

FIG. 1

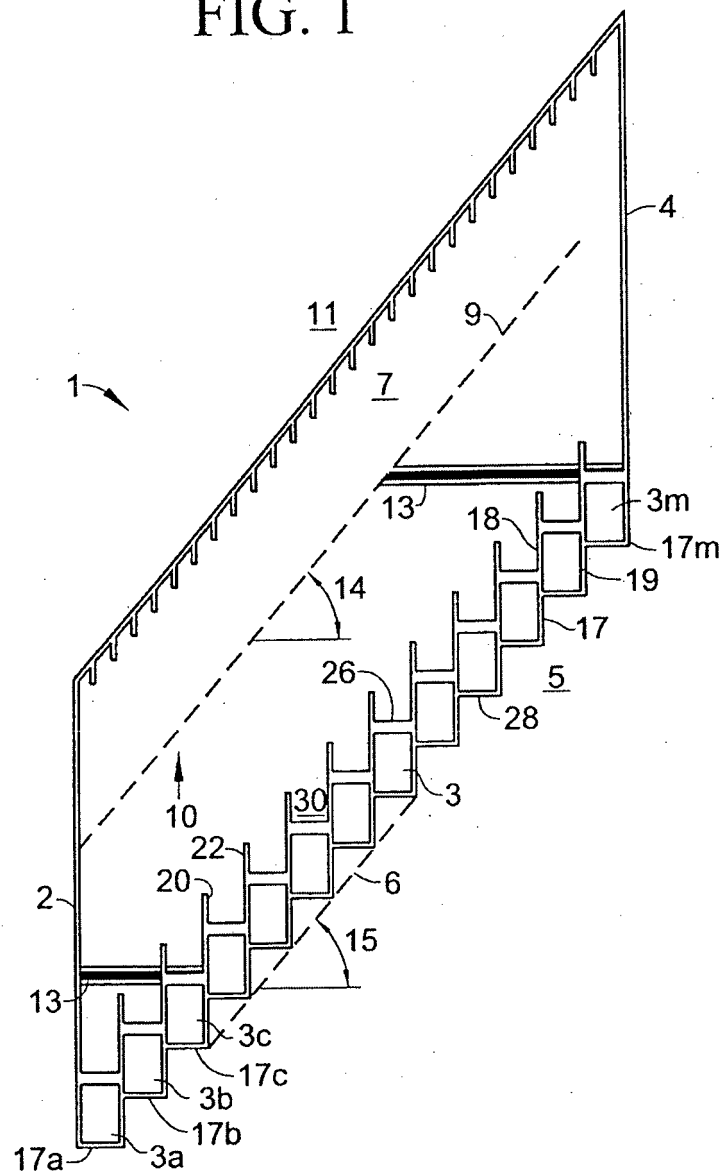


FIG. 2

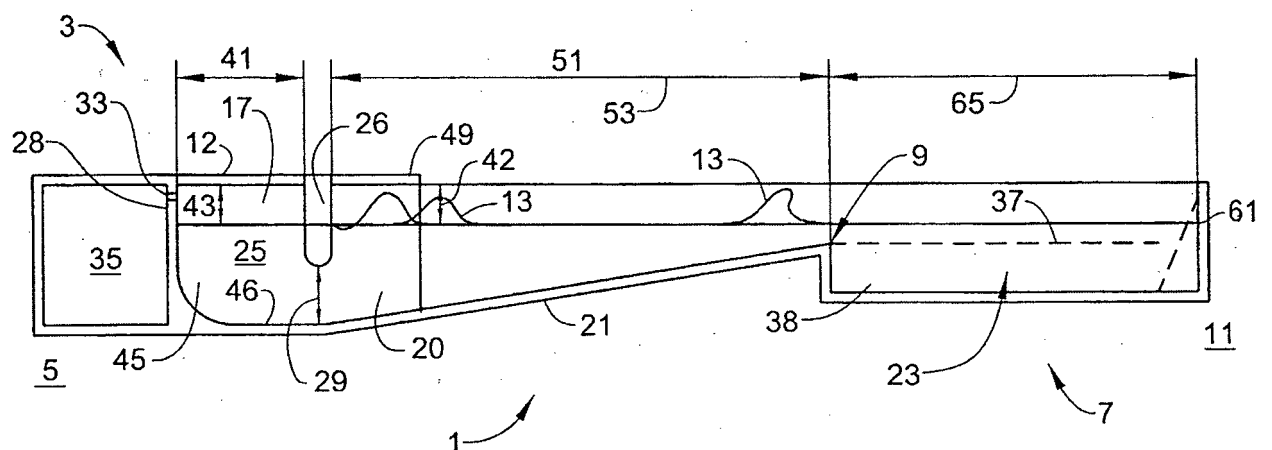


FIG. 3a

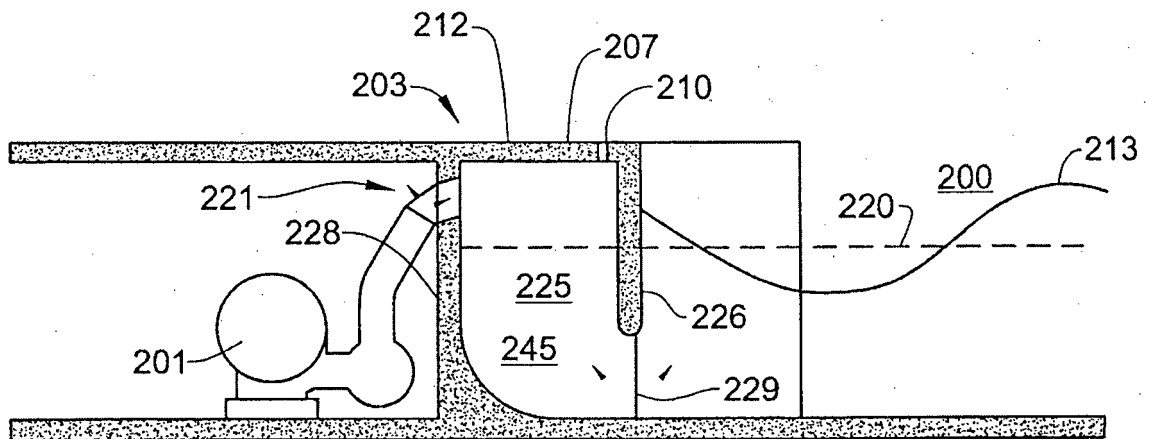


FIG. 3b

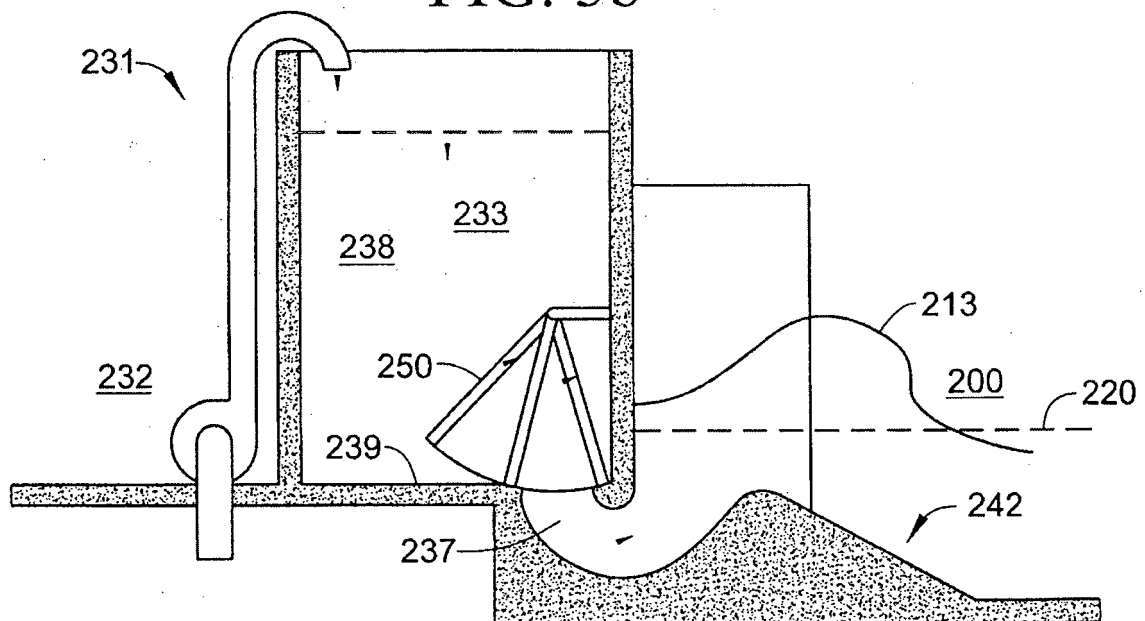


FIG. 3c

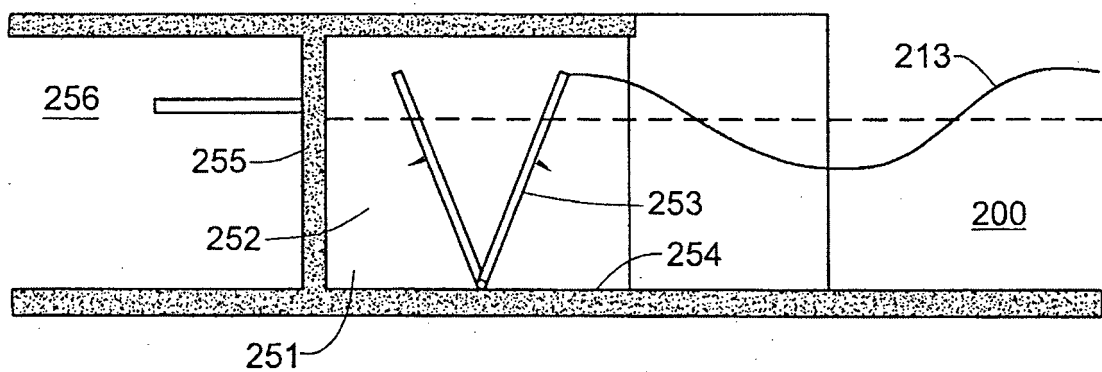


FIG. 4

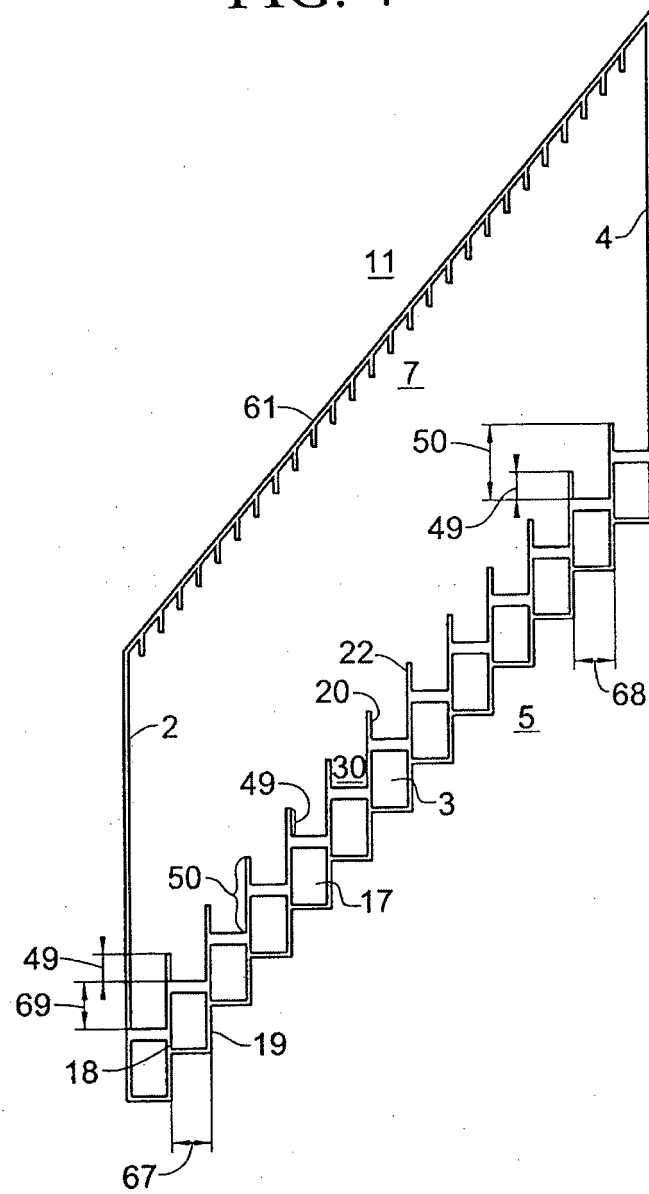


FIG. 5

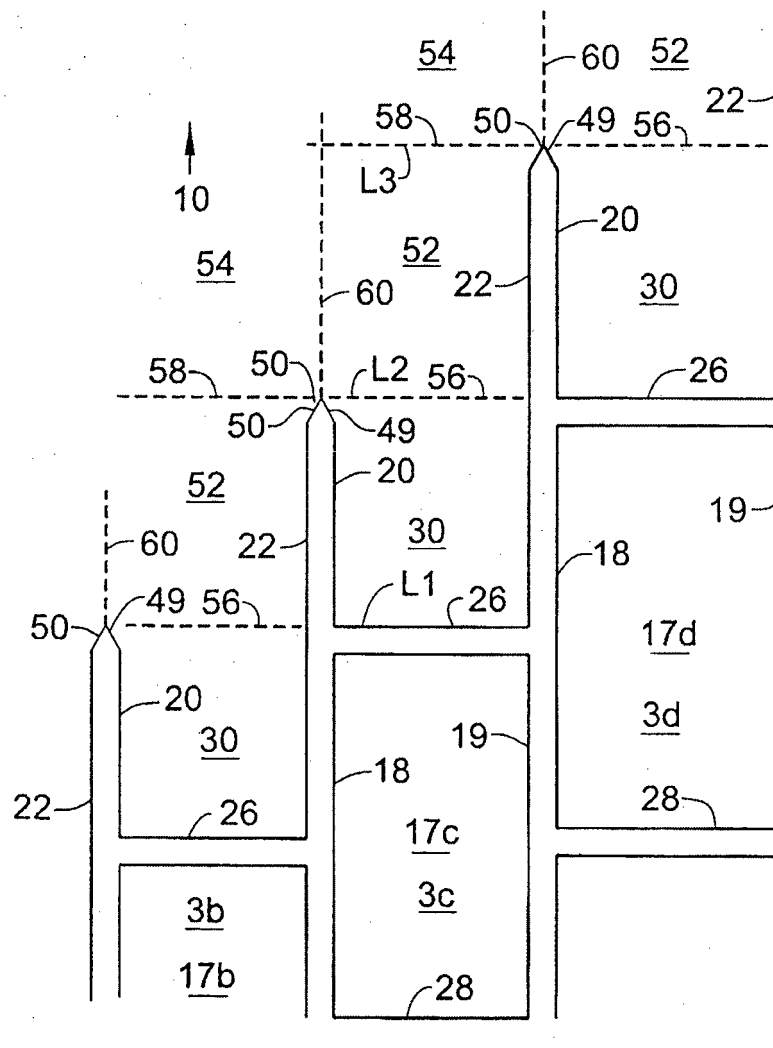


FIG. 6

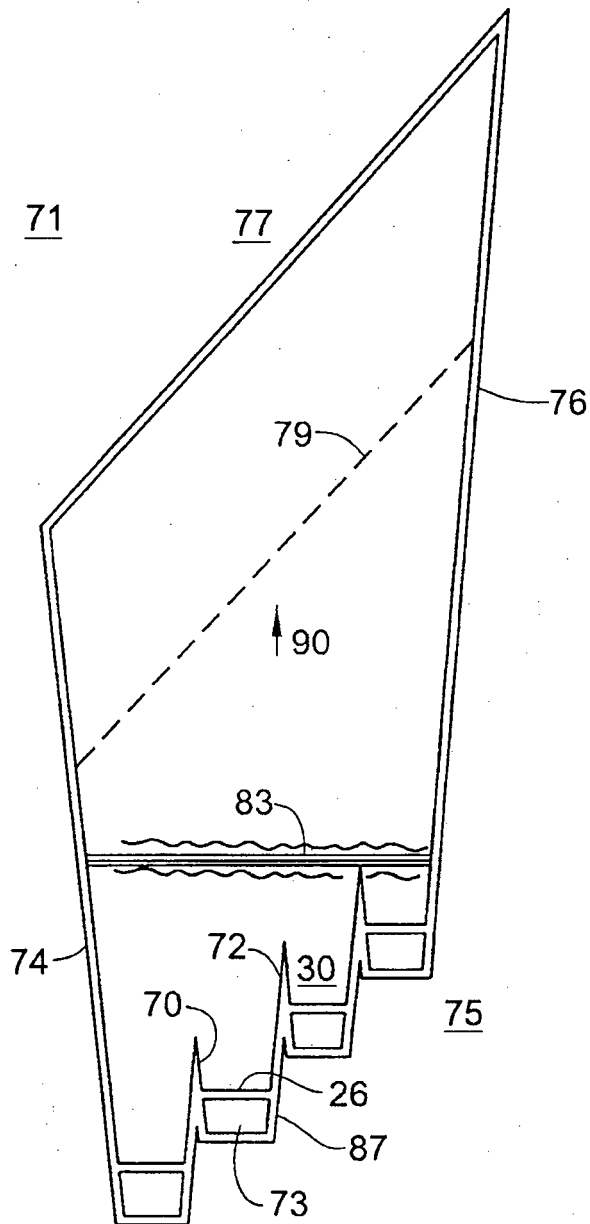


FIG. 7

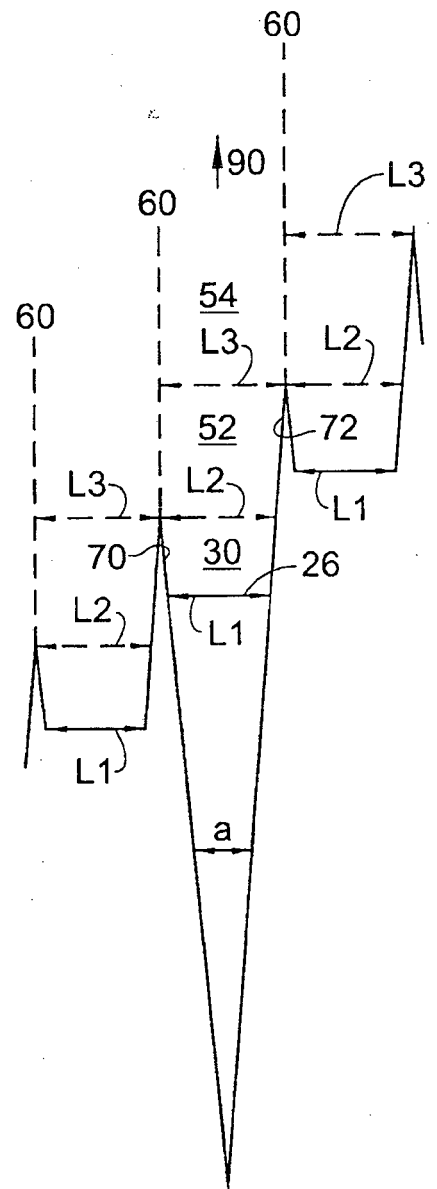


FIG. 8

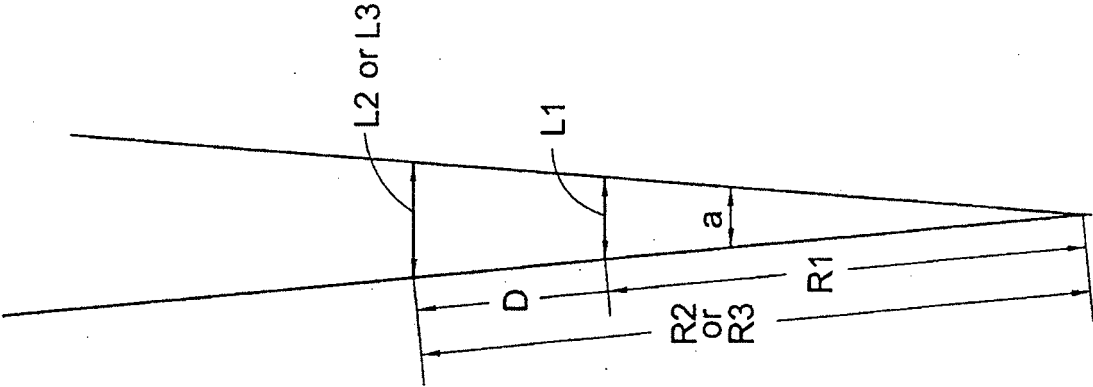
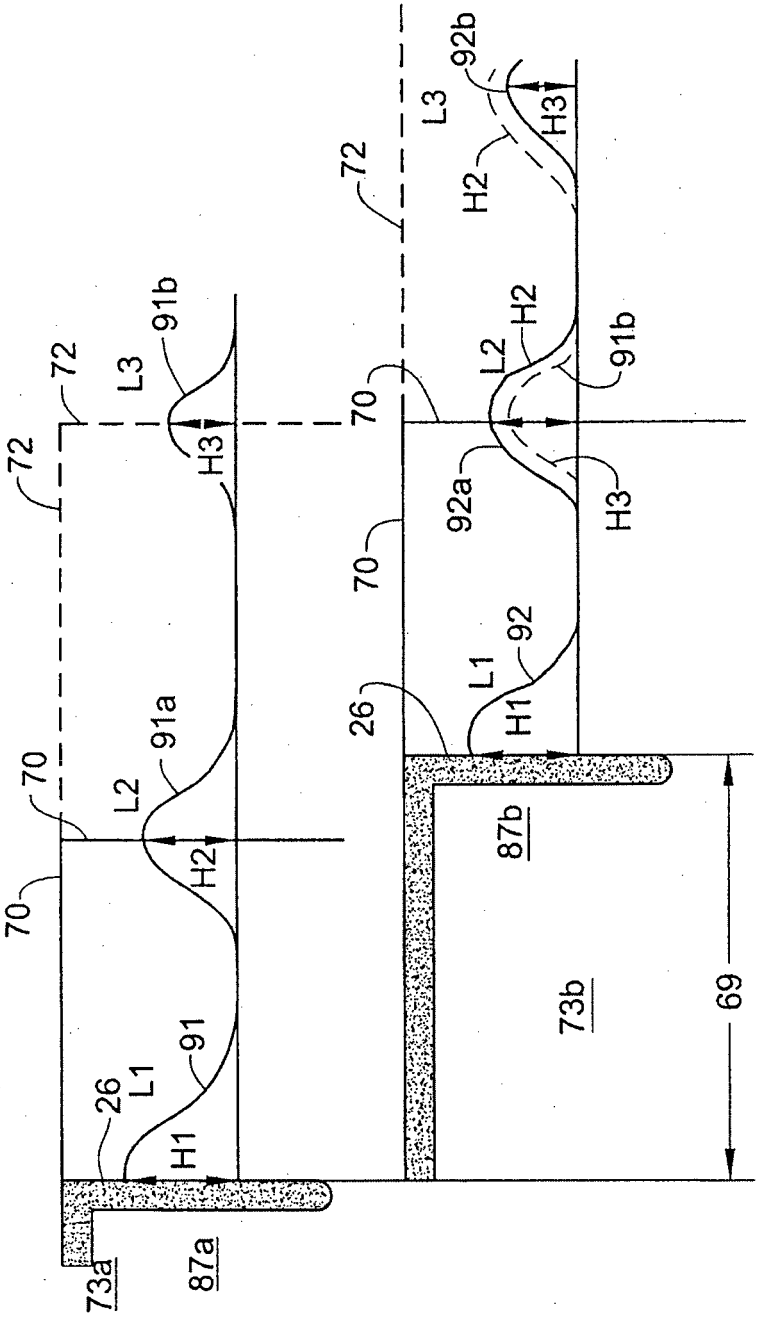


FIG. 9



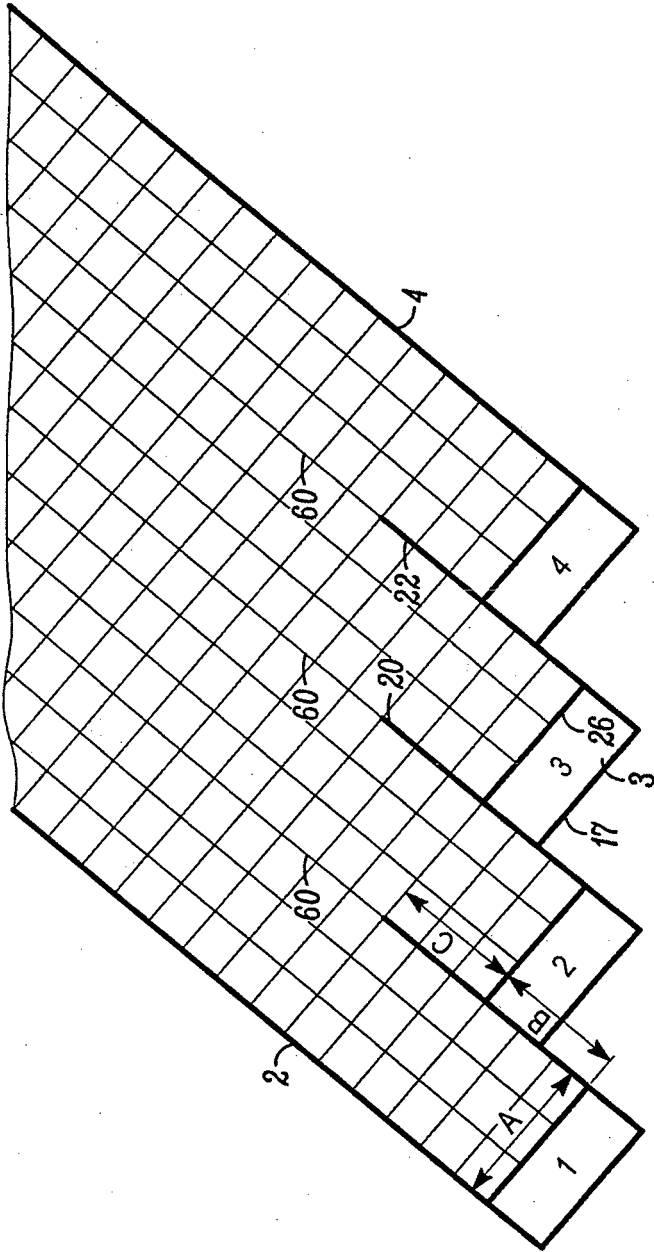


FIG. 10

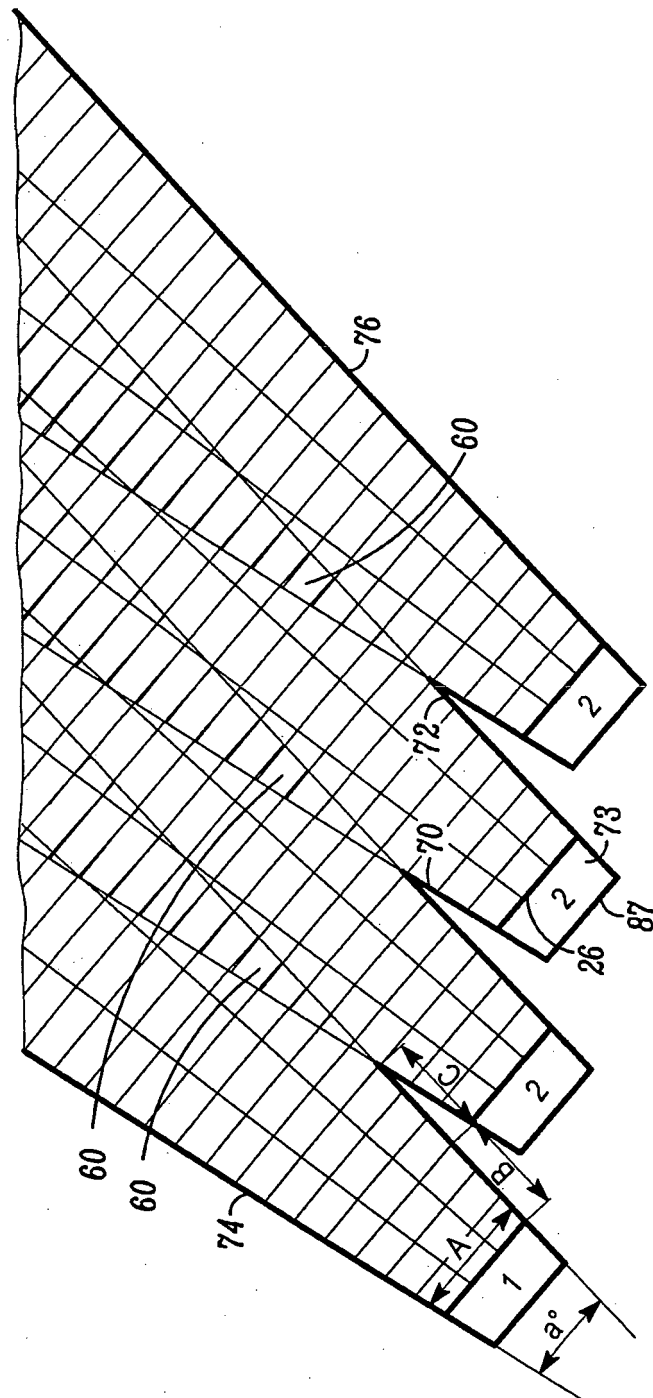


FIG. 11

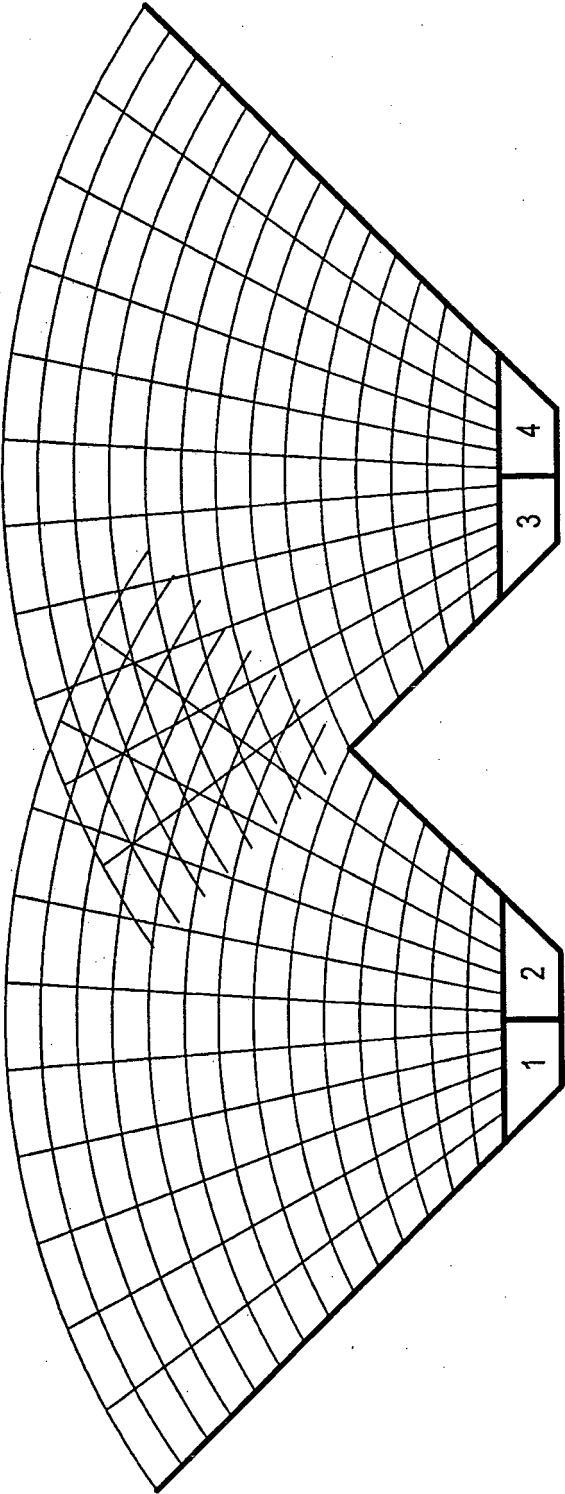


FIG. 12

FIGURE 13a

Initial Wave Height of 1.0 m

Fade Angle	α	L1	L2	L3	D	F	H1	H2	H3	$\Delta H2-H3$	$\Delta H2-H3$ %	Wave Speed (forward celerity)	Spread Speed (on each side)	Convergence Speed (laterally)
0	0	4.0m	4.0m	4.0m	4.0m	2.0m	1.0m	1.0m	1.0m	0	0%	≈ 5.42 mps	0	0
5	0.0872	4.0m	4.35m	≈ 4.81 m	4.0m	2.0m	1.0m	0.96m	0.91m	0.05m	5.2%	≈ 5.42 mps	≈ 0.24 mps	≈ 0.48 mps
10	0.1745	4.0m	4.69m	≈ 5.62 m	4.0m	2.0m	1.0m	0.92m	0.84m	0.08m	8.6%	≈ 5.42 mps	≈ 0.46 mps	≈ 0.92 mps
15	0.2617	4.0m	5.04m	≈ 6.42 m	4.0m	2.0m	1.0m	0.89m	0.79m	0.10m	11.6%	≈ 5.42 mps	≈ 0.70 mps	≈ 1.40 mps
20	0.3491	4.0m	5.4m	≈ 7.22 m	4.0m	2.0m	1.0m	0.86m	0.74m	0.12m	13.4%	≈ 5.42 mps	≈ 0.90 mps	≈ 1.80 mps
30	0.5236	4.0m	6.1m	≈ 8.87 m	4.0m	2.0m	1.0m	0.81m	0.67m	0.14m	17.3%	≈ 5.42 mps	≈ 1.4 mps	≈ 2.8 mps

Fade Angle = the angle between the two dividing walls

 α = fade angle in radians

L1 = width of caisson which is also the initial width (or lateral length) of the wave segment

L2 = width (or lateral length) of wave segment at convergence

L3 = projected width (or lateral length) of adjacent wave segment at convergence – without accounting for merge

D = wall extension, i.e., forward distance from front wall of caisson to initial convergence point

F = depth of pool floor at creation of wave segment

H1 = wave height at wave creation (in front of caisson)

H2 = wave height of wave segment at convergence

H3 = wave height of adjacent wave segment at convergence

 $\Delta H2-H3$ = the wave height differential between H2 and H3 at convergence $\Delta H2-H3$ % = the wave height differential between H2 and H3 at convergence as a percentage

Wave Speed = the approx. forward velocity of the wave segment

Spread Speed = the approx. rate at which each wave segment widens or elongates laterally on each side due to fade angle

Convergence Speed = the approx. combined net speed at which adjacent wave segments converge laterally

Note: The stagger angle is assumed to be 45 degrees when the fade angle is 10 degrees, but varies otherwise, wherein the distance from the caisson to the distal end of the long dividing wall is assumed to be constant, i.e., 9.3 m

FIGURE 13b

Initial Wave Height of 2.0 m

Fade Angle	α	L1	L2	L3	D	F	H1	H2	H3	$\Delta H2-H3$	$\Delta H2-H3$ %	Wave Speed (forward celerity)	Spread Speed (on each side)	Convergence Speed (laterally)
0	0	4.0m	4.0m	4.0m	4.0m	4.0m	2.0m	2.0m	2.0m	0	0%	≈ 7.67 mps	0	0
5	0.0872	4.0m	4.35m	≈ 4.81 m	4.0m	4.0m	2.0m	1.91m	1.82m	0.09m	5.2%	≈ 7.67 mps	≈ 0.34 mps	≈ 0.68 mps
10	0.1745	4.0m	4.69m	≈ 5.62 m	4.0m	4.0m	2.0m	1.85m	1.69m	0.16m	8.6%	≈ 7.67 mps	≈ 0.67 mps	≈ 1.35 mps
15	0.2617	4.0m	5.04m	≈ 6.42 m	4.0m	4.0m	2.0m	1.78m	1.58m	0.20m	11.6%	≈ 7.67 mps	≈ 1.00 mps	≈ 2.00 mps
20	0.3491	4.0m	5.4m	≈ 7.22 m	4.0m	4.0m	2.0m	1.72m	1.49m	0.23m	13.4%	≈ 7.67 mps	≈ 1.33 mps	≈ 2.67 mps
30	0.5236	4.0m	6.1m	≈ 8.87 m	4.0m	4.0m	2.0m	1.62m	1.34m	0.28m	17.3%	≈ 7.67 mps	≈ 2.02 mps	≈ 4.04 mps

Fade Angle = the angle between the two dividing walls

 α = fade angle in radians

L1 = width of caisson which is also the initial width (or lateral length) of the wave segment

L2 = width (or lateral length) of wave segment at convergence

L3 = projected width (or lateral length) of adjacent wave segment at convergence – without accounting for merge

D = wall extension, i.e., forward distance from front wall of caisson to initial convergence point

F = depth of pool floor at creation of wave segment

H1 = wave height at wave creation (in front of caisson)

H2 = wave height of wave segment at convergence

H3 = wave height of adjacent wave segment at convergence

 $\Delta H2-H3$ = the wave height differential between H2 and H3 at convergence $\Delta H2-H3$ % = the wave height differential between H2 and H3 at convergence as a percentage

Wave Speed = the approx. forward velocity of the wave segment

Spread Speed = the approx. rate at which each wave segment widens or elongates laterally on each side due to fade angle

Convergence Speed = the approx. combined net speed at which adjacent wave segments converge laterally

Note: The stagger angle is assumed to be 45 degrees when the fade angle is 10 degrees, but varies otherwise, wherein the distance from the caisson to the distal end of the long dividing wall is assumed to be constant, i.e., 9.3 m

FIGURE 13c

Initial Wave Height of 3.0 m

Fade Angle	α	L1	L2	L3	D	F	H1	H2	H3	$\Delta H2-H3$	$\Delta H2-H3$ %	Wave Speed (forward celerity)	Spread Speed (on each side)	Convergence Speed (laterally)
0	0	4.0m	4.0 m	4.0 m	4.0 m	6.0 m	3.0 m	3.0 m	3.0 m	0	0%	≈ 9.40 mps	0	0
5	0.0872	4.0m	4.35 m	≈ 4.81 m	4.0 m	6.0 m	3.0 m	2.88 m	2.73 m	0.15 m	5.2%	≈ 9.40 mps	≈ 0.41 mps	≈ 0.82 mps
10	0.1745	4.0m	4.69 m	≈ 5.62 m	4.0 m	6.0 m	3.0 m	2.77 m	2.53 m	0.24 m	8.6%	≈ 9.40 mps	≈ 0.82 mps	≈ 1.64 mps
15	0.2617	4.0m	5.04 m	≈ 6.42 m	4.0 m	6.0 m	3.0 m	2.67 m	2.37 m	0.30 m	11.6%	≈ 9.40 mps	≈ 1.22 mps	≈ 2.44 mps
20	0.3491	4.0m	5.4 m	≈ 7.22 m	4.0 m	6.0 m	3.0 m	2.58 m	2.23 m	0.35 m	13.6%	≈ 9.40 mps	≈ 1.65 mps	≈ 3.29 mps
30	0.5236	4.0m	6.1 m	≈ 8.87 m	4.0 m	6.0 m	3.0 m	2.43 m	2.01 m	0.42 m	17.3%	≈ 9.40 mps	≈ 2.47 mps	≈ 4.94 mps

Fade Angle = the angle between the two dividing walls

α = fade angle in radians

L1 = width of caisson which is also the initial width (or lateral length) of the wave segment

L2 = width (or lateral length) of wave segment at convergence

L3 = projected width (or lateral length) of adjacent wave segment at convergence – without accounting for merge

D = wall extension, i.e., forward distance from front wall of caisson to initial convergence point

F = depth of pool floor at creation of wave segment

H1 = wave height at wave creation (in front of caisson)

H2 = wave height of wave segment at convergence

H3 = wave height of adjacent wave segment at convergence

$\Delta H2-H3$ = the wave height differential between H2 and H3 at convergence

$\Delta H2-H3$ % = the wave height differential between H2 and H3 at convergence as a percentage

Wave Speed = the approx. forward velocity of the wave segment

Spread Speed = the approx. rate at which each wave segment widens or elongates laterally on each side due to fade angle

Convergence Speed = the approx. combined net speed at which adjacent wave segments converge laterally

Note: The stagger angle is assumed to be 45 degrees when the fade angle is 10 degrees, but varies otherwise, wherein the distance from the caisson to the distal end of the long dividing wall is assumed to be constant, i.e., 9.3 m

FIG. 14

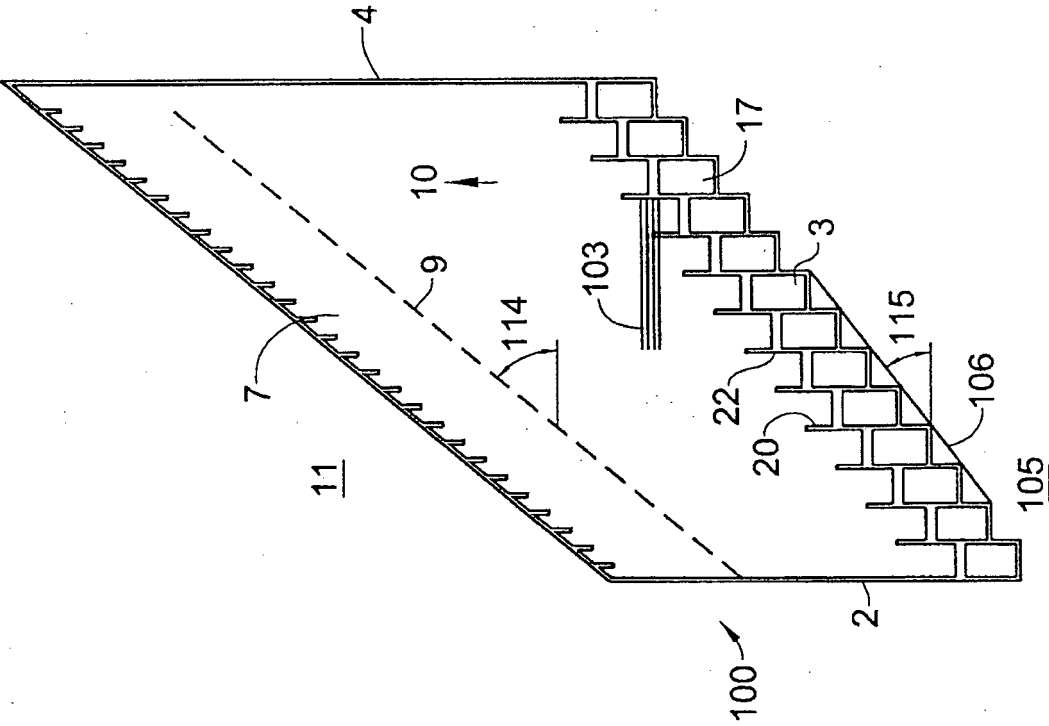


FIG. 15

