Oct. 9, 1928. 1,686,633

A. M. MELAHN

SWITCH OPERATING MEANS

Filed June 8, 1927

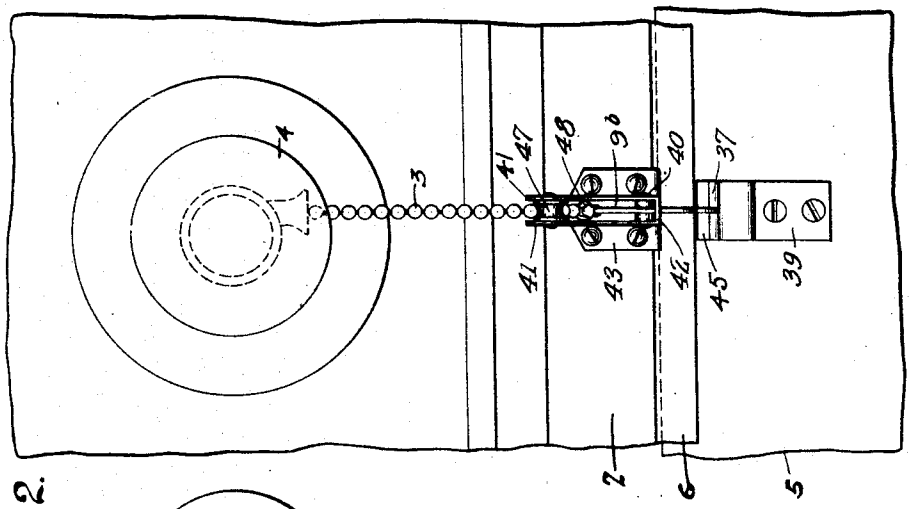


Fig. 2.

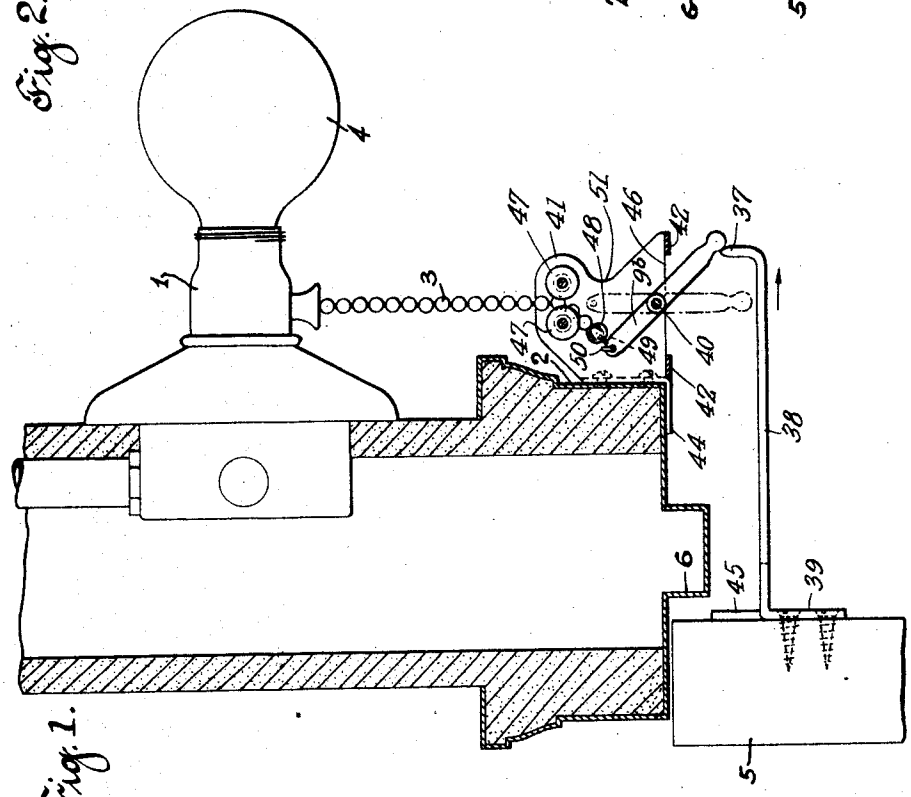


Fig. 1.

INVENTOR.

August M. Melahn

BY Philip L. McLean.

ATTORNEY

Patented Oct. 9, 1928. 1,686,633

UNITED STATES PATENT OFFICE.

AUGUST M. MELAHN, OF BROOKLYN, NEW YORK.

SWITCH-OPERATING MEANS.

Application filed June 8, 1927. Serial No. 197,375.

The objects of this invention are to provide a door actuated switch operator which will be simple and inexpensive in its construction, positive and dependable in its operation, easily mounted and connected with the switch, durable and practical in every way.

The invention is particularly designed for controlling the lights in closets and the like. Heretofore, the practice has been to control these lights by plunger switches mounted in the door frame in position for direct actuation by the door. This involves a certain amount of extra wiring and, in the case of a later installation, means that the wall has to be cut into and subsequently plastered and finished to bring this extra wiring down to the door casing. The present invention eliminates this extra expense and objectionable features because with it the switch may be associated with the light, for instance, form a part of the light socket, and be connected with the actuator simply by a pull chain or a suitable mechanical connection.

Various other advantages and novel features of the invention will appear as the specification proceeds.

The drawings accompanying and forming part of this specification illustrate a practical embodiment of the invention, but it is to be understood that this disclosure is illustrative in character and that the structure may be modified without departure from the true spirit and broad scope of the invention.

Figure 1 is a part vertical section and side elevation of the upper part of a door casing with the closet light above the same actuated by one of the new switch operating devices.

Figure 2 is a broken face view of the parts shown in Figure 1.

In the several views, the device is shown applied to the operation of a pull socket switch 1 mounted within a closet over the top of a door frame 2, said socket switch having a pull chain 3 and carrying a suitable closet light 4. The upper portion of the door is indicated at 5 cooperating with a stop 6 in the door frame.

Special advantages of the invention are its adaptability to either old or new installations and its usability in different locations and positions. In the case of an old installation, if a pull socket is already present, the actuator need only be mounted on the door casing and connected with the pull chain. If a key socket or plain socket is present, the same can be readily changed to a pull socket and the installation completed without any extra wiring. In the case of a new installation, the actuator and switch may be located where most convenient, with the best saving in wiring.

In the form of the device illustrated, the lever member 9^b is aranged vertically and has its upper end connected with the pull chain and its lower end projecting far enough below the door stop to be engaged by an upwardly angled lug or finger 37 on the inner end of an inwardly extending arm 38 attached to the back of the door by a bracket base 39. The lever is pivoted at 40 between the sides of a frame formed of sheet metal and produced by bending up two sides 41 connected at the bottom by straps 42, said side pieces having angled side wings 43 at the back attached to the back of the casing and inwardly extending lugs 44 at the bottom engaging under the lower edge of the door casing.

These lugs 44 serve to position the actuator so that the lever projects the proper distance below the stop and a positioning lug 45 struck up from the bracket 39 may be utilized by positioning it against the lower edge of the stop to properly locate the trip arm on the back of the door. Thus the two parts carried by the casing and door respectively can be accurately positioned without the need for special measurements. The trip arm 38 may be made of spring material so that it may be bent if necessary and so that it may yield to avoid injury in case of any misfit of parts.

The straps 42 connecting the sides of the frame are located at the front and back edges of the frame with an open space 46 between for the lever to swing in and these straps may be so located as to serve as stops limiting the throw of the lever.

In connecting the device with the switch, the pull chain is drawn down between guide rolls 47 between the sides at the top of the frame and a star shaped clasp 48 is closed about the last ball on the chain, said clasp having the head 49 of a wire hook 50 caught therein and said hook being caught into an opening in the upper end of the lever. The sides of the frame are cut back at 51 so as to provide access to this hook and chain clasp when the upper end of the lever is swung fully to the rear.

The lever pivot 40 and the pivots for the rollers 47 may be made as rivets securing the sides of the frame in properly spaced relation and these with the connecting straps 42

make the frame quite rigid and strong even though made of relatively light sheet metal.

The form of the invention disclosed is particularly simple and inexpensive, is easily installed, is practically entirely hidden behind the door casing and possesses the advantage that it does not actuate the switch until the door is practically entirely closed so that there is not much likelihood of the door being pushed just far enough to actuate the switch and then left ajar, which would have the effect of reversing the operation of the switch. A distinct advantage is that the device may be used with any standard form of lever or pull switch, the connection with the lever switch being made by means of a pull chain or the like.

What is claimed is:

1. In apparatus of the character disclosed, a switch operating lever member adapted for operative connection with a switch actuating pull, a casing in which said lever is pivoted and projecting lugs on said casing engageable over a predetermined portion of a door frame to thereby position the lever in definite predetermined relation for its proper operation and a bracket attachable to a door in predetermined position to actuate said lever, said bracket having positioning means by which the same is located on the door in proper position to actuate the switch operating lever member when the casing of that member is positioned by its lugs in its predetermined location on the door frame.

2. In apparatus of the character disclosed, a door bracket having a positioning lug engageable with the door stop when said door is closed to thereby position the bracket in predetermined relation on the door, a casing having a positioning lug engageable with a door frame and a pull chain operating lever member mounted in said casing and positioned thereby in proper relation to be actuated by the door bracket.

3. In combination, a casing for attachment to a door frame, an upright lever pivoted in said casing with its lower end projecting below the casing, pull chain guiding means in the upper portion of the casing, said lever having means for attachment of a pull chain to the upper end thereof and a bracket member attachable to a door for cooperative engagement with the protruding lower end of said lever.

4. In apparatus of the character disclosed, a switch operating member adapted to be operatively connected with a pull switch or the like, a mounting for said switch operating member, said mounting having angularly related lug portions engageable over the corner edge of a door casing and by which said mounting is definitely located on the door casing, said switch operating member having a projecting actuating part thus definitely located in respect to the door cooperating with the casing by such location of the mounting on the door casing and a door carried member having a positioning portion engageable with a part of the door casing when the door is closed to thereby locate said member in proper position for engagement with the projecting portion of the switch operating member.

5. In apparatus of the character disclosed, a switch operating member adapted to be operatively connected with a pull switch or the like, a mounting for said switch operating member, said mounting having angularly related lug portions engageable over the corner edge of a door casing and by which said mounting is definitely located on the door casing, said switch operating member having a projecting actuating part thus definitely located in respect to the door cooperating with the casing by such location of the mounting on the door casing and a pull chain guide carried by the mounting for directing a pull chain to the switch operating member.

6. In apparatus of the character disclosed, a lever pivoted intermediate its ends and provided at one end with means enabling connection of a switch pull chain therewith, said lever being mounted free to swing in opposite directions from an intermediate position in line with the chain, a mounting for said lever adaptable to a door casing and means attachable to the door for engagement with the opposite end of the lever and comprising a lug operable in the closing movement of the door to swing the lever from the intermediate position in one direction and then release the same and in the opening movement of the door to swing the lever in the opposite direction from the intermediate position and then release the same.

7. In combination, a casing for mounting on a door frame, a lever pivoted in said casing and having a portion projecting therebeyond, said lever having means for enabling the connection of a pull chain therewith and a bracket provided with means for enabling the mounting of the same on a door and having an angled finger to first engage and then release the projecting portion of the lever both in the door opening movement and in the door closing movement.

8. In apparatus of the character disclosed, a switch operating lever member and means for mounting the same on a door casing or the like in position with a part of the same protruding for actuation by a door carried member, switch actuating connections associated with said lever member and by which a complete actuating movement may be imparted to a switch when said lever member is oscillated in each direction and an operating member adapted for mounting on the door of the door casing aforesaid, said door carried member having a trip portion co-

operating with the projecting portion of the lever member to swing said lever member in one direction and then release the same in the door closing movement and to swing the lever member in the opposite direction and then release the same in the door opening movement.

9. In apparatus of the character disclosed, a switch operating lever member and means for mounting the same on a door casing or the like, comprising a sheet metal frame having spaced sides connected in spaced relation at the bottom by cross straps and said side pieces having angled side wings at the back by which the frame may be mounted on the face of a door casing and provided with inwardly angled lugs for engagement beneath the lower edge of the door casing to position the frame on the door casing, a chain guide in the upper portion of the frame between the side pieces, the lever member being pivoted between the side pieces below said chain guide and projecting between the straps for operation by a door carried part.

In testimony whereof I hereby affix my signature.

AUGUST M. MELAHN.