

CLAIMS

What is claimed is:

1. An apparatus for servicing a wellbore comprising:
 - a housing defining an axial flowbore extending therethrough and comprising:
 - one or more high-pressure ports; and
 - one or more high-volume ports; and
 - a mandrel slidably positioned within the housing, the mandrel defining a mandrel axial flowbore and being alternately movable from a first position relative to the housing to a second position relative to the housing and to a third position relative to the housing,
 - wherein, when the mandrel is in the second position, a route of fluid communication via the one or more high-pressure ports is provided and a route of fluid communication via the high-volume ports is obstructed,
 - wherein, when the mandrel is in the third position, a route of fluid communication via the high-volume ports is provided, and
 - wherein the apparatus is transitionable from the second position to the third position without communicating an obturating member to the apparatus, without removing an obturating member from the apparatus, or combinations thereof.
2. The apparatus of claim 1, further comprising:
 - wherein the housing further comprises a J-slot and the mandrel further comprises at least one lug, wherein the at least one lug is slidably positioned within the J-slot.
3. The apparatus of claim 2, wherein the J-slot comprises:
 - an upper profile comprising a plurality of upper notches; and
 - a lower profile comprising a plurality of lower short notches and a plurality of lower long notches, wherein lower short notches and the lower long notches are alternately displaced within the lower profile.
4. The apparatus of claim 3, wherein the at least one lug of the mandrel occupies one of the plurality of upper notches in the J-slot when the mandrel is in the first position.
5. The apparatus of claim 3, wherein the at least one lug of the mandrel occupies one of the plurality of lower short notches in the J-slot when the mandrel is in the second position.
6. The apparatus of claim 3, wherein the at least one lug of the mandrel occupies one of the plurality of lower long notches in the J-slot when the mandrel is in the third position.

7. The apparatus of one of claims 1-6, further comprising a biasing member configured to bias the mandrel in the direction of the first position.
8. The apparatus of claim 1, wherein the mandrel further comprises a check valve within the mandrel axial flowbore, wherein the check valve is configured to restrict downward fluid communication via the mandrel flowbore and to permit upward fluid communication via the mandrel flowbore.
9. The apparatus of one of claims 1-7, wherein the high-pressure ports are configured for a relatively high-pressure communication of fluid relative to the high-volume ports.
10. The apparatus of one of claims 1-8, wherein the high-volume ports are configured for a relatively high-volume communication of fluid relative to the high-pressure ports.
11. A system for servicing a wellbore comprising:
 - a tubular disposed within the wellbore;
 - a wellbore servicing apparatus coupled to a downhole end of the tubular, the wellbore servicing apparatus being transitionable between a jetting configuration and a fracturing configuration, wherein the wellbore servicing apparatus is configured to cycle between the jetting configuration and the fracturing configuration without communicating an obturating member to the wellbore servicing apparatus, without removing an obturating member from the wellbore servicing apparatus, or combinations thereof.
12. The system of claim 11, wherein the wellbore servicing apparatus comprises:
 - a housing defining an axial flowbore extending therethrough and comprising:
 - one or more high-pressure ports; and
 - one or more high-volume ports; and
 - a mandrel slidably positioned within the housing, the mandrel defining a mandrel axial flowbore and being alternately movable from a first position relative to the housing to a second position relative to the housing and to a third position relative to the housing,
 - wherein, when the mandrel is in the second position, the apparatus is configured in the jetting configuration, and
 - wherein, when the mandrel is in the third position, the apparatus is configured in the fracturing configuration.

13. A method for servicing a wellbore comprising:
- positioning a wellbore servicing apparatus within the wellbore proximate to a first subterranean formation zone;
 - configuring the wellbore servicing apparatus to deliver a jetting fluid without communicating an obturating member to the wellbore servicing apparatus, without removing an obturating member from the wellbore servicing apparatus, or combinations thereof;
 - communicating the jetting fluid via the wellbore servicing apparatus;
 - configuring the wellbore servicing apparatus to deliver a fluid at a rate and pressure sufficient to form and/or extend a fracture within the first subterranean formation zone without communicating an obturating member to the wellbore servicing apparatus, without removing an obturating member from the wellbore servicing apparatus, or combinations thereof;
 - forming a fracture within the first subterranean formation zone by communicating a fluid via the wellbore servicing apparatus.
14. The method of claim 13, wherein communicating the jetting fluid via the wellbore servicing apparatus forms a perforation within a casing, a cement sheath, a wellbore wall, or combinations thereof.
15. The method of one of claims 13-14, wherein configuring the wellbore servicing apparatus to deliver the jetting fluid comprises making a first application of fluid pressure to an axial flowbore of the wellbore servicing apparatus.
16. The method of claim 15, wherein the first application of the pressure transitions a mandrel within the wellbore servicing apparatus from a first axial position relative to a housing of the wellbore servicing tool to a second axial position relative to the housing.
17. The method of claim 16, wherein configuring the wellbore servicing apparatus to deliver a fluid at a rate and pressure sufficient to form and/or extend a fracture comprises:
- releasing the first application of pressure;
 - making a second application of fluid pressure to the axial flowbore.
18. The method of claim 17, wherein releasing the first application of pressure transitions the mandrel from the second axial position to the first axial position.
19. The method of claim 18, wherein the second application of pressure transitions the mandrel from the first axial position to a third axial position relative to the housing.

20. The method of one of claims 13-19, further comprising:

after forming a fracture within the first subterranean formation zone, positioning the wellbore servicing apparatus within the wellbore proximate to a second subterranean formation zone;

configuring the wellbore servicing apparatus to deliver a jetting fluid without communicating an obturating member to the wellbore servicing apparatus, without removing an obturating member from the wellbore servicing apparatus, or combinations thereof;

communicating the jetting fluid via the wellbore servicing apparatus;

configuring the wellbore servicing apparatus to deliver a fluid at a rate and pressure to form and/or extend a fracture within the second subterranean formation zone without communicating an obturating member to the wellbore servicing apparatus, without removing an obturating member from the wellbore servicing apparatus, or combinations thereof;

forming a fracture within the second subterranean formation zone by communicating a fluid via the wellbore servicing apparatus.

21. The method of one of claims 13-20, wherein forming the fracture within the first subterranean formation zone by communicating a fluid via the wellbore servicing apparatus comprises communicating a proppant-laden fluid.

22. The method of claim 21, wherein forming the fracture within the first subterranean formation zone by communicating a fluid via the wellbore servicing apparatus comprises forming a composite fracturing fluid within the wellbore, the fracture, or combinations thereof.

CLAIMS

What is claimed is:

1. An apparatus for servicing a wellbore comprising:
 - a housing defining an axial flowbore extending therethrough and comprising:
 - one or more high-pressure ports; and
 - one of more high- volume ports, wherein the high-pressure ports are configured for a relatively high-pressure communication of fluid relative to the high-volume ports and wherein the high-volume ports are configured for a relatively high-volume communication of fluid relative to the high-pressure ports; and
 - a mandrel slidably positioned within the housing, the mandrel defining a mandrel axial flowbore, the mandrel being movable;
 - from a first longitudinal position relative to the housing to a second longitudinal position relative to the housing,
 - from the second longitudinal position to the first longitudinal position, and
 - after returning to the first longitudinal position from the second longitudinal position, from the first longitudinal position to a third longitudinal position relative to the housing, wherein the mandrel further comprises a check valve within the mandrel axial flowbore, wherein the check valve is configured to restrict downward fluid communication via the mandrel flowbore and to permit upward fluid communication via the mandrel flowbore, and wherein the check valve comprises an obturating member trapped between an upper cage and a lower seat within the mandrel axial flowbore,
 - wherein, when the mandrel is in the first longitudinal position, a route of fluid communication via the high-volume ports is obstructed,

wherein, when the mandrel is in the second longitudinal position, a route of fluid communication via the one or more high-pressure ports is provided and the route of fluid communication via the high-volume ports is obstructed, and

wherein, when the mandrel is in the third position, the route of fluid communication via the high-volume ports is provided

wherein the apparatus is transitionable from the second position to the third position without communicating an obturating member to the apparatus, without removing an obturating member from the apparatus, or combinations thereof.

2. The apparatus of claim 1, wherein the housing further comprises a J- slot and the mandrel further comprises at least one lug, wherein the at least one lug is slidably positioned within the J-slot.

3. The apparatus of claim 2, wherein the J-slot comprises:

an upper profile comprising a plurality of upper notches; and

a lower profile comprising a plurality of lower short notches and a plurality of lower long notches, wherein lower short notches and the lower long notches are alternatingly displaced within the lower profile.

4. The apparatus of claim 3, wherein the at least one lug of the mandrel occupies one of the plurality of upper notches in the J-slot when the mandrel is in the first longitudinal position.

5. The apparatus of claim 3, wherein the at least one lug of the mandrel occupies one of the plurality of lower short notches in the J-slot when the mandrel is in the second longitudinal position.

6. The apparatus of claim 3, wherein the at least one lug of the mandrel occupies one of the plurality of lower long notches in the J-slot when the mandrel is in the third longitudinal position.

7. The apparatus of claim 1, further comprising a biasing member configured to bias the mandrel in the direction of the first longitudinal position.

8. A system for servicing a wellbore comprising:

a tubular disposed within the wellbore;

a wellbore servicing apparatus coupled to a downhole end of the tubular, the wellbore servicing apparatus being transitionable between a jetting configuration and a fracturing configuration, wherein the wellbore servicing apparatus comprises:

a housing defining an axial flowbore extending therethrough and comprising:

one or more high-pressure ports; and

one or more high-volume ports, wherein the high-pressure ports are configured for a relatively high-pressure communication of fluid relative to the high-volume ports and wherein the high-volume ports are configured for a relatively high-volume communication of fluid relative to the high-pressure ports; and

a mandrel slideably positioned within the housing, the mandrel defining a mandrel axial flowbore, the mandrel being moveable;

from a first longitudinal position relative to the housing to a second longitudinal position relative to the housing,

from the second longitudinal position to the first longitudinal position, and

after returning to the first longitudinal position from the second longitudinal position, from the first longitudinal position to a third longitudinal position relative to the housing, wherein the mandrel further comprises a check valve within the mandrel axial flowbore, wherein the check valve is configured to restrict downward fluid communication via the mandrel flowbore and to permit upward fluid communication via the mandrel flowbore, and

wherein the check valve comprises an obturating member trapped between an upper cage and a lower seat within the mandrel axial flowbore,

wherein, when the mandrel is in the first longitudinal position, a route of fluid communication via the high-volume ports is obstructed,

wherein, when the mandrel is in the second longitudinal position, a route of fluid communication via the one or more high-pressure ports is provided and the route of fluid communication via the high-volume ports is obstructed, and

wherein, when the mandrel is in the third longitudinal position, the route of fluid communication via the high-volume ports provided.

9. The system of claim 8, wherein the housing further comprises a J-slot and the mandrel further comprises at least one lug, wherein the at least one lug is slidably positioned within the J-slot, wherein the J-slot comprises:

an upper profile comprising a plurality of upper notches; and

a lower profile comprising a plurality of lower short notches and a plurality of lower long notches, wherein lower short notches and the lower long notches are alternatingly displaced within the lower profile.

10. The system of claim 8, further comprising a biasing member configured to bias the mandrel in the direction of the first longitudinal position.

11. A method for servicing a wellbore comprising:

positioning a wellbore servicing apparatus within the wellbore proximate to a first subterranean formation zone;

wherein the wellbore servicing apparatus comprises:

a housing defining an axial flowbore extending therethrough and comprising:

one or more high-pressure ports; and

one or more high-volume ports, wherein the high pressure ports are configured for a relatively high-pressure communication of fluid relative to the high-volume ports and wherein the high-volume ports are configured for a relatively high-volume communication of fluid relative to the high-pressure ports; and

a mandrel slidably positioned within the housing, the mandrel defining a mandrel axial flowbore, the mandrel being movable;

from a first longitudinal position relative to the housing to a second longitudinal position relative to the housing,

from the second longitudinal position to the first longitudinal position, and

after returning to the first longitudinal position from the second longitudinal position, from the first longitudinal position to a third longitudinal position relative to the housing, wherein the mandrel further comprises a check valve within the mandrel axial flowbore, wherein the check valve is configured to restrict downward fluid communication via the mandrel flowbore and to permit upward fluid communication via the mandrel flowbore, and wherein the check valve comprises an obturating member trapped between an upper cage and a lower seat within the mandrel axial flowbore,

wherein, when the mandrel is in the first longitudinal position, a route of fluid communication via the high-volume ports is obstructed,

wherein, when the mandrel is in the second longitudinal position, a route of fluid communication via the one or more high-pressure ports is provided and the route of fluid communication via the high-volume ports is obstructed, and

wherein, when the mandrel is in the third longitudinal position, the route of fluid communication via the high-volume ports provided;

configuring the wellbore servicing apparatus to deliver a jetting fluid while the mandrel is in the second longitudinal position;

communicating the jetting fluid via the wellbore servicing apparatus;

forming a fracture within the first subterranean formation zone by communicating a fluid via the wellbore servicing apparatus while the mandrel is in the third longitudinal position.

12. The method of claim 11, wherein communicating the jetting fluid via the wellbore servicing apparatus forms a perforation within a casing, a cement sheath, a wellbore wall, or combinations thereof.

13. The method of claim 11, wherein configuring the wellbore servicing apparatus to deliver the jetting fluid comprises making a first application of fluid pressure to an axial flowbore of the wellbore servicing apparatus.

14. The method of claim 13, wherein the first application of the pressure transitions a mandrel within the wellbore servicing apparatus from the first longitudinal position to the second longitudinal position.

15. The method of claim 14, wherein configuring the wellbore servicing apparatus to deliver a fluid at a rate and pressure sufficient to form and/or extend a fracture comprises:

releasing the first application of pressure;

making a second application of fluid pressure to the axial flowbore.

16. The method of claim 15, wherein releasing the first application of pressure transitions the mandrel from the second longitudinal position to the first longitudinal position.

17. The method of claim 16, wherein the second application of pressure transitions the mandrel from the first longitudinal position to a third longitudinal position relative to the housing.

18. The method of claim 11, further comprising:

after forming a fracture within the first subterranean formation zone, positioning the wellbore servicing apparatus within the wellbore proximate to a second subterranean formation zone;

configuring the wellbore servicing apparatus to deliver a jetting fluid without communicating an obturating member to the wellbore servicing apparatus, without removing an obturating member from the wellbore servicing apparatus, or combinations thereof;

communicating the jetting fluid via the wellbore servicing apparatus;

forming a fracture within the second subterranean formation zone by communicating a fluid via the wellbore servicing apparatus.

19. The method of claim 11, wherein forming the fracture within the first subterranean formation zone by communicating a fluid via the wellbore servicing apparatus comprises communicating a proppant-laden fluid.

20. The method of claim 19, wherein forming the fracture within the first subterranean formation zone by communicating a fluid via the wellbore servicing apparatus comprises forming a composite fracturing fluid within the wellbore, the fracture, or combinations thereof.

21. The method of claim 11, wherein the housing further comprises a J-slot and the mandrel further comprises at least one lug, wherein the at least one lug is slidably positioned within the J-slot, wherein the J-slot comprises:

an upper profile comprising a plurality of upper notches; and

a lower profile comprising a plurality of lower short notches and a plurality of lower long notches, wherein lower short notches and the lower long notches are alternatingly displaced within the lower profile.

22. The method of claim 11, further comprising a biasing member configured to bias the mandrel in the direction of the first longitudinal position.