CLAIMS:

1. A tip cap (112) slidably engageable with a distal end of a syringe barrel for shielding a needle, the tip cap (112) comprising:

an outer cap (606);

an inner cap (602); and

a connector (604) shaped to fit within and engage the outer cap (606) and engage the inner cap (602) and having a plurality of first legs (702a-702d) spaced symmetrically away from one another, each first leg (702a-702d) having a plurality of internally facing barbs (703) pointing toward a distal region of the connector (604) and adapted to engage a proximal region of the inner cap (602), wherein each of the plurality of internally facing barbs (703) is disposed at an angle with respect to the plurality of first legs (702a-702d), the connector (604) having a plurality of second legs (706a, 706b) spaced symmetrically away from one another,

characterized in that each second leg (706a, 706b) has a plurality of externally facing barbs (707a-707d) located at an end of the second leg (706a, 706b) and adapted to engage a distal region of the outer cap (606).

2. The tip cap (112) of claim 1, wherein the outer cap (606) includes a gripping ring (132).

3. The tip cap (112) of claim 2, wherein the gripping ring (132) is shaped to receive a user’s finger or a hook to engage the gripping ring (132).

4. The tip cap (112) of any of claims 1 to 3, wherein the outer cap (606) includes a shoulder (608) and a stem (610) having a hollow inner space shaped to receive the connector (604), wherein the shoulder (608) includes an inner surface (622) and an outer surface (624) and flares outwardly and away from the stem (610) forming an orifice (618) for receipt of the distal end of the syringe barrel, and preferably wherein the orifice (618) is wider than the stem (610).

5. A syringe comprising:

a syringe barrel having a needle mounted at a distal end; and

the tip cap (112) of any of claims 1 to 4.

6. The syringe of claim 5, wherein the syringe barrel comprises,

an outer barrel (106) and an inner barrel (404), the inner barrel (404) having dosage marks, the outer barrel (106) shaped to receive the inner barrel (404) and having an elliptical cross section to magnify the dosage marks located on the inner barrel (404).

7. The syringe of claim 6, wherein the outer barrel (106) includes a first recess (506a) and a second recess (506b) shaped to receive the tip cap (112).

8. The syringe of claim 7, wherein the outer cap (606) includes a first protrusion (504a) and a second protrusion (504b) formed on an inner surface of the shoulder (608) at the outer cap (606), wherein the first and second protrusions (504a,

504b) interfit with the first recess (506a) and the second recess (506b) of the outer barrel (106), respectively.

9. The syringe of any of claims 6 to 8, wherein the outer barrel (106) has a major diameter and a minor diameter, wherein the major diameter is longer than the minor diameter.

10. The syringe of claim 9, wherein the inner barrel (404) is positioned within the outer barrel (106) such that the dosage marks are oriented at one end of the major diameter for magnifying the dosage marks.

11. The syringe of any of claims 6 to 10, further comprising a handle (201), wherein the handle (201) comprises:

a first flange (102a) and a second flange (102b) forming a handgrip (102);

a first arc (204a) forming a bottom surface of the first flange (102a) contoured to correspond to a radius of an arc formed by a user's fingers; and

a second arc (204b) forming a bottom surface of the second flange (102b) contoured to correspond to a radius of an arc formed by the user's fingers and shaped flatter than the first arc.

12. The syringe of claim 11, wherein the handle (201) includes a top cover (203) and a handle body (204), the top cover (203) having a plurality of pegs adapted to mate with a set of corresponding depressions formed on the handle body (204).