

Sept. 24, 1946.

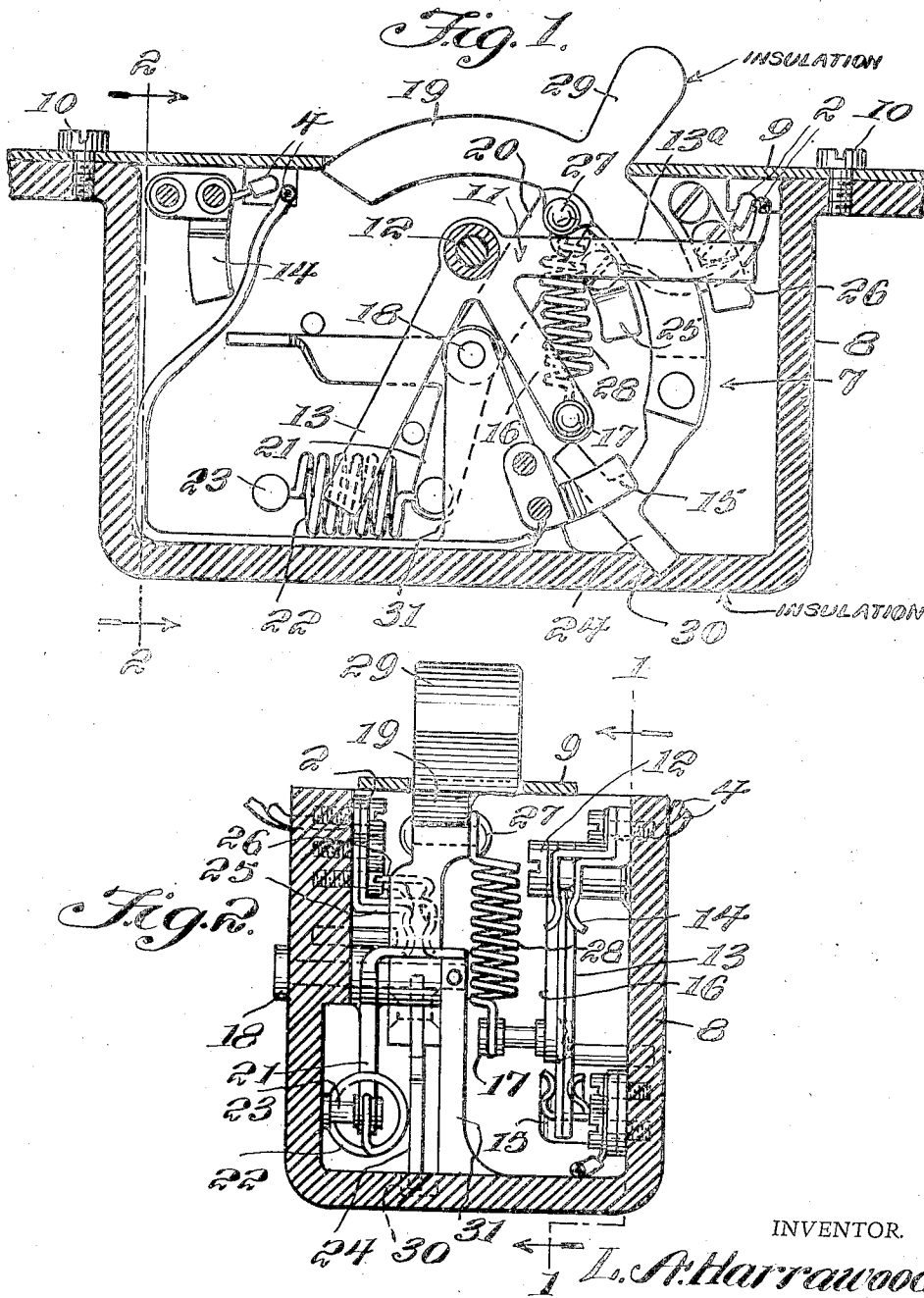
L. A. HARRAWOOD

2,408,165

FLUORESCENT SWITCH STARTER

Filed Jan. 8, 1945

2 Sheets--Sheet 1



INVENTOR.

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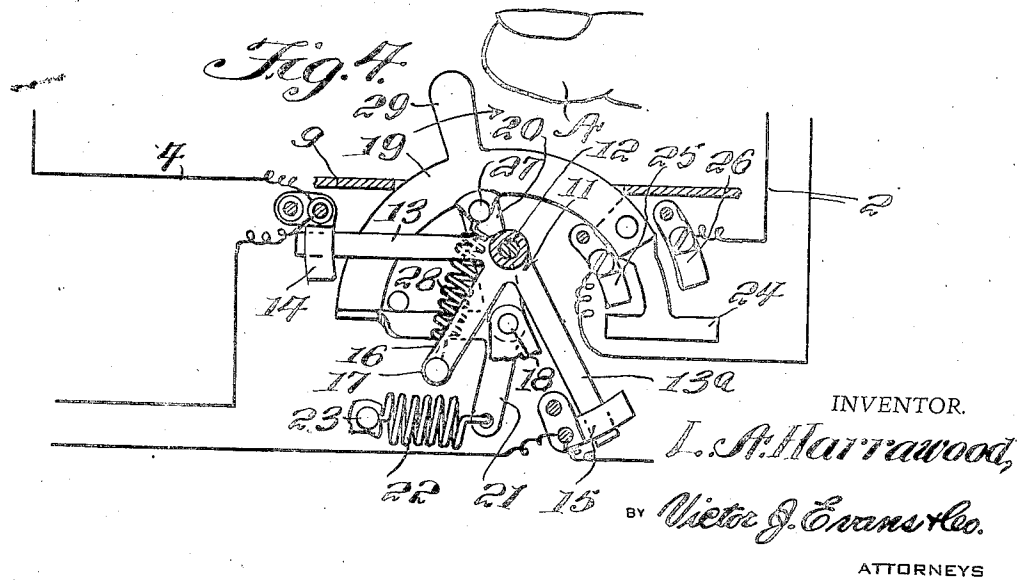
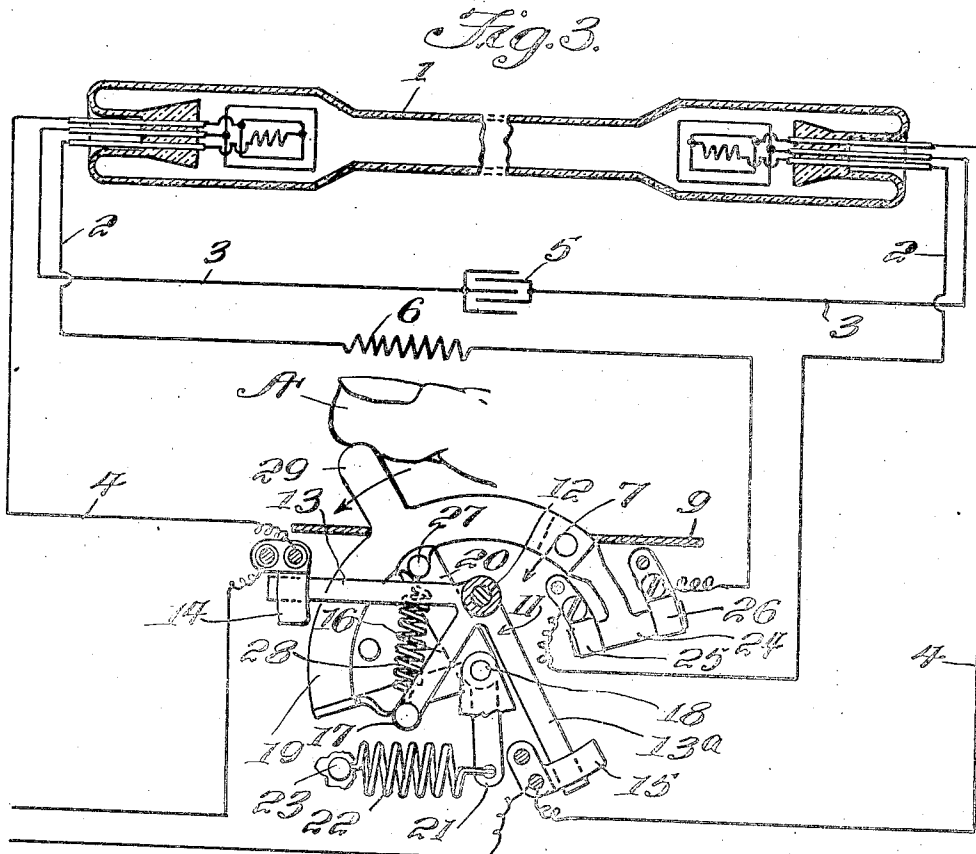
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UNITED STATES PATENT OFFICE

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FLUORESCENT SWITCH STARTER

Luther A. Harrawood, Broughton, Ill.

Application January 8, 1945, Serial No. 571,870

6 Claims. (Cl. 200—6)

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My present invention, in its broad aspect, has to do with starting means for fluorescent lighting circuits, and the principle may be embodied in any suitable switch construction whether of the single, double or multiple pole type. I have found that automatic starting devices now associated with fluorescent lighting have a tendency to cause considerable trouble, whereas my invention is simple, positive, and is embodied in a compact sturdy assembly which is not likely to get out of order or become broken.

Briefly described, the structure bringing forth my improved results, includes a simple, sturdy, insulating casing in which is mounted a suitable snap switch for a fluorescent lighting circuit. Associated with the snap switch is a second switch device which is spring operated to be in a normally open position and which has a handle or push lever for closing the switch to start the fluorescent lighting elements, and which remains closed only so long as pressure is applied, however, by spring means over-riding a center of rotation or the axis of movement of the snap switch, and connected with the snap switch, the snap switch is thrown to a closed position at the same time the starter switch is operated.

My device therefore combines in a simple and effective apparatus means for starting and operating a fluorescent lighting system, and is compact, readily applied to conventional switch structures, practical and sturdy and unlikely to give trouble or to become broken or deranged.

Other and equally important objects and advantages of my invention will be apparent from the following detailed description and drawings, but changes may be made in form, size, shape, construction and arrangement of parts, provided same fall within my broad inventive concept and the scope of the appended claims.

In the drawings wherein I have illustrated a preferred form of my invention:

Figure 1 is a longitudinal section;

Figure 2 is a transverse section taken on the line 2—2 of Figure 1;

Figure 3 is a partially diagrammatic view of a fluorescent lighting circuit in which my invention is incorporated and shows the starting switch mechanism in closed position with sustained finger pressure applied thereto, and

Figure 4 is a view similar to Figure 3 with pressure on the starting mechanism released.

In the drawings wherein like characters of reference are used to designate like or similar parts throughout the several views:

The numeral 1 designates a fluorescent lighting

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tube, and numerals 2, 3 and 4, the usual three wire circuit, including leads to the condenser 5 and coil 6; this circuit being conventional from the standpoint of starting and maintaining the fluorescent lighting system. In the circuit is interpolated a suitable snap switch mechanism generally designated by 7 mounted in an insulating casing 8 with a cover 9 held in place by screws 10.

The snap switch 7 comprises a triple-arm plate 11 which is pivotally mounted on a pin 12 carried in the housing. Arms 13 and 13a extend outwardly at an obtuse angle to each other and are switch contact arms, for engagement with contact elements 14 and 15 in the circuit 4. An operating arm 16 is located between arms 12 and 13. Referring to Figures 1, 3 and 4, it will be noted that the arc of pivotal movement of the switch 7 is such that in its open position (Figure 1) the free end 17 of the arm 16 is on one side of the axis or fulcrum 12 while in its closed position (Figures 3 and 4) the free end 17 is on the other side of the axis of fulcrum 12.

Pivoted on the pin 18 is an arcuate plate 19 supported by frame 20 and having a depending arm 21 engaged by a spring 22 which is attached as at 23 to the casing. At the end of plate 19 is a double contact element 24 engaging contacts 25 and 26 in circuits 2 and 3, and connected with the plate at a point 27 moving from one side to the other of fulcrum point 12 of snap switch 7 is a spring 28 connected with the end 17 of arm 16. Spring 22 normally holds contact element 24 out of engagement with the contacts 25 and 26 in the position shown in Figures 1 and 4. A finger lever or handle 29 on plate 19 is engaged, as at A, to rotate the plate to engage element 24 with elements 25 and 26 in which position spring 22 is moved from one side of fulcrum 12 to the other carrying with it the arm 16 thereby closing switch 7. Contact between element 24 and points 25 and 26 is sustained only so long as pressure is sustained at which time all circuits are closed to start the fluorescent lighting systems, continuance of lighting being sustained by continued closure of snap switch 7 thereby accomplishing both starting and operation of the system in a single operation. A stop 30 limits the movement of plate 19 and a standard 31 supports the end of pin 18.

From the foregoing, it is believed that the operation, advantages and construction of my invention will be apparent, but interpretation thereof should only be conclusive when made in the light of the subjoined claims.

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I claim:

1. A fluorescent lighting system starter, comprising a pivoted semi-circular snap switch having an operating arm movable from one side to the other of the pivot point of the switch representing the fulcrum, contacts for the switch in circuit with the lighting system, a pivoted plate, a connection from the plate to the operating arm, said plate being movable to shift the arm from a position on one side of the fulcrum to the other, contact points in circuit with the lighting system to start the same, said plate having points to engage the contacts in one position, and spring means normally holding said plate with the contacts in open position.

2. A fluorescent lighting system starter, comprising a pivoted semi-circular snap switch having contact arms, an operating arm between the contact arms and movable from one side to the other of the pivot point of the switch representing the fulcrum, contacts for the switch in circuit with the lighting system, an arcuate pivoted plate having contact points, a spring connecting the plate with the arm, said plate being movable

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to shift the arm from a position on one side of the fulcrum to the other, contact points in circuit with the lighting system to start the same, and spring means normally urging and holding said plate with its contacts in open position.

3. The invention as defined in claim 2, wherein a finger lever is provided to hold said plate manually with its contacts in open position.

4. The invention as defined in claim 2, wherein in the point of attachment of the spring with the plate and the operating arm shifts from one side of the fulcrum to the other as the plate is moved to open and close the circuit.

5. The invention as defined in claim 2 wherein in a housing is provided with pins supporting said snap switch and said plate, and is provided with a stop element for the plate to limit its movement.

6. The invention as defined in claim 2, wherein in the housing has a cover through which the operating handle of the plate extends, and wherein a standard is provided to support the pivoting pin for the plate.

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