

THAT WHICH IS CLAIMED:

1. A fish handling unit, comprising:
an inspection system configured to inspect a plurality of live fish;
5 a conveyor assembly configured to transport the live fish to the inspection system;
at least one robotic cell having a controller configured to control operation thereof, the
controller being in communication with the inspection system; and
an end effector operably engaged with the robotic cell, the end effector being configured
to interact with the live fish moving along the conveyor assembly, based on
10 information determined by the inspection system and received by the controller.
2. A fish handling unit according to Claim 1, wherein the robotic cell is configured
to facilitate translational motion and rotational motion to the end effector.
- 15 3. A fish handling unit according to Claim 2, wherein the end effector comprises a
movable section operably engaged with the robotic cell for translational motion, and the end
effector having a wrist section rotatable with respect to the movable section and operably
engaged with the robotic cell for rotational motion.
- 20 4. A fish handling unit according to Claim 1, wherein the end effector comprises a
gripper assembly and an injection assembly.
5. A fish handling unit according to Claim 1, wherein the end effector comprises a
gripper assembly having a plurality of engagement members cooperating to lift the live fish from
25 the conveyor assembly.
6. A fish handling unit according to Claim 5, wherein the engagement members are
a pair of opposing gripper blades.

7. A fish handling unit according to Claim 5, wherein the engagement members are individually and independently controlled by respective gripper actuators.

8. A fish handling unit according to Claim 1, wherein the end effector comprises an injection assembly and a pusher individually controllable to apply compression to the live fish during an injection event.

9. A method of processing live fish, the method comprising:
sedating a plurality of live fish;
10 conveying the live fish to an inspection system;
inspecting the live fish with the inspection system to determine information about each live fish;
communicating the information about the inspected fish to a robotic cell having an end effector operably engaged therewith and configured to interact with the live fish
15 while conveyed; and
processing the live fish with the end effector.

10. A method according to Claim 9, wherein the live fish are processed by the end effector regardless of orientation of the live fish as conveyed.

11. A method according to Claim 9, wherein processing the live fish with the end effector comprises lifting the live fish and transporting the live fish to a predetermined location.

12. A method according to Claim 9, wherein processing the live fish with the end effector comprises injecting the live fish with at least one treatment substance.

13. A method according to Claim 9, wherein processing the live fish with the end effector comprises withdrawing a sample from the live fish.

14. A method according to Claim 9, wherein processing the live fish with the end effector comprises orienting the live fish and injecting a treatment substance.

5 15. An inspection system for inspecting live fish, the inspection system comprising:
a conveyor assembly being segmented to provide a gap therein;
a first image capture device positioned on a side of the conveyor assembly, the first
image capture device being configured to optically scan a first side of the live fish
while transported along the conveyor assembly;
10 a second image capture device positioned on the opposite side of the conveyor assembly
with respect to the first image capture device, the second image capture device
being positioned proximate to the gap, and the second image capture device being
configured to capture through the gap a plurality of images of a second side of the
live fish, opposite the first side, while the live fish are transported along the
conveyor assembly;
15 a processor configured to construct a visual image of the second side of the live fish using
the images captured by the second image capture device.

16. A method of inspecting live fish implementing the inspection system of Claim 15.

20 17. A method of processing live fish implementing the fish handling unit of any of
Claims 1-8.

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