

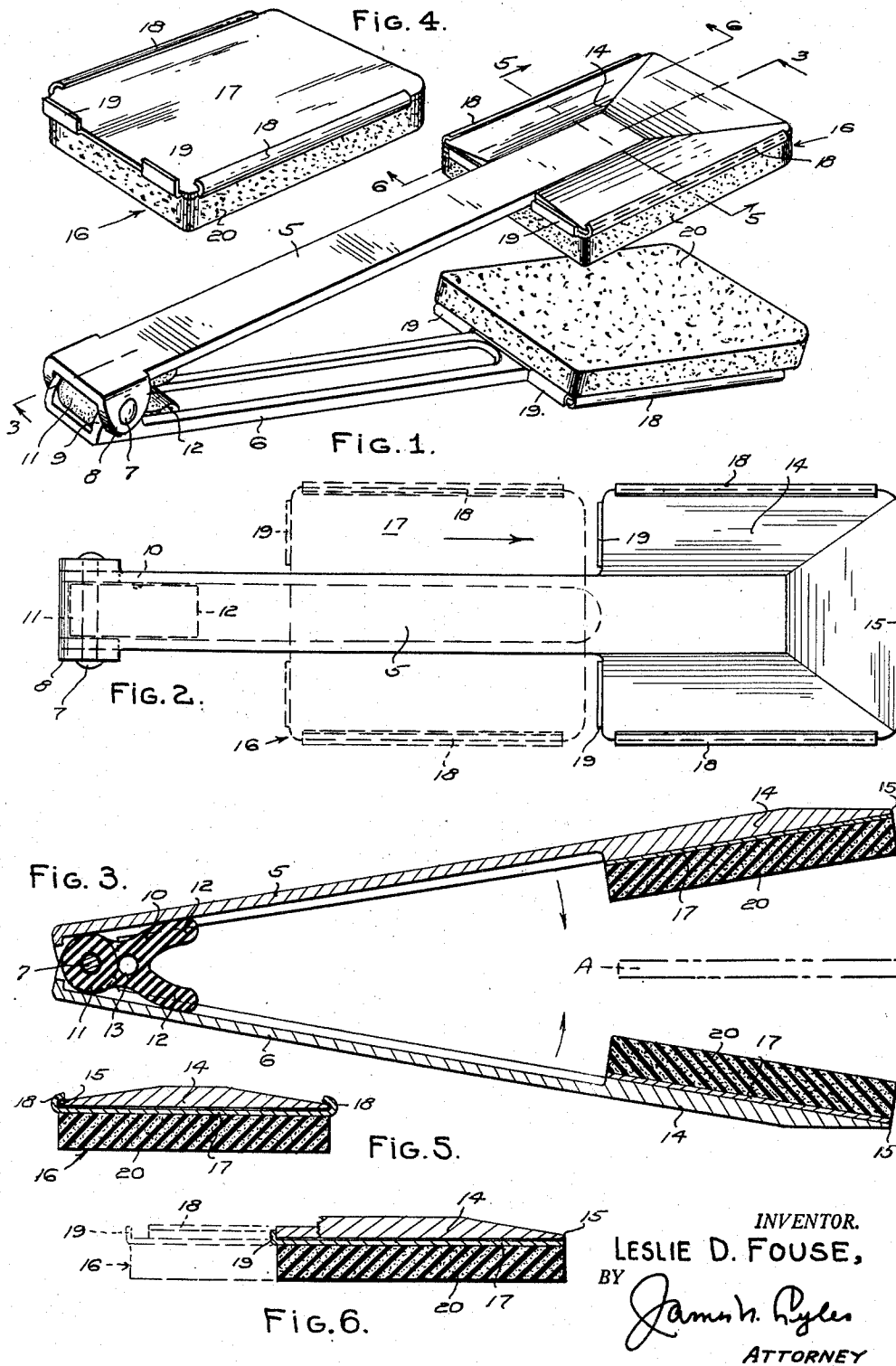
Jan. 14, 1958

L. D. FOUSE
CLEANING TOOL

2,819,484

Filed Aug. 1, 1955

2 Sheets-Sheet 1



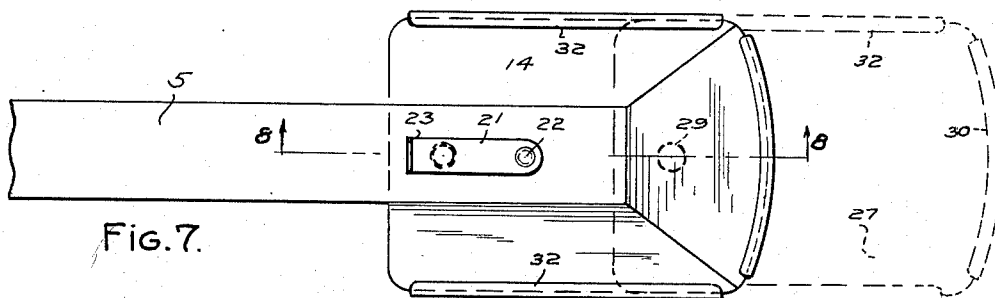
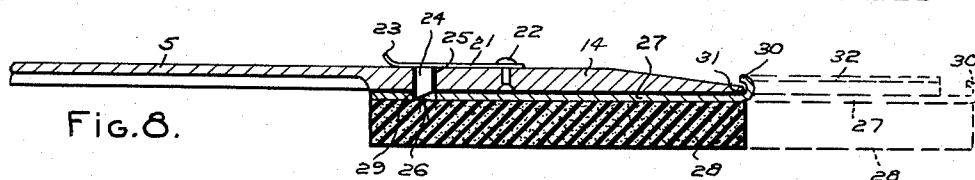
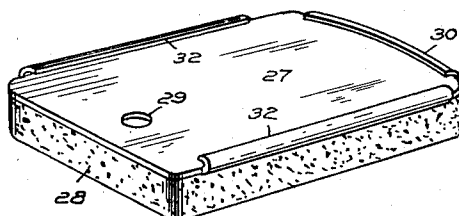
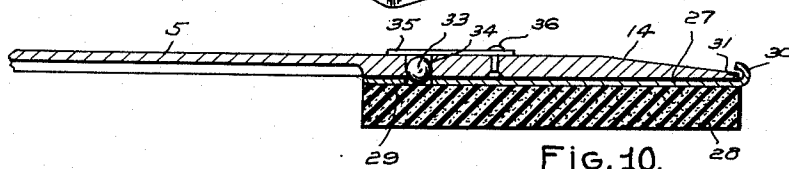
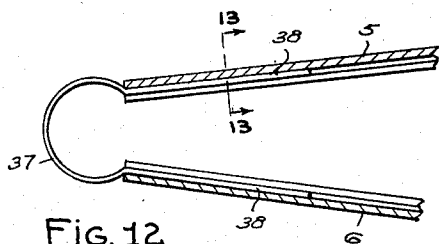
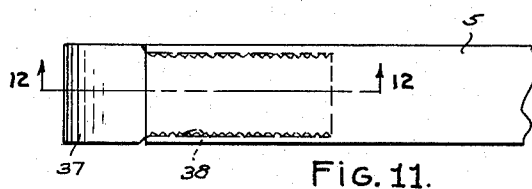
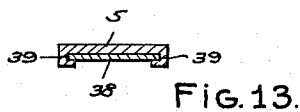
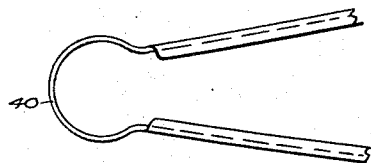
Jan. 14, 1958

L. D. FOUSE
CLEANING TOOL

2,819,484

Filed Aug. 1, 1955

2 Sheets-Sheet 2



INVENTOR.
LESLIE D. FOUSE,
BY
James H. Pyle
ATTORNEY

1

2,819,484

CLEANING TOOL

Leslie D. Fouse, Lake Worth, Fla.

Application August 1, 1955, Serial No. 525,658

1 Claim. (Cl. 15—244)

This invention relates to cleaning tools and has particular reference to a cleaning tool that is constructed in a manner to simultaneously engage upon the opposite faces of glass panels or the like commonly employed in the well known jalousie windows.

The invention contemplates a tool having a pair of opposed sponge elements that are supported upon handles that are biased in a direction to normally dispose the sponge elements in spaced apart relation and with the handles being pivotally connected in a manner whereby they may be shifted together to cause the sponge elements to engage upon the opposite faces of the panel.

The invention further contemplates novel supporting means for the sponge elements whereby the elements may be quickly and easily disconnected from supporting heads whereby to permit the sponges to be cleaned and replaced when worn out and with the connecting means preventing the accidental displacement of the sponge elements in use.

The invention further contemplates novel tension means between the handle members whereby they are biased away from each other and with the tension means being readily compressible with relatively little effort whereby the handles and the sponges are shifted toward each other to engage the panel.

Novel features of construction and operation of the device will be clearly apparent during the course of the following description, reference being made to the accompanying drawings wherein has been illustrated the preferred embodiments of the device and wherein the characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

Figure 1 is a perspective view of a tool constructed in accordance with the invention,

Figure 2 is a plan view thereof,

Figure 3 is a longitudinal sectional view taken on line 3—3 of Figure 1,

Figure 4 is a perspective view of a detachable sponge element and its backing plate,

Figure 5 is a transverse section taken substantially on line 5—5 of Figure 1,

Figure 6 is a longitudinal sectional view taken substantially on line 6—6 of Figure 1,

Figure 7 is a fragmentary top plan view of a modified form of the invention,

Figure 8 is a longitudinal section taken on line 8—8 of Figure 7,

Figure 9 is a perspective view of a sponge element and its backing plate, illustrated in Figures 7 and 8,

Figure 10 is a fragmentary longitudinal section of a slightly modified form of the invention,

Figure 11 is a fragmentary top plan view of a modified form of connecting means for the tool handles,

Figure 12 is a section taken on line 12—12 of Figure 11,

Figure 13 is a transverse section taken on line 13—13 of Figure 12 and,

Figure 14 is a further modified form of connecting means for the tool handles.

Referring specifically to the drawings, the numerals 5 and 6 designate a pair of rigid handles that are pivotally connected at one end by a pin 7 engaging through apertured ears 8 and 9 formed upon the handles. The handles 5 and 6 may be formed of any desirable material, such as plastic, metal or the like. Disposed upon the pin 7

2

is a preferably rubber tension element 10. The element 10 embodies a tubular head 11 that has a width substantially equal to the spacing of the ears 8. The head 11 is provided with a pair of forwardly extending flaring leg portions 12 that engage upon the inner sides of the handles 5 and 6. The member 10 is preferably apertured transversely at 13 whereby to impart adequate tension upon the legs 12 and to permit the legs 12 to be compressed toward each other under the influence of the manual movement of the arms 5 and 6 toward each other and with the aperture 13 preventing any tendency toward bulging of the rubber body when compressed.

Each of the arms 5 and 6 are provided at their forward ends with integral and generally rectangular head plates 14. Plates 14 from the handles 5 and 6 are tapered downwardly to each side and forwardly, whereby to form relatively thin edges 15. The tension member 10 serves to bias the arms 5 and 6 and the plates 14 outwardly to an angular position substantially as shown, for a purpose to be presently described.

Shiftably supported upon the plates 14 are cleaning elements indicated as a whole by the numeral 16. Each cleaning element embodies a metallic backing plate 17 that is substantially co-extensive in size to the plates 14. Each of the plates 17 are provided along their opposite sides with channel flanges 18 and along their ends with stop flanges 19. The plates 17 have cemented or otherwise fixedly connected thereto rectangular flat sponge rubber pads 20. The pads 20 are of a suitable thickness and substantially co-extensive with the plate 17. The forward corners of the plates 14 and 17 and the pads 20 are rounded, for a purpose to be presently described. The plates 17 and their supported pads 20 are shiftably engaged upon the plates 14 in a manner whereby the flanges 18 engage the marginal edges of the plate 14 and are limited in their forward movement by the abutment of the flanges 19 with the rear end of the plates 14. The construction of each plate 14 and its associated detachable cleaning elements 16 are substantially identical in construction. The purpose for engaging the cleaning elements 16 in a forward manner as illustrated in Figure 2 is to prevent accidental shifting of the cleaning elements in use.

In the use of this form of the invention, the operator engages a cleaning element 16 upon each plate 14 in a longitudinal forward manner to the point where the flanges 19 engage the rear end of the plate 14. The operator then dips the cleaning ends of the device, including the sponge pads into a cleaning solution, where the solution will be absorbed by the pads 20, then removing the device from the fluid, the arms 5 and 6 are shifted toward each other, causing the sponges to engage, at which time adequate pressure upon the arms will wring any excess fluid from the sponges. The arms 5 and 6 are then permitted to shift apart under the influence of element 10, at which time the device is engaged over and under a conventional glass panel, indicated by the letter A in Figure 3. Then, by again shifting the arms 5 and 6 toward each other, the pads 20 will simultaneously engage upon the opposite sides of the panel A. The tool is then shifted back and forth along the panel, causing the panel to be cleaned upon its opposite faces. The rounded corners of the plates 14 and the element 16 serve to prevent injury to the usual insect screen that is supported within a window opening adjacent to the panels. While the corners have been rounded, it will be apparent that the forward end of the device may be arcuately formed, as shown in Figures 7 and 9. The cleaning operation is repeated for a rinsing and drying operation. The pads 20 and their backing plate 17 may be removed from time to time for replacement or for cleaning. The purpose in connecting elements 16 upon the plates 14 in a

forward direction is to prevent the element 16 from shifting from the plates 14 as the device is pulled toward the operator.

In Figures 7, 8 and 9 there has been illustrated a slightly modified form of the invention wherein the arms 5 and 6 are provided with spring latch elements 21 that are riveted at 22 centrally of the head plate 14. The spring 21 has an up-turned lip 23 whereby the spring may be shifted upwardly by the finger of the operator. The spring 21 carries a lug 24 that extends downwardly through an opening 25 and with its lower end being beveled at 26 to normally lie in the path of sliding movement of a backing plate 27, corresponding to the plate 17. The plate 27 has been cemented or otherwise connected thereto a sponge rubber pad 28. Plate 27 is apertured at 29 for latching engagement with the lug 24, when the plate 27 is shifted to its maximum operative position upon the plate 14, thus serving to substantially hold the plate 27 and its supported sponge 28 against accidental displacement in use. In the form of the invention illustrated in Figures 7, 8 and 9 the plate 27 and its supported pad are engaged with the plate 14 from its forward end. The plate 27 at its forward end is arcuately shaped and is provided with an arcuate flange 30 that engages over the forward arcuate edges 31 of the plate 14 and serves as a stop means to limit the engagement of the parts upon the plate 14. The opposite edges of the plate 27 are also provided with channel flanges 32 that engage the opposite edges of the plate 14. The forming of the arcuate forward ends of the plate 14 and the plate 27 serves to prevent injury to the insect screening, should the device contact therewith. The pad 28 is substantially co-extensive with the plate 27 and the plate 27 and the arms 5 and 6 are substantially identical in construction.

A further modified form of the invention has been illustrated in Figure 10 and embodies the same plates 14 and arms 5 and 6. In this form of the device the plate 27, sponge pad 28 and the flanges 30 and 32 are substantially identical to that just described with respect to Figures 7, 8 and 9. However, in this form of the invention a latch means has been provided that includes a ball 33 that is disposed in a socket 34 formed in the plate 14. The socket 34 has a depth whereby the ball 33 will project slightly below the lower face of the plate 14 to lie in the path of sliding movement of the plate 27 and whereby the ball 33 will engage within the aperture 29 when the plate 27 is in its maximum position of adjustment. A spring tongue 35 overlies the socket 34 and yieldably maintains the ball in its downward projecting position. The tongue 35 is riveted to the plate 14, as at 36. With this form of latch, the plate 27 and its pad 28 may be disengaged from the plate 14 by suitable forward pressure thereon and does not require the manual release of the latch as in that form of the invention in Figures 7, 8 and 9.

In Figures 11, 12 and 13, there has been illustrated a modified form of spring tension means for the handles 5 and 6. In this form of the invention, a cylindrical spring 37 is provided with flat arm extensions 38 and with the marginal edges of the arms 38 being serrated. The arms 38 are engaged with the ends of the arms 5 and 6 by forcing them longitudinally of the arms through oppositely facing channels 39 where the serrated edges will have a biting engagement therein and whereby to prevent displacement of the spring. The spring 37 serves to bias the arms 5 and 6 to an angular position as previously described and presents a novel connecting means for the handles 5 and 6 whereby they are connected together without the use of pivot pins or the like. Figure 14 illustrates a further modified form of handle connection wherein the handles are integrally formed with a connecting semi-cylindrical spring end 40.

In this latter form of the invention it is contemplated that the spring 40, the arms and the element supporting plates 14 will be formed integrally and of any desirable

material having the quality of maintaining adequate spring tension between the arms.

It will be apparent from the foregoing that a very desirable form of cleaning tool has been provided. The structure is of the type that may be economically manufactured, is strong, durable and highly convenient in use. The detachable cleaning elements 16 are easily and quickly mounted and will be securely retained against displacement throughout the cleaning operation. The desirable cleaning elements 16 greatly extend the useful life of the article since it is contemplated that the elements 16 will be furnished for replacement when the sponges become worn and further facilitates the removal and thorough cleaning of the sponge pads separate from the supporting structure. While the pads 20 and 28 have been indicated as being cemented to the under faces of the plates 17 and 27, it will be apparent that these pads may be connected by screws, rivets or the like. The device further readily lends itself to manufacture from various materials.

It is to be understood that the invention is not limited to the precise arrangements shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claim.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

A cleaning tool of the character described for simultaneously cleaning the opposite flat faces of glass panels employed as closures in jalousie windows, comprising a pair of flat rigid arms that are pivotally connected together at one end and with means being provided to bias the arms in a direction away from each other, each of the arms being provided with integral and generally rectangular head plates having opposed flat faces, the said plates at their intermediate portion having a thickness corresponding to the thickness of the arms and with the outer surface of each head plate being tapered laterally to form relatively thin marginal edges, the head plates at their forward end being arcuately formed and with the plates being tapered forwardly to form a relatively thin marginal edge, cleaning elements that comprise each a flat sponge rubber pad that is fixedly connected to a backing plate and with the sponge rubber pads and their backing plates being co-extensive in shape and size to the flat surfaces of the head plate, flanges formed upon the backing plate that slidably engage the opposite edges of the head plate and whereby the cleaning elements are detachably supported against accidental shifting movement, each of the backing plates being provided with a forward arcuate flange that is shaped to conform to and to overlie the forward edges of the backing plates when the cleaning elements are in fully engaged position and with the last named flanges limiting the sliding movement of the cleaning elements to a point where they fully underlie the head plates, latch means carried by the forward extremities of the arms and at a point overlying the head plates, each of the latch means embodying a spring tongue, a pin carried by the tongues and that projects downwardly through an opening formed in the head plates, the said pins having a lower beveled end that is disposed in the path of sliding movement of the backing plates and an aperture formed in each of the backing plates for the reception of the beveled end of the pins.

References Cited in the file of this patent

UNITED STATES PATENTS

1,570,201	Bonney	Jan. 19, 1926
1,731,751	Neissl	Oct. 15, 1929
2,537,482	Reilly	Jan. 9, 1951
2,658,221	Nicoli	Nov. 10, 1953
2,698,955	Trindl	Jan. 11, 1955
2,710,981	Steiert	June 21, 1955
2,723,412	Harris	Nov. 15, 1955
2,759,211	Schostal	Aug. 21, 1956