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W. P. KLIMENT

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VALVE HANDLE

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Fig. 1.

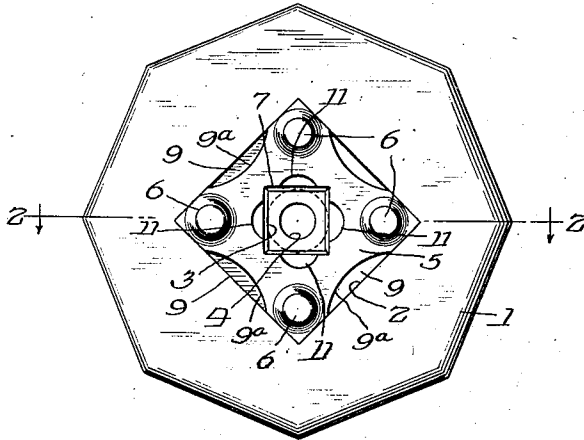


Fig. 2.

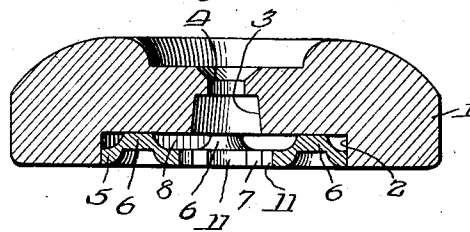
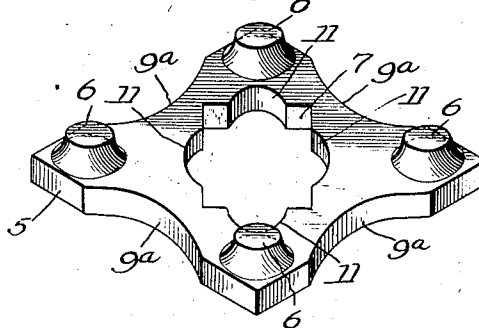


Fig. 3.



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VALVE HANDLE

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3 Claims. (Cl. 16—117)

More specifically, my invention relates to an insert piece for use with a valve handle or wheel in which improved heat dissipation is accomplished by means of a novel form of construction of such insert.

The particular type of operating handles or wheels to which this invention relates are those which are customarily made in bakelite or other moldable materials, compositions, and in some instances have been made of wood. Briefly, the type of wheel, for example, to which my invention is adaptable is that designated as Type L on page 61 of Catalogue No. 51, issued by Crane Co.

Heretofore, a very significant problem faced by the industry in connection with this type of valve handle or wheel, has been the objectionable tendency of the heat from the valve pipe line to be transferred to the valve stem by radiation and also by actual contact and then subsequently being transmitted to the wheel itself, thus resulting in not only increased deterioration of the wheel material itself but in numerous instances becoming so objectionably hot as to be incapable of operation with comfort by the user, and in some cases even resulting in minor burns because of contact with the hot insert plate itself. This objectionable condition has been largely traceable to the fact that previously the inserts have been made to accommodate a very intimate contact with the wheel so that little or no dissipation of the accumulated air having relatively high temperatures, was possible.

By my invention I have accomplished the avoidance of such objectionable heat accumulation by providing what might be termed a system of ventilation or means of air circulation which readily dissipates a substantial amount of the heat ordinarily accumulating between the square of the valve stem, the insert, and the wheel proper.

More specifically, by a uniquely formed insert providing an arrangement of circulatory channels or passages when in assembly with the wheel or handle, dissipated movement of the heated air is obtained so as to readily expedite disposal of the otherwise accumulating air possessing objectionably high temperatures causing the aforesaid objectionable heating.

Another important object is to provide for an insert which is readily adaptable for compact use and assembly with the many current types of wheels and handles, without requiring substantial modification of the latter to be suitable, and also capable of use upon various sizes of wheels with-

out incurring the requirement for special molds or dies for the latter.

Other objects and advantages will become apparent upon reading of the specification in connection with the drawing, in which

Fig. 1 is an exterior plan view of the underside of a handwheel equipped with a preferred embodiment of my insert employing my invention.

Fig. 2 is a longitudinal sectional view of the same wheel taken in the plane of line 2—2 in Fig. 1.

Fig. 3 is a perspective view of the detached insert showing in more detail the manner in which the latter is constructed in one of its many available forms.

As illustrated in Fig. 1, the wheel or handle may comprise a main body 1 of bakelite or any other suitable composition molded into such form as may be desired to accomplish convenient hand gripping for the operation of a rotatable valve stem or the like. The body 1 is provided at its underside or lower portion with a recessed panel 2 preferably of such configuration as to accommodate, preferably snugly, such insert or plate 5 as may be used, and of such form as will hereinafter be described. The main body is also provided with an upward extending tapered socket 3 into which the topmost end of the square of the valve stem (not shown) ordinarily projects. At the upper part of the said socket a round opening 4 is provided for the usual machine screw which is adapted to enter a threaded tapping in the adjacent end of the valve stem square when assembled with the latter, thus holding the wheel securely to the valve stem.

In a preferred embodiment as illustrated, the insert or plate 5 is preferably of square or rectangular form, although it is obvious that it may be of any suitable shape, depending upon the size and form of the main body 1 with which it is to be ultimately assembled. As previously stated, the insert 5 fits the recess 2 preferably in a snug manner so as to eliminate any objectionable looseness of fit therebetween.

On the upper side of the insert a number of small lugs or raised portions 6 are provided. If the insert is made from a comparatively thin metal, the lugs 6 may of course be formed by simply partially displacing or punching the metal on one side, creating a depression therein, with the raised portion 6 accordingly being formed on the opposite side, as more clearly shown in Fig. 2. Furthermore, the shape and size of these lugs or raised portion may of course vary to suit the form

and size of insert used, as well as that of the main body.

Preferably co-axial with the main body 1, the insert 5 is provided with an opening 7 preferably of square form and having the relieved portions 11 on each side of the square for purposes hereinafter to be explained. Similarly, on the outside borders or periphery of the insert, similar relieving portions 9a are provided.

Directing attention now to Fig. 2, which shows the plate or insert 5 in place within the main body 1, it will be noticed that the upper portions of the lugs 6 contact with the inner plane surface of the recessed panel 2, thereby creating a clearance or air space 8 over all of the upper surface of the insert between the lugs 6.

Therefore, with the insert plate 5 in assembled relation to the main body 1, as more clearly shown in Figs. 1 and 2, and because of the circulatory passages or air channels 8, 9 and 11, the amount of actual contact surface of the insert with the main body 1 is reduced to only such minimum contact as may be required for practical operation. Likewise, because of the circulatory horizontal air passage 8 (see Fig. 2) and the vertical passages 9 and 11 (see Fig. 1) the free circulation of air is thus expedited, thereby decreasing materially the amount of heat that will otherwise pass from the valve stem square by way of the opening 7 and thence radiated across the insert to the main body 1.

Briefly, I have accomplished the advantageous use of an insert of such form that a relatively large counteracting circulation of air is obtained and at the same time, insure a sufficient contacting

surface between the insert and wheel body 1 so as to obtain convenient assembly and operation of the valve wheel.

It is of course apparent that the size and the form of the main body, as well as that of the insert, may be materially modified without departing beyond the spirit of this invention. I desire therefore that the scope of my protection be measured by the claims appended hereto.

I claim:

1. In a substantially solid handle suitable for assembly with a valve stem, an apertured plate, the said handle having a recess on its underside for the reception of the said plate, relieved means provided by the said plate whereby circulatory air passages are provided within and around the said recess when mounted therewithin.

2. In a substantially solid handle suitable for assembly with a valve stem, an apertured plate with peripherally relieved sections, the said handle having a recess on its underside for the reception of the said plate, means interposed between the said plate and the said recess whereby circulatory air passages are provided within and around the said plate when the latter is positioned within the said recess.

3. In a substantially solid handle suitable for assembly with a valve stem, an apertured plate with relieved peripheral portions, the said handle having a recess on its underside for the reception of the said plate, the said relieved portions providing means whereby circulatory air passages are formed within and around the said plate when the latter is mounted within the said recess.

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