March 10, 1942. J. E. AHLBORG 2,275,713

WINDSHIELD SCRAPER

Filed Feb. 6, 1939

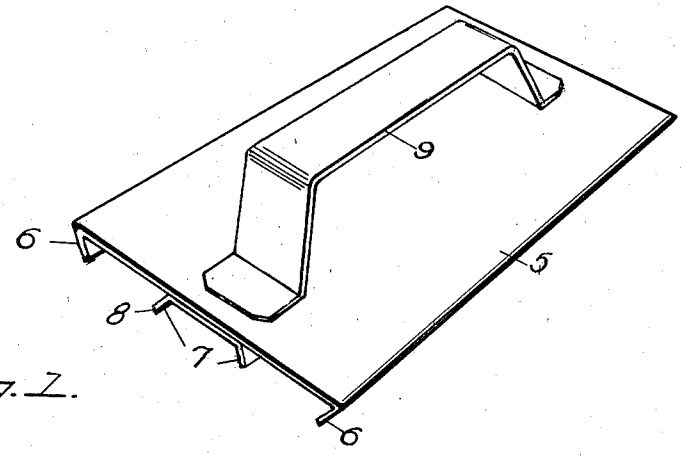


Fig. 1.

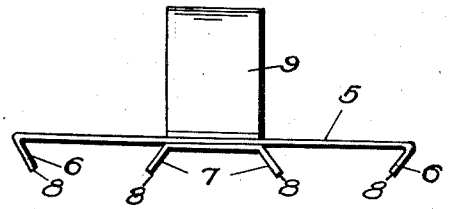


Fig. 2.

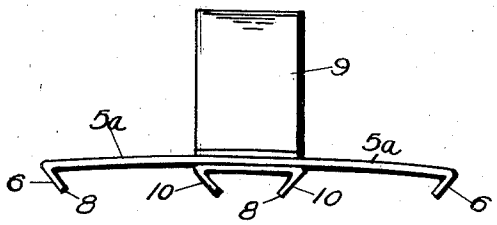


Fig. 3.

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WINDSHIELD SCRAPER

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3 Claims. (Cl. 30—172)

This invention relates to scrapers for windshields or other glass surfaces.

The principal object of the invention is to provide a scraper for the removal of frost or other frozen matter from an automobile windshield or the like, without damage to the scraped surface.

Another object is to provide a rust-proof scraper of this character that may also be used for the removal of stickers that have been applied to a windshield or the windows of an automobile.

Other objects and advantages reside in details of design and construction which will be more fully disclosed in the following description and in the drawing wherein like parts have been similarly designated and in which:

Figure 1 illustrates a perspective view of a scraper built according to this invention;

Figure 2 is an end elevation thereof; and

Figure 3 is an end elevation showing a modified construction of a scraper that embodies the present inventive concept.

In the drawing, reference character **5** denotes a backing plate preferably made of non-rusting material such as stainless steel or the like. Backing plate **5** has downwardly and inwardly turned flanges **6** adjacent the outer longitudinal edges, and a pair of downwardly and outwardly inclined flanges **7** that are positioned between and spaced from the flanges **6**. The lower edge of each flange is preferably sharpened or ground to provide angular, sharp scraping edges **8**. A handle element **9** is provided for the convenience of a user. It will be noted that in the construction illustrated in Figures 1 and 2 that adjacent scraping flanges **6** and **7** are inclined oppositely and the same is true of their scraping edges **8**.

Figure 3 illustrates a somewhat modified construction wherein the backing plate **5a** is slightly curved to introduce a factor of greater strength and rigidity. In this form, the downwardly and inwardly inclined scraping flanges **6** are positioned along the longitudinal edges of the backing plate **5a** and a pair of downwardly and inwardly inclined flanges **10** are positioned between and spaced from the flanges **6**. According to this arrangement, adjacent flanges **6** and **10** are inclined in the same general direction.

By providing scraping flanges that are inclined oppositely to each other, means for a definite two-way scraping action are available which operate well with a reciprocating or oscillating movement of the scraper over the surface to be cleared.

Obviously, in either form of the invention, more or fewer scraping flanges could be used and either type could be provided with either a straight backing plate as **5** or a curved backing plate as exemplified in **5a**. The middle flanges **7** and **8** may be entirely omitted using only the opposed outer flanges **6**. While the various flanges have been illustrated as substantially longitudinally parallel to each other, it would be entirely possible to arrange the flanges so that the lines of their longitudinal axes would not be parallel but would be in angular relation to each other. Furthermore, a scraper could be made conbining the downwardly inclined angular arrangement of the flanges as illustrated in both Figures 2 and 3, in one unit. Therefore, it is apparent that the instant illustrations are merely typical and that the invention is not limited to the examples shown. Preferably, two or more flanges having opposite angles of inclination, should be provided.

In both illustrated forms of the invention, the flanges **6** are shown as integral with the respective backing plates **5** and **5a**, while the middle flanges **7** and **10** are separate and attached tot he backing plate as by riveting, welding, or any other convenient mechanical means. This particular system is merely an example of a convenient arrangement and it is of no particular importance how the flanges are attached to the backing plates, providing the attachment is rigid and enduring. The lower sharp scraping edges **8**, of all flanges of each model are preferably in substantially the same plane so that they may all simultaneously contact the surface to be scraped. The arrangement of scraping edges, as set forth, will not harm the surface over which they are moved, because for one reason, they cannot "dig in."

In use, an operator grasps the handle **9** and applies the cutting edges **8** to the surface of a windshield or the like, and moves the improved scraper back and forth in reciprocating motion or in orbits or in any desired manner, to remove frost, ice, stickers, or any other unwanted matter from such surface. Obviously, the improved scraper could also be used conveniently for cleaning the windows of an automobile, house or store.

The present inventive concept is not limited to any exact angular relationship of the various scraping flanges nor to any exact angle of the sharpened scraping edges **8**.

Thus the stated objects of this invention are fully effected and while this specification discloses preferred means for reducing the present invention to practice and a preferred embodi-

ment of the invention, changes may occur to those skilled in the art and may be made within the scope of the appended claims, without departing from this inventive concept.

What I claim and desire to secure by Letters Patent is:

1. A windshield scraper comprising a backing plate having a pair of flanges that extend convergently away therefrom, said flanges terminating in angular cutting edges positioned in a common plane, the angular inclination of said cutting edges being opposite each other and opposite to that of their respective flanges.

2. A windshield scraper comprising a backing plate having four flanges arranged to form two pairs of flanges that extend convergently away from said plate, said flanges terminating in angular cutting edges positioned in a common plane, the angular inclination of said cutting edges of each pair being opposite each other and opposite to that of their respective flanges.

3. A windshield scraper comprising a backing plate having a pair of flanges that extend convergently away therefrom, said flanges terminating in angular cutting edges positioned in a common plane, and a handle on said plate on the opposite side thereof from the flanges.

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