Nov. 4, 1952 G. E. KEARNS, JR 2,616,110

GLASS CLEANING DEVICE HAVING A WIPING MEMBER WITH METAL WOOL EMBEDDED THEREIN

Filed Sept. 9, 1948

FIG. 1.

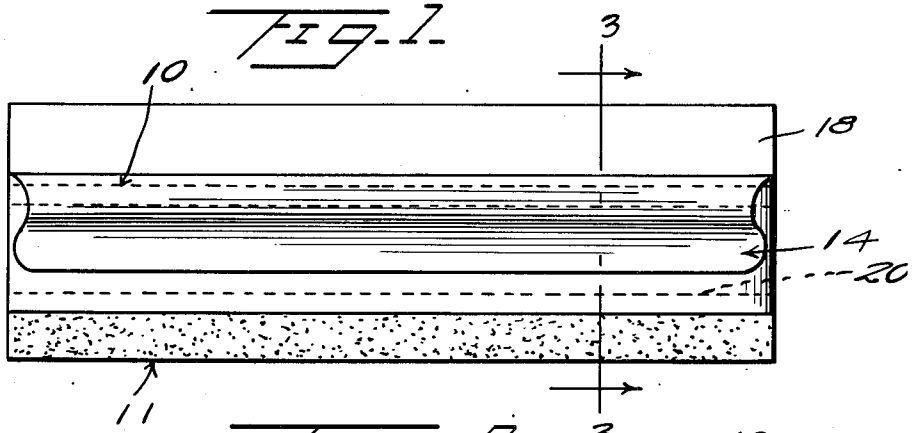


FIG. 2.

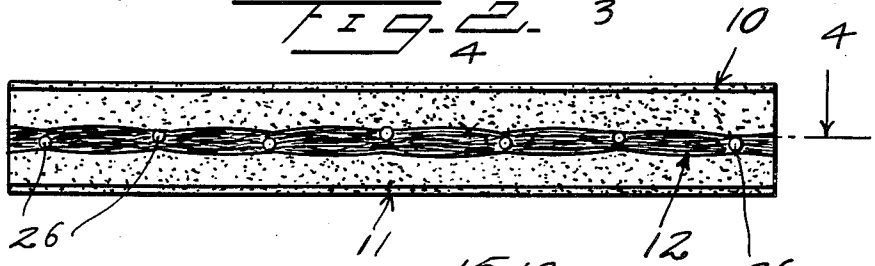


FIG. 3.

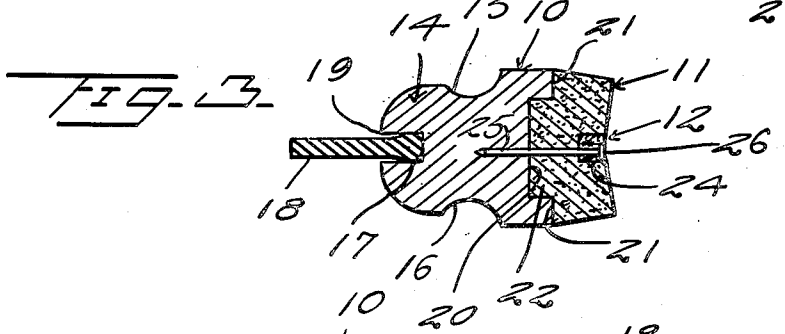
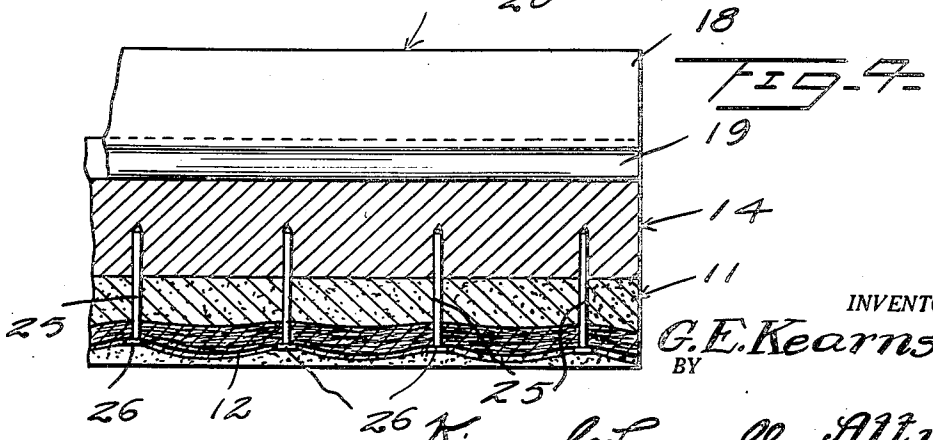


FIG. 4.



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Patented Nov. 4, 1952 2,616,110

UNITED STATES PATENT OFFICE

2,616,110

GLASS CLEANING DEVICE HAVING A WIPING MEMBER WITH METAL WOOL EMBEDDED THEREIN

George E. Kearns, Jr., Swarthmore, Pa.

Application September 9, 1948, Serial No. 48,469

1 Claim. (Cl. 15—118)

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This invention relates to a glass cleaning device and more particularly to a wiper and scraper for cleaning windshields and the like.

It is an object of this invention to provide a window cleaner of the kind to be more particularly described hereinafter which has a felt surface to engage the glass for rubbing the dirt from the glass and a fibrous metal insert carried by the felt pad which is so disposed in relation to the pad that it will engage the surface of the glass or other material to be cleaned when a sufficient force has been applied to the device to compress the felt against the glass and permit the metal to scrapingly engage it.

Another object of this invention is to provide a rubbing and scouring device of this kind so constructed and arranged that the rubbing or scouring material may be selectively caused to engage the surface to be cleaned by the application of a compression force on the device by the user.

A further object is to provide a rubbing and scraping device wherein the rubbing material is carried by a solid handle and a scouring material is carried within the rubbing material in such a manner that the scouring material will normally be out of engagement with the surface to be cleaned and may, at the user's selection, be caused to engage the surface with the rubbing material.

Still another object of this invention is to provide a device of this kind which may be readily manufactured at a reasonable cost and sold in the market at a low price, being effective at a low cost to render greater utility than is available with present similar devices.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claim.

In the drawing,

Figure 1 is a side elevation of a glass cleaning device constructed according to an embodiment of my invention,

Figure 2 is a bottom plan view of the device,

Figure 3 is a vertical transverse section taken on the line 3—3 of Figure 1, rotated 90° counterclockwise, and

Figure 4 is a fragmentary longitudinal section taken on the line 4—4 of Figure 2.

Referring to the drawing, the numeral 10 designates generally a glass cleaning device for removing dirt, dust and other soil from a hard surface as glass or the like. The device 10 is provided with a pad or wiper element 11 and a scouring or scrubbing element 12.

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The scrubbing element 12 is carried by the wiper 11 in such a manner that in the normal position of the brush relative to the handle portion 14, the scouring element is held out of contact with the surface to be cleaned. Upon application of pressure through the handle 14 onto the wiper 11, the scouring element 12 is pressed into contact with the surface to be cleaned so that any material which adheres to the surface in such a manner that it is not readily removed by the wiper will be engaged by the abrasive scouring member 12.

The element 11 is preferably formed of felt or other suitable fabric material, while the abrasive member 12 is preferably formed of spun metal as bronze wool or the like.

The handle 14 as shown in the drawing, is made of wood or other material which is suitably rigid. The upper end of the handle is curved to fit the fingers of an operator or user, and the opposite side walls of the body 14 are formed with longitudinally extending recesses 15 and 16. The fingers of the user may be readily engaged within the recesses 15 and 16 to provide a firm grip.

The upper longitudinal edge of the handle is formed with a recess 17 within which a substantially stiff blade 18 is supported. The blade 18 extends upwardly beyond the handle 14 to provide a squeegee for wiping moisture from the glass or other hard material on which the device is being used.

A bead as 19 is formed on the inner end of the blade 18 and as the blade is preferably made out of rubber, the bead 19 when slightly compressed will firmly secure the blade 18 onto the body portion of the handle 14. The lower or bottom side of the handle 14 is formed with a rectangular recess 20 which extends the full length of the handle. The recess 20 is substantially in the transverse center of the body and leaves an upstanding shoulder 21 along the opposite side edges of the bottom wall.

The felt pad 11 is formed along its upper edge with a central tongue formation 22 which engages within the recess 20. The body of the felt member 11 extends outwardly from the tongue 22 to overlie the bottom wall of the handle 14, and the shoulders 21. The side edges of the felt wiper 11 converge downwardly and inwardly below the shoulders 21 as clearly shown in Figure 3 of the drawings.

A recess 24 is formed longitudinally of the felt

wiper 11 on the bottom surface thereof and is also centered transversely of the brush. The extreme bottom surface of the wiper 11 is formed with opposite surfaces which converge inwardly and upwardly relative to the device 10 so that the recess 24 is disposed upwardly from the extreme bottom of the wiper 11. The abrasive member 12 which is formed of a bronze fabric material or other suitable material to provide the desired abrasive effect, is disposed within the recess 24. None of the bronze material is free to extend downwardly beyond the surfaces of the bottom wall of the wiper 11 so that in the normal use of the device 10, the lower surfaces of the wiper 11 alone will engage the surface to be cleaned.

The abrasive element 12 is secured in the recess 24 by nails 25 or other suitable securing means, each having a head 26 on the lower end thereof. The nails 25 will extend through the wire 12, through the felt 11, and penetrate the wooden handle 14 for securing the elements in the relation as shown in Figure 3 of the drawing. The heads 26 are countersunk below the working surface of the bronze fabric material 12 to avoid possible scratching of the surface worked upon.

In the use and operation of this cleaning and abrasive device, the glass which may be a window or windshield, is cleaned by rubbing the wiper 11 over the surface of the glass and by applying only a light pressure onto the handle 14. When certain elements are encountered on the glass, which are not removed by a light wiping movement, further pressure may be exerted on the handle so that the brush 11 is partially compressed and the scouring member 12 is placed in the same plane as the wall of the brush 11 which is in engagement with the glass to be cleaned. At this time the wire will engage the difficult material to be removed from the glass and the scouring effect accomplished.

It is especially desirable that this disposition of the elements be maintained in view of the fact that undue pressures on the abrasive material

such as bronze wire or steel wool, will effect a scratching and deterioration of the glass, preventing the normal use of windshields and other windows.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claim.

What I claim is:

A glass cleaning device comprising a handle member including a surface to which working elements are adapted to be attached formed with a centrally positioned groove extending the full length of said surface thereof, a compressible pad engaging in said groove and overlying a portion of said handle member adjacent said groove, said pad formed with a longitudinal recess extending the full length of a bottom working surface thereof, an elongated fibrous metallic member in said recess, the bottom working surface of said pad forming an obtuse dihedral angle, the side edges thereof extending below said metallic member whereby said metallic member will be engaged with a surface to be cleaned upon compression of said pad against the surface, and headed securing members engaging through said metallic member and countersunk below the working surface thereof, through said pad and engaging in said handle for securing said metallic member and said pad thereto.

GEORGE E. KEARNS, JR.

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