Claims

1. A floodgate comprising:

a panel configured to be movable between an opened position and a closed position wherein in the opened position, the panel forms a barrier against flood water; ~~and~~

at least one extendable member configured to move the panel from the closed position to the opened position about at least one hinge, wherein the extendable member is spaced away from an axis of the hinge, wherein the extendable member is a gas strut; and

at least one connection means for connecting the gas strut to a frame;

wherein the hinge is attached to the panel, the hinge and the connection means being maintained in a constant relative positional relationship by the frame.

2. A floodgate according to claim 1, wherein when, in use, the floodgate is installed into a generally horizontal ground area, a first end of the gas strut lies beneath the axis of the hinge and is laterally spaced away from the axis of the hinge.

~~2~~3. A floodgate according to claim 1 or claim 2, wherein each extendable member comprises a dampening mechanism configured to reduce the rate at which the extendable member moves the panel from a predetermined position to the closed position.

~~3~~4. A floodgate according to claim ~~2~~3, wherein the reduction in the rate at which the extendable member moves the panel is adjustable.

~~4~~5. A floodgate according to any of the preceding claims, wherein each extendable member is arranged with the panel such that when the panel is in the closed position, ~~a~~the first end of the extendable member lies ~~substantially~~ proximate a position directly below an end of the panel and a second end of the extendable member opposite the first end lies directly below a point two-thirds of a length of the panel from the end of the panel.

~~5~~6. A floodgate according to any of the preceding claims, further comprising a plurality of hinges attached to the panel and a plurality of brackets attached to the gas struts, the hinges and brackets being maintained in a constant relative positional relationship by a frame, each hinge and bracket being arranged with the panel such that when the panel moves, a weight of the panel exerted on the hinge is at least partially balanced by an opposing force exerted by the bracket.

~~6~~7. A floodgate according to any of the preceding claims, further comprising at least one locking member configured to be switchable between a locked state and an unlocked state such that when the at least one locking member is in the locked state, the at least one locking member locks the panel in the closed position and when the at least one locking member is in the unlocked state, the panel moves from the closed position to the opened position.

~~7~~8. A floodgate according to any of the preceding claims, further comprising at least one rotatable drive arranged with the panel such that rotation of the at least one rotatable drive moves the panel from the opened position to the closed position.

~~8~~9. A floodgate according to claim ~~7~~8 when dependent on claim ~~6~~7, wherein each locking member is integrally formed with one of the at least one rotatable drive.

~~9~~10. A floodgate according to claim ~~7~~8 or ~~8~~9 wherein each rotatable drive further comprises a brake configured to exert a force against the rotation of the rotatable drive when a speed of the rotation exceeds a predetermined threshold.

~~10~~11. A floodgate according to any of the preceding claims, further comprising a base frame arranged to hold the panel and a seal arranged to press against the base frame when the panel is in the opened position to form a continuous barrier with the panel against floodwater.

~~11~~12. A floodgate according to any of the preceding claims, wherein the panel is configured to withstand a weight of an automobile over the panel when the panel is in the closed position.

~~12~~13. A floodgate according to any of claims ~~7~~ 8 to ~~11~~12, wherein each rotatable drive is configured to exert a force on the panel to move the panel from the opened position to the closed position wherein the force exerted by each rotatable drive at a point a distance away from a first end of the panel is equal to the force exerted by a different rotatable drive at a point the same distance away from a second end of the panel opposite the first end.

~~13~~14. A floodgate for installation in a location subject to flooding, the floodgate comprising:

a frame for installation at the location,

a panel connected to the frame by at least one hinge, and

at least one connection means for connecting a gas strut to the frame such that the gas strut is spaced away from an axis of the hinge,

the frame being adapted to maintain the relative positions of the hinge and connection means, whereby upon attachment of respective ends of the at least one gas strut to the connection means and to the panel, the frame prevents forces generated by the gas strut from being transmitted to the location.

~~14. A floodgate comprising:~~

~~a panel configured to be movable between an opened position and a closed position about a hinge axis, and~~

~~a plurality of sealing elements provided at edges of the panels which are opposite with respect to the direction of the hinge axis,~~

~~the sealing elements extending along the edges of the panel, whereby upon locating the panel in the opened position with the edges of the panel in sealing contact with respective other objects, the sealing elements provide respective watertight seals against the other objects.~~

~~15. A floodgate system comprising;~~

~~a plurality of floodgates according to any of the preceding claims, each floodgate further comprising a plurality of sealing elements; and~~

~~wherein at least one sealing element of each floodgate is configured to overlap with a sealing element of another floodgate such that a continuous barrier is formed by the panels and the overlapping sealing elements.~~

~~16. A floodgate system comprising:~~

~~a plurality of floodgates, each floodgate comprising a panel configured to be movable between an opened position and a closed position, and a plurality of sealing elements;~~

~~wherein at least one sealing element of each floodgate is configured to overlap with a sealing element of another floodgate such that a continuous barrier is formed by the panels and the overlapping sealing elements.~~

~~17. A floodgate system according to claim 16, wherein each floodgate is according to any one of or more of claims 1 to 14.~~