Oct. 20, 1942. B. HAAN 2,299,089

ICE REMOVER FOR WINDSHIELDS

Filed May 5, 1941

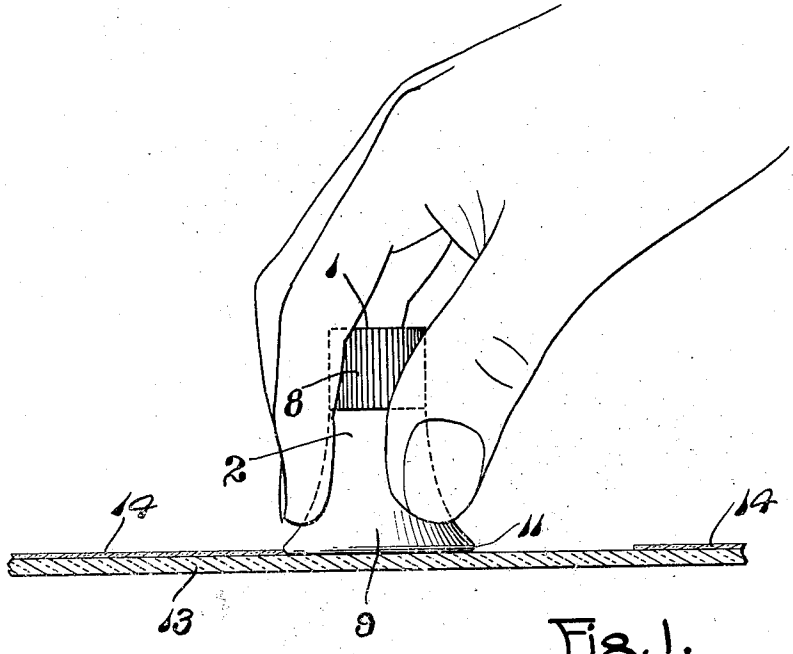


Fig. 1.

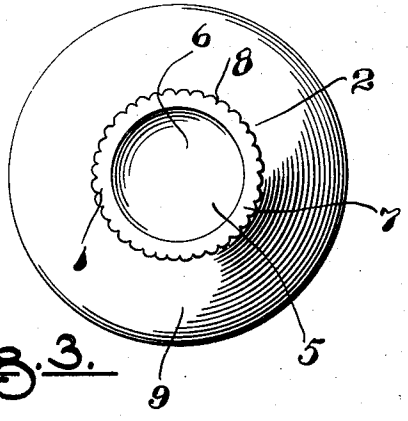


Fig. 3.

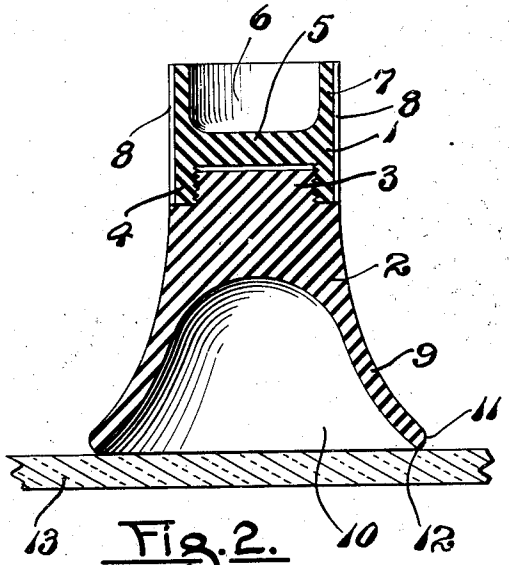


Fig. 2.

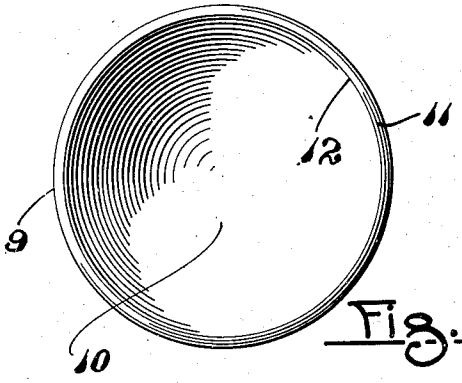


Fig. 4.

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ICE REMOVER FOR WINDSHIELDS

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4 Claims. (Cl. 15—236)

This invention relates to a particularly simple, effective and novel ice remover for windshields. The collection of ice at the outer side of windshields in motor vehicles at times during the colder seasons of the year is a matter of considerable danger in driving. The ice adheres strongly to the glass and has been difficult to remove except with the use of sharp steel instruments, for example, razor blades properly held for cutting and removing the ice. Such sharp steel implements, however effective they may be for ice removal, scratch and otherwise damage the surface of the glass. With my invention the ice is very quickly and expeditiously removed without danger of abrading the glass surface. The implement which I have devised may be made in different forms, for use when the ice frozen to the glass is in a relatively thin or thick deposit and, for convenience, two different forms which I have devised for the two different conditions mentioned may be readily connected together so that either may be used in accordance with the condition met.

The invention may be understood from the following description taken in connection with the accompanying drawing, in which,

Fig. 1 is an elevation showing a portion of a windshield in section, and illustrating the manner in which the ice removing tool or implement may be used in removal of a thin ice coating.

Fig. 2 is an enlarged longitudinal section through the ice removing implement.

Fig. 3 is a plan view thereof, and

Fig. 4 is an under view.

Like reference characters refer to like parts in the different figures of the drawing.

In a preferred construction of the ice removing implement two members 1 and 2, preferably of hard rubber, are connected together, the upper end of the part 2 being reduced in diameter and exteriorly threaded as indicated at 3. The upper portion 1 consists in effect of a cylindrical sleeve of the same material which has a downwardly extending section 4 below an integral cross web 5 extending across the interior of the sleeve, which downward extension is interiorly threaded and may be screwed upon the exterior threaded part 3 to connect the two parts 1 and 2.

Above the cross web or partition 5, the upper member 1 has a recess 6 surrounded by a cylindrical wall 7. The exterior surface of the member 1 is corrugated, that is, provided with a continuous series of vertically extending ribs 8 separated by vertical grooves or valleys between the ribs.

The lower portion of the member 2 is flared outwardly and downwardly, providing a continuous annular bell-like wall 9 around an interior recess 10. The lower edges of the wall 9 are curved downwardly and inwardly as at 11, meeting with the lower parts of the interior recess sides to provide a relatively sharp continuous annular edge at 12, as shown.

The windshield glass 13 is indicated in Fig. 1 as having deposited at a side thereof a thin layer of ice 14. Where the ice coating is relatively thin the lower member 2 is brought against the ice and the cutting edge at 12 will pass therethrough and then by moving the implement laterally over the surface of the glass the ice will be scraped ahead of the sharp edge 12 and forced outwardly between such edge 12 and the curved edges at 11. When the ice is relatively thick the implement is reversed in position and the corrugated outer edges of the wall 7 of the upper member 1 are forced into the ice and will cut therethrough more readily than the edge at 12, and will scrape and remove the ice from the glass windshield.

The material used which preferably is hard rubber, or of an equivalent nature, does not scratch or abrade the glass yet it cuts the ice and scrapes and removes it from the glass very quickly and cleanly.

It is of course to be understood that the specific construction disclosed shows two of the forms only in which this invention may be embodied. There are numerous other ways in which it can be constructed to obtain the scraping edge at 12 with the outwardly curved or flared surface 11 in conjunction therewith; also to obtain a corrugated edge for engagement and removal of the thicker deposits of ice. The construction does not have to be in the circular or conical form shown but may take numerous other forms.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. An ice scraping implement of a hard plastic material, said material having a degree of hardness between that of ice and glass and provided with a wall having an annular scraping edge, the sides of which are located in angular relation to each other.

2. An ice removing implement adapted for scraping ice frozen to the surface of glass comprising, a member having a wall and a scraping edge formed by two sides of said member joining at a corner to provide said scraping edge, said

implement adjacent the scraping edge being of a material having a hardness that the scraping edge will penetrate ice frozen on glass and not hard enough to scratch the glass, the outer side of the wall, to be presented to and forced against the ice, being serrated to provide spaced apart ribs with intervening grooves between the ribs, as and for the purposes specified.

3. An ice scraping implement of a hard plastic material, the degree of hardness of which is less than that of glass and sufficiently hard to penetrate ice frozen on glass, including an annular wall having a free edge and provided with an ice penetrating and scraping annular portion around it for engaging with and removing ice frozen to a glass surface, by forced movement of said scraping edge against the ice.

4. An ice scraping device comprising, a hollow member of substantially circular form in cross section, having the lower portion thereof flared outwardly, the inner and outer sides of said member being brought together to form a sharp edge, said device being formed of a hard plastic having a lesser degree of hardness than glass and greater than ice.

BENNIE HAAN.