

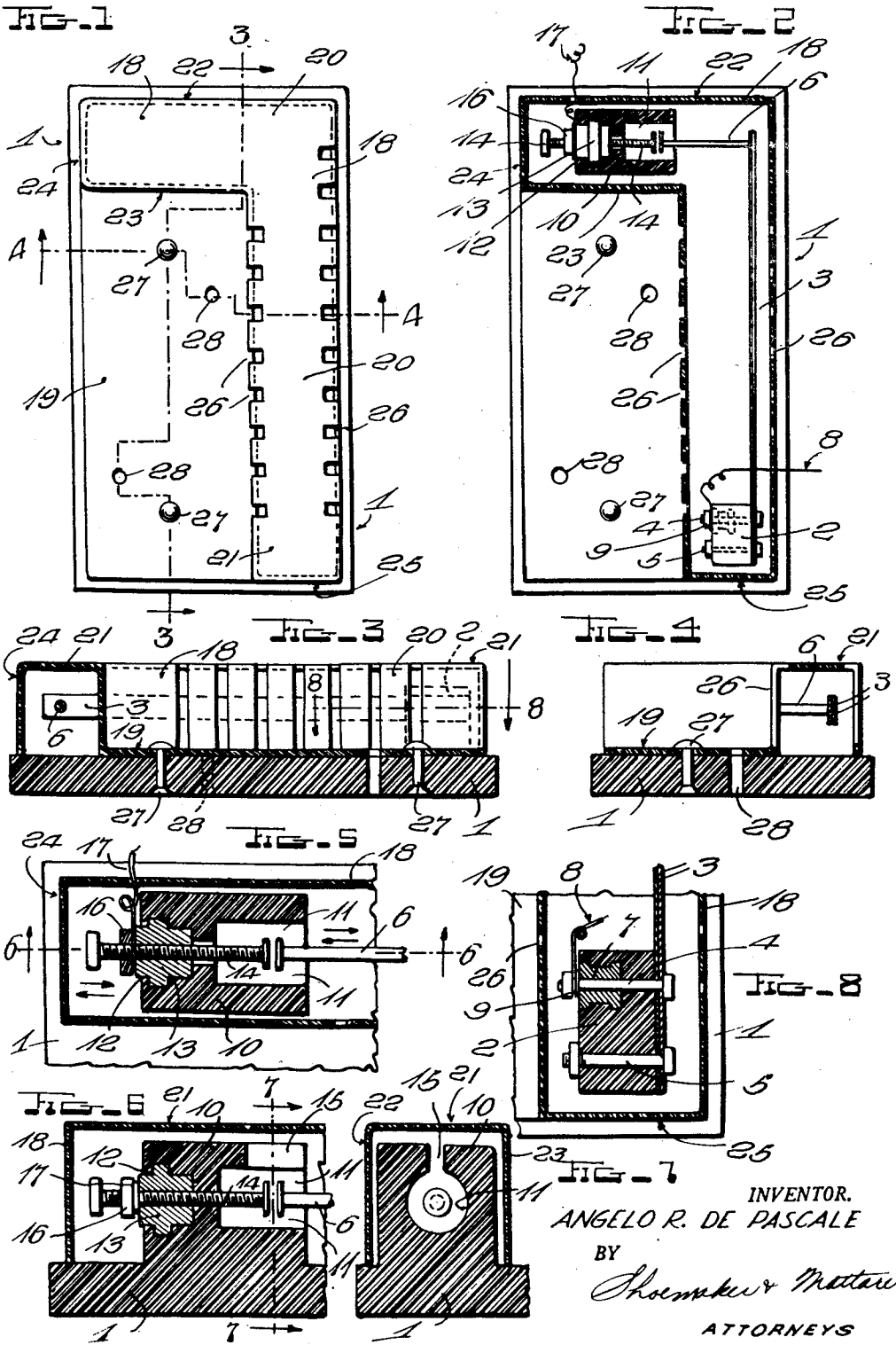
Nov. 15, 1949

A. R. DE PASCALE

2,488,055

THERMOSTATIC SWITCH

Filed Aug. 15, 1947



INVENTOR.  
ANGELO R. DE PASCALE

BY  
*Shank & Mottau*  
ATTORNEYS

# UNITED STATES PATENT OFFICE

2,488,055

## THERMOSTATIC SWITCH

Angelo R. De Pascale, Scottsville, N. Y.

Application August 15, 1947, Serial No. 768,721

5 Claims. (Cl. 200—138)

1

This invention relates to improvements in thermostatic switches particularly adapted for use in electric fire alarm systems for private dwellings, hotels, factories and other buildings.

An object of the invention is to provide an improved thermostatic switch of simple, light, compact, durable construction that can be produced at low cost and will be efficient and reliable in operation.

Another object of the invention is to provide an improved thermostatic switch in which the thermostatic element and other switch parts will be well protected against tampering and from interference due to accumulations of dust while at the same time the thermostatic element will be fully responsive to changes in temperature of air adjacent the switch.

Another object of the invention is to provide an improved thermostatic switch of the character referred to that can be easily assembled and installed.

A particularly important novel characteristic of the invention resides in the special construction of protective shield provided for the switch parts, of simple, strong construction, which provides for securely mounting the same on a supporting base for the switch parts and in which provision is made for passage of air to the thermostatic element while protecting the same against tampering.

The invention, with other objects, novel features and advantages thereof, and the particular construction, combination and arrangement of parts comprising the same will be understood from the hereinafter contained detailed description when considered in connection with the accompanying drawings forming part hereof and illustrating one embodiment of the invention.

In the drawings:

Fig. 1 is a top plan view of a thermostatic switch constructed in accordance with the present invention;

Fig. 2 is a similar view with the shield member shown in section;

Fig. 3 is a longitudinal section on the line 3—3 of Fig. 1, looking in the direction of the arrows;

Fig. 4 is a transverse section on the line 4—4 of Fig. 1;

Fig. 5 is a detail horizontal section of the mounting for the adjustable screw contact;

Fig. 6 is a detail vertical section of the mounting for the adjustable screw contact;

Fig. 7 is a fragmentary transverse section on the line 7—7 of Fig. 6;

2

Fig. 8 is a detail section on the line 8—8 of Fig. 3;

While a preferred embodiment of the invention is illustrated in the drawings, it will be understood that minor changes and modifications may be made in the particular construction shown and the invention may be embodied in other forms as will appeal to those skilled in the art and falling within the scope of the appended claims without departing from the spirit of the invention.

Referring to a detailed description of the particular embodiment of the invention illustrated in the drawings, 1 designates a base formed of electrical insulating material, preferably plastic material. On the upper face of the base at one end and at one side thereof is a boss 2, the same being shown of rectangular shape in cross section. A bi-metallic thermostatic strip 3 is secured at one end to said boss by bolts and nuts 4, 5, said bi-metallic strip extending along one side of the base 1 to the opposite end thereof and having at its free end a contact stem 6 extending inwardly therefrom at right angles thereto. One of the bolts 4 has associated therewith a metal sleeve 7 suitably secured in a recess in the boss 2, said bolt serving as a binding post to which is connected a conductor wire 8, the end of the conductor wire being clamped between a nut 9 on said bolt and the metal sleeve 7. On the base 1 at the other end thereof is a boss 10, which is provided with an interior chamber 11 extending inwardly from one end thereof and also with a bore 12 that extends inwardly from the opposite end of the boss to said chamber. Suitably secured in a recess in the boss adjoining said bore is a nut 13, and adjustably engaging said nut for cooperation with the contact stem 6 of the thermostatic strip is a contact screw 14, the inner end portion of the latter and the end portion of the contact stem being both disposed within the chamber 11 of the boss. As will be understood the lateral movement of the bi-metallic strip 3 due to changes in temperature, imparts a corresponding movement to the contact stem 6 to and from the inner end of the contact screw 14, thereby closing the alarm circuit when the contact points meet and opening the alarm circuit when the contacts separate. By adjusting the contact screw 14, the switch may be set to open and close at the desired predetermined temperature. To facilitate the nice adjustment of the contact screw 14 relatively to the contact stem 6, the boss 10 may be provided with

3

an elongated slot 15 for the insertion of an appropriate gauge to measure the distance between the contact points of the contact screw and stem. On the outer end portion of the contact screw 14 is a nut 16 for securing a conductor wire 17 to the contact screw, the conductor wire being clamped between said nut against the metal sleeve 13.

A shield is provided to protect the switch parts against tampering and also from interference by accumulations of dust. The shield designated generally 18 is of oblong shape and of substantially the same size as the base 1. It comprises a flat plate portion 19 of oblong shape to fit against the upper face of the base 1, and a casing 20 integral with the flat plate portion 19 projecting above the upper face thereof, said casing extending along one end and along an adjoining side marginal portion of the plate portion, the casing being open at its under side and adapted to enclose the bosses 2 and the switch elements. The protective casing is substantially U-shaped in cross section, the same having a top wall 21, side walls 22, 23 and end walls 24, 25. That portion of the protective casing 20 extending along the side of the base and enclosing the bi-metallic thermostatic strip is formed with vertical slots 26 providing openings for the passing of air into the casing adjacent the bi-metallic strip 3. After the contact screw 14 has been adjusted relatively to the contact stem 6 as desired, the protective shield is permanently secured to the base by rivets 27. 28 designates apertures extending through the flat plate portion 19 of the shield and the base for attaching screws.

The shield is preferably formed from plastic material but it could be constructed of metal or any other suitable material. It may be transparent, translucent or opaque. When formed of transparent plastic material, a light strong structure is afforded that provides for ready inspection of the switch parts when the shield is permanently secured to the base to prevent tampering.

What I claim is:

1. In a thermostatic switch, a substantially oblong shape base of insulating material, a boss on the upper face of the base at one end and at one side thereof, a bi-metallic strip secured at one end to said boss and extending to the other end of the base, said strip having a contact stem extending inwardly from its free end, a boss on the base at the end thereof opposite to that at which the first mentioned boss is located, a transversely extending adjustable contact screw mounted in said last mentioned boss to cooperate with the contact stem of the bi-metallic strip, and a shield member substantially oblong shape in plan having a flat plate portion to fit against the face of the base, and a casing integral with said plate portion projecting above the upper face thereof, said casing extending along one end and one side marginal portion of said plate portion, the casing being open at its under side and adapted to enclose said bosses and switch elements, and means for securing the shield member to the base.

2. In a thermostatic switch, a substantially oblong shaped base of insulating material, a boss on the upper face of the base at one end and at one side thereof, a bi-metallic strip secured at one end to said boss and extending to the other end of the base, said strip having a contact stem

4

extending inwardly from its free end at substantially right angles thereto, a boss on the base at the end thereof opposite to that at which the first mentioned boss is located, a transversely extending adjustable contact screw mounted on said last mentioned boss to cooperate with the contact stem of the bi-metallic strip, and a shield member oblong shape in plan and of substantially the same size as said base, said shield member having a flat oblong shaped plate portion of substantial size to fit against the face of the base, and a casing of inverted L-shape form integral with said plate portion projecting above the upper face thereof, said casing extending along one end and one side marginal portion of the plate portion and of the base, the casing being open at its under side and adapted to enclose said bosses and switch elements, and means passing through said flat plate portion of the shield for securing the shield member to the base.

3. In a thermostatic switch, a substantially oblong shape base of insulating material, a boss on the upper face of the base at one end and at one side thereof, a bi-metallic strip secured at one end to said boss and extending to the other end of the base, said strip having a contact stem extending inwardly from its free end, a boss on the base at the end thereof opposite to that at which the first mentioned boss is located, a transversely extending adjustable contact screw mounted in said last mentioned boss to cooperate with the contact stem of the bi-metallic strip, and a shield member substantially oblong shape in plan having a flat plate portion to fit against the face of the base, and a casing integral with said plate portion projecting above the upper face thereof, said casing extending along one end and one side marginal portion of said plate portion, the casing being open at its under side and adapted to enclose said bosses and switch elements, the part of said casing that encloses the bi-metallic strip having slots at intervals along the same providing air inlets adjoining the thermostatic strip, and means for securing the shield member to the base.

4. In a thermostatic switch, a substantially oblong shape base of insulating material, a boss on the upper face of the base at one end and at one side thereof, a bi-metallic strip secured at one end to said boss and extending to the other end of the base, said strip having a contact stem extending inwardly from its free end, a boss on the base at the end thereof opposite to that at which the first mentioned boss is located, a transversely extending adjustable contact screw mounted in said last mentioned boss to cooperate with the contact stem of the bi-metallic strip, and a shield member of substantially oblong shape in plan having a flat plate portion to fit against the face of the base, and a casing integral with said plate portion projecting above the upper face thereof, said casing being of inverted L-shape form in plan and rectangular shape in cross section and extending along one end and the adjoining side marginal portion of said plate portion, the casing being open at its under side and adapted to enclose said bosses and switch elements, that part of the casing enclosing the bi-metallic strip having slots in its opposite side walls at intervals along the same providing air inlets adjoining the thermostatic strip, and means for securing the shield member to the base.

5. In a thermostatic switch, a substantially

5

oblong shaped base of insulating material, a boss on the upper face of the base at one end and at one side thereof, a bi-metallic strip secured at one end to said boss and extending to the other end of the base, said strip having a contact stem extending inwardly from its free end at substantially right angles thereto, a boss on the base at the end thereof opposite to that at which the first mentioned boss is located, said boss having an interior chamber extending inwardly from one end thereof and also having a bore extending inwardly from its other end to said chamber, the outer end portion of said contact stem extending within the interior chamber of said boss, a transversely extending adjustable contact screw on said base extending through said bore into said chamber and having a contact at its outer end to cooperate with the contact stem of the thermostatic strip, a substantially oblong shaped shield member having a flat plate portion to fit against the face of the base, a casing integral with said plate portion

6

projecting above the upper face thereof, said casing extending along one end and the adjoining side marginal portion of the plate portion, the casing being open at its under side and adapted to enclose said bosses and switch elements, and means for securing the shield member to the base.

ANGELO R. DE PASCALE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS:

Number	Name	Date
582,093	Riley -----	May 4, 1897
1,044,270	Shaler -----	Nov. 12, 1912
1,336,728	Christensen -----	Apr. 13, 1920
1,612,114	Hall -----	Dec. 28, 1926
1,822,472	Brady -----	Sept. 8, 1931
1,845,049	Jarvis -----	Feb. 16, 1932
2,074,141	Broune -----	Mar. 16, 1937