

**OPINION UNDER SECTION 74A**

Patent	GB 2543475 B
Proprietor(s)	Easyfit Hardware Limited
Exclusive Licensee	
Requester	Dr Thomas Morgan
Observer(s)	Mr Christopher Range
Date Opinion issued	10 May 2018

**The request**

1. The comptroller has been requested by Dr Thomas Morgan (“the Requester”) to issue an opinion as to whether claims 1-3 and 6-13 of GB2543475 (“the Patent”) lack either novelty or an inventive step in light of documents D1-D4 provided by the Requester. The request was received on 13 February 2018. It was accompanied by a statement explaining the request as well as copies of the documents.
2. The Patent entitled ‘Window or door locking system’ was filed on 19 August 2015, was granted on 3 January 2018 and remains in force.

**Observations and Observations in Reply**

3. Observations were received from Mr Christopher Range of Withers & Rogers LLP (“the Observer”) on 13 March 2018. The Observer notes that document D2 was identified by the UKIPO search report as an A category document. He concludes that D2 has already been given due consideration during examination. In response, I note that D2 was not included as part of any novelty or inventive step objection during the pre-grant process. In this opinion, the Requester employs D2 in combination with a new document D1, not cited pre-grant, in an inventive step argument. I therefore consider this to raise a new question not considered previously and will consider the arguments surrounding D2 in this opinion.
4. The Observer also submits that D1 does not constitute prior art regarding its date of publication and whether it pre-dates the filing date of the Patent in 2015. D1 is a product data sheet from the company Nico Manufacturing Ltd. The only dating information on the data sheet is the statement “The innovative design will easily meet the requirements of PAS024:2012...” The Requester asserts in his Request that 2012 is therefore the time of advertising this product. The Observer points out

that PAS024:2012 relates to the 2012 revision of the security standard PAS024. The Observer states that this is still the revision quoted in building regulations today and therefore the alleged publication date of 2012 is not substantiated in any way.

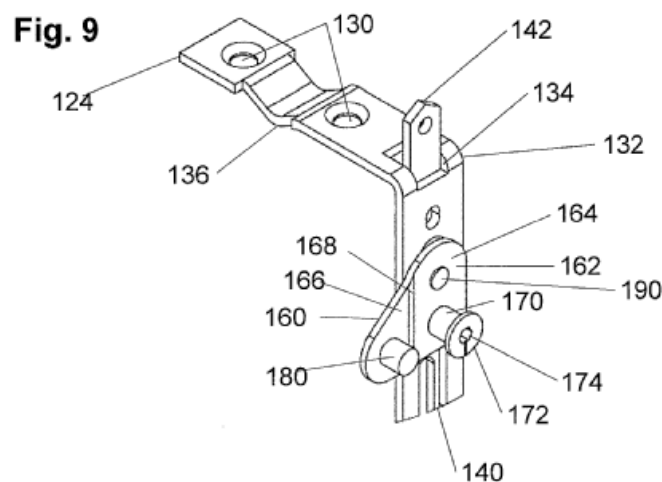
5. Observations in reply were received from the Requester on 28 March 2018. In order to substantiate the publication date of D1, or the date the advertised product was made available to the public, the Requester submitted two further documents. One document is a technical drawing dated 17 October 1994 in the name of Anglian Home Improvements that the Requester asserts includes the Nico product from the data sheet of D1. The Requester states further that the Design Manager at Anglian is prepared to sign a witness statement to confirm that Anglian have been procuring the Nico product and selling and installing these on their windows since 1994 i.e. the year referred to in the attached technical drawing. The second document is a printout of the currently-available version of D1 which mentions a later standard PAS024:2016.
6. I first need to consider whether these additionally-filed documents are strictly observations in reply as required by Rule 96 of the Patent Rules. These documents could be considered to have been submitted in response to the Observer questioning whether D1 was made available to the public before the filing date of the Patent. However, that is not in itself sufficient for them to be treated as evidence in reply. I need to consider the matter more closely. As indicated above the only dating information in D1 is a reference to a security standard. The Requester will clearly understand the importance of establishing the publication date of any document in order to confirm it predates the filing date of the Patent and can therefore be considered state of the art according to section 2(2) of the Patents Act 1977 ("the Act"). The Requester did not make a sufficiently strong case initially regarding the publication date of D1 and this was challenged by the Observer. The Requester then provided further evidence to support his case. The Requester, however, could have provided this additional evidence in the original request but did not do so. If they had then the Observer would have had an opportunity to make observations on it. The Observer would not have that opportunity if I allow the documents to be introduced during the observations in reply stage. That would be unfair to the observer. I will therefore not consider these documents for the purposes of this opinion.
7. I am therefore unable to establish whether D1 was made available to the public before the filing date of the Patent: I agree with the Observer that the standard quoted in D1 is not sufficient for this purpose; and I have not allowed the further documents (or the surrounding arguments). Therefore, I cannot accept that D1 forms part of the state of the art as required by section 2(2) of the Act. However, I will continue with the opinion including consideration of arguments surrounding D1 with the proviso that this important requirement has not been met.

## **The Patent**

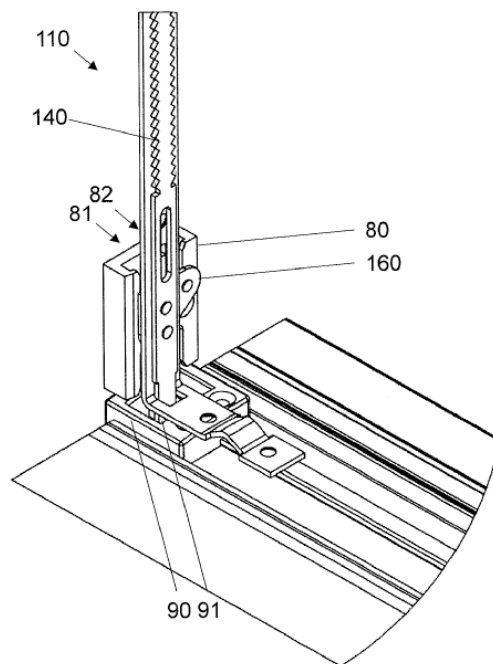
8. The Patent relates to a locking system for a door or window. In particular it relates to a locking system for a uPVC window system where primarily for aesthetic reasons the external edge of the window sash frame (the part of the window system that moves) is flush with the external edge of the fixed window frame. In order to ensure that the window can be locked securely in both a fully-locked and a night-vent

position the invention of the Patent provides an adaptor forming part of a shootbolt assembly.

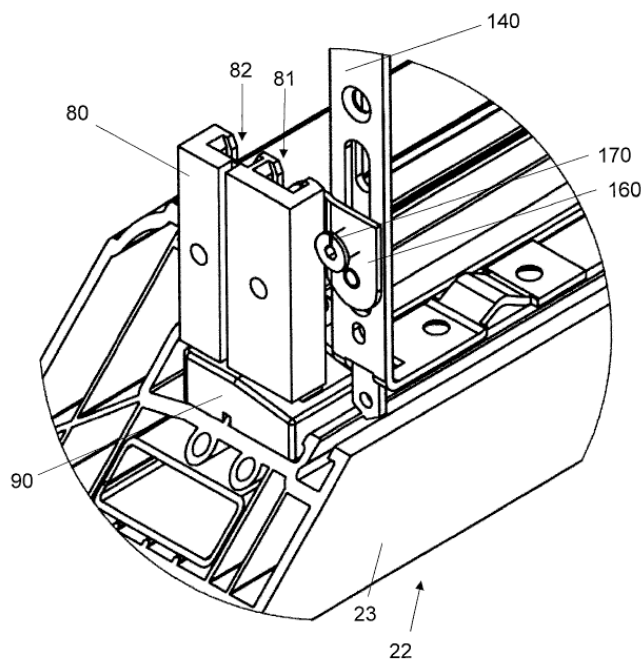
9. A shootbolt assembly is a particular type of espagnolette or locking system which is located in a longitudinal groove in the window sash frame. Typically a shootbolt assembly includes an operation rod which is moveable by a handle on the window sash. Operation of the window handle moves a projection on the end of the operation rod to engage or disengage with a recess provided in the window frame. In the Patent an adaptor 160 has two cams 170, 180 (or projections) located on a base plate 162 which is attached to the operation rod 140 of a shootbolt assembly 110. The cams sit side by side on the base plate, one in line with the central longitudinal axis of the operation rod and one offset from it. In the locked position the end of the operation rod 142 engages with an end stop recess 91 in the window frame (the shootbolt mechanism). At the same time the first cam 170 and second cam 180 are displaced longitudinally into first and second recesses 81, 82 respectively of a double-entry keep 80 also located in the window frame. Therefore three locking contacts are provided. To lock the window in a night-vent position, the window sash is aligned with the window frame to provide a small air gap. The second cam 180 is now aligned with the first recess 81 and is displaced longitudinally into this to secure the window sash. The first cam 170 and the end of the operation rod 142 are not engaged with a recess. In this mode, therefore, the window is still secured but only a single locking contact is provided.
10. Figures 9, 11 and 13 are reproduced from the Patent below. Figure 9 is a magnified view of the shootbolt assembly in a closed position. Figure 11 shows the window system in a locked position and Figure 13 shows the window system in a night-vent position.



**Fig. 11**



**Fig. 13**



11. There are 13 claims including one independent claim, claim 1, which reads as follows with the features separated out using the same notation as used by the Requester:

*1.1 A shootbolt assembly for use on a flush sash window or flush door leaf locking system,*

- 1.2 the shootbolt assembly comprising:
- 1.3 a face plate;
- 1.4 an operation rod; and
- 1.5 an adaptor, wherein the adaptor comprises:
- 1.6 a base plate;
- 1.7 a first cam; and
- 1.8 a second cam,
- 1.9 wherein the base plate is attached to the operation rod of the shootbolt assembly, the operation rod having a longitudinal axis, and
- 1.10 wherein the first and second cams are arranged on the base plate,
- 1.11 the first cam being arranged substantially in-line with the longitudinal axis of the operation rod of the shootbolt assembly, and
- 1.12 the second cam being arranged out of line with the longitudinal axis of the operation rod of the shootbolt assembly.

## **Novelty and Inventive step – the law**

12. The Requester argues that claims 1-3 and 6-13 are either not novel or lack an inventive step in light of the provided documents. Section 1(1)(a) and (b) of the Act reads:

*1(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –*

- (a) the invention is new;*
- (b) it involves an inventive step;*

13. The relevant provisions in relation to novelty are found in section 2(1) and section 2(2) which read:

*2(1) An invention shall be taken to be new if it does not form part of the state of the art.*

*2(2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.*

14. The provisions in relation to inventive step are found in section 3 which states:

*3. An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).*

15. The Court of Appeal in *Windsurfing*<sup>1</sup> formulated a four-step approach for assessing whether an invention is obvious to a person skilled in the art. This approach was

---

<sup>1</sup> *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59

restated and elaborated upon by the Court of Appeal in *Pozzoli*.<sup>2</sup> Here, Jacob LJ reformulated the *Windsurfing* approach as follows:

- (1)(a) *Identify the notional “person skilled in the art”*
- (1)(b) *Identify the relevant common general knowledge of that person;*
- (2) *Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;*
- (3) *Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;*
- (4) *Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?*

## **Construction of claim 1**

16. When considering the validity of the claims of the Patent I will first need to construe them. 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.
17. The Requester identifies the skilled person as a person skilled in the art of providing window or door locking assemblies. I think this is a reasonable assessment.
18. Regarding claim 1, the Requester provides his interpretation of each of features 1.1 - 1.12. Most of these features are generally straightforward to construe and require no further discussion. The key issue I need to consider is whether claim 1 is limited to shootbolts or not.
19. Feature 1.1 specifies “A shootbolt assembly for use on a flush sash window or flush door leaf locking system”. The Requester refers to page 1 lines 9-10 that confirms that a shootbolt assembly is a particular type of espagnolette. As the Requester explains an espagnolette is a window or door locking mechanism “comprising a driving mechanism that can be actuated to lock and unlock a window or door to a frame”. The Requester further explains that an espagnolette has an operation rod which is a moveable part that is typically used to bring about either a locked or unlocked state of a locking mechanism. He later explains that the difference between a common espagnolette driving mechanism and a shootbolt assembly is that the operation rod in a shootbolt assembly further comprises a shootbolt attached to the end (or ends) of the operation rod which projects beyond the door or window when in the locked position. I agree that the skilled person would interpret a shootbolt assembly and operation rod in this way.
20. The Requester asserts that because claim 1 does not specify whether the operation rod has such an end or not, the claim does not specify the presence of a shootbolt. He supports this by pointing to the fact that the shootbolts shown in the Figures of

---

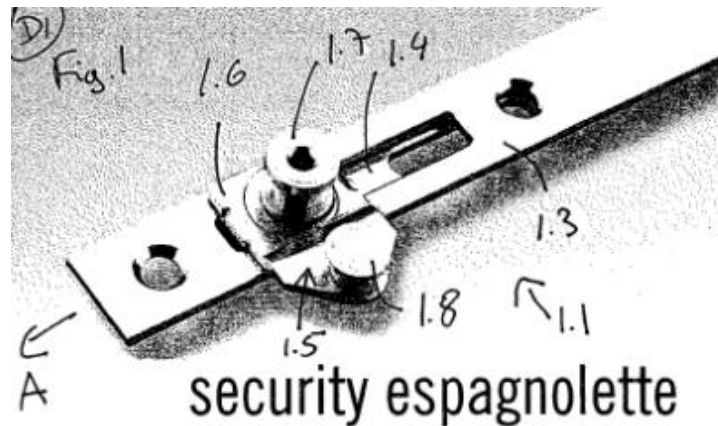
<sup>2</sup> *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588

the Patent do not engage the frame in the night-vent position (see Figure 13 above), and indicating that the remaining features of claim 1 relate to features present only in the region of the face plate of the shootbolt assembly.

21. The Observer, in response, asserts that claim 1 clearly recites a shootbolt assembly ... comprising... an operation rod (features 1.2, 1.4). From this the Observer argues that claim 1 clearly requires the presence of the operation rod of a shootbolt assembly. The Observer goes on to assert that the skilled person would understand that such an operation rod will engage with a recess in the window frame when in the locked position. The Observer refers to page 2, first paragraph of the Patent which describes the mechanism of the operation rod of a shootbolt assembly in prior art window systems and page 6 (final two paragraphs), page 9 (first two paragraphs) that describe the equivalent action in the invention of the Patent.
22. In response, I agree with the Observer that the skilled person would understand from the Patent that the operation rod of claim 1 is part of a shootbolt assembly. Although not mentioned explicitly in claim 1 the skilled person will understand that this operation rod must have an end or shootbolt that engages with a recess in the window frame in the fully locked position (even if it doesn't engage the frame in a night vent position). I agree with the Observer that the Patent clearly describes such shootbolts in the prior art and as a feature of the embodiments. Therefore I consider claim 1 to require a shootbolt assembly with at least one shootbolt which is suitable for use on a flush sash window or flush door leaf locking system and having the later features defined in features 1.3-1.12.
23. Feature 1.9 specifies that the operation rod has a longitudinal axis. The Requester submits that this means the operation rod has an elongate extent. I agree with this interpretation. However, I also add that the skilled person would realise, from for example Figure 3 of the Patent, that the longitudinal axis referred to as X runs down the centre of the operation rod. From page 8, line 13 of the Patent the skilled person would further understand that the first cam is substantially in-line with this axis (feature 1.11 of claim 1).

### **Whether claim 1 lacks novelty in view of D1**

24. The Requester argues that claim 1 is not novel in light of document D1. D1 is a product data sheet from the company Nico Manufacturing Ltd. D1 describes a 'security espagnolette' which is 'for flush fit windows' and has a 'double cam design'. The data sheet provides a picture of the espagnolette which has been annotated by the Requester and is reproduced below. The locking system clearly has two cams in the form of two mushroom-shaped protrusions. The fitting instructions on the back of the leaflet state that the espagnolette should be secured in the sash and that keeps should be located in the frame. The leaflet further states that the user should check that the locking cams are fully engaged with the keeps when the espagnolette is locked. The leaflet mentions briefly that this product has a 'night vent facility' but doesn't describe its operation.



25. Looking more closely at the picture from the leaflet and using the annotations provided by the Requester which relate to the features of claim 1, the locking system has a front surface or face plate 1.3. The system additionally has two cams 1.7, 1.8 arranged on a base plate 1.6 which can be considered to be part of an adaptor 1.5. This base plate in turn appears to be attached to an operation rod 1.4. One cam 1.7 lies on the longitudinal axis of the operation rod and the other cam 1.8 is offset from this. However, there is no mention anywhere in the leaflet of a shootbolt assembly. From the Figures, the operation rod of the espagnolette of D1 does not have an end that could engage with a recess in the frame. I therefore agree with the Observer that D1 does not relate to a shootbolt or shootbolt assembly. As explained above the presence of a shootbolt is a necessary feature of claim 1. Therefore D1 has features 1.3-1.12 of claim 1 (assuming a general operation rod) but does not have the remaining features that require a shootbolt assembly. Therefore claim 1 is novel in light of this document.
26. The Requester also asserts that claim 1 lacks an inventive step with respect to D1 either in light of the common general knowledge of the skilled person and/or in combination with further documents D2 or D3. I will now consider these arguments by employing the Windsurfing/Pozzoli steps outlined above.

### **Whether claim 1 lacks an inventive step in view of D1 and common general knowledge**

*Steps 1(a) and 1(b): Identify the notional "person skilled in the art" and the relevant common general knowledge of that person*

27. As discussed above, I agree with the Requester that the skilled person is a person skilled in the art of providing window or door locking assemblies. I also agree with the Requester that the skilled person will be aware of different types of espagnolettes including various designs of shootbolts. I note that the contents of individual patent specifications and isolated documents do not normally form part of the relevant common general knowledge.

*Step (2): Identify the inventive concept of the claim in question or, if that cannot be*



*readily done, construe it.*

28. The Requester considers that the inventive concept of claim 1 is “to provide a window or door locking mechanism that comprises two positions in which the window or door is locked to a frame, the first position being a position in which the window or door is completely received in the frame, the second position being a position in which a night vent option is made available”.
29. In response to this I note that it has been established that the inventive concept must be derived from the construed claim in question not the specification as a whole. I therefore consider the inventive concept to be: a shootbolt assembly with at least one shootbolt suitable for a flush sash window or flush door leaf locking system comprising an adaptor with two cams arranged on a base plate where the base plate is attached to the operation rod of the shootbolt assembly and one cam is arranged substantially in-line with the longitudinal axis of the operation rod and the other cam is arranged out of line with this axis.

*Step (3): Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or claim as construed.*

30. The Requester argues that in the invention of the Patent the shootbolt(s) do not engage the fixed frame when in the night vent position i.e. the shootbolts of the shootbolt assembly do not add to the security of the system when the window or door is in this position. He explains further that it is only the second cam that provides the increased security in the night vent position. The Requester concludes from this that there are no differences between the matter cited in D1 and the inventive concept of claim 1. In response, although I agree that the invention of the Patent operates in this way, as noted above the inventive concept must be derived from the claim in question. Using this approach, I consider that the difference between the disclosure in D1 and the inventive concept of claim 1 is that D1 does not disclose a shootbolt assembly including at least one shootbolt.

*Step (4): Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?*

31. The Requester submits that “the use of a shootbolt assembly to further improve the security of an espagnolette is well known to the skilled person and is therefore simply a natural progression which does not involve an inventive step”. As indicated above I agree that the skilled person would be familiar with common types of espagnolettes including shootbolt assemblies. The question is whether it would have been obvious to the person skilled in the art to adapt the locking mechanism of D1 to include a shootbolt. Firstly I note that there is no suggestion anywhere in D1 of modifying the security espagnolette to include an additional shootbolt mechanism. In fact there is very little detail provided in the leaflet of D1 on how the locking mechanism operates in practice. For example it is not clear how the cams interact with the keeps in both the locked and night-vent positions. Including an additional shootbolt mechanism would require both modification of the espagnolette itself and the corresponding keeps in the window frame. This would have to be carried out in conjunction with the offset cams and allowance made for both the locked and night-

vent positions. This would not be a straightforward task and in my view would require some inventive ingenuity on behalf of the skilled person. Therefore I consider claim 1 to include an inventive step in light of D1 and common general knowledge.

### **Whether claim 1 lacks an inventive step in view of a combination of D1 and any of D2 – D4**

32. The Requester also asserts that claim 1 lacks an inventive step in view of a combination of D1 and D2. D2 is patent document WO 2004/011750 A1. It was published 5 February 2004 and therefore forms part of the state of the art according to section 2(2) of the Act. D2 discloses a window leaf 4 moveable relative to a fixed frame 3. A push bar 11 is mounted on a vertical side 12 of the window leaf. The push-bar is axially slidable towards a position where one end engages a seat or recess 18 in the frame when the window is in the fully locked position. (See Figure 1 and description on page 11 lines 11-15.) Although not referred to as such, I agree with the Requester that this is a shootbolt locking system.
33. The Requester directs me to a later embodiment illustrated in Figure 4 of D2. Here, an adaptor plate 125 is mounted on the window leaf. At each end 128 of the attachment plate is a pair of projections 175, each pair defining a seat 172 which can be engaged by a projection 171b mounted on the fixed frame. The projections 175 of each pair are both mounted out of line with the longitudinal axis of the operation rod of this locking mechanism. Therefore if these projections are to be considered to be the required cams of claim 1 of the Patent, they do not meet the positional requirements of feature 1.11 of the claim. The Requester notes that according to page 26 paragraph 1 of D2 the locking device described above may be regarded as a ventilation device because the projections 175 may allow a small air gap between the window leaf and frame. However, this feature does not bring the disclosure any closer to meeting the terms of claim 1. The Requester further notes that D2 does not enable flush closing of the window in the fully locked position when the adaptor is present in the window.
34. Although D2 discloses the use of shootbolts, the further locking mechanism in the embodiment of D2 as described above works in a very different way to that of the invention of the Patent. In my view, the skilled person would not be able to use the teaching in D2 in order to modify the espagnolette of D1 to arrive at that defined in claim 1. Therefore I consider claim 1 to involve an inventive step in light of D1 in combination with D2.
35. The Requester also provides further document D3, patent document GB 2289709 A. D3 was published 29 November 1995 and therefore forms part of the state of the art according to section 2(2) of the Act. In the original request D3 was only employed in an argument surrounding dependent claim 10. Later both the Observer and the Requester in his Observations in Reply provide arguments relating to claim 1. I will therefore consider D3 here.
36. D3 discloses an openable frame 16 hinged with respect to a fixed frame 10 forming a window system (see Figure 1). An espagnolette and shootbolt mechanism is mounted on moveable frame 16. The mechanism includes shoot bolts 36, 38 which extend in opposite directions and have ends 36a, 38a which co-operate with keepers

44, 46 at end corners of the fixed frame. The espagnolette also includes striker pins (or cams) 32, 34 that lock by engaging simultaneously into opposed slots 32a, 34a (or 32b, 34b) provided in a central striker plate 14 located on the fixed frame thus allowing for a night vent facility (see Figure 3). Therefore D3 discloses both shootbolts and a double-cam locking system. However, the cams 32, 34 are positioned on the same longitudinal axis and therefore do not meet feature 1.12 of claim 1. I agree with the Observer that further D3 does not disclose a flush sash system. Moreover, the locking system in D3 works in a very different way to the invention. In my view, the disclosure would not assist the skilled person in adapting the locking mechanism of D1 to arrive at what is defined in claim 1. Therefore I consider claim 1 to involve an inventive step in light of D1 in combination with D3.

37. Finally, for completeness, D4 (patent document GB 2415461 A) is also provided by the Requester. The Requester employs D4 as background art to illustrate that a double entry keep was known in the art at the filing date of the Patent as required by dependent claim 10. No arguments are provided by the Requester regarding D4 and claim 1. In any case, D4 does not disclose a shootbolt locking mechanism or two offset cams as required by claim 1. I can therefore discount this document.
38. I have found claim 1 to be both novel and involve an inventive step in light of the provided documents. I therefore do not need to consider the dependent claims.

## Opinion

39. I am unable to establish whether D1 was made available to the public before the filing date of the Patent and therefore I cannot accept that D1 forms part of the state of the art. Notwithstanding this issue, it is my opinion that independent claim 1 of the Patent is novel in light of document D1. Further it is my opinion that claim 1 involves an inventive step in light of D1 and common general knowledge of the skilled person. I also consider claim 1 to involve an inventive step in light of D1 in combination with either D2 or D3. I have not needed to consider D4.

Susan Dewar  
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.*