

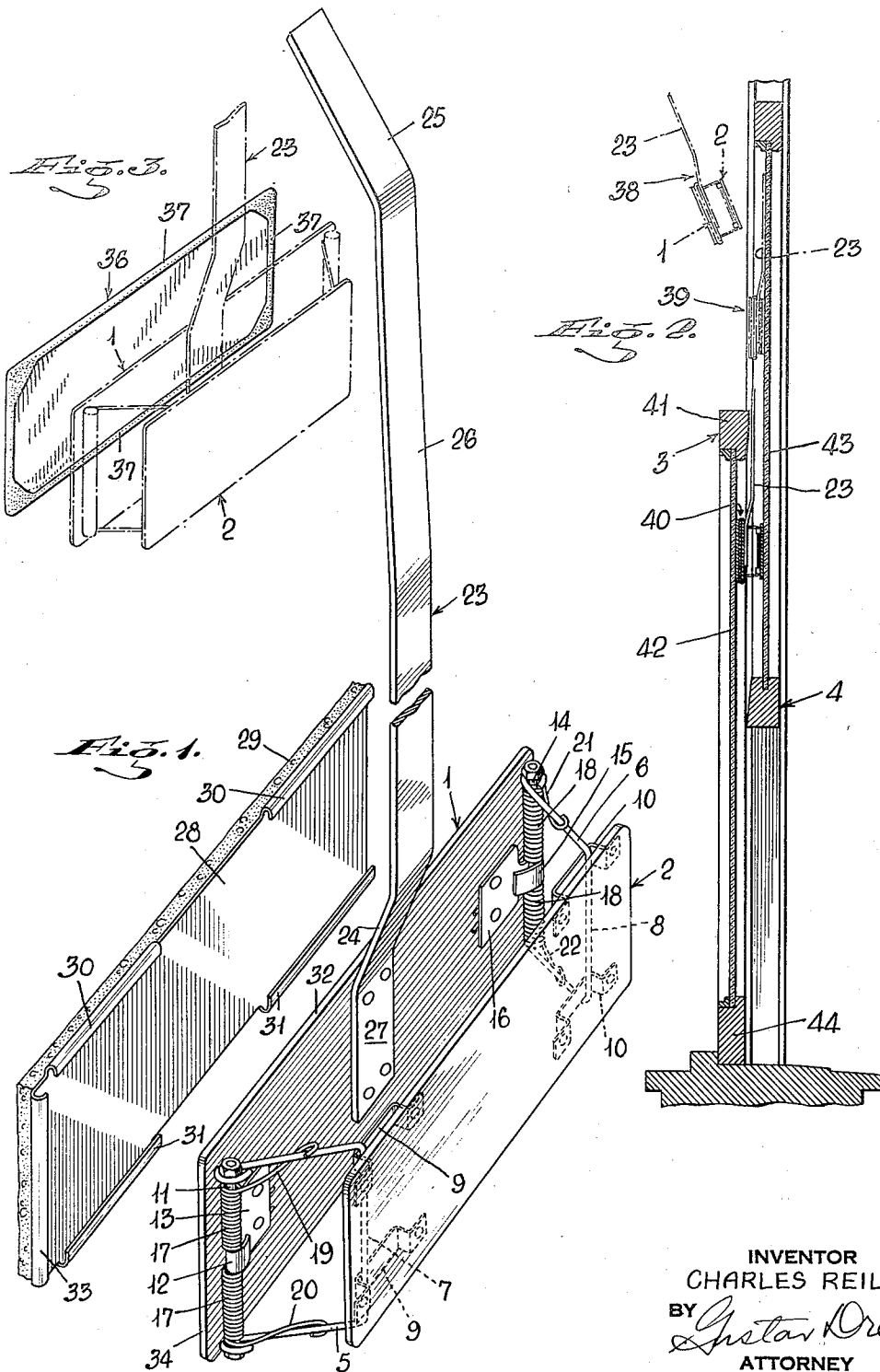
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DOUBLE HUNG WINDOW CLEANER

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DOUBLE HUNG WINDOW CLEANER

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3 Claims. (Cl. 15-220)

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This invention relates to window cleaners in general and more especially to window cleaners particularly suited for two adjacent slideable sashes.

Among the objects of the present invention it is aimed to provide an improved window cleaner which not only can be used effectively to treat, by washing, cleaning and polishing, an exposed window pane but also used to advantage similarly to treat difficultly accessible window panes, particularly the opposing faces of two adjacent slideable sashes.

More specifically the present invention aims to provide a window cleaner which is collapsible and may with facility be inserted between two slideable sashes and then manipulated to clean, one at a time, of course, the opposing panes of the two adjacent slideable sashes.

These and other features, capabilities and advantages of the invention will appear from the subjoined detail description of one specific embodiment thereof illustrated in the accompanying drawings in which

Fig. 1 is a perspective exploded view partly broken away of the window cleaner.

Fig. 2 is a longitudinal section of the same on a diminished scale in operative position between two adjacent slideable sashes.

Fig. 3 is a perspective of another form of cleaning cloth supporting plate than that shown in Fig. 1 with the holder broken away and in dash and dot lines.

In the embodiment shown there is provided a main supporting plate 1, and an auxiliary plate 2, connected to one another by a yieldable means to enable the plate 2 to fold up or collapse against the plate 1 to facilitate inserting the device between two sashes such as the sashes 3 and 4 shown in Fig. 2. The yieldable means may partake of any one of several well known forms of collapsible connections. Excellent results have been achieved when the yieldable means consists of two U-shaped wire members 5 and 6, the intermediate webs 7 and 8 respectively of which extend through the pair of looped brackets 9 and 10 respectively which are secured to the inner face of the auxiliary plate 2. The free ends of the legs of the wire member 5 are looped to receive end portions of the rod 11 extending through the lip 12 of the connecting plate 13 secured to the inner face of the plate 1 and the free ends of the legs of the wire member 6 are looped to receive end portions of the rod 14 extending through the lip 15 of the connecting plate 16 secured to the inner face of the plate 1.

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Coiled springs 17 and 18 are mounted on the rods 11 and 14, respectively, being connected by the lips 12 and 15, respectively, against rotation on the rods 11 and 14. The end portions 19 and 20 of the springs 17 are deflected and provided with loops at the free ends thereof to engage the legs of the wire member 5, while the end portions 21 and 22 of the springs 18 are deflected and provided with loops at the free ends thereof to engage the legs of the wire member 6.

In the extended or expanded position of the plates 1 and 2 the intermediate webs 7 and 8 of the wire members 5 and 6, respectively, as shown, will approach the outer ends longitudinally of the brackets 9 and 10, and in the closed or collapsed position of the plates 1 and 2 these webs 7 and 8 will approach the inner ends longitudinally of the brackets 9 and 10.

The plate 1 in the present instance is provided with an arm 23 fixed to the inner face of the plate 1, preferably composed of flat stock and having two bends 24 and 25 so that the main shank portion 26 thereof may clear the upper frame portion of the lower sash.

The main supporting plate is provided to detachably support holding plates to which are attached cleaning substances such as a rubber sheet, a chamois, cotton, or the like cloth. In the present instance the holding plate 28 is illustrated as provided with a sponge rubber layer 29, the plate 28 having laterally extending flanges 30 and 31 to receive the longitudinally extending edges 32 of the plate 1 and the transversely extending flange 33 to receive and engage the transverse edge 34 of the plate 1.

The holding plate 28, see Fig. 3, on the other hand, may be omitted and a cloth envelope 36 provided having flanges 37 which are sufficiently yieldable to facilitate stretching the same over the edges of the plate 1.

In the course of cleaning, the plate 1 may initially be equipped with the holding plate 28 to wash the window, and then the plate 28 replaced with the cloth envelope 36 to dry the window. The number and kind of holding plates used may of course vary without departing from the general spirit of the invention.

The present device is particularly adapted for cleaning the opposing faces of the window panes of two adjacent slideable sashes such as the sashes 3 and 4 shown in Fig. 2. When used for cleaning the upper portion of the outer face of the inner sash 3, as shown, (see the three successive positions 38, 39 and 40 of the cleaning device), the cleaning device with the plates 1 and 2

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expanded, (see position 38) is moved into the position 39 and the plates 1 and 2 pressed against one another as shown so that the so collapsed plates 1 and 2 may then pass beyond the frame 41 of the sash 3 into the position 40. Thereupon the medium mounted on the plate 28, Fig. 1, as an instance will be resiliently pressed against the window pane 42 of the sash 3, using the window pane 43 of the sash 40 as an abutment or perch for the plate 2, under the urge of the springs 17 and 18, and thereupon by engaging the arm or handle 23 the medium such as the sponge rubber 29 or the cotton envelope 36 may be rubbed against the window pane 42 in the course of cleaning and drying the same.

In turn if the lower outer face of the inner sash 3 is sought to be cleaned, the sash 3 will be moved upwardly relative to the sash 4, and after the device has been collapsed it will be inserted and moved past the frame 44 of the sash 3 into position between the opposing faces of the window panes of the sashes 3 and 4.

Preferably, although not necessarily, the plates 1, 2 and 28 and the arm 23 are composed of a fairly thin flat stock such as cast aluminum sheet or the like to reduce the weight of the device to a minimum and in turn also to enable the device when collapsed readily to be passed between the frame of a sash and the window pane of the adjacent sash into the narrow space between the opposing faces of the window panes of two adjacent slideable sashes.

It is obvious that various changes and modifications may be made to the details of construction without departing from the general spirit of the invention as set forth in the appended claims.

I claim:

1. The window cleaner adapted to be inserted between the opposing window panes of a double hung window, characterized by having an arm composed of flat stock, a supporting plate extending transversely to, and fixed to, one end of said arm, an auxiliary plate with its ends disposed adjacent and opposite to the ends of said supporting plate respectively, said arm and plates normally extending perpendicular to a common plane, foldable means connecting the respective ends of said plates to one another, tension means operatively connected to said foldable means to urge said plates into spaced relation to one another but yieldable to enable said plates to be brought into close proximity to one another, and a cleaning substance mounted to extend from the outer face of said supporting plate, said auxiliary plate being adapted to engage the opposing face of the double hung window as an abutment to enable the tension means to cause a pressure to be exercised by the cleaning substance on the other window pane when rubbed across the same.

2. The window cleaner set forth in claim 1 characterized by the foldable means consisting of hinged brackets which are foldable against the supporting plate in contracted position of the window cleaner and extendable into an upright position between the plates in the expanded position of the window cleaner.

3. The combination of an arm composed of flat stock, a supporting plate extending transversely to said arm and fixed to one end thereof, an auxiliary plate, rods connected to the inner face of said supporting plate, U-shaped wire members having the free ends of their legs pivotally connected to the ends of said rods, the intermediate webs of said wire members slideably connected to the inner face of said auxiliary plate, coil springs connecting said rods to said legs normally to urge said plates spaced from one another, a cleaning substance, and means for detachably connecting said cleaning substance to the outer face of said supporting plate.

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