

## CLAIMS

What is claimed is:

1. A system for processing debris, the system comprising:
  - a plurality of bins capable of receiving debris, each bin comprising:
    - a base assembly having a base that is configured for selective movement about and between an open position and a closed position, and an actuator operatively coupled to the base and operable to effect selective movement of the base about and between the open position and the closed position; and
    - a plurality of walls coupled to and extending upwardly from the base, wherein the plurality of walls and the base cooperate to define an interior space;
    - a downstream conveyor assembly configured to deliver debris toward the plurality of bins, wherein the downstream conveyor assembly has a top surface that is positioned in communication with at least one wall of each bin of the plurality of bins to facilitate delivery of debris into the interior space of each bin,
    - wherein as the base of each bin moves from the closed position toward the open position, the base is configured to dispense debris from the interior space of the bin through the base.
2. The system of claim 1, further comprising a support assembly having a rail extending horizontally relative to the downstream conveyor assembly, and a plurality of support posts coupled to and extending downwardly from the rail, wherein the plurality of bins are securely coupled to the rail.
3. The system of claim 1, further comprising a system controller having at least one processor and at least one memory in communication with the at least one processor, wherein the system controller is communicatively coupled to the actuator of each bin of the plurality of bins.
4. The system of claim 3, wherein each bin of the plurality of bins comprises a load cell configured to produce an output corresponding to a weight of debris within the respective bin.
5. The system of claim 4, wherein the system controller is configured to receive and store the output from the load cell of each respective bin of the plurality of bins.

6. The system of claim 4, wherein the system controller comprises at least one programmable logic controller communicatively coupled to the actuator of each bin of the plurality of bins.
7. The system of any one of claims 1-6, further comprising a plurality of sensors, wherein each sensor of the plurality of sensors is positioned proximate a respective bin of the plurality of bins, wherein each sensor is configured to produce an output indicative of a desired amount of debris within the respective bin.
8. The system of claim 7, further comprising an indicator in communication with the sensor and configured to receive the output from the sensor, wherein, upon receipt of the output, the indicator produces an alert corresponding to the output.
9. The system of claim 8, wherein the alert comprises an audible alert, a visual alert, a signal transmitted to a remote device, or a combination thereof.
10. The system of claim 9, further comprising a remote device that receives the alert, wherein the remote device is a computer, a mobile phone, a remote control, a tablet, or a handheld device.
11. The system of claim 10, wherein, following activation of the alert, the remote device is configured to produce an activation signal, wherein upon receipt of the activation signal by the actuator, the actuator effects movement of the base from the closed position toward the open position to permit unloading of the debris from the interior space of the respective bin of the plurality of bins.
12. The system of claim 11, further comprising at least one container that is positioned below a bin of the plurality of bins and configured to receive debris that is unloaded from the bin.
13. The system of claim 1, further comprising:
  - at least one cart having a base, a plurality of wheels extending downwardly from the base relative to a vertical axis, and a plurality of walls extending upwardly from the base, wherein the walls and the base of each cart cooperate to define a debris-receiving space;
  - a lifting apparatus having at least one arm assembly configured to engage a portion of the base of a respective cart of the at least one cart when the cart is in a resting position, wherein, following engagement between the at least one arm assembly and the cart, the at least one arm assembly of the lifting apparatus is selectively rotatable relative to a rotational

axis to move the cart about and between the resting position and an unloading position, and wherein the cart reaches the unloading position following rotational movement of the at least one arm assembly of the lifting apparatus along an arcuate path having an arc length ranging from about 130 degrees to about 170 degrees,

wherein the downstream conveyor assembly is configured to receive debris after the debris has been unloaded from the at least one cart.

14. The system of claim 13, further comprising an upstream conveyor assembly configured to receive debris from the at least one cart when the at least one cart is in the unloading position, wherein the downstream conveyor is configured to receive the debris from the upstream conveyor.

15. The system of claim 1, wherein the downstream conveyor assembly is configured to deliver debris toward the plurality of bins at a selectively adjustable rate.

16. A method of processing debris, comprising:

positioning a plurality of bins along a downstream conveyor assembly having a top surface, each bin comprising a base assembly having a base that is configured for selective movement about and between an open position and a closed position, and an actuator operatively coupled to the base and operable to effect selective movement of the base about and between the open position and the closed position, and a plurality of walls coupled to and extending upwardly from the base, wherein the plurality of walls and the base cooperate to define an interior space, and wherein the top surface of the downstream conveyor is positioned in communication with at least one wall of each bin of the plurality of bins to facilitate delivery of debris into the interior space of each bin;

transporting debris along the top surface of the downstream conveyor assembly relative to a conveyor axis;

selectively moving the debris into at least one bin of the plurality of bins;

activating the actuator to effect movement of the base of the at least one bin from the closed position toward the open position; and

unloading debris from the at least one bin into at least one container positioned below the at least one bin and configured to receive the debris that is unloaded from the at least one bin.

17. The method of claim 16, further comprising measuring the weight of the at least one bin prior to unloading the debris.
18. The method of claim 17, further comprising transmitting the weight of the at least one bin to a system controller.
19. The method of claim 16, further comprising returning the base to the closed position following the step of unloading the debris from the at least one bin.
20. The method of claim 16, further comprising selectively adjusting a speed of the downstream conveyor assembly prior to unloading the debris from the at least one bin.
21. The method of claim 16, further comprising selectively sorting the debris on the top surface of the downstream conveyor assembly.
22. The method of claim 16, further comprising:
- providing at least one cart to a jobsite, each cart having a base, a plurality of wheels extending downwardly from the base relative to a vertical axis, and a plurality of walls extending upwardly from the base, wherein the walls and the base of each cart cooperate to define a debris-receiving space;
  - transporting the at least one cart from the jobsite to a debris processing facility, the debris processing facility comprising a lifting apparatus and an upstream conveyor assembly;
  - effecting engagement between at least one arm assembly of a lifting apparatus and a first cart of the at least one cart; and
  - following engagement between the at least one arm assembly and the first cart, selectively rotating the at least one arm assembly of the lifting apparatus relative to a rotational axis to move the first cart from a resting position to an unloading position, wherein the first cart reaches the unloading position following rotational movement of the at least one arm assembly of the lifting apparatus along an arcuate path having an arc length ranging from about 130 degrees to about 170 degrees,
  - wherein the downstream conveyor assembly receives debris after the debris has been unloaded from the at least one cart.
23. The method of claim 22, wherein, with the first cart in the unloading position, the upstream conveyor assembly receives debris exiting the first cart, and wherein the downstream conveyor assembly receives the debris from the upstream conveyor assembly.

24. The method of claim 22, wherein each cart is assigned a unique identifier and provided with indicia of the unique identifier, wherein the method further comprises:

- detecting the indicia of the unique identifier of the first cart prior to moving the first cart from the resting position to the unloading position;

- measuring a weight of the first cart;

- transmitting information regarding the weight of the first cart to a system controller;

- using the system controller to associate the measured weight of the first cart with the unique identifier assigned to the first cart;

- producing an image of the debris provided from the first cart to the upstream conveyor assembly;

- transmitting the image of the debris to the system controller; and

- using the system controller to associate the image of the debris with the unique identifier assigned to the first cart.

25. The method of claim of 24, wherein the at least one cart comprises a plurality of carts, and wherein the method further comprises unloading debris from each cart of the plurality of carts, transporting the debris from each cart of the plurality of carts toward the plurality of bins, selectively distributing the debris from each cart of the plurality of carts into the plurality of bins, measuring the weight of each bin of the plurality of bins, and determining a total weight of debris within the plurality of bins.

26. A debris bin, comprising:

- a base assembly comprising:

- a base that is configured for selective movement about and between an open position and a closed position, and

- an actuator operatively coupled to the base and operable to effect selective movement of the base about and between the open position and the closed position;
- and

- a plurality of walls coupled to and extending upwardly from the base, wherein the plurality of walls and the base cooperate to define an interior space,

wherein as the base of each bin moves from the closed position toward the open position, the base is configured to dispense debris from the interior space of the bin through the base.