

No. 754,104.

PATENTED MAR. 8, 1904.

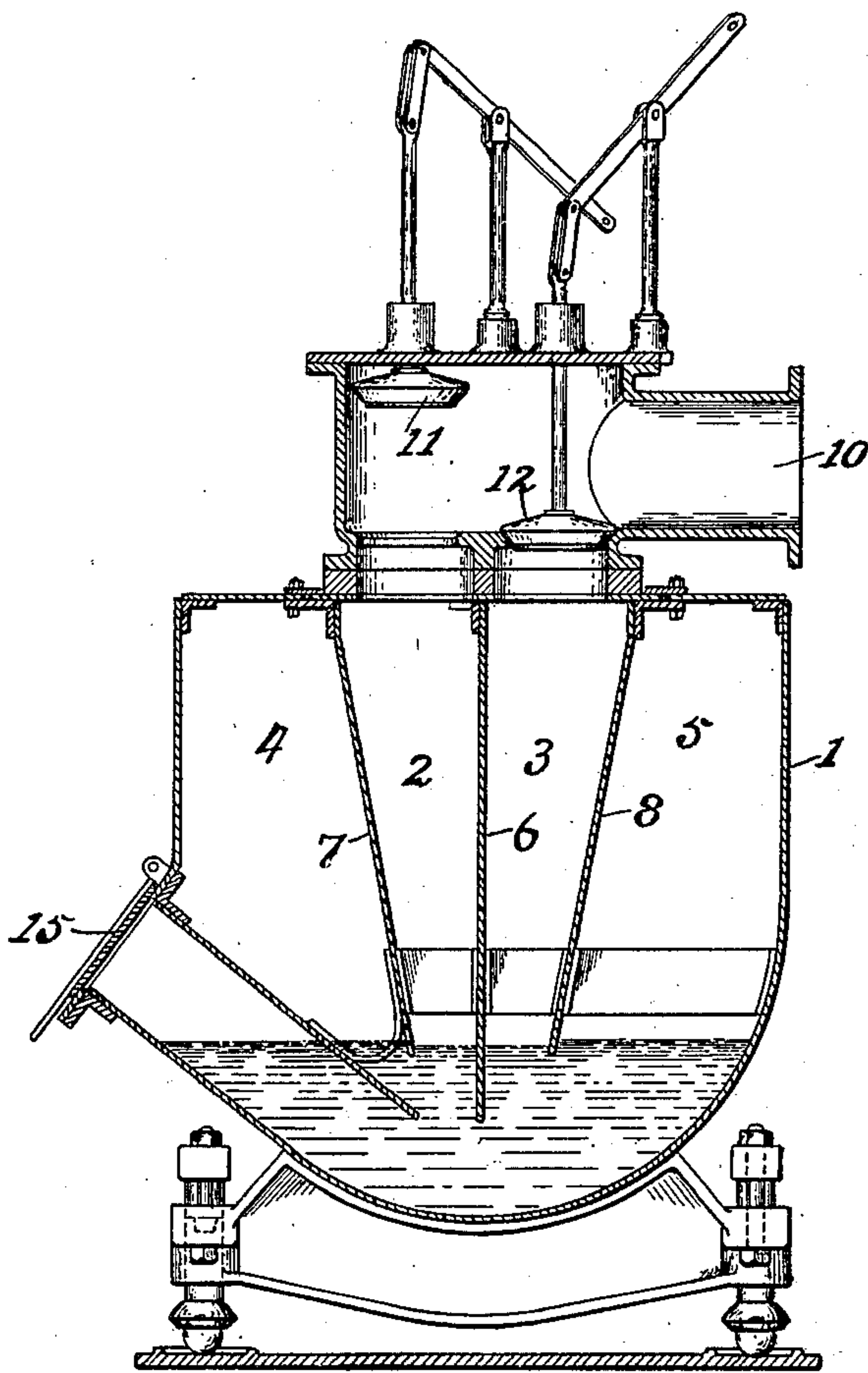
E. N. TRUMP.  
HYDRAULIC MAIN.

APPLICATION FILED JUNE 13, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

*Fig. 1.*



WITNESSES:

*Max Hoffmann*

*C. L. Chet*

INVENTOR

*Edward N. Trump*

BY

*W. H. Howardsdale*

ATTORNEY.

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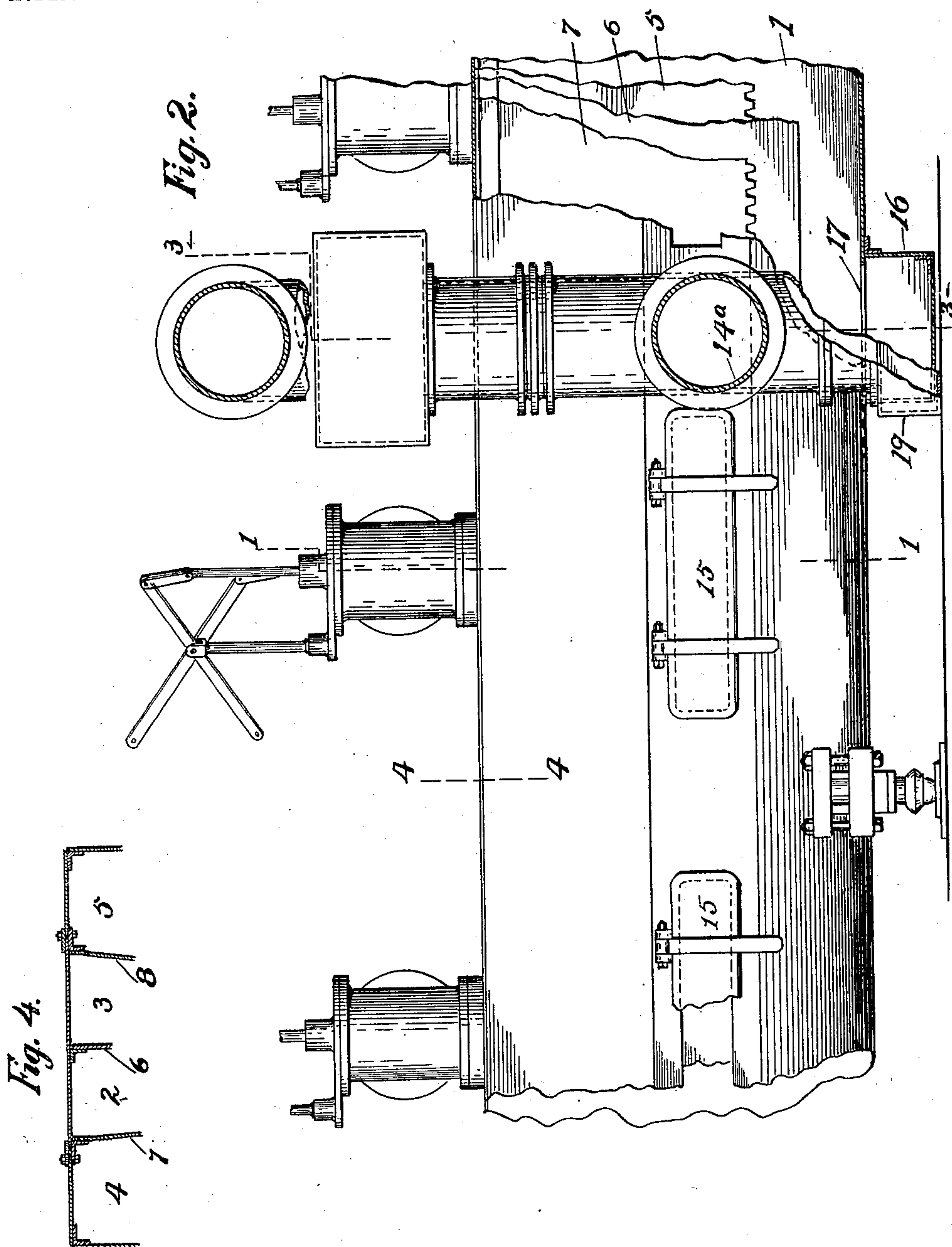
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3 SHEETS—SHEET 2.



WITNESSES:  
*Max Hofmann*  
*W. L. Ehret*

INVENTOR  
*Edward N. Trump*  
BY  
*W. P. Crossdale*  
ATTORNEY.

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3 SHEETS—SHEET 3.

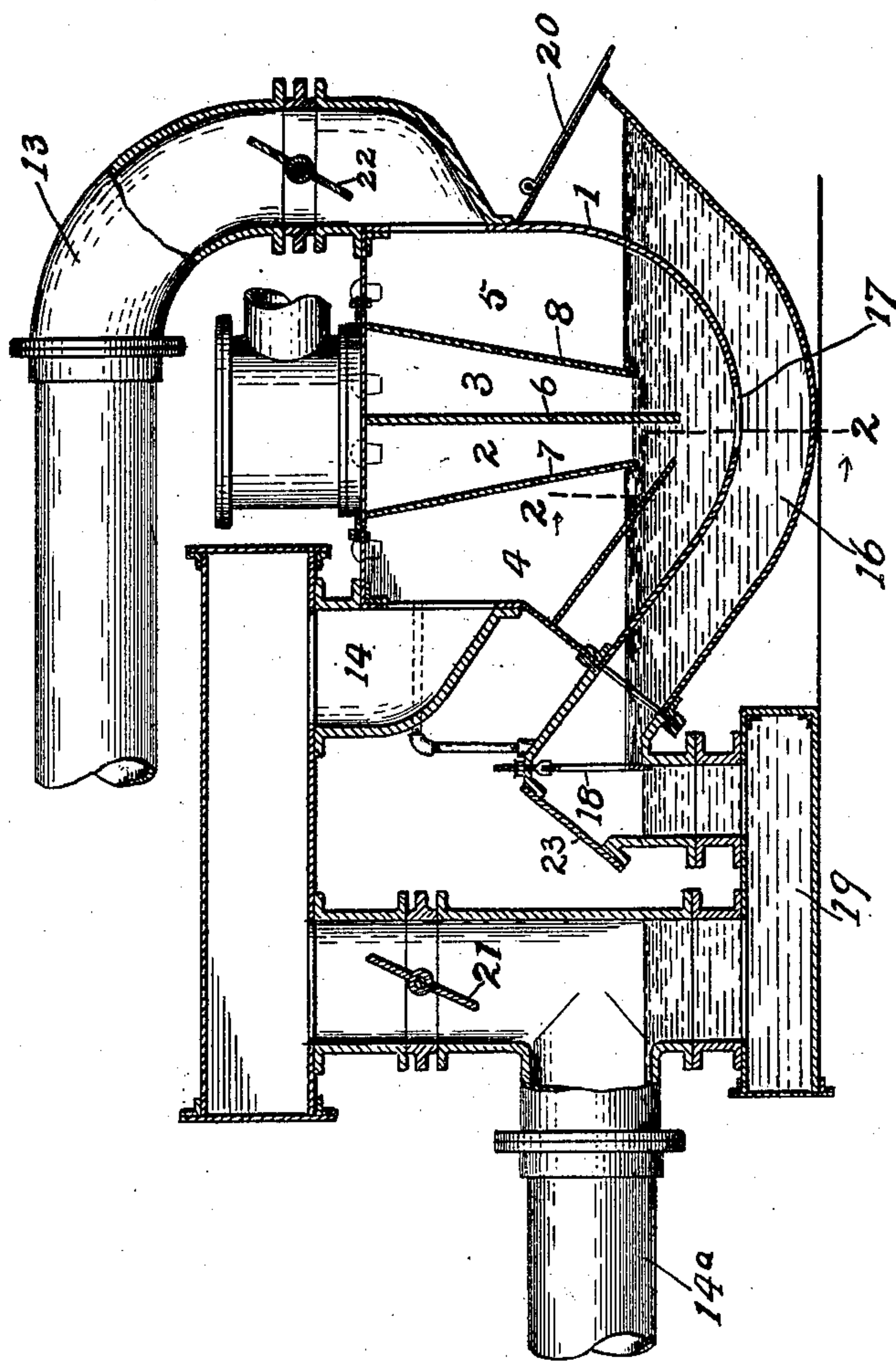


Fig. 3.

WITNESSES:

Mae Hofmann

C. L. Ehret

INVENTOR

Edward N. Trump

BY

W. C. Wasdale

ATTORNEY.



# UNITED STATES PATENT OFFICE.

EDWARD N. TRUMP, OF SYRACUSE, NEW YORK.

## HYDRAULIC MAIN.

SPECIFICATION forming part of Letters Patent No. 754,104, dated March 8, 1904.

Application filed June 13, 1903. Serial No. 161,288. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD N. TRUMP, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Hydraulic Main, of which the following is a specification.

My invention relates to improvements in double hydraulic mains, and is especially adapted for use in connection with coke-ovens, the purpose being to afford improved means for receiving the gas from the ovens, washing it, and conveying it to a desired point.

My invention comprises a conduit or main having a plurality of compartments with a common water seal, the compartments adapted to receive the gas discharged from the ovens being centrally located, while on either side are located the compartments for receiving the gas through the water seal from the first-named compartments.

My invention also comprises improved means for feeding the said main.

My invention also comprises other improvements in details of construction.

In the accompanying drawings, Figure 1 is a cross-section of my device on line 1 1 of Fig. 2. Fig. 2 is a side elevation of a portion of my device partially shown in section on line 2 2 of Fig. 3. Fig. 3 is a cross-section on line 3 3 of Fig. 2. Fig. 4 is a sectional view of the top of the main on line 4 4 of Fig. 2.

Similar numerals refer to similar parts throughout the several views.

Referring to the drawings, the conduit 1 is divided into four compartments 2, 3, 4, and 5 by the partitions 6, 7, and 8, which extend throughout the length of the main. The compartments 2 and 3 we shall call the "discharging-compartments." The gas discharged from the oven is conveyed through pipe 10 to either of the compartments 2 or 3, depending upon which valve 11 or 12 is open. Because of the discharging of the gas into 2 and 3 the pressure into these compartments is greater than that in compartments 4 and 5. Water is maintained in the main, as shown in Figs. 1 and 3, at a height sufficient to immerse the lower edges of partitions 6, 7, and 8, partition 6 extending deeper into the water than partitions

7 and 8. The lower edges of partitions 7 and 8 are also serrated. The result of this formation and the position of the various compartments is that the gas will bubble from compartment 2 through the water around the lower edge of partition 7 into compartment 4, while the gas from compartment 3 will similarly bubble into the compartment 5. The gas is conducted from compartment 4 through pipes 14 and 14<sup>a</sup>, the suction thereof being controlled by wing-valve 21. (See Fig. 3.) The gas from compartment 5 is carried away through pipe 13, controlled by valve 22. This gas carries large quantities of tar, which is washed out in the water as it passes through the same in going around partitions 7 and 8. This tar or pitch is liable to clog the main if it is not cleaned out at intervals. For this purpose I provide the water-sealed ports 15. (See Figs. 1 and 2.) An advantage of this construction is that we have two complete mains with one set of cleaning-ports, and the compartments 2 and 3 are of such shape that they keep entirely free of pitch and are easily kept open, so that the gas is maintained at a constant pressure by a constant height of liquor in the compartments 4 and 5.

In the single mains heretofore used where (partitions 7 and 8 being omitted) a compartment corresponding to 2 and 4 was used for the hot gas and a compartment corresponding to 3 and 5 was used for the cold gas it was very difficult to keep the mains straight because of the difference in temperature of the two sides. In the construction of the main, as shown in the accompanying drawings, where the compartments 2 and 3 are used for the hot gas, while the flanking or outer compartments 4 and 5 receive the cooler gas, it will be seen that the higher temperature is always maintained in the middle of the main, and consequently there is no tendency to twist or distort the same. The middle section of the top of the main may be made in a separate piece, as shown in Fig. 4, and have a sliding engagement with the rest of the main, so as to permit slight movement with respect thereto due to changes in temperature, thus keeping the main entirely straight.

At a convenient point in the main I provide



the chamber 16. (Shown in Figs. 2 and 3.) This chamber has communication through aperture 17 with the main immediately below the compartments 2, 3, 4, and 5, and into this chamber 16 a large portion of the tar will flow, which may readily be cleaned therefrom through the water-sealed port 20. Chamber 16 also has communication through the adjustable apertured plate 18 with the trap-chamber 19, communicating with pipe 14<sup>a</sup>. By means of this chamber 16 and its water-sealed connection with 14<sup>a</sup> it is possible to take out the tar and the liquid from the main and at the same time maintain a constant level of the water in the main by the adjustable plate 18. The gas may be drawn off independently through pipes 13 and 14. Access to chamber 19 may be had through the port 23.

In operation the main is adapted to be connected with a large number of ovens. As many as forty ovens have been connected in this way, any number of which may be connected to compartment 2 or to compartment 3 at the same time. In practice about half of the ovens are connected to each compartment, a single oven being connected to one compartment for half the time delivering the rich gas and to the other compartment for the other half the time delivering the gas which is poorer in illuminants. As the gas comes off in different quantities at different times, connecting them all to one compartment equalizes the pressure on all the others.

The specific device illustrated in the drawings and described above show the inner chambers 2 and 3 connected with the ovens and the outer chambers 4 and 5 adapted to receive the gas from chambers 2 and 3, through the water seal, which results in the hot gas being discharged into the middle of main while the cooler gas is collected in the flanking compartments 4 and 5 on the outer sides of the main. It is obvious, however, that the method of connecting said compartments may be reversed without departing from the spirit of my invention—that is, the outer flanking compartments 4 and 5 might be connected with the ovens and the gas therefrom permitted to pass through the water seal around the partitions 7 and 8 into the inner chambers 2 and 3. In such an arrangement the hotter gas would be delivered to the outer sides of the main while the cooler gas would be collected in the middle part thereof.

What I claim is—

1. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the

opposite sides of the main at the same temperature.

2. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature and a liquid-sealed port for having access to the bottom of the main.

3. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature and a chamber beneath the main having communication with the interior thereof.

4. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature, and a chamber beneath the main communicating with the interior thereof and provided with a liquid-sealed port for having access thereto.

5. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature, and means for withdrawing the liquid from the main and adjustable means connected therewith for maintaining the liquid at the required height in the main.

6. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temper-



ature and liquid-trapped means for withdrawing the liquid from the main.

7. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature, with liquid-trapped means for withdrawing the liquid, from the main and a liquid-sealed port for having access to the trap.

8. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature and valve-controlled connection between certain compartments and the source of gas-supply.

9. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature and valve-controlled connection between certain compartments and a carrying-off pipe or pipes.

10. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature, an adjustable gate for maintaining the liquid at the desired height and valve-controlled connection between certain compartments and a source of gas-supply.

11. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main

at the same temperature, a valve-controlled connection between certain compartments and a source of gas-supply, and a valve-controlled conductor for withdrawing the gas from the main.

12. In a hydraulic gas-main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly from the top of the main and dipping into a body of liquid at the bottom of the main, said partitions being so proportioned and disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartments as will maintain the opposite sides of the main at the same temperature, a conductor for withdrawing the gas and liquid from the main with independently-adjustable means for regulating the flow of gas and liquid therethrough.

13. A hydraulic main, provided with a plurality of partitions extending throughout its length projecting from the top toward the bottom into a common water seal, thereby forming a plurality of water-sealed compartments, the inner or middle compartments having a gas-inlet, the flanking or outer compartments adapted to receive the gas from the inner compartments as it passes through the water around the lower edge of the separating-partitions.

14. A hydraulic main, provided with a plurality of partitions extending throughout its length projecting from the top toward the bottom into a common water seal, thereby forming a plurality of water-sealed compartments, the inner or middle compartments having a gas-inlet, the flanking or outer compartments adapted to receive the gas from the inner compartments as it passes through the water around the lower edge of the separating-partitions and means for conducting the gas away from the outer compartments.

15. In a hydraulic gas-main, the combination of a plurality of longitudinally-disposed compartments, the main constructed to contain a mass of liquid as a seal common thereto, a plurality of partitions dipping in the said mass of liquid so disposed as to provide such distribution of the hot gas as to maintain the opposite sides of the main at the same temperature.

16. In a hydraulic gas-main, the combination of a plurality of longitudinally-disposed compartments, the main constructed to contain a mass of liquid as a seal common thereto, a plurality of partitions dipping in the said mass of liquid so disposed as to provide such distribution of the hot gas as to maintain the opposite sides of the main at the same temperature, and a liquid-sealed port for having access with the bottom of the main.

17. A hydraulic main provided with a plurality of longitudinally-disposed compartments having a common water seal, the inner compartments adapted to receive the gas, a



valve-controlled gas-inlet for each of said inner compartments, each outer compartment adapted to receive the gas from its adjacent inner compartment after the same has passed through the water seal.

18. A hydraulic main provided with a plurality of compartments, extending throughout its length, a common water seal therefor, the middle compartments adapted to receive the gas, the flanking or outer compartments adapted to receive the gas from the middle compartments, means for carrying said gas from the outer compartment, and a water-sealed port through which may be removed the tar washed from the gas.

19. A hydraulic main provided with a plurality of partitions extending throughout its length, projecting from the top toward the bottom into a common water seal, thereby forming a plurality of water-sealed compartments, the inner or middle compartments each having a valve-controlled gas-inlet, the flanking or outer compartments adapted to receive the gas from the inner compartments as it passes through the water around the lower edges of the supporting-partitions, means for conducting the gas away from the outer compartments, and a water-sealed port through which may be removed the tar washed from the gas.

20. A hydraulic main provided with a plurality of partitions extending throughout its length, projecting from the top toward the bottom into a common water seal, thereby forming a plurality of water-sealed compartments, the middle partition projecting farther into the water than the others, the inner or middle compartments each having a valve-controlled gas-inlet, the flanking or outer compartments adapted to receive the gas from the inner compartments as it passes through the water around the lower edges of the supporting-partitions, means for conducting the gas away from the outer compartments, and a water-sealed port through which may be removed the tar washed from the gas.

21. A hydraulic main provided with a plurality of partitions extending throughout its length, projecting from the top toward the bottom into a common water seal, thereby forming a plurality of water-sealed compartments, the inner or middle compartments each having a valve-controlled gas-inlet, each flanking or outer compartment adapted to receive the gas from its adjacent compartment as it passes through the water around the lower edges of the supporting-partitions, means for conducting the gas away from the outer compartments, and a water-sealed port through which may be removed the tar washed from the gas.

22. A hydraulic main provided with a plurality of partitions extending throughout its length, projecting from the top toward the bottom into a common water seal, thereby

forming a plurality of water-sealed compartments, the inner or middle compartments each having a valve-controlled gas-inlet, each flanking or outer compartment adapted to receive the gas from its adjacent compartment as it passes through the water around the lower edges of the supporting-partitions, means for conducting the gas away from the outer compartments, and a chamber beneath the main communicating therewith for collecting the tar washed from the gas, having a water-sealed port through which may be removed the tar.

23. In a hydraulic gas-main, the combination of a plurality of compartments, the main constructed to contain a mass of liquid as a seal common thereto, partitions between said compartments, a valve-controlled connection between certain of the compartments and a gas-supply, said partitions being so proportioned and the connection with the gas-supply being such as to maintain the opposite sides of the main at approximately the same temperature.

24. In a hydraulic gas-main, the combination of a plurality of compartments, the main constructed to contain a mass of liquid as a seal common thereto, partitions between said compartments, a valve-controlled connection between certain of the compartments and a gas-supply, said partitions being so proportioned and the connection with the gas-supply being such as to maintain the opposite sides of the main at approximately the same temperature, and a water-sealed port for removing the tar from the bottom of the main.

25. A hydraulic main having a plurality of compartments, extending throughout its length, a water seal common thereto, the middle compartments adapted to receive the gas, the flanking or outer compartments, means for carrying said gas from the outer compartments, a chamber beneath said main, having communication through the bottom thereof for collecting the tar washed from the gas and a water-sealed port through which the same may be removed.

26. In combination with a gas-supply, a hydraulic main therefor provided with a plurality of partitions extending throughout its length projecting from the top toward the bottom into a common water seal, thereby forming a plurality of water-sealed compartments, the inner or middle compartments connected with the source of gas-supply, the flanking or outer compartments adapted to receive the gas from the inner compartments as it passes through the water around the lower edge of the separating-partitions, means for conducting the gas away from the outer compartments, a chamber beneath said main having communication through the bottom thereof for collecting the tar washed from the gas and a water-sealed port through which the same may be removed.

27. A hydraulic main provided with a plu-



5 rality of longitudinally-disposed compartments having a common water seal, the inner compartments adapted to receive the gas, the outer compartments adapted to receive the gas from the inner compartments after the same has passed through the water seal, a chamber beneath said main having communication through the bottom thereof for collecting the tar washed from the gas and a water-sealed port through which the same may be removed.

15 28. A hydraulic main provided with a plurality of longitudinally-disposed compartments having a common water seal, a valve-controlled gas-inlet for each inner compartment, the outer compartments adapted to receive the gas from the inner compartments after the same has passed through the water seal.

20 29. A hydraulic main provided with a plurality of longitudinally-disposed compartments having a common water seal, a valve-controlled gas-inlet for each inner compartment and means for connecting said gas-inlets with different sources of gas-supply, the outer compartments adapted to receive the gas from the inner compartments after the same has passed through the water seal.

30 30. A hydraulic main provided with a plurality of longitudinally-disposed compartments having a common water seal, a valve-controlled gas-inlet for each inner compartment, the outer compartments adapted to receive the gas from the inner compartments after the same has passed through the water seal, and means for so separating the inner compartments that each outer compartment shall receive the gas from its adjacent compartment only.

40 31. A hydraulic main provided with a plurality of longitudinally-disposed compartments, having a common water seal, a valve-controlled gas-inlet for each inner compartment and means for connecting the same with different sources of gas-supply, the outer compartments adapted to receive the gas from the inner compartments after the same has passed through the water seal, and means for so separating the inner compartments that each outer compartment shall receive the gas from its adjacent inner compartment only.

50 32. A hydraulic main having a plurality of compartments extending throughout its length, a common water seal therefor, the middle compartments provided with gas-inlets, the flanking or outer compartments adapted to receive the gas from the middle compartment, means for carrying said gas from the outer compartments and an adjustable water-gate for maintaining the water in the main at the desired level.

60 33. A hydraulic main provided with a plurality of longitudinally-disposed compartments having a common water seal, the inner compartments provided with gas-inlets, the

outer compartments adapted to receive the gas from the inner compartments after the same has passed through the water seal, and an adjustable water-gate for maintaining the desired level of the water in the main.

70 34. A hydraulic main, provided with a plurality of partitions extending throughout its length, projecting from the top toward the bottom into a common water seal, thereby forming a plurality of water-sealed compartments, the inner or middle compartments connected with a source of gas-supply, the flanking or outer compartments adapted to receive the gas from the inner compartments as it passes through the water around the lower edges of the separating-partitions, means for conducting the gas from the outer compartments and an adjustable water-gate for maintaining the desired level of water in the main.

80 35. In a hydraulic gas-main, the combination of a plurality of longitudinally-extending compartments, said compartments being divided into two elements, one element comprising an inner compartment or compartments, the other element comprising outer compartments flanking both sides of the first element, said elements being separated by partitions having their lower edges dipping into a water seal, said partitions being so disposed as to permit the gas discharged into one element to pass therefrom through the water seal to the other element and means for connecting one element with a source of gas-supply.

90 36. In a hydraulic gas-main, the combination of a plurality of longitudinally-disposed partitions dipping into a common water seal thereby forming a plurality of longitudinally-disposed compartments, said compartments being divided into two elements, one element comprising an inner compartment or compartments, the other element comprising outer compartments flanking both sides of the first element, said partitions so proportioned and disposed as to insure the passage of the gas from one element to the other and means for connecting one element with a source of gas-supply.

100 37. A hydraulic gas-main comprising a longitudinally-extending conduit provided with a plurality of longitudinally-disposed partitions extending from the upper side of said conduit downwardly toward its bottom into a common water seal thereby forming a plurality of longitudinally-extending compartments, said compartments being divided into two elements, one element comprising an inner compartment or compartments, the other element comprising outer compartments flanking both sides of the first element, the partitions being so proportioned and disposed as to permit the gas to pass through the water seal from one element to the other element, and means for connecting one element with a source of gas-supply.

110 38. A hydraulic gas-main comprising a lon-

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gitudinally-extending conduit provided with a plurality of longitudinally-disposed partitions extending from the upper side of said conduit downwardly toward its bottom into a  
 5 common water seal thereby forming a plurality of longitudinally - extending compartments, said compartments being divided into two elements, one element comprising an inner compartment or compartments, the other  
 10 element comprising outer compartments flanking both sides of the first element, the partitions being so proportioned and disposed as to permit the gas to pass through the water seal from one element to the other element so  
 15 that the hot gas and cold gas will be so distributed to either side of the main as to prevent the twisting thereof and means for connecting one element with a source of gas-supply.

20 39. A hydraulic gas-main comprising a longitudinally-extending conduit provided with a plurality of longitudinally-disposed partitions extending from the upper side of said conduit downwardly toward its bottom, a body  
 25 of liquid occupying the lower portion of said conduit and immersing the lower extensions of the partitions thereby forming a plurality of longitudinally-extending liquid-sealed compartments, said compartments being divided  
 30 into two elements, one element comprising an inner compartment or compartments the other element comprising outer compartments flanking both sides of the first element, the partitions being so proportioned and disposed as  
 35 to permit the gas to pass evenly through the liquid seal from one element to the other, and means for connecting one element with the gas-supply.

40 40. A hydraulic gas-main provided with a plurality of longitudinally - extending partitions, said main constructed to contain a mass of liquid for immersing the lower extensions of said partitions thereby providing a plurality  
 45 of liquid-sealed longitudinally-extending compartments and means whereby the temperature from the hot gas delivered thereto is so distributed as to prevent its causing a twisting or contortion of the main.

50 41. In a hydraulic gas-main the combination of a plurality of compartments, the main constructed to contain a mass of liquid as a seal common thereto, partitions between said compartments so proportioned respectively, and the connection between the main and the  
 55 source of gas-supply being such, as to maintain the opposite sides of the main at the same temperature.

60 42. A hydraulic gas-main provided with a plurality of longitudinally - extending partitions projecting downwardly from the upper wall of the main, and constructed to contain a mass of liquid immersing the lower extensions of said partitions thereby forming a plurality  
 65 of longitudinally - extending compartments having a common liquid seal, valve-controlled

connections between one or more of said compartments and a gas-supply, the disposal of the partitions and the connection with the gas-supply being such as to maintain the opposite  
 70 sides of the main at approximately the same temperature.

43. In a hydraulic main, the combination of a plurality of compartments formed by a plurality of partitions dipping into a body of liquid, said partitions being so disposed as to  
 75 cause the gas to pass through the liquid from one or more of said compartments to such other compartment or compartments as will maintain the opposite sides of the main at the  
 80 same temperature.

44. In a hydraulic main, the combination of a plurality of compartments formed by a plurality of partitions extending downwardly and dipping into a body of liquid, said partitions  
 85 being so disposed as to cause the gas to pass through the liquid from one or more of said compartments to such other compartment or compartments as will maintain the opposite  
 90 sides of the main at the same temperature.

45. A hydraulic main constructed to maintain a mass of liquid and provided with a plurality of compartments formed by partitions dipping into said liquid, means for connecting  
 95 one or more of said compartments with a gas-supply, said partitions being so disposed and the connection with the gas-supply being such as to maintain the opposite sides of the main  
 100 at approximately the same temperature.

46. A hydraulic main constructed to maintain a mass of liquid, said main provided with  
 105 a plurality of compartments formed by partitions dipping into said mass of liquid, means for connecting one or more of said compartments with a gas-supply, said connecting means being such and said partitions being so  
 110 disposed as to provide such distribution of the gas as will maintain the opposite sides of the main at approximately the same temperature.

47. A hydraulic main constructed to maintain a mass of liquid, said main provided with  
 115 a plurality of compartments formed by partitions dipping into said mass of liquid, means for connecting one or more of said compartments with a gas-supply, said connecting means being such and said partitions being so  
 120 disposed as to provide such distribution of the gas as will maintain the opposite sides of the main at approximately the same temperature, and a liquid-sealed port for having access to the portion of the main containing the mass  
 125 of liquid.

48. In a hydraulic gas-main, the combination of a plurality of compartments, the main constructed to contain a mass of liquid as a seal common thereto, partitions between said  
 130 compartments so proportioned respectively, and the connection between the main and the source of gas-supply being such, as to maintain the opposite sides of the main at approximately the same temperature, and a longi-



tudinally-extending section of the main having sliding engagement with adjacent parts of the main to permit slight movement with respect thereto due to change in temperature.

5 49. A hydraulic gas-main provided with a plurality of longitudinally-extending partitions, said main constructed to maintain a mass of liquid for immersing the lower extensions of said partitions thereby providing a  
10 plurality of liquid-sealed longitudinally-extending compartments, the partitions between said compartments so proportioned respectively, and the connection between the main and the source of gas-supply being such, as to  
15 maintain the opposite sides of the main at approximately the same temperature, and a longitudinally-extending section of the main having sliding engagement with adjacent parts of the main to permit slight movement  
20 with respect thereto due to changes in temperature.

50. A hydraulic gas-main provided with a plurality of longitudinally-extending partitions, said main constructed to maintain a mass of liquid for immersing the lower extensions of said partitions thereby providing a  
25 plurality of liquid-sealed longitudinally-extending compartments, a longitudinally-extending section of the main having sliding engagement with adjacent parts of the main to  
30 permit slight movement with respect thereto, due to changes in temperature, and means for connecting certain compartments with the gas-supply and for permitting the discharge therefrom to other compartments so that the temperature from the hot gas delivered to the  
35 main shall be so distributed as to prevent the twisting or contortion of the main.

EDWARD N. TRUMP.

Witnesses:

ED. F. HUGHES,  
H. C. EHLE.