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(54) Centre key.

(57) A centre key for joining hollow profiles in a decorative grille for a glazing panel has a body portion 10 from which project a number of tongues 12-15 for insertion into lengths of profile 16. A pair of moulded plastics caps 3 are provided for covering the body portion 10. The caps have internal abutment walls 33 which form a positive stop for abutment with the ends of the profile. In addition, the abutment walls 33 are inset from the edges of the caps to form overhanging lips 38 which cover the cut ends of the profile.

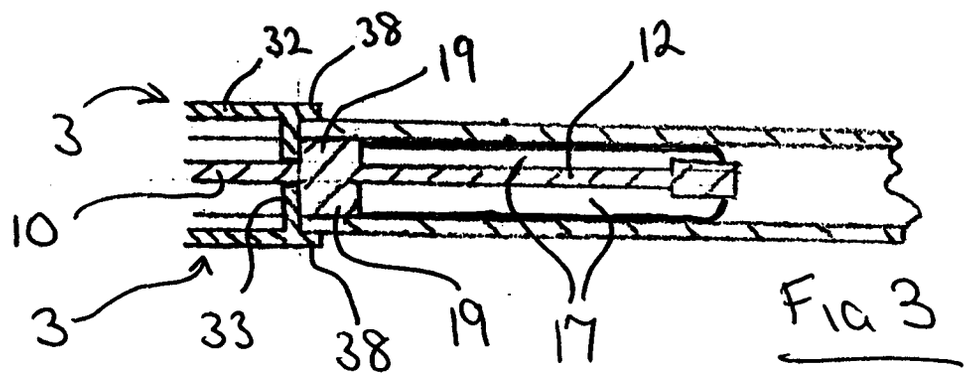

Fig 3

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TECHNICAL FIELD OF THE INVENTION

This invention relates to a key for joining hollow profiles in the formation of a decorative grille which can be inserted in a glazing panel to simulate traditional Georgian windows. Such keys are widely known in the double glazing industry as "centre keys".

BACKGROUND

Known centre keys includes a body portion and a number of tongues which project from the body portion for insertion into the open ends of respective lengths of profile. The body portion usually remains visible in the finished glazing unit and is designed to provide a matching, aesthetically attractive square edged interface between the cut ends of the profiles. Injection mouldings are widely used to form a one piece component incorporating both the attachment tongues and the centre section. The polymer used is a light-fast, UV stable grade of pigmented engineering plastics, but the mass of the centre section can cause so-called weld lines to appear, and can produce shrinkage at the edges which causes the moulded centre to gape apart from the raw cut edges of the profiles.

Another known form of key has metal covers for the body portion, which are held in place by integral tongues which project into the ends of the profiles. This system enables the covers to be paint finished, matching exactly the finish of the profiles. However, this arrangement still has several disadvantages, which include the following:

- The cut ends of the profiles remain exposed detracting from the visual appearance of the finished grille.
- The range of cap configurations which can be produced is very limited due to metal forming techniques.
- The metal caps can chatter against the glass due to vibrations caused by traffic or aircraft for example.

An aim of the present invention may be viewed as being to overcome the limitations of both integrally moulded centre keys and composite keys with metal covers.

SUMMARY OF THE INVENTION

The present invention proposes a centre key of the kind set forth in the appended Claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The following description and the accompanying drawings referred to therein are included by way of non-limiting example in order to illustrate how the invention may be put into practice. In the drawings:

Figure 1 is a plan view of the main part of a centre key of the invention together with a cap which is shown separately,

Figure 2 is an end view of one of the tongues shown in Fig. 1 with two caps in place, and

Figure 3 is longitudinal section taken through the tongue of Fig. 2 in position III-III of Fig. 1.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring firstly to Fig. 1, the main part 1 of the centre key is an integral plastics moulding which includes a substantially square body part 10 having four tongues 12-15 of known form projecting from its four sides to receive four profile sections 16, shown in outline only. The tongues each have a pair of upstanding longitudinally extending ribs 17 which are continued across the body part 10 to be continuous with the ribs 17 of the opposite tongue. At the root of each tongue the ribs are bridged by a transverse bar 19.

The opposite rear face of the main part 1 is of substantially the same configuration, and a pair of substantially identical caps 3 are provided to completely cover and enclose the opposite faces of the body part 10 (only one being seen in Fig. 1). The front wall 32 of the caps is substantially square and may be of any desired style (e.g. "square cut" or "pyramid") to provide an aesthetically attractive interface between the profiles 16. As can be seen in Fig. 2, an abutment wall 33 depends from each of the four straight edges of the front wall 32, being slightly inset from the extreme marginal edge of the front wall which thus forms a projecting lip 38. The four abutment walls 33 are each provided with double notches 34 to receive the ribs 17 when the cap is superimposed on the body portion 10, in which position the abutment walls 33 are positively located between the four transverse bars 19.

The two caps 3 may be secured to the body portion 10 by means of a suitable adhesive, by a suitable plastics welding technique, or by means of co-operating snap-engageable formations on the cap and body portion.

When a length of profile 16 is pushed over one of the tongues 12 as shown in Fig. 3, the leading cut end eventually abuts the wall 33 which provides a positive stop for the profile. The position of the cut end is therefore determined relative to the cap rather than the body portion, ensuring that the end is covered irrespective of the relative positions of the cap and body portion. The projecting lip 38 closely overlies the cut end of the profile, hiding the cut end from view. Although the lip is only short, its length is still sufficient to cover the end face of the profile in the event of normal shrinkage in the length of the profile.

The caps and body portion can be formed with an aperture for insertion of a resilient glass buffer, to prevent chattering against the glass sheets in a double

glazing panel.

The advantages of the present centre key may be summarised as follows:

1. The cut ends of the profiles are not visible.
2. Only one main part need be moulded for a given size of profile.
3. The main part can be moulded in inexpensive materials without regard to colour, in order to reduce component costs.
4. The moulding tools for the caps can easily be provided with interchangeable inserts for manufacture of various cover shapes.
5. The caps can be moulded from different coloured materials for use with a range of profile colours at minimum cost.
6. The caps can be cycled quicker, reducing moulding costs.
7. Shrinkage problems related to moulding of heavy sections are eliminated.

Claims

1. A centre key comprising a unitary main part (1) which includes a body portion (10) and a plurality of tongues (12-15) which project from the body portion for insertion into the open ends of respective lengths of profile (16), and a cap (3) to cover the body portion in use, the key including abutment means (33) to, provide a stop for abutment with cut ends of the lengths of profile,

   characterised in that the cap is moulded of plastics and has a lip or flange portion (38) which, in use, overlies the cut end of a length of profile when in contact with the abutment means.

2. A centre key according to Claim 1, in which the abutment means (33) is formed on the cap.

3. A centre key according to Claim 1 or 2, in which the cap is secured to main part by snap engagement.

4. A centre key according to Claim 1 or 2, in which the cap is secured to main part by an adhesive.

5. A centre key according to Claim 1 or 2, in which the cap is secured to main part by welding.

6. A centre key according to any preceding claim, in which two such caps are provided, for mounting on opposite sides of the body portion.

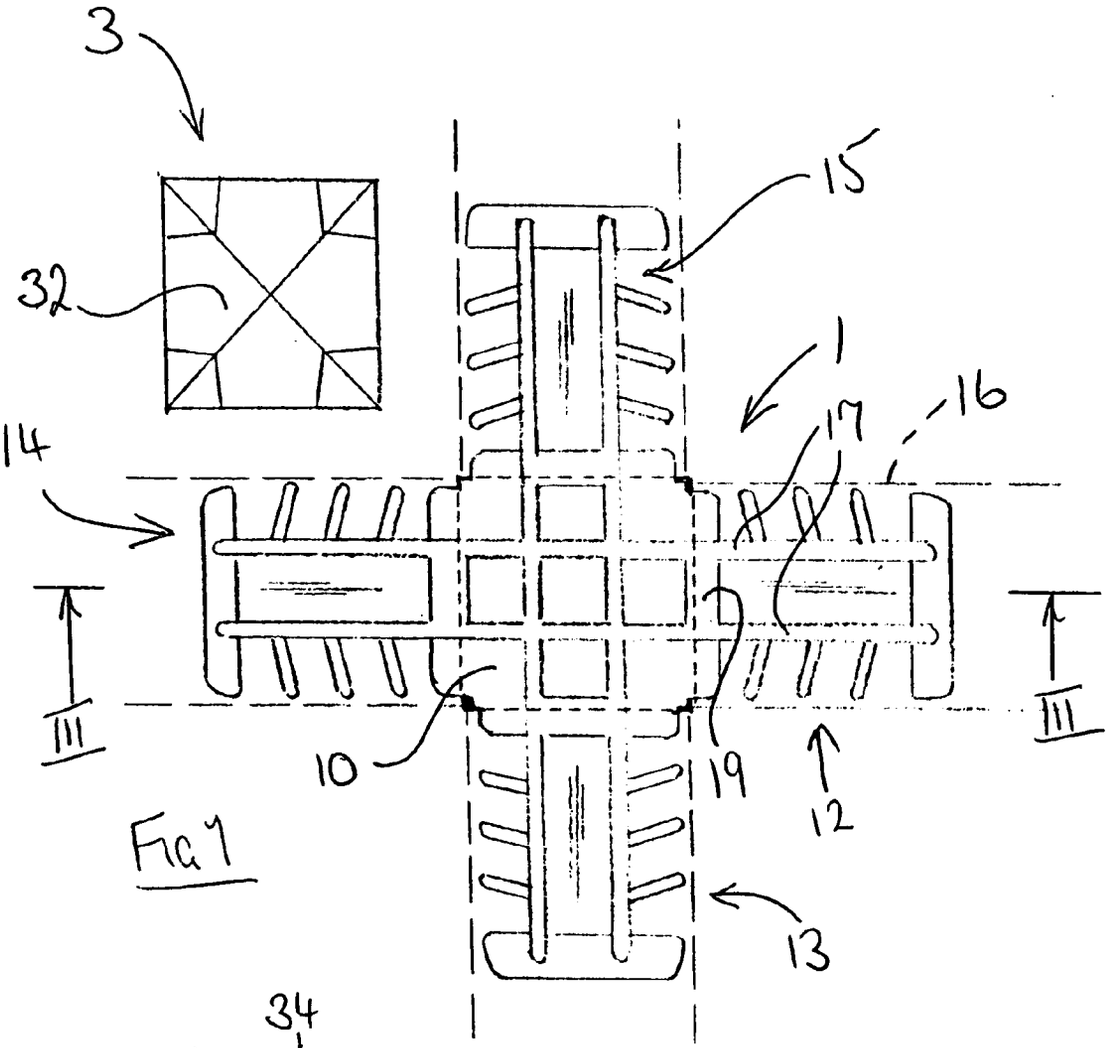

Fig 1

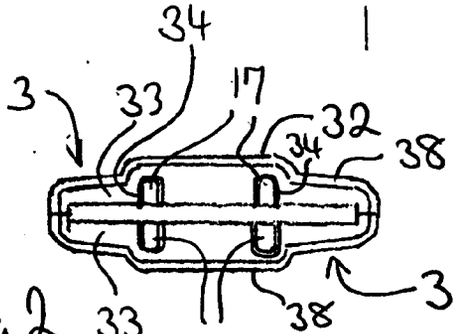

Fig 2

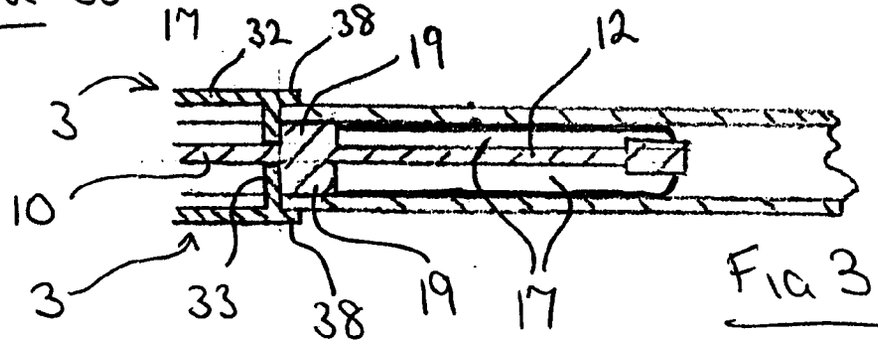

Fig 3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 95 30 0821

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.6)
A	GB-A-2 147 045 (HEPWORTH PLASTICS) * page 1, line 84 - page 2, line 51; figures * ---	1,3,6	E06B3/667
A	FR-A-2 550 577 (FREUDENBERG) * page 3, line 12 - line 34; figures * ---	1	
A	DE-A-32 21 117 (KNACK) * page 6, paragraph 3 - page 13, paragraph 2; figures * ---	1,3,5,6	
A	AT-B-394 617 (PROGLAS) * the whole document * ---	1,3,6	
A	US-A-4 783 938 (PALMER) * column 6, line 39 - column 7, line 19; figures 2,7-9 * -----	1,6	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26 May 1995	Depoorter, F

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

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