What is claimed is:

1. A peristaltic pump, comprising:

a cam shaft;

inlet and outlet valve cams fixed to the cam shaft;

inlet and outlet valve cam followers configured to engage the inlet and outlet valve cams;

a plunger cam fixed to the cam shaft;

a cam-follower shaft;

a plunger-cam follower rotatably mounted to the cam-follower shaft, the plunger-cam follower having a first structure extending away from the cam-follower shaft in a first direction and a second structure extending away from the cam-follower shaft in a second direction, wherein the plunger-cam follower includes a cam contacting element rotatably mounted to an end of the second structure of the plunger-cam follower, the cam contacting element is configured to contact the plunger cam;

a platen configured to receive an infusion line;

a plunger removably attached to the first structure of the plunger-cam follower, wherein expansion of the plunger cam along a radial angle intersecting the plunger-cam follower as the cam shaft rotates pushes the plunger-cam follower to disengage the plunger from the infusion line;

a bias member configured to bias the plunger toward the platen;

a sensor configured to determine a position of the plunger and generate a signal indicative of the position;

a processor configured to receive the signal from the sensor, wherein the processor is configured to estimate fluid flow within the infusion line based on the position of the plunger indicated by the signal.

2. The peristaltic pump according to claim 1, further comprising an angle sensor operatively coupled to the cam shaft configured to determine an angle of rotation of the cam shaft.

o

3. The peristaltic pump according to claim 1, wherein the processor compares a first plateau measured by the sensor for determining the position of the plunger to a second plateau measured by the sensor for determining the position of the plunger to estimate the fluid flow.

4. The peristaltic pump according to claim 1, further comprising an electric motor operatively coupled to the cam shaft to apply a rotational torque to the cam shaft.

5. The peristaltic pump according to claim 1, wherein the cam contacting element is a cam roller.

6. The peristaltic pump according to claim 1, wherein a sector is defined by the first structure as a radius and the second structure as another radius, wherein the cam shaft is disposed between the first structure and the second structure within the sector.

7. The peristaltic pump according to claim 1, wherein a sector is defined by the first structure as a radius and the second structure as another radius, wherein the cam shaft is disposed a predetermined distance away from the cam-follower shaft in a direction intersecting the sector.

8. The peristaltic pump according to claim 1, further comprising a stop member configured to stop a stroke of the plunger.

9. The peristaltic pump according to claim 8, wherein the stop member is configured to stop a tip of the plunger a predetermined distance from a bottom of the platen.

10. The peristaltic pump according to claim 1, wherein the bias member is a spring.

11. The peristaltic pump according to claim 1, wherein the cam-follower shaft includes first and second eccentric end sections.

o