

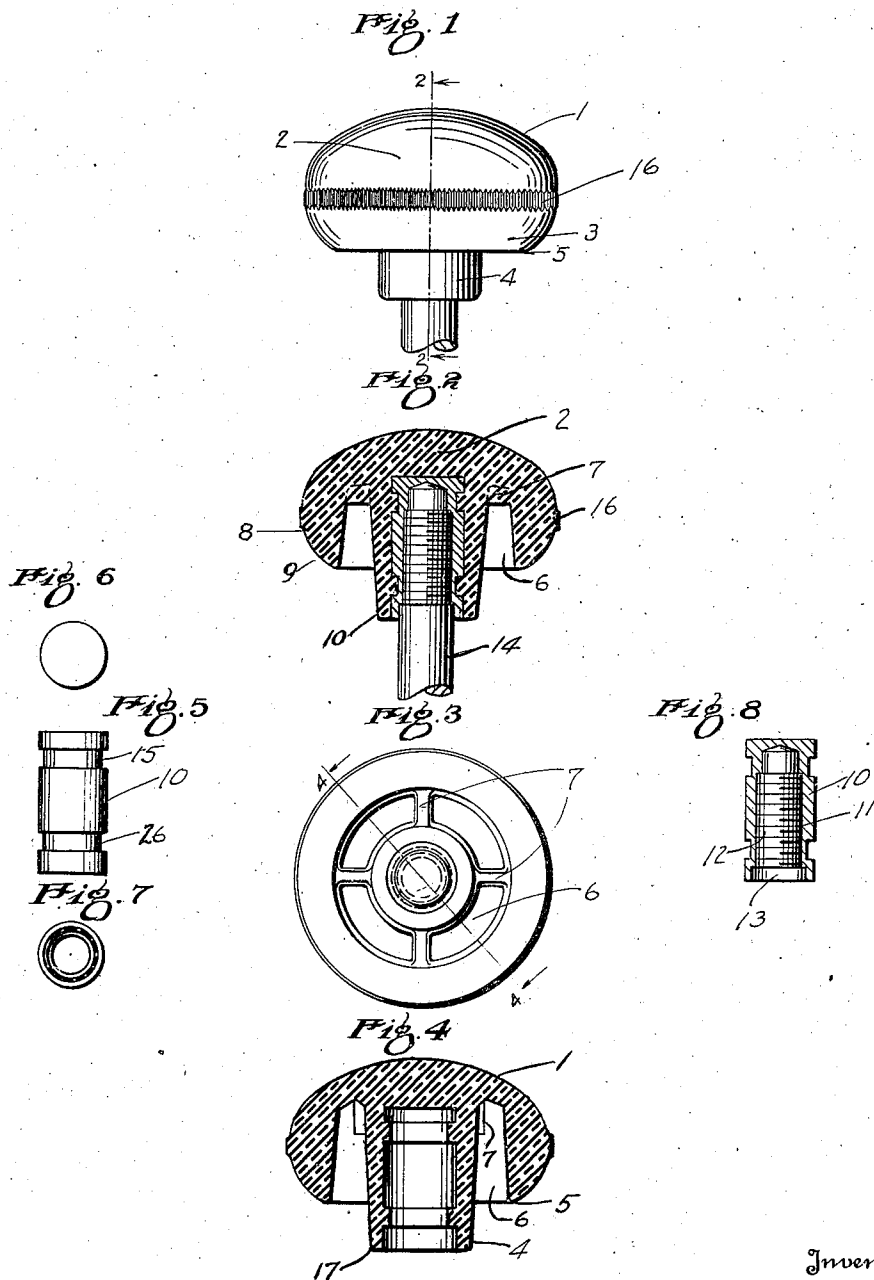
Feb. 4, 1930.

J. G. SWANSON

1,746,059

KNOB

Filed Jan. 24, 1927



Inventor

John G. Swanson

By

Frank M. Slough

His Attorney.

UNITED STATES PATENT OFFICE

JOHN G. SWANSON, OF ELYRIA, OHIO, ASSIGNOR TO THE GENERAL INDUSTRIES COMPANY, OF ELYRIA, OHIO, A CORPORATION OF OHIO

KNOB

Application filed January 24, 1927. Serial No. 163,044.

My invention relates to knobs and relates particularly to knobs for handles, such as, for instance, may be employed as handle knobs on the end of gear-shift levers of automobiles.

Heretofore it has been proposed to place on the end of gear-shift levers for automobiles a ball containing a metallic insert projected from a side thereof, the metallic insert having an interior threaded recess adapted to receive the screw-threaded end of a gear-shift lever projected within the recess.

These gear-shift lever balls have been made of various materials and it has been found that balls of phenolic moulded compositions, commonly known as bakelite, or condensite, possess the properties of strength and durability required, at the same time being susceptible of receiving a high polish on their exterior surfaces so as to present a pleasing appearance.

However, such balls are expensive to make because of the high cost of the phenolic material contained in the same, and it has been, therefore, proposed to adulterate this material, and gear-shift lever balls have been formed of phenolic material adulterated with sawdust, or which are made almost entirely of wood in their interior portions and contain only a surface shell of phenolic material. The phenolic-sawdust balls do not present a pleasing appearance to the eye and are not as durable as balls made of substantially unadulterated phenolic material, and the balls having but a thin outer shell of phenolic material are subject to separation of the outer shells from the main body of the balls and are subject to the metallic inserts becoming loosened from the wooden cores for the balls.

Other and various attempts have been made to accomplish the making in quantities of gear-shift lever or like balls adapted to be used as handles, and which will possess all of the desirable qualities of substantially unadulterated bakelite or condensite material, but none of these proposals have met with any degree of success, so far as I am aware.

An object of my invention, therefore, is to

provide a gear-shift lever ball having the undesirable properties of a substantially unadulterated bakelite or condensite ball but without possessing the disadvantages attendant upon the use of balls of adulterated or composite materials.

Another object of my invention is to provide a gear-shift lever, or like ball, in which the metallic internally threaded insert employed for connection purposes is rigidly anchored in the integral phenolic material of the ball and which ball will have the desired outer form and surface of phenolic material in an integrally moulded structure comprising merely the metallic insert and the phenolic material.

Another object of my invention is to provide a gear-shift lever ball entirely of phenolic material except for an imbedded metallic insert for connection purposes and which will comprise a minimum of such phenolic material relative to its exterior dimensions.

Another object of my invention is to provide a gear-shift lever ball of phenolic material employing a minimum of such material for its exterior dimensions and which will be strong, durable, pleasing in appearance, and inexpensive to make in quantities.

Other objects of my invention and the invention itself will become apparent by reference to the drawings illustrating an embodiment of my invention, and in which drawings:—

Fig. 1 illustrates a side elevational view of an embodiment of my invention;

Fig. 2 is a longitudinal medial section view taken on the line 2—2 of Fig. 1;

Fig. 3 is a plan view from below of the embodiment of my invention shown in Fig. 1;

Fig. 4 is a section taken on the line 4—4 of Fig. 2;

Fig. 5 is an elevational view of a metallic insert employed in the foregoing embodiment; and

Figs. 6, 7 and 8 are top plan, bottom plan and sectional views, respectively, thereof.

Referring now to the different figure drawing, in all of which like parts are designated by like reference characters, it will be seen, generally, that my improved gear-

or like lever ball handle is of mushroom form, the outer surface being substantially that of a truncated flattened spheroid having an upper crown surface 1 of substantially the form of a portion of a sphere on the head 2 and having an annular skirt 3 depending therefrom, and having an axial stem 4 depending from the head and extending beyond the edge 5 of the skirt, there being formed between the stem and skirt an annular recess 6. A plurality of spaced webs 7, herein illustrated as four in number, joining opposing portions of the skirt and stem in portions thereof disposed toward the head 2. These webs, as will be noted by reference to Fig. 3, increase in lateral and longitudinal dimensions where they merge with the integrally moulded skirt and stem portions so as to provide symmetry of outline and maximum strength in the joints between the webs and such skirt and stem portions.

The periphery of the skirt, as indicated at 8, is rounded longitudinally, being more abruptly rounded, preferably, than the crown 1 in medial, vertical sections, so as to have a portion of its surface 9 adjacent its edge 5 receding from its portion of greatest diameter, sufficiently rapid that when the ball is in use the pressure of the operator's hand will be applied more towards its portion of larger diameter than towards its edge 5.

Within the stem 4 is contained the metallic insert 10 which contains an axial recess 11, intermediate the portion of which contains an interior screw-thread 12, as illustrated. The recess bore is enlarged at 13 adjacent the mouth of the recess so as to effect ready guiding of the knob on to the threaded end of a gear-shift lever, indicated at 14.

The metallic insert 10 comprises exterior grooves 15 and 26 and may have its exterior surface formed polygonally in transverse sections so as to increase the rigidity of contact had with the interior walls of the recessed stem 4 containing such insert.

I find that a knob having an outer surface, as illustrated, wherein the peripheral surfaces are more sharply curved than is the crown surface, permits a tighter grip to be more likely had by the hand of the operator in gear-shifting operations than is the case of a truly spherical ball knob surface, and this effect is increased, where desired, by the provision of a roughened surface portion 16 projecting outwardly from the intermediate knob portion of greatest diameter.

It will be noted that by the provision of an annular recess 6, I have accomplished a saving of bakelite or condensate phenolic material which will enable me to produce gear-shift lever balls of unadulterated phenolic material with rigidly secured metallic inserts substantially as low a cost as it is possible to produce balls of composite phenolic and wood materials, and that a better, more du-

urable ball is produced. Also, this effect is contributed to by the flattened spheroidal form of the outer surface which accomplishes a saving of material in portions which are thus omitted below the surface 9, which otherwise would be filled with material, to the lower edge 17 of the stem.

At the same time, I find that by forming the skirt, as shown, and by providing the connecting web 7 joining it, as shown, to the stem, that the lateral walls of the ball are not subject to crushing stresses which would be sufficient to break a skirted ball substantially otherwise as formed.

Having thus described my invention in a specific embodiment, I am aware that numerous and extensive departures may be made from the embodiment herein illustrated and described but without departing from the spirit of my invention.

I claim:

A lever handle knob adapted to be screw threaded onto the threaded end of a lever, comprising a single integral body of molded phenolic condensate material or the like, having a top dome portion with a depending annular skirt, the outer surfaces of the dome and skirt adapted to be engaged by the hand of an operator and of circular form along all parallel transverse sections, and of substantially truncated oblately spheroidal form in all vertical sections, having a waistline of greatest diameter disposed substantially nearer its truncated base portion than the outer polar surface of the dome portion, the perimeter of the base being substantially less than the periphery at the waistline, and an integral stem depending axially from the inner wall of the said dome axially of the knob to beyond the plane of the truncated end of the skirt, said stem being of gradually diminishing diameter towards its end, said skirt being radially spaced from said stem, and a metallic longitudinally bored insert provided with annular grooves in its surface embedded by molding axially within the stem, having the walls of its bore threaded for engagement with the threads at the end of the lever to which the knob is to be attached.

In testimony whereof I hereunto affix my signature this 13th day of December, 1926.

JOHN G. SWANSON.

120

125

130