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WALL MOUNTED DIGITAL SCALE

Abstract

The disclosure includes a scale comprising a housing, an arm hingedly coupled to the housing, and a display located on the housing. In some embodiments, the arm is configured to receive at least a portion of an item to be weighed, and the display is configured to show the weight of the item. The scale may be configured to couple to a wall of a building.

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Background/Summary

[0001] A scale is a device used to quantify the weight of an item. Scales are widely used across different industries and can range from large-capacity devices used in manufacturing and shipping to small-capacity devices used in home cooking and baking. Another common use for scales is to weigh luggage.
[0002] Luggage is essential while traveling. However, luggage is typically subject to strict weight limits, especially for air travel. If luggage weighs more than the permitted weight, a traveling individual may incur a significant fee and/or have to remove items from the luggage to meet the weight requirement. This is undesirable and may be embarrassing for individuals. As a result, individuals may want to weigh their bags before leaving for the airport. Traditionally, travelers have had to make do with using a bathroom scale or a hand-held luggage scale, but both of these options have drawbacks.
[0003] For example, traveling individuals may not always have access to a bathroom scale before going to the airport, especially in a hotel or other similar accommodation. Hand-held luggage scales must be packed in the luggage and brought on a trip to be used for the return journey. In addition, both bathroom scales and hand-held luggage scales may not be accurate.
[0004] Therefore, there exists a long-felt need in the art for a device that allows individuals to conveniently weigh their bags to prevent them from arriving at an airport with overweight luggage.
SUMMARY
[0005] The subject matter disclosed and claimed herein, in one embodiment thereof, comprises a luggage scale device. The device is primarily comprised of a housing with at least one weighing member, at least one display, and at least one strain gauge load cell. In the preferred embodiment, the housing has a front wall, a plurality of side walls, and a rear wall that form a generally rectangular housing. The front wall of the housing is comprised of a weighing member that extends outwards from the front wall via at least one hinge such that the weighing member is perpendicular to the front wall.
[0006] The rear surface of the weighing member is further comprised of at least one strain gauge load cell. The cell is comprised of at least one strain gauge, at least one load cell sensor (i.e., force transducer), at least one converter, and at least one microchip.
[0007] To use the device, a user first secures the rear wall of the housing to a wall via at least one fastener that allows the rear surface to fasten to the wall. The user can then position the weighing member perpendicular to the front wall. Then, the strap or straps of a piece of luggage, bag, or other item can be placed on the weighing member such that the strap contacts the strain gauge load cell and is suspended off the ground via the weighing member.
[0008] The load cell sensor has an electric charge such that as the sensor is pressed downward and once the strap is placed on the sensor, the electrical resistance of the sensor will change. The strain gauge then converts this change into an electric signal that runs through at least one analog to digital converter which is in electrical communication with at least one microchip. The microchip is in electrical communication with at least one display such that the weight of the luggage is displayed in numerical form via at least one indicia. The load cell and display are powered by and in electrical communication with at least one battery. The battery may be recharged by at least one USB port of any USB type known in the art.
[0009] Accordingly, the luggage scale device of the present invention is particularly advantageous as it provides a device that prevents a user from arriving at an airport with overweight luggage by allowing a user to conveniently weigh their luggage. In addition, the device is easily transportable and can be used anywhere, which is extremely advantageous for travelers. In this manner, the luggage scale device provides a novel solution to on-the-go luggage weighing.

[0010] The disclosure includes a scale comprising a housing, an arm hingedly coupled to the housing, the arm configured to receive at least a portion of an item to be weighed, and a display located on the housing, the display configured to show a weight of the item. In some embodiments, the housing comprises a rear wall, and the arm comprises a first end and a second end located opposite the first end. The second end may be hingedly coupled to the rear wall. In some embodiments, the scale further comprises a weighing portion located on the arm. The weighing portion may be located closer to the first end than the second end, and may be configured to receive the at least a portion of the item to be weighed.
[0011] In some embodiments, the scale further comprises a button located on a front surface of the rear wall. The button may be configured to tare the weighing portion of the scale. In some embodiments, the button is configured to zero the weighing portion of the scale. The scale may also include a toggle switch located on a front surface of the rear wall. In some embodiments, the toggle switch is configured to select a unit of measure for the weight. The unit of measure may comprise one of kilograms and pounds. In some embodiments, the scale is powered by at least one battery. The scale may further comprise a battery compartment located on the rear wall.
[0012] In some embodiments, the housing comprises a top portion. The display may be located on the top portion. The housing may also comprise a bottom portion located opposite the top portion. In some embodiments, the arm is hingedly coupled to the housing closer to the bottom portion than the top portion. The scale may further comprise a plate removably coupled to a back surface of the rear wall of the housing. In some embodiments, the plate is configured to couple, via an attaching mechanism, to a wall of a building to thereby couple the scale to the wall of the building.
[0013] The disclosure includes a scale comprising a housing, an arm coupled to the housing, a weighing portion located on the arm, the weighing portion configured to receive at least a portion of an item to be weighed, and a display located on the housing, the display configured to show a weight of the item. In some embodiments, the display is configured to show the weight of the item in units selected from the group consisting of pounds, kilograms, grams, ounces, and combinations thereof.
[0014] The weighing portion may be configured to receive a secondary device configured to hold the item to be weighed. In some embodiments, the secondary device is selected from the group consisting of a bag, a basket, a tray, a hook, and combinations thereof.
[0015] The scale may further comprise a strain gauge, a load cell sensor, a converter, and a microchip. In some embodiments, the load cell sensor has an electric charge, and the strain gauge is configured to convert a change in the electric charge to an analog electric signal. The converter may be configured to convert the analog electric signal to a digital signal. In some embodiments, the microchip receives the digital signal and communicates the digital signal to the display. The display may be configured to show the digital signal as the weight.
[0016] The foregoing, and other features and advantages of the invention, will be apparent from the following, more particular description of the preferred embodiments of the invention, the accompanying drawings, and the claims.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
[0017] These and other features, aspects, and advantages are described below with reference to the drawings, which are intended to illustrate, but not to limit, the invention. In the drawings, like characters denote corresponding features consistently throughout similar embodiments.
[0018] FIG. **1** illustrates a perspective view of a luggage scale device of the present invention while attached to a wall and in a closed position, according to some embodiments.
[0019] FIG. **2** illustrates a perspective view of a luggage scale device of the present invention while

attached to a wall and in an opened position, according to some embodiments.
[0020] FIG. **3** illustrates a perspective view of a luggage scale device of the present invention while attached to a wall and in an opened position while weighing luggage, according to some embodiments.
[0021] FIG. **4** illustrates a perspective view of a scale holding a piece of luggage, according to some embodiments.
[0022] FIG. **5** illustrates a perspective view of the scale in a closed position, according to some embodiments.
[0023] FIG. **6** illustrates a perspective view of the scale in an open position, according to some embodiments.
[0024] FIG. **7** illustrates a perspective view of the scale in an open position, including a battery compartment, according to some embodiments.
[0025] FIG. **8** illustrates an exploded view of the scale, according to some embodiments.
[0026] FIG. **9** illustrates a side view of the scale, according to some embodiments.
[0027] FIG. **10** illustrates a top view of the scale, according to some embodiments.
[0028] FIG. **11** illustrates an exploded view of the scale, according to some embodiments.
[0029] FIG. **12** illustrates an exploded view of an arm of the scale, according to some embodiments.
[0030] FIG. **13** illustrates a perspective view of a basket hanging from the scale, according to some embodiments.
[0031] FIG. **14** illustrates a perspective view of a rope and hook hanging from the scale, according to some embodiments.
[0032] FIG. **15** illustrates a perspective view of the scale with a tray mounted on the arm, according to some embodiments.
[0033] FIG. **16** illustrates a perspective view of the scale with a tray hanging from the arm, according to some embodiments.
[0034] FIG. **17** illustrates a perspective view of a bag hanging from the scale, according to some embodiments.
[0035] FIG. **18** illustrates a front view of the scale in an open position, according to some embodiments.
[0036] FIGS. **19**, **20**, and **21** illustrate top views of the scale displaying different weights, according to some embodiments.
[0037] FIG. **22** illustrates a front view of a scale in an open position, according to some embodiments.
[0038] FIGS. **23**A and **23**B illustrate block diagrams of the scale, according to some embodiments.
[0039] FIG. **24** illustrates a flowchart of the operation of the scale, according to some embodiments.

COMPONENT INDEX

[0040] **10**—wall [0041] **20**—luggage [0042] **30**—straps [0043] **100**—device [0044] **110**—housing [0045] **120**—front wall [0046] **130**—weighing member [0047] **132**—hinge [0048] **134**—rear surface [0049] **136**—front surface [0050] **138**—fastener [0051] **140**—side walls [0052] **150**—rear wall [0053] **160**—front surface [0054] **162**—display [0055] **164**—indicia [0056] **166**—rear surface [0057] **170**—fastener [0058] **180**—handle [0059] **190**—battery [0060] **192**—USB port [0061] **200**—button [0062] **300**—strain gauge load cell [0063] **310**—strain gauge [0064] **320**—load cell sensor [0065] **330**—converter [0066] **340**—microchip [0067] **400**—scale [0068] **402**—housing [0069] **404**—arm [0070] **404***a*—upper arm structure [0071] **404***b*—middle arm structure [0072] **404***c*—lower arm structure [0073] **406**—display [0074] **408**—luggage [0075] **500**—top portion (of housing) [0076] **502**—bottom portion (of housing) [0077] **600**—rear wall [0078] **602**—first end (of arm) [0079] **604**—second end (of arm) [0080] **606**—weighing portion [0081] **608**—battery compartment cover [0082] **700**—front surface (of rear wall) [0083] **702**—button [0084] **704**—

toggle switch [0085] **706**—battery compartment [0086] **800**—plate [0087] **802**—attaching mechanism [0088] **804**—attaching mechanism [0089] **1100**—hinge [0090] **1200**—load cell sensor [0091] **1300**—basket [0092] **1302**—basket handles [0093] **1400**—rope [0094] **1402**—hook [0095] **1500**—tray [0096] **1600**—tray [0097] **1602**—tray handles [0098] **1700**—bag [0099] **1702**—bag handles [0100] **2200**—scale [0101] **2202**—housing [0102] **2204**—rear wall [0103] **2206**—front surface [0104] **2208**—arm [0105] **2210**—first button [0106] **2212**—second button [0107] **2214**—display [0108] **2216**—battery compartment [0109] **2218**—battery compartment cover

DETAILED DESCRIPTION

[0110] The innovation is now described with reference to the drawings, wherein like reference numerals are used to refer to like elements throughout. In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding thereof. It may be evident, however, that the innovation can be practiced without these specific details. In other instances, well-known structures and devices are shown in block diagram form in order to facilitate a description thereof. Various embodiments are discussed hereinafter. It should be noted that the figures are described only to facilitate the description of the embodiments. They are not intended as an exhaustive description of the invention and do not limit the scope of the invention. Additionally, an illustrated embodiment need not have all the aspects or advantages shown. Thus, in other embodiments, any of the features described herein from different embodiments may be combined.

[0111] As noted above, there is a long-felt need in the art for a device that prevents a user from arriving at an airport with overweight luggage. There also exists a long-felt need in the art for a luggage scale device that can be used to weigh luggage.

[0112] The present invention, in one exemplary embodiment, is comprised of a luggage scale device. The device is primarily comprised of a housing with at least one weighing member, at least one display, and at least one strain gauge load cell. In the preferred embodiment, the housing has a front wall, a plurality of side walls, and a rear wall that form a generally rectangular housing. The front wall is comprised of a weighing member that extends outward from the front wall via at least one hinge such that the weighing member is perpendicular to the front wall. The rear surface of the weighing member is further comprised of at least one strain gauge load cell. The cell is comprised of at least one strain gauge, at least one load cell sensor (i.e., force transducer), at least one converter, and at least one microchip.

[0113] To use the device, a user first secures the rear wall of the housing to a wall via at least one fastener that allows the rear surface to fasten to the wall. The user can then position the weighing member perpendicular to the front wall. Then, the strap or straps of a piece of luggage, bag, or other item can be placed on the weighing member such that the strap contacts the strain gauge load cell and is suspended off the ground via the weighing member.

[0114] The load cell sensor has an electric charge such that as the sensor is pressed downward and once the strap is placed on the sensor, the electrical resistance of the sensor will change. The strain gauge then converts this change into an electric signal that runs through at least one analog to digital converter which is in electrical communication with at least one microchip. The microchip is in electrical communication with at least one display such that the weight of the luggage is displayed in numerical form via at least one indicia. The load cell and display are powered by and in electrical communication with at least one battery. The battery may be recharged by at least one USB port of any USB type known in the art.

[0115] Accordingly, the luggage scale device of the present invention is particularly advantageous as it provides a device that prevents a user from arriving at an airport with overweight luggage by allowing a user to conveniently weigh their luggage. In addition, the device is easily transportable and can be used anywhere, which is extremely advantageous for travelers. In this manner, the luggage scale device provides a novel solution to on-the-go luggage weighing.

[0116] Referring initially to the drawings, FIG. **1** illustrates a perspective view of one potential

embodiment of a luggage scale device **100** of the present invention while attached to a wall and in a closed position in accordance with the disclosed architecture. The device **100** is primarily comprised of a housing **110** with at least one weighing member **130**, at least one display **162**, and at least one strain gauge load cell **300**. The device **100** and all components are preferably made from a rigid plastic such as, but not limited to, acrylic, polycarbonate, polyethylene, thermoplastic, acrylonitrile butadiene styrene, low-density polyethylene, medium-density polyethylene, high-density polyethylene, polyethylene terephthalate, polyvinyl chloride, polystyrene, polylactic acid, acetal, nylon, fiberglass, recycled plastic, biodegradable plastic, etc., and/or a durable metal such as, but not limited to, aluminum or stainless steel. In the preferred embodiment, the housing **110** has a front wall **120**, a plurality of side walls **140**, and a rear wall **150** that form a generally rectangular housing **110**. However, the housing **110** may be any shape known in the art such as, but not limited to, square, circular, polygonal, etc.

[0117] The front wall **120** of the housing **110** is comprised of a weighing member **130**. The weighing member **130** extends outward from the front wall **120** via at least one hinge **132** (as seen in FIG. **2**) such that the weighing member **130** is perpendicular to the front wall **120**. In various embodiments, the hinge **132** may be any hinge type known in the art such as, but not limited to, an offset blind hinge, a knuckle hinge, a butt hinge, a rising butt hinge, a gravity pivot hinge, a ball bearing hinge, a barrel hinge, a concealed hinge, a knife hinge, a piano hinge, a strap hinge, a pivot hinge, a gas-piston hinge, an injection molded hinge, a locking hinge, etc.

[0118] In one embodiment, the rear surface **134** and/or front surface **136** of the weighing member **130** may have at least one fastener **138**. The fastener **138** allows the weighing member **130** to remain secure (i.e., locked) to the front wall **120** and/or the front surface **160** of the rear wall **150** when the device **100** is not in use. There may also be a reciprocating fastener **138** of the same type located on the front wall **120** and/or the front surface **160** of the rear wall **150**. The fastener **138** may be any fastener type known in the art such as, but not limited to, hook and loop, adhesive, magnetic, snap-button, tongue and groove, latch, etc.

[0119] The weighing member **130** is preferably rectangular in shape but may be any shape known in the art such as, but not limited to, a hook-like shape in various embodiments. The rear surface **134** of the weighing member **130** is further comprised of at least one strain gauge load cell **300**. The cell **300** is comprised of at least one strain gauge **310**, at least one load cell sensor **320** (i.e., force transducer), at least one converter **330**, and at least one microchip **340**.

[0120] FIG. **3** illustrates a perspective view of one potential embodiment of a luggage scale device **100** of the present invention while attached to a wall and in an opened position while weighing luggage in accordance with the disclosed architecture. To use the device **100**, a user first secures the rear wall **150** of the housing **110** to a wall **10**. The rear surface **166** of the rear wall **150** has at least one fastener **138** that allows rear surface **166** to fasten to the wall **10**. The fastener **138** may be any fastener known in the art such as, but not limited to, adhesive, magnetic, suction cup, etc. The user can then position the weighing member **130** perpendicular to the front wall **120**. The weighing member **130** may further be comprised of at least one handle **180** to aid in the repositioning of the weighing member **130** during use. Then, the strap **30** or straps **30** of a piece of luggage **20**, bag, or other item can be placed on the weighing member **130** such that the strap **30** contacts the strain gauge load cell **300** and is suspended off the ground via the weighing member **130**. The device **100** may be used to weigh luggage **20** but may also be used to weigh various items that can be placed within a bag or other hanging object. At least one button **200** on the housing **110** may allow a user to tare the strain gauge **310** to account for the extra weight of a bag which various items may be placed in.

[0121] The load cell sensor **320** has an electric charge. As the sensor **320** is pressed downward and once the strap **30** is placed on the sensor **320**, the electrical resistance of the sensor **320** will change. The strain gauge **310** then converts this change into an electric signal. The electric signal runs through at least one analog to digital converter **330** which is in electrical communication with at

least one microchip **340**. The microchip **340** is in electrical communication with at least one display **162** such that the weight of the luggage **20** is displayed in numerical form via at least one indicia **164**. The display **162** may be positioned anywhere on the housing **110** but is preferably positioned on the front surface **160** of the rear wall **150**. In various embodiments, the display **162** may display the weight of the luggage **20** in a plurality of weight units such as, but not limited to, pounds, ounces, grams, kilograms, etc., that can be selected via the button **200**. It is preferred that the device **100** have a minimum weight of 1 gram (or equivalent other unit). The display **162** may be any display screen known in the art such as, but not limited to, a touch screen, an LCD screen, an OLED screen, an ELD screen, an LED backlit LCD screen, an LED screen, a PDP screen, etc.
[0122] The load cell **300** and display **162** are powered by and in electrical communication with at least one battery **190**. The battery **190** may be a disposable battery **190** or a rechargeable battery **190** in the form of an alkaline, nickel-cadmium, nickel-metal hydride battery **190**, etc., such as any 3V-12 volts DC battery **190** or other conventional battery **190** such as A, AA, AAA, etc., that supplies power to the device **100**. Throughout this specification the terms “battery” and “batteries” may be used interchangeably to refer to one or more wet or dry cells or batteries **190** of cells in which chemical energy is converted into electricity and used as a source of DC power. References to recharging or replacing batteries **190** may refer to recharging or replacing individual cells, individual batteries **190** of cells, or a package of multiple battery cells as is appropriate for any given battery **190** technology that may be used. Additionally, the battery **190** may be recharged by at least one USB port **192** of any USB type known in the art.
[0123] Referring now to FIG. **4**, a perspective view of a scale **400** is shown. Any device and scale embodiments (**100**, **400**, and **2200**) disclosed herein may incorporate any of the features and components described with respect to each other. For example, scale **400** may include any of the features described with respect to device **100** and scale **2200**, and vice versa.
[0124] In some embodiments, the scale **400** includes a housing **402**, an arm **404**, and a display **406**. As demonstrated in FIG. **4**, the arm **404** may be configured to receive at least a portion of an item to be weighed, such as a handle of a piece of luggage **408**. The display **406** may be configured to show the weight of the item. In some embodiments, the arm **404** is hingedly coupled to the housing **402** and is configured to fold up into the housing **402** when not in use, as illustrated in FIG. **5**. In addition, FIG. **4** shows the scale **400** mounted to a wall **10**, similar to the device **100** shown in FIGS. **1** and **3**.
[0125] FIG. **5** shows a perspective view of the scale **400** mounted on the wall **10** and in a closed position, with the arm **404** folded substantially flush with the housing **402**. In some embodiments, at least one of the arm **404** and the housing **402** comprises a fastening mechanism to keep the arm **404** engaged with the housing **402** in the closed position. For example, the arm **404** and/or the housing **402** may include a clip or similar fastener that engages when the arm **404** is folded into the housing **402**. The arm **404** and the housing **402** may also fit together via a friction fit. It should be noted that the arm **404** may be configured to be “put away” in a manner other than folding against the housing **402**. For example, the arm **404** may comprise a telescoping arm, such that the arm **404** can collapse into itself when not in use. Alternatively, the arm **404** may be configured to fold onto itself, such as in half or thirds, before folding against the housing **402**. These examples are included as non-limiting possibilities, and it is understood that a person having ordinary skill in the art may conceive of numerous ways to store and secure the arm **404**.
[0126] In some embodiments, the housing **402** comprises a top portion **500** and a bottom portion **502**. As previously mentioned, the arm **404** may be hingedly coupled to the housing **402**. In some embodiments, the arm **404** is hingedly coupled to the housing **402** closer to the bottom portion **502** than the top portion **500**. The arm **404** may be hingedly coupled to the housing **402** adjacent the bottom portion **502**. In some embodiments, in the closed position, the arm **404** folds into the housing **402** and is secured adjacent the top portion **500**. The arm **404** may be secured to the housing **402** closer to the top portion **500** than the bottom portion **502**. As shown in FIG. **5**, the

display **406** may be located on the top portion **500**. It should be noted that the display **406** may be located anywhere on the housing **402**, including, but not limited to, the top portion **500**, the bottom portion **502**, and a side wall anywhere along the perimeter of the housing **402**.

[0127] FIG. **6** shows a perspective view of the scale **400** in an open position, again mounted to the wall **10**. With the scale **400** in an open position with the arm **404** folded down, rather than folded up, as shown in FIG. **5**, a rear wall **600** is visible. In some embodiments, the housing **402** comprises a rear wall **600** extending between the top portion **500** and the bottom portion **502**. When the arm **404** folds into the housing **402** in the closed position, at least a portion of the arm **404** may be configured to contact the rear wall **600**.

[0128] In some embodiments, the arm **404** comprises a first end **602** and a second end **604** located opposite the first end **602**. The second end **604** may be hingedly coupled to the housing **402**, and the first end **602** may extend outward from the housing **402**. In some embodiments, the second end **604** is coupled to the rear wall **600**. The second end **604** may be coupled to the rear wall **600** closer to the bottom portion **502** of the housing **402** than the top portion **500**. In some embodiments, when the arm **404** folds up into the closed position, the first end **602** couples to the housing **402** closer to the top portion **500** than the bottom portion **502**.

[0129] The scale **400** may include a weighing portion **606** located on the arm **404**, as illustrated in FIG. **6**. In some embodiments, the weighing portion **606** is configured to receive at least a portion of the item to be weighed, such as the handle of a suitcase. The weighing portion **606** may be located closer to the first end **602** of the arm **404** than the second end **604**. The weighing portion **606** may be located closer to the second end **604** than the first end **602**. The weighing portion **606** may be located substantially in the middle of the arm **404** equidistant from the first end **602** and the second end **604**. In some embodiments, the weighing portion **606** comprises a different proportion than shown in FIG. **6**. For example, the weighing portion **606** may cover about half of the arm **404**. In some embodiments, the weighing portion **606** covers less of the arm **404** than shown in FIG. **6**. The weighing portion **606** may cover substantially all of the arm **404**, such that an item may be placed anywhere on the arm **404** to be weighed. In some embodiments, the weighing portion **606** defines a recessed portion of the arm **404**. The weighing portion **606** may be thought of as similar to a cradle designed to hold a handle of an item to be weighed. The arm **404** and the weighing portion **606** will be discussed further with reference to FIG. **12**. FIG. **6** also shows a battery compartment cover **608**.

[0130] FIG. **7** is similar to FIG. **6** and shows a perspective view of the scale **400** in the open position and mounted on the wall **10**. As illustrated, in some embodiments, the rear wall **600** of the housing **402** comprises a front surface **700**. The front surface **700** may be thought of as the part of the rear wall **600** that is visible to a user when the scale **400** is mounted on the wall **10** and in the open position with the arm **404** folded down.

[0131] In some embodiments, the scale **400** includes a button **702** located on the front surface **700** of the rear wall **600**. The button **702** may be configured to tare the scale **400**. It should be noted that in this context, to “tare” the scale **400** means removing or disregarding a weight measurement, such as that of a container, before adding the item to be weighed. For example, if a user wanted to use the scale **400** to determine the weight of a pair of shoes, the user could hang a bag from the weighing portion **606** and press the button **702** to tare the scale **400**, thereby disregarding the weight of the bag (for example, 0.2 pounds). The user could then place the shoes in the bag so that the scale **400** would measure, and the display **406** would show, only the weight of the shoes, not the combined weight of the shoes and the bag.

[0132] The button **702** may also be configured to zero the scale **400**. In this context, to “zero” the scale **400** means resetting the weight value, and the display **406**, to zero. To continue with the previous example, consider that the user now wants to know the combined weight of the shoes and the bag. If the user removed the bag and the shoes from the weighing portion **606**, the display **406** would read “−0.2,” or possibly even display an error message because the scale **400** was previously

tared with the bag, so the weight of the bag was considered 0.0 rather than 0.2. To fix this issue, the user could remove any items from the weighing portion **606** and thereby press the button **702** to reset the scale **400** back to a true zero. Then, the user could simply hang the bag containing the shoes back on the weighing portion **606**, and the display **406** would show the combined weight of the shoes and the bag.

[0133] In some embodiments, the scale **400** also includes a toggle switch **704** located on the front surface **700** of the rear wall **600**. The toggle switch **704** may be configured to select a unit of measure for the weight shown on the display **406**. For example, FIG. **7** shows the toggle switch **704** as able to select either pounds ("lb") or kilograms ("kg"), and specifically illustrates kilograms as the selected unit of measure. It should be noted that the unit of measure may be selected by a mechanism other than a toggle switch, such as a button, multiple buttons, a touchscreen, or any number of other possibilities. It should also be noted that units of measurement other than pounds and kilograms may be selected, including, but not limited to: grams, milligrams, and ounces.

[0134] Unlike FIG. **6**, FIG. **7** shows the battery compartment cover **608** removed, thereby revealing the battery compartment **706**. In some embodiments, the scale **400** is powered by at least one battery within the battery compartment **706**. The scale **400** may be configured to turn on when the arm **404** is lowered and/or when weight is sensed on the weighing portion **606**. In some embodiments, the scale **400** includes a power button configured to turn on/off the scale **400**. The scale **400** may be powered by at least one rechargeable battery. The scale **400** may be powered by any number of battery types, including, but not limited to, traditional alkaline batteries (e.g., A, AA, AAA, C, D), coin or button cell batteries, and lithium-ion batteries, among others. To preserve battery life, the scale **400** may be configured to turn off after a predetermined amount of time without detecting weight. In some embodiments, the predetermined amount of time is 10 seconds. The predetermined amount of time may be about 2 minutes. In some embodiments, the predetermined amount of time is 5 minutes. The predetermined amount of time may be an amount of time other than those specifically stated in this disclosure. In some embodiments, the scale **400** is connected to a power supply of a building (i.e., hardwired to the building), and is thereby powered by the building.

[0135] FIG. **8** shows an exploded view of the scale **400**. In some embodiments, the scale **400** includes a plate **800** removably coupled to a back surface of the rear wall **600**. The plate **800** may be coupled to the rear wall **600** via at least one attaching mechanism **802**. In some embodiments, the at least one attaching mechanism **802** comprises at least one screw, as illustrated in FIG. **8**. The at least one attaching mechanism **802** may comprise any suitable type of fastener. In some embodiments, the at least one attaching mechanism **802** couples to the plate **800** through the battery compartment **706**. The at least one attaching mechanism **802** may couple to the plate **800** through the front surface **700** of the rear wall **600**. The plate **800** may couple to the rear wall **600** by a method other than the at least one attaching mechanism **802**. For example, at least one clip of the plate **800** may be received by, or otherwise couple to, the housing **402**. In some embodiments, the plate **800** couples to the rear wall **600** with a combination of the at least one attaching mechanism **802** and another method.

[0136] FIG. **8** also shows another attaching mechanism **804**. In some embodiments, the plate **800** is configured to couple to a wall of a building via the at least one attaching mechanism **804**, thereby coupling the scale **400** to the wall of the building. The attaching mechanism **804** may comprise a threaded fastener, such as a bolt, screw, or similar fastener. The attaching mechanism **804** may comprise a different type of fastener, such as hook and loop fastener or adhesive. In some embodiments, a user first couples the plate **800**, via the at least one attaching mechanism **804**, to the wall of the building, then couples the housing **402** to the plate **800** via the at least one attaching mechanism **802**.

[0137] FIG. **9** illustrates a side view of the scale **400**, including the attaching mechanism **804** protruding from the plate **800**. In some embodiments, as shown in FIGS. **8** and **9**, the plate **800** is

configured to receive two attaching mechanisms **804** in order to couple to a wall (or other suitable surface). The plate **800** may be configured to use a single attaching mechanism **804** to couple to another surface. In some embodiments, the plate **800** uses more than two attaching mechanisms **804** to couple to another surface.

[0138] FIG. **10** shows a top view of the scale **400**, including the display **406** on the top portion **500** of the housing **402**. FIG. **10** also shows one attaching mechanism **804**. In some embodiments, the display **406** includes three digits. The display **406** may include fewer than three digits. The display **406** may include more than three digits, as will be discussed with reference to FIGS. **21** and **22**.

[0139] FIG. **11** shows another exploded view of the scale **400**, including the housing **402**, the arm **404**, and the plate **800**. As previously mentioned, the arm **404** may be hingedly coupled to the housing **402**. FIG. **11** shows the hinge **1100**, which may be received by the arm **404** and configured to couple to the housing **402**. In some embodiments, the arm **404** is hingedly coupled to the rear wall **600**. The arm **404** may be hingedly coupled to the housing **402** below the rear wall **600**. In some embodiments, the housing **402** includes a portion, such as a track or channel, configured to receive at least a portion of the arm **404**. The channel may be configured to receive the hinge **1100**. It should be noted that the arm **404** may be coupled to the housing **402** by a mechanism other than the hinge **1100**.

[0140] FIG. **12** illustrates an exploded view of the arm **404**. In some embodiments, the arm **404** comprises an upper arm structure **404***a*, a middle arm structure **404***b*, and a lower arm structure **404***c*. The upper arm structure **404***a* and the lower arm structure **404***c* may be configured to couple together with the middle arm structure **404***b* located between, and inside of, the upper arm structure **404***a* and the lower arm structure **404***c*. Accordingly, the upper arm structure **404***a* and the lower arm structure **404***c* may be considered exterior structures, while the middle arm structure **404***b* may be considered an interior structure.

[0141] FIG. **12** also shows the weighing portion **606** and illustrates its recessed nature, as compared to the rest of the arm **404**. Also included in FIG. **12** is the load cell sensor **1200**. In some embodiments, the load cell sensor **1200** is one of the components involved in measuring the weight of an item received by the weighing portion **606**. The load cell sensor **1200** may operate similarly to the load cell sensor **320**, discussed earlier in this disclosure with reference to the device **100**.

[0142] In some embodiments, the weighing portion **606** of the scale **400** is configured to receive a secondary device configured to hold an item to be weighed. As illustrated in FIG. **13**, the secondary device may comprise a basket **1300**. The basket **1300** may be configured to hold any number of items, depending on the use context of the scale **400**. For example, if the scale **400** is installed in a grocery store, the basket **1300** may be configured to hold produce to allow shoppers to determine the weight of the produce prior to purchasing it. FIG. **13** also illustrates a use case where the button **702** would be used to tare the scale **400**—by taring the scale **400** to disregard the weight of the basket **1300**, shoppers can be sure that the weight displayed by the scale **400** is that of the produce only, not that basket and the produce. The basket **1300** can be used to weigh items by hanging the basket **1300**, via the basket handles **1302**, from the weighing portion **606** of the scale **400**. In some embodiments, the weighing portion **606** includes some kind of bracket or similar holder to secure the basket handles **1302** in one spot and prevent the basket handles **1302** from slipping—and the basket **1300** from tipping—if weight is not distributed evenly across the surface of the basket **1300**.

[0143] FIG. **14** illustrates another embodiment of a secondary device configured to hang from the scale **400**. As shown, a rope **1400** with a hook **1402** on the end may be configured to hang from the weighing portion **606**, and an item to be weighed may, in turn, hang from the hook **1402** to be weighed by the scale **400**. In some embodiments, the hook **1402** comprises a barbless hook to prevent damage to the item to be weighed. For example, the scale **400** may be mounted on a wall **10** of a restaurant, fish market, or fishing boat, and the hook **1402** may hook into the mouth or gills of a fish so that the scale **400** can weigh the fish. The rope **1400** and the hook **1402** may also be used in farming or food processing facilities to weigh other small animals, such as poultry.

[0144] FIG. **15** shows the scale **400** with a tray **1500** mounted on top. In some embodiments, the tray **1500** comprises another secondary device configured to couple to the scale **400** to receive an item to be weighed. For example, the tray **1500** may be configured to hold cosmetics, produce, or other bulk goods (e.g., bagged nuts or candy) when the scale **400** is used in a retail context. The scale **400** may also be used in homes, bakeries, or restaurants, and the tray **1500** can be configured to hold ingredients, like flour or sugar, that are best measured by weight. In some embodiments, the tray **1500** is coupled to a mounting device, which, in turn, is coupled to the weighing portion **606** of the scale **400**, in order to direct the weight on the tray **1500** to the weighing portion **606**, rather than across the arm **404**.
[0145] FIG. **16** is similar to FIG. **15** but shows a tray **1600** hanging from the weighing portion **606** rather than mounted on top, like the tray **1500**. Similar to the basket **1300**, the tray **1600** may include tray handles **1602** configured to hang from the weighing portion **606**. In some embodiments, the weighing portion **606** includes some kind of bracket or similar holder to secure the tray handles **1602** in one spot and prevent the tray handles **1602** from slipping—and the tray **1600** from tipping—if weight is not distributed evenly across the surface of the tray **1600**. As discussed with reference to FIG. **15**, the tray **1600** may be used in both residential and commercial contexts to weigh a variety of items that can be placed on the tray **1600**. It should be noted that the tray **1500** and/or the tray **1600** may define a size other than what is shown in the figures. In addition, the tray **1500** and/or the tray **1600** may be comprised of food-safe materials and may be washable to ensure sanitary handling of food, such as when using the tray **1500** and/or the tray **1600** to weigh ingredients for cooking or baking.
[0146] FIG. **17** illustrates another example of a secondary device—the bag **1700**. In some embodiments, the bag handles **1702** are configured to hang from the weighing portion **606** so that item(s) can be placed in the bag **1700** to be weighed by the scale **400**. In some embodiments, the weighing portion **606** includes some kind of bracket or similar holder to secure the bag handles **1702** in one spot and prevent the bag handles **1702** from slipping—and the bag **1700** from tipping—if weight is not distributed evenly within the bag **1700**. The bag **1700** may be comprised of a number of suitable materials and may define a number of sizes.
[0147] FIG. **18** shows a front view of the scale **400** coupled to a wall **10**. FIG. **18** is similar to previous figures, including FIG. **6**, and shows the rear wall **600**, as well as the button **702** and the toggle switch **704** coupled to the front surface **700**. FIG. **18** also includes the arm **404** extending straight out the front of the housing **402**, along the Z axis of the page, as shown by the directional indicator in FIG. **18**.
[0148] FIGS. **19**, **20**, and **21** each illustrate a top view of the scale **400**, with different numbers shown on the display **406**. It should be noted that, in order to focus on the display **406**, the arm **404** is not shown in FIGS. **19-21**. As demonstrated in FIG. **19**, where the display **406** shows the number 39.2, the display **406** may comprise three digits and be configured to show one decimal place. In some embodiments, as demonstrated in FIG. **20**, where the display **406** shows the number 5.07, the display **406** comprises three digits and is configured to show two decimal places. The display **406** may comprise four digits, as shown in FIG. **21**, where the display **406** shows the number 22.54. In an embodiment where the display **406** comprises four digits, the display **406** may be configured to show zero, one, two, or three decimal places.
[0149] FIG. **22** shows a scale **2200**. The scale **2200** may be similar to the scale **400** in that it comprises similar features, such as a housing **2202**, a rear wall **2204**, a display **2214**, and an arm **2208**, illustrated coming straight out of the housing **2202**, along the Z axis of the page, as shown by the directional indicator in FIG. **22**. The scale **2200** may also include a first button **2210** on the front surface **2206** configured to tare/zero the scale **2200**, similar to the button **702**. Rather than the toggle switch **704**, the scale **2200** may include a second button **2212** on the front surface **2206** configured to select the units of measurement.
[0150] In some embodiments, the scale **2200** is configured to measure and display weight in at

least one of four possible measurements: pounds, kilograms, ounces, and grams. As shown in FIG. **22**, the possible units of measurement may be written around the display **2214**. In some embodiments, the selected unit of measurement is indicated by the illumination of one of the terms. For example, when the second button **2212** is pressed, the labels around the display **2214** may take turns glowing to indicate which unit is selected. Alternatively, the display **2214** may include a dot or other symbol configured to illuminate in each corner of the display **2214** corresponding to each possible unit. It should be noted that rather than a button, the units of measurement may be selected by multiple buttons, one or more toggle switches, a touchscreen, or the like. In some embodiments, the scale **2200** includes a display **2214** having four digits, like the display **406** shown in FIG. **21**.

[0151] FIG. **22** also includes a battery compartment **2216** and a battery compartment cover **2218**. Like the scale **400**, the scale **2200** may be powered by at least one battery within the battery compartment **2216**. The scale **2200** may be configured to turn on when the arm **2208** is lowered and/or when weight is sensed on the weighing portion of the arm **2208**. In some embodiments, the scale **2200** includes a power button configured to turn on/off the scale **2200**. The scale **2200** may be powered by at least one rechargeable battery. The scale **2200** may be powered by any number of battery types, including, but not limited to, traditional alkaline batteries (e.g., A, AA, AAA, C, D), coin or button cell batteries, and lithium-ion batteries. To preserve battery life, the scale **2200** may be configured to turn off after a predetermined amount of time without detecting weight. In some embodiments, the predetermined amount of time is 10 seconds. The predetermined amount of time may be about 2 minutes. In some embodiments, the predetermined amount of time is 5 minutes. The predetermined amount of time may be an amount of time other than those specifically stated in this disclosure. In some embodiments, the scale **2200** is connected to a power supply of a building (i.e., hardwired to the building), and is thereby powered by the building.

[0152] In some embodiments, the scale **2200** has a maximum weight capacity of about 25pounds. The scale **400** may have a maximum weight capacity of about **100** pounds. In some embodiments, the scale **2200** defines smaller dimensions than the scale **400**. In addition to the use cases described above, the scale **400** and/or the scale **2200** may be located in hotels, resorts, airports, and on cruise ships, as well as in short-term rental vacation homes. The scale **400** and/or the scale **2200** may be used to weigh sporting goods such as bicycles (by balancing the bike seat on the weighing portion), backpacks, and hunting equipment.

[0153] FIGS. **23**A and **23**B show block diagrams of a scale. It should be noted that FIGS. **23**A and **23**B apply to both the scale **400** and the scale **2200**. In some embodiments, as shown in FIG. **23**A, the scale includes a load cell sensor, a strain gauge, a converter, and a microchip. As shown in FIG. **23**B, the arm of the scale may comprise the load cell sensor and the strain gauge, while the converter and the microchip may be located elsewhere on the scale.

[0154] FIG. **24** shows a flowchart of operation of a scale. Like FIGS. **23**A and **23**B, FIG. **24** may be considered as referring to both the scale **400** and the scale **2200**. In some embodiments, operation begins with the scale receiving power from at least one battery, at Step **2400**. Upon the scale receiving power, the load cell sensor may receive an electric charge. Then, the weighing portion receives an item, at Step **2402**. The electric charge from the load cell sensor may change due to the force from the item being placed on the weighing portion, at Step **2404**. In some embodiments, the strain gauge converts the change in the electric charge to an analog electric signal, at Step **2406**. The converter may convert the analog electric signal to a digital signal, at Step **2408**. In some embodiments, the microchip receives the digital signal and communicates the signal to the display, at Step **2410**. Finally, the display shows the digital signal as the weight of the item, at Step **2412**.

[0155] Certain terms are used throughout the following description and claims to refer to particular features or components. As one skilled in the art will appreciate, different persons may refer to the same feature or component by different names. This document does not intend to distinguish between components or features that differ in name but not structure or function. As used herein

“luggage scale device” and “device” are interchangeable and refer to the luggage scale device **100** of the present invention.

[0156] Notwithstanding the foregoing, the luggage scale device **100** of the present invention and its various components can be of any suitable size and configuration as is known in the art without affecting the overall concept of the invention, provided that they accomplish the above-stated objectives. One of ordinary skill in the art will appreciate that the size, configuration, and material of the luggage scale device **100** as shown in the FIGS. are for illustrative purposes only, and that many other sizes and shapes of the luggage scale device **100** are well within the scope of the present disclosure. Although the dimensions of the luggage scale device **100** are important design parameters for user convenience, the luggage scale device **100** may be of any size, shape and/or configuration that ensures optimal performance during use and/or that suits the user's needs and/or preferences.

[0157] Some of the components listed herein use the same number from figure to figure. It should be appreciated these components use the same numbers solely for ease of reference and to facilitate comprehension for the reader. While these components may use the same numbers, differences may be present in these components as illustrated in the various figures in which they appear and as described in the specification herein.

[0158] None of the steps described herein is essential or indispensable. Any of the steps can be adjusted or modified. Other or additional steps can be used. Any portion of any of the steps, processes, structures, and/or devices disclosed or illustrated in one embodiment, flowchart, or example in this specification can be combined or used with or instead of any other portion of any of the steps, processes, structures, and/or devices disclosed or illustrated in a different embodiment, flowchart, or example. The embodiments and examples provided herein are not intended to be discrete and separate from each other.

[0159] The section headings and subheadings provided herein are nonlimiting. The section headings and subheadings do not represent or limit the full scope of the embodiments described in the sections to which the headings and subheadings pertain. For example, a section titled “Topic 1” may include embodiments that do not pertain to Topic 1 and embodiments described in other sections may apply to and be combined with embodiments described within the “Topic 1” section.

[0160] The various features and processes described above may be used independently of one another, or may be combined in various ways. All possible combinations and subcombinations are intended to fall within the scope of this disclosure. In addition, certain method, event, state, or process blocks may be omitted in some implementations. The methods, steps, and processes described herein are also not limited to any particular sequence, and the blocks, steps, or states relating thereto can be performed in other sequences that are appropriate. For example, described tasks or events may be performed in an order other than the order specifically disclosed. Multiple steps may be combined in a single block or state. The example tasks or events may be performed in serial, in parallel, or in some other manner. Tasks or events may be added to or removed from the disclosed example embodiments. The example systems and components described herein may be configured differently than described. For example, elements may be added to, removed from, or rearranged compared to the disclosed example embodiments.

[0161] Conditional language used herein, such as, among others, “can,” “could,” “might,” “may,” “e.g.,” and the like, unless specifically stated otherwise, or otherwise understood within the context as used, is generally intended to convey that certain embodiments include, while other embodiments do not include, certain features, elements and/or steps. Thus, such conditional language is not generally intended to imply that features, elements and/or steps are in any way required for one or more embodiments or that one or more embodiments necessarily include logic for deciding, with or without author input or prompting, whether these features, elements and/or steps are included or are to be performed in any particular embodiment. The terms “comprising,” “including,” “having,” and the like are synonymous and are used inclusively, in an open-ended

fashion, and do not exclude additional elements, features, acts, operations and so forth. Also, the term “or” is used in its inclusive sense (and not in its exclusive sense) so that when used, for example, to connect a list of elements, the term “or” means one, some, or all of the elements in the list. Conjunctive language such as the phrase “at least one of X, Y, and Z,” unless specifically stated otherwise, is otherwise understood with the context as used in general to convey that an item, term, etc. may be either X, Y, or Z. Thus, such conjunctive language is not generally intended to imply that certain embodiments require at least one of X, at least one of Y, and at least one of Z to each be present.

[0162] The term “and/or” means that “and” applies to some embodiments and “or” applies to some embodiments. Thus, A, B, and/or C can be replaced with A, B, and C written in one sentence and A, B, or C written in another sentence. A, B, and/or C means that some embodiments can include A and B, some embodiments can include A and C, some embodiments can include B and C, some embodiments can only include A, some embodiments can include only B, some embodiments can include only C, and some embodiments can include A, B, and C. The term “and/or” is used to avoid unnecessary redundancy.

[0163] Also define any other terms used in the application (i.e., “about,” “substantially,” “adjacent,” etc.)

[0164] The foregoing may be accomplished through software code running in one or more processors on a communication device in conjunction with a processor in a server running complementary software code.

[0165] Some of the devices, systems, embodiments, and processes use computers. Each of the routines, processes, methods, and algorithms described in the preceding sections may be embodied in, and fully or partially automated by, code modules executed by one or more computers, computer processors, or machines configured to execute computer instructions. The code modules may be stored on any type of non-transitory computer-readable storage medium or tangible computer storage device, such as hard drives, solid state memory, flash memory, optical disc, and/or the like. The processes and algorithms may be implemented partially or wholly in application-specific circuitry. The results of the disclosed processes and process steps may be stored, persistently or otherwise, in any type of non-transitory computer storage such as, e.g., volatile or non-volatile storage.

[0166] It is appreciated that in order to practice the method of the foregoing as described above, it is not necessary that the processors and/or the memories of the processing machine be physically located in the same geographical place. That is, each of the processors and the memory (or memories) used by the processing machine may be located in geographically distinct locations and connected so as to communicate in any suitable manner. Additionally, it is appreciated that each of the processor and/or the memory may be composed of different physical pieces of equipment. Accordingly, it is not necessary that the processor be one single piece of equipment in one location and that the memory be another single piece of equipment in another location. That is, it is contemplated that the processor may be two pieces of equipment in two different physical locations. The two distinct pieces of equipment may be connected in any suitable manner. Additionally, the memory may include two or more portions of memory in two or more physical locations.

[0167] To explain further, processing, as described above, is performed by various components and various memories. However, it is appreciated that the processing performed by two distinct components as described above may, in accordance with a further embodiment of the foregoing, be performed by a single component. Further, the processing performed by one distinct component as described above may be performed by two distinct components. In a similar manner, the memory storage performed by two distinct memory portions, as described above, may, in accordance with a further embodiment of the foregoing, be performed by a single memory portion. Further, the memory storage, performed by one distinct memory portion, as described above, may be performed

by two memory portions.
[0168] Further, various technologies may be used to provide communication between the various processors and/or memories, as well as to allow the processors and/or the memories of the foregoing to communicate with any other entity, i.e., so as to obtain further instructions or to access and use remote memory stores, for example. Such technologies used to provide such communication might include a network, the Internet, Intranet, Extranet, LAN, an Ethernet, wireless communication via cell tower or satellite, or any client server system that provides communication, for example. Such communications technologies may use any suitable protocol such as TCP/IP, UDP, or OSI, for example.
[0169] As described above, a set of instructions may be used in the processing of the foregoing. The set of instructions may be in the form of a program or software. The software may be in the form of system software or application software, for example. The software might also be in the form of a collection of separate programs, a program module within a larger program, or a portion of a program module, for example. The software used might also include modular programming in the form of object-oriented programming. The software may instruct the processing machine what to do with the data being processed.
[0170] Further, it is appreciated that the instructions or set of instructions used in the implementation and operation of the foregoing may be in a suitable form such that the processing machine may read the instructions. For example, the instructions that form a program may be in the form of a suitable programming language, which is converted to machine language or object code to allow the processor or processors to read the instructions. That is, written lines of programming code or source code, in a particular programming language, are converted to machine language using a compiler, assembler or interpreter. The machine language is binary coded machine instructions that are specific to a particular type of processing machine, i.e., to a particular type of computer, for example. The computer understands the machine language.
[0171] Any suitable programming language may be used in accordance with the various embodiments of the foregoing. Illustratively, the programming language used may include assembly language, Ada, APL, Basic, C, C++, COBOL, dBase, Forth, Fortran, Java, Modula-2, Pascal, Prolog, Python, REXX, Visual Basic, and/or JavaScript, for example. Further, it is not necessary that a single type of instruction or single programming language be utilized in conjunction with the operation of the system and method of the foregoing. Rather, any number of different programming languages may be utilized as is necessary and/or desirable.
[0172] Also, the instructions and/or data used in the practice of the foregoing may utilize any compression or encryption technique or algorithm, as may be desired. An encryption module might be used to encrypt data. Further, files or other data may be decrypted using a suitable decryption module, for example.
[0173] As described above, the foregoing may illustratively be embodied in the form of a processing machine, including a computer or computer system, for example, that includes at least one memory. It is to be appreciated that the set of instructions, i.e., the software for example, that enables the computer operating system to perform the operations described above may be contained on any of a wide variety of media or medium, as desired. Further, the data that is processed by the set of instructions might also be contained on any of a wide variety of media or medium. That is, the particular medium, i.e., the memory in the processing machine, utilized to hold the set of instructions and/or the data used in the foregoing may take on any of a variety of physical forms or transmissions, for example. Illustratively, the medium may be in the form of paper, paper transparencies, a compact disk, a DVD, an integrated circuit, a hard disk, a floppy disk, an optical disk, a magnetic tape, a RAM, a ROM, a PROM, an EPROM, a wire, a cable, a fiber, a communications channel, a satellite transmission, a memory card, a SIM card, or other remote transmission, as well as any other medium or source of data that may be read by the processors of the foregoing.

[0174] Further, the memory or memories used in the processing machine that implements the foregoing may be in any of a wide variety of forms to allow the memory to hold instructions, data, or other information, as is desired. Thus, the memory might be in the form of a database to hold data. The database might use any desired arrangement of files such as a flat file arrangement or a relational database arrangement, for example.
[0175] In the system and method of the foregoing, a variety of “user interfaces” may be utilized to allow a user to interface with the processing machine or machines that are used to implement the foregoing. As used herein, a user interface includes any hardware, software, or combination of hardware and software used by the processing machine that allows a user to interact with the processing machine. A user interface may be in the form of a dialogue screen for example. A user interface may also include any of a mouse, touch screen, keyboard, keypad, voice reader, voice recognizer, dialogue screen, menu box, list, checkbox, toggle switch, a pushbutton or any other device that allows a user to receive information regarding the operation of the processing machine as it processes a set of instructions and/or provides the processing machine with information. Accordingly, the user interface is any device that provides communication between a user and a processing machine. The information provided by the user to the processing machine through the user interface may be in the form of a command, a selection of data, or some other input, for example.
[0176] As discussed above, a user interface is utilized by the processing machine that performs a set of instructions such that the processing machine processes data for a user. The user interface is typically used by the processing machine for interacting with a user either to convey information or receive information from the user. However, it should be appreciated that in accordance with some embodiments of the system and method of the foregoing, it is not necessary that a human user actually interact with a user interface used by the processing machine of the foregoing. Rather, it is also contemplated that the user interface of the foregoing might interact, i.e., convey and receive information, with another processing machine, rather than a human user. Accordingly, the other processing machine might be characterized as a user. Further, it is contemplated that a user interface utilized in the system and method of the foregoing may interact partially with another processing machine or processing machines, while also interacting partially with a human user.
[0177] While certain example embodiments have been described, these embodiments have been presented by way of example only, and are not intended to limit the scope of the inventions disclosed herein. Thus, nothing in the foregoing description is intended to imply that any particular feature, characteristic, step, module, or block is necessary or indispensable. Indeed, the novel methods and systems described herein may be embodied in a variety of other forms; furthermore, various omissions, substitutions, and changes in the form of the methods and systems described herein may be made without departing from the spirit of the inventions disclosed herein.

Claims

1. A scale, comprising: a housing; an arm hingedly coupled to the housing, the arm configured to receive at least a portion of an item to be weighed; and a display located on the housing, the display configured to show a weight of the item.
2. The scale of claim 1, wherein the housing comprises a rear wall, the arm comprising a first end and a second end located opposite the first end, wherein the second end is hingedly coupled to the rear wall.
3. The scale of claim 2, further comprising a weighing portion located on the arm, wherein the weighing portion is located closer to the first end than the second end, and wherein the weighing portion is configured to receive the at least a portion of the item to be weighed.
4. The scale of claim 3, the scale further comprising a button located on a front surface of the rear wall, the button configured to tare the weighing portion of the scale.

5. The scale of claim 4, wherein the button is configured to zero the weighing portion of the scale.
6. The scale of claim 2, further comprising a toggle switch located on a front surface of the rear wall, the toggle switch configured to select a unit of measure for the weight.
7. The scale of claim 6, wherein the unit of measure comprises one of kilograms and pounds.
8. The scale of claim 2, wherein the scale is powered by at least one battery, the scale further comprising a battery compartment located on the rear wall.
9. The scale of claim 1, wherein the housing comprises a top portion and wherein the display is located on the top portion.
10. The scale of claim 9, wherein the housing comprises a bottom portion located opposite the top portion, wherein the arm is hingedly coupled to the housing closer to the bottom portion than the top portion.
11. The scale of claim 2, further comprising a plate removably coupled to a back surface of the rear wall of the housing, wherein the plate is configured to couple, via an attaching mechanism, to a wall of a building to thereby couple the scale to the wall of the building.
12. A scale, comprising: a housing; an arm coupled to the housing; a weighing portion located on the arm, the weighing portion configured to receive at least a portion of an item to be weighed; and a display located on the housing, the display configured to show a weight of the item.
13. The scale of claim 12, wherein the display is configured to show the weight of the item in units selected from the group consisting of pounds, kilograms, grams, ounces, and combinations thereof.
14. The scale of claim 12, wherein the weighing portion is configured to receive a secondary device configured to hold the item to be weighed.
15. The scale of claim 14, wherein the secondary device is selected from the group consisting of a bag, a basket, a tray, a hook, and combinations thereof.
16. The scale of claim 12, further comprising a strain gauge, a load cell sensor, a converter, and a microchip.
17. The scale of claim 16, wherein the load cell sensor has an electric charge and the strain gauge is configured to convert a change in the electric charge to an analog electric signal.
18. The scale of claim 17, wherein the converter is configured to convert the analog electric signal to a digital signal.
19. The scale of claim 18, wherein the microchip receives the digital signal and communicates the digital signal to the display.
20. The scale of claim 19, wherein the display shows the digital signal as the weight.