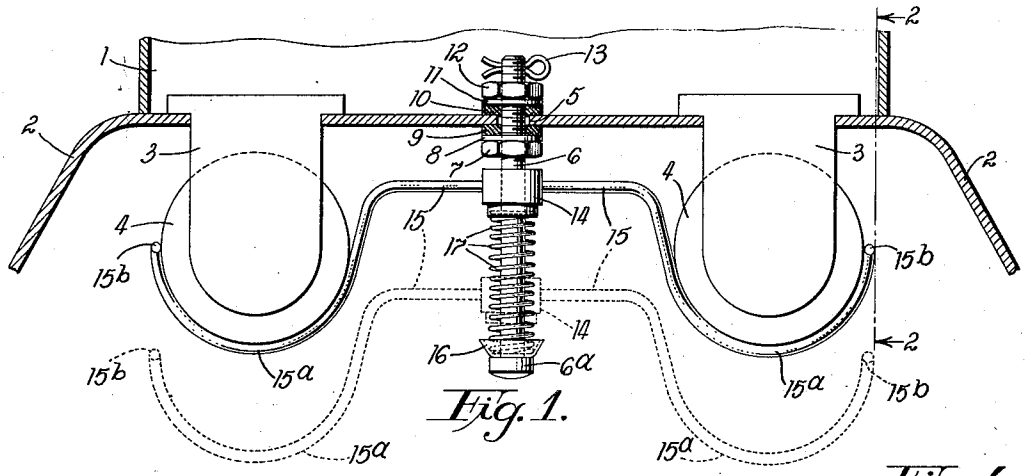


Fig. 1.

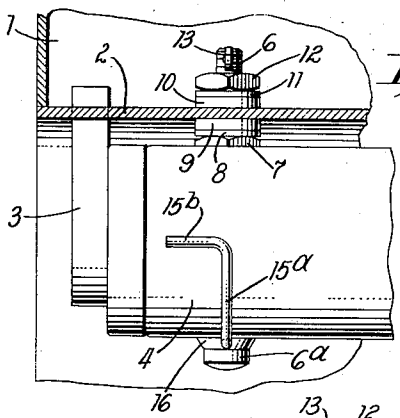


Fig. 2.

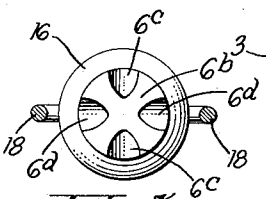


Fig. 5.

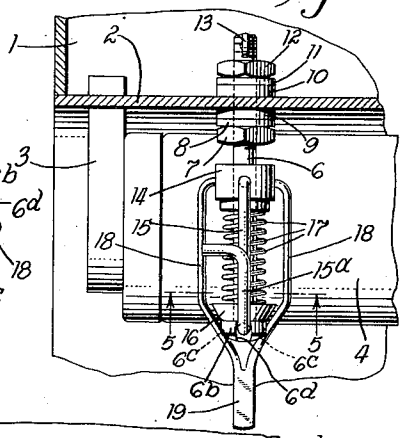


Fig. 4.

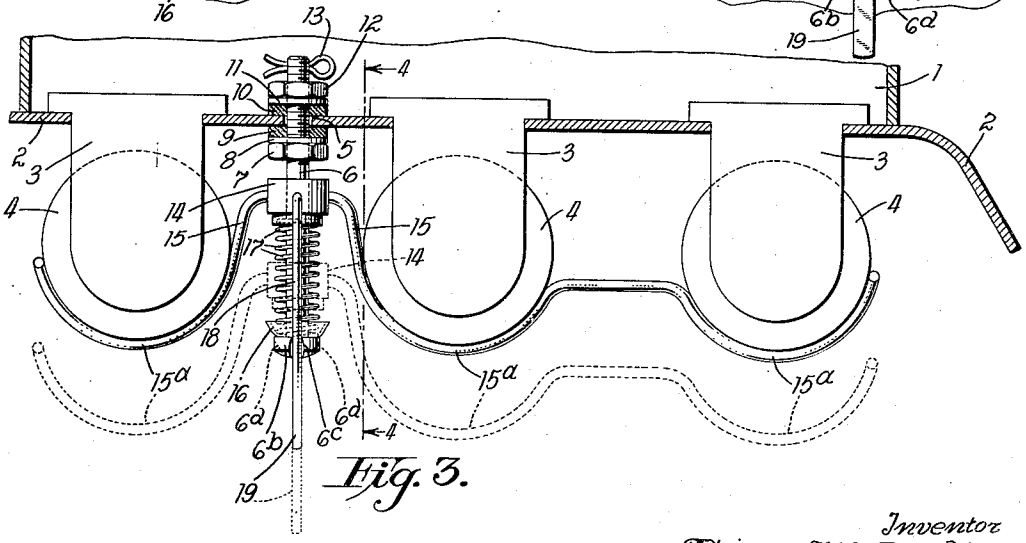


Fig. 3.

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SAFETY GUARD FOR FLUORESCENT LAMPS

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2 Claims. (Cl. 240—51.11)

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This invention relates to fluorescent lighting fixtures and more particularly to safety guards for such fixtures.

When fluorescent lighting fixtures are used in factories and other buildings where there is considerable vibration, it is not uncommon for the fluorescent lamp tubes to become disengaged from their supporting sockets and to fall. This not only destroys the lamps but may cause injury to persons working in the vicinity and also is likely to damage machinery or other equipment therebeneath.

This invention has as its primary object to provide an improved guard which readily may be attached to such lighting fixtures and which will prevent the lamps from falling in the event that they should inadvertently become disengaged from their supporting sockets.

Another object of this invention is to provide such a guard which is efficient in operation, simple in construction, inexpensive to manufacture and which may be applied to fluorescent lighting fixtures with a minimum of labor.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations, and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the drawings, Fig. 1 is a transverse sectional view of a two lamp fluorescent lighting fixture showing one of my improved lamp guards attached thereto.

Fig. 2 is a vertical section, substantially on the line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 1 but showing another embodiment of my invention applied to a three lamp fixture.

Fig. 4 is a vertical section, substantially on the line 4—4 of Fig. 3, but showing the lamp-supporting guard in elevation.

Fig. 5 is an enlarged section, substantially on the line 5—5 of Fig. 4, showing particularly certain detent notches hereinafter referred to.

Referring more specifically to the drawings and first to Figs. 1 and 2, the invention is disclosed as embodied in a two lamp fluorescent lighting fixture comprising a top housing 1, a reflector 2 supported thereby, lamp-supporting socket elements 3 and fluorescent lamp tubes 4 secured in the socket elements. Between the socket elements 3, the reflector 2 is provided with a hole 5

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through which is passed the upper end of a guard supporting rod 6. A nut 7 threaded on the rod 6, a metal washer 8 and an insulating washer 9 surrounding the rod 6 are arranged beneath the reflector 2, and a similar insulating washer 10, metal washer 11, and nut 12 are mounted on the rod 6 above the reflector 2. Screwing down of the nut 12 clamps the reflector between the washers 9 and 10 and supports the rod 6 in vertical position. A cotter pin 13 passing through the upper end of the rod 6 insures against accidental removal of the nut 12. Slidingly mounted on the pin 6, beneath the nut 7, is a collar 14 from the opposite sides of which project arms 15 having curved portions 15ª which underlie and yieldingly engage the fluorescent lamp tubes 4. The curved portions 15ª of the arms terminate in straight horizontally disposed portions 15ᵇ which bear against the sides of the lamp tubes to prevent the arms 15 and collar 14 from tending to rotate about the axis of the rod 6. At its lower end the rod 6 carries a head 6ª upon which rests a sheet metal cup 16. A coil spring 17, surrounding the pin 6 and interposed between the cup 16 and the collar 14, normally urges the collar 14 and arms 15 upwardly to the position shown in Fig. 1 in which the curved portions 15ª of the arms engage and bear lightly against the under sides of the lamp tubes 4. Should either of the lamp tubes become disengaged from its socket 3, it will be supported by the arm 15 and prevented from falling. It is to be understood, of course, that one of these guard devices is located at each end of the lighting fixture.

When it is desired to remove a lamp tube 4 from its socket, the collar 14 is grasped and the collar and the arms 15 are drawn downwardly, in opposition to the spring 17, to the position illustrated in dotted lines in Fig. 1, and then turned ninety degrees about the axis of the rod 6 or until the arms are arranged substantially parallel to the lamp tubes. Either or both of the lamp tubes may then be removed in the usual manner. After the lamp tubes have been replaced the guard device is again shifted to the position shown in full lines in Fig. 1 and again serves to prevent falling of the lamp tubes.

In Figs. 3, 4 and 5, the invention is shown as embodied in a similar guard for a three lamp fluorescent lighting fixture. Insofar as the parts are similar to those shown in Figs. 1 and 2, the same description applies and the same reference characters have been used on the drawings.

In lighting fixtures having three or more lamp tubes, the lamp tubes are spaced too closely to-

gether to permit easy grasping of the collar 14 to draw the guard device downwardly to permit removal of the lamp tubes. Therefore, in guard devices for lighting fixtures having three or more lamp tubes, it has been found desirable to provide a hand grasp depending from the collar 14. This conveniently may consist of a wire loop 18 having the upper ends of its limbs secured in the collar 14 and the lower ends thereof flattened to form a finger grip 19. When one or more of the lamp tubes shown in Fig. 3 are to be removed, the finger grip 19 is grasped and the collar 14 and guard wire 15 are drawn downwardly to the position illustrated in dotted lines, after which the guard is turned ninety degrees about the axis of the rod 6 as above described with respect to Figs. 1 and 2.

As shown in Figs. 3, 4, 5, the rod 6 is formed at its lower end with a head 6^b the under surface of which is formed with two sets of transversely arranged detent notches 6^c and 6^d into which the wires of the tapered lower end of the loop 18 are adapted to be seated to hold the guard device in either of two predetermined positions. When the limbs of the loop 18 are seated in the notches 6^c, as shown in Figs. 3 and 4, the arms 15^a are maintained parallel with the end of the reflector 2. When the limbs are in the notches 6^d, the arms 15^a are arranged lengthwise between two of the lamp tubes 4 and permit ready removal of the tubes as above described.

It is also to be understood that one of the guard devices shown in Figs. 3, 4 and 5 is provided at each end of the lighting fixture to support each end of the fluorescent lamp tubes.

Having thus set forth the nature of the invention, what I claim herein is:

1. A safety guard for a fluorescent lighting fixture having a reflector and carrying a plurality of lamp tubes, comprising a supporting rod adapted to be secured at one end to the reflector, a head on the opposite end of said rod, transversely arranged detent notches formed in said head, a collar rotatably and slidably mounted on said rod, a pair of oppositely extending arms carried by said collar and adapted when said rod is secured to the reflector to be disposed in lamp tube guarding position so as to engage the lamp tubes carried by the fixture, a coil spring surrounding said rod intermediate said head and said collar, and a hand grasp carried by said collar and having a detent portion engaging said detent notches, said hand grasp being rotated with said collar to move said arms into and out of lamp tube guarding position and said detent portion cooperating with said detent notches to lock said arms in lamp tube guarding position.

2. The combination with a fluorescent lighting fixture having a reflector, a plurality of lamp sockets and a plurality of lamp tubes removably supported in said sockets with the tubes spaced apart not materially greater than the diameter of the tubes, of a safety guard for the lamp tubes comprising a vertically disposed supporting rod carried by and depending from said reflector between two of said tubes, a head formed at the lower end of said supporting rod and having provided therein transversely arranged detent notches, a collar slidably and rotatably mounted on said rod, a pair of oppositely extending lamp-engaging arms carried by said collar and each underlying one of said lamp tubes, a coil spring surrounding said supporting rod and acting between said head and collar to maintain said arms in lamp-engaging position, and a hand grasp carried by and depending from said collar to facilitate the withdrawal of said arms from said lamp tubes and the turning of the arms approximately ninety degrees to an inoperative position in which they are arranged between and lengthwise of said lamp tubes to permit removal of the lamp tubes from said sockets, said hand grasp being provided with a detent portion adapted to enter the detent notches in said head to hold the lamp-engaging arms in either their lamp-engaging position or their inoperative position.

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