Claims

1. A blast valve comprising

a frame (1) having a first elongated side member (2), a second elongated side member (3), an elongated bottom member (4), and an elongated top member (5),

wherein the first elongated side member (2) and the second elongated side member (3) are parallel and wherein the elongated bottom member (4) and the elongated top member (5) are parallel,

wherein each of the first elongated side member (2), the second elongated side member, (3) the elongated bottom member (4) and the elongated top member (5) have two opposite first ends (6),

wherein one of opposite first ends (6) of the first elongated side member (2) is attached to a first end (6) of the elongated bottom member (4) and the other of the opposite first ends (6) of the first elongated side member (2) is attached to a first end (6) of the elongated bottom member (4),

wherein one of opposite first ends (6) of the second elongated side member (3) is attached to a first end (6) of the elongated bottom member (4) and the other of the opposite first end (6) of the second elongated side member (3) is attached to a first end (6) of the elongated bottom member (4),

wherein a plurality of parallel rows of closure devices (7) arranged in the frame (1),

characterized

by the first elongated side member (2) being attached to the elongated bottom member (4) and to the elongated top member (5) by external fastening means (8),

by the second elongated side member (3) being attached to the elongated bottom member (4) and to the elongated top member (5) by external fastening means (8),

by the frame (1) comprising an outer frame (9) and an inner frame (10), and

by the inner frame (10) being connected to the outer frame (9) by means of external fastening means (8),

by the outer frame (9) comprisingtwo outer frame sections (33) joined together by external fastening means (8) to form the outer frame (9),

by each outer frame section (9) comprising an outer lower horizontal beam (22) that forms a part of the elongated bottom member (4) of the frame (1) and an outer upper horizontal beam (21) that forms a part of the elongated top member (5) of the frame,

by one outer frame section (33) that comprises an outer vertical beam (26) that forms a part of the first elongated side member (2) of the frame (1), and

by another outer frame section (33) that comprises an outer vertical beam (26) that forms a part of the second elongated side member (3) of the frame (1),

by the inner frame (10) being formed of a plurality of parallel frame sections (11) each having an opening (12) in which one row of closure devices (7) of said plurality of parallel rows of closure devices (7) is arranged,

by each frame section (11) comprising a first vertical beam (13), a second vertical beam (14), an upper horizontal beam (15), and a lower horizontal beam (16),

by the first vertical beam (13) and the second vertical beam (14) are parallel,

by the upper horizontal beam (15) and the lower horizontal beam (16) are parallel,

by each of the first vertical beam (13), the second vertical beam (14), the upper horizontal beam (15), and the lower horizontal beam (16) being formed of a U-beam each having two opposite second ends (30) and each having two flanges (18), a web (19) and a channel (20) between the two flanges (18) and the web (19),

by one of the opposite second ends (30) of the first vertical beam (13) being connected to a second end (30) the upper horizontal beam (15) and by the other of the opposite second ends (30) of the first vertical beam (13) being connected to a second end (30) of the lower horizontal beam (16),

by one of the opposite second ends (30) of the second vertical beam (14) being connected to a second end (30) of the upper horizontal beam (15) and by the other of the opposite second ends (30) of the second vertical beam (14) being connected to a second end (30) of the lower horizontal beam (16), and

by an adjacent parallel frame sections (11) of the inner frame (10) being arranged so that the web (19) of the U-beam forming one of a first vertical beam (13) and a second vertical beam (14) in a parallel frame section (11) is in contact with the web (19) of the U-beam forming one of a first vertical beam (13) and a second vertical beam (14) in an adjacent frame section (11).

2. The blast valve according to claim 1, **characterized**

by the adjacent parallel frame sections (11) of the inner frame (10) being arranged so that the web (19) of the U-beam forming one of a first vertical beam (13) and a second vertical beam (14) in a parallel frame section (11) is in contact with the web (19) of the U-beam forming one of a first vertical beam (13) and a second vertical beam (14) in an adjacent frame section (11) so that the U-beams of the adjacent parallel frame sections (11) together forms an I-beam.

3. The blast valve according to claim 1 or 2, **characterized**

by the blast valve comprising two blast valve sections (17) joined together to form the blast valve,

by each blast valve sections (17) comprising at least two parallel frame sections (11) of said plurality of parallel frame sections (11),

by each of said at least two parallel frame sections (11) comprising an upper outer horizontal beam (21), which that forms a part of the elongated top member (5) and of the outer frame, (9) and a lower outer horizontal beam (22), which forms a part of the elongated bottom member (4) and of the outer frame (9),

by the upper outer horizontal beam (21) being connected to each of said least two parallel frame sections (11) in each blast valve section (17),

by the lower outer horizontal beam (22) being connected to each of said least two parallel frame sections (11) in each blast valve section (17), and

by each blast valve section (17) having at least one connection surface (23) formed in part by the web (19) of one of a first vertical beam (13) and a second vertical beam (14) of a parallel frame section (11) of the blast valve section (17), and

by said two blast valve sections (17) being joined together by mating the connection surfaces (23) of adjacent blast valve section (17) and by connecting adjacent blast valve sections (17) by external fastening means (8).

4. The blast valve according to claim 3, **characterized**

by the upper outer horizontal beam (21), which forms a part of the outer frame (9), being at the connection surface (23) of the blast valve section (17) provided with an upper connection flange (24), which forms a part of the connection surface (23) of the blast valve section (17).

5. The blast valve according to claim 4, **characterized**

by the upper connection flange (24) being provided with **apertures (29)** for external fastening means (8).

6. The blast valve according to any of the claims 3 to 5, **characterized**

by the upper outer horizontal beam (21) being formed of a u-beam having two flanges (18), a web (19), and a channel (20) between the two flanges (18) and the web (19), and

by the web (19) of the upper outer horizontal beam (21) being in contact with the web (19) of the U-beam forming the upper horizontal beam (15) in each frame section (11).

7. The blast valve according to any of the claims 3 to 6, **characterized**

by the lower outer horizontal beam (22), which forms a part of the outer frame (9), being at the connection surface (23) of the blast valve section (17) provided with a lower connection

flange (25), which forms a part of the connection surface (23) of the blast valve section (17).

8. The blast valve according to claim 7, **characterized**

by the lower connection flange (25) being provided with apertures (29) for external fastening means (8).

9. The blast valve according to any of the claims 3-8, **characterized**

by the lower outer horizontal beam (22) being formed of a u-beam having two flanges (18), a web, and a channel (20) between the two flanges (18) and the web (19), and

by the web (19) of the lower outer horizontal beam (22) being in contact with the web (19) of the U-beam forming the lower horizontal beam (16) in each frame section (11).

10. The blast valve according to any of the claims 3 to 9, **characterized**

by two blast valve sections (17) of the blast valve being provided with an outer vertical beam (26) in contact with the web (19) of one of a first vertical beam (13) and a second vertical beam (14) of a parallel frame section (11), and

by the outer vertical beam (26) forms a part of the outer frame (9) and one of the first elongated side member (2) and the second elongated side member (3).

11. The blast valve according to claim 10, **characterized**

by the outer vertical beam (26) being formed or u-beams having two flanges (18), a web (19), and a channel (20) between the two flanges (18) and the web (19).

12. The blast valve according to claim 11, **characterized**

by the web (19) of the outer vertical beam (26) being in contact with the web (19) of one of a first vertical beam (13) and a second vertical beam (14) of the parallel frame section (11) of the blast valve section (17).

13. The blast valve according to any of the claims 10 to 12, **characterized**

by the outer vertical beam (26) being formed of at least two outer vertical beam sections (27) connected together by external fastening means (8).

14. The blast valve according to any of the claims 1 to 13, **characterized**

by each first vertical beam (13) and each second vertical beam (14) of each frame section (11) comprising reinforcements (28) in the channel (20) of the u-beam and connecting the two flanges (18) and the web (19), and

by each first vertical beam (13) and each second vertical beam (14) comprising reinforcements (28) at each second end (30) of the channel (20) of the u-beam.

15. The blast valve according to claim 14, **characterized**

by the reinforcements (28) at each second end (30) of the channel (20) of the u-beam comprising apertures (29) for external fastening means (8).

16. The blast valve according to any of the claims 1 to 15, **characterized**

by each upper horizontal beam (15) and each lower horizontal beam (16) of each frame section (11) comprising reinforcements (28) at each second end (30) of the channel (20) of the u-beam.

17. The blast valve according to claim 16, **characterized**

by the reinforcements (28) at each second end (30) of the channel (20) of the u-beam comprising apertures (29) for external fastening means (8).

18. The blast valve according to any of the claims 1 to 17, **characterized**

by the frame (1) comprising at least two frame sections (32) joined together by external fastening means (8) to form the frame (1), and

by each frame section (32) comprising an elongated bottom member section (34) that forms a part of the elongated bottom member (4) and an elongated top member section (35) that forms a part of the elongated top member (5).

19. The blast valve according to claim 18, **characterized**

by one frame section (32) that comprises the first elongated side member (2), and

by another frame section (32) that comprises the second elongated side member (3).