CLAIMS:

1. A hinged shield assembly comprising:

a needle hub including an exterior surface and a first hinge part defining a first socket and a second socket, a needle extending from the needle hub and comprising a lengthwise axis;

a shield including a second hinge part that engages the first hinge part to pivotably secure the shield to the hub, the second hinge part defining a first ball and a second ball engaging the first socket and the second socket, the shield further including a plurality of sidewalls that partially surrounds the needle when the shield is in a protected position; wherein each of the sidewalls comprises a base end; and

at least one stop piece extending radially relative to the lengthwise axis and externally of the exterior surface of the needle hub and comprises a first surface and an opposed second surface, said at least one stop piece located in a rotational path of the shield such that at least one of the plurality of sidewalls contacts the first surface of the at least one stop piece to prevent over rotation of the base end of the at least one of the plurality of sidewalls beyond an at rest point upon contacting the first surface of the at least one stop piece in one rotational direction when the shield is in the protected position;

wherein each of the first socket and the second socket has a recess with an opening with a first diameter and an intermediary portion inward of the opening that increases in diameter to a second diameter larger than the first diameter and then decreases in diameter to a third diameter smaller than the second diameter.

2. The hinged shield assembly of claim 1, wherein the first surface of the at least one stop piece comprises a base element having a radially extending planar surface to abut the base end of the at least one of the plurality of sidewalls.

3. The hinged shield assembly of claim 2, further comprising a capture element extending from the base element in an axial direction to define a retention space.

4. The hinged shield assembly of claim 3, further comprising a reduced depth portion formed on at least one of the plurality of sidewalls on a side of the hinged shield assembly corresponding to the at least one stop piece.

5. The hinged shield assembly of claim 4, further comprising a second stop piece comprising a first surface and an opposed second surface located in a rotational path of the shield such that a second sidewall of the plurality of sidewalls contacts the first surface of the second stop piece to prevent over rotation of the base end of the second sidewall.

6. The hinged shield assembly of claim 5, wherein a first sidewall and a second sidewall of the plurality of sidewalls define a shield width and wherein a stop width defined by the at least one stop piece and the second stop piece is wider than the shield width or is equal to the shield width.

7. The hinged shield assembly of claim 2, wherein the at least one stop piece is located on a transverse base defining a flange, which intersects an elongated portion on the needle hub between a distal cylindrical portion and a proximal cylindrical portion.

8. The hinged shield assembly of claim 7, wherein the flange has a first edge, a second edge, and a first side edge and wherein the at least one stop piece is located on the side edge, between the first edge and the second edge.

9. The hinged shield assembly of claim 8, wherein the flange has an upper surface facing the distal cylindrical portion, and wherein the radially extending planar surface of the base element is offset from the upper surface of the flange.

10. The hinged shield assembly of claim 3, further comprising a second stop piece and a second capture element extending from a base element of the second stop piece and wherein the two base elements define radially extending members and the two capture elements define axially extending members.

11. The hinged shield assembly of claim 10, wherein each pair of base element and capture element forms a generally “L” shape structure when viewing from an end.

12. A hinged shield assembly comprising:

a needle hub including a flange, an exterior surface, and a first hinge part formed with the flange, the first hinge part defining a first socket and a second socket;

a needle extending from the needle hub and comprising a lengthwise axis;

a shield including a second hinge part that engages the first hinge part to pivotably secure the shield to the hub, the second hinge part defining a first ball and a second ball engaging the first socket and the second socket, the shield further including a plurality of sidewalls, including a first sidewall and a second sidewall, that partially surrounds the needle when the shield is in a protected position; wherein each of the sidewalls comprises a base end; and

two stop pieces each with a first surface and an opposed second surface extending radially relative to the lengthwise axis and externally of the exterior surface of the needle hub, said two stop pieces being located in a rotational path of the shield such that the first sidewall and the second sidewall of the plurality of sidewalls contact the two stop pieces to prevent over rotation of the base ends of the first and second sidewalls beyond an at rest point at the first contact surface of each of the two stop pieces in one rotational direction when the shield is in the protected position;

wherein each of the first socket and the second socket has a recess with an opening with a first diameter and an intermediary portion inward of the opening that increases in diameter to a second diameter larger than the first diameter and then decreases in diameter to a third diameter smaller than the second diameter.

13. The hinged shield assembly of claim 12, wherein each stop piece has a base element and a capture element extending from the base in an axial direction to define a retention space.

14. The hinged shield assembly of claim 13, wherein at least a portion of the base end of the first sidewall and at least a portion of the base end of the second sidewall are both located in the two retention spaces.

15. The hinged shield assembly of claim 14, wherein the base end of the first sidewall and the base end of the second sidewall each comprises a reduced depth portion and wherein the reduced depth portion is located in a respective retention space.

16. The hinged shield assembly of claim 12, further comprising a tab on each of the first and second sidewalls for engaging the needle hub in the protected position.

17. The hinged shield assembly of claim 12, wherein the two stop pieces define a stop width.

18. The hinged shield assembly of claim 17, wherein the first sidewall and the second sidewall of the plurality of sidewalls define a shield width and wherein the stop width is wider than the shield width, equal to the shield width, or less than the shield width.

19. A method of manufacturing a hinge shield assembly comprising:

forming a needle hub with an exterior surface, a flange, and a first hinge part formed with the flange comprising two spaced apart sockets, each of the spaced apart sockets having a recess with an opening with a first diameter and an intermediary portion inward of the opening that increases in diameter to a second diameter larger than the first diameter and then decreases in diameter to a third diameter smaller than the second diameter;

extending a needle from the needle hub, said needle comprising a lengthwise axis;

forming a shield including a second hinge part comprising two spaced apart balls, the two spaced apart balls engage the two spaced apart sockets of the first hinge part to pivotably secure the shield to the needle hub, the shield further including a plurality of sidewalls, including a first sidewall and a second sidewall, that partially surrounds the needle when the shield is in a protected position; each of the first and second sidewalls comprising a base end; and

forming two stop pieces each with a first surface and an opposed second surface extending from the flange radially relative to the lengthwise axis at locations externally of the exterior surface of the needle hub, the two stop pieces being positioned in a rotational path of the shield such that the first sidewall and the second sidewall contact the two first surfaces of the two stop pieces to prevent over rotation of the base ends of the first and second sidewalls beyond an at rest point of each of the two stop pieces in one rotational direction when the shield is in the protected position.

20. The hinged shield assembly of claim 1, wherein each of the first ball and the second ball has a diameter that is greater than the first diameter of the opening of each of the first socket and the second socket.

21. The hinged shield assembly of claim 12, wherein the flange on the needle hub has a first side edge having the first stop piece located therewith and a second side edge having the second stop piece located therewith.