

OPINION UNDER SECTION 74A

Patent	GB2435766
Proprietor(s)	ASSA ABLOY Limited
Exclusive Licensee	
Requester	Lucas & Co.
Observer(s)	
Date Opinion issued	14 March 2019

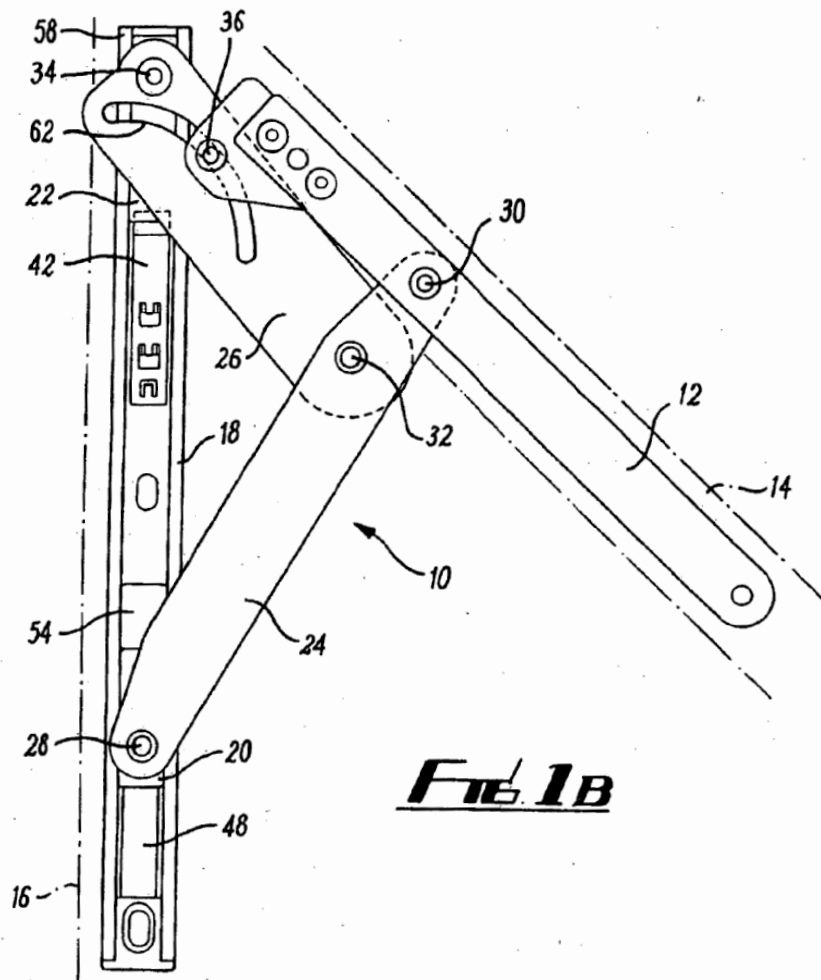
The request

1. The comptroller has been requested to issue an opinion as to whether GB2435766 (“the patent”) is novel and inventive in light of certain prior art documents and whether it discloses the invention in a manner that is clear enough and complete enough for the invention to be performed by a person skilled in the art.
2. Observations have been received from Abel & Imray on behalf of the proprietor and observations in reply have been received from the requester.

The patent

3. Filed on 19 November 2004 by virtue of being divided from application number 0611786.5, the patent was granted with effect from 16 January 2008 and remains in force.
4. The invention is entitled “Window stay arrangement” and is concerned with means to allow a window sash to open and close in a window frame. Two embodiments are disclosed and figure 1B below shows the first embodiment with the window stay arrangement 10 in an intermediate position between open and closed positions. The stay arrangement 10 includes a sash arm 12 fixed to a sash 14 which opens and closes in a frame 16. A track 18 is mounted to the frame 16 and carries first and second carriages 20, 22 which can slide along the track 18 as the sash 14 moves relative to the frame 16.
5. During normal operation, a releasable locking arrangement 42 locks the second carriage 22 at the position shown in figure 1B. The carriages 20, 22 are connected to the sash arm 12 by a pivot linkage formed by a first intermediate arm 24, and a second intermediate arm 26. The first intermediate arm 24 is pivotally connected at

28 to the first carriage 20, to the sash arm 12 at 30 and to the second intermediate member 26 at 32 with pivot 32 positioned between pivots 28 and 30. The second intermediate arm 26 is pivotally connected at 34 to the second carriage 22, at 36 to the sash arm 12 and at 32 to the first intermediate arm 24 with pivot 36 located between the pivots 32 and 34. When the sash is to be opened from a closed position the first carriage 20 begins to move as the sash is opened whilst the second carriage 22 remains locked at the position shown in figure 1B and eventually, the intermediate position shown below is reached.



6. The pivot arrangement 36 incorporates a curved slot 62 so that, in addition to the second intermediate arm 26 pivoting relative to the sash arm 12, at the pivot 36, the position of the pivot 36 moves relative to the second intermediate arm 26, along the curve defined by the slot 62. At any position within the range of possible movement, the position of the pivot 36 along the slot 62, and thus the shape of the slot 62, determines the angle of the sash arm 12 about the pivot 30 and thus, determines the angle of the sash 14 relative to the frame 16.

Claim construction

7. Firstly I need to construe the claims of the Patent. That is to say I must interpret them in the light of the description and drawings as instructed by Section 125(1). In doing so I must interpret the claims in context through the eyes of the person skilled in the art. Ultimately the question is what the person skilled in the art would have understood the patentee to be using the language of the claims to mean.
8. Section 125(1) of the Act states that:

For the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.

9. The claims are as follows:

1. *A window stay arrangement comprising:-*

a frame member for attachment to a window frame;

a sash member for attachment to a sash to be mounted for opening and closing in the frame;

first and second intermediate members pivotally connected to the frame member and to the sash member;

the second intermediate member being pivotally connected to the first intermediate member at a position between the pivotal connections of the first intermediate member to the frame member and the sash member;

the sash member being pivotally connected to the second intermediate member at a position between the pivotal connections of the second intermediate member to the frame member and the first intermediate member;

the position of the pivotal connection between the frame member and one of the intermediate members being movable relative to the frame member; and

the position of the pivotal connection between the sash member and the second intermediate member being movable relative to the second intermediate member, as the sash member moves relative to the frame member.

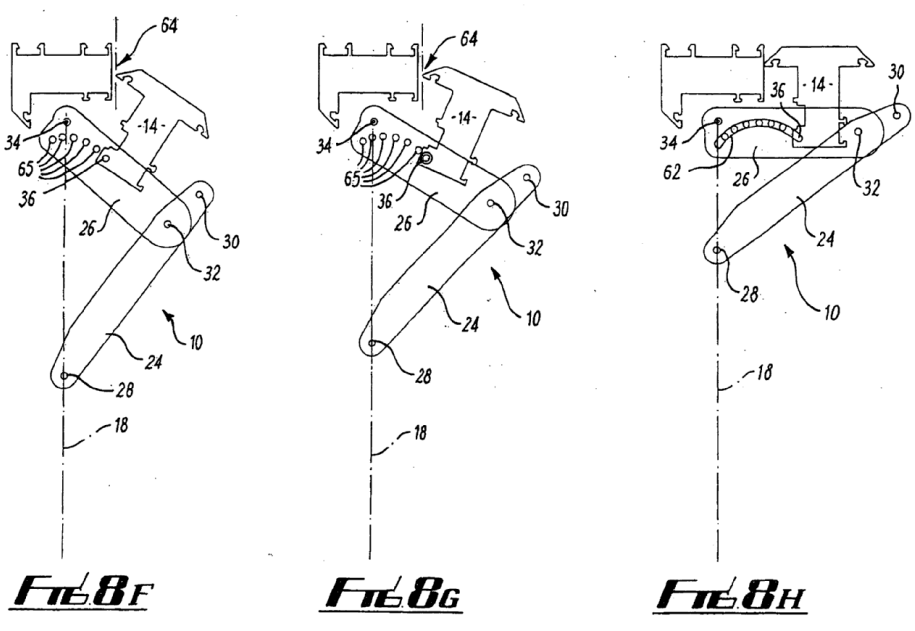
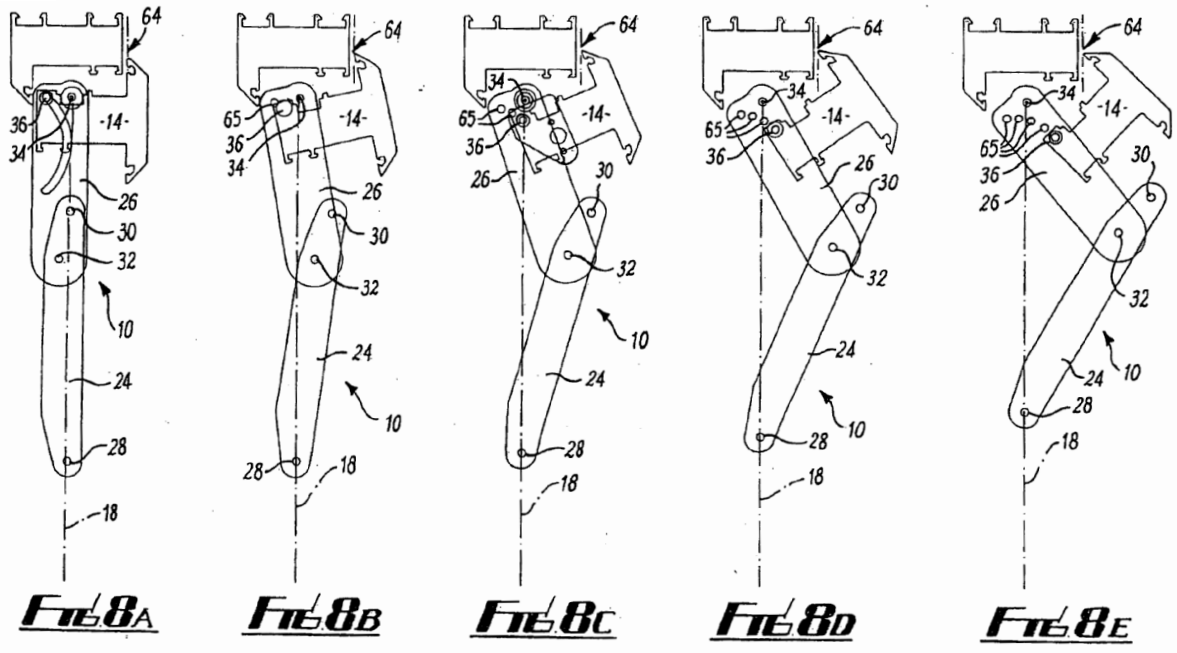
2. *An arrangement according to claim 1, wherein the pivotal connection between the sash member and the second intermediate member is constrained to move along a curved path relative to the second intermediate member.*
3. *An arrangement according to claim 2, wherein the curved path is chosen to cause the sash to remain clear of the frame as the sash opens and closes.*

4. *An arrangement according to any preceding claim, wherein when the sash is fully closed, the pivotal connection between the sash member and the second intermediate member is positioned inwardly of the pivotal connection between the second intermediate member and the frame member, the pivotal connections defining a line which is substantially perpendicular to the plane of the sash.*
5. *An arrangement according to any preceding claim, wherein the position of both pivotal connections between the frame member and the intermediate members are selectively movable relative to the frame, as the sash moves relative to the frame.*
6. *An arrangement according to any preceding claim, wherein the arrangement further comprises a releasable locking arrangement operable to select the pivotal connection of the first intermediate member for movement, except when the locking arrangement is overcome.*

10. It is perhaps worth noting that the terminology differs slightly between the claims and the description, but not sufficient to cause any confusion to my mind. Track 18 forms the frame member of claim 1 and sash arm 12 and intermediate arms 24, 26 correspond to the sash member and intermediate members of the claims.
11. For the most part claim 1 is clear. However, the requester and the proprietor differ regarding the construction to be placed upon "*pivotaly connected*" and "*pivotal connection*". According to the proprietor these phrases are "*intended to cover elements that are connected by a pivot, i.e. the actual pivots are identified that connect various carriages and arms together*". They point to the specific description at lines 28 to 34 on page 3 where various pivotal connections are made at pivot points. At the risk of over-analysing the proprietor's observations, it occurs to me that the choice of words "*intended to cover*" might imply that, whilst "*pivotaly connected*" encompasses actual pivots, it could be construed more broadly. This is perhaps of more than academic interest since the pivotal connection at 36 between the second intermediate arm 26 and the sash arm 12 is said to incorporate a curved slot 62 and hence is not to my mind one of what the patent describes as "*simple pivot connections*".
12. The proprietor also argues that the patent uses the phrase "*pivot linkage*" to refer to indirect connections formed from combinations of pivots and arms. I can find two uses of the phrase "*pivot linkage*" in the granted patent, on page 3 at lines 25 and 26 and page 8 at lines 13 to 15. In both cases it is said that the two carriages are connected to the sash arm by a pivot linkage formed by a first intermediate arm and a second intermediate arm. It seems to me that "*pivot linkage*" is being used as something of a blanket term to cover the whole mechanism of members or arms and pivots between the carriages and the sash arm, including what the patent terms pivotal connections, rather than being used to differentiate between simple pivot connections and indirect connections.
13. In response the requester contrasts the use of "*the pivot*" in the description and the absence of the noun "*pivot*" from claim 1. The requester goes on to point out that in the embodiments the pivotal connections between the track 18 and the intermediate arms 24, 26 include carriages 20, 22. This leads them to the conclusion that a

member, in this case the frame member, should be construed to include multiple elements and not just a single element.

14. This all leads me to conclude that a person skilled in the art would understand "*pivotally connected*" and "*pivotal connection*" to cover elements connected by an actual pivot or simple pivot connections. However, I believe that such a person would understand the phrases to cover more than just such simple connections. In my view the phrases would be understood to include at least connections where a pivot moves in a slot in one of the elements that are connected and also a pivot formed on a component that moves along one of the elements that are connected. These are the forms of connections other than a simple pivot that are described as "*pivotally connected*" in the patent. Since the phrase is explicitly used in the patent to cover three different forms of connection it seems to me that a person skilled in the art would understand that "*pivotally connected*" is simply being used to mean a connection that includes a pivot. That seems to be the common feature of the three types of connection that are described in the patent as "*pivotally connected*". It seems to me that such a connection may or may not include an intermediate component such as the carriages 20, 22.
15. Neither the requester nor the proprietor finds anything in the dependent claims that requires interpretation or discussion. Several small points struck me. Claim 2 of the patent requires that a pivotal connection "*is constrained to move along a curved path relative to the second intermediate member.*". In the embodiment this constraint and curved path is provided by curved slot 62. However, I do not believe the skilled person would understand "*curved path*" in claim 2 to only mean "*curved slot*", but rather to mean any curved path in whatever way it is constrained.
16. Claim 3 requires that "*the curved path is chosen to cause the sash to remain clear of the frame as the sash opens and closes*" (my emphasis added). It is not apparent to me what might be intended by "*is chosen*" in this context rather than simply requiring that the curved path causes the sash to remain clear of the frame as it opens and closes. The words seem to add nothing to the claim and I can find nothing in the patent as a whole to suggest otherwise. I shall therefore take it that "*is chosen to cause*" in claim 3 should be treated as "*causes*".
17. Since the sash opens and closes in the frame it is not immediately apparent how the sash might remain clear of the frame in claim 3. This seems to be explained in figures 8A to 8H below in which a minimum clearance 64 is said to be maintained between the sash 14 and the frame 16 in order to ensure seals are not trapped or to avoid the sash and the frame fouling each other. I take it that to remain clear simply means to avoid fouling or to maintain a minimum clearance.

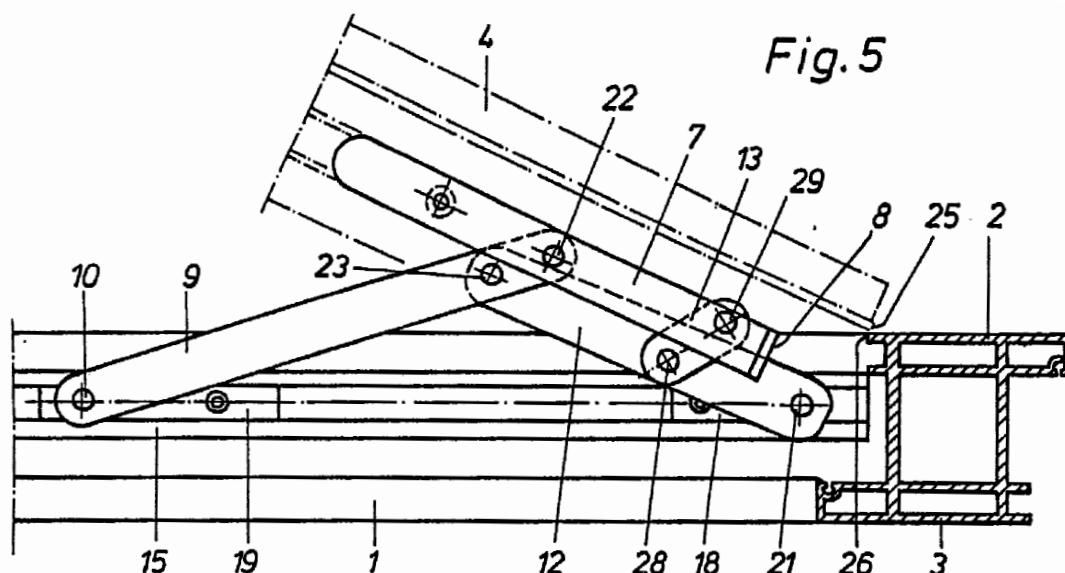


18. Claim 5 requires both pivotal connections between the frame member and the intermediate members to be "selectively movable" relative to the frame. Claim 6 and the description make it clear that the "selectively movable" requirement may be satisfied by a releasable locking arrangement. In figure 1B such a releasable locking arrangement is shown by leaf spring 42 which engages with a step on second carriage 22 and locks carriage 22 in position. If the sash 14 is opened to its maximum extent first carriage 20 is moved to its uppermost position moves shuttle 54 with it to depress leaf spring 42 and release carriage 22. Flexible restraining member 48 located on track 18 and first carriage 20 both have ribs which interfere with one another to restrain carriage 20 when the sash 14 is closed. When second carriage 22 is locked in place movement of the sash 14 by a user from a closed position overcomes this restraint and first carriage 20 moves along track 18.

Whereas, when the releasable arrangement locking second carriage 22 in place is released, the restraint of the interfering ribs is sufficient to hold first carriage 20 in place at the lower end of track 18 as the sash moves and carriage 22 moves along track 18. I take it from this that “*selectively movable*” in claim 5 should be understood to mean that the pivotal connections are either restrained or locked in place relative to the track or frame member and the restraint or lock can be overcome or released depending upon operation of the sash by a user.

Novelty of the independent claim

19. The request refers to two prior art patent documents in the context of novelty, GB2125867 and US4622715. Both were published well before the earliest date of the patent.
20. Although it refers to a pivot bearing it is clear that GB2125867 is concerned with a lever system for a casement, i.e. a door or a window. A single embodiment is described, as shown in figures 5 and 6 below.
21. A casement mounting plate 7 bears a rigid hinge point 22 for one end of a scissor arm 9, the other end of which is hinged rigidly at 10 to a blind frame 1 or a securing plate 15 formed as a sliding guide. At a slight distance from the hinge point 22 of the casement mounting plate 7, the free end of a carrier arm 12 is hinged at 23 to a scissor arm 9. The other, or inner, end of the carrier arm 12 is hinged at 21 to a sliding part 18 which is movably guided at the blind frame in the sliding guide 15 parallel to the plane of the blind frame 1.



22. At the carrier arm 12, at a predetermined distance from the hinge point 21 of the carrier arm 12 one end of a guide rod 13 is hinged to the sliding part 18 at 28, the other end being hinged to the casement mounting plate 7. The open position of the casement 4 is determined by the abutment of the sliding part 18 at a stop part 19 which is secured to the guide rail 15 and may also bear the pivot bearing 10 for the scissor arm 9.

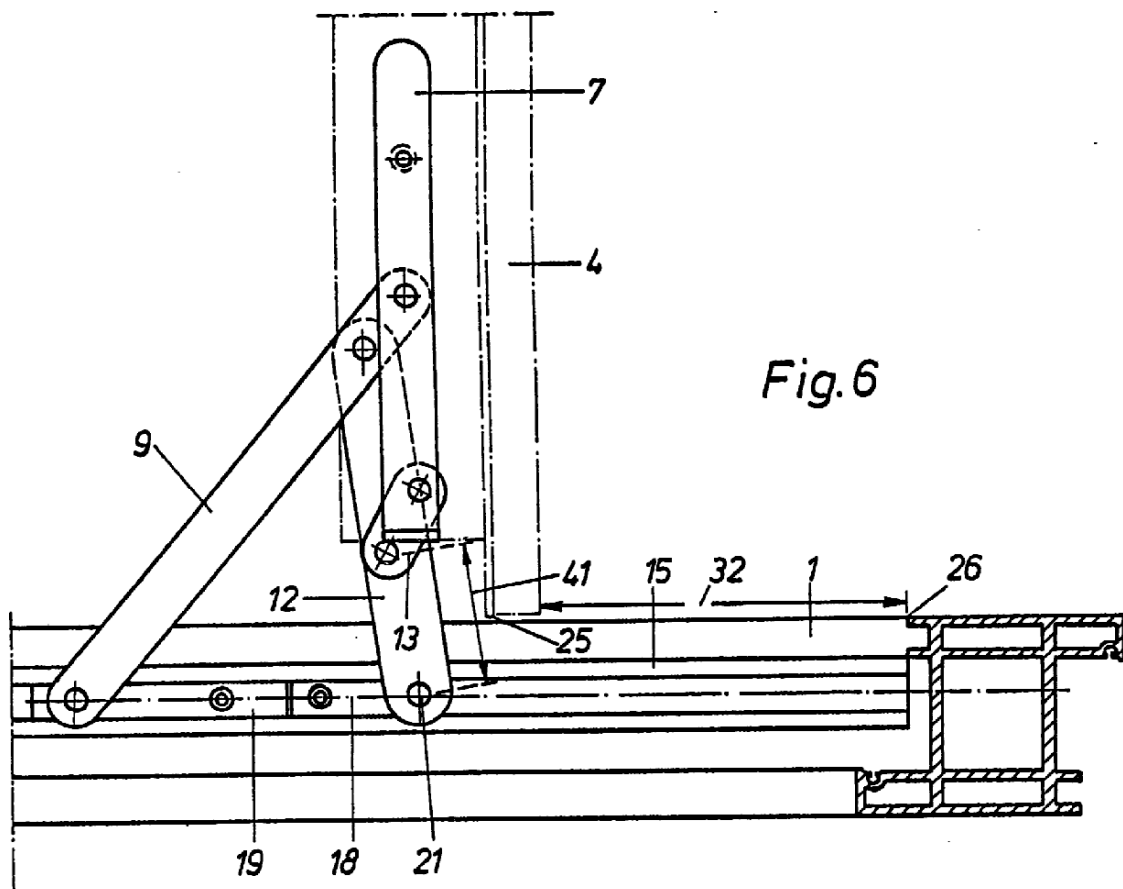
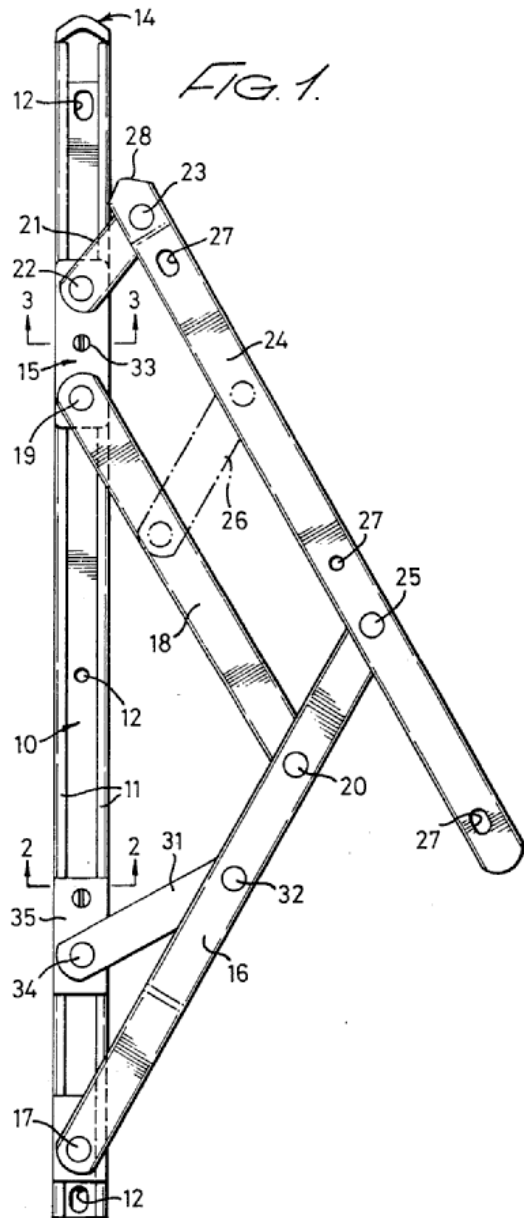


Fig. 6

23. In the terms of claim 1 of the patent GB2125867 clearly shows a window stay arrangement comprising a frame member or securing plate 15 for attachment to a window frame 1 and a sash member or casement mounting plate 7 for attachment to a sash or casement 4 to be mounted for opening and closing in the frame 1. According to the requester scissor arm 9 and carrier arm 12 respectively form the first and second intermediate members of claim 1 of the patent. Scissor arm 9 and carrier arm 12 are pivotally connected to the frame member 15 at 21 on sliding part 18 and at 10 on stop part 19. The first intermediate member or scissor arm 9 is also pivotally connected at 22 to the sash member or casement mounting plate 7.
24. There is disagreement between the requester and the proprietor over whether the first intermediate member or carrier arm 12 is "*pivotaly connected ... to the sash member*" or casement mounting plate 7. The first intermediate member or carrier arm 12 is connected to guide rod 13 at pivot 28 and in turn guide rod 13 is connected to sash member or casement mounting plate 7 at pivot 29. I have previously construed "*pivotaly connected*" to simply mean a connection that includes a pivot and may or may not include an intermediate component. It follows therefore that in my view the first intermediate member or carrier arm 12 is "*pivotaly connected ... to the sash member*" or casement mounting plate 7.
25. The carrier arm 12 or second intermediate member is pivotally connected to scissor arm 9 or first intermediate member at a position 23 between the pivotal connections 10, 22 of the first intermediate member to the frame member or blind frame 1 and the sash member or casement mounting plate 7. As noted above, it is my view that the

first intermediate member or carrier arm 12 is "*pivotaly connected ... to the sash member*" or casement mounting plate 7 by guide rod 13 and pivots 28, 29. Guide rod 13 and pivots 28, 29 are clearly positioned between pivots 21 and 23. It follows that the sash member or casement mounting plate 7 is pivotally connected to the second intermediate member or carrier arm 12 at a position between the pivotal connections 21, 23 of the second intermediate member or carrier arm 12 to the frame member or blind frame 1 and the first intermediate member or scissor arm 9.

26. By virtue of sliding part 18 carrying hinge point 21 for second intermediate member or carrier arm 12 and also moving along frame member or securing plate 15 the position of the pivotal connection 21 between the frame member 1 and one of the intermediate members 12 is movable relative to the frame member 1. Comparing figures 5 and 6 above the position 29 of the connection between the sash member 7 and the second intermediate member 12 at guide rod 13 is movable relative to the second intermediate member 12, as the sash member 7 moves relative to the frame member 1.
27. The second document upon which a novelty opinion is sought is US4622715, entitled "Friction supporting stays for windows". A single embodiment is described, as shown in figure 1 below.
28. This shows a stay which comprises a track 10 which can be attached to a window frame by screws (not shown) passing through holes 12. The track 10 has, at its upper end as seen in the drawing, a nose portion 14 of plastic with a curved inner surface adapted to receive the nose portion 28 of a bar 24 which has holes 27 for receiving screws by which the window sash may be attached to bar 24. Bar 24 is pivotally attached to the track 10 by a link 16 joined to the bar 24 at rivet 25 and to track 10 at rivet 17. The bar 24 is also attached to a slider 15, engaged in track 10, by a link 21 pivoted on rivets 22, 23. A brace 18 extends from link 16 to slider 15 and is attached by rivets 19, 20. Optionally an extra link 26 may be included. To provide additional strength a link 31 is provided, pivoted to link 16 at 32 and to a second slider 35 at 34.
29. In the language of claim 1 of the patent, US4622715 discloses a window stay arrangement comprising a frame member or track 10 for attachment to a window frame and a sash member or bar 24 for attachment to a sash to be mounted for opening and closing in the frame. According to the request a combination of links 16 and 31 in US4622715 correspond to the first intermediate member pivotally connected to the frame member or track 10 and to the sash member or bar 24 and brace 18 forms the second intermediate member pivotally connected to the frame member or track 10 and to the sash member or bar 24 by virtue of extra link 26. However, the proprietor denies that the brace 18 and the sash member or bar 24 are "*pivotaly connected*" as the term should be construed. I have construed "*pivotaly connected*" to simply mean a connection that includes a pivot and may or may not include an intermediate component. It follows that to my mind the brace 18 and the sash member or bar 24 are "*pivotaly connected*" by extra link 26 and the pivots at its ends.



30. The brace 18 or second intermediate member is pivotally connected to the first intermediate member or links 16, 31 at a position 20 between the pivotal connections 17, 34 and 25 of the first intermediate member to the frame member and the sash member. The sash member or bar 24 is said by the requester to be pivotally connected to the second intermediate member or brace 18 and link 26 at a position between the pivotal connections 19, 20 of the second intermediate member or brace 18 to the frame member or track 10 and the first intermediate member or links 16, 31. Since it is my view that the brace 18 is "*pivotaly connected*" to bar 24 I agree with the requester than the connection is at the position required by claim 1.
31. By virtue of sliders 15 and 35 the position of the pivotal connection 19 or 34 between the frame member or track 10 and one of the intermediate members 18 or 31 is movable relative to the frame member 10. Since link 26 moves relative to the bar 24 and the brace 18 (which I have concluded are "*pivotaly connected*" by link 26), the position of the pivotal connection between the sash member or bar 24 and the

second intermediate member brace 18 is movable relative to the second intermediate member or bar 24, as the sash member 24 moves relative to the frame member or track 10.

32. Since they show all the requirements of claim 1 of the patent as I have construed it, in my opinion GB2125867 and US4622715 each anticipate claim 1.

Novelty of the dependent claims

33. The request goes on to argue that dependent claims 2, 3 and 5 in the patent are not novel in light of one or both of the two prior art documents already discussed.
34. In GB2125867 the pivotal connection, as I have construed it, between the sash member or plate 7 and the second intermediate member or carrier arm 12 is formed by guide rod 13 and pivots 28, 29. Claim 2 of the patent requires that this pivotal connection "*is constrained to move along a curved path relative to the second intermediate member.*". The requester suggests that the arrangement shown in GB2125867 fulfils this requirement as point 29 is constrained to move along a curved path by the rotation of the guide rod 13. I agree with their suggestion.
35. Casement edge 25 shown in figure 5 of GB2125867 is said to abut and overlap edge 26 of frame 1 such that sealing is ensured and penetration of rainwater is eliminated. Only once the casement 4 is opened beyond the position in figure 5 to the position in figure 6 is casement edge 25 said to lift from frame edge 26. Consequently I do not believe that the sash in GB2125867 can be said to remain clear of the frame as the sash opens and closes as required by claim 3.
36. I have already concluded that US4622715 shows a pivotal connection between the sash member or bar 24 and the second intermediate member or brace 18 by virtue of extra link 26 and the pivots at its ends. Such a connection is in my view "*constrained to move along a curved path relative to the second intermediate member.*", as required by claim 2.
37. Since neither the sash nor the frame are shown in US4622715 I cannot agree that the sash is shown to remain clear of the frame in US4622715, as claim 3 requires.
38. Claim 5 requires that "*the position of both pivotal connections between the frame member and the intermediate members are selectively movable relative to the frame, as the sash moves relative to the frame.*". The requester argues that US4622715 shows such an arrangement since sliders 15 and 35 carry pivots 19 and 34 and are also movable along frame member or track 10. The second intermediate member or brace 18 is clearly pivotally connected to the frame at pivot 19 and equally clearly pivot 19 can move relative to the frame or track 10 as slider 15 moves. According to the requester links 16 and 31 in combination form the first intermediate member. The pivotal connection between links 16 and 31 and frame member or track 10 lies at two points. Rivet 17 about which link 16 pivots is apparently fixed relative to frame member or track 10 while pivot 34 is mounted to slider 35 running along frame member or track 10. In my view it does not matter whether fixed pivot 17 and two movable pivots 19 and 34 satisfy the requirement "*both pivotal connections ... are ... movable relative to the frame*" since the sliders 15 and 35 have no locking or

restraining arrangements and consequently none of the pivotal connections are “*selectively movable*” (my emphasis added) as I construed the requirement earlier.

39. I believe that GB2125867 and US4622715 anticipate claim 2, but not claims 3 or 5.

Inventive step of the dependent claims

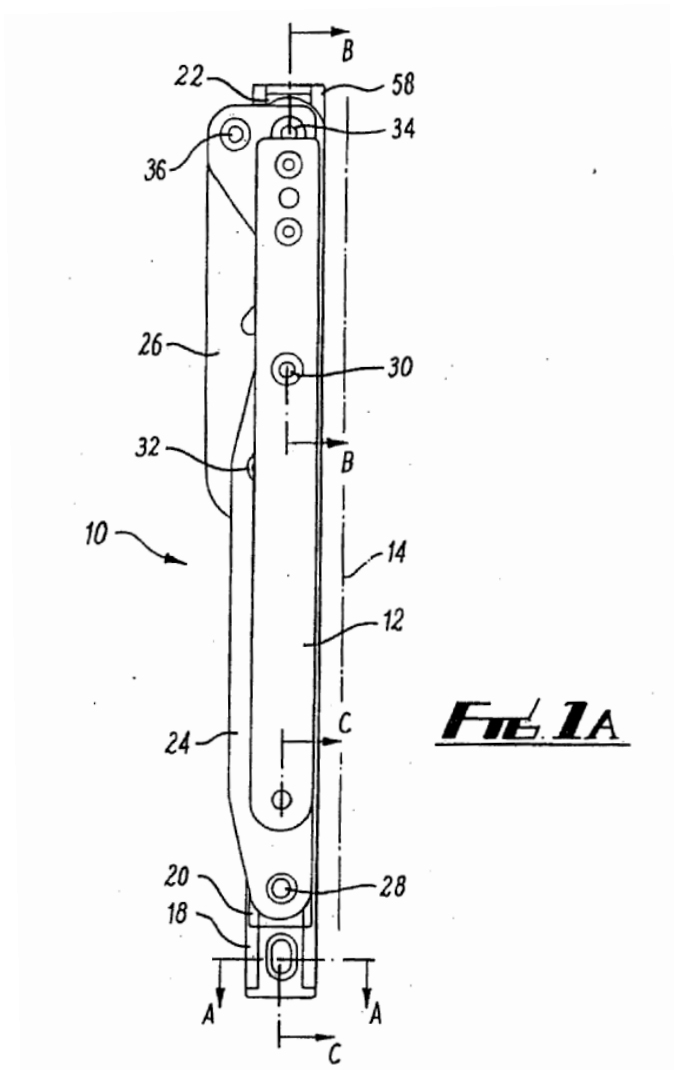
40. The requester asserts that claims 1 to 6 do not involve an inventive step. No argument is offered regarding the obviousness of claims 1 to 3 and 5 in light of GB2125867 or US4622715 beyond referring to the novelty arguments in the request. I have already come to the view that claims 1 and 2 are anticipated by GB2125867 and US4622715 so to consider obviousness would be superfluous. In the absence of any argument in the request specifically regarding the obviousness of claims 3 and 5 I do not feel that it would be appropriate for me to provide an opinion.
41. The request also argues that claims 5 and 6 are obvious in view of combinations of either GB2125867 or US4622715 with US4571776. In each case the argument ends with the assertions that it would have been obvious at the priority date to combine the disclosures of the patent documents in question to arrive at the subject matter of the claim in question. The request offers no motivation for the skilled person to combine these documents and none of them are shown for be commonly known. The arguments seem to be simple mosaics of pairs of patent documents. Whilst such mosaics are not expressly forbidden, the Manual of Patent Practice makes it clear that there are a number of considerations around combining the disclosures of patent documents in the context of obviousness (see paragraph 3.40 onwards). The request makes no mention of such considerations. Nor does the request provide an argument following the conventional, structured *Windsurfing* approach, as restated and elaborated by Jacob LJ in *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588. It seems inappropriate for me to construct an argument and then give my opinion on my argument. Had the request included such an argument the proprietor would have had an opportunity to provide observations upon its substance. If I were to construct an argument as part of my opinion they would have no such opportunity. For these reasons I offer no opinion on the obviousness of claims 5 and 6.
42. The obviousness argument in the request concerning claim 4 also does not follow a conventional structured approach, but in essence simply states that it would have been obvious at the priority date to modify the angles and dimensions of the components shown in GB2125867 and arrive at the invention of claim 4. Such an argument strikes me as relying on hindsight, but in any event in the absence of a structured approach to the question of obviousness of claim 4 in the request I offer no opinion on the matter.

Sufficiency

43. The requestor has argued that the specification of the patent does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art. More specifically they point out that claim 1 requires “*the sash member being pivotally connected to the second intermediate member at a position between the pivotal connections of the second intermediate member to the frame*”

member and the first intermediate member". They argue that this requirement is not satisfied when the sash is shown in the closed position in each embodiment and as a result the patent is insufficient.

44. The request goes on to point out that claim 4 requires that "when the sash is fully closed, the pivotal connection between the sash member and the second intermediate member is positioned inwardly of the pivotal connection between the second intermediate member and the frame member, the pivotal connections defining a line which is substantially perpendicular to the plane of the sash.". The request goes on to argue that there is no description of an arrangement satisfying the requirements of both claim 1 and claim 4 and once again the patent is insufficient.
45. Figure 1A below shows an embodiment in which the sash is in a closed position.
46. In this position the window stay arrangement satisfies the requirement of claim 4 in that pivot 36 is positioned inwardly of pivot 34 and pivots 36 and 34 define a line substantially perpendicular to the sash.



47. In their observations the proprietor argues that "between" should be construed as "at

or within the limits of a range” and if the skilled person construed the term in that way, the patent is sufficient. An analogy is drawn with numbers between 1 and 10 which would normally be understood to include 1 and 10 rather than only 2 to 9. They argue that the embodiments such as figure 1A and the requirements of claim 4 would lead the skilled person to understand that “*between*” was being used in this way.

48. In light of the specification as a whole the construction proposed by the proprietors does not seem unreasonable. As a result it is my opinion that the patent discloses the invention clearly enough and completely enough for it to be performed by a person skilled in the art.
49. In their observations in reply the requester does not return to the question of “*between*”. They do however argue that claim 1 defines a scope much broader than the teaching provided by the patent by virtue of the construction to be placed upon “*pivotaly connected*” and as a result the patent is insufficient. Whatever the merits of this argument it strikes me as a new question rather than an observation strictly in reply or a matter raised in the original request. Since I believe that this is the case and further since it is a matter upon which the proprietor has had no chance to comment it would be inappropriate for me to provide an opinion.

Conclusion

50. It is my opinion that GB2125867 and US4622715 each anticipate claims 1 and 2 of the patent, but not claims 3 or 5.
51. It is also my opinion that the patent discloses the invention clearly enough and completely enough for it to be performed by a person skilled in the art.

Application for review

52. Under section 74B and rule 98, the proprietor may, within three months of the date of issue of this opinion, apply to the comptroller for a review of the opinion.

Karl Whitfield
Examiner

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.