

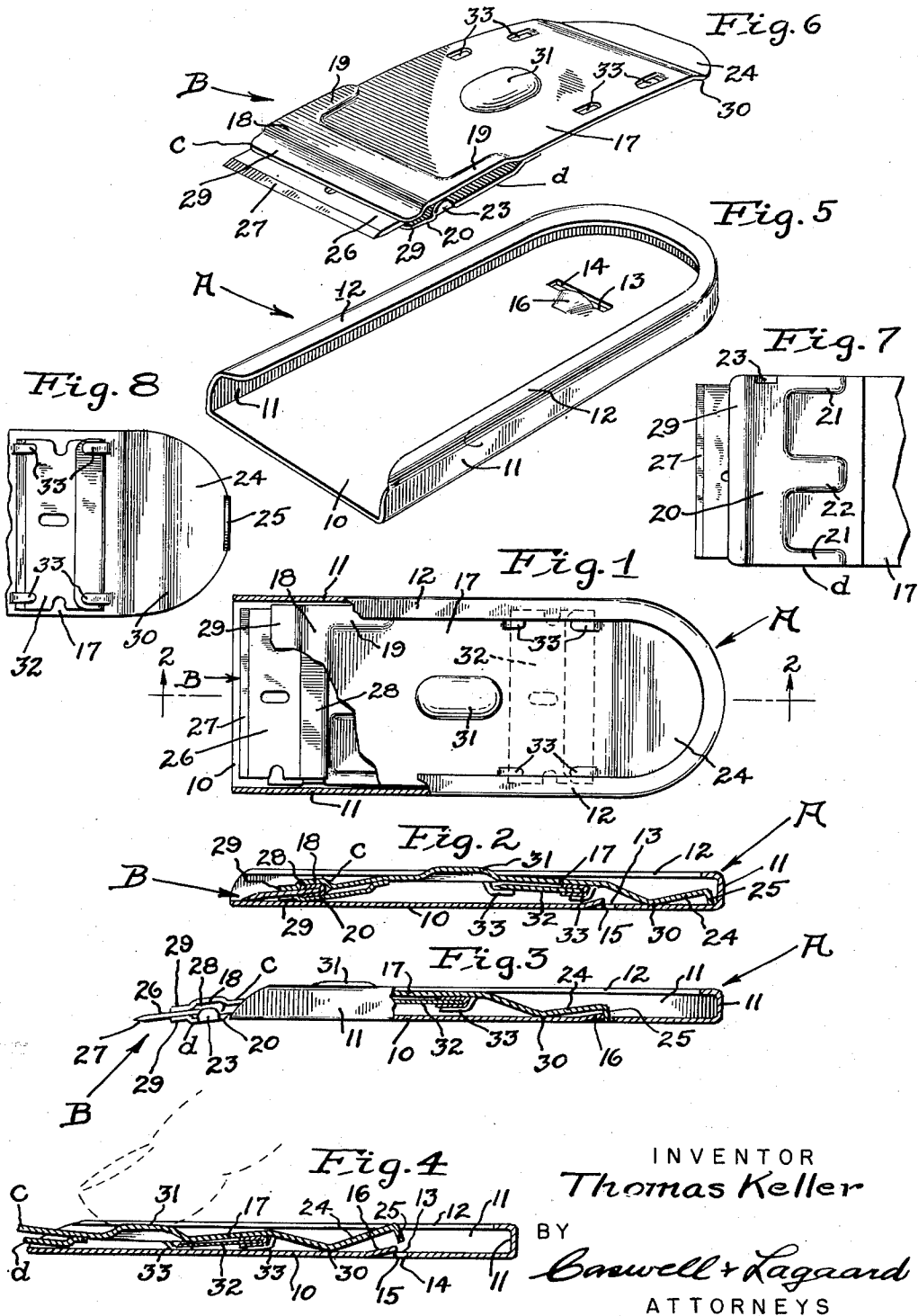
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SCRAPER EMPLOYING RAZOR BLADE

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SCRAPER EMPLOYING RAZOR BLADE

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My invention relates to improvements in scrapers of the type adapted to be held in and operated by one hand of the user, as for scraping frost, sleet, snow, paint, sticker-signs and the like from window panes or other surfaces.

An object of the invention is to provide a relatively inexpensive and compact article of the instant nature having a minimum number of parts designed and cooperating to provide a trouble-free device that is efficient, safe and easily operated by any novice in performance of the operations above noted, or in the cutting and slitting of various materials.

More specifically, it is an object of my invention to provide a scraper, employing a blade, such as the conventional safety razor blade, and including a handle and a slide releasably gripping the blade and movably guided by the handle to project and expose the blade forwardly of said handle and to retract and sheath said blade within the handle in a position guarded thereby.

Another object of the invention is to provide a handle and slide, as above indicated, wherein said handle and slide cooperate to hold a second or reserve blade in shielded position of non-use pending the need therefor in replacement of the working blade.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing, Fig. 1 is a plan view of an embodiment of my invention, said view showing the slide in retracted position within the handle of the device; Fig. 2 is a longitudinal sectional view taken as on the line 2—2 of Fig. 1; Fig. 3 is an elevational view of the structure shown in Figs. 1 and 2, portions of the parts being broken away and the slide being shown projected to present the blade in working position relative to the handle; Fig. 4 is a view similar to Fig. 2 showing the bowed slide flattened, as under the pressure of a user's thumb, to free the latch member of the slide from the abutment stops on the handle; Fig. 5 is a detail perspective view of the handle of the illustrated scraper; Fig. 6 is a detail perspective view of the slide; Fig. 7 is a fragmentary view showing the underside of the slide at the forward end thereof and illustrating particularly the lower blade-holding jaw of said slide, and Fig. 8 is a fragmentary view showing the underside of the slide at the rear end thereof and illustrating particularly a reserve blade and the blade-holding means on said slide for said reserve blade.

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Referring to the drawings, it will be seen that the illustrated embodiment of my invention includes a handle A and a slide B, both being formed of sheet material.

The handle A is of channel-like construction open at its forward end and closed at the rear end thereof, said handle consisting of an elongated back 10, upturned webs 11, 11 extending along the sides of said back 10, and flanges 12, 12 turned inwardly from said webs 11, 11. Closing the rear end of said handle A, the web 11 and flange 12 at one side of the handle merge along curved lines with the web 11 and flange 12 at the other side of said handle, such merger of webs and flanges providing a rounded rear end for the handle A which renders the same comfortable to the hand of the user. Near its rear end and intermediately of the webs 11, 11, the back 10 of the handle A is formed with a short slot 13 extending transversely thereof. The rear wall of the slot 13 provides a forwardly facing abutment 14 and the forward wall of said slot 13 provides a rearwardly facing abutment 15. Forwardly of said slot 13, the back 10 of the handle A is indented from beneath to form a hump 16 and thereby elevate above the upper surface of the back 10 a portion of the rearwardly facing abutment wall 15 of said slot 13.

The slide B includes an elongated body 17 of resilient material upwardly bowed longitudinally thereof, the forward portion of said body 17 being formed with a downwardly opening socket 18 extending transversely across the same near the front edge thereof and further formed with reinforcing beads 19 extending rearwardly from said socket 18 along the edges of said body, said forward portion of the body 17 thus formed constituting an upper jaw c. Said slide B further includes a lower jaw d of sheet material which generally matches said upper jaw c, said lower jaw d being secured along its rear margin to the underside of the body 17 transversely thereof. This lower jaw d is formed near its forward end with an upwardly opening socket 20 extending thereacross and mating with the socket 18 in the upper jaw c. Said lower jaw d is formed with reinforcing beads extending rearwardly from said socket 20, beads 21, 21 being formed along the edges of said lower jaw d longitudinally of the body 17 and bead 22 being formed between said beads 21, 21 and likewise extending longitudinally of said body 17. An ear 23 upwardly turned from the lower jaw d provides a stop at one end of the socket 20 in said jaw. At the rear of the slide B the body 17 thereof is provided with an extension 24 at

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the terminus of which is downturned lug 25. Said extension 24 and lug 25 constitute a latching member for the slide which cooperates with the abutment walls 14, 15 of the slot 13 in the back 10 of the handle A, as will later appear.

The jaws c, d constructed, as above noted, accommodate the well known form of expendable blade commonly used in safety razors, such a blade as at 26 having a sharpened forward edge 27 and a reinforcing rib 28 extending along the rear edge thereof. A blade 26 of said nature is slipped endwise between the jaws c, d from one side of the slide B, the upper and lower portions of the rib 28 taking position respectively in the sockets 18, 20 of said upper and lower jaws c, d, and the blade proper in advance of the rib 28, but to the rear of the sharpened edge 27, taking position between blade gripping lips 29, 29 of said jaws, which lips comprise the marginal portions of the jaws forwardly of said sockets 18, 20. The length of the blade 26, corresponds substantially with the width of the slide B, said blade 26 upon its insertion between the jaws c, d being pushed therealong until the leading end of the blade engages the stop-forming ear 23. From the foregoing, it will be appreciated that the sockets 18, 20 in the jaws c, d which receive the ribbed edge of the blade 26 deprive said blade of movement relative to the slide B longitudinally thereof, and that said ear 23 on the lower jaw d deprives said blade 26 of movement relative to the slide B laterally thereof in one direction.

To assemble the slide B with the handle A, the former is simply inserted rear end foremost into the latter, the body 17 of the upwardly bowed slide being therewith flexed slightly to flatten the same. Thus positioning the slide B within the handle A, the rear end of the body 17 of said slide serves as a bearing as at 30, which yieldingly rides along the back 10 of said handle, while the lower jaw d serves as a shoe likewise to ride along said back 10. Oppositely, the marginal upper portions of the bowed body 17 at the crest thereof yieldingly bear against and ride along the lower surfaces of the flanges 12, 12 of said handle A. Approximately centrally of the body 17, an upstanding bulge 31 is provided to serve as thumb-rest. Grasping the device in the fingers of his hand, a user will apply his thumb to said thumb-rest 31 and by convenient manipulation of the slide B may propel and repel the same relative to the handle A to project the blade 26 into an exposed position for use as for scraping or cutting (Fig. 3) and to retract said blade into position of disuse sheathed within the handle A (Fig. 2). When the slide B is repelled, the extension 24 thereon will strike the web 11 of the handle A at the rear thereof and limit the retraction of the blade 26 which takes its sheathed position within said handle A. In this sheathed position of the blade 26, it is to be noted that the sharpened edge 27 thereof is held by the jaws c, d flatly against the upper surface of the back 10 of the handle A. In this disposition of the edge 27 relative to the back 10, said edge is effectively guarded. When the slide B is propelled to advance the blade 26 into working position (Fig. 3), the latch lug 25 is sprung into the slot 13 by the flexed resilient extension 24 and engages the rearwardly facing abutment wall 15 of said slot thus arresting the forward movement of the slide B and establishing the blade 26 in its position of use. In this connection, it is to be noted that the raising of a portion of the abutment wall 15 above the upper surface of the back 10

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of the handle A insures the catching of said wall 15 by the latch lug 25 upon a forward thrust of the slide B to present the blade 26 in working position. With the latch lug 25 positioned within the slot 13, said latch lug engages the forwardly facing abutment wall 14, thereby preventing retrograde movement of the slide B in the handle A as the blade 26 is used in scraping or cutting operations. To enable the slide B to be moved back from its operative position (Fig. 3) to its inoperative position (Fig. 2), the user simply presses down on the thumb-rest 31 on the body 17 of the slide to unlatch the slide from the back 10 of the handle A and thereupon retracts the then free slide. Such downward unlatching pressure brought to bear on the body 17 of the slide A biases the extension 24 upwardly with the result that the latch lug 24 is withdrawn from the slot 13 in the handle.

The slide B is provided with an extra or reserve blade 32 to replace the blade worn out in the jaws c, d. To this end, oppositely directed blade-holding fingers 33 are struck down out of the bowed body 17 of said slide. These fingers 33 receive and carry the extra blade 32 crosswise beneath said body 17 and deprive said blade of lateral movement relative to said body longitudinally thereof, longitudinal movement of said blade relative to said body 17 laterally thereof being permitted by the fingers 33 to admit of the endwise application of the extra blade 32 to said slide B and the endwise removal of said extra blade from the slide. With the slide B in place within the handle A, the webs 11, 11 of said handle act to hold the extra blade 32 against endwise dislodgement from the blade-holding fingers 33 on the slide. And, too, the one of said webs 11 opposite the ear 23 on jaw d acts to hold the working blade 26 against endwise dislodgement from the jaws c, d. To render the extra blade 32 accessible, the slide B is slid from the handle A and this is accomplished by first bringing thumb pressure to bear upon the body 17 of said slide (Fig. 4), whereby the latch lug 25 is elevated above the raised portion of the rearwardly facing abutment wall 15 of the slot 13 in said handle. Having removed the slide B from the handle A, the user may slip the extra blade 32 out of the grasp of the blade-holding fingers 33 and use it in replacement of the working blade 26 previously held in the jaws c, d.

From the foregoing, it will be apparent that I have devised an exceedingly simple, compact, durable and inexpensive device in which the slide B is readily propelled and repelled along the handle A by the thumb of the user's hand in which the device is held, the stopping and latching of the slide B being effected automatically, and the unlatching of the slide being effected under pressure of the thumb brought against the body 17 of the slide without changing the position of the thumb as used in shifting the slide B forwardly and backwardly in the handle A.

Changes in the specific form of my invention, as herein described, may be made within the scope of what is claimed without departing from the spirit of my invention.

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

1. In a scraper, a channel-like handle open at its forward end and comprising an elongated planiform back, a web member upstanding from said back along either side thereof, and a flange member extending inwardly from each of the web members, said web members and flange-members

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at one side of the handle merging with the corresponding members of the other side of the handle to close the rear end of said handle, a slide carried by the handle and including an elongated upwardly bowed body of resilient sheet material, a blade mounted on the body at the forward end thereof, said slide slidably bearing at the front and rear of said body against the back of the handle, said body intermediately marginally thereof slidably bearing against the flanges of said handle, said slide being adapted to be propelled and repelled relative to the handle and flexed to flatten the bowed body thereof by the thumb of a user's hand grasping said handle, said slide further including a latch member consisting of a rearward extension of said body and a latch lug depending from said extension, said back of said handle being formed with a forwardly facing abutment and a rearwardly facing abutment, the latch lug of said latch member being adapted normally to engage said rearwardly facing abutment upon the forward propulsion of the slide to limit its forward movement in projection of the blade into working position and adapted normally to engage said forwardly facing abutment to prevent the slide from having retrograde movement retracting said blade from said working position thereof, the flattening of the bowed body of said slide acting to bias said latch member upwardly relative to the back of said handle sufficiently to swing said latch lug clear of said forwardly facing abutment and thus free the slide for retraction into said handle.

2. In a scraper, a channel-like handle open at its forward end and comprising an elongated planiform back, a web member upstanding from said back along either side thereof, and a flange member extending inwardly from each of the web members, a slide carried by the handle and including an elongated upwardly bowed body of resilient sheet material, upper and lower jaws at the forward end of said body, a blade, said blade being clamped at its rear portion between said jaws and having a sharpened front edge exposed forwardly of the jaws, said slide slidably bearing at the front and rear of said body against the back of the handle, said body intermediately marginally thereof slidably bearing against the flanges of the handle, said slide being adapted to be propelled and repelled relative to the handle and flexed to flatten the bowed body thereof by the thumb of a user's hand grasping said handle, said slide further including a latch member consisting of a rearward extension of said body and a latch lug depending from said extension, said back of said handle being formed with a slot therein providing a forwardly facing abutment and rearwardly facing abutment, the latch lug of said latch member being adapted normally to engage said rearwardly facing abutment upon the forward propulsion of the slide to limit its for-

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ward movement in projection of the blade into working position and adapted normally to engage said forwardly facing abutment to prevent the slide from having retrograde movement retracting said blade from said working position thereof, the flattening of the bowed body of said slide acting to bias said latch member upwardly relative to the back of said handle sufficiently to swing said latch lug clear of said abutments and thus free the slide for forward and backward movement along said handle.

3. In a scraper, a channel-like handle open at its forward end and comprising an elongated planiform back, a web member upstanding from said back along either side thereof, and a flange member extending inwardly from each of the web members, a slide carried by the handle and including an elongated upwardly bowed body of resilient sheet material, the forward portion of said body constituting an upper jaw, a lower jaw secured to said body, a blade, said blade having a rear portion adapted to be received between said jaws and having a sharpened front edge adapted to be exposed forwardly of the jaws, said jaws being adapted to prevent said blade from having movement relative to the slide in a direction longitudinally thereof, the rear portion of said body constituting a rear bearing for the slide, said lower jaw providing a front bearing for said slide, said bearings slidably bearing against the back of said handle, and the body of the slide intermediately marginally thereof slidably bearing against the flanges of the handle, said slide being adapted to be propelled and repelled relative to the handle and flexed to flatten the bowed body thereof by the thumb of a user's hand grasping said handle, said slide further including a latch member wholly contained within the handle, said latch member consisting of a rearward extension of said body and a latch lug depending from said extension, said back of said handle being formed with a forwardly facing abutment, the latch lug of said latch member being adapted to engage said forwardly facing abutment to prevent the slide from having retrograde movement retracting said blade from projected working position, the flattening of the bowed body of said slide to swing said latch lug clear of said abutment and free the slide acting to bias said latch member upwardly relative to the handle sufficiently for the aforesaid retrograde movement thereof.

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