Claims

1. A syringe pump for administering an agent to a patient, the syringe pump comprising:

a housing;

a lead screw;

a linear cam;

a half-nut assembly having first and second half-nut arms each having a first end and a second end, wherein the first ends of the first and second half-nut arms are configured to engage with the lead screw, the first and second half-nut arms are pivotally coupled together, the second ends of the first and second half-nut arms are configured to engage with the linear cam such that actuation of the linear cam toward the half-nut assembly causes the second ends of the first and second half-nut arms to pivotally approach each other, and the first ends of the first and second half-nut arms each includes threads configured to engage the lead screw when the second ends of the first and second half-nut arms approach each other caused by actuation of the linear cam;

a plunger head assembly coupled to said half-nut assembly and operative to drive a plunger of a syringe into a barrel of said syringe;

a first plunger flange clamp jaw; and

a second plunger flange clamp jaw,

wherein the first and second plunger flange clamp jaws are configured to be actuated from a first position to a second position.

2. The syringe pump of claim 1, wherein the plunger head assembly further comprises a pressure sensor for monitoring a pressure of the agent being dispensed from the syringe.

3. The syringe pump of claim 2, wherein a plunger flange of the syringe is held against the pressure sensor.

4. The syringe pump of claim 1, wherein the syringe pump further comprises a barrel flange clip, said barrel flange clip configured to retain a barrel flange of the syringe.

5. The syringe pump of claim 4, wherein the barrel flange clip comprises an optical sensor and a light source configured to detect a presence of the barrel flange, said light source obscured in the presence of said barrel flange.

6. The syringe pump according to claim 1, wherein the plunger head assembly includes a user actuator operatively coupled to the linear cam to actuate the linear cam toward and away from the half-nut assembly.

7. The syringe pump according to claim 1, further comprising a spacer coupled to one of the first and second half-nut arms.

8. The syringe pump according to claim 1, further comprising a pivot pin configured to provide the pivotal coupling between the first and second half-nut arms.

9. The syringe pump according to claim 1, wherein the linear cam includes two ramping surfaces configured to engaged with second ends of the first and second half-nut arms.

10. The syringe pump according to claim 1, further comprising a bias member configured to bias the second ends of the first and second half-nut arms away from each other.

11. A syringe pump for administering an agent to a patient, the syringe pump comprising:

a housing;

a lead screw;

a linear cam;

a half-nut assembly having first and second half-nuts arms each having a first end and a second end, wherein the first ends of the first and second half-nut arms are configured to engage with the lead screw, the first and second half-nut arms are pivotally coupled together, the second ends of the first and second half-nut arms are configured to engage with the linear cam such that actuation of the linear cam toward the half-nut assembly causes the second ends of the first and second half-nut arms to pivotally approach each other, and the first ends of the first and second

half-nut arms each includes threads configured to engage the lead screw when the second ends of the first and second half-nut arms approach each other caused by actuation of the linear cam;

a plunger head assembly coupled to said half-nut assembly and operative to drive a plunger of a syringe into a barrel of said syringe.

12. The syringe pump of claim 11, wherein the plunger head assembly further comprises a pressure sensor for monitoring a pressure of the agent being dispensed from the syringe.

13. The syringe pump of claim 12, wherein a plunger flange of the syringe is held against the pressure sensor by at least one jaw.

14. The syringe pump according to claim 13, wherein the bias member is a spring.

15. The syringe pump according to claim 11, wherein the plunger head assembly includes a user actuator operatively coupled to the linear cam to actuate the linear cam toward and away from the half-nut assembly.

16. The syringe pump according to claim 11, further comprising a spacer coupled to one of the first and second half-nut arms.

17. The syringe pump according to claim 11, further comprising a pivot pin configured to provide the pivotal coupling between the first and second half-nut arms.

18. The syringe pump according to claim 11, wherein the linear cam includes two ramping surfaces configured to engaged with second ends of the first and second half-nut arms.

19. The syringe pump according to claim 11, further comprising a bias member configured to bias the second ends of the first and second half-nut arms away from each other.

20. The syringe pump according to claim 19, wherein the bias member is a spring.