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(54) **TOPPING SPREADER FOR DISPENSING SHAKE-ON AGGREGATE COMPOSITION ONTO A CONCRETE SURFACE**

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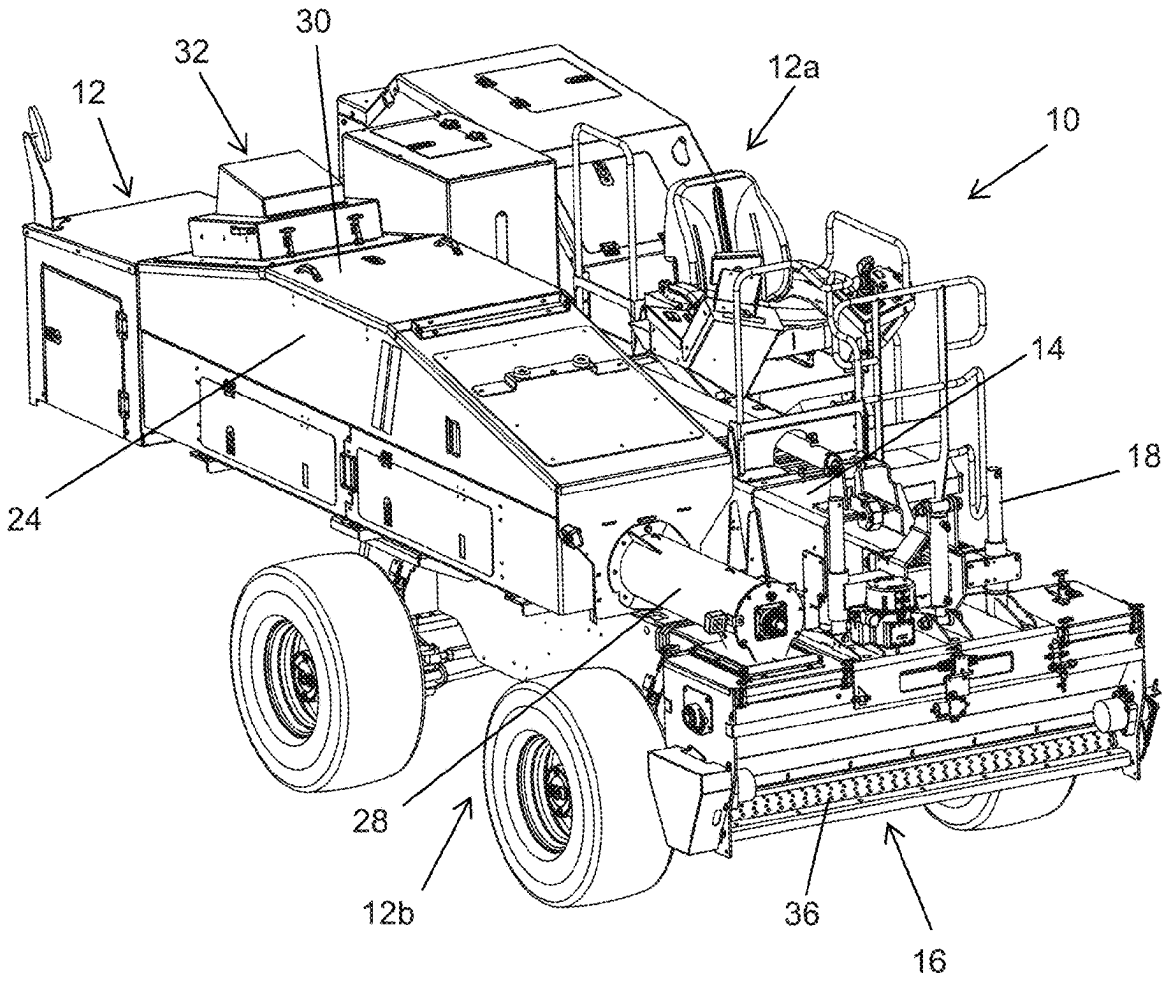
CPC ***E01C 19/201*** (2013.01); ***E01C 19/288*** (2013.01); *E01C 2019/2055* (2013.01)

(57) **ABSTRACT**

A topping spreader machine for dispensing topping material onto a concrete surface includes a base unit and a topping spreading head assembly movably mounted at the base unit. The topping spreading head assembly includes (i) a bin that holds topping material, (ii) a distributing device that distributes the topping material along the length of the bin, (iii) a dispenser disposed along a lower portion of the bin for dispensing the topping material, and (iv) a sensor for sensing elevation of the topping spreading head assembly above the concrete surface. The topping spreading head assembly is positionable at a starting location and is movable over the concrete surface in a topping direction from the starting location to dispense the topping material onto the concrete surface, and a control system controls elevation actuators responsive to the sensor to maintain the height of the topping spreading head assembly above the concrete surface.



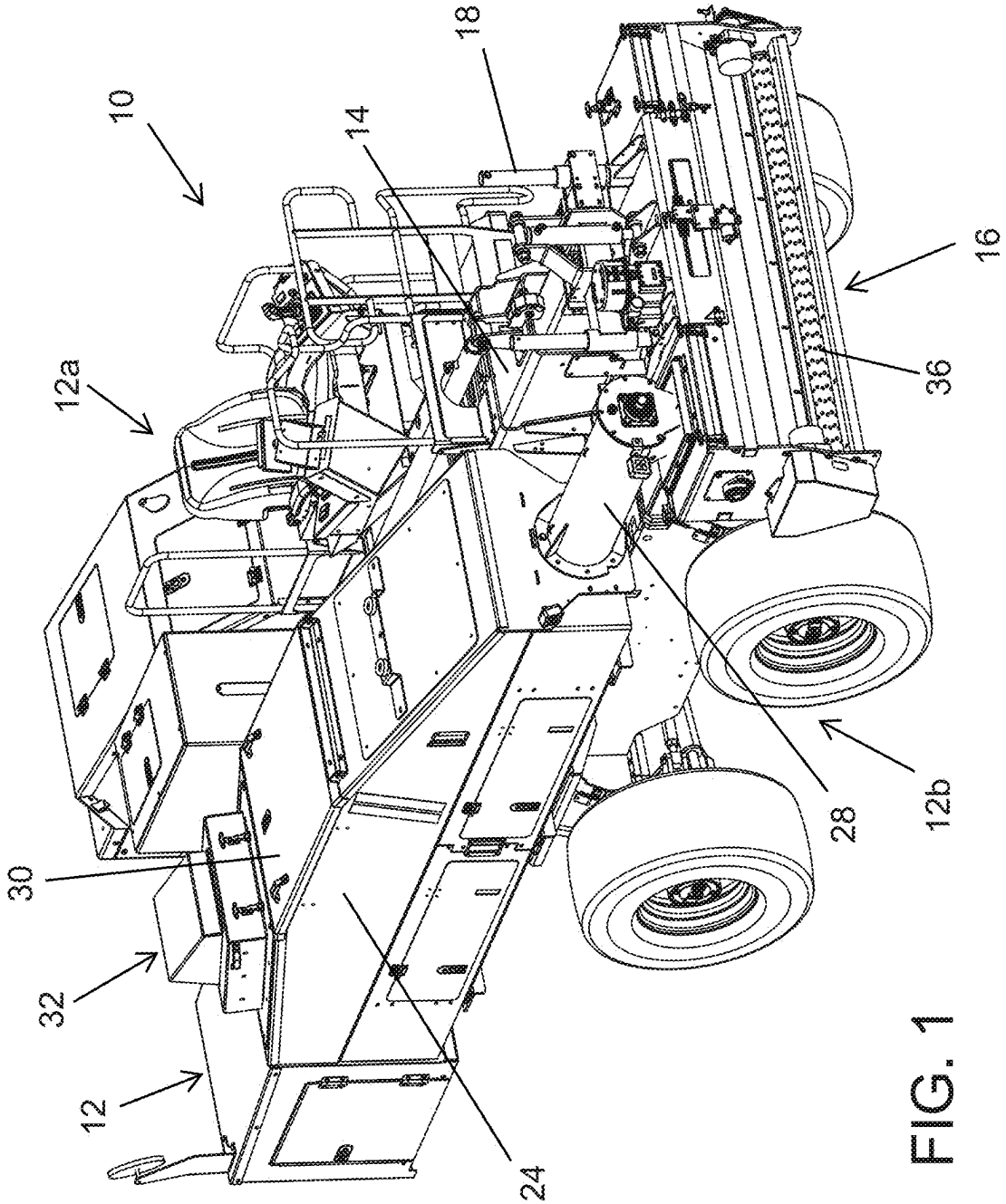


FIG. 1

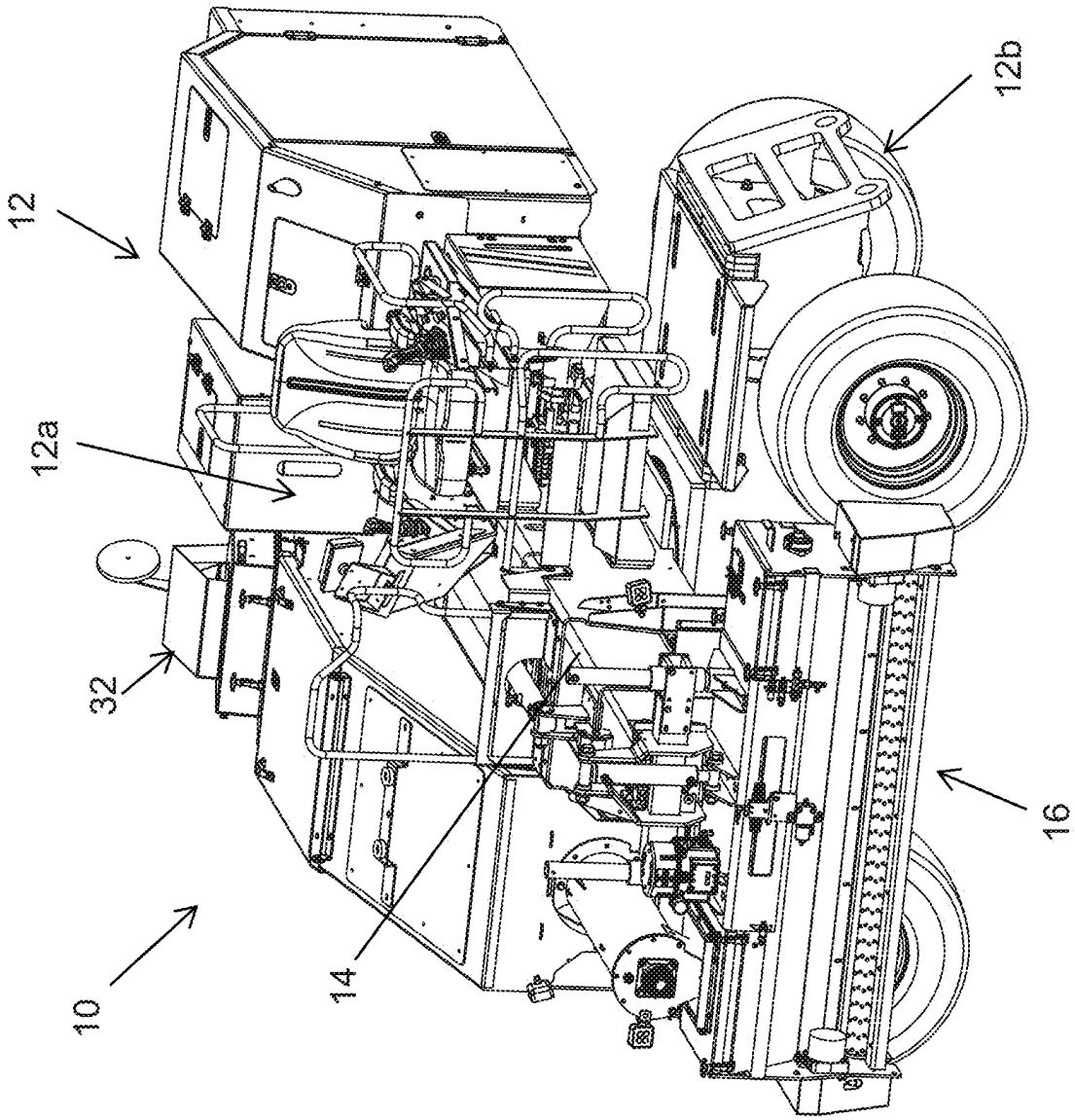


FIG. 2

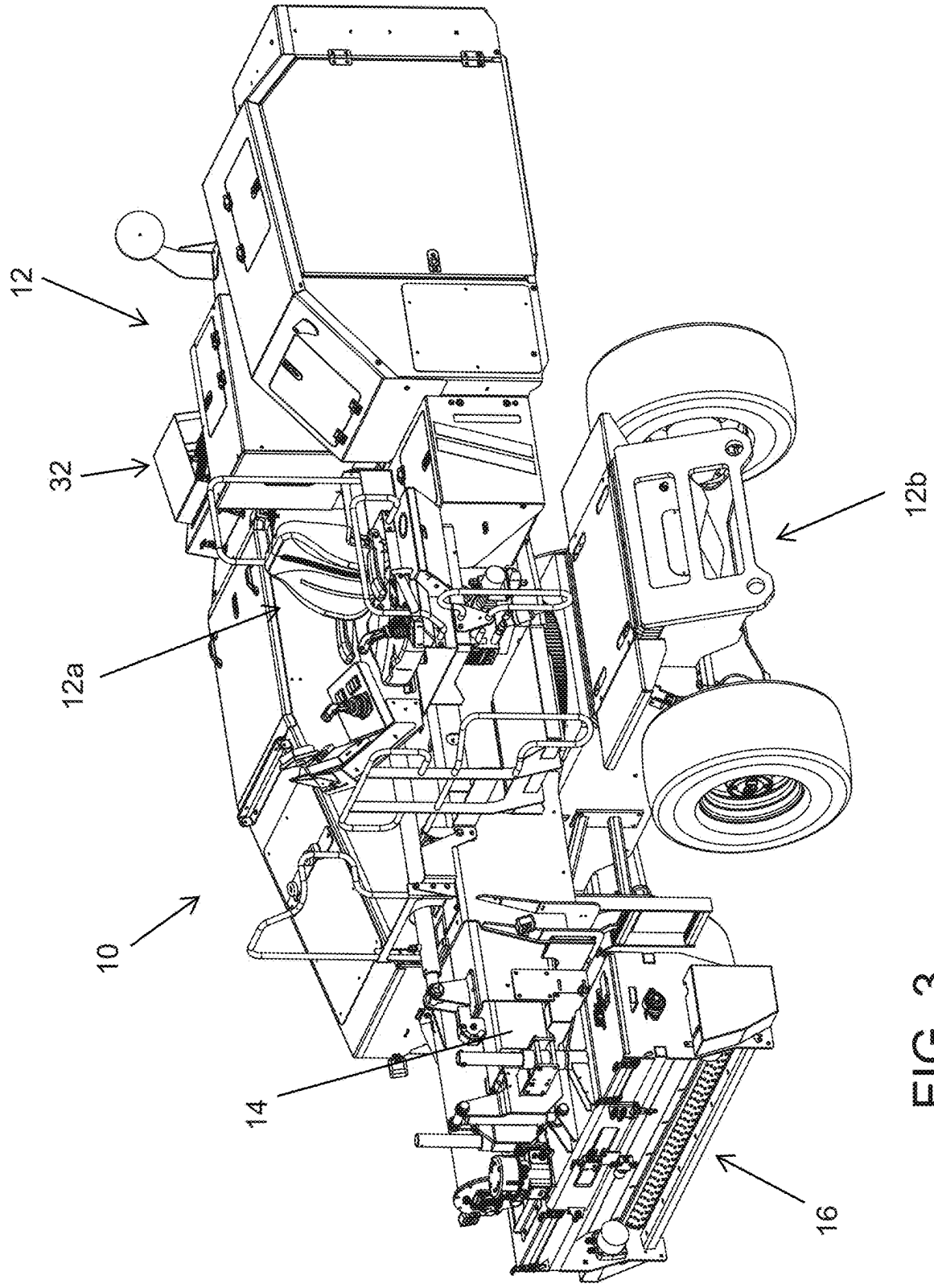


FIG. 3

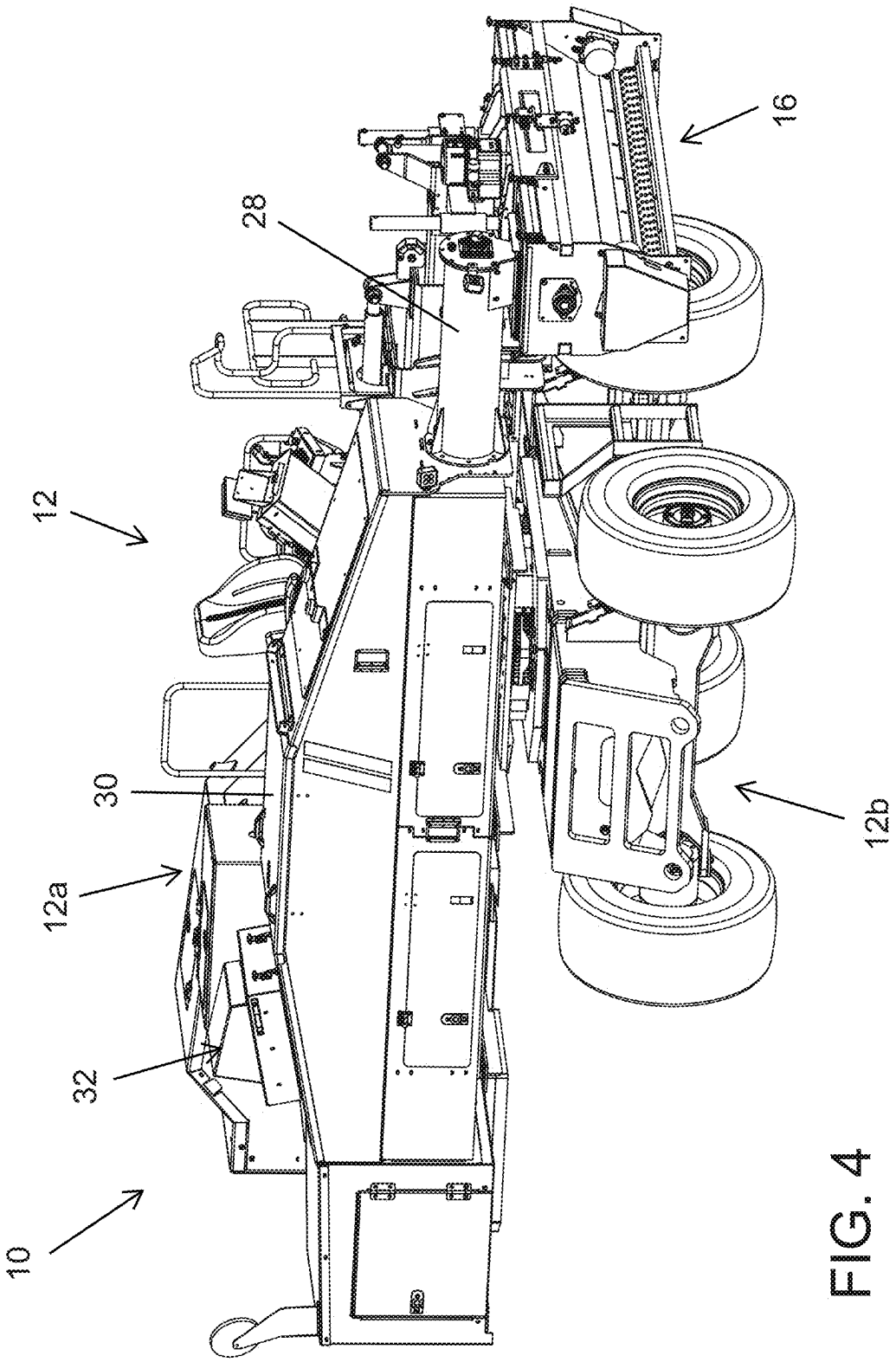


FIG. 4

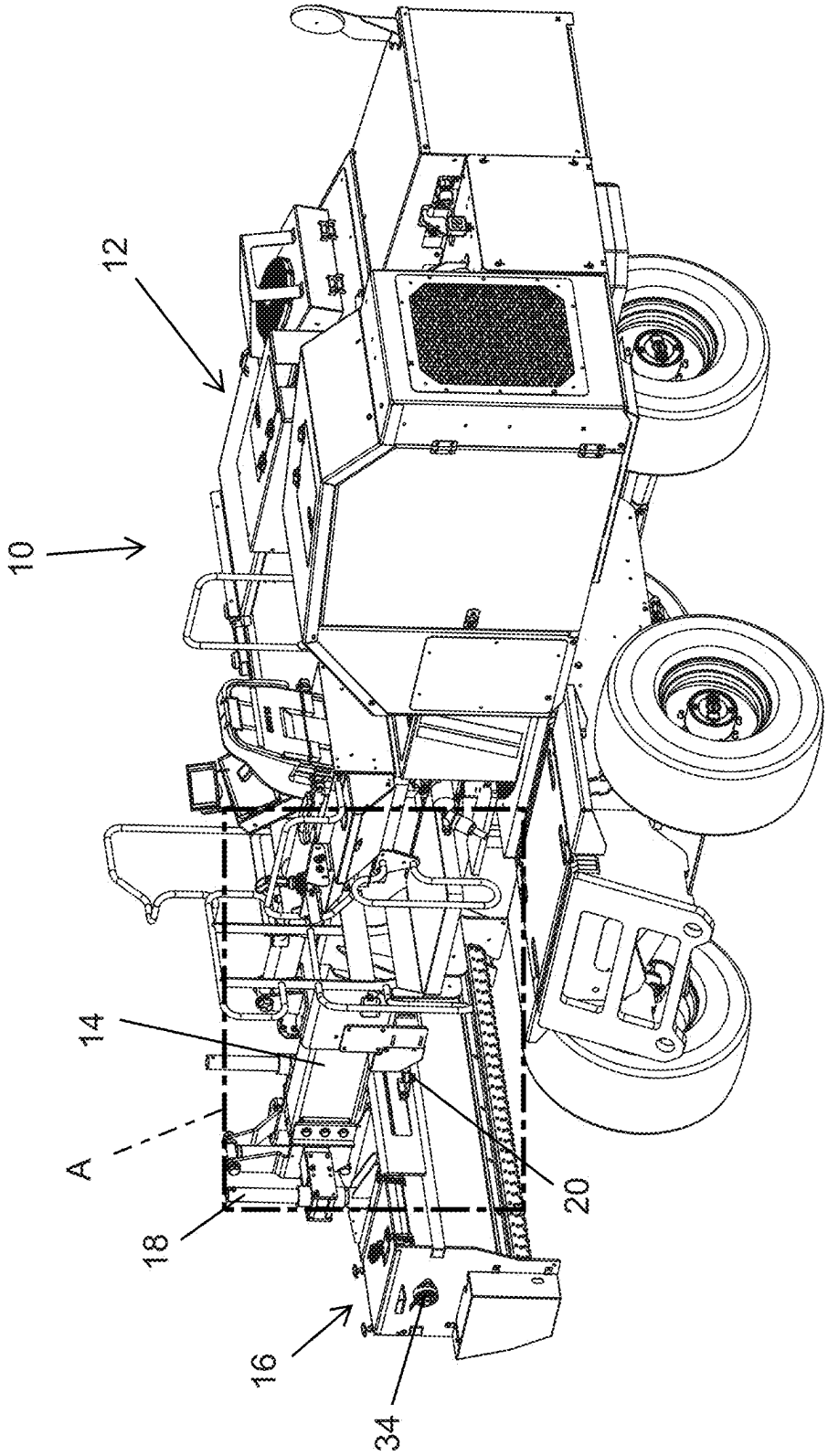


FIG. 5

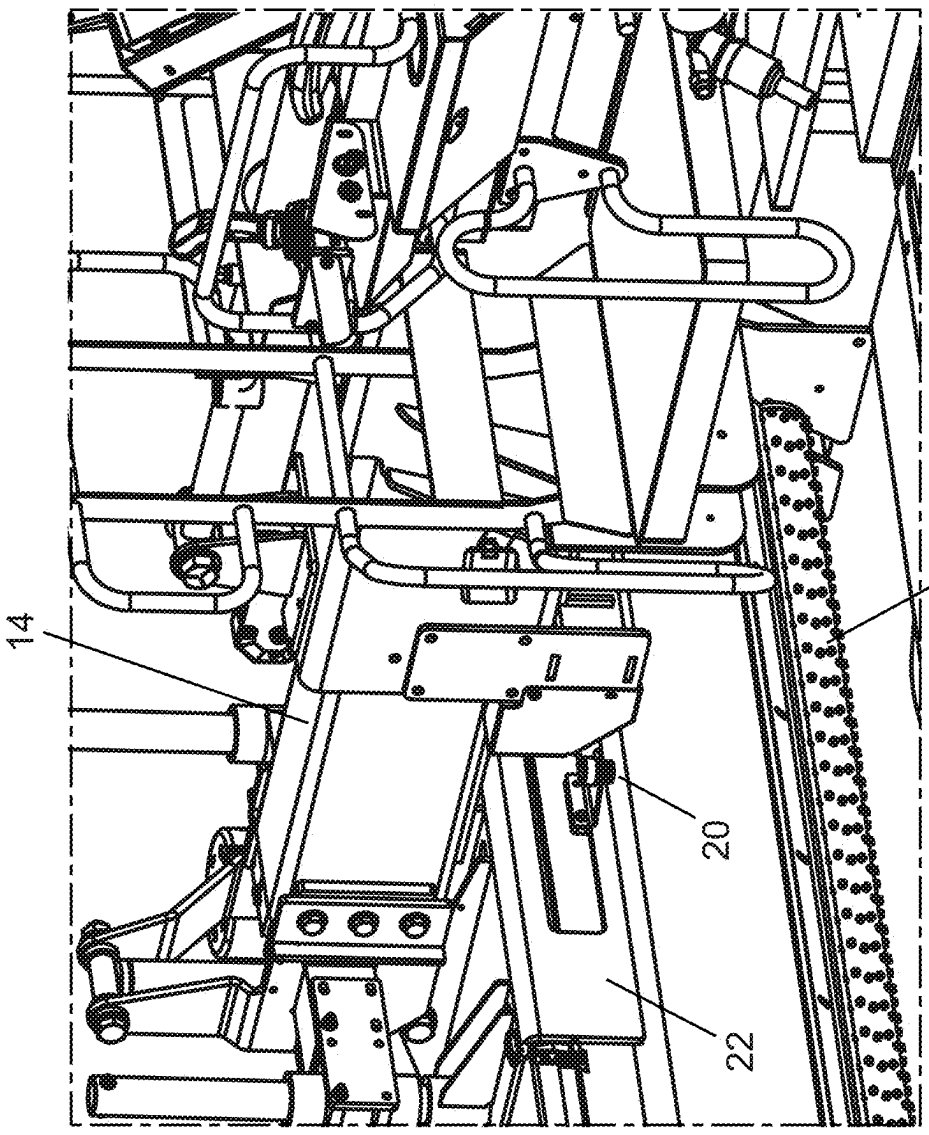


FIG. 5A

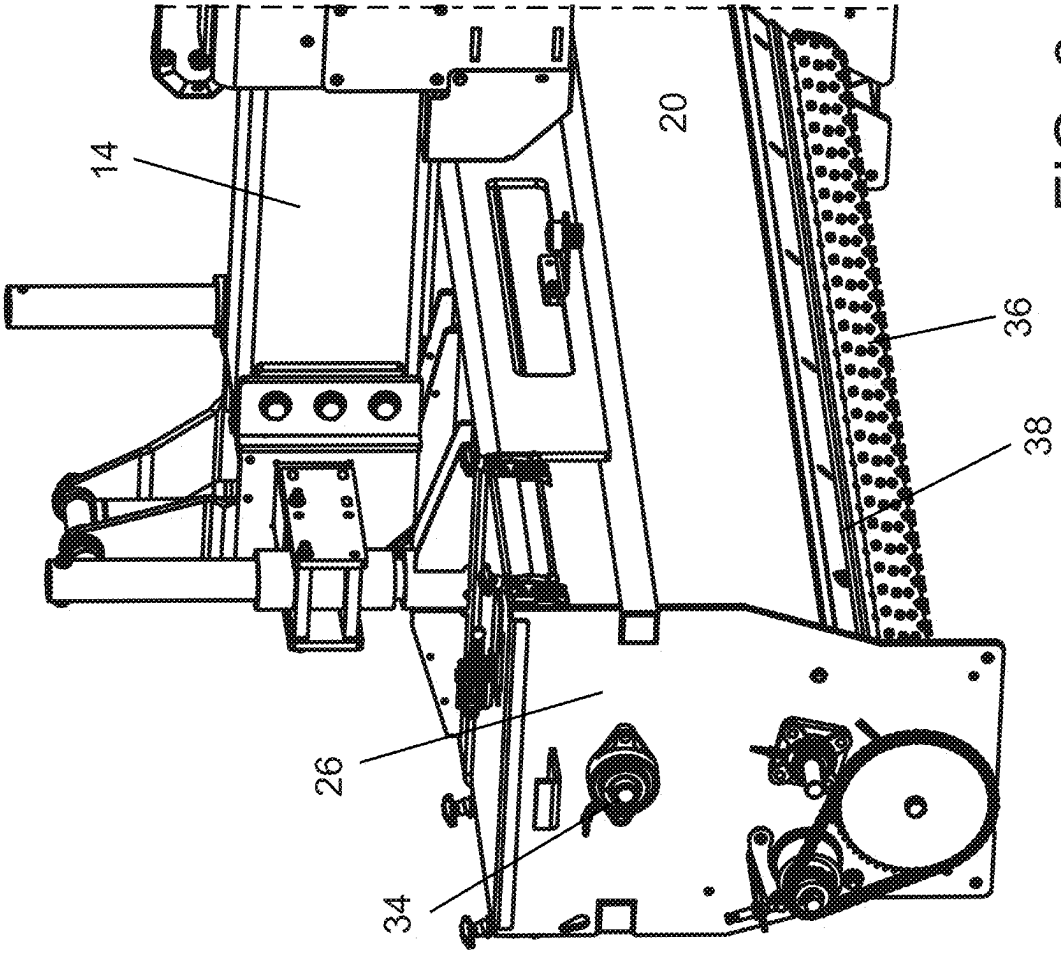


FIG. 6

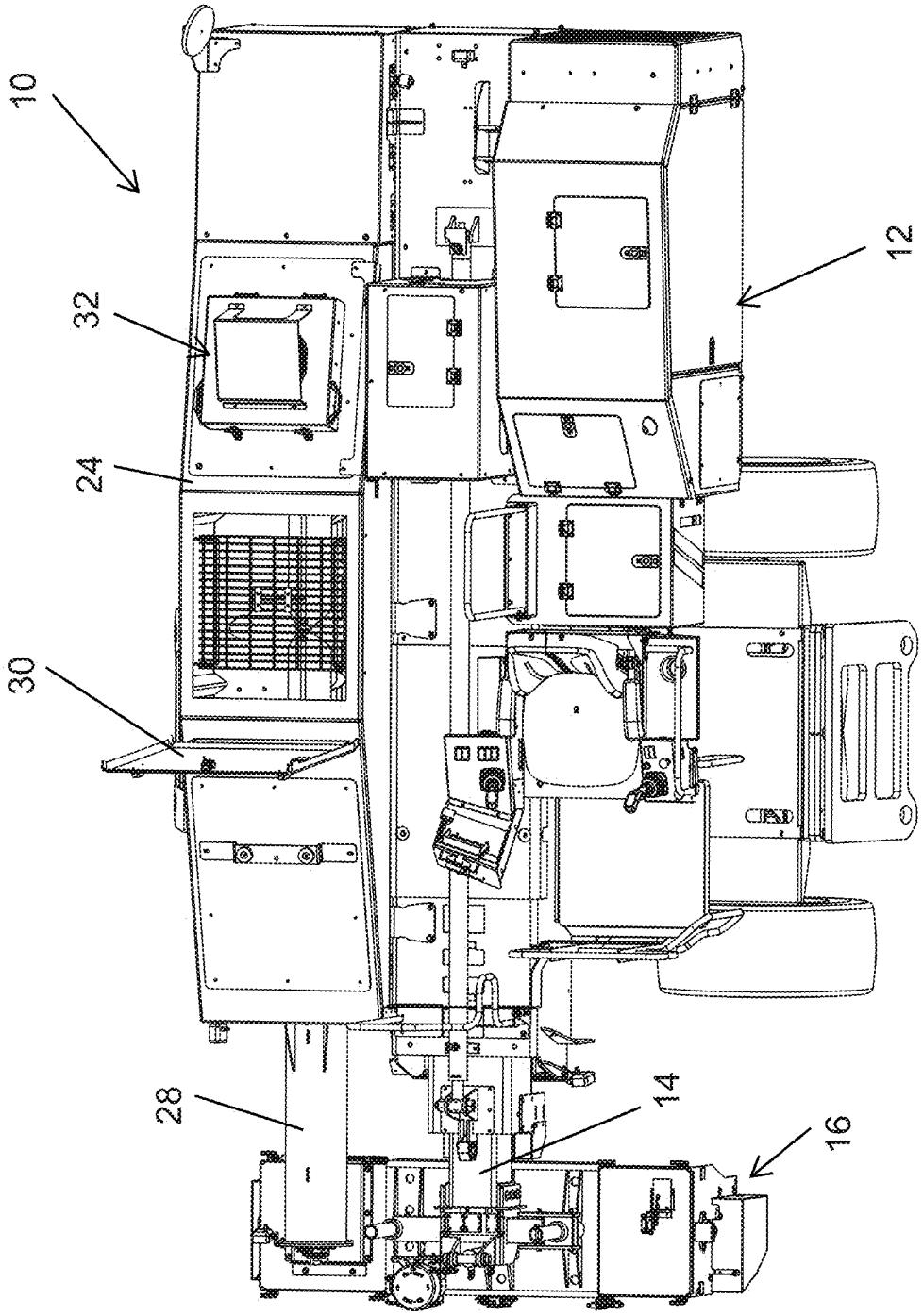


FIG. 7

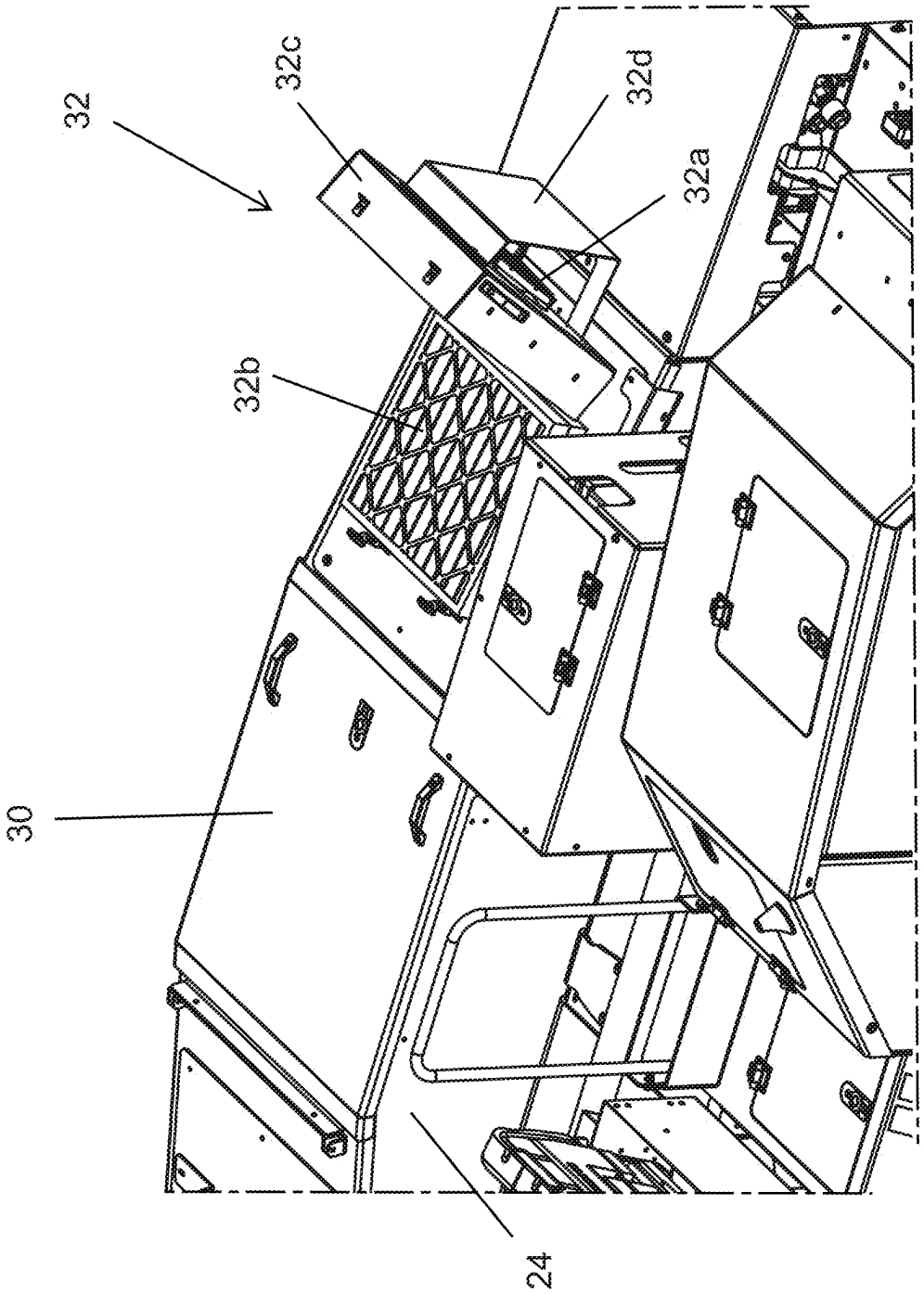


FIG. 8

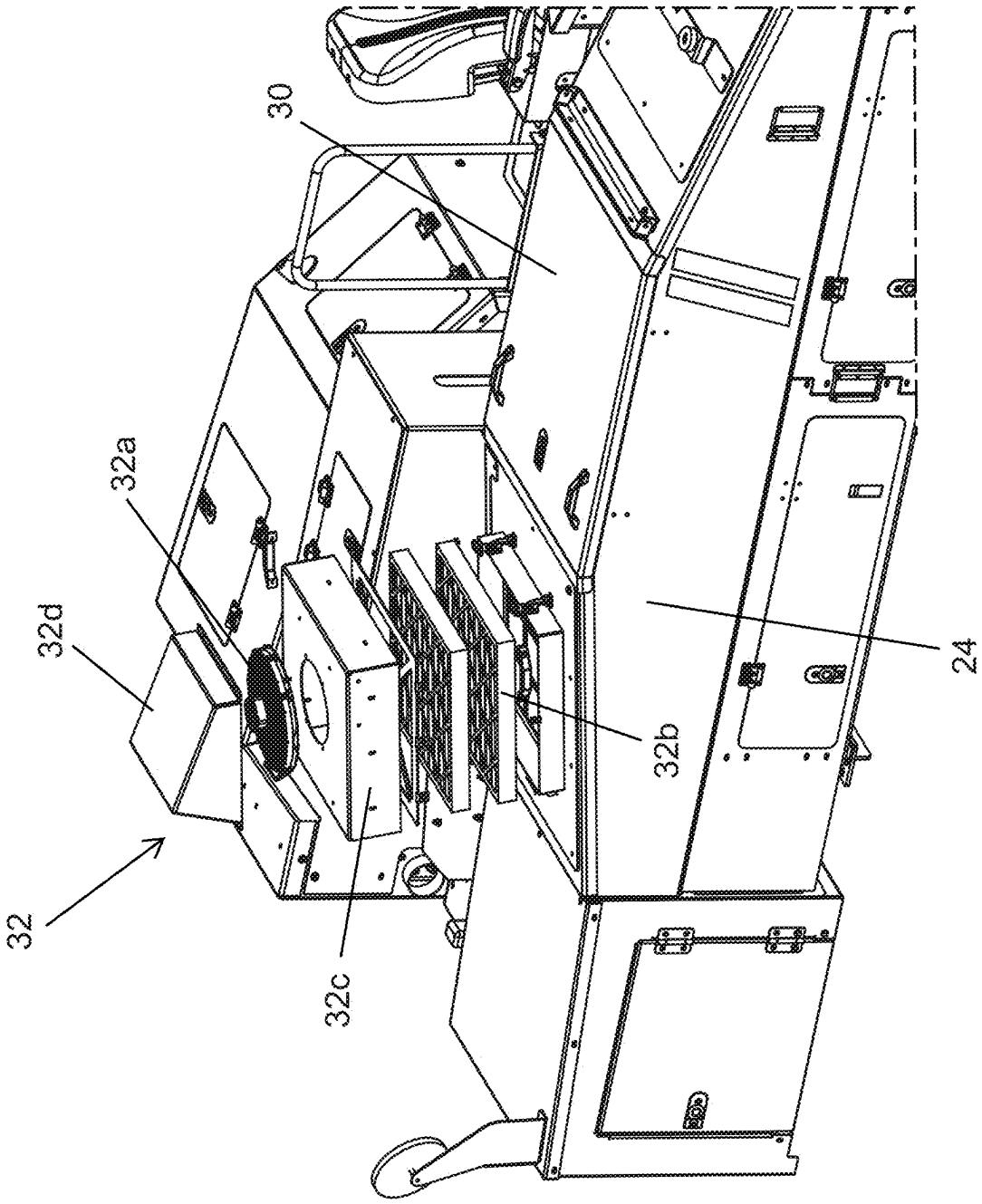


FIG. 9

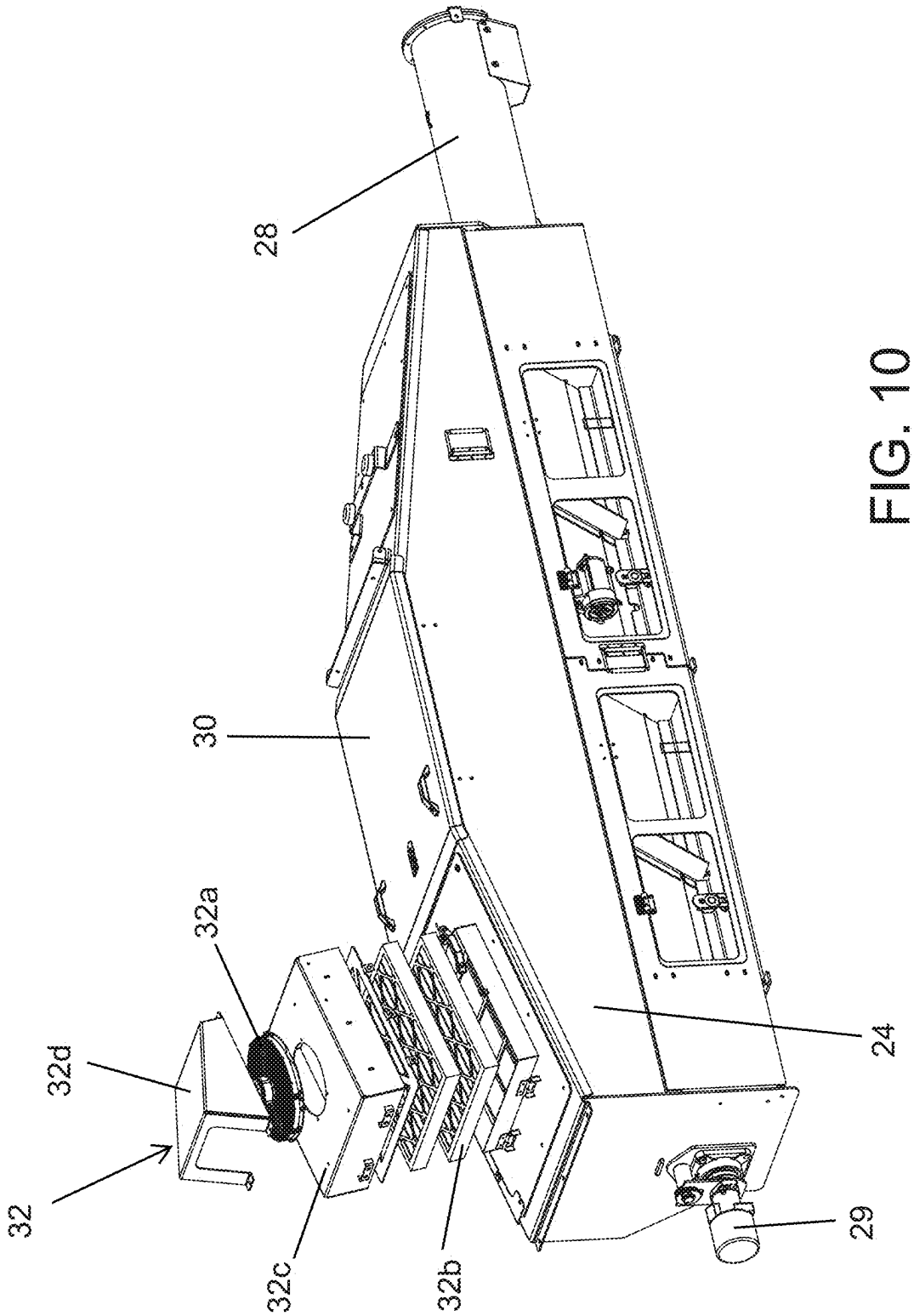
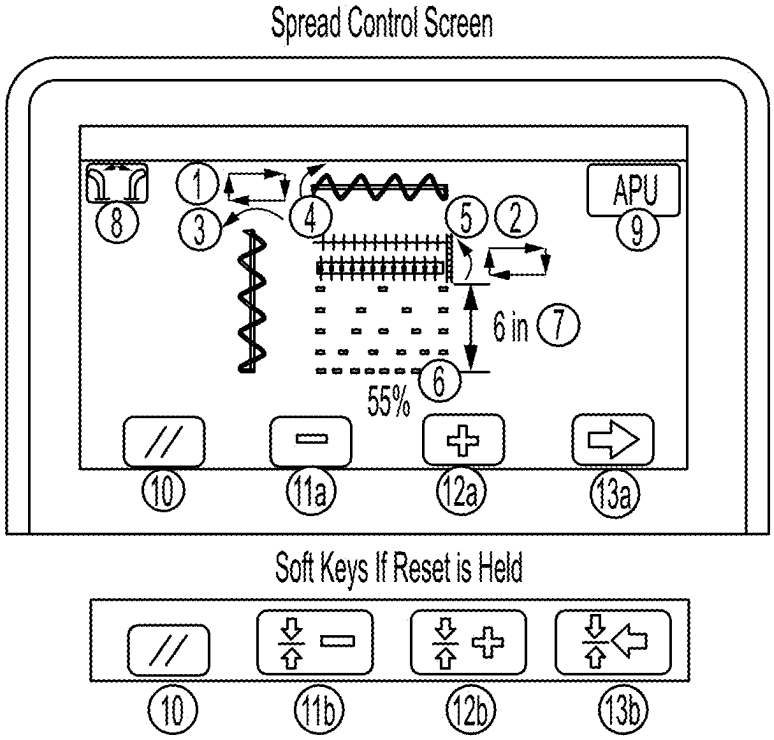


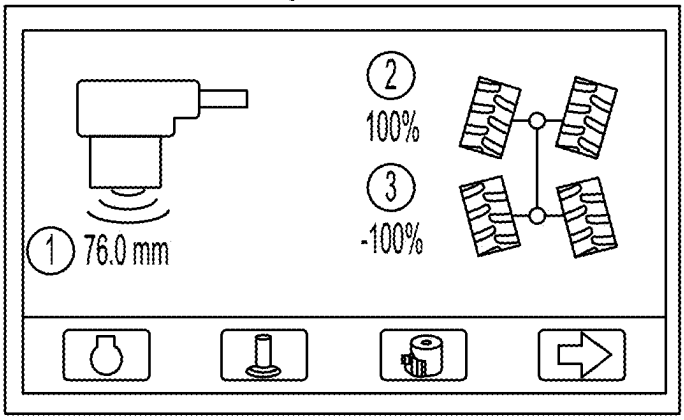
FIG. 10



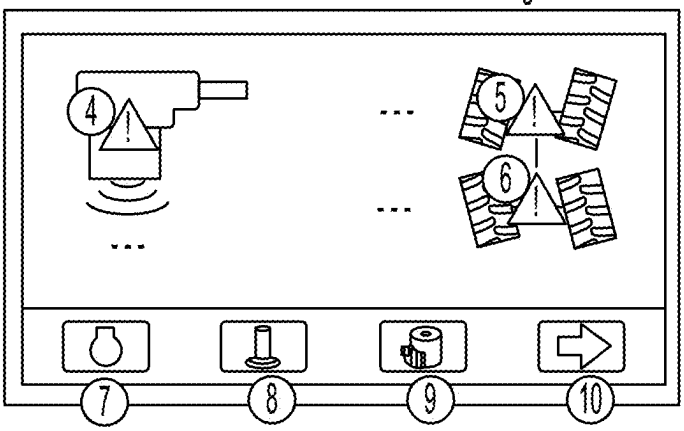
1) Auto Load Active
2) Auto Spread
   Auto = On, Inactive Auto = Blinking
3) Bulk Bin Auger
   Bulk Bin Auger Forward On
   Bulk Bin Auger Reverse On
4) Head Auger
   Head Auger On
5) Drum
   Drum On
6) Spread Rate
   - Drum Speed %
7) Head Height (Elevation Setpoint)
8) Joystick Swap Active
9) APU Enabled
10) Soft Key 1
    - Reset
11) Soft Key 2
    a. Drum Speed Decrease
    b. Elevation Setpoint Decrease (if Reset is held)
12) Soft Key 3
    a. Drum Speed Increase
    b. Elevation Setpoint Increase (if Reset is held)
13) Soft Key 4
    a. Next Screen
    b. Elevation Setpoint Match (if Reset is held)

FIG. 11

Diagnostic Screen



1) Elevation Sensor Deviation Data
--- Out of Range/Disconnected
2) Front Steer Sensor Data
--- Not Calibrated/Out of Range
3) Rear Steer Sensor Data
--- Not Calibrated/Out of Range



4) Elevation Sensor Disconnected/Fault
5) Front Steer Sensor Disconnected/Fault
6) Rear Steer Sensor Disconnected/Fault
7) Soft Key 1
- Press to Access Engine Diagnostic Screen
- Background turns orange if fault is active

8) Soft Key 2
- Press to Access Input Diagnostic Screen
- Background turns orange if fault is active

9) Soft Key 3
- Press to Access Valve Diagnostic Screen
- Background turns orange if fault is active

10) Soft Key 4: Next Screen

FIG. 12

TOPPING SPREADER FOR DISPENSING SHAKE-ON AGGREGATE COMPOSITION ONTO A CONCRETE SURFACE

CROSS REFERENCE TO RELATED APPLICATION

[0001] The present application claims the filing benefits of U.S. provisional application Ser. No. 63/555,430, filed Feb. 20, 2024, which is hereby incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates generally to an apparatus and method for placing or dispensing aggregate topping material onto a concrete surface.

BACKGROUND OF THE INVENTION

[0003] Screeding devices or machines are used to level and smooth uncured concrete to a desired grade. Topping spreaders are also known and dispense a powder or aggregate composition or material onto the concrete surface to provide a desired or selected texture or coating or top surface at the concrete. A spreader machine must be loaded with the aggregate composition, which causes a substantial amount of dust and airborne particles at and around the machine.

SUMMARY OF THE INVENTION

[0004] A topping spreader machine for dispensing or spreading an aggregate composition or material or shake-on toppings onto a concrete surface includes a base unit positionable at a support surface and a dispensing or spreading head assembly movably mounted at the base unit via an extendable and retractable mechanism. The dispensing or spreading head assembly includes (i) a bin that holds the topping material, (ii) an auger device (or other suitable moving or distributing device) that distributes the topping material along the length of the bin, (iii) a dispenser disposed along a lower portion of the bin for dispensing and spreading the topping material, and (iv) a sensor for sensing elevation of the spreading head assembly above the concrete surface. Elevation actuators are operable to adjust elevation of the spreading head assembly responsive at least in part to the sensor. A control system, responsive to signals from the sensor, controls the elevation actuators to set and maintain the height of the spreading head assembly and the dispenser above the uncured concrete. The spreading head assembly is positionable at a dispensing location (over a target area, such as recently screeded but not yet cured concrete) via extension of the extendable and retractable mechanism and is movable over the uncured concrete in the topping direction from the initial location via retraction of the extendable and retractable mechanism to dispense the topping materials onto the concrete surface. As the spreading head assembly is retracted from an initial extended position toward a retracted position, the control system controls the elevation actuators to maintain the height of the dispenser above the concrete surface throughout the topping pass of the spreading head assembly.

[0005] The base unit of the topping spreader machine includes a large bin for holding large quantities of topping materials, which are loaded into the bin of the spreading head assembly via an auger or other suitable device when the spreading head assembly is fully retracted. The holding bin of the base unit includes an exhaust fan and filter assembly that operates to draw air out of the holding bin and to filter the drawn air so dust and other airborne particles or particulates do not get exhausted out of the holding bin. During loading of the holding bin with topping material, the exhaust fan operates to draw air (including dust and airborne particles) into the holding bin to reduce the dust and airborne particles in the air around the machine and in the area that an operator may be standing when loading the holding bin.

[0006] These and other objects, advantages, purposes and features of the present invention will become apparent upon review of the following specification in conjunction with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. **1** is a perspective view of a topping spreader machine;

[0008] FIG. **2** is another perspective view of the topping spreader machine;

[0009] FIG. **3** is another perspective view of the topping spreader machine;

[0010] FIG. **4** is another perspective view of the topping spreader machine;

[0011] FIG. **5** is a perspective view of the spreading head of the topping spreader machine, showing an elevation sensor;

[0012] FIG. **5**A is an enlarged perspective view of the region A in FIG. **5**;

[0013] FIG. **6** is another perspective view of the spreading head of the topping spreader machine;

[0014] FIG. **7** is a perspective view of the holding bin of the base unit of the topping spreader machine;

[0015] FIG. **8** is another perspective view of the base unit, showing the fan detached from the filters;

[0016] FIG. **9** is an exploded perspective view of the fan assembly and filters at the holding bin of the base unit of the topping spreader machine;

[0017] FIG. **10** is another exploded perspective view of the fan assembly and filters at the holding bin of the base unit of the topping spreader machine;

[0018] FIG. **11** is a diagram showing a spread control screen of the topping spreader machine and the functions associated with the screen icons and the user actuatable inputs; and

[0019] FIG. **12** is a diagram showing a diagnostic screen of the topping spreader machine and the errors indicated by the screen icons.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] Referring now to the drawings and the illustrative embodiments depicted therein, a topping spreader machine **10** includes a base unit **12** with an extendable and retractable support or mechanism, such as a boom **14** extending from the base unit and supporting a topping spreader or dispensing or spreading head or assembly **16** at an outer end thereof (FIGS. **1-4**). The base unit **12** is movable or drivable to a targeted area at a support surface with screeded concrete thereat, and the base unit may include an upper portion **12***a* that rotates or pivots about a base portion **12***b* to swing the boom and topping spreading head to a targeted location. The base portion **12***b* includes a plurality of wheels (e.g., four wheels) that are rotatably drivable and steerable to maneuver

the base unit **12** to an appropriate topping dispensing position relative to the concrete to be topped or covered.

[0021] When the machine is positioned at the topping dispensing position, the boom **14** is extendable to move the topping spreading head **16** over the concrete surface (such as recently screeded but not yet cured concrete) to a starting position. When in the starting position, the topping spreading head assembly **16** is raised or lowered via elevation actuators **18** to set a desired or selected height of the head assembly above the concrete surface. The boom is then retracted to pull the topping spreading head toward the base unit, while the topping spreading head **16** operates to dispense topping material (such as sand and rock or concrete aggregate compositions) over the concrete. The controller of the topping dispensing machine controls the elevation actuators **18** of the topping spreading head to raise and lower the topping spreading head responsive to signals generated by one or more sensors **20** (FIGS. **5-7**) of the machine, such as, for example, responsive to signals generated by a ranging or distance sensing sensor disposed at a cross beam or frame or support or bracket **22** of the topping spreading head assembly, which senses a distance to the concrete surface below the sensor, or any suitable sensor or sensing system that operates to generate an output indicative of the height of the topping spreading head at the concrete surface. The sensor may be generally centrally located at the topping spreading head assembly or may be laterally offset, or optionally two sensors may be laterally offset from the center region and from one another to sense the height of the end regions of the topping spreading head assembly.

[0022] The topping dispensing machine comprises a pressurized hydraulic fluid system powered by an engine (or electrically operable motor, such as a battery-powered motor) at the base unit that drives the hydraulic system to generate pressurized fluid for controlling the elevation actuators or cylinders **18** and stabilizers and for rotating the upper base portion **12***a* relative to the lower base portion **12***b* and for controlling the extension and retraction mechanism (such as the telescoping boom or articulating arm or any other suitable mechanism that operates to extend and retract while supporting the topping spreading head) and for driving and steering of the wheels of the base unit. The topping dispensing machine **10** and the topping spreading head or assembly **16** may utilize various aspects of the screeding machines and screeding heads described in U.S. Pat. Nos. 4,655,633; 4,930,935; 6,227,761; 6,976,805; 7,044,681; 7,121,762; 7,175,363; 7,195,423; 7,396,186; 7,850,396; 8,038,366; 9,835,610; 10,060,900; 10,190,268 and/or 10,895,045, and/or U.S. Publication Nos. US-2024-0392517; US-2010-0196096 and/or US-2007-0116520, which are all hereby incorporated herein by reference in their entireties.

[0023] As shown in FIGS. **1-4**, the base unit **12** includes a bulk bin or holding bin **24** that is filled or partially filled with the topping material to be dispensed. Such topping material may include sand, crushed rock, concrete, etc., and may include fine particles, which may become airborne during the loading or filling of the holding bin. The machine includes an auger or other suitable device (e.g., a conveyor belt or other conveying surface or device or a movable ram or other pushing/moving device) that is operable to move or convey the topping material from the holding bin to a head bin **26** of the topping spreading head assembly **16**, such as via a loading tube **28** that connects to the topping spreading head assembly when the head assembly is fully retracted. The auger may be rotatably driven by a motor **29** that is operable to drive the auger to move or convey the topping material along the loading tube, such as responsive to a user input or automatically as the machine is operating.

[0024] The holding bin **24** has a loading door **30** (FIG. **7**) that is opened to allow for loading of the topping material into the holding bin. Such a loading process typically involves pouring the topping material into the holding bin when the loading door is open, which often generates dust and airborne particles or particulates at the machine. The machine **10** includes an exhaust fan assembly **32** at an upper wall of the holding bin **24** to limit or reduce the amount of dust and airborne particles exterior the machine at the loading bin during the loading or filling of the holding bin.

[0025] As shown in FIGS. **8-10**, the exhaust fan assembly **32** includes a fan **32***a* and at least one filter **32***b* (such as two or three filters, optionally having different levels of filtering (i.e., different particle size filtering) stacked on top of one another) at a housing **32***c*. The fan and housing can be detached from the base unit (see FIG. **8**, where the housing **32***c* (which houses or accommodates the fan **32***a*) is detached from a base portion that accommodates at least one of the filters and is set on the loading door **30**), such as for changing the filter or filters. The fan, when operated, draws air from within the holding bin, through the filters, and out an exhaust vent **32***d* at the housing. The filters limit or reduce or preclude dust and fine particles from exhausting from the bin with the air drawn in and exhausted by the fan. During loading or filling of the holding bin **24**, the fan **32***a* is operated and draws the air from within the holding bin, which also draws air from immediately outside of the holding bin at or near the loading door **30** into the holding bin. Thus, dust and other fine particles that become airborne around the loading door during the filling process are drawn into the holding bin and not exhausted out through the filters. The fan assembly thus reduces the amount of dust and airborne particles exterior of the machine that may otherwise occur as the holding bin is filled.

[0026] After the loading bin is filled and the machine is ready for operation, the machine is positioned at a location at or near the concrete surface, and the head bin **26** of the topping spreading head assembly **16** is filled or substantially filled via the loading auger and tube **28**, and an auger **34** of the head assembly operates to distribute the topping material along the length of the head bin **26**. The boom **14** is extended out to a starting location (at the start of a dispensing pass) and the elevation actuators **18** are operated to raise or lower the topping spreading head assembly **16** to a selected height above the concrete surface (in response to signals output by the sensor **20** at the head assembly). When positioned at the selected height, a drum or dispensing device **36** within the topping spreading head assembly **16** operates, such that the topping material is dispensed generally uniformly along the length of the topping spreading head assembly. The drum or dispensing device **36** may comprise a textured cylinder (such as textured via protrusions attached to and protruding from the cylindrical surface or via any suitable roughening or texturing of the cylindrical surface) that rotates to draw or pull the topping material from the bin and through an opening or gap **38** (that may be opened and closed) between the drum and the structure of the spreading head assembly, such that the topping material is dispensed onto the surface below the spreading head assembly. As the drum is rotated

and the material is dispensed, the boom is retracted to move the topping spreading head assembly **16** over and along the concrete surface while the topping material is dispensed. As the boom is retracted, the controller operates (adjusts or extends or retracts) the elevation actuators **18** responsive to the sensor **20** to maintain the topping spreading head assembly **16** at the desired or selected height above the concrete surface.

[0027] The sensor **20** may comprise any suitable ranging sensor, such as a laser sensor or lidar sensor or a radar sensor or time-of-flight (TOF) sensor or a forward-looking infrared (FLIR) sensor, a three-dimensional laser scanner (e.g., a FARO/Trimble scanner), and/or the like. The controller determines height of the sensor above the concrete surface and adjusts the elevation actuators **18** to maintain the height of the topping spreading head assembly and the dispenser **38** above the concrete surface. Thus, as the boom is retracted (at a generally constant retraction speed) and the dispenser is dispensing the topping material, the height of the dispenser is maintained to provide a more uniform layer of topping material dispensed onto the concrete surface. The topping material may be further processed or finished via any suitable means (e.g., ride on trowel machines, hand finishers, or the like) to provide the desired final surface finish of the concrete.

[0028] The adjustment of the elevation cylinders maintains the height of the topping spreading head assembly above the concrete surface and thus accommodates for sag in the boom when it is fully extended. For example, when the boom is fully extended, there is some sag at the outer end such that the topping spreading head assembly is at an initial height above the concrete. The elevation actuators may at that time set the topping spreading head assembly at a selected height, and then may adjust as the boom is retracted to maintain the topping spreading head assembly at the selected height. For example, as the sag is reduced when the boom is retracted, the elevation actuators may be extended to maintain the topping spreading head assembly at the selected height as the topping spreading head assembly approaches the base unit. By controlling the height of the spreader head above the concrete surface and maintaining the height throughout the topping pass, the topping spreader machine provides uniform spreading of the topping material onto the concrete surface and allows for operation of the spreader head at a very low height above the concrete surface. By maintaining the spreader head very close to the surface, the machine may spread the topping material on to the concrete surface and may limit or reduce dust from being created during the spreading process.

[0029] The elevation actuators may be automatically controlled via a controller or instructions may be provided to the operator (e.g., via a display screen of the machine) and the operator may raise and lower the elevation actuators to adjust the topping spreading head assembly relative to the boom to maintain the topping spreading head assembly at the selected height.

[0030] Optionally, the base unit **12** may include a control screen or display screen or touch screen and control panel for the operator to interface with during operation of the topping spreader machine. For example, and with reference to FIG. **11**, a spread control screen may display information to the operator to inform the operator of various operating parameters of the machine. For example, the spread control screen may display (and allow the operator to adjust) the spreading function, the bulk bin or holding bin auger, the head auger, the drum of the topping spreading head assembly, the spread rate, the head height (elevation setpoint), etc. Various soft keys or buttons or switches or other user actuatable inputs allow the operator to adjust the drum speed and/or adjust the elevation setpoint during operation of the machine.

[0031] The elevation height sensor is a non-contact distance or ranging sensor that continuously measures the distance to the concrete surface. The distance from the bottom of the spreader head is then subtracted from the sensor mounting height. This value may be displayed to the operator on the diagnostic screen as the distance from the bottom of the spreader head to the surface. On the spread control Screen, the operator can set/adjust the elevation control height for the spreader head. When an "Auto Spread" function is active, the machine will control the height of the spreader head to the height set by the operator.

[0032] Optionally, the operator controls include a diagnostic screen (which may be a reconfigurable display screen that also operates as the spread control screen). As shown in FIG. **12**, the diagnostic screen may display various data during or after a topping pass is performed. For example, the diagnostic screen may display elevation sensor deviation data and front and rear steer sensor data, and may display when one or more sensors are disconnected or when a fault is triggered. Various soft keys or buttons or switches or other user actuatable inputs allow the operator to access other diagnostic screens (e.g., an engine diagnostic screen, an input diagnostic screen, a valve diagnostic screen or the like), and may display when there is an active fault associated with what is displayed by the other diagnostic screens.

[0033] Optionally, the topping spreader machine **10** may comprise a remotely controlled machine (i.e., no operator station on the base of the machine), such that an operator can control the extension and retraction of the boom and the operation of the topping spreading head and the elevation of the head and actuation of the drum, etc., via a remote-control device separate and remote from the machine. The remote-control device may wirelessly communicate with a controller or control system of the machine via any suitable means, such as radio communication or other wireless communications. The remote control may also include remote control of the base unit to drive and steer the wheels (such as four-wheel steering, two-wheel steering and/or crab steering or the like) of the base unit to position the machine at a topping location.

[0034] Therefore, the system or machine or method for dispensing topping material onto a concrete surface includes a height sensor to provide uniform dispensing height of the spreading head assembly during each topping pass. The spreading head assembly is moved over the concrete surface via the machine to dispense the topping material onto the concrete surface. The sensor senses an elevation or height of the sensor (and thus of the topping head assembly) relative to the concrete surface, and the elevation cylinders operate to adjust the height of the topping head responsive to the signals received from the sensor to uniformly dispense the topping material onto the concrete surface.

[0035] The machine or system includes an exhaust fan that draws air into the holding bin during loading or filling of the holding bin to reduce dust and other airborne particles exterior the machine during the loading or filling of the holding bin. The exhaust fan draws air around the opening

of the holding bin into the holding bin and filters the air that is exhausted from the holding bin such that the airborne particles draw into the holding bin remain in the holding bin and are not exhausted back out. Thus, the exhaust fan reduces the airborne particles in the air at and around the opening of the holding bin and at and around the area where an operator may be standing when loading the holding bin during loading or filling of the holding bin.

[0036] Changes and modifications to the specifically described embodiments can be carried out without departing from the principles of the present invention, which is intended to be limited only by the scope of the appended claims as interpreted according to the principles of patent law.

1. A topping spreader machine for dispensing topping material onto a concrete surface, the topping spreader machine comprising:

a base unit positionable at a support surface;

a topping spreading head assembly movably mounted at the base unit, wherein the topping spreading head assembly comprises (i) a bin that holds topping material, (ii) a distributing device that distributes the topping material along the length of the bin, (iii) a dispenser disposed along a lower portion of the bin for dispensing the topping material, and (iv) a sensor for sensing elevation of the topping spreading head assembly above the concrete surface;

elevation actuators operable to adjust elevation of the topping spreading head assembly responsive at least in part to the sensor;

a control system, wherein the control system, responsive to signals from the sensor, controls the elevation actuators to set the height of the topping spreading head assembly above the concrete surface;

wherein the topping spreading head assembly is positionable at a starting location and is movable over the concrete surface in a topping direction from the starting location to dispense the topping material onto the concrete surface; and

wherein, as the topping spreading head assembly is moved over the concrete surface in the topping direction, the control system controls the elevation actuators responsive to the sensor to maintain the height of the topping spreading head assembly above the concrete surface.

2. The topping spreader machine of claim **1**, wherein the sensor comprises a ranging sensor and the output is indicative of height of the ranging sensor above the concrete surface.

3. The topping spreader machine of claim **2**, wherein the ranging sensor comprises a plurality of ranging sensors disposed along the topping spreading head assembly.

4. The topping spreader machine of claim **2**, wherein the ranging sensor comprises one selected from the group consisting of (i) a radar sensor and (ii) a lidar sensor.

5. The topping spreader machine of claim **1**, further comprising a display device for viewing by an operator of the topping spreader machine during the topping pass.

6. The topping spreader machine of claim **5**, wherein the display device displays operating aspects of the topping spreading head assembly during the topping pass.

7. The topping spreader machine of claim **1**, wherein the base unit comprises a wheeled base unit.

8. The topping spreader machine of claim **1**, wherein the topping spreading head assembly is movably mounted at the base unit via an extendable and retractable mechanism, and wherein the topping spreading head assembly is positionable at the starting location via extension of the extendable and retractable mechanism and is movable over the concrete surface in the topping direction from the starting location via retraction of the extendable and retractable mechanism to dispense the topping material onto the concrete surface.

9. The topping spreader machine of claim **8**, wherein the extendable and retractable mechanism includes a mounting end that mounts at the base unit and a distal end opposite the mounting end, and wherein the topping spreading head assembly is disposed at the distal end of the extendable and retractable mechanism, and wherein the elevation actuators are operable to adjust position of the topping spreading head assembly relative to the distal end of the extendable and retractable mechanism responsive at least in part to the sensor.

10. The topping spreader machine of claim **1**, wherein the base unit of the topping spreader machine includes a bulk holding bin, and wherein the topping material is loaded into the topping spreading head assembly via a conveying device when the topping spreading head assembly is in a fully retracted position relative to the base unit.

11. The topping spreader machine of claim **10**, wherein the conveying device comprises an auger that is partially within the bulk holding bin and that extends toward an opening of the topping spreading head assembly.

12. The topping spreader machine of claim **10**, wherein the bulk holding bin of the base unit includes an exhaust fan and filter assembly that operates to draw air out of the bulk holding bin and to filter the drawn air so dust and other airborne particles do not get exhausted out of the bulk holding bin.

13. The topping spreader machine of claim **12**, wherein, during loading of the bulk holding bin with the topping material, the exhaust fan operates to draw air and dust and airborne particles into the bulk holding bin to reduce the dust and airborne particles in the air around the topping spreader machine.

14. The topping spreader machine of claim **1**, wherein the distributing device comprises an auger that extends along the bin of the topping spreading head assembly.

15. A topping spreader machine for dispensing topping material onto a concrete surface, the topping spreader machine comprising:

a base unit positionable at a support surface;

wherein the base unit of the topping spreader machine includes a bulk holding bin for holding topping material;

wherein the bulk holding bin of the base unit includes an exhaust fan and filter assembly that operates to draw air out of the bulk holding bin and to filter the drawn air so dust and other airborne particles do not get exhausted out of the bulk holding bin;

wherein, during loading of the bulk holding bin with topping material, the exhaust fan operates to draw air and dust and airborne particles into the bulk holding bin to reduce the dust and airborne particles in the air around the topping spreader machine;

a topping spreading head assembly movably mounted at the base unit;

wherein the topping spreading head assembly comprises a dispenser disposed along a lower portion of topping spreading head assembly for dispensing the topping material; and

wherein the topping spreading head assembly is positionable at a starting location and is movable over the concrete surface in a topping direction from the starting location to dispense the topping material onto the concrete surface.

16. The topping spreader machine of claim **15**, wherein the topping spreading head assembly is movably mounted at the base unit via an extendable and retractable mechanism, and wherein the topping spreading head assembly is positionable at the starting location via extension of the extendable and retractable mechanism and is movable over the concrete surface in the topping direction from the starting location via retraction of the extendable and retractable mechanism to dispense the topping material onto the concrete surface.

17. The topping spreader machine of claim **16**, wherein the topping material present in the bulk holding bin is loaded into the topping spreading head assembly via a conveying device when the topping spreading head assembly is in a fully retracted position relative to the base unit.

18. The topping spreader machine of claim **15**, wherein the topping spreading head assembly comprises (i) a bin that receives the topping material from the bulk holding bin of the base unit and (ii) a distributing device that distributes the topping material along the length of the bin of the topping spreading head assembly.

19. The topping spreader machine of claim **15**, wherein the base unit comprises a wheeled base unit.

20. The topping spreader machine of claim **15**, further comprising a display device for viewing by an operator of the topping spreader machine during the topping pass.

21. The topping spreader machine of claim **20**, wherein the display device displays operating aspects of the topping spreading head assembly during the topping pass.

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