CLAIMS

What is claimed is:

1. A flow control assembly, comprising:

a housing defining one or more flow ports that place an interior of the housing in fluid communication with an exterior of the housing;

a sliding sleeve defining one or more sleeve ports and movably positioned within the interior between a first position, where fluid communication between the interior and the exterior via the one or more flow ports is prevented, and a second positon, where fluid communication between the interior and the exterior is facilitated through the one or more sleeve ports and the one or more flow ports;

a piston movably arranged within a piston chamber defined between the housing and the sliding sleeve, the piston having a first end exposed to an interior pressure and a second end exposed to an exterior pressure via one or more chamber ports defined in the housing;

a slip device movably arranged within the piston chamber; and

a biasing device positioned within the piston chamber, wherein increasing the exterior pressure moves the piston and the slip device relative to the sliding sleeve in a first direction within the piston chamber to compress the biasing device, and

wherein overcoming the exterior pressure allows the biasing device to expand and move the piston and the slip device in a second direction within the piston chamber and the slip device engages the sliding sleeve to move the sliding sleeve toward the second position.

2. The flow control assembly of claim 1, further comprising:

a series of sleeve teeth defined on an outer surface of the sliding sleeve; and

a series of slip teeth defined on an inner surface of the slip device and engageable with the sleeve teeth,

wherein the slip teeth and the sleeve teeth are profiled to allow the slip device to ratchet over the sleeve teeth as the slip device moves in the first direction relative to the sliding sleeve, but prevent relative movement when the slip device moves in the second direction; and, optionally,

wherein the slip teeth and the sleeve teeth are further profiled to allow the sleeve teeth to ratchet over the slip teeth as the sliding sleeve moves in the second direction relative to the slip device, but prevent relative movement when the sliding sleeve moves in the first direction.

3. The flow control assembly of claim 1, further comprising a wedge member positioned within the piston chamber, wherein the wedge member provides a wedge ramp and the slip member provides a slip ramp that slidingly engages the wedge ramp to radially expand the wedge member.

4. The flow control assembly of claim 1, wherein the slip device is a C-ring.

5. The flow control assembly of claim 1, wherein the slip device comprises:

a plurality of arcuate slip segments; and

a retaining band positioned about an outer periphery of the plurality of slip segments.

6. A well system, comprising:

a downhole completion positioned within a wellbore penetrating a subterranean formation;

a flow control assembly included in the downhole completion and comprising:

a housing defining one or more flow ports that place an interior of the housing in fluid communication with a wellbore annulus;

a sliding sleeve defining one or more sleeve ports and movably positioned within the interior between a first position, where fluid communication between the interior and the wellbore annulus via the one or more flow ports is prevented, and a second positon, where fluid communication between the interior and the wellbore annulus is facilitated through the one or more sleeve ports and the one or more flow ports;

a piston movably arranged within a piston chamber defined between the housing and the sliding sleeve, the piston having a first end exposed to an interior pressure and a second end exposed to an annulus pressure via one or more chamber ports defined in the housing;

a slip device movably arranged within the piston chamber; and

a biasing device positioned within the piston chamber,

wherein increasing the annulus pressure moves the piston and the slip device relative to the sliding sleeve in a first direction within the piston chamber to compress the biasing device, and

wherein overcoming the annulus pressure allows the biasing device to expand and move the piston and the slip device in a second direction within the piston chamber and the slip device engages the sliding sleeve to move the sliding sleeve toward the second position.

7. The well system of claim 6, further comprising:

a series of sleeve teeth defined on an outer surface of the sliding sleeve; and

a series of slip teeth defined on an inner surface of the slip device and engageable with the sleeve teeth,

wherein the slip teeth and the sleeve teeth are profiled to allow the slip device to ratchet over the sleeve teeth as the slip device moves in the first direction relative to the sliding sleeve, but prevent relative movement when the slip device moves in the second direction.

8. The well system of claim 6, further comprising a wedge member positioned within the piston chamber, wherein the wedge member provides a wedge ramp and the slip member provides a slip ramp that slidingly engages the wedge ramp to radially expand the wedge member.

9. The well system of claim 6, further comprising a shifting tool conveyable into the wellbore and engageable with a profile defined on an inner radial surface of the sliding sleeve, the shifting tool being operable to move the sliding sleeve in the first direction and toward the first position.

10. A method, comprising:

increasing an annulus pressure within a wellbore annulus defined between a flow control assembly positioned within a wellbore and wall of the wellbore, the flow control assembly comprising:

a housing defining one or more flow ports that place an interior of the housing in fluid communication with the wellbore annulus;

a sliding sleeve defining one or more sleeve ports and movably positioned within the interior between a first position, where fluid communication between the interior and the wellbore annulus via the one or more flow ports is prevented, and a second positon, where fluid communication between the interior and the wellbore annulus is facilitated through the one or more sleeve ports and the one or more flow ports;

a piston arranged within a piston chamber defined between the housing and the sliding sleeve, the piston having a first end exposed to an interior pressure and a second end exposed to the annulus pressure via one or more chamber ports defined in the housing;

a slip device movably arranged within the piston chamber; and

a biasing device positioned within the piston chamber;

moving the piston and the slip device relative to the sliding sleeve in a first direction within the piston chamber as the annulus pressure increases;

compressing the biasing device as the piston and the slip device move in the first direction;

overcoming the annulus pressure and thereby allowing the biasing device to expand and move the piston and the slip device in a second direction within the piston chamber; and

engaging the sliding sleeve with the slip device and thereby moving the sliding sleeve toward the second position.

11. The method of claim 10, wherein moving the piston and the slip device relative to the sliding sleeve in the first direction within the piston chamber comprises:

generating a pressure differential across the piston as the annulus pressure increases; and

acting on the second end of the piston with the annulus pressure to thereby move the piston and the slip device in the first direction within the piston chamber.

12**.** The method of claim 10, wherein a series of sleeve teeth is defined on an outer surface of the sliding sleeve, and a series of slip teeth is defined on an inner surface of the slip device and engageable with the sleeve teeth, and wherein moving the piston and the slip device relative to the sliding sleeve in the first direction comprises ratcheting the slip teeth over the sleeve teeth as the slip device moves in the first direction relative to the sliding sleeve; and, optionally, wherein engaging the sliding sleeve with the slip device comprises engaging an angled profile of the slip teeth against an angled profile of the sleeve teeth such that the sliding sleeve moves in the second direction with the slip device.

13. The method of claim 10, wherein the flow control assembly further comprises a wedge member positioned within the piston chamber, and wherein moving the piston and the slip device relative to the sliding sleeve in the first direction within the piston chamber comprises:

engaging a slip ramp provided on the slip device on a wedge ramp provided on the wedge member; and

radially expanding the slip device as the slip ramp slidingly engages the wedge ramp**;** and optionally,

wherein engaging the sliding sleeve with the slip device comprises:

slidingly disengaging the slip ramp from the wedge ramp as the slip device moves in the second direction; and

radially contracting the slip device as the slip ramp disengages from the wedge ramp.

14. The method of claim 10, further comprising:

conveying a shifting tool into the wellbore and to the flow control assembly;

engaging the shifting tool on a profile defined on an inner radial surface of the sliding sleeve; and

moving the sliding sleeve in the first direction and toward the first position with the shifting tool; and, optionally,

wherein a series of sleeve teeth is defined on an outer surface of the sliding sleeve, and a series of slip teeth is defined on an inner surface of the slip device and engageable with the sleeve teeth, and wherein moving the sliding sleeve in the first direction comprises engaging an angled profile of the slip teeth against an angled profile of the sleeve teeth such that the slip device moves in the first direction with the sliding sleeve.

15. The method of claim 10, wherein overcoming the annulus pressure comprises reducing the annulus pressure or increasing the interior pressure.