

## SYSTEMS AND METHODS FOR A COMBUSTION SPECIAL EFFECT

## BACKGROUND

**[0001]** This section is intended to introduce the reader to various aspects of art that may be related to various aspects of the present techniques, which are described and/or claimed below. This discussion is believed to be helpful in providing the reader with background information to facilitate a better understanding of the various aspects of the present disclosure. Accordingly, it should be understood that these statements are to be read in this light, and not as admissions of prior art.

**[0002]** Throughout amusement parks and other entertainment venues, special effects can be used to help immerse guests in the experience of a ride or attraction. Immersive environments may include three-dimensional (3D) props and set pieces, robotic or mechanical elements, electrical or chemical elements, and/or display surfaces that present media. For example, an immersive environment may be provided via show components that operate to produce a visual combustion effect (e.g., smoke, cloud, or fog effects). However, infrastructure to create such combustion effects are bulky and unsuited for rapid-deploy effects. Thus, improvements for systems and methods to replicate the appearance of combustion effects are desired to provide a more realistic, suitable, and/or desirable interactive experience.

## SUMMARY

**[0003]** Certain embodiments commensurate in scope with the originally claimed subject matter are summarized below. These embodiments are not intended to limit the scope of the claimed subject matter, but rather these embodiments are intended only to provide a brief summary of possible forms of the subject matter. Indeed, the subject matter may encompass a variety of forms that may be similar to or different from the embodiments set forth below.

**[0004]** In an embodiment, a special effect system may include fog generation equipment configured to generate fog, a show element comprising one or more compartments, and a controller communicatively coupled to the fog generation equipment. The fog generation equipment may include one or more positive pressure

sources and one or more negative pressure sources. The controller may perform operations comprising applying negative pressure from the one or more negative pressure sources to the one or more compartments for a period of time, permitting the fog to enter the one or more compartments after the period of negative pressure, and applying a positive pressure from the one or more positive pressure sources to cause the fog to exit the one or more compartments to trigger a combustion effect.

[0005] In an embodiment, a special effect method may include instructing, via a controller, a fog generation machine to generate fog and instructing, via the controller, to apply a negative pressure for a period of time from one or more vacuum blowers to one or more compartments to empty the one or more compartments. The method may also allow fog from the fog generation machine to fill the one or more compartments after the period of time and instruct, via the controller, to apply a positive pressure from one or more compressed air supplies to the one or more compartments to generate a combustion effect.

[0006] In an embodiment, an attraction system may include a show element comprising a compartment configured to store and release fog, one or more dampers configured to open or close to control air flow to and from the compartment, a vehicle configured to move along a path proximate to the show element, and a controller communicatively coupled to the show element and the vehicle. The controller may determine a location of the vehicle and instruct one or more compressed air supplies and/or one or more blower to apply a positive pressure to release stored fog from the compartment based on the location of the vehicle.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0007] These and other features, aspects, and advantages of the present invention will become better understood when the following detailed description is read with reference to the accompanying drawings in which like characters represent like parts throughout the drawings, wherein:

[0008] FIG. 1 is a schematic diagram of an embodiment of a special effect system, in accordance with an aspect of the present disclosure;

[0009] FIG. 2 is a back view of an embodiment of a compartment used within the special effect system of FIG. 1, in accordance with an aspect of the present disclosure;

[0010] FIG. 3A is a side view of an embodiment of the compartment used within the special effect system of FIG. 1 prior to triggering the combustion effect, in accordance with an aspect of the present disclosure;

[0011] FIG. 3B is a side view of an embodiment of the compartment used within the special effect system of FIG. 1 after triggering the combustion effect, in accordance with an aspect of the present disclosure;

[0012] FIG. 4 is a flow diagram of an embodiment of a method for operating the special effect system of FIG. 1 to create the combustion effect, in accordance with an aspect of the present disclosure;

[0013] FIG. 5 is a schematic diagram of an embodiment of the special effect system of FIG. 1, in accordance with an aspect of the present disclosure;

[0014] FIG. 6 is a flow diagram of an embodiment of a method for operating the special effect system of FIG. 5 to create the combustion effect, in accordance with an aspect of the present disclosure; and

[0015] FIG. 7 is a block diagram of an embodiment of an attraction system including the special effect system of FIG. 1, in accordance with an aspect of the present disclosure.

#### DETAILED DESCRIPTION

[0016] When introducing elements of various embodiments of the present disclosure, the articles “a,” “an,” and “the” are intended to mean that there are one or more of the elements. The terms “comprising,” “including,” and “having” are intended to be inclusive and mean that there may be additional elements other than the listed elements. Additionally, it should be understood that references to “one embodiment” or “an embodiment” of the present disclosure are not intended to be interpreted as excluding the existence of additional embodiments that also incorporate the recited features.

[0017] One or more specific embodiments of the present disclosure will be described below. In an effort to provide a concise description of these embodiments, all features of an actual implementation may not be described in the specification. It should be appreciated that in the development of any such actual implementation, as in any engineering or design project, numerous implementation-specific decisions must be made to achieve the developers' specific goals, such as compliance with system-related and business-related constraints, which may vary from one implementation to another. Moreover, it should be appreciated that such a development effort might be complex and time consuming, but would nevertheless be a routine undertaking of design, fabrication, and manufacture for those of ordinary skill having the benefit of this disclosure.

[0018] The present disclosure is directed to providing combustion special effects for an amusement park or theme park. The amusement park may include a variety of features, such as rides (e.g., a roller coaster), theatrical shows, set designs, performers, and/or decoration elements, to entertain guests. Special effects may be used to supplement or complement the features, such as to provide the guests with a more immersive and/or unique experience. For example, the special effects may be presented to emulate real world elements in order to present a more realistic atmosphere for the guests.

[0019] Embodiments of the present disclosure are directed to a special effect system to present combustion effects (e.g., spontaneous combustion) in a realistic manner. In an embodiment, a combustion special effect may be a rapid-deploy effect, such as a rapid laser destruction. Achieving a fast change from an initial unharmed configuration to a burnt or otherwise affected configuration can be challenging. Further, because attraction cycles are repeated throughout the day, rapidly returning the show element back to its unharmed configuration for the next cycle without lingering smoke or other evidence of the effect is also beneficial. Combustion effects may include smoke, fog, or other visual features that disperse throughout an environment, which may take time to dissipate between cycles. In addition, a large volume of smoke for more visually compelling special effects is difficult to generate quickly. Thus, combustion effects are conventionally not suited for rapid deployment and rapid reversal.

**[0020]** Present embodiments provide the show element (e.g., animated figure, prop, statue, object) operated as part of a realistic and/or immersive environment to entertain guests. The show element may be coupled via one or more fluid conduits (e.g., ducts) to fog generation equipment and one or more blowers (e.g., fans). Since generating fog may be a slow process, the fog generation equipment may remain in an on-state and continuously generate fog. The show element may include one or more compartments to store the fog and permit a desired volume of fog to build up before a combustion effect is activated. The fog may travel through the conduits to be retained within compartments of the show element prior to triggering the combustion effect.

**[0021]** In an embodiment, the fog generation equipment is located outside and away from the show element, both the show element and the compartment may be any suitable shape or size. For example, the compartment may be designed as a torso of the show element to provide guests with realistic and immersive experience. Further, the compartment may include one or more outlets that are exit points for the fog. To trigger the combustion effect, a positive pressure may be applied to the compartment to force the fog outwards through the compartment outlets and such that the combustion effect is visible. In certain instances, one or more compressed air supplies may be used to apply the positive pressure to a first compartment and push the fog out at high speeds for a primary combustion effect. Then, a fan may be used to apply the positive pressure to force retained fog from a second compartment for a secondary combustion effect. The secondary combustion effect may be a slower effect and last for a longer period of time compared to the primary combustion effect. In this manner, the combustion effect provided by the special effect system may be layered to provide a unique and/or realistic visualization of combustion effects, including spontaneous combustion, to guests within the amusement park.

**[0022]** With the preceding in mind, FIG. 1 is a schematic diagram of an embodiment of a special effect system 50 used to create a combustion effect. For example, the special effect system 50 may include a fog generation equipment 52 positioned outside of but coupled to a show element 54. One or more fluid conduits 56 (e.g., ducts) may couple the fog generation equipment 52 to the show element 54. By placing the fog generation equipment 52 outside of the show element 54, size and material constraints of components within the special effect system 50 may be reduced or eliminated. For

example, the show element 54 may be any suitable shape, size, or material, since the show element 54 acts as a central point for storing fog rather than a point for fog generation. Additionally or alternatively, the one or more fluid conduits 56 may be made from any suitable material to handle the flow of air and/or fog, while ducting within the fog generation equipment 52 may have material constraints to protect against the fog.

**[0023]** In an embodiment, the fog generation equipment 52 may include a fog machine that operates, when active, to generate fog. For example, the machine may be active (e.g., on-state) before the combustion effect, during the combustion effect, and after the combustion effect because fog generation can be a slow and time-consuming process. In the on-state, fog generation materials may enter the machine to generate the fog. For example, the fog generation machine may combine an active ingredient (e.g., propylene glycol, glycerin) and water to create a dense vapor that visually appears like fog or smoke. In another example, the fog generation machine may heat a chemical compound (e.g., carbon dioxide, liquid nitrogen, water) to create the fog. Ducting to the fog generation machine may be made from stainless steel with insulation or high-pressure water lines to accommodate the fog generation materials. To create the combustion effect, the fog generation equipment 52 may include one or more blowers (e.g., fans) and one or more compressed air supplies to create a positive pressure and push fog outwards. The fog generation equipment 52 may also include one or more vacuum blowers configured to create a negative pressure to prevent fog from emanating from the show element 54 prior to the combustion effect.

**[0024]** In certain instances, fog from the fog generation machine may travel through the one or more fluid conduits 56 to the show element 54. A center block 57 may cover and/or support the one or more fluid conduits 56. For example, the center block 57 include one or more holes to support the fluid conduit 56. The show element 54 may include the one or more compartments 58 for storing the fog prior to the combustion effect. The one or more compartments 58 may be made from a non-breathable material to hold the fog and include multiple exit points (e.g., openings) for the fog to create the combustion effect. To create the combustion effect, a compressed fluid, such as air (e.g., pressurized air, compressed air) may be applied to the one or more compartments 58 via the one or more fluid conduits 56 to push the fog outwards. In certain instances,

the one or more compartment 58 may be individually coupled to one fluid conduit of the one or more fluid conduits 56. For example, the one or more compartments 58 may include a first compartment 58a coupled to a first fluid conduit 56a and a second compartment 58b coupled to a second fluid conduit 56b. As further described herein, it may be beneficial to include one or more compartments 58 within the show element 54 to control the visual appearance of the combustion effect.

**[0025]** For purposes of illustration, the show element 54 may be a snowman and the one or more compartments 58 may form the body (e.g., torso) of the snowman. To create the realistic and/or immersive environment, the show element 54 may also include one or more appendages 60 and/or accessories 62. For example, the appendages 60 may be a head of the show element 54 and the accessories 62 may include a hat and a cape worn by the show element 54. Furthermore, the appendages 60 and the accessories 62 may be used to hide one or more elements (e.g., one or more fluid conduits 56, motion controller 64, fog generation machine 110) of the special effect system 50 from guest view. While the illustrated embodiment depicts the show element 54 as the snowman, in other embodiments, the show element 54 may include a vampire, a dragon, a troll, a humanoid, an alien, a house, a volcano, a food item, or any suitable object to provide an immersive combustion effect for the guests.

**[0026]** The show element 54 may be coupled to a motion controller 64 (e.g., show action equipment) configured to support and coordinate movement of the show element 54. For example, the motion controller 64 may include a moveable arm 66 (e.g., robotic arm, moveable member) coupled to the show element 54. The show element 54 may be actuated by the motion controller 64 via the moveable arm 66. In this way, the motion controller 64 may produce a visual effect perceivable to the guest, such as the show element 54 appearing to fly, float, levitate, fall, walk, or the like. In certain instances, the show element 54 may be static and the motion controller 64 may provide additional support to the show element 54. In another example, the motion controller 64 may be supported by a transmission line (e.g., one or more cables) that may extend along (e.g., within, beside) the motion controller 64 and supply power and/or data to the show element 54. As an example, power supplied via the transmission line may enable the show element 54 to be animated to portray a reaction or interact with other

show elements of the attraction system. In this manner, operation and animation of the show element 54 may enhance the experience perceived by the guests.

**[0027]** The special effect system 50 may include a support structure 68 to support the motion controller 64 and/or the fog generation equipment 52. The support structure 68 may include an elevated platform (e.g., table, stand) to support the motion controller 64 and the fog generation equipment 52. In certain instances, the support structure 68 may also be coupled to the show element 54 and provide additional support to the show element 54. Still in certain embodiments, the special effect system 50 may not include the support structure.

**[0028]** FIG. 2 is a back view of an embodiment of the one or more compartments 58 of the special effect system 50. The one or more compartments 58 may include one or more conduit ports 80 to receive fog and one or more outlets 82 to release the fog for the combustion effect. The one or more compartment 58 may receive fog from the fog generation machine via the one or more fluid conduits, such as the fog generation equipment 52 and the fluid conduits 56 described with respect to FIG. 1. Each of the one or more fluid conduits 56 may couple to each of the one or more compartments 58 via the one or more conduit ports 80 (e.g., duct ports). The one or more conduit ports 80 may be an opening configured to receive the one or more fluid conduits 56 and be an entry point for the fog. For example, a first fluid conduit 56 may be a hose and a conduit port 80, which may be a port configured to receive and couple to the hose. In the illustrated example, the one or more compartments 58 includes two conduit ports 80, however in other embodiments, the one or more compartments 58 may include 1, 3, 4, 5, 6, or any suitable number of conduit ports 80. For example, a first compartment 58a may include three conduit ports 80 configured to receive the one or more fluid conduits 56.

**[0029]** The one or more compartments 58 may be a reservoir for collecting and storing fog. To this end, the one or more compartments 58 may be made from a non-breathable material, such as a fiber-reinforced plastic, thermoform plastic, carbon fiber, metal, wood, or any suitable material for storing fog. To create the combustion effect, the one or more compartments 58 may include one or more outlets 82. The one or more outlets 82 may be created by a cut or a penetration in the one or more compartments 58 to form an opening which allows fog to be released for the combustion effect. For

example, the one or more outlet 82 may be a circular hole created by removing portions of the non-breathable material of the one or more compartments 58. In the illustrated example, the one or more outlets 82 may include openings of different shapes and sizes. Further, the outlet openings may be covered by open weave material (e.g., scrim, mesh, perforated material) that includes multiple openings for fog to be released from the compartment 58. The open weave openings within the open weave material (e.g., fabric) may be any suitable shape or size. Open weave material with a greater open area percentage may allow fog to pass through at a greater rate compared to an open weave material with smaller open area percentage, thereby visually creating a larger combustion effect. In other instances, the outlet openings may not be covered by the open weave material and fog may pass through at a greater rate in comparison to fog exiting outlet openings covered with the open weave material. By controlling a number of the one or more outlets 82 within the one or more compartments 58, a shape and a size of the one or more outlets 82, and/or a shape and a size of the open weave fabric, the visual appearance of the combustion effect may be controlled (e.g., adjusted). Furthermore, the open weave material may be painted to match a color and/or a texture of the one or more compartments 58 to disguise or hide the one or more outlets 82 from guest view.

**[0030]** In the illustrated example, the one or more compartments 58 includes a center compartment 58a and a body compartment 58b (collectively the one or more compartments 58). The center compartment 58a may include a first conduit port 80a to receive fog via a coupling to the one or more fluid conduits 56 and the one or more outlets 82 for fog to exit. The body compartment 58b may include a second conduit port 80a to receive fog and the one or more outlets 82 for fog to exit. In the illustrated example, the body compartment 58b may be larger in size compared to the center compartment 58a, and therefore, hold a greater amount of fog. As further described herein, the center compartment 58a may be used for a primary combustion effect while the body compartment 58b may be used for a secondary combustion effect. Indeed, a differing shape and size of the center compartment 58a and the body compartment 58b may allow for visually different combustion effects. As such, the combustion effect provided by the special effect system 50 may be layered to provide a unique and/or realistic visualization of combustion effects.

[0031] While the illustrated example includes one center compartment 58a and one body compartment 58b, in certain embodiments, the special effect system 50 may include 2, 3, 4, 5, or any suitable number of center compartments 58a and body compartments 58b to create the combustion effect. The visual appearance of the combustion effect may be adjusted based on the number of the one or more compartments 58, the number of the one or more outlets 82 within the one or more compartments 58, or both. Furthermore, the one or more compartment 58 may be coupled to any suitable number of the one or more fluid conduits 56 since the one or more compartment 58 may be designed with any suitable number of conduit ports 80.

[0032] FIG. 3A is a side view of an embodiment of the one or more compartments 58 of the special effect system 50 in a configuration before or between combustion effect cycles, e.g., prior to triggering the combustion effect or after the combustion effect is completed but before initiation of a next cycle of the combustion effect. In the illustrated example, the one or more compartments 58 may be configured as a multi-space compartment that includes the center compartment 58a and the body compartment 58b to create the combustion effect. The center compartment 58a may be located in the middle of the body compartment 58b, however the center compartment 58a may also be located adjacent (e.g., above, below, left, right) of the body compartment 58b. In an embodiment, the center compartment 58a is separate from or fluidically isolated from the body compartment 58b. Accordingly, fog stored in the center compartment 58a does not transfer directly from the center compartment 58a to the body compartment 58b, and vice versa in an embodiment. However, in certain embodiments, the one or more compartments 58 of a multi-compartment configuration may include certain through passages to permit direct gas transfer.

[0033] In the illustrated example, the center compartment 58a and the body compartment 58b may have different properties, thereby creating visually different combustion effects. For example, the interior volume of the body compartment 58b may be greater in comparison to the center compartment 58a, thereby allowing the body compartment 58b to store more fog. The center compartment 58a may feature a total outlet surface area (e.g., an area corresponding to surface area of the compartment 58 removed or perforated to create open passageways) that is greater than a total outlet surface area of the body compartment 58b. Accordingly, the one or more compartments

58, when configured in a multi-compartment structure, may include different compartments having relatively different interior volumes as well as relatively different numbers of outlets 82 and/or differently sized outlets 82. Furthermore, a number of the one or more second outlets 82b may be greater than a number of the first outlet 82a, thereby changing the visual appearance of the generated combustion effect. However, each of the one or more second outlets 82b may be a smaller size in comparison to the first outlet 82a. For example, the first outlet 82a may have a surface area that is greater than a total surface area of the one or more second outlets 82b. As such, the fog may emanate from the one or more second outlets 82b in a slower manner compared to fog released from the first outlet 82a. In this way, the center compartment 58a may be used to generate a primary combustion effect while the body compartment 58b may be used to generate a secondary combustion effect.

**[0034]** To receive the fog, the center compartment 58a and the body compartment 58b may be coupled the fog generation equipment 52 via the one or more fluid conduits 56. As illustrated, the center compartment 58a may be coupled to a first fluid conduit 56a and the body compartment 58b may be coupled to a second fluid conduit 56b. By separately coupling the center compartment 58a and the body compartment 58b, a movement of the fog to and from each of the one or more compartments 58 may be separately controlled. In this way, the visual appearance of the combustion effect may also be controlled.

**[0035]** FIG. 3B is a side view of an embodiment of the one or more compartments 58 of the special effect system 50 during operation of the combustion effect. For example, the center compartment 58a may be used for a larger primary combustion effect 90a and the body compartment 58b may be used for a smaller secondary combustion effect 90b. To create the primary combustion effect 90a, the first fluid conduit 56a coupled to the center compartment 58a may create a positive pressure forcing collected fog outwards via the first outlet 82a. Since the fog is centrally stored within the center compartment 58a, the fog may rapidly exit from the first outlet 82a. In certain instances, an attraction controller may instruct an attraction system to generate additional special effects (e.g., lighting effects, audio effects, visual effects, smell effects) to occur in parallel with the primary combustion effect 90a. For example, the attraction controller may instruct a laser to generate a visual effect (e.g., sun beam)

to strike the show element 54 (e.g., snowman) and the special effect system 50 may cause the show element 54 to appear to spontaneously combust (e.g., primary combustion effect 90a).

**[0036]** During the primary combustion effect 90a, the body compartment 58b may continuously receive fog via a second fluid conduit 56b. Then, the second fluid conduit 56b may release a positive pressure into the body compartment 58b and force the stored fog outwards. Since the body compartment 58b includes the one or more second outlets 82b, the fog may slowly exit from the body compartment 58b and visually appear as a smoldering or burning effect. As such, the secondary combustion effect 90b may not visually appear as large as the primary combustion effect 90a. By layering the primary combustion effect 90a and the secondary combustion effect 90b, the visual appearance of the combustion effect may be adjusted.

**[0037]** To further enhance the combustion effect, the show element 54 may be coupled to appendages and/or accessories, such as the appendages 60 and/or the accessories 62 described with respect to FIG. 1. For example, the accessories may include lightweight draped costuming such as loose-fitting garments or pieces of cloth. The accessories may be attached around the one or more outlets 82 such that when the one or more compartments 58 are positively pressured, the accessories 62 may billow outwards illustrating to the guests that the combustion effect is occurring. The accessories may also add to a story telling aspect for the guests. For example, if the show element 54 is flying through the air via the motion controller 64, the accessories may move adjacent the show element 54 to enhance the flying effect. In this way, the show element 54 may create a realistic and/or immersive environment for the guests.

**[0038]** With the foregoing in mind, FIG. 4 is a flow diagram of an embodiment of an example method 100 for operating the special effect system 50. The method 100 is discussed with respect to features shown in FIGS. 1, 2, 3A, and 3B. The method 100 may begin with an empty compartment state. The method 100 may be carried out according to instructions stored on one or more tangible, non-transitory, machine-readable media and/or may be instructed by a processor or the processing circuitry of a control system (e.g., fog generation control system) described herein or on another suitable controller. The blocks of the method 100 may be performed in any suitable

order. Furthermore, certain blocks of the method 100 may be omitted and/or other blocks may be added to the method 100.

**[0039]** At block 102, the controller may receive an activation signal. For example, the controller may receive an indication (e.g., user input, automatic signal) to trigger the combustion effect. In another example, the controller may receive a signal indicative of triggering the combustion effect based on received sensor signals or timing signals indicative of guest proximity to the special effect system 50. In response to receiving the activation signal, the controller may instruct one or more blowers to push fog into the one or more compartments 58 (e.g., center compartment 58a, body compartment 58b) via the one or more fluid conduits 56. As described herein, creating fog may be a slow and time-consuming process. As such, a controller may instruct a fog generation machine within the fog generation equipment 52 to continuously make fog, and initiation of the combustion effect may include opening valves to permit entry of the fog into the one or more compartments 58. In certain instances, the fog may first fill the center compartment 58a then fill the body compartment 58b. In other instances, the fog may fill the center compartment 58a and the body compartment 58b in parallel. The fog may travel through the one or more fluid conduits 56 to the compartments 58 through diffusion or through a low level of positive pressure that is set to promote fog collection within the one or more compartments 58 but that is not sufficiently high to blow fog out through the one or more outlets 82.

**[0040]** During an initial charging stage of the combustion effect, it may be beneficial to create a low level of negative pressure within the one or more compartments 58 to prevent fog from being released prior to triggering a visible stage of the combustion effect. Thus, the charging stage of the combustion effect may include activation of a negative pressure at a level to keep any fog within the one or more compartments 58 from exiting through the one or more outlets 82.

**[0041]** At block 104, the controller may instruct one or more devices of the fog generation equipment 52 to apply positive pressure to push fog out of the one or more compartments 58. The fog generation equipment 52 may include one or more air sources that may generate air to create a positive pressure to force the fog out of the compartments 58. As such, the combustion effect may be created. For example, the controller may instruct one or more compressed air supplies to create positive pressure

to be applied to the center compartment 58a. The positive pressure may push the fog out of the center compartment 58a, thereby creating the primary combustion effect 90a. In another example, the controller may instruct one or more blowers to activate and create positive pressure to be applied to the body compartment 58b. The one or more blowers may cause fog to leave the body compartment 58b at a speed slower in comparison to fog leaving the center compartment 58a, thereby creating a secondary combustion effect 90b. In an embodiment, the positive pressure to push the fog through the one or more outlets 82 is higher than the pressure used to fill the one or more compartments 58.

[0042] Additionally, or alternatively, the controller may instruct the attraction controller to generate light effects, sound effects, smell effects, mechanical effects, or the like in combination with the combustion effect. For example, the controller may instruct motion controller 64 to actuate the show element 54 to create an appearance of an attack followed by a combustion. Further, the controller may instruct the attraction controller to generate a smoky or a burning smell to be carried by the fog to the guests. In another example, the controller may instruct the attraction controller to generate sound effects to be generated along with the combustion effect to create an immersive environment for the guests.

[0043] At block 106, the controller may receive a deactivation signal. For example, the controller may receive an indication (e.g., user input, automatic signal) indicative of resetting the special effect system 50. The controller may instruct the one or more devices to enter an idle state. In other instances, the controller may instruct motion controller 64 to return the show element 54 to a default position. At block 108, the controller may also instruct the one or more devices of the fog generation equipment 52 to generate the negative pressure to remove fog from the one or more compartments 58.

[0044] FIG. 5 is a schematic diagram of an embodiment of the special effect system 50 including the fog generation equipment 52 and the show element 54. As described herein, the fog generation equipment 52 may be outside the show element 54 to reduce or eliminate complexity of the show element 54 and/or the one or more compartments 58. The fog generation equipment 52 may be coupled to the one or more compartments 58 via the one or more fluid conduits 56, which may include flexible ducting made of

any suitable material. In the illustrated example, the fog generation equipment 52 may be coupled to the center compartment 58a via a first fluid conduit 56a and the body compartment 58b via a second fluid conduit 56b. It may be beneficial to use separate fluid conduits 56 for each of the center compartment 58a and the body compartment 58b to control the visual appearance of the combustion effects.

**[0045]** As illustrated, the fog generation equipment 52 may include a fog generation machine 110, one or more devices (e.g., vacuum blower 112, fan 121), one or more ducts 114, one or more valves 116, one or more dampers 118, and one or more compressed air supplies 120. While active, the fog generation machine 110 may generate fog for the special effect system 50. For example, the fog generation equipment 110 may combine the active ingredient and water to generate the fog. In another example, the fog generation 110 may heat an ingredient to generate the fog. Still in another example, the fog generation equipment 110 may release a fluid to the atmosphere to generate the fog. Further, the fog generation equipment 110 may be coupled to the one or more blowers (e.g., blowers) that may generate positive pressure to push the fog from the fog generation equipment 110 into the one or more ducts 114.

**[0046]** In certain cases, the one or more ducts 114 may be made from high performance materials that may withstand the fog. For example, the fog may be created from heating liquid nitrogen, as such the one or more ducts 114 may include insulating materials to reduce or eliminate freezing from the nitrogen. In another example, the fog may include steam, as such the one or more ducts 114 may include insulated high pressure water lines to withstand heat or pressure used to create the steam for the fog. Additionally or alternatively, the one or more ducts 114 may be made from stainless steel, carbon steel, polyvinyl chloride (PVC) pipes, or other suitable materials. However, as the fog move through the special effect system 50, certain fog properties may dissipate and material limitations for the one or more fluid conduits 56 may be reduced or eliminated.

**[0047]** The one or more ducts 114 may be coupled to one or more valves 116 and/or one or more dampers 118 to control the movement of fog within the special effect system 50. For example, the one or more valves 116 may include a check valve that allows air or fog to flow in a certain direction (e.g., from the fog generation machine 110 to the compartments 58). In another example, the one or more valves 116 may

include a ball check valve with a closing member that may open when a pressure is above a threshold and reseal the valve when the pressure is below the threshold. Additionally, or alternatively, a controller may instruct the one or more valves 116 to open or close based on an indication (e.g., user input, automatic signal).

**[0048]** The one or more dampers 118 may also be used to control air or fog flow within the fog generation equipment 52 and/or the special effect system 50. The one or more dampers 118 may include three-way dampers, two-way dampers, single-blade dampers, inlet vane dampers, isolation dampers, valves, or the like. In an instance, the one or more dampers 118 may include a three-way damper that receives air from an inlet and releases air from an outlet. The one or more dampers 118 may also receive or divert air to and from a third port. In certain configurations, the receiving or diverting air from the third port may cause the one or more dampers 118 to move from the open to closed position or vice versa. In another example, the one or more dampers 118 may be a pneumatic operated valve that changes between the open or closed position based on pressure being above or below the threshold. For example, the one or more dampers 118 may close when the pressure is below the threshold to stop air flow within a portion of the one or more ducts 114 and the one or more dampers 118 may open when the pressure is above the threshold to allow air flow within the one or more ducts 114. In certain instances, the controller may instruct the one or more dampers 118 to open in response to receiving the activation signal to create the combustion effect and instruct the one or more dampers 118 to close in response to receiving the deactivation signal to reset the special effect system 50.

**[0049]** The special effect system 50 may include one or more devices (e.g., devices of the fog generation equipment 52) that create a positive pressure or a negative pressure. By way of example, the one or more devices may include one or more vacuum generation devices or one or more air current generation devices. By way of example, the one or more devices may include one or more vacuum blowers 112, one or more blowers 113, one or more electric blowers, one or more fans 121, or any suitable equipment to create a current for air or fog movement. As illustrated, the one or more devices may include one or more vacuum blowers 112 configured to pull air or fog to create the negative pressure within the one or more fluid conduits 56 and/or the one or more compartments 58. The one or more vacuum blowers 112 may pull air from the

one or more fluid conduits 56 into the one or more dampers 118 to be diverted out of the fog generation equipment 52. In another example, the one or more fluid conduits 56 may create a venturi effect to pull air from the one or more compartments 58. In another example, the one or more devices may include a blower 113, such as a fog blower, that creates a positive pressure to push fog generated by the fog generation machine 110 into the one or more ducts 114. In an embodiment, the blower 113 may be the same as the fans 121 and configured to apply positive pressure to the system. For example, the blower 113 and the fan 121 may be blowers configured to push fog out of the one or more compartments 58.

**[0050]** The fog generation equipment 52 may also include one or more compressed air supplies 120 configured to create the positive pressure for the primary combustion effect 90a. The one or more compressed air supplies 120 may include a motor-driven device (e.g., include air compressors, vacuum air compressors) for pressurizing air based on one or more settings. For example, the settings may include a speed of a motor, a pressure, a volume, a duration of pressurizing, or the like. The controller may receive an indication of the settings and instruct the one or more compressed air supplies 120 to pressurize air based on the settings. The one or more compressed air supplies 120 may receive air from an inlet valve, compress the air to a desired volume, and release the pressurized air through a discharge valve. The pressurized air may enter the center compartment 58a via the first fluid conduits 56a and push the collected fog outwards, thereby generating the primary combustion effect 90a.

**[0051]** In certain instances, the one or more dampers 118 and/or the one or more valves 116 may control movement of air to and from the center compartment 58a. In the illustrated example, the center compartment 58a may be coupled to the fog generation machine 110, the one or more compressed air supplies 120, and the one or more vacuum blowers 112. The one or more vacuum blowers 112 may pull air to create the negative pressure within the center compartment 58a. Additionally, or alternatively, the fog generation machine 110 may be active and generating fog to charge the one or more ducts 114 of the fog generation equipment 52. In response to receiving the activation signal, the controller may instruct the one or more dampers 118 and/or the one or more valves 116 to open for fog to travel into the center compartment 58a. After a period of time, the controller may instruct the one or more dampers 118 and/or the

one or more valves to 116 close, thereby preventing fog from traveling to the center compartment 58a. The controller may instruct the one or more compressed air supplies 120 to release pressurized air into the one or more ducts 114 to create a positive pressure within the center compartment 58a to generate the primary combustion effect 90a.

**[0052]** In the illustrated example, the body compartment 58b may be coupled to the fog generation machine 110 and two or more devices of the fog generation equipment 52. For example, the body compartment 58b may be coupled to the one or more vacuum blowers 112 that create the negative pressure within the body compartment 58b. The controller may instruct the one or more vacuum blowers 112 to pull air to create the negative pressure within the body compartment 58b and prevent fog from exiting the body compartment 58b prior to generating the secondary combustion effect 90b. The controller may also instruct the one or more dampers 118 and/or the one or more valves 116 coupled to the one or more ducts 114 to open for air to flow from the body compartment 58b to the one or more vacuum blowers 112. During or after the primary combustion effect 90a, the controller may instruct the one or more dampers 118 and/or valves 116 to open for fog from the fog generation machine 110 to enter the body compartment 58b via the one or more fluid conduits 56. Following the primary combustion effect 90a, the controller may instruct one or more fans 121 to create the positive pressure within the fog generation machine 110, thereby pushing fog out of the body compartment 58b to create the secondary combustion effect 90b.

**[0053]** In an embodiment, the fog generation machine 110 may be in an active state (e.g., on-state) and continuously generate fog. As described herein, fog generation may be a slow and time-consuming process. As such, it may be beneficial to keep the fog generation machine 110 active for continuous fog generation and control movement of the fog by opening or closing the one or more dampers 118 and/or the one or more valves 116. Further, components of the fog generation equipment 52 may take time to enter the active state. For example, ramping the one or more fans 121 from an idle state to the active state may take a period of time, which may cause a delay to the combustion effect. In another example, the one or more compressed air supplies 120 may take an amount of time to pressurize air. As such, it may be beneficial to keep certain components of the fog generation equipment 52 active and control movement of air by opening or closing the associated one or more valves 116 and/or one or more dampers

118. Accordingly, by controlling the opening or closing of the one or more dampers 118 and/or the one or more valves 116, the visual appearance of the combustion effect may be controlled.

**[0054]** The fog generation equipment 52 may be controlled by a fog generation controller 122 (e.g., control system). The controller 122 may include a memory 124 and processing circuitry 126. The memory 124 may include volatile memory, such as random-access memory (RAM), and/or non-volatile memory, such as read-only memory (ROM), optical drives, hard disc drives, solid-state drives, or any other non-transitory computer-readable medium that includes instructions to operate the special effect system 50 and/or the fog generation equipment 52. The processing circuitry 126 may be configured to execute such instructions. For example, the processing circuitry 126 may include one or more application specific integrated circuits (ASICs), one or more field programmable gate arrays (FPGAs), one or more general purpose processors, or any combination thereof.

**[0055]** In an embodiment, the fog generation controller 122 may set, adjust, and/or change one or more parameters of the combustion effect, such as to control the visual appearance of the combustion effect, a timing of the combustion effect, a length of the combustion effect or the like. For example, the fog generation controller 122 may instruct the one or more dampers 118 and/or the one or more valves 116 open or close, which may result in applying a positive pressure or a negative pressure to be applied to the one or more compartments 58. In another example, the fog generation controller 122 may instruct the fog generation machine 110, the one or more air current devices, or the one or more compressed air supplies 120 to be in an active state or an idle state before, during, or after the combustion effect. In an embodiment, the controller 122 may instruct the fog generation equipment 52 to remain in the active state to generate fog, the negative pressure, or the positive pressure. Further, the fog generation controller 122 may instruct the motion controller 64 to actuate the show element 54 to create a realistic and immersive environment for the guests. In this way, the fog generation controller 122 may create visually realistic combustion effect and a realistic and/or immersive environment for the guests.

**[0056]** FIG. 6 is a flow diagram of an example method 150 for operating the special effect system 50. By way of example, the show element 54 may be the snowman,

described with respect to FIG. 1, and a scene may include the snowman spontaneously combusting after being exposed to a beam of light. The combustion effect may occur in two steps. For example, upon being exposed by the beam of light, the snowman may experience a large explosion (e.g., a primary combustion effect) a torso area followed by a smoldering or burning effect (e.g., a secondary combustion effect).

[0057] To prepare for the combustion effect, the special effect system 50 may create fog and store the fog. At block 152, the controller 122 may instruct the fog generation equipment 52 to activate and produce fog. For example, the controller 122 may send an indication to the fog generation machine 110 to ramp into the active state for fog generation. In another example, controller 122 may instruct the fog generation machine 110 to be in the active state for continuous fog production. In this case, the controller 122 may not send an indication to the fog generation machine 110 and the machine 110 may remain in the active state generating the fog.

[0058] At block 154, the controller 122 may instruct the one or more vacuum blowers 112 to create negative pressure in the compartments 58 by pulling air from the compartments 58. For example, the controller 122 may instruct the one or more vacuum blowers 112 to be in the active state and pull air within the special effect system 50. The controller 122 may also instruct the one or more dampers 118 associated with the one or more vacuum blowers 112 to open for negative pressure to be applied to the compartments 58. For example, by opening the associated one or more dampers 118 may allow a first vacuum blower of the one or more vacuum blowers 112 to pull air from the center compartment 58a via the first fluid conduit 56a and a second blower of the one or more vacuum blowers 112 to pull air from the body compartment 58b via the second fluid conduit 56b. In other instances, the air pulled from the center compartment 58a into the first vacuum blower of the one or more vacuum blowers 112 and exit through an outlet of the first vacuum blower and the air pulled from the body compartment 58b into the second vacuum blower may exit through an outlet of the second vacuum blower.

[0059] At block 156, the controller 122 may receive an activation signal. The activation signal may be a signal indicative from user input or an automatic signal indicative of triggering the combustion effect. For example, the controller 122 may receive user input indicative of generating the combustion effect. In another example,

the controller 122 may receive a signal from the memory 124 indicative of generating the combustion effect. In response to receiving the activation signal, the controller 122 may instruct the one or more dampers 118 to close. As such, negative pressure applied to the one or more compartments 58 may be stopped.

[0060] At block 158, the controller 122 may instruct the one or more dampers 118 to open based on the activation signal to allow the fog to charge the one or more fluid conduits 56 and/or a one or more ducts 114. As the fog generation machine 110 generates fog, the fog may enter the one or more ducts 114 coupled to the machine 110. The controller 122 may instruct the one or more dampers 118 coupled to the one or more ducts 114 to open for fog to flow into the one or more fluid conduits 56 (e.g., first fluid conduit 56a, second fluid conduit 56b). In certain instances, the controller 122 may instruct the one or more dampers 118 coupled to the first fluid conduit 56a to open for fog to charge the first fluid conduit 56a; then after a period of time, the controller 122 may instruct the one or more dampers 118 coupled to the second fluid conduit 56b to open to charge the second fluid conduit 56b. As such, fog may be stored within the center compartment 58a prior to the body compartment 58b.

[0061] At block 160, the controller 122 may cause fog to collect within the one or more compartments 58. Since the one or more compartments 58 may be negatively pressured, the fog may travel through the one or more fluid conduits 56 and into the compartments 58. It may be beneficial to use the one or more compartments 58 as a central storage point prior to generating the combustion effect since fog generation is a time-consuming process. Rather, the combustion effect may be rapidly generated by creating a positive pressure within the special effect system 50 to push fog out of the one or more compartments 58.

[0062] At block 162, the controller 122 may activate one or more devices of the fog generation equipment 52 to push collected fog through the one or more outlets 82 of the one or more compartments 58. By way of example, the controller 122 may instruct the one or more compressed air supplies 120 to generate pressurized air. The pressurized air may create a positive pressure within the center compartment 58a and push out the fog to generate the primary combustion effect 90a. In certain instances, the pressurized air may charge the one or more fluid conduits 56 and apply pressure to a valve of the one or more valve 116. As such, the pressurized air may travel through

the first fluid conduit 56a to the center compartment 58a. The pressurized air may rapidly push the collected fog within the center compartment 58a to be released through the first outlet 82a, thereby creating the primary combustion effect.

**[0063]** In another example, the controller 122 may instruct the one or more fans 121 to generate air flow to create the positive pressure within the body compartment 58b. The air may push the stored fog through the one or more outlets 82 of the body compartment 58b to create the secondary combustion effect. For example, the controller 122 may instruct the one or more vacuum blowers 112 to be in an active state and continuously generate air flow. The controller 122 may instruct the one or more fans 121 to start producing high velocity air, then instruct the one or more dampers 118 to open such that the high velocity air may push fog out of the body compartment 58b via the one or more outlets 82. In comparison to the pressurized air from the one or more compressed air supplies 120, the high velocity air from the one or more fans 121 may move slower, apply less positive pressure, or the like. As such, the secondary combustion effect 90b may visually appear smaller than the primary combustion effect 90a. By layering the primary combustion effect 90a and the secondary combustion effect 90b, a visually realistic combustion effect may be created.

**[0064]** At block 164, the controller 122 may receive a deactivation signal. For example, the controller 122 may receive an indication (e.g., user input, automatic signal) to reset the special effect system 50. In response to receiving the deactivation signal, the controller 122 may instruct the one or more dampers 118 to close to stop air flow to the one or more compartments 58. For example, the controller 122 may instruct the one or more dampers 118 associated with the one or more fluid conduits 56 to close to prevent air (e.g., compressed air, high velocity air) from entering the one or more compartments 58. Additionally or alternatively, closing the dampers 118 may stop fog from entering the one or more compartments 58. As such, the show element 54 may reset until a subsequent activation signal. In an embodiment, the controller 122 may instruct the one or more devices of the fog generation equipment 52 to enter the idle state and stop pushing fog into the one or more compartments 58. Additionally or alternatively, the controller 122 may cause one or more dampers 118 associated with the negative pressure to open and pull residual fog from the one or more compartments 58. Further, the controller 122 may instruct the motion controller 64 to move the one

or more compartments 58 to an initial position. The method 150 may return to block 152 to create fog, and block 154 to create negative pressure the compartments 58.

**[0065]** The method 150 may be carried out according to instructions stored on one or more tangible, non-transitory, machine-readable media and/or may be performed by the processor or the processing circuitry 126 of the control system (e.g., fog generation controller 122) described herein or on another suitable controller. The blocks of the method 150 may be performed in any suitable order. Furthermore, certain blocks of the method 150 may be omitted and/or other blocks may be added to the method 150.

**[0066]** FIG. 7 is a schematic diagram of an embodiment of an attraction system 180 of an amusement park using the special effect system 50. For example, the attraction system 180 may include a roller coaster, a motion simulator, a water ride, a walk-through attraction (e.g., a maze), and the like. The attraction system 180 may also include special effects 182, which may be operated to enhance the guest experience provided by the attraction system 180. For instance, the special effects 182 may include light effects, a movable object (e.g., a robot), smoke effects, audio effects, and the like. The special effects 182 may also include the combustion effect created by the special effect system 50. For example, the combustion effect may be used in parallel with other special effects 182 to create a realistic and/or immersive environment for the guests.

**[0067]** The attraction system 180 may also include a ride 184, which may have a vehicle 186. The ride 184 may, for example, include a roller coaster, a water ride, a motion simulator, a dark ride, and so forth. To this end, the vehicle 186 may move (e.g., translate, rotate, pivot) about a motion base and/or along a track of the attraction system 180 in an embodiment. In an additional or alternative embodiment, the vehicle 186 may remain stationary within the attraction system 180. One or more guests may be positioned within the vehicle 186. The ride 184 may entertain the guests via movement of the vehicle 186, such as by providing certain movement sensations for the guest. Additionally, or alternatively, the special effects 182 may entertain the guest(s) positioned in the vehicle 186, such as by providing realistic visual and/or audio effects.

**[0068]** In an embodiment, the special effect 182 may include combinations of electrical, visual, smell, smoke, audio, and fog effects. For example, the special effects

182 may include the combustion effect created by the special effect system 50 controlled by the fog generation controller 122 (as described with respect to FIG. 5). The special effect system 50 may include the fog generation equipment 52 configured to generate fog push the fog through the one or more fluid conduits 56 coupled to the one or more compartment 58 and a visual appearance of the combustion effect may be controlled by causing the one or more dampers 118 and/or the one or more valves 116 to open and close. Further, the special effects 182 may include sounds effects, light effects, water effects, movement, visual effects, smelling effects, or the like that may be used in parallel with the combustion effect. For example, the special effects 182 may include a lighting effect to simulate a sun beam striking the show element 54. The special effects 182 may include certain displays with visual effects to compliment the combustion effect. As described herein, the special effects 182 may also include certain smells or audio to compliment the combustion effect.

**[0069]** The attraction system 180 may also include an attraction control system 188 coupled to the fog generation controller 122 and the ride 184. The attraction control system 188 may include a memory 190 and processing circuitry 192. The memory 190 may include volatile memory, such as random-access memory (RAM), and/or non-volatile memory, such as read-only memory (ROM), optical drives, hard disc drives, solid-state drives, or any other non-transitory computer-readable medium that includes instructions to operate the attraction system 180. The processing circuitry 192 may be configured to execute such instructions. For example, the processing circuitry 192 may include one or more application specific integrated circuits (ASICs), one or more field programmable gate arrays (FPGAs), one or more general purpose processors, or any combination thereof.

**[0070]** Further, the attraction control system 188 may cause additional special effects to be generated before, during, or after the combustion effect. For instance, the attraction control system 188 may control movement of the vehicle 186 within the attraction system 180 and/or various outputs provided by the fog generation controller 122. In an embodiment, the attraction control system 188 may set, adjust, and/or change one or more parameters of the combustion effect, such as to control the appearance of the visual combustion effect provided. As an example, the attraction control system 188 may operate the combustion effect to result in the show element 54 appearing to

move or travel in a certain manner relative to the vehicle 186. For instance, the attraction control system 188 may instruct the show element 54 to move towards the vehicle 186 and combust before reaching the vehicle 186. In another instance, the attraction control system 188 may instruct the show element 54 to move adjacent the vehicle 186. In an embodiment, the combustion special effect is activated based on the location of the vehicle 186 being within a certain distance of the show element. For example, a vehicle location signal is provided to the special effect system 50.

[0071] The special effect system 50 may be added to new and existing special effects. Furthermore, the special effect system 50 described herein may be installed in both new and existing show elements 54 (e.g., objects). Installation of the special effect system 50 includes incorporating the compartments within the figure or object and coupling to the fog machine equipment and/or the motion controller. For example, the special effect system 50 may be applied to animated figures or other non-anthropomorphic shapes or objects with a cavity. Additionally or alternatively, the object may be coupled to the motion controller for the object to move relative to other special effects in the system.

[0072] While only certain features of the invention have been illustrated and described herein, many modifications and changes will occur to those skilled in the art. It is, therefore, to be understood that the appended claims are intended to cover all such modifications and changes as fall within the true spirit of the invention.

[0073] The techniques presented and claimed herein are referenced and applied to material objects and concrete examples of a practical nature that demonstrably improve the present technical field and, as such, are not abstract, intangible or purely theoretical. Further, if any claims appended to the end of this specification contain one or more elements designated as “means for (perform)ing (a function)...” or “step for (perform)ing (a function)...”, it is intended that such elements are to be interpreted under 35 U.S.C. 112(f). However, for any claims containing elements designated in any other manner, it is intended that such elements are not to be interpreted under 35 U.S.C. 112(f).

## CLAIMS

1. A special effect system, comprising:  
fog generation equipment configured to generate fog and comprising:  
one or more positive pressure sources; and  
one or more negative pressure sources;  
a show element comprising one or more compartments; and  
a controller communicatively coupled to the fog generation equipment,  
wherein the controller is configured to perform operations comprising:  
applying negative pressure from the one or more negative  
pressure sources to the one or more compartments for a period of time;  
permitting the fog from the fog generation equipment to enter  
the one or more compartments after the period of negative pressure; and  
applying a positive pressure from the one or more positive  
pressure sources to cause the fog to exit the one or more compartments  
to trigger a combustion effect.
2. The special effect system of claim 1, wherein the one or more  
compartments comprises a center compartment configured for a primary combustion  
effect and a body compartment configured for a secondary combustion effect.
3. The special effect system of claim 2, wherein the center compartment  
comprises one or more outlets configured to release the fog for the primary combustion  
effect and the body compartment comprises additional outlets configured to release fog  
for the secondary combustion effect.
4. The special effect system of claim 1, wherein the one or more positive  
pressure sources comprises one or more blowers, one or more compressed air supplies,  
one or more fans.
5. The special effect system of claim 1, wherein the one or more  
compartments comprises one or more outlets configured to release the fog during the  
combustion effect.

6. The special effect system of claim 5, wherein the outlets comprise a covering comprising of a perforated material.

7. The special effect system of claim 1, wherein the controller is configured to perform operations comprising:

receiving a deactivation signal; and

instructing a negative pressure damper of a plurality of dampers to open to apply the negative pressure from the one or more negative pressure sources to the one or more compartments for the period of time.

8. The special effect system of claim 7, wherein the controller is configured to perform operations comprising:

receiving an activation signal;

instructing the negative pressure damper of the plurality of dampers to close after the period of time; and

instructing a positive pressure damper of the plurality dampers to open to permit the fog to enter the one or more compartments.

9. The special effect system of claim 1, wherein the fog generation equipment comprises one or more vacuum generation devices configured to apply the negative pressure to the one or more compartments.

10. The special effect system of claim 9, comprising a negative pressure damper of a plurality of dampers coupled to the one or more vacuum generation devices, wherein the controller is configured to perform operations comprising instructing the negative pressure damper of the plurality of dampers to open to apply the negative pressure from the one or more vacuum generation devices to the one or more compartments.

11. The special effect system of claim 1, wherein the fog generation equipment is configured to generate the fog.

12. A special effect method, the method comprising:  
instructing, via a controller, a fog generation machine to generate fog;  
instructing, via the controller, to apply a negative pressure for a period of time from one or more vacuum blowers to one or more compartments to empty the one or more compartments;  
allowing the fog from the fog generation machine to fill the one or more compartments after the period of time; and  
instructing, via the controller, to apply a positive pressure from one or more compressed air supplies to the one or more compartments to generate a combustion effect.
13. The method of claim 12, comprising, instructing, via the controller, a negative pressure damper to open for the negative pressure to be applied to the one or more compartments.
14. The method of claim 13, comprising:  
instructing, via the controller, the negative pressure damper to close in response to receiving an activation signal; and  
instructing, via the controller, a positive pressure damper to open to allow the fog from the fog generation machine to enter the one or more compartments.
15. The method of claim 14, wherein the fog is configured to travel through one or more fluid conduits before entering the one or more compartments.
16. The method of claim 14, comprising:  
instructing, via the controller, the positive pressure damper to close in response to receiving a deactivation signal; and  
instructing, via the controller, the negative pressure damper to open to apply the negative pressure for the period of time.
17. The method of claim 16, comprising:  
filling a first compartment of the one or more compartments with the fog from the fog generation machine;

applying, via the controller, the positive pressure from one or more blowers to the first compartment to generate a first combustion effect;

filling a second compartment of the one or more compartments with the fog from the fog generation machine; and

applying, via the controller, the positive pressure from the one or more blowers to the second compartment to generate a second combustion effect, wherein the second combustion effect is visually smaller than the first combustion effect.

18. An attraction system, comprising:

a show element comprising a compartment configured to store and release fog;

one or more dampers configured to open or close to control air flow to and from the compartment;

a vehicle configured to move along a path proximate to the show element; and

a controller communicatively coupled to the show element and the vehicle, wherein the controller is configured to:

determine a location of the vehicle; and

instruct an application of a positive pressure to release stored fog from the compartment based on the location of the vehicle.

19. The attraction system of claim 18, comprising a fog generation machine configured to generate fog, and wherein the one or more dampers are configured to open to allow the fog to be stored within the compartment.

20. The attraction system of claim 18, comprising one or more blowers activated by the controller to apply the positive pressure.