

CLAIMS

What is claimed is:

1. An insertion device for inserting a catheter into a body of a patient, comprising:
 - a housing in which at least a portion of the catheter is initially disposed;
 - a needle distally extending from the housing, at least a portion of the catheter pre-disposed over the needle;
 - a guidewire;
 - a guidewire advancement assembly including a first user engagement component configured for thumb or finger application by a user for selectively distally advancing the distal end of the guidewire out a distal opening of the needle in preparation for distal advancement of the catheter;
 - a catheter advancement assembly including a second user engagement component configured for thumb or finger application by the user for selectively advancing the catheter in a distal direction, wherein the user can begin to advance the second user component after advancing the first user engagement component without substantially re-positioning the thumb or finger used for the guidewire and catheter advancement;
 - wherein the first user engagement component is distally slidable to a distal termination point that is proximate a proximal commencement point of the second user engagement component, the first user engagement component further includes a first finger pad; and
 - wherein the second user engagement component includes a second finger pad which defines a cove in which the first finger pad is configured to seat when the first finger pad is distally slid to the distal termination point and the second finger pad is disposed at the proximal commencement point.

2. The insertion device as defined in claim 1, wherein the second finger pad includes a curved, raised surface configured to assist the user with distal sliding of the second finger pad.
3. The insertion device as defined in claim 1, wherein the guidewire advancement assembly is configured to prevent advancement of the catheter until distal advancement of the guidewire is performed.
4. The insertion device as defined in claim 1, wherein the guidewire advancement assembly includes a spring arm that is configured to engage with a pocket within the housing to prevent proximal retraction of the guidewire after full distal advancement of the guidewire is performed.
5. The insertion device as defined in claim 4, wherein the spring arm is disposed on a guidewire lever, the guidewire lever attached to a finger pad slidably disposed on the housing, and wherein the pocket is included in a needle hub within the housing, a proximal end of the needle mounted to the needle hub.
6. The insertion device as defined in claim 5, wherein the catheter advancement assembly includes a safety housing, a needle safety component disposed within the safety housing, the safety housing initially disposed at an initial position adjacent the needle hub, and wherein distal movement of the safety housing via the catheter advancement assembly enables a free end of the spring arm to seat in the pocket of the needle hub after full distal advancement of the guidewire is performed.
7. The insertion device as defined in claim 6, wherein the catheter advancement assembly is configured such that proximal movement of the safety housing to the initial position adjacent the needle hub pushes the free end of the spring arm out of the pocket of the needle hub to once again enable guidewire advancement and retraction.
8. The insertion device as defined in claim 5, wherein the guidewire lever includes an actuation block, the actuation block configured to engage a portion of the catheter advancement assembly when the guidewire is fully distally advanced, the engagement of the

actuation block with the portion of the catheter advancement assembly enabling the catheter to be distally advanced.

9. The insertion device as defined in claim 1, wherein the housing includes a stability structure configured to support the needle extending from the housing, the needle stability assembly configured to separate upon distal advancement of the catheter to enable the catheter to exit the housing.

10. The insertion tool as defined in claim 9, wherein the housing includes a top housing portion and a bottom housing portion, and wherein a bottom portion of the stability structure is included with the bottom housing portion and a top portion of the stability structure is included with the top housing portion, the stability structure disposed at an exit point of the needle from the housing.

11. The insertion tool as defined in claim 10, wherein the bottom portion of the stability structure is configured to be substantially flexible in a first direction and substantially rigid in a second direction and wherein the top portion of the stability structure is configured to be substantially flexible in the second direction and substantially rigid in the first direction.

12. The insertion device as defined in claim 11, wherein the bottom and top portions of the stability structure are configured to overlap one another so as to provide the support to the needle.

13. The insertion device as defined in claim 12, wherein the bottom stability structure includes first and second arms that are laterally spreadable so as to enable the catheter to pass the first and second arms when the catheter advancement assembly is distally advanced.

14. The insertion device as defined in claim 13, wherein the top portion of the stability structure is included on a distal portion of the top housing portion, the top portion of the stability structure being vertically flexible and including a slot defined in the distal portion of the top housing portion, the first and second arms of the bottom portion of the stability

structure extending partially through the slot before distal advancement of the catheter occurs so as to provide the support for the needle.

15. The insertion device as defined in claim 14, wherein the top portion of the stability structure includes a horseshoe feature that is disposed adjacent the slot and partially about the needle.

16. The insertion device as defined in claim 15, wherein upon distal advancement of the catheter the catheter advancement assembly is configured to impinge on the top housing portion so as to cause the first and second arms of the bottom portion of the stability structure to recede from the slot of the top portion of the stability structure, the catheter spreading the first and second arms to enable passage of the catheter.

17. The insertion device as defined in claim 16, wherein the second user engagement component include a head portion that wraps around a portion of the top housing portion, wherein distal sliding of the head portion causes upward movement of the top housing portion so as to enable passage of the catheter distally from the housing.

18. An insertion device for inserting a catheter into a body of a patient, comprising:
a housing in which at least a portion of the catheter is initially disposed;

a needle distally extending from the housing, at least a portion of the catheter pre-disposed over the needle;

a guidewire;

a guidewire advancement assembly including a first user engagement component configured for thumb or finger application by a user for selectively distally advancing the distal end of the guidewire out a distal opening of the needle in preparation for distal advancement of the catheter; and

a catheter advancement assembly including a second user engagement component configured for thumb or finger application by the user for selectively

advancing the catheter in a distal direction, wherein the user can begin to advance the second user component after advancing the first user engagement component without substantially re-positioning the thumb or finger used for the guidewire and catheter advancement;

the housing includes a stability structure configured to support the needle extending from the housing, the needle stability assembly configured to separate upon distal advancement of the catheter to enable the catheter to exit the housing, the housing further includes a top housing portion and a bottom housing portion, and wherein a bottom portion of the stability structure is included with the bottom housing portion and a top portion of the stability structure is included with the top housing portion, the stability structure disposed at an exit point of the needle from the housing, the bottom portion of the stability structure is further configured to be substantially flexible in a first direction and substantially rigid in a second direction and wherein the top portion of the stability structure is configured to be substantially flexible in the second direction and substantially rigid in the first direction, the bottom and top portions of the stability structure are configured to overlap one another so as to provide the support to the needle;

the bottom stability structure further includes first and second arms that are laterally spreadable so as to enable the catheter to pass the first and second arms when the catheter advancement assembly is distally advanced;

the top portion of the stability structure is included on a distal portion of the top housing portion, the top portion of the stability structure being vertically flexible and including a slot defined in the distal portion of the top housing portion, the first and second arms of the bottom portion of the stability structure extending partially through the slot before distal advancement of the catheter occurs so as to provide the support for the needle.

19. The insertion device as defined in claim 18, wherein the top portion of the stability structure includes a horseshoe feature that is disposed adjacent the slot and partially about the needle.

20. The insertion device as defined in claim 18, wherein upon distal advancement of the catheter the catheter advancement assembly is configured to impinge on the top housing portion so as to cause the first and second arms of the bottom portion of the stability structure to recede from the slot of the top portion of the stability structure, the catheter spreading the first and second arms to enable passage of the catheter.

21. The insertion device as defined in claim 18, wherein the second user engagement component include a head portion that wraps around a portion of the top housing portion, wherein distal sliding of the head portion causes upward movement of the top housing portion so as to enable passage of the catheter distally from the housing.