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(54) SYSTEMS AND METHODS FOR EASY-TO-OPEN PAINTBALL LOADER

(76) Inventors: **John Marques**, Tustin, CA (US); **Christopher V. Corcino**, Temecula, CA (US); **Gary Shows**, Riverside, CA (US)

Correspondence Address:
STETINA BRUNDA GARRED & BRUCKER
75 ENTERPRISE, SUITE 250
ALISO VIEJO, CA 92656

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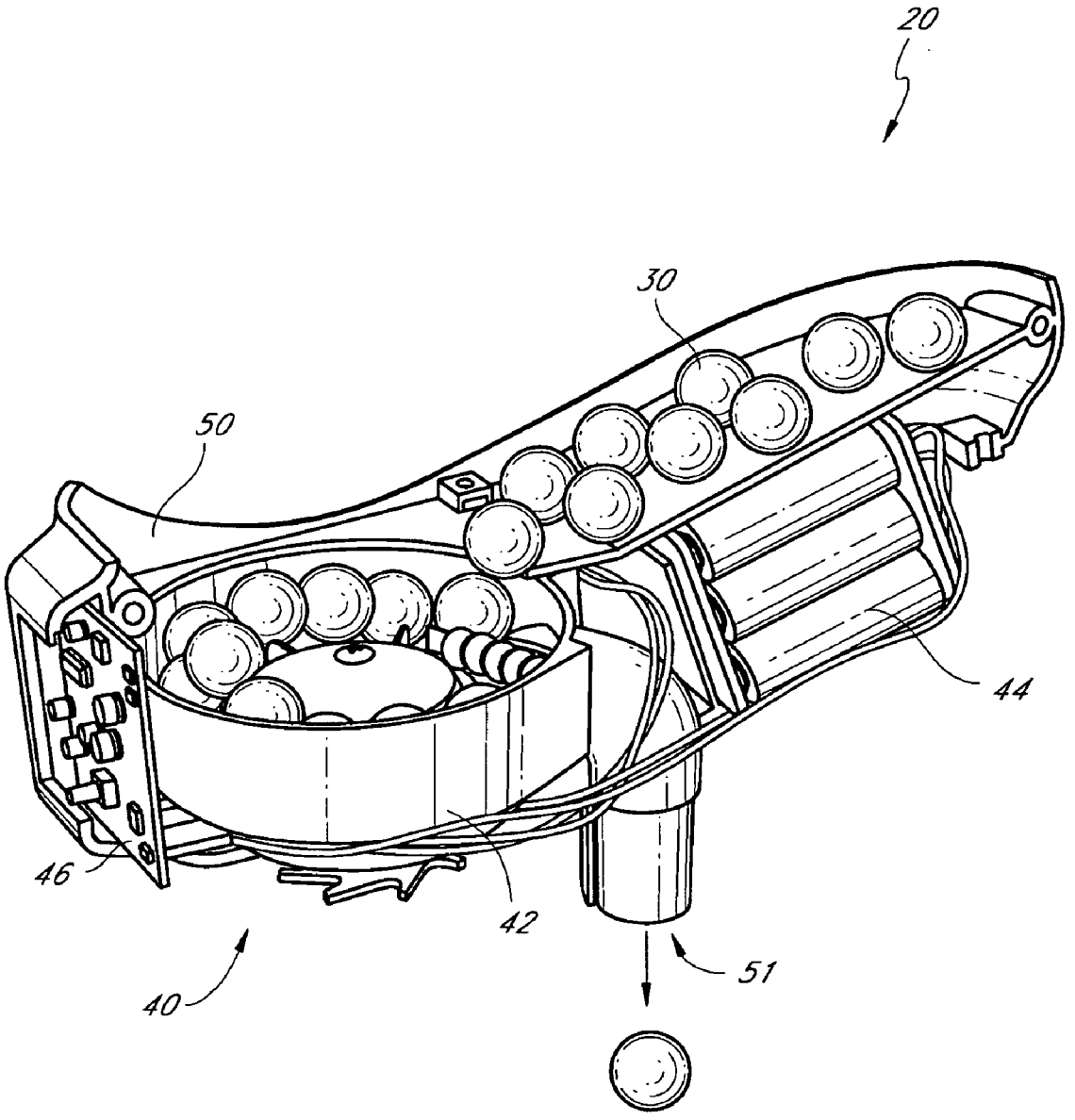
(57) **ABSTRACT**

Systems and methods are provided for an easy-to-open paintball loader housing. A housing is provided with a chamber for storing a paintball feeding system and a chamber for storing a supply of paintballs. The housing is separable such that the portion storing the supply of paintballs may be reached by a user's hand for cleaning.



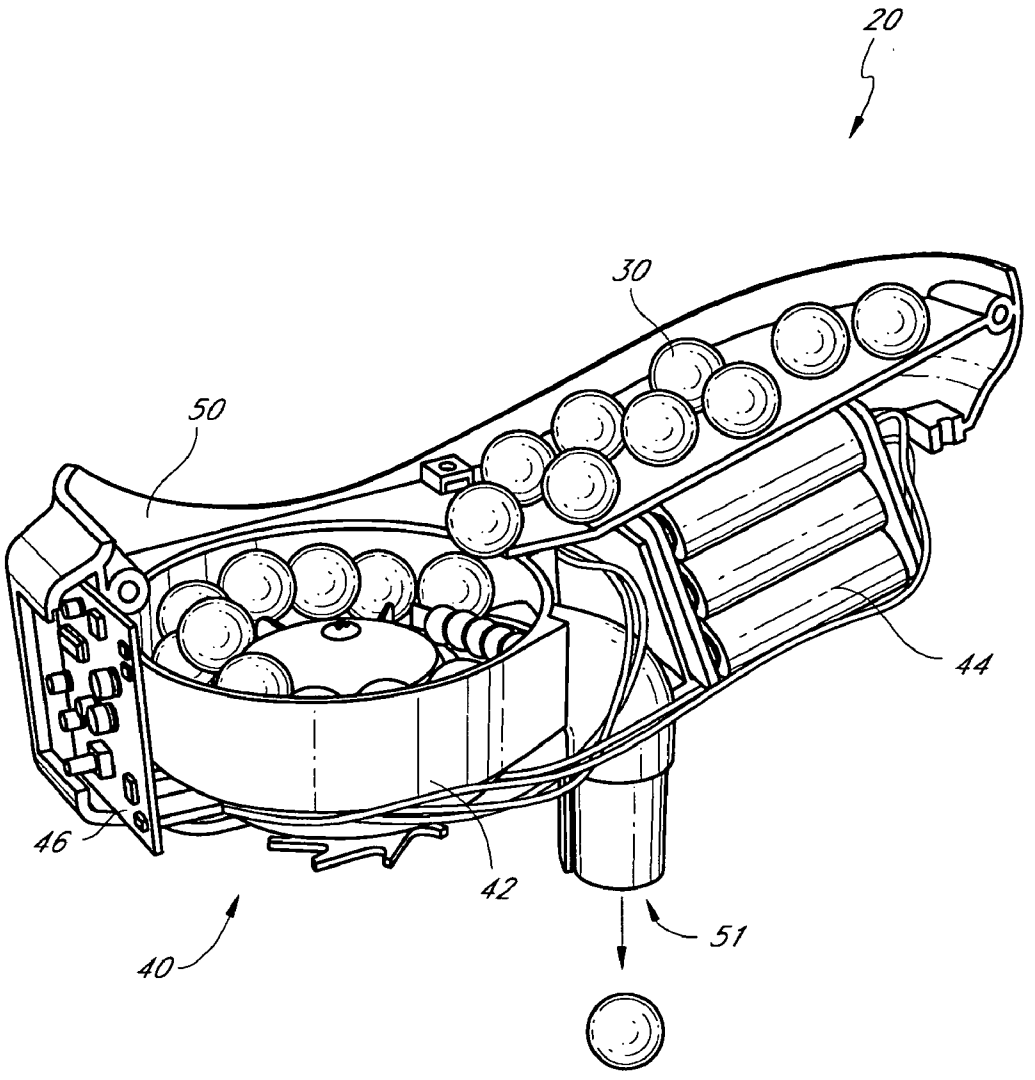


FIG. 1

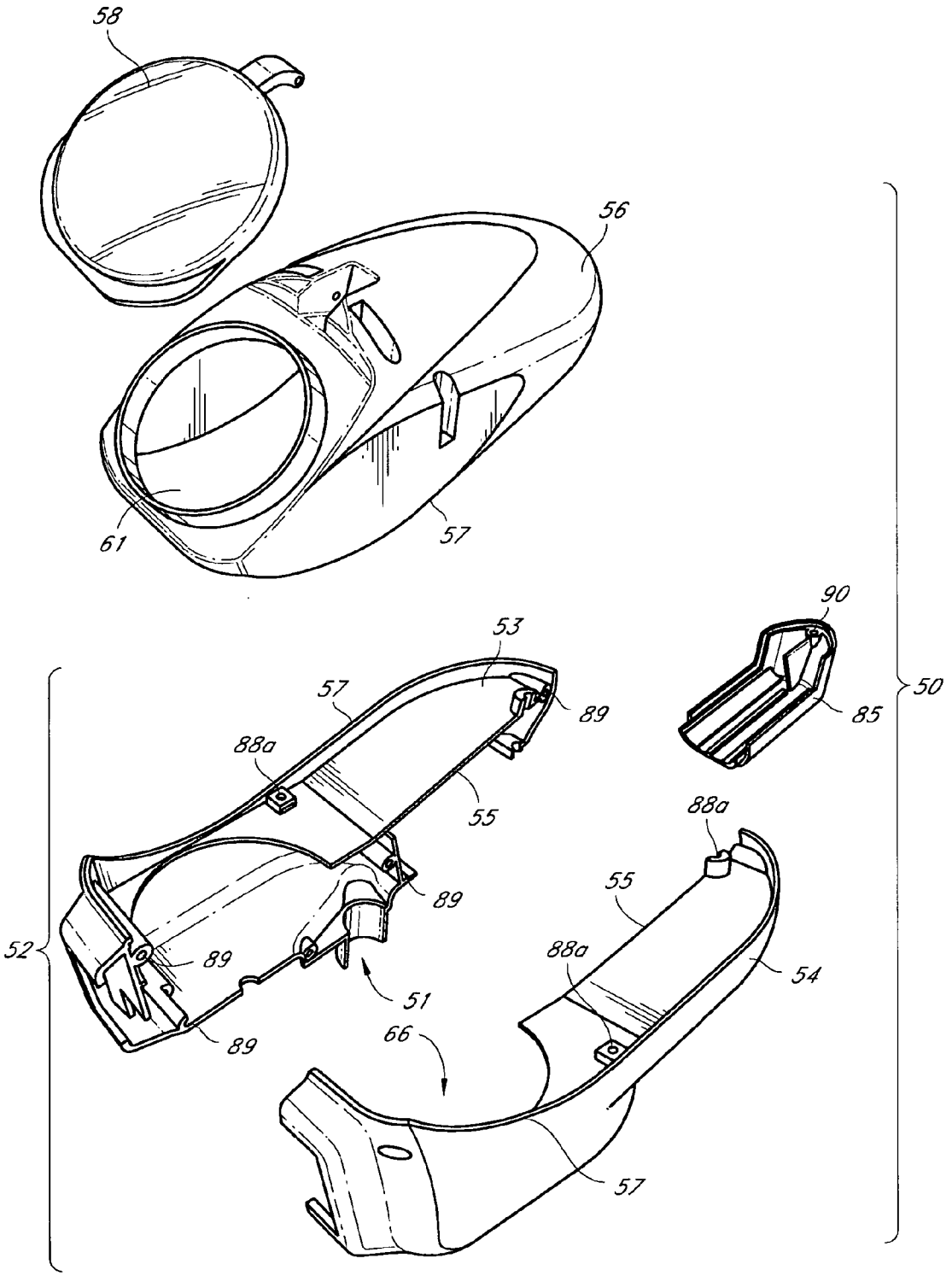


FIG. 2

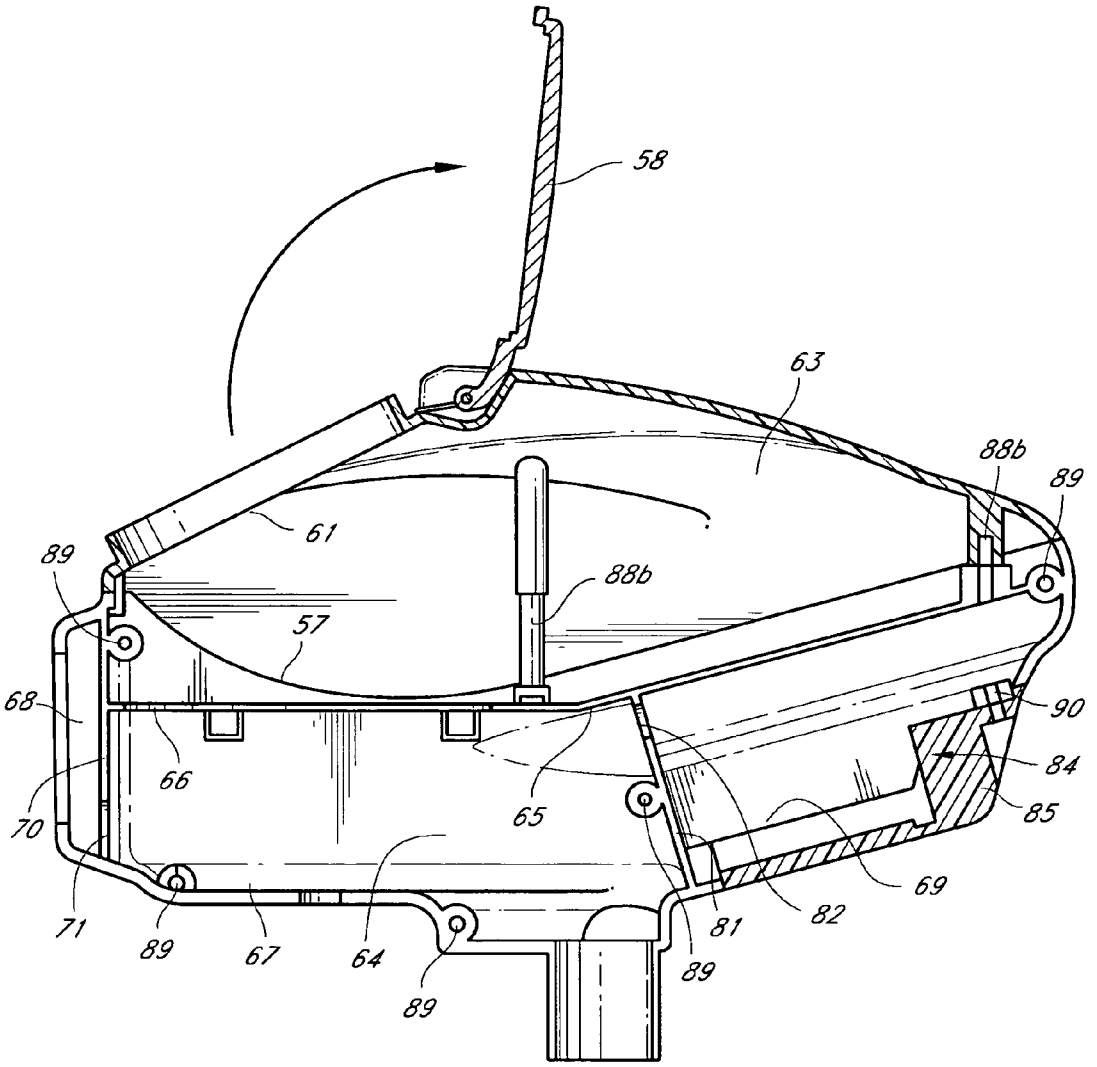

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FIG. 3

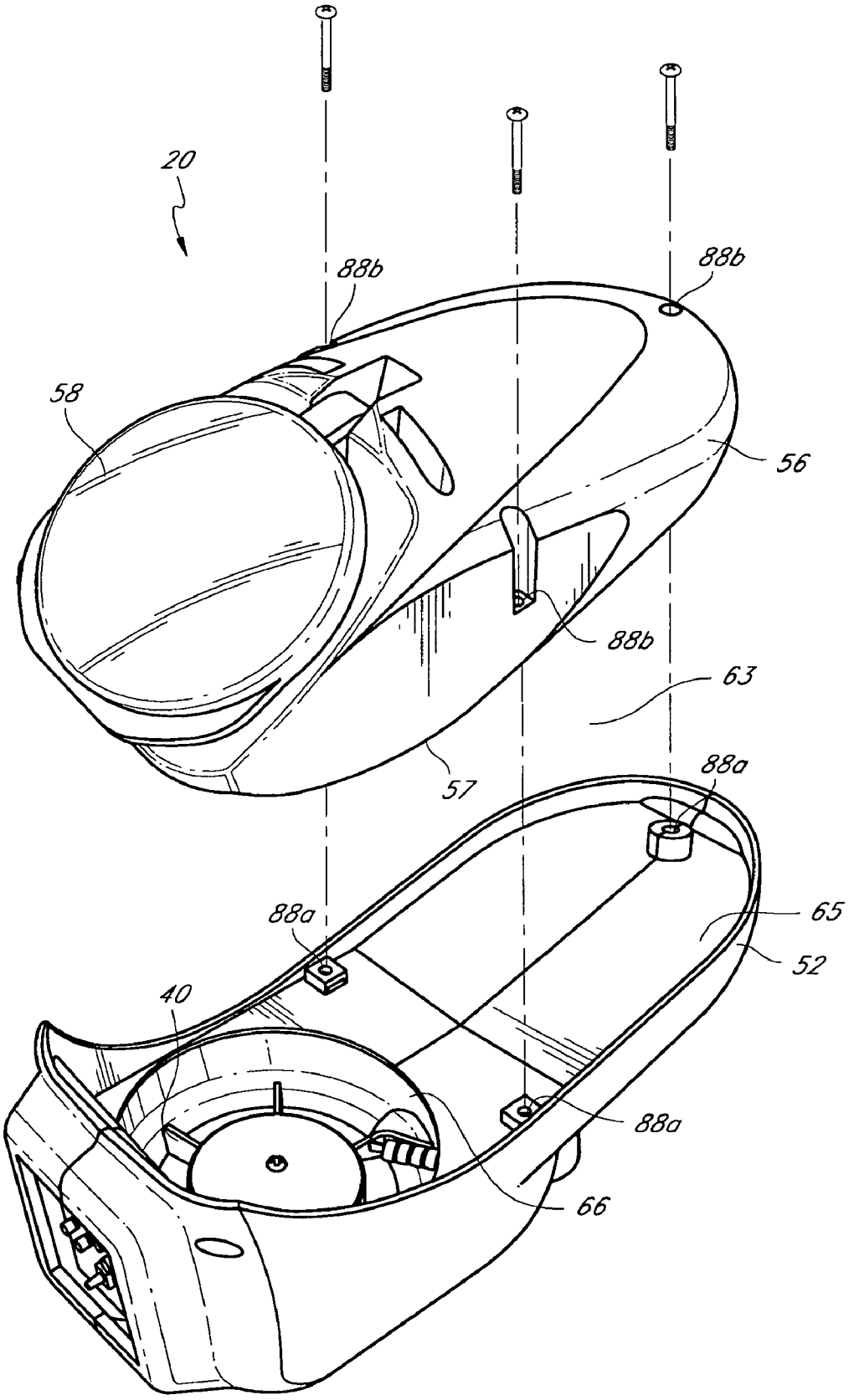

FIG. 4

SYSTEMS AND METHODS FOR EASY-TO-OPEN PAINTBALL LOADER

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The invention relates generally to paintball loaders. More particularly, the invention relates to easy-to-open paintball loaders.

[0003] 2. Description of the Related Art

[0004] Paintball is an exciting sport whose participants use compressed air guns (called markers) to shoot paintballs at other players. During play, participants attempt to eliminate other players by hitting them with paintballs fired from their markers. Upon impact, a paintball capsule explodes, splattering the paint upon the impact surface. A player who has been marked by an exploding paintball must retire from the field of play. Various styles of game play exist, and paintball games are played in a variety of environments, including natural settings and artificial playing fields.

[0005] In order to fire multiple paintballs in rapid succession with minimal manual operation, a paintball loader may be connected to a marker. Paintball loaders store a supply of paintballs and feed individual paintballs from the supply into the marker. Typically, the loader will include a refill opening, closable by a lid, which permits replenishment of the supply of paintballs within the loader. Because the discharge of paintballs creates a volatile environment for fragile paintballs stored in the loader, occasionally paintballs may explode within the loader. The resultant exploded residue may impede or even prevent continued operation of the paintball feeding system. In general, the refill opening is not large enough to permit thorough cleaning of the interior space of the loader by hand. As a result, in the event of a paintball explosion within the loader, it is often necessary to remove the loader from the marker so that the loader housing may be opened for cleaning. Present loader housings typically may be separated along a generally central, vertical seam. Because paintball loaders are connected to the markers, opening the housing of the loader for cleaning may be a time-consuming and labor-intensive process.

[0006] Not being able to quickly and easily open the loader housing for cleaning may be particularly disadvantageous during game play, when time spent maintaining equipment may expose the player as a target and/or may reduce the player's ability to fire on other players. Hence, there is a need for a paintball loader housing that is easy to disassemble. In addition to being advantageous during game play, an easy-to-open housing may also be advantageous when, for example, players are servicing their equipment in anticipation of or following termination of game play.

SUMMARY OF THE INVENTION

[0007] The systems and methods generally relate to an easy-to-open paintball loader housing. Desirably, the present loaders permit portions of the loader housing to be separated from one another without removing the loader from the paintball marker. In certain preferred embodiments, the separation of the loader housing provides significantly greater access to the internal space of the loader housing than is possible through the refill opening. In some embodiments, the separation of the loader housing may allow refilling of the loader with a supply of paintballs such that the refill opening may be omitted.

[0008] In one embodiment, a loader for a paintball marker is provided. The loader may comprise: a housing configured to be connected to the paintball marker and to hold a supply of paintballs; a first chamber within the housing, wherein the first chamber is configured to accommodate a substantial entirety of a paintball feeding system; and a second chamber within the housing, wherein the second chamber is configured to accommodate at least a substantial portion of the supply of paintballs. With respect to the loader, the housing is separable into a first piece and a second piece, which substantially correspond to the first chamber and to the second chamber, respectively.

[0009] In another embodiment, a paintball loader is provided. The paintball loader may comprise: an upper piece; and a lower piece, wherein the lower piece is configured to be connected to a paintball marker. With respect to the loader, the upper piece is removable from the lower piece to expose a substantial entirety of a space configured to store paintballs.

[0010] In another embodiment, a paintball loader housing is provided. The paintball loader housing may comprise: a first piece configured to be connected to a paintball marker; and a second piece configured to define a first opening sized to permit at least one paintball to be loaded. The second piece is movable to an open position relative to the first piece, wherein the first piece is capable of remaining connected to the paintball marker when the second piece is in the open position, and wherein when in the open position the paintball loader housing defines a second opening larger than the first opening.

[0011] In another embodiment, a loader for a paintball marker is provided. The loader may comprise: a housing configured to be connected to a paintball marker, wherein the housing defines a space for storing a supply of paintballs, wherein the housing is movable to an open position, wherein a portion of the housing remains connected to the paintball marker when the housing is in the open position, and wherein the open position directly exposes substantially an entirety of the space for storing the supply of paintballs such that the space may be reached by a user's hand.

[0012] In another embodiment, a method of cleaning the inside of a paintball loader is provided. The method may comprise connecting the paintball loader to a paintball marker; firing the paintball marker, wherein the firing causes an area of the paintball loader to require cleaning before it is in a suitable condition for continued firing; and moving the paintball loader to an open position, wherein a portion of the paintball loader remains connected to the paintball marker, and wherein the open position defines a space providing suitable access to reach the area of the paintball loader requiring cleaning with the user's hand.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. **1** illustrates a cross-sectional view of one embodiment of an easy-to-open paintball loader housing with a paintball feeder system and a supply of paintballs enclosed within.

[0014] FIG. **2** illustrates an exploded view of the easy-to-open paintball loader housing of FIG. **1**.

[0015] FIG. **3** illustrates a cross-sectional view of the easy-to-open paintball loader housing of FIG. **1**.

[0016] FIG. **4** illustrates the separation of the upper and lower pieces of the easy-to-open paintball loader housing of FIG. **1**.

[0017] These and other features will now be described with reference to the drawings summarized above. The drawings and the associated descriptions are provided to illustrate embodiments of the invention and not to limit the scope of the invention. Throughout the drawings, reference numbers may be re-used to indicate correspondence between referenced elements.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0018] Systems and methods which represent one embodiment of an example application of the invention will now be described with reference to the drawings. Variations to the systems and methods which represent other embodiments will also be described.

[0019] In general, an operating paintball loader includes a supply of paintballs, a feeder mechanism for transferring the paintballs to a marker, and a housing that encloses the supply of paintballs and the feeder mechanism and that is connectable to a marker. Typically, loader housings are plastic shells. Many conventional housings are manufactured in two halves. These halves contact one another along respective mating surfaces which typically define a generally vertical plane. The halves are joined together, typically, with fasteners, such as metal screws and/or bolts.

[0020] Generally, a portion of the housing is connected to a marker, either directly or through the use of a small connecting device, such as a metallic connector that may clamp, screw, or otherwise connect the loader to the marker. Because the housing typically may be opened only by separating the two halves of the housing, a loader is often disconnected from a marker before opening the housing in order, for instance, to clean the inside of the housing of an exploded paintball. Moreover, separating the housing into two halves typically requires the removal of the feeder system from the housing. Disconnecting the loader from the marker, removing the feeder system from the housing, and the associated reassembly after opening the housing are time-consuming and labor-intensive tasks, which presents a significant disadvantage, especially during game play.

[0021] To remedy the problems described-above, preferred embodiments of the invention provide an easy-to-open paintball loader housing. Some embodiments of the invention allow the loader to remain connected to the marker while opening the housing. Other embodiments allow the loader to be opened without removing or otherwise disassembling the feeder mechanism. Still other embodiments allow only a portion of the housing to be moved into an open position that exposes an affected area, such as a reservoir portion of the loader housing, which is an area likely to contain the residue of an exploded paintball. Yet other embodiments combine some or all of the embodiments just described or combine other features described below.

[0022] The accompanying drawings illustrate one embodiment of a loader **20** in accordance with the invention. As illustrated in FIG. **1**, loader **20** stores a supply of paintballs (or "supply") **30** and moves individual paintballs from the loader **20** to a paintball marker (not illustrated) using a paintball feeding system (or "feeder") **40**. A housing **50** encloses the feeder **40** and the supply **30**. The housing **50** is only partially illustrated in FIG. **1**; it is illustrated in more detail in FIGS. **2** and **3**. Although in the illustrated embodiment the housing **50** encloses the feeder **40**, in other embodiments a housing may only partially enclose a feeder, or may not enclose a feeder at all. Furthermore, although in the illustrated embodiment the housing **50** encloses the supply **30**, in other embodiments a housing may only partially enclose a supply of paintballs. For instance, a separate reservoir may be attachable to a housing, such as the housing **50**, and store a portion of a supply of paintballs, such as the supply **30**.

[0023] As illustrated in FIG. **1**, feeder **40** preferably has a motorized rotating tray **42**, a battery unit **44**, and a control unit **46**. The motorized rotating tray **42** feeds paintballs from the supply **30** into a tunnel defined within the tray and sized to permit a paintball to pass. The battery unit **44** supplies electric power to motorize rotating tray **42**. A control unit **46** controls the operation of the motorized rotating tray **42**, such as causing the rotation of the tray to be on or off. Although the illustrated embodiment describes an electronically controlled and motorized feeder **40**, in other embodiments a feeder may comprise only mechanical parts. In still other embodiments a loader may not include a feeder, relying instead on the shape and configuration of the housing **50** to move paintballs from the supply **30**, through the housing **50**, and to the connected paintball marker. Loaders without a mechanized feeding system are sometimes referred to as "hoppers."

[0024] Paintballs exit housing **50** through feed opening **51**. The feeder **40** moves paintballs from the supply **30**, through the tunnel defined in the motorized rotating tray **42**, and out feed opening **51**. A paintball marker (not illustrated) may be connected to the housing **50** at the feed opening **51** to receive the paintballs from the loader **20**. After leaving opening **51**, paintballs may enter directly into a paintball marker or may pass through an intermediate structure(s), such as a tube, before reaching a paintball marker. Typically, loader **20** is configured to be connected to a paintball marker at or near feed opening **51**. Thus, housing **50** is connectable to a paintball marker in a suitable manner to facilitate the movement of paintballs from the supply **30**, through housing **50**, and to a paintball marker. Housing **50** may connect directly to a paintball marker or may connect via an intermediate device (not illustrated), such as a metal connector that clips, snaps, slides, or otherwise provides a connection between the housing **50** and a paintball marker.

[0025] The housing **50** preferably is made of plastic. In other embodiments, however, a housing may be made with other suitable materials, such as aluminum, polyurethane, rubber, and so forth, as well as from combinations of the same or like. As illustrated in FIGS. **2** and **3**, the housing **50** is separable into a lower piece **52** and an upper piece **56**. The lower piece **52** is further separable into a left piece **53** and a right piece **54**. The lower piece **52** and the upper piece **56** meet together at respective mating surfaces, which preferably define a generally horizontal intersection **57**. The mating surface of the upper piece **56** defines an opening of the upper piece **56**. Similarly, the mating surface of the lower piece **52** defines an opening of the lower piece **52**. In the illustrated arrangement, the left piece **53** and the right piece **54** meet together at respective mating surfaces, which preferably define a vertical intersection **55**.

[0026] As illustrated, the vertical intersection **55** defines a substantially planar interface. In contrast, the horizontal intersection **57**, between the lower piece **52** and the upper piece **56**, is a more sloped or curvilinear surface. In other embodiments, a vertical intersection, such as the vertical intersection **55**, may be less planar, or more sloped, and a

horizontal intersection, such as the horizontal intersection **57**, may be more planar, or less sloped. Furthermore, although in the illustrated embodiment the lower piece **52** is separable into a left piece **53** and a right piece **54**, in other embodiments a lower piece, such as lower piece **52**, may be a single physical unit. Additionally and/or alternatively, in other embodiments an upper piece, such as upper piece **56**, may be separable into multiple physical pieces or units. Moreover, in other embodiments, a housing may be separable into a left piece and a right piece without being separable into an upper piece and a lower piece. Preferably, in such an arrangement, the portion of the loader connectable to the marker is defined entirely by one of the left and right pieces so that the pieces may still be separable with one piece coupled to the marker. In still other embodiments, a housing may not be fully separable into pieces, but may be configured to allow pieces of the housing to move to an open position that exposes a portion of the inside of the housing while remaining interconnected. It will be appreciated by one in the art that pieces of a housing, such as lower piece **52**, left piece **53**, right piece **54**, and upper piece **56** of the housing **50**, may be sized in a variety of suitable proportions.

[0027] In the illustrated embodiment, a closure, such as a lid **58**, is attached to the upper piece **56** via a springed hinge, which causes the lid **58** to rotate to an open position relative to the housing **50**. In the open position, preferably the lid **58** is substantially perpendicular with respect to the portion of the upper piece **56** by which it is supported. By placing pressure against the force of the spring (not illustrated), the lid may be rotated into a substantially horizontal position with respect to upper piece **56** and snapped into place, covering supply access or refill opening **61**. Although in the illustrated embodiment, supply access opening **61** is covered by lid **58**, it will be appreciated that many other suitable configurations are possible. By way of example, supply access opening **61** may be closed by a sliding door. Additionally and/or alternatively, supply access opening **61** may remain completely or partially uncovered. In still other embodiments, supply access opening **61** may be covered by a cap, a cloth, a plug, a cork, combinations of the same and equivalents, and so forth. As noted above, some embodiments may permit refill of the loader housing **50** by separation of pieces of the housing **50** such that the supply access opening **61** may be omitted.

[0028] A user may add paintballs to the supply **30** by placing paintballs inside the housing **50** through the supply access opening **61**. Thus, preferably, the supply access opening **61** is sized to allow multiple paintballs to pass through the opening **61**. However, preferably, the supply access opening **61** is smaller than an opening defined by the mating surfaces of either of the upper piece **56** or lower piece **52**, as described above. As discussed above with reference to FIG. **1**, individual paintballs leave the housing **50** through feed opening **51**, which is defined by a passage through vertical intersection **55**, between left piece **53** and right piece **54**.

[0029] Although in the illustrated embodiment it is contemplated that paintballs enter the housing **50** through supply access opening **61** and exit the housing **50** through the feed opening **62**, in other embodiments paintballs may enter and exit the housing **50** through a single opening. Such an opening may be defined along any suitable portion of a suitable housing. For example, a single opening may be defined, with respect to housing **50**, in the lower piece **52**, left piece **53**, right piece **54**, vertical intersection **55**, upper piece **56**, and/or horizontal intersection **57**. Thus, in some embodiments, housing **50** may not include a lid **58**. Additionally, and/or alternatively, lid **58** may be attached to another portion of a housing. For instance, a lid may be attached to cover a supply opening defined in a lower piece of a housing. One skilled in the art will appreciate that there are many suitable ways to arrange and manufacture various component pieces of the housing in such a way as to allow for the entry and exit of paintballs. In some embodiments, paintballs may enter and/or exit a loader housing through an opening that is not accessible until portions or pieces of the loader housing have been moved to an open position, such as by sliding movable pieces.

[0030] As illustrated in FIGS. **2** and **3**, the interior space of housing **50** is divided into at least a supply chamber **63** and a feeder chamber **64**. It is the primary responsibility of the supply chamber **63** to house the supply **30**. In the illustrated arrangement, the upper piece **56** of the housing **50** substantially corresponds to the supply chamber **63** and substantially encloses or circumscribes an entirety of the supply **30**. That is, preferably, the substantial entirety of the maximum supply **30** is located within a space defined by the outer wall(s) of the upper piece **56**.

[0031] It is the primary responsibility of the feeder chamber **64** to house the feeder **40**. In the illustrated arrangement, lower piece **52** of the housing **50** corresponds to the feeder chamber **64** and substantially encloses or circumscribes an entirety of the feeder **40**. Thus, preferably, the feeder **40** is located within a space defined by the outer wall(s) of the lower piece **52**.

[0032] In the illustrated embodiment, supply chamber **63** and feeder chamber **64** are physically separated by an intermediate wall **65**. Intermediate wall **65** defines an intermediate opening **66**, which permits individual paintballs of the supply **30** to move from supply chamber **63** to feeder chamber **64**. In the illustrated arrangement, the intermediate wall **65** is a portion of the lower piece **52**. However, in other arrangements, the intermediate wall **65** may be a portion of the upper piece **56** or may be a separate component that can be supported by either of the lower piece **52** and upper piece **56**.

[0033] Although in the illustrated embodiment, the supply chamber **63** is oriented above the feeder chamber **64**, in other embodiments a supply chamber may be below a feeder chamber **63**. Additionally and/or alternatively, a supply chamber and a feeder chamber may be arranged in a substantially side-by-side manner, or in any suitable arrangement. Furthermore, in some embodiments, a supply chamber and a feeder chamber may occupy substantially the same chamber. In these embodiments, the respective supply chamber and feeder chamber may be considered as logical chambers and may occupy adjacent space without a physical barrier (such as intermediate wall **65**) between them. Moreover, although in the illustrated embodiment intermediate opening **66** is sized to permit multiple paintballs of the supply **30** to pass from the supply chamber **63** to the feeder chamber **64**, in other embodiments an intermediate opening may be sized to permit only a single paintball from moving from a supply chamber to a feeder chamber. In yet other embodiments, an intermediate wall may completely separate a supply chamber from a feeder chamber. In these embodiments, paintballs may pass outside of the respective supply chamber before passing inside the respective feeder cham-

ber. This may require that the paintballs leave the respective loader housing, or may also require an additional channel or tube connecting the respective supply chamber and the respective feeder chamber.

[0034] In the illustrated embodiment, the feeder chamber **64** is divided into three chambers, which are divided by two walls. A tray chamber **67** preferably is sized and configured to house and, preferably, enclose the motorized rotating tray **42**. A control chamber **68** preferably is sized and configured to house and, preferably, enclose the control unit **46**. A battery chamber **69** preferably is sized and configured to house and, preferably, enclose the battery unit **44**.

[0035] In the illustrated embodiment, the tray chamber **67** and the control chamber **68** are separated by a control wall **70**. Control wall **70** only partially separates tray chamber **67** from control chamber **68**. Control wall **70** defines a control wire opening **71** between tray chamber **67** and control chamber **68**, which permits wires to connect motorized rotating tray **42** with control unit **46**. Similarly, in the illustrated embodiment, the tray chamber **67** and the battery chamber **69** are separated by a battery wall **81**. Battery wall **81** only partially separates tray chamber **67** from battery chamber **69**. Battery wall **81** defines a battery wire opening **82**, which allows wires from battery unit **44** to connect to control unit **46** by passing from battery chamber **69**, through tray chamber **67**, to control chamber **68**.

[0036] In other embodiments, a feeder chamber can be configured without internal walls, such as control wall **70** and battery wall **81**. In still other embodiments, a feeder chamber may include walls that completely separate internal chambers, such as tray chamber **67**, control chamber **68**, and battery chamber **69**. For instance, the various components of a feeder system may be connected via wireless communications, eliminating the necessity for openings to accommodate wire communications, such as the control wire opening **71** and the battery wire opening **82**. In still other embodiments, portions of a feeder system may be only partially enclosed, defining openings to the outside of a housing, such as the housing **50**.

[0037] In the illustrated embodiment, battery chamber **69** defines a battery replacement opening **84**. The battery replacement opening **84** provides access to the battery unit **44** without requiring the disassembly of other pieces of housing **50**, such as lower piece **52** from upper piece **56** or left piece **53** from right piece **54**. In the illustrated embodiment, battery replacement opening **84** is covered with a battery cover **85**. There are a variety of suitable manners in which to connect a battery cover, such as battery cover **85**, to a housing, such as the housing **50**, such that a battery replacement opening, such as battery replacement opening **84**, is either partially or completely covered. For instance, a battery cover may attach to a housing via fasteners, adhesives, tongue and groove alignments, snaps, slotted fittings, combinations of the same and the like, and so forth. In the illustrated embodiment, battery cover **85** is connected to housing through a slotted fitting that is secured with a fastener.

[0038] The separable pieces of housing **50** may be connected and/or attached in a variety of suitable manners. In the illustrated embodiment, lower piece **52** and upper piece **56** define one or more aligned vertical holes **88***a*, **88***b* (FIGS. **2** and **3**, respectively). Fasteners may be inserted into corresponding vertical holes **88***a*, **88***b*, in order to couple lower piece **52** and upper piece **56**. In FIG. **2**, vertical holes **88***a* are visible on the lower piece **52**, but are obscured from view on upper piece **56**. In FIG. **3**, vertical holes **88***b* are visible on the upper piece **52**, but are not identified on the lower piece **56**.

[0039] Similarly, corresponding horizontal holes **89** are provided to permit the left piece **53** and right piece **54** to be coupled together, such as via a fastener (not shown). Horizontal holes **89** are visible, in FIG. **2**, on the left piece **53**, but are obscured from view on right piece **54**. By way of example and not of limitation, fasteners may include screws, bolts, nails, dowels, combinations of the like, and so forth. Left piece **53** and right piece **54** define adjacent horizontal holes **89**. Horizontal holes **89** may be joined with fasteners as well.

[0040] As discussed above, in the illustrated embodiment, battery cover **85** is slotted to fit over battery replacement opening **84**. A single battery cover hole **90** may receive a fastener to attach battery cover **85** to lower piece **52**.

[0041] Although in the illustrated embodiment, lower piece **52** and upper piece **56** are joined in the same manner that left piece **53** and right piece **54** are joined, in other embodiments different suitable attachment instruments may be used. Furthermore, the scope of the invention is not limited to mechanical fasteners. There are a variety of suitable ways to connect various component pieces of housing **50**. For instance, the components of housing **50** such as lower piece **52** and upper piece **56**, may be snapped together, adhered together, strapped together, tied together, clicked together, slid together, taped together, fastened together, pinned together, nailed together, stuck together, combinations of the same and the like, and so forth. Moreover, although in the illustrated embodiment the component pieces of housing **50**, such as left piece **53** and right piece **54**, separate completely, in other embodiments the component pieces may only partially separate. For instance, the component pieces may open on a hinge, may slide in such a manner as to partially separate, and so forth.

[0042] When lower piece **52** is separated from upper piece **56**, as illustrated in FIG. **4**, a substantial portion of the entirety of supply chamber **63** is exposed. This movement to a separated position may be considered movement to an open position. Thus, when upper piece **56** is separated from lower piece **52** such that a substantial portion of the entirety of supply chamber **63** is exposed, then the housing **50** of loader **20** may be said to be in an open position (or alternatively that the loader **20** is in an open position). This is advantageous because conditions of use may require cleaning the inside of the loader **20** that enclose the supply chamber **63**. One of these conditions of use may be the explosion of a paintball within supply chamber **63** of housing **50**. Surfaces that may require cleaning for proper, effective, and/or aesthetic use may include the inside surface of upper piece **56**, the exposed surface of intermediate wall **65**, and the top surface of motorized rotating tray **42**. In some embodiments, the exposure of a supply chamber, such as supply chamber **63**, may be sufficiently large such that a user's hand may reach substantially the entirety of the corresponding interior surfaces of the housing **50** of loader **20**, which may facilitate quick, efficient, and/or thorough cleaning. In other words, the open position of the housing **50** of loader **20** (or, alternatively, the open position of loader **20**) may be sufficiently open such that there is suitable access to reach the area requiring cleaning. This is advantageous because many supply access openings, such as supply access opening **61**, may not permit suitable access to the interior surfaces of the housing **50** of loader **20** required for quick, efficient, and/or thorough cleaning, at least not without the use of tools.

[0043] In the illustrated embodiment, lower piece **52** and upper piece **56** are connected with three fasteners that connect the respective pieces through adjacent vertical holes **88***a*, **88***b*. This is advantageous because it may facilitate easy opening of the loader **20** for certain conditions, such as when a user desires to clean the inside of loader **20** following the explosion of a paintball. Removing upper piece **56** from lower piece **52** does not require the disassembly of lower piece **52** or the removal of loader **20** from a paintball marker. Moreover, the feeder **40** may not need to be disassembled or removed from feeder chamber **64**. Reducing the amount of disassembly a user must perform in order to gain access to the inside of loader **20** (corresponding to supply chamber **63**) may facilitate the quick, efficient, and/or thorough cleaning of loader **20**. Such advantages may be particularly meaningful during game play when time spent maintaining a loader, such as loader **20**, may reduce the effectiveness of a player and expose the player to the risk of elimination.

[0044] Although in the illustrated embodiment, the upper piece **56** and the lower piece **52** are connected by three fasteners, in other embodiments pieces of a loader that move to an open position may be connected with fewer fasteners, or even no fasteners. In some embodiments, pieces of an easy-to-open loader, such as the lower piece **52** and the upper piece **56**, may be connected together by sliding, slotting, adhering, snapping, bolting, clicking, combinations of the same and the like, and so forth. The pieces may be formed specially such that no fasteners or additional elements are necessary. For instance, the pieces may have slotted fittings or tongue and groove alignments that facilitate connection without fasteners. It will be appreciated that there are many suitable manners in which pieces of an easy-to-open loader, such as loader **20**, may be connected to facilitate quick, efficient, and/or thorough access.

[0045] While certain embodiments of the invention have been described, these embodiments have been presented by way of example only, and are not intended to limit the scope or the present invention. Accordingly, the breadth and scope of the present invention should be defined in accordance with the following claims and their equivalence.

What is claimed is:

1. A loader for a paintball marker, comprising:
- a housing configured to be connected to the paintball marker and to hold a supply of paintballs;
- a first chamber within said housing, wherein said first chamber is configured to accommodate a substantial entirety of a paintball feeding system; and
- a second chamber within said housing, wherein said second chamber is configured to accommodate at least a substantial portion of the supply of paintballs,
- wherein said housing is separable into a first piece and a second piece, which substantially correspond to said first chamber and to said second chamber, respectively.

2. The loader of claim **1**, wherein the paintball feeding system comprises a motorized rotating tray for moving paintballs from said second chamber to the paintball marker, an electronic control unit for operating the motor, and a battery for supplying power to the electronic control unit and the motorized rotating tray.

3. The loader of claim **1**, wherein said housing comprises an opening for loading the supply of paintballs into said loader, and wherein said loader comprises a closure sized and configured to close said opening.

4. The loader of claim **1**, wherein said first piece and said second piece are sufficiently separable to provide access to said second chamber whereby cleaning of said loader surfaces defining said second chamber is permitted.

5. The loader of claim **1**, wherein said loader comprises an interior wall at least partially separating said first chamber and said second chamber.

6. The loader of claim **5**, wherein said first piece comprises said interior wall.

7. The loader of claim **1**, wherein said first piece is separable into a plurality of pieces.

8. The loader of claim **1**, wherein said second piece and said first piece are connected by at least one fastener.

9. A paintball loader, comprising:
- an upper piece; and
- a lower piece, wherein said lower piece is configured to be connected to a paintball marker;
- wherein said upper piece is removable from said lower piece to expose a substantial entirety of a space defined by said loader and configured to store paintballs.

10. The paintball loader of claim **9**, wherein said upper piece defines an opening sized to permit the loading of paintballs into said paintball loader housing.

11. The paintball loader of claim **10**, further comprising a lid sized and configured to close said opening defined by said upper piece.

12. The paintball loader of claim **9**, wherein said lower piece is sized and configured to house a paintball feeder system.

13. The paintball loader of claim **9**, wherein said upper piece is sized and configured to house a supply of paintballs.

14. A paintball loader housing, comprising:
- a first piece configured to be connected to a paintball marker; and
- a second piece configured to define a first opening sized to permit at least one paintball to be loaded into said housing;
- wherein said second piece is movable to an open position relative to said first piece, wherein said first piece is capable of remaining connected to the paintball marker when said second piece is in said open position, and wherein when in said open position said paintball loader housing defines a second opening larger than said first opening.

15. The paintball loader housing of claim of **14**, wherein said second piece is entirely removable from said first piece.

16. The paintball loader housing of claim of **14**, wherein said first piece is sized and configured to house a paintball feeder system.

17. The paintball loader housing of claim of **14**, wherein said second piece is sized and configured to house a supply of paintballs.

18. A loader for a paintball marker, comprising:
- a housing configured to be connected to a paintball marker, wherein said housing defines a space for storing a supply of paintballs, wherein said housing is movable to an open position, wherein a portion of said housing remains connected to the paintball marker when said housing is in said open position, and wherein said open position directly exposes substantially an entirety of said space for storing the supply of paintballs such that said space may be reached by a user's hand.

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