

teristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

1. A hemostasis valve apparatus adapted for providing access to a cardiovascular or other intravascular system of a patient in a manner so as to control and desirably minimize loss of body fluids when accessing the cardiovascular or other intravascular system through the apparatus, comprising:

- (a) body means for providing a lumen therethrough and which is adapted for accessing a patient's cardiovascular or other intravascular system, said body means comprising distal and proximal ends, and said body means further comprising an interior hollow compression chamber;
- (b) resiliently deformable sealing means disposed in said compression chamber for selectively opening and closing said lumen in response to a compression force exerted on said sealing means, said sealing means comprising distal and proximal ends and a longitudinal passageway therethrough which communicate with and serves as an opening to said lumen of the body means, and said sealing means assuming a normally open position when not subjected to said compression force wherein said passageway provides an unobstructed opening to said lumen, and said sealing means responding to said compression force so as to progressively and uniformly reduce the size of said opening provided by said passageway until said opening is completely closed when desired;
- (c) rotatable housing means, rotatably joined to the proximal end of said body means, for exerting a compression force on said sealing means when the housing means is rotated in one direction relative to the body means, and for releasing the compression force from the sealing means when rotated in an opposite direction relative to the body means;
- (d) first means for interlocking the distal end of said sealing means within said compression chamber such that when said compression force is exerted on the sealing means, the distal end of the sealing means will remain firmly in place within the compression chamber and will not become displaced nor undesirably enter said lumen;
- (e) second means for interlocking the proximal end of said sealing means such that when said compression force is exerted on the tubular member, the proximal end of the sealing means will remain firmly in place within the compression chamber and will not become displaced; and
- (f) ring means, disposed between the proximal end of said sealing means and said rotatable housing means, for rotatable connection to said second means for interlocking so as to reduce rotation and twisting of said sealing means when said compression force is exerted on the sealing means.

2. A valve apparatus as recited in claim 1, wherein said first means for interlocking said distal end of said sealing means comprises:

- (a) a first ridge proximally projecting from a shoulder and defining a first receiving groove positioned between said ridge and said compression chamber; and

- (b) a first tongue distally projecting from said distal end of said sealing means and received within said first receiving groove.

3. A valve apparatus as recited in claim 2, wherein said first ridge is annular and encircles said lumen so that said first receiving groove is annular.

4. A valve apparatus as recited in claim 2, wherein said first tongue is annular and encircles said passageway.

5. A valve apparatus as recited in claim 1, wherein said second means for interlocking said proximal end of said sealing means comprises:

- (a) a second ridge distally projecting from a distal end of said rotatable housing means and defining a second receiving groove positioned between said second ridge and said compression chamber; and

- (b) a second tongue proximally projecting from said proximal end of said sealing means and received within said second receiving groove.

6. A valve apparatus as recited in claim 1, wherein said rotatable housing means comprises a shaft and means for coupling said shaft to said sealing means by selectively advancing said shaft into said compression chamber, and said coupling means comprising:

- (a) first engagement threads positioned at said proximal end of said body means; and

- (c) second engagement threads positioned at said distal end of said rotatable housing, said second engagement threads being configured for engaging said first engagement threads when said shaft is received within said compression chamber.

7. A valve apparatus as recited in claim 1, wherein said passage through said sealing means is substantially cylindrical.

8. A valve apparatus as recited in claim 1, wherein said sealing means comprises a tubular body having an exterior surface that is substantially cylindrical.

9. A valve apparatus as recited in claim 1, wherein said compression chamber has an exterior surface that is polygonal.

10. A valve apparatus as recited in claim 1, wherein said sealing means has an exterior surface that is substantially cylindrical.

11. A valve apparatus as recited in claim 1, wherein said sealing means comprises a tubular body made of polycarbonate plastic.

12. A valve apparatus as recited in claim 1, wherein said sealing means is made of silicone.

13. A hemostasis valve apparatus adapted for providing access to a cardiovascular or other intravascular system of a patient in a manner so as to control and desirably minimize loss of body fluids when accessing the cardiovascular or other intravascular system through the apparatus, comprising:

- (a) body means for providing a lumen therethrough and which is adapted for accessing a patient's cardiovascular or other intravascular system, said body means comprising distal and proximal ends, and said body means further comprising an interior hollow compression chamber;

- (b) resiliently deformable sealing means disposed in said compression chamber for selectively opening and closing said lumen in response to a compression force exerted on said sealing means, said sealing means comprising an elongated tubular member having distal and proximal ends and a longitudinal passageway therethrough which communicates with and serves as