Aug. 4, 1942. C. CHIRELSTEIN 2,292,050

STARTER SWITCH

Filed Aug. 9, 1941

Fig. 1

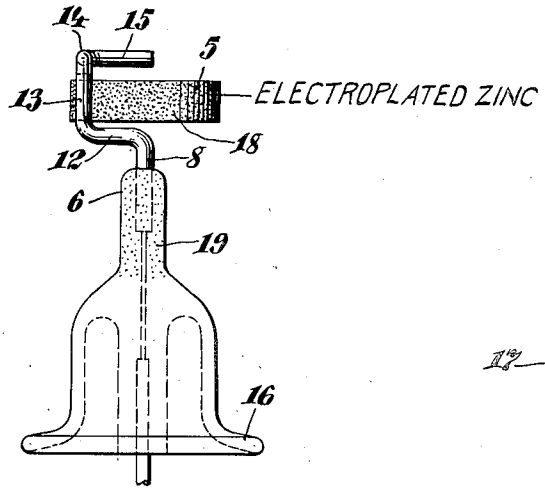



Fig. 2

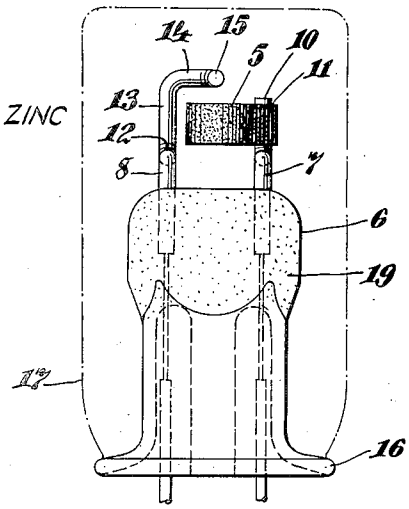



Fig. 3

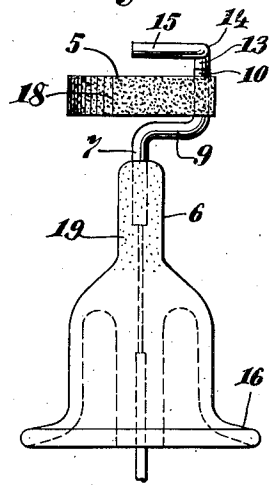
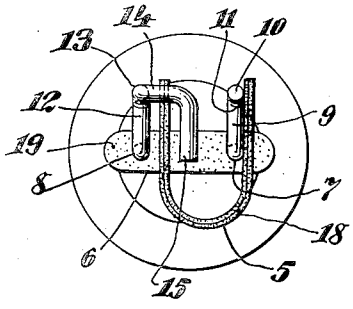



Fig. 4




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# UNITED STATES PATENT OFFICE

2,292,050

## STARTER SWITCH

Charles Chirelstein, Newark, N. J.

Application August 9, 1941, Serial No. 406,217

1 Claim. (Cl. 200—122)

The invention here disclosed relates to starting switches for gaseous discharge devices.

Special objects of the invention are to provide a starter of the glow switch type, which will have incorporated in it an ample supply of electron emissive material, available to maintain it efficiently active over a long period of useful life and operative under extreme conditions, such as at particularly low temperatures.

Other objects are to reduce the number of parts required, to arrange the switch parts in a substantially symmetrical centralized relation within the bulb or container and to strengthen and stiffen them so that they will hold their proper positions.

Other desirable objects will appear and the novel features by which the purposes of the invention are attained are hereinafter set forth and broadly claimed.

In the drawing accompanying and forming part of the specification, there is illustrated one present commercial embodiment of the invention. Structure however may be modified and changed as regards this illustration, all within the true intent and broad scope of the invention.

Figs. 1, 2 and 3 are side views of the switch parts embodying and constituting the invention, as viewed from different angles and Fig. 4 is a top plan view of the same.

In the present disclosure, the bowed bimetallic switch element **5**, is supported extending transversely across the end of the press **6**, on one stem **7**, in position for the free end of the same to engage a substantially parallel portion of the other stem **8**.

The rods or switch stems **7** and **8**, are sealed in the press and are bent to stiffen the same and to locate the bimetal substantially centered across the top of the press.

The supporting stem **7**, is shown bent substantially at a right angle at **9**, close to the end of the press and then bent substantially parallel with the sealed portion of the stem at **10**. The fixed or supported end of the bimetal is shown as welded or otherwise secured at **11**, to this straight supporting portion **10**.

Fig. 4 shows how the laterally offset part **10**, will then support the bimetal with the ends of the bimetal at one side of the press and the loop in substantially symmetrical relation at the other side of the press.

The other stem **8**, providing the fixed electrode of the switch is shown as bent angularly at **12**, close to the end of the press, substantially parallel with the first bent portion **9**, of the other stem and then bent at an angle **13**, to provide a longitudinal portion, offset from the main portion and substantially parallel with the offset supporting portion **10**, of the other stem and directly opposite to and extending transversely across the free end portion of the bimetal. This straight lateral offset part **13**, thus constitutes the stationary switch element, providing an extended contact engageable by the full width of the bimetal.

Beyond the contact portion **13**, the stem or electrode wire **8**, is bent at an angle **14**, toward and over the top of the bimetal and this part is again bent at an angle and extended as a substantially straight terminal portion **15**, overlying and substantially parallel with the free arm of the bimetal. Actually, this terminal portion may be disposed transversely substantially over the center of the press and in this position it forms an extended efficient electrode for the glow discharge to the free arm of the bimetal, eliminating the need for a cap or plate, such as has been used heretofore.

The press is shown as having a flanged base portion **16**, by which it may be sealed into the envelope **17**, forming part of the completed switch and usually containing an atmosphere of one or more of the rare gases.

The bimetallic element differs from the ordinary in that it is electroplated with a coating **18**, of zinc.

The electrolytic application of the zinc constitutes it a basic part of the bimetal and one which will dissipate or disperse slowly, giving the switch a long useful life. Further, this integrated active material will not sputter or drop off in the containing bulb. The extensive surface and the strongly adherent form of this coating layer are important factors contributing to the long useful life of the device.

The electroplating may be quite thin, about .0001 inch. This will form a substantially uniform coating of chemically pure zinc, which will act as a continuous getter or clean-up medium as well as providing ample electronically active material for prompt, quick, positive operation of the switch.

A special advantage of this electrolytically deposited zinc coating, is that it will constitute an effective electron emissive material in combination with various gases or combinations of gases and hence serve a wider field of use than some of the other active materials heretofore employed.

The short, angled bends impart a desired stiff-

ness to the electrode wires in addition to serving to support the bimetal in a desired centralized position and to form desirable switch contact and glow discharge areas.

The zinc electroplating avoids the need for special getter materials. The end of the press may be given a light coating or application of aluminum paint as indicated at 19.

What is claimed is:

A starter switch for gaseous discharge devices, comprising a container, electrode stems sealed in substantially parallel relation in said container and having substantially parallel angularly offset portions, a bowed bimetallic strip secured at one end to one of said angularly offset portions and engagable at its opposite end with the other angularly offset portion, said last mentioned offset portion having a portion extended over the bimetallic strip and a terminal portion substantially parallel with and overlying the free portion of the bowed bimetallic strip and a coating of zinc electrolytically applied to and united with said bimetallic strips.

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