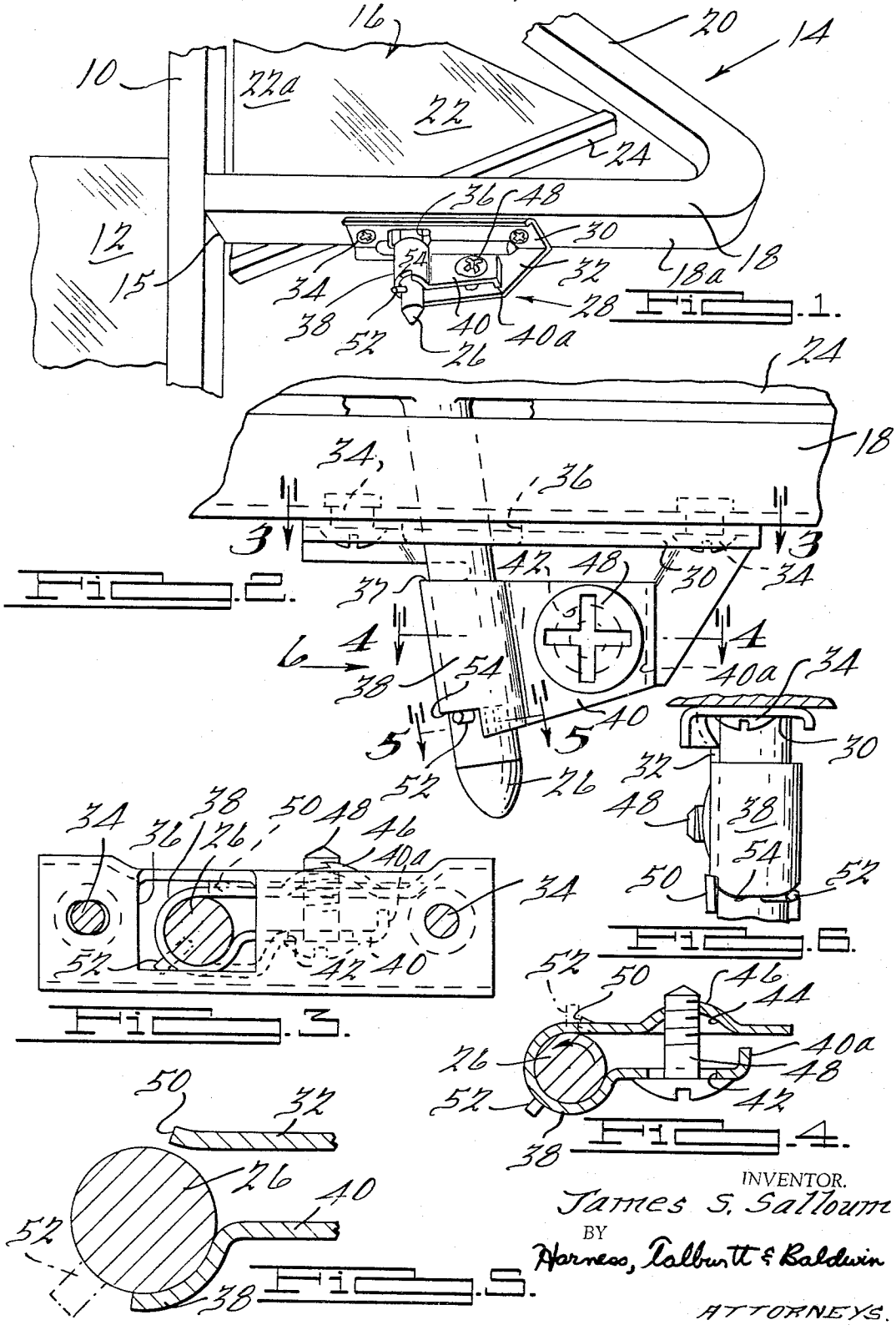
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MOUNTING CLIP FOR VENT WINDOW ASSEMBLY

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MOUNTING CLIP FOR VENT WINDOW ASSEMBLY

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This invention relates to a window vent assembly for a motor vehicle. More particularly, it relates to an improved mounting clip for frictionally embracing the swivel shaft or post of a vent window of a motor vehicle.

A typical window vent assembly for a motor vehicle includes a fixed window frame rigid with the door structure, a vent window received within the window frame and having a lower border or frame member supported on the lower member of the window frame, and a swivel shaft depending from the vent window lower frame member and passing through the window frame lower member for frictional engagement at its lower end by a mounting clip.

It is an object of the present invention to provide an improved mounting clip for use with a vent window assembly; a more particular object is to provide such a mounting clip which is inexpensive to produce, easy to install, and afficient in operation.

These and other objects and advantages of the present invention will be apparent from the following detailed description of a preferred embodiment of the invention and from the accompanying drawing wherein:

FIG. 1 is a perspective fragmentary view of a vent window assembly according to the invention;

FIG. 2 is a fragmentary elevational view on an enlarged scale of the assembly of FIG. 1;

FIGS. 3, 4 and 5 are cross sectional views taken on lines 3—3, 4—4, and 5—5, respectively, of FIG. 2; and

FIG. 6 is a fragmentary view looking in the direction of the arrow 6 in FIG. 2.

The vent window assembly seen fragmentarily in FIG. 1 includes a vertical window frame member **10** providing the forward guide channel for the vertically movable door window **12**, and an angular frame member **14** suitably secured as at **15** to frame member **10** and receiving the vent window **16**. It will be understood that frame members **10** and **14** are carried by, and rigid with, the door (not shown) of the vehicle. Angular frame member **14** includes a lower or horizontal portion **18** and an inclined, upwardly extending portion **20**. The upper end (not shown) of portion **20** is rigidly secured to the upper end of vertical frame member **10**.

Vent window **16** includes a triangular piece of glass **22** bordered at its lower edge by a lower metallic frame member **24**. Window **16** is pivoted within frame member **14** by an upper pivot member (not shown) and a lower swivel post or shaft **26**. Swivel shaft **26** depends from the lower face of frame member **24** and passes through frame member portion **18** for engagement at its lower end by a mounting clip seen generally at **28**.

Mounting clip **28** comprises a single piece of sheet metal suitably bent and contoured to frictionally embrace shaft **26**. Clip **28**, broadly considered, includes a horizontal flange portion **30** and a vertical wall portion **32**.

Flange portion **30** is rigidly secured to the underface **18***a* of frame portion **18** as by screws **34** and has an aperture **36** therein passing shaft **26**.

Wall portion **32** extends generally vertically downwardly from one longitudinal edge of flange portion **30** and is slotted at **37** to allow it to be bent back upon itself about the axis of shaft **26** on a bend radius approximating the radius of that shaft to form a socket portion

38 at the bend rotatably receiving shaft **26** and a resilient arm portion **40** extending from socket portion **38** in parallel and confronting relation to the adjacent surface of the unbent section of wall portion **32**.

Socket portion **38** bends around the axis of shaft **26**, on the shaft radius, through an angle of approximately 270° so that arm portion **40**, as it extends outwardly from the free end of socket portion **38**, lies in a plane passing generally through the axis of shaft **26**. The free end of arm portion **40** is bent over toward the unbent section of portion **32** to form a lip **40***a* for engagement with the adjacent surface of the unbent section of wall portion **32**.

Arm portion **40** includes an aperture **42** and the unbent section of wall portion **32** includes an aperture **44** in general alignment with aperture **42**. The periphery of aperture **44** includes a tongue **46** whose free edge defines a spiral pattern for coaction with the threads of a headed fastener **48** passing through aligned apertures **42** and **44**. The free spiral edge of tongue **46** coacts with the threads of fastener **48** so that selective turning movement of fastener **48** moves arm portion **40** toward or away from the unbent section of wall portion **32** to adjust the frictional grip of socket portion **38** on shaft **26**.

As fastener element **48** is turned in a tightening direction, lip **40***a* moves into abutment with the adjacent surface of the unbent section of the wall portion **32** to provide a fulcrum about which arm portion **40** may thereafter pivot upon further tightening movement of element **48** to enable socket portion **38** to tightly grasp shaft **26**. It will be seen that socket portion **38** bends away from the unbent section of wall portion **32** in the direction of closing movement of vent window **16** (as depicted by the arrow in FIG. 4) so that, upon such closing movement, the frictional engagement of shaft **26** in socket portion **38** tends to close up the socket portion to increase the frictional resistance to such closing movement. The vent window thus tends to stay in the open position to which it is moved irrespective of the action of the wind acting at high vehicle speeds against the outer portion **22***a* of the window and tending to move it toward its closed position.

Socket portion **38** is selectively cut away adjacent its lower end to define a stop surface **50** extending generally parallel to the axis of shaft **26**. Shaft **26** includes a pin or stud **52** projecting radially outwardly from the main body portion of the shaft for coaction with stop surface **50** to limit the opening movement of the vent window. Pin **52** also coacts with the upper edge **54** of the cut away portion of socket portion **38** to preclude upward displacement of the vent window relative to the mounting clip.

While a preferred embodiment of the invention has been illustrated and described in detail, it is to be understood that various changes may be made in the disclosed embodiment without departing from the scope or spirit of the invention as defined by the appended claims.

I claim:

1. A one-piece sheet metal mounting clip for frictionally embracing the lower end of the swivel shaft of a motor vehicle vent window after the shaft has passed downwardly through a longitudinal support member carried by the door of the vehicle, comprising:

(A) a horizontal flange portion adapted to be rigidly secured to the underface of said support member and having an aperture therein to pass said swivel shaft;

(B) a longitudinally extending wall portion extending generally vertically downwardly from one longitudinal edge of said flange portion and bent upon itself about the axis of said shaft on a bend radius approximating the radius of said shaft to form

(1) a socket portion at the bend rotatably receiving the shaft and

(2) a resilient arm portion extending from said socket portion in parallel and confronting relation to the adjacent surface of the unbent section of said wall portion;

(C) means defining aligned openings in said arm portion and in said unbent section of said wall portion;

(D) a threaded fastener member adapted to be passed through said aligned openings; and

(E) means at the periphery of one of said openings for adjustably gripping the threads of said fastener element, whereby said element may be selectively turned to adjust the frictional grip of said socket portion on said shaft.

2. A vent window assembly according to claim 1 wherein:

(F) said socket portion bends around said axis on said shaft radius through approximately 270 degrees; and

(G) said arm portion extends from the free end of said socket portion and lies in a plane passing generally through said axis.

3. A vent window assembly according to claim 2 wherein:

(H) the free end of said arm portion is bent over toward said unbent section of said wall portion to form a lip for engagement with the aforesaid surface of said unbent section.

4. A vent window assembly according to claim 1 wherein:

(F) said socket portion is selectively cut away to define a stop surface extending generally parallel to the shaft axis, and

(G) said shaft includes a portion projecting radially outwardly from the main body portion thereof for coaction with said stop surface to limit the opening movement of the vent window.

5. A vent window assembly according to claim 1 wherein:

(F) said socket portion bends away from said unbent section in the direction of closing movement of said vent window, whereby upon such closing movement the frictional engagement of said shaft in said socket portion tends to close up said socket portion to increase the frictional resistance to such closing movement.

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