

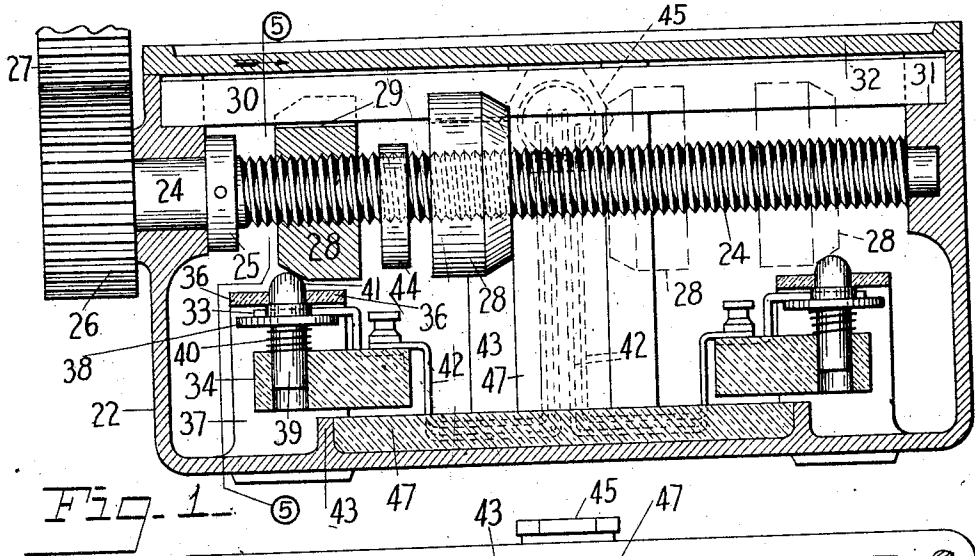
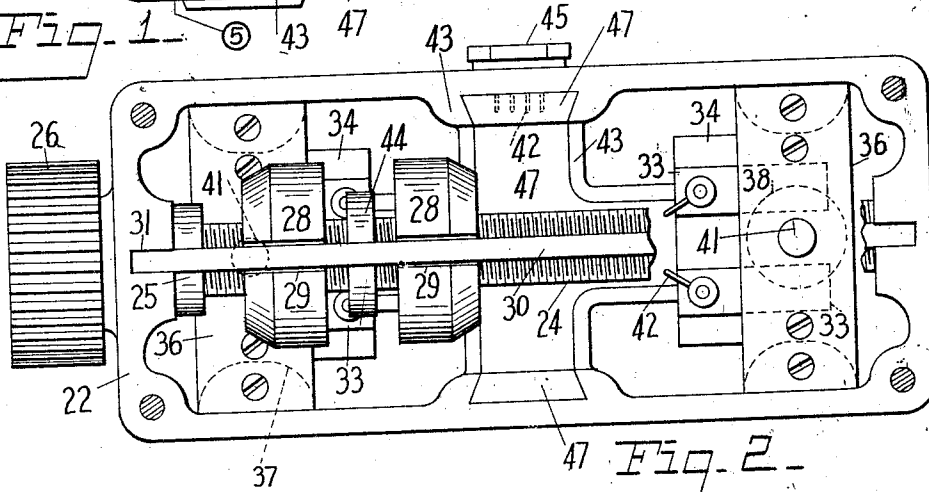
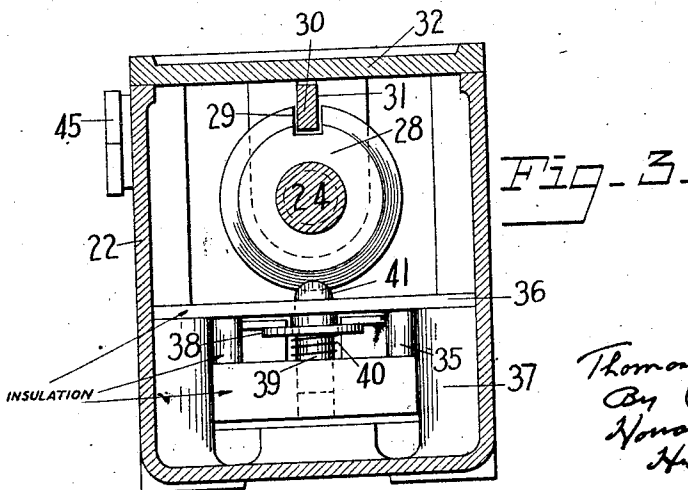
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1,601,346

T. J. CALLAHAN

LIMIT SWITCH

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UNITED STATES PATENT OFFICE.

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LIMIT SWITCH.

Application filed February 25, 1924. Serial No. 695,006.

This invention relates to new and useful improvements in limit switches.

It is the principal object of the invention to provide an inclosed switch for the above and other purposes that is simple in construction and positive in operation.

It is another object of the invention to provide a switch of the above type that is self lubricating and easily adjusted.

Figure 1 is a longitudinal, vertical, sectional elevation of the switch which forms the subject matter of the present application. Figure 2 is a plan view of the same. And Figure 3 is a section taken on the line 3—3 of Figure 1.

Referring to the accompanying drawings, my automatic stop switch is mounted in a casing 22 supported in a bracket 23 extending from the plate 12. Journaled in the end walls of the casing 22 is a screw shaft 24 held in position by a collar 25. (See Figure 1.) The shaft projects out of the casing at one end, and is provided with a pinion 26 in mesh with a gear 27 mounted on the shaft 8. When the latter is rotated in either direction, the screw shaft 24 is likewise rotated.

Mounted on the screw shaft 24 are cam nuts 28 provided with recesses 29 that receive a bar 30 which, while preventing the rotation of the nuts, permits them to move along the shaft. (See Figures 1, 2 and 3.) The bar 30 is supported in pockets 31 in the end walls of the casing 22, and is removable to permit the nuts to be adjusted on the shaft by removing a cover plate 32 of the casing 22. The cam nuts 28 are adapted to actuate individual electrical switches that may be of any well known type and which are mounted adjacent the ends of the screw shaft.

In the present instance the switches are of the normally closed type, and each one consists of switch points 33 mounted on a block 34 suspended by posts 35 from a plate 36 supported by bosses 37 which are part of the casing 22. In contact with the points 33 are conducting discs 38 mounted on a post 39 having bearing in the blocks 34. The discs 38 are held in contact with the points 33 by springs 40. (See Figures 1 and 3.)

The circuits are broken at the switches by depressing the discs 38 through the agency of buttons 41 which extend from the discs 38 through the plates 36, where they are adapted to be engaged and depressed by the cam nuts 28.

The switch points 33 are connected into the automatic electrical devices by wires 42 which lie in pockets formed by flanges 43 within the casing. The wires may, therefore, be incased in pitch 47, and the mechanism within the casing run in a bath of oil, thereby providing for the continuous lubrication of the mechanism.

To facilitate the lubrication of the screw shaft, the same is provided with an oil ring 44. The wires 42 pass out of the casing through a conduit 45.

Having described my invention, I claim:

A casing, switches mounted therein, cam nuts formed with recesses, adapted to actuate said switches, a screw shaft on which said nuts are mounted, a removable bar mounted in said casing passing through said recesses to prevent the nuts from rotating, and a cover plate for said casing to hold said bar in position.

In testimony whereof I have hereunto set my hand this 23 day of February, 1924.

THOMAS J. CALLAHAN.