

Dec. 7, 1943.

J. NELSON

2,336,284

RAZOR BLADE HOLDER

Filed March 24, 1941

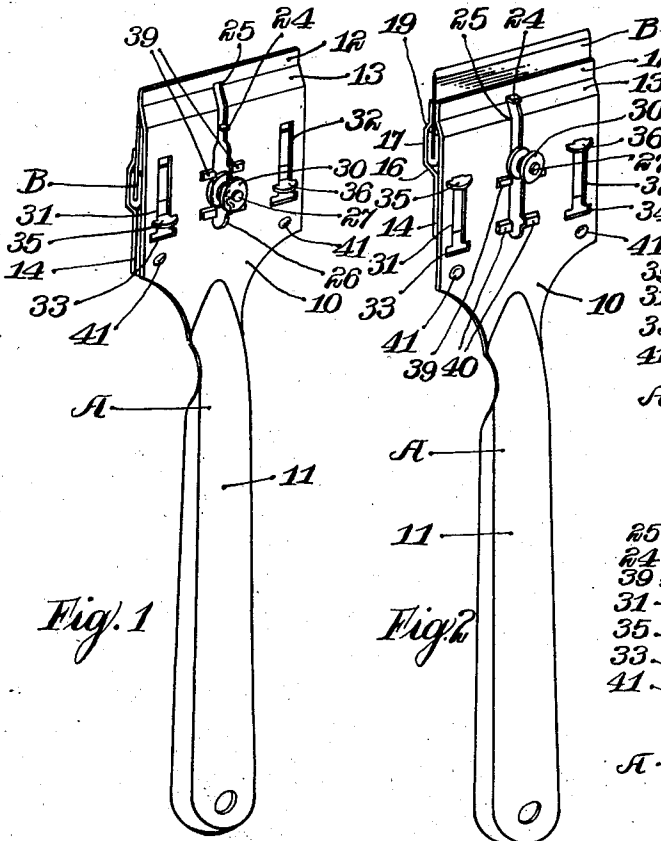


Fig. 1

Fig. 2

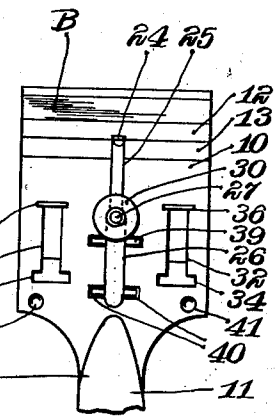


Fig. 3

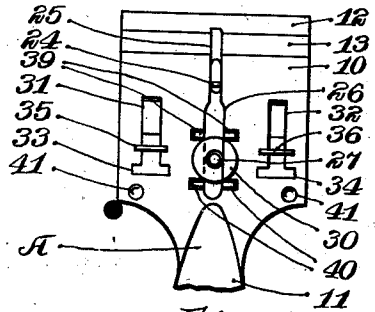


Fig. 4

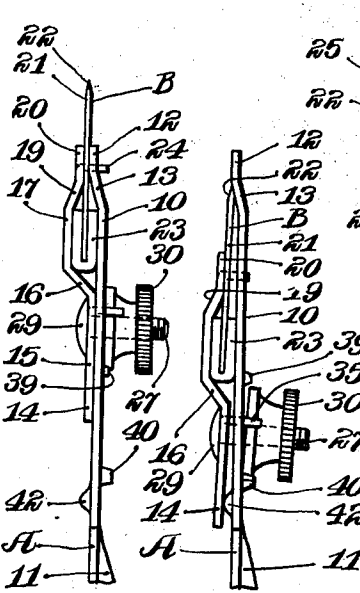


Fig. 6

Fig. 7

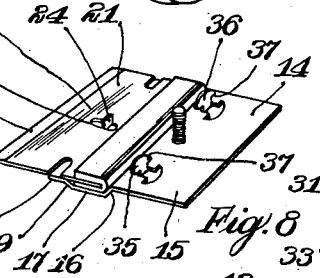


Fig. 8

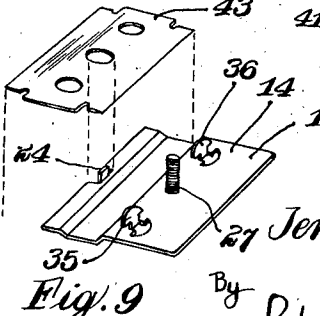


Fig. 9

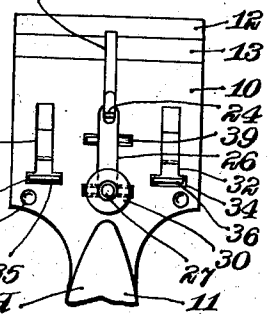


Fig. 5

Inventor

Jennings Nelson

By

Robert M. Dunning
Attorney

UNITED STATES PATENT OFFICE

2,336,284

RAZOR BLADE HOLDER

Jennings Nelson, St. Paul, Minn.

Application March 24, 1941, Serial No. 335,922

12 Claims. (Cl. 30—333)

My invention relates to an improvement in blade holders wherein it is desired to provide a holder for a razor blade which will permit the same to be used for scraping operations.

With former types of blade holding devices designed to support a razor blade certain difficulties have been experienced. In the first place, it has been difficult to design a blade holder for a blade of common construction which will permit the blade to be pushed into the extreme corners of a window frame, or the like, to remove paint, putty, or other material. In other words, most previous types of razor blade holders have been so constructed that the side edges of the holder project beyond the ends of the supported blade. Furthermore, many of these former types of holders permit movement of the blade from an operative position to an inoperative position, but make necessary the handling of the blade in order to move the same from one extreme position to the other. The elimination of the latter difficulty is of extreme importance as in handling the blade the fingers of the operator are often cut, thus considerably destroying the value of the holder.

It is the purpose of the present invention to provide a razor blade holder which is so constructed that the side edges of the holder extend flush with the side edges of the cutting blade. With such a construction the blade may extend into ordinarily inaccessible places, such as the corners of window frames or the like. Thus with my holder the blade may scrape the entire surface of the glass pane and its use is not limited to the central area of the pane.

It is an object of the present invention to provide a blade holder by means of which the blade may be slidably moved from operative position to inoperative position without the necessity of handling the blade. With such a construction much of the danger usually encountered in the use of razor blade holders of this type is obviated. A portion of the holder supports the blade, and this holder portion, together with the blade, may be slidably shifted with respect to the remainder of the holder, to slide the blade from operative to inoperative position.

It is a further feature of my invention to provide a blade holder construction which, when the blade is not in use, supports the blade with its cutting edge held closely adjacent the holder under spring tension. My holder is so devised that when the blade is in inoperative position the sharpened edge thereof is held angularly with respect to the holder, so that the extreme cut-

ting edge thereof is clamped tightly against the holder. Thus my holder may be safely carried about with virtually no danger of injury to the operator.

It is a further feature of my invention to provide a blade holding means having a slidably blade which remains assembled during its movement from one extreme position to the other. The blade is held between a pair of clamping elements and is moved in unison with one of these elements. During movement of the blade between the two extreme positions of its movement the two clamping elements and the blade are held in assembled relation, even though the clamp screw or other means used to draw the clamping elements together is entirely withdrawn.

A further feature of the present invention lies in the fact that while the holder is particularly designed to accommodate one particular type of blade which is very popular and which is available in all sections of the country, it is possible to use other types of blades in the holder if it is so desired. Thus, with my type of holder the particular type of blade used is not confined to a single type of blade, but certain other commonly used types of blades can be used if it is so desired.

It is a further feature of my invention to provide a blade holder which is movable to three positions, each of which serves some particular function. One of these positions is an extreme position, which is used only when it is desired to entirely remove or replace a blade. The blade is normally movable between the other extreme position and an intermediate position which intermediate position normally forms an extreme position of movement for the blade and clamping plate. In other words, the blade is movable between an operative position in which the blade projects beyond the end of both of the clamping elements and a second extreme position in which the blade is held with its cutting edge clamped against one clamping element. This last named position is usually considered a second extreme position, as shoulder means are provided to prevent the movement of the blade to a greater extent in this one direction. By further loosening the clamping means or by removing one portion of the means clamping the clamping elements together the plate may be moved beyond this second extreme position into a position in which the two clamping elements may be separated.

A further object of my invention is to provide a simple scraping device made of an extremely

small number of parts and which may be sold at a low cost. This feature is of importance in the present field in order to effectively compete with other blade holders previously constructed.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawing forming a part of my specification:

Figure 1 is a perspective view of the blade holder showing the blade in inoperative position.

Figure 2 is a perspective view similar to Figure 1 showing the blade holder in operative position.

Figure 3 is a plan view of the head end of the holder showing the blade in extended or operative position.

Figure 4 is a view similar to Figure 3 showing the blade in inoperative position.

Figure 5 is a view similar to Figures 3 and 4 showing the blade holder in position to permit disassembly of the same.

Figure 6 is a side view of the head end of the blade holder showing the blade in operative position.

Figure 7 is a view similar to Figure 6, showing the blade in inoperative position.

Figure 8 is a perspective view of the movable portion of the clamping head showing a razor blade supported thereby.

Figure 9 is a view of the clamping plate shown in Figure 8 showing the manner in which a different type of razor blade may be mounted thereupon.

The scraper blade holder A is designed to hold a razor blade B in the manner best illustrated in the drawing. The holder A includes a flat plate 10 which is the width of the razor blade B and which is of substantial length. A handle 11 projects from the rear edge of the plate 10 as illustrated, to form a convenient means of holding the blade holder. The extreme edge portion of the plate 10 opposite the edge from which the handle 11 projects and indicated in the drawing by the numeral 12 is connected to the plate 10 by an offset 13. The offset 13 connects the plate 10 to the edge 12 so that the edge 12 may be positioned against the blade body of the blade B.

A relatively movable clamping plate 14 is secured to the plate 10 for longitudinal slidable movement with respect thereto. The clamping plate 14 includes a flat plate portion 15 which is designed to contact the plate 10 when the plate is in extended position as illustrated in Figure 6. The plate 15 is connected by an offset 16 to a parallel portion 17 which extends substantially parallel to the plane of the plate 15. An offset 19 connects the parallel portion 17 to an edge portion 20 which in extended position of the blade extends in opposed relation to the edge 12 of the plate 10.

As best illustrated in Figures 6 and 8 of the drawing the blade B includes a flat plate 21 having a sharpened edge 22. The edge of the plate 21 opposite the sharpened edge 22 is enclosed or folded within a doubled strip of metal 23 to reinforce this edge of the plate and to provide a convenient means of holding the blade. This type of blade is commonly sold and is known to the trade as a Gem blade.

As will be seen from an examination of Figure 6 of the drawing the folded strip 23 enclosing the rear edge of the blade B is supported between the parallel portion 17 of the clamping plate 14 and the body of the plate 10. The two

edges 12 and 20 of the clamping elements 10 and 14, respectively, engage the plate 21 of the blade B and hold the blade securely for the scraping action. In this way it will be seen that the blade is held from twisting or turning between the clamping plates and no movement of the blade is permitted relative to the clamping elements.

A small ear 24 is bent up from a point near the edge 20 to extend through an aperture 25 in the plate 21 of the blade B. The ear 24 extends through a slot 25 extending longitudinally of the plate 10 to permit relative slidable movement between the clamping elements 10 and 14. The slot 25 widens at a point spaced from the edge of the holder to form a wider slot 26. This wider slot 26 is designed to contain the shank 27 on the clamping bolt. In the form illustrated in the drawing the shank 27 is provided with a head 29 and is secured to the clamping plate 14. A thumb nut 30 on the shank 27 may be tightened to clamp the two elements 10 and 14 together. If it is preferred the clamping plate 14 can be threaded and a bolt having an easily engageable head may be substituted for the shank 27 and the thumb nut 30.

In order to guide the slidable movement of the relatively movable clamping elements 10 and 14 I provide a pair of parallel slots 31 and 32 in the clamping plate 10. These slots are of substantially uniform width throughout the major portion of their length and are provided with wider terminated portions 33 and 34 respectively. As best illustrated in Figures 8 and 9 of the drawing, the clamping element 14 is provided with a pair of spaced ears 35 and 36 projecting therefrom. These ears 35 and 36 are relatively narrow at the juncture between the ears and the flat plate 15 but are substantially wider at the top, forming shoulders 37 which engage over the surface of the plate 10 when the clamping plates are assembled. The ears 35 and 36 are of a width to extend through the enlarged portions 33 and 34 of the slots 31 and 32. The enlarged heads of these ears engage over the outer surface of the plate 10 after the ears have been inserted through the enlarged portions 33 and 34 and the slidable clamping element 14 is moved upwardly. In other words, the shoulders 37 engage the outer surface of the plate 10 to hold the clamping elements normally engaged.

On the surface of the plate 10 I provide a series of projections, or shoulders, which tend to limit the movement of the slidable element 14. A pair of projections 39 extend upwardly from the surface of the plate 10 and engage the edge of the thumb nut 30 when the same is clamped against the plate 10. When the nut 30 is tightened against the plate 10 and the blade is extended, as shown in Figures 2 and 3 of the drawing, the projections 39 tend to prevent the sliding of the blade rearwardly. Thus, the blade is held in extended position and can not accidentally move from this extended position.

When it is desired to place the blade in inoperative position the thumb nut 30 is loosened sufficiently to pass over the projections 39. When the nut has been loosened sufficiently the clamped element 14 together with the blade B carried thereby is moved rearwardly until the nut 30 strikes a set of relatively higher projections 40 on the plate 10. The projections 40 thus form a limit for the movement of the nut 30 and in this position the blade is concealed as illustrated in Figures 1 and 4 of the drawing.

A pair of indentations 41 are formed in the outer surface of the plate 10 so as to provide projecting bumps 42 on the rear surface of the plate 10, as best illustrated in Figures 6 and 7 of the drawing. As the clamping plate 14 is moved downwardly to move the blade B into operative position and as the clamping nut 30 passes over the projections 39 the clamping plate 14 strikes the projections 42 and is forced away from the body of the plate 10 as the same continues its downward movement. This action serves two purposes. In the first place, it tilts the clamping plate 14 to some extent with respect to the plate 10 and causes the sharpened edge 22 of the blade B to engage firmly against the offset portion 13 with spring pressure. Thus, the edge of the blade is drawn tightly against the body of the holder and in this position it is impossible for the blade to cut or injure anything. In the second place the projections 42 tend to draw the clamping element 14 away from the plate 10, thus drawing the thumb nut 30 inwardly to insure its striking the projections 40.

From an examination of Figures 1, 4, and 7 of the drawing, it will be noted that when the blade B is in retracted position the enlarged portion of the ears 35 and 36 are engaging over the surface of the plate 10 adjacent the slots 31 and 32, and are holding the clamping plates and blade in assembled relation. If it is so desired, however, to remove or replace the blade B it is necessary to unthread the thumb nut 30 until this nut may pass over the projections 40. When the nut 30 is unthreaded to this extent the shank 27 may be moved to the extreme lower end of slot 26 as illustrated in Figure 5 of the drawing. In this position the ears 35 and 36 register with the enlarged portions 33 and 34 of the slots 31 and 32. By entirely unthreading the nut 30 the clamping plates may be entirely disassembled.

My holder A is particularly designed to contain blades of the type described. It will be obvious, however, that the holder will operate with other types of blades if it is so desired. In Figure 9 of the drawing, I disclose the clamping element 14 shown in relation to a blade 43 of another common type. The ear 24 is designed to extend through the blade and to hold the same in place.

In accordance with the patent statutes I have described the principles of construction and operation of my razor blade holder, and while I have endeavored to set forth the best embodiments thereof, I desire to have it understood that these are only illustrative of a means of carrying out my invention and that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A blade holder comprising a plate having an elongated slot therein, a relatively slidable clamping plate, means extending through said slot connecting said plates to clamp the same together, a blade clamped between said plates, and means on said first named plate adjacent said slot engaging said connecting means to prevent slidable movement of said clamping plate until said connecting means is loosened.

2. A blade holder comprising a plate having an elongated slot therein, a relatively slidable clamping member, threaded means connecting said plate and said member and extending through said slot, clamping said plate and member together, a blade between said plate and member, and means adjacent said slot engageable with

said threaded means to prevent movement of said member when said threaded means is tightened.

3. A blade holder comprising a plate having an elongated slot therein, a relatively slidable clamping member, a threaded member on said clamping member extending through said slot and operating, when tightened against the plate, to clamp the clamping member thereto, a blade clamped between said plate and said member, and projection means on said plate adjacent said slot to hold said threaded member, and the clamping member to which it is engaged, from sliding relative to said plate when said threaded member is tightened.

4. A blade holder comprising a plate having an elongated slot therein and an enlargement in the slot at one end thereof, a clamping member slidably supported adjacent said plate, a blade interposed between said plate and said clamping member, clamping bolt means for drawing said plate and member together to clamp the blade therebetween, and guide means bent to project from said clamping member extending through said slot and having an enlarged head of a size to pass through said enlargement in the slot engaging over the plate adjacent the slot as said clamping member is moved slidably.

5. A blade holder comprising a plate having an elongated slot therein, a second plate relatively slidable with respect to the first plate, a blade interposed between said plates, said slotted plate having a slot enlargement communicating with one end of the slot, a guide means bent to project from the second plate extending through said slot and having a head overlying the first named plate adjacent the slot, said head being of dimensions to pass through said slot enlargement, and clamping bolt means for clamping the plates together.

6. A blade holder comprising a plate having a pair of parallel slots therein and slot enlargements at one end of said slots, a second plate having guide members bent to project therefrom extending through said slots to slidably connect said plates, heads on said guide members removable only through said slot enlargements, a blade between said plates, and means connecting said plates to draw the same together.

7. A blade holder comprising a first plate, an edge on said plate connected to said plate by an offset, a second plate slidably secured to said first plate, a blade interposed between said plates, means for drawing said plates together to clamp the blade therebetween, said second plate contacting said first plate and clamping said blade against said edge of said first plate with an edge of the blade projecting beyond said edge in one relative position of said plates, and means on said first plate engaging the second plate in another relative position of said plates to incline said second plate with respect to said first plate, and to press the formerly projecting edge of the blade against said offset.

8. A blade holder comprising a first plate, a forward edge on said plate connected to said plate by an offset, a second plate slidably supported on said first plate, a blade between said plates slidable with said second plate and having a cutting edge projecting forwardly from said forward edge in one position thereof, said plates extending generally parallel, means for drawing said plates together to clamp the blade therebetween, and means on said first plate engageable with said second plate in one relative posi-

tion thereof to tilt said second plate with respect to said first plate and to press the cutting edge of the blade against said offset.

9. A blade holder comprising a first plate having an elongated slot therein and a pair of parallel guide slots therein, a second clamping plate, guide means on said second clamping plate engaged in said guide slots, threaded means extending through said slot connecting said plates together, a blade between said plates and slidable with said second plate, and projection means on said first plate adjacent said elongated slot and engageable with said threaded means when the threaded means is tightened to prevent the relative sliding of said clamping plates.

10. A blade holder comprising a first plate having an elongated slot therein and a pair of parallel guide slots therein, the guide slots terminating in enlarged apertures, a clamping plate slidable with respect to the first plate, threaded means extending through said slot and operable, when tightened, to clamp said plates together, a blade clamped partially between said plates and slidable with said clamping plate, guide means on said clamping plate extending through said guide slots and having heads thereon removable only through said enlarged apertures, said clamping plate being slidable from one extreme position in which said blade projects beyond the plates to its other extreme position in which said heads of said means register with said enlarged apertures; shoulder means engaging said threaded means when tightened to hold said blade from retracting from, or moving into blade projecting

position; and second larger shoulder means engaging said threaded means to hold the second plate from moving into said other extreme position.

11. A blade holder comprising a plate having an elongated slot therein, a relatively slidable clamping plate, means extending through said slot connecting said plates to clamp the same together, a blade clamped between said plates, and means forming a part of the first named plate engaging said connecting means to prevent slidable movement of said clamping plate until said connecting means is loosened.

12. A blade holder comprising a fixed member including a clamping plate and an elongated slot therein, and a relatively slidable member including a second clamping plate and a connecting element extending through said slot designed to clamp said plates together, a blade clamped between said plates and slidable with said second clamping plate, said blade having a reinforcing element embracing the edge thereof opposite the cutting edge, said first named clamping plate continuously engaging said reinforcing element and said blade, said second clamping plate having a marginal flange thereupon designed to bear against said blade between said reinforcing element and said cutting edge, said marginal flange pivoting said blade about said reinforcing element and thereby tilting said blade against said first named clamping plate in retracted position of the blade.

JENNINGS NELSON.