Feb. 2, 1937. F. STOTT 2,069,427

KNOB FASTENER

Filed April 24, 1935

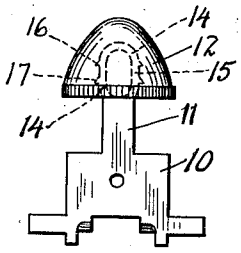


Fig. 1

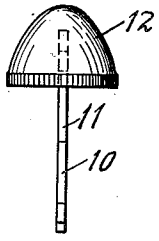


Fig. 2

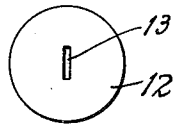


Fig. 3

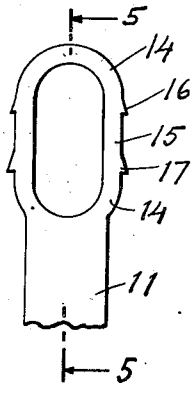


Fig. 4

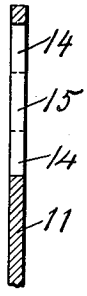


Fig. 5

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2,069,427

KNOB FASTENER

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Application April 24, 1935, Serial No. 17,990

5 Claims. (Cl. 287—53)

This invention relates to means for fastening small knobs or handles to levers on switches or similar articles.

It is an object of the present invention to provide fastening means of this kind which are suitable to permanently fasten a metallic stem or tang to a knob of hard, brittle material without splitting or injuring the same.

It is another object of this invention to provide a fastening means which is applicable to flat and thin tangs, which is of extremely simple construction and which can be applied to knobs without the use of any cement or glue as has been necessary heretofore in order to fasten such parts permanently to each other.

With these and other objects in view which will become clearer as this description progresses, the invention consists in the novel shape of the switch tang to make it resilient as shown in the accompanying drawing in which—

Figure 1 is a front elevation of a switch lever and knob attached thereto by my novel fastening means.

Figure 2 is a side view of the device of Fig. 1.

Figure 3 is a bottom plan view of the knob without the switch lever.

Figure 4 is an enlarged front view of a portion of a switch tang provided with the improved fastening means.

Figure 5 is a sectional view on the plane of the line 5—5 of Fig. 4.

Referring to Figure 1 of the drawing, 10 is a switch operating lever of a widely distributed plug switch for electric flat irons or other heating devices. It is preferably made of thin hard rolled sheet metal and has a tang 11 extending upwardly therefrom. The upper part of the tang 11 is embedded in a knob 12 of substantially paraboloidal form having a flat bottom plane which is shown in Fig. 3.

Knob 12 generally consists of hard brittle molded insulating material as phenolic compound or the like. It is provided with a narrow recess 13 preferably molded therein at the center of its flat face and extending deep into the body of knob 12 and has all sides parallel to each other. The upper part 14 of the tang which is to be lodged in recess 13 is shown in Fig. 4 and consists of an elongated closed loop 14—14 slightly wider than the lower portion 11 and rounded at its upper and lower ends. The part between the rounded ends consists of two parallel narrow bars 15 of the same thickness as part 11. On the outer side of each bar 15 two small triangular teeth 16 and 17 are formed, each having its outer slanting side extending toward the free end of the loop. It will be noted the front teeth 16 are slightly smaller than the rear teeth 17.

To fasten lever 10 to knob 12 the rounded front end 14 of the loop portion is inserted into recess 13 which is of the same width as the lever at the portions 15. When pressure is exerted against the lever 10 to drive the loop 14—14 deeper into the recess 13, the triangular or wedge shaped teeth 16 with bars 15 are compressed inwardly by the resiliency of the loop permitting the teeth 16 to pass into the recess without great effort and under further pressure the loop is further compressed permitting the teeth 17 to follow until the whole loop portion 14—14 is embedded in knob 12 as shown in dotted lines in Fig. 1. When so lodged the teeth 16 and 17 hold the tang 11 rigidly fastened to knob 12 preventing the separation of said parts without breaking the knob 12. The teeth 16 are made slightly smaller than teeth 17 because in driving them they remove a very small surface portion of the knob material which would not permit the teeth 17 which follow to get a good grip on the interior surface of recess 13.

By the above described fastening means the labor of cementing the tang 11 into knob 12 is completely eliminated and a far more rigid and lasting connection is obtained. The holding power is obtained primarily by the resiliency of the apertured, loop shaped end of the tang which permits the teeth to be pressed inwardly enough to let them pass into the recess 13 under pressure, and the same resiliency presses all the teeth into the material of knob 12 under a pull on the tang 11.

A similar action could not be obtained by simply splitting the forward end of the tang in which case the teeth 16 would give more than teeth 17 and remain inactive. Solid tangs having teeth on their outside have been used before for fastening handles of wood thereto but in such cases however the wood supplied the necessary resiliency to let them pass into the recess therefor and closed in on the teeth after driving. In the present invention, the necessary resiliency is supplied by the shape of the closed loop on the tang.

Having thus described my invention, in its preferred form, I want it to be understood that changes in construction may be made without departing from the principle of the invention and I desire to be limited only by the state of the prior art and the appended claims.

I claim:

1. An implement of the kind described including a tang adapted for insertion into a handle

consisting of a strip of sheet material having an elongated aperture near one end thereof and forming a loop portion and teeth on the outside of said loop portion.

2. An implement of the kind described including a tang, a handle having a recess formed therein for the reception of said tang, a loop formed at the end of said tang, a part of said loop having parallel outer edges forming resilient portions and a pair of teeth on each outer edge adapted to yield towards the interior of said loop, the teeth near the front end of said loop being smaller than the rear teeth to produce a tight grip of all teeth on the material of said handle within the recess thereof.

3. In combination with a knob having a narrow rectangular slot therein, of a lever having a tang portion having its outer contour of substantially the same shape in cross section as the shape of said slot, said tang being provided with an opening forming a loop portion slightly wider than the slot and rounded at its ends, the side walls of said loop portion being adapted to be compressed inwardly under pressure and slanting teeth on the outer edges of said side walls adapted to engage the inner walls of said slot when said tang portion is driven home into said slot.

4. The combination with a handle of hard and brittle material having a recess formed therein, of a metallic bar having a tang of substantially rectangular cross section adapted for insertion into the recess in said handle, an elongated perforation transversely through said tang near its end to form resilient portions supported at both ends and a plurality of teeth formed on the outside of said portions and contacting with the inside surface of said recess.

5. An implement of the kind described comprising a metallic bar having a tang portion thereon substantially rectangular cross section and adapted for insertion into a handle or the like having a recess therein of substantially the same shape in cross section as the recess in said handle, said tang being provided with an opening forming a loop portion slightly wider than the recess, the side walls of said loop portion being adapted to yield inwardly between the ends of the loop under pressure and teeth on the outer edges of the yielding portions of said loop adapted to engage the inner walls of the recess in said handle under pressure when said tang is driven into the recess.

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