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(71) Applicant: McGarry, Brian Francis
578 Harewood Road
Christchurch(NZ)

(72) Inventor: McGarry, Brian Francis
578 Harewood Road
Christchurch(NZ)

(74) Representative: Parker, Jeffrey et al,
Frank B. Dehn & Co. Imperial House 15-19 Kingsway
London, WC2B 6UZ(GB)

(54) **Security door stop.**

(57) A security stop for placement behind a door comprises a substantially vertically extending member (15) movable in a housing (3) between a first position (8) in which the member (5) is retained substantially within the housing (3) and a second position in which the member extends from the housing to a position where it blocks the opening movement of the door (not shown). In use, the housing (3) is positioned behind a door in a position such that the door can be opened which the vertically extending member is in its first position, (8) but when the vertically extending member is in its second position, the door can only be opened a small distance until the door contacts the vertically extending member (5).

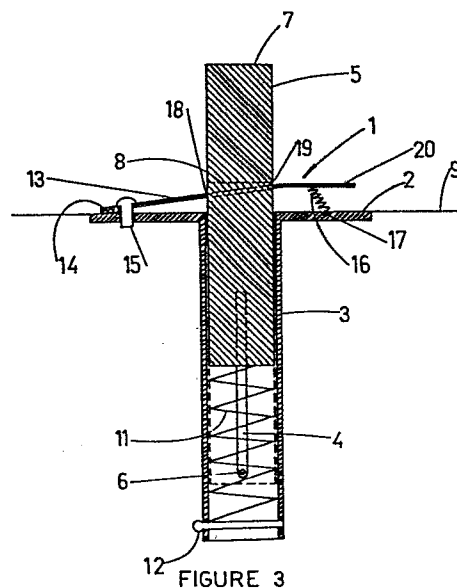


FIGURE 3

SECURITY DOOR STOP

This invention relates to a security stop for a door and more particularly relates to a security stop for use behind a door so that when the security stop is activated the door can only be opened slightly.

5 At present a main door or main doors of a home or building which allow access to the property from the outside are sometimes provided with a security chain which allows a door to be opened a small distance. Such a construction of security chain can still be cut by bolt
-10 cutters and it is considered that this type of security stop does not necessarily stop a determined person from gaining entry even though the security chain is in use.

 An object of the present invention is to provide a security stop for use behind a door which security stop
15 allows the door to be opened only a very short distance and does not allow ready access to the security stop when the door is opened.

 A further object of the present invention is to provide a security stop for a door which offers to the
20 public a useful alternative choice.

 According to a first aspect of the present invention there is provided a security stop for placement behind a door, the security stop comprising a substantially
vertically extending member movable in a housing between
25 a first position in which the member is retained substantially within the housing and a second position in which the member extends from the housing to a position where it blocks the opening movement of the door, the arrangement being such that, in use, the housing is

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positioned behind a door in a position such that the door can be opened when the vertically extending member is in its first position and when the vertically extending member is in its second position, the door can only be opened a
5 small distance until the door contacts the vertically extending member.

According to a second aspect of the present invention there is provided a security stop for placement behind a door, the security stop comprising a housing arranged for
10 attachment to or fitment into a floor of a building in a position behind a door, the housing having therein a biasing means which moves a substantially vertically extending member between a first position in which the member is retained substantially within the housing and a
15 second position in which the member extends from the housing to a position where it interrupts an opening movement of the door, the arrangement being such that when the housing is in position and the extending member is in its first position the door can be opened and
20 closed and when the member is in its second position it interrupts the opening movement of the door so that it can only be opened a short distance.

The housing can include a mounting plate normally positioned flush with the floor immediately behind the
25 door, the mounting plate supporting a locking plate which has an aperture therein through which the vertically extending member can extend, one end of the locking plate being biased in an upward direction to create frictional

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engagement between the periphery of the aperture and the extending member, the arrangement being such that when the extending member is in its first position it is retained in this position by the frictional engagement
5 between the locking plate and the upper end of the extending member, when the extending member is to be moved to its second position one end of the locking plate is pressed down ward to reduce the frictional engagement and allow the biasing means to move the extending member to
10 its second position.

The member can have on a lower end thereof, within the housing, a pin which moves in a guide slot formed in the housing, the guide slot has therein a locking portion into which the pin locks when the member is in its first
15 position, the member being released by being rotated around its longitudinal axis to move the pin into alignment with the guide slot so that the member can move to its second position.

Further aspects of the present invention which
20 should be considered in all its novel aspects will become apparent from the following description which is given by way of example only.

Examples of the present invention will now be described with reference to the accompanying drawings in
25 which:

Figure 1: shows a cross-section in a vertical plane through a first example of security stop according to the present invention;

Figure 2: shows a section on the lines 1-1

through the security stop shown in Figure 1;

Figure 3: shows a cross-section in a vertical plane through an alternative construction of security stop; and

5 Figure 4: shows a section on the line IV-IV through the security stop shown in Figure 3.

The security stop according to the present invention can be used in any home or business situation. The example described herein will be described with reference to its
10 use in a home situation where it is a substitute for a security chain. The security stop is positioned in association with a door so that the door can be opened only a short distance when the security stop is activated.

The security stop is generally indicated by arrow
15 1 and is mounted so that a mounting plate 2 thereof is flush with a floor or floor covering of the building in which it is used. The mounting plate 2 is connected or fixed to a housing 3 which is, in use, positioned in a hole drilled in a concrete floor or positioned in a pipe
20 set in a concrete floor or the mounting plate 2 can be fixed to a flooring material with the housing 3 extending beneath the level of the floor.

The housing 3 can be constructed from a tubular metal or plastics material which has formed therein a
25 slot or guide 4.

The housing 3 has mounted therein a member 5 which has a pin or pins 6 fixed thereto, the pin 6 extending to the side thereof and into the slot 4. The pin 6 being

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arranged to travel in the slot 4 so that the member 5 can move from its retracted or first position substantially within the housing shown dotted in Figure 1 to its extended or second position shown.

5 In its first position the member 5 has the upper end 7 thereof immediately above the level of the mounting plate 2. This level shown dotted at 8 in Figure 1 would generally be slightly higher or flush with the carpet or floor covering on the floor the level of which is indicated at 9.

10 In its second position the member 5 is raised to the position shown and this is effected by unlocking the member from its first position. This locking can be effected by providing at a point near the bottom of the slot 4 a locking portion 10. The locking portion 10 can be an
15 extension of the slot or an angled rebate as shown in Figure 1. The member 5 being unlocked by turning same about its longitudinal axis through about ninety degrees to disengage the pin 6 from the locking portion 10. The member 5 being forced by a biasing means 11 upwards to
20 its extended position in which the pin 6 is at the top of the slot 4. When in its extended position the rear of a door contacts the extended member 5.

 The spring biasing means can be held in position by a locating pin 12 extending transversely through aligned
25 apertures in the housing 2.

 The housing 2 can be constructed from aluminium, stainless steel or another metal or metal alloy material. The upper end 7 of the member 5 can be provided with a roughened or textured surface so that it can easily be

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turned to unlock the member 5 from its first position or to lock the member in its first position.

In practice the security stop according to the present invention is placed in position in the floor or
5 ceiling of a room immediately behind the door so that when it is in its second position it interrupts the opening movement of the door.

When situated in a floor situation the bottom of the door will pass over the top of the extending member 7 when
10 it is in its first or retracted position. This allows the door to be opened and closed in the normal manner. When the security stop is to be activated and the member 5 moved to its raised or second position a user places a foot on the top 7 of the member 5 and the foot is twisted through
15 about ninety degrees to disengage the pin 6 from its engagement with the locking portion 10 of the slot 4. This allows the biasing means 11 to raise the member 5 to its raised or second position in which a door cannot be opened fully because it contacts the extending member 5.

20 In this position the member 5 stops the door from being opened fully. When the security stop is to be disengaged a person stands on the top 7 of the member 5 and forces same down into the housing 3 and when down it is turned to lock the pin 6 in the locking portion 10 of the
25 slot 4.

The alternative construction of security stop shown in Figures 3 and 4 has the parts thereof similar to those incorporated in the example shown in Figures 1 and 2

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referenced by the same numerals. In this construction the mounting plate 2 has supported thereon a locking plate 13. The locking plate 13 is preferably constructed from a metal or rigid plastics material and is supported at the end 14 thereof by a pin 15 which extends through holes formed in the locking plate 13 and mounting plate 2.

The locking plate 13 is biased to its upwards position shown in Figure 3 by providing a biasing means 16 which is positioned between a recess 17 in the mounting plate 2 and the underside of the locking plate 13.

The locking plate 13 having an aperture 18 therein through which the member 5 extends. The diameter of the aperture 18 being slightly larger than the diameter of the extending member 5 and the shape in cross-section is similar to that of the extending member 5.

The position of the member 5 relative to the mounting plate 2 is governed by the frictional engagement between the periphery of the aperture 18 and the outer surface 19 of the member 5.

In use when the member 5 is in its first position the upper end 7 of the member 5 is down at the dotted level 8 in Figure 3. In this position the frictional engagement between the outer surface 19 of the member 5 and the periphery of the aperture 18 stops the member 5 from rising. The member 5 is moved to this position by being pushed down into the housing 3 against the bias of the spring 11 and when the downward movement is stopped, that is when the upper end 7 of the member 5 is in the region of the dotted

level 8 the return movement under the bias of the spring 11 immediately increases the frictional contact between the periphery of the aperture 18 and the outer surface 19 of upper end 7 of the member 5. Although this rises slightly
5 it is still retained at a level beneath the level of the door behind which the security stop is positioned.

When the security stop is to be operated i.e. moved to its second position the user of the device presses down on the free end 20 of the locking plate 13 and this movement
10 again reduces the frictional engagement between the aperture 18 and the outer surface 19 and allows the member 5 to rise under the bias of the biasing means 11 to its second position. When the users foot is removed from the locking plate 13 the frictional engagement again occurs
15 until the member 5 is to be lowered by the user pressing down on the member 5.

The tension in the biasing means 16 is selected to ensure that the operating pressure on the locking plate is such that it can not accidentally be operated by the weight
20 of an animal or small child.

It is also to be appreciated that a security stop according to the present invention can be fitted to a sliding door by placing same behind the door in the track on which the door slides or in any position in which it
25 interrupts the opening movement of the door.

Thus by this invention there is provided a security stop for use behind a door which stop allows the door to be opened only slightly.

A particular example of the present invention has been described by way of example and it is envisaged that improvements and modifications thereto can take place without departing from the scope of the appended claims.

CLAIMS

1. A security stop for placement behind a door,
5 the security stop including a housing arranged for attachment to or fitment into a floor of a building in a position behind a door, the housing having therein a biasing means which moves a substantially vertically extending member between a first position in which
10 the member is retained substantially within the housing and a second position in which the member extends from the housing to where it interrupts an opening movement of the door, the arrangement being such that when the housing is fitted in position the door can
15 be opened and closed and when the member is in its second position it interrupts the opening movement of the door so that it can only be opened a short distance until the door contacts the member.
2. A security stop as claimed in claim 1 wherein
20 the housing includes a mounting plate normally positioned flush with the floor immediately behind the door, the mounting plate supporting a locking plate which has an aperture therein through which the vertically extending member can extend, one end of the locking
25 plate being biased in an upward direction to create frictional engagement between the periphery of the aperture and the extending member.
3. A security stop as claimed in claim 1 or 2 wherein the housing is constructed from a tubular length of
30 metal or metal alloy pipe.
4. A security stop as claimed in claim 1, 2 or 3 wherein the housing, the movable member and mounting plate are constructed from a metal alloy material.

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5. A security stop as claimed in claim 1, 2 or 3 wherein the housing, mounting plate and movable member are constructed from aluminium, the mounting
5 plate having therein holes through which fixing means can attach the mounting plate to the floor of a building.

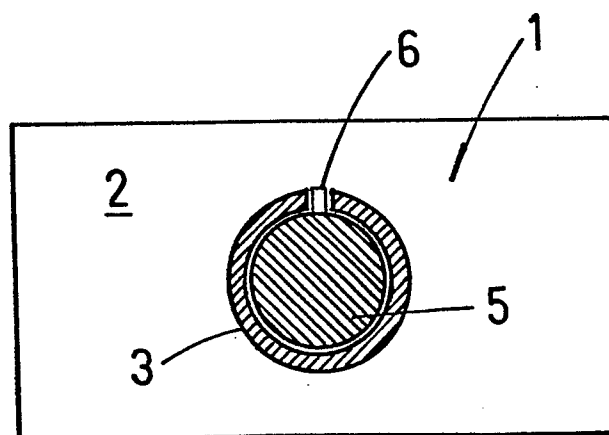
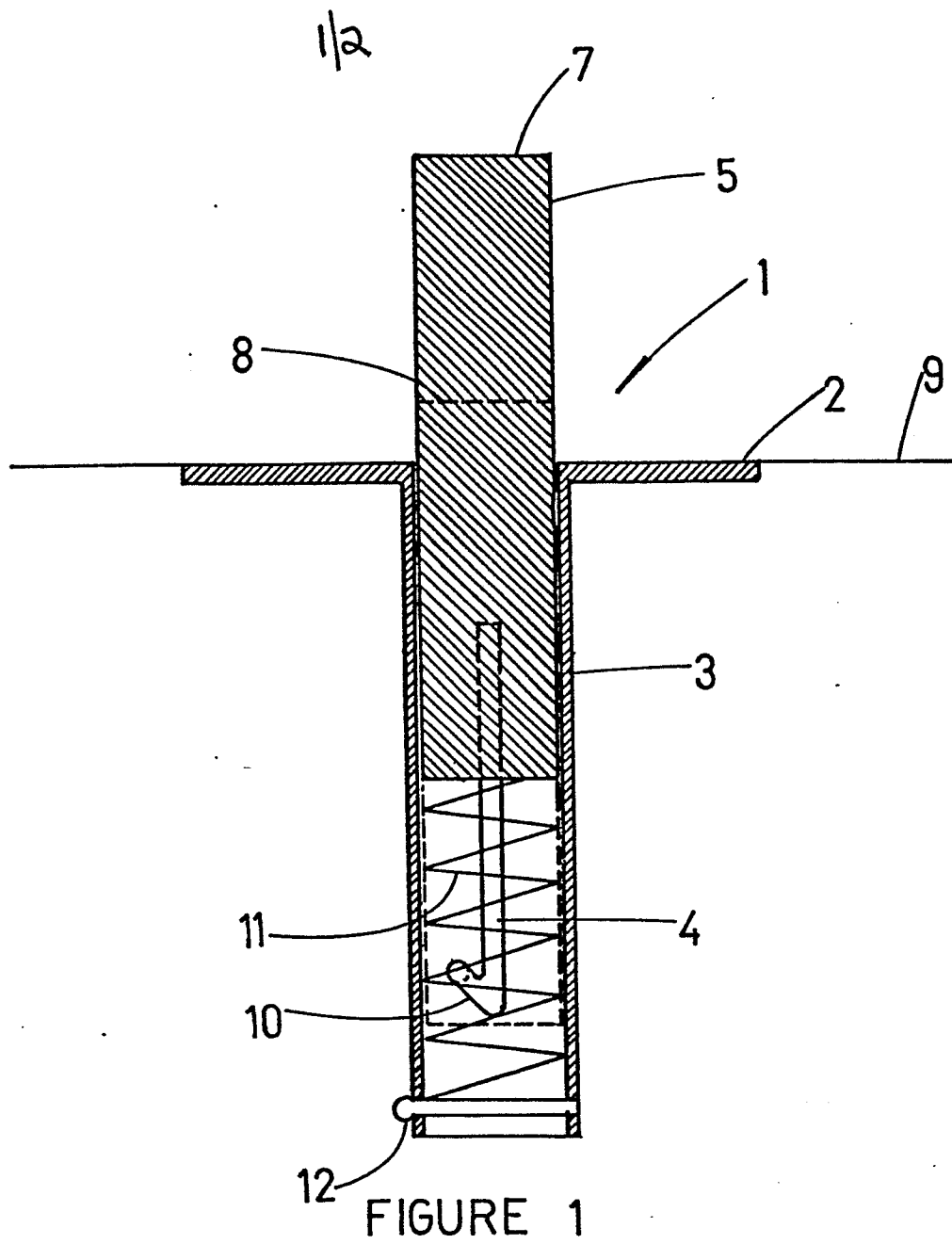
6. A security stop as claimed in any of the preceding claims wherein the biasing means is a spring situated within the bottom of the housing, the spring being
10 biased against the bottom of the moveable member and being maintained in position by a locating pin which extends between aligned apertures in the bottom of the housing.

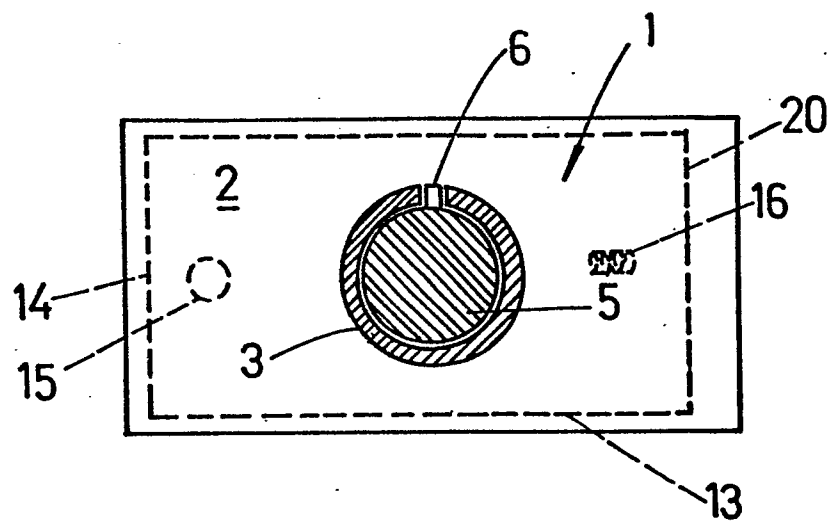
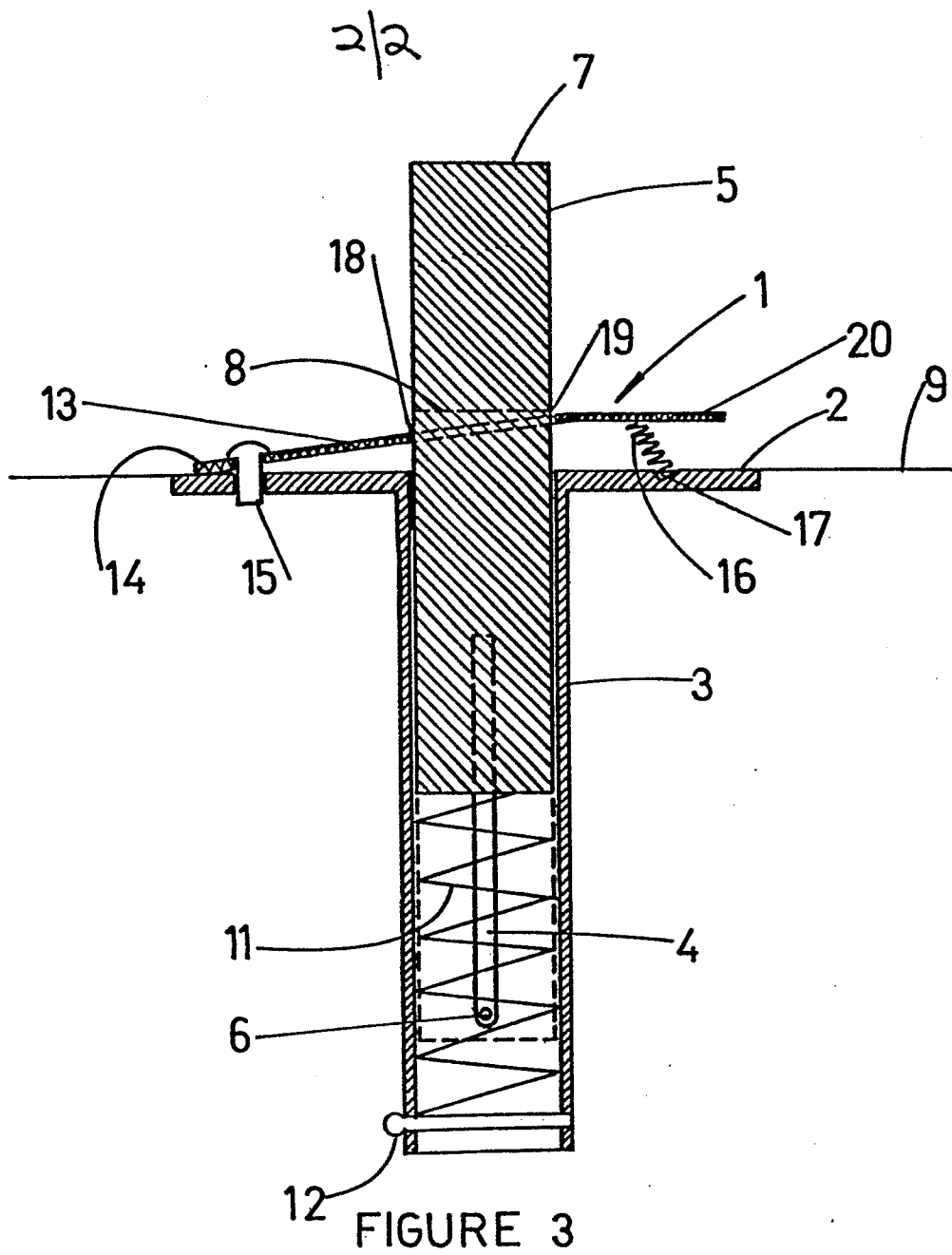
7. A security stop as claimed in any of the preceding
15 claims wherein the housing is positioned in the opening arc of a side hung door.

8. A security top as claimed in claim 7 wherein the housing is inserted either in a hole drilled in a concrete floor or in a pipe set in a concrete floor.

20 9. A security stop as claimed in any of claims 1 to 7 wherein the housing is fixed to a wooden floor so that the housing extends beneath the floor through a hole therein.

10. A security stop as claimed in claim 9 wherein
25 a recess is formed in the wooden floor, the recess being of the same shape and depth as the thickness of the mounting plate so that when in position the mounting plate is flush with the wooden floor.







European Patent
Office

EUROPEAN SEARCH REPORT

0111034

Application number

EP 82 30 6450

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
X	US-A-3 330 585 (POLLIN) * Whole document *	1-8	E 05 F 5/06
A	--- GB-A- 898 841 (ESQUIVEL) * Page 1, lines 72-83; page 2, lines 1-50; figures 1-3 * -----	2	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
			E 05 F E 05 C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 02-08-1983	Examiner NEYS B.G.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	