

What Is Claimed Is:

1. A device for processing organ tissue so as to maintain tissue viability comprising:

a) an aseptic container for accommodating fluid and for receiving said organ

tissue;

b) a stationary cutting device and a movable cutting device supported in compressive engagement within said aseptic container, said movable cutting device being moveable with respect to said stationary cutting device to cut organ tissue therebetween, said stationary cutting device including breaches therethrough configured to atraumatically cut said tissue in combination with said movable cutting device, in a slicing action;

c) an agitation device supported within said aseptic container which causes repeated continuous recirculating flow of said fluid and organ tissue through said cutting devices within said aseptic container, said agitation device capable of moving in concert with said moveable cutting device and repeatedly recirculating said fluid and organ tissue through said cutting devices to atraumatically cut said organ tissues repeatedly, while maintaining said tissue viability; and

d) wherein said agitation device includes an impeller movable with said movable cutting device in a rotational direction about an axis, said impeller shaped to include a leading portion adjacent said cutting devices for imparting an axial thrust and a terminal portion for imparting a radial thrust for causing fluid repeated recirculating flow through said cutting devices.

2. ~~A~~The device of claim 1, wherein said at least one movable cutting device is mounted to or integrated with said agitation device for movement therewith.

3. ~~A~~The device of claim 1, wherein each of said cutting devices include a plurality of spaced apart cutting blades.

4. ~~A~~The device of claim 148, wherein said agitation device causes circulating flow of said fluid and organ tissue through said cutting devices.

5. ~~A~~The device of claim 1, wherein said agitation device creates a vortex movement of said fluid and said organ tissue repeatedly through said cutting devices.

6. ~~A~~The device of claim 1, wherein said impeller has a curved surface along said axis.

7. ~~A~~The device of claim 1, wherein each of said cutting devices includes a plurality of blades radially arrayed with angular spaces therebetween.

8. ~~A~~The device of claim 7, wherein said angular spaces between said blades of said movable cutting device are different from said angular spaces of said blades of said other cutting device.

9. ~~A~~The device of claim 1, wherein said container includes an opening for receiving of said fluid and said organ tissue.

10. ~~A~~The device of claim 1, wherein said container includes an outlet for discharge of said fluid and said cut organ tissue.

11. ~~A~~The device of claim 10 further including a dispensing device in fluid communication with said outlet to receive said discharged fluid and said cut organ tissue.

12. ~~A~~The device of claim 11, wherein said dispensing device is a syringe.

13. A device for processing organ tissue comprising:

a) an aseptic container for accommodating fluid and for receiving said organ tissue;

b) a stationary cutting device and a movable cutting devices supported in compressive physical contact along a common shear plane within said aseptic container, said movable cutting device being movable with respect said stationary cutting device to cut organ tissue therebetween, said stationary cutting device including breaches therethrough configured to atraumatically cut said tissue in combination with said movable cutting device, in a slicing action;

c) an agitation device supported within said aspetic container which causes repeated continuous recirculating flow of said fluid and organ tissue through said cutting devices

within said aseptic container, said agitation device capable of moving in concert with said movable cutting device and repeatedly recirculating said fluid and organ tissue through said cutting devices to atraumatically cut said organ tissue repeatedly, while maintaining said tissue viability; and

5 d) wherein said agitation device includes an impeller movable with said movable cutting device in a rotational direction about an axis, said impeller shaped to include a leading portion adjacent said cutting device for imparting an axial thrust and a terminal portion for imparting a radial thrust for causing said repeated recirculating flow through said cutting devices.

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14. ~~A~~The device of claim 13, wherein said impeller has a curved surface.

15. A method for processing organ tissue into particulate form comprising:
 providing a stationary cutting device and movable cutting device in mutual

15 compressive engagement supported within an aseptic container;

 placing fluid and organ tissue into said container;

 moving said movable cutting device with respect to said stationary cutting device to cut said organ tissue through breaches formed in the stationary cutting device to atraumatically cut said tissue in combination with said movable cutting device, in a slicing
20 action; and

 providing an impeller to continuously recirculate said fluid and said organ tissue through said cutting devices to repeatedly atraumatically cut said organ tissue into progressively smaller particulates, said impeller shaped to include a leading portion proximal to said cutting devices for imparting an axial thrust and a terminal portion distal to said
25 cutting devices for imparting a radial thrust for causing said continuous recirculation through said devices for repeated cutting of said organ tissue.

16. The method of claim 15, wherein said impeller has a curved surface.

30 17. ~~A~~The method of claim 15, further comprising the step of:

 mounting to or integrating with said movable cutting device to said impeller for movement therewith.

18. ~~A~~The method of claim 15, wherein said container includes an outlet and further comprises the step of:

discharging said fluid and said cut organ tissue through said outlet.

5 19. ~~A~~The method of claim 18, further including:

providing a dispensing device in fluid communication with said outlet; and
discharging said fluid and said cut organ tissue into said dispensing device.

20. A method for processing organ tissue into particulate form comprising:

10 providing a movable cutting device and a stationary cutting device in compressive contact along a common shear plane supported in an aseptic container;

placing fluid and organ tissue into said container;

moving said movable cutting device with respect to said stationary cutting device to
atraumatically cut said organ tissue through breaches in said stationary cutting device in a
15 slicing action; and

providing an impeller to continuously recirculate said fluid and said organ tissue
through said cutting devices to repeatedly atraumatically cut said organ tissue into
progressively smaller particulates, said impeller shaped to include a leading portion proximal
to said cutting devices for imparting an axial thrust and a terminal portion distal to said
20 cutting devices for imparting a radial thrust for causing said continuous recirculation through
said cutting devices.

21. ~~A~~The method of claim 20, wherein said impeller has a curved surface.

25 22. ~~A~~The method of claim 20, wherein the impeller is mounted to or integrated with said
movable cutting device for movement therewith.