CLAIMS

1. A method of processing glass filament, comprising:

providing a length of glass filament (10) from which a portion (12) is to be separated from the remainder of the filament, the filament having an internal structure comprising one or more longitudinal lumina (20, 22);

directing energy, in the form of one or more laser beams (30) or flames (40) or plasma beams applied to the filament, onto the filament in order to cause a decrease in a width (W) of the filament at a desired location (D) for separation of the portion; and

moving the portion away from the remainder (14) of the filament to obtain the portion separated from the remainder of the filament, the separated portion forming a cane able to be drawn into optical fibre.

2. A method according to claim 1, in which directing energy onto the filament comprises directing energy onto two or more regions circumferentially disposed around the filament at the desired location.

3. A method according to any one of claims 1 to 3, further comprising causing relative rotational movement between the filament and the energy while directing the energy onto the filament, in order to direct energy onto a region or regions circumferentially disposed around the filament at the desired location.

4. A method according to any one of claims 1 to 3, in which directing energy onto the filament causes the width of the filament to decrease to zero at the desired location, thereby separating the portion from the remainder of the filament.

5. A method according to any one of claims 1 to 4, in which directing energy onto the filament reduces the width of the filament at the desired location to greater than zero, and moving the portion away from the remainder of the filament comprises causing relative longitudinal movement between the portion and the remainder of the filament to separate the portion from the remainder of the filament at the desired location, further comprising, during the directing energy, holding the remainder of the filament with a first clamp arrangement (24) at a first position, and holding the portion with a second clamp arrangement (28) at a second position longitudinally spaced from the first position, and causing the relative longitudinal movement by increasing the spacing (d1) between the first clamp arrangement and the second clamp arrangement.

6. A method according to any one of claims 1 to 4, in which directing energy onto the filament reduces the width of the filament at the desired location to greater than zero, and moving the portion away from the remainder of the filament comprises causing relative longitudinal movement between the portion and the remainder of the filament to separate the portion from the remainder of the filament at the desired location, further comprising, during the directing energy, holding one of the remainder of the filament and the portion with a clamp arrangement, and causing the relative longitudinal movement by allowing the portion to move under gravity.

7. A method according to any one of claims 1 to 6, comprising directing energy onto the filament that is sufficient to cause softening and deformation of the glass of the filament

into a necked region at the desired location and further comprising applying crimping jaws (42) to the softened glass to aid deformation into the necked region.

8. A method according to claim 7, in which deformation of the glass into the necked region comprises collapse of the one or more lumina.

9. A method according to claim 8, in which the deformation and optionally also the moving of the portion away from the remainder of the filament cause a width of the necked region to decrease to zero, thereby closing the lumina at the separated end of the portion.

10. A method according to any one of claims 1 to 6, comprising directing energy ono the filament that is sufficient to cause ablation of the glass of the filament at the desired location.

11. A method according to claim 10, in which the glass is ablated to form a circumferential slot (44) around the filament at the desired location.

12. A method according to any one of claims 1 to 11, in which the length of glass filament has been drawn from a glass preform and the method is carried out in a draw tower while the filament is being drawn from the glass preform.

13. A method according to claim 12, in which the filament is drawn from the glass preform using a cane puller (70) comprising a pair of opposing rotating belts (72) arranged to grip opposite sides of the filament and pull the filament in a longitudinal direction away from the preform.

14. A method according to claim 13, in which the pair of opposing rotating belts are arranged such that the axis of rotation of each belt (72) is orthogonal to the longitudinal direction.

15. A method according claim 13, in which the pair of opposing rotating belts (72a, 72b) are arranged such that the axes of rotation of the belts are at opposite and substantially equal non-orthogonal angles to the longitudinal direction, in order to cause rotation of the drawn filament about its longitudinal axis.