Sept. 9, 1969 P. R. GERST 3,465,726

PREFABRICATED STEAM GENERATING PACKAGE

Filed May 13, 1968 4 Sheets-Sheet 1

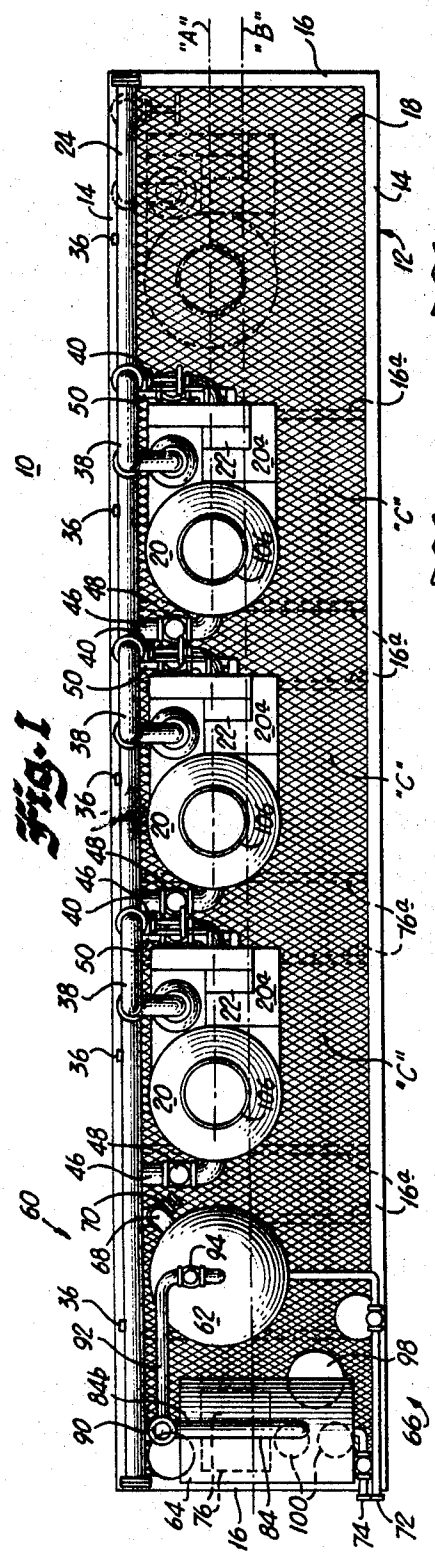

Fig. 1

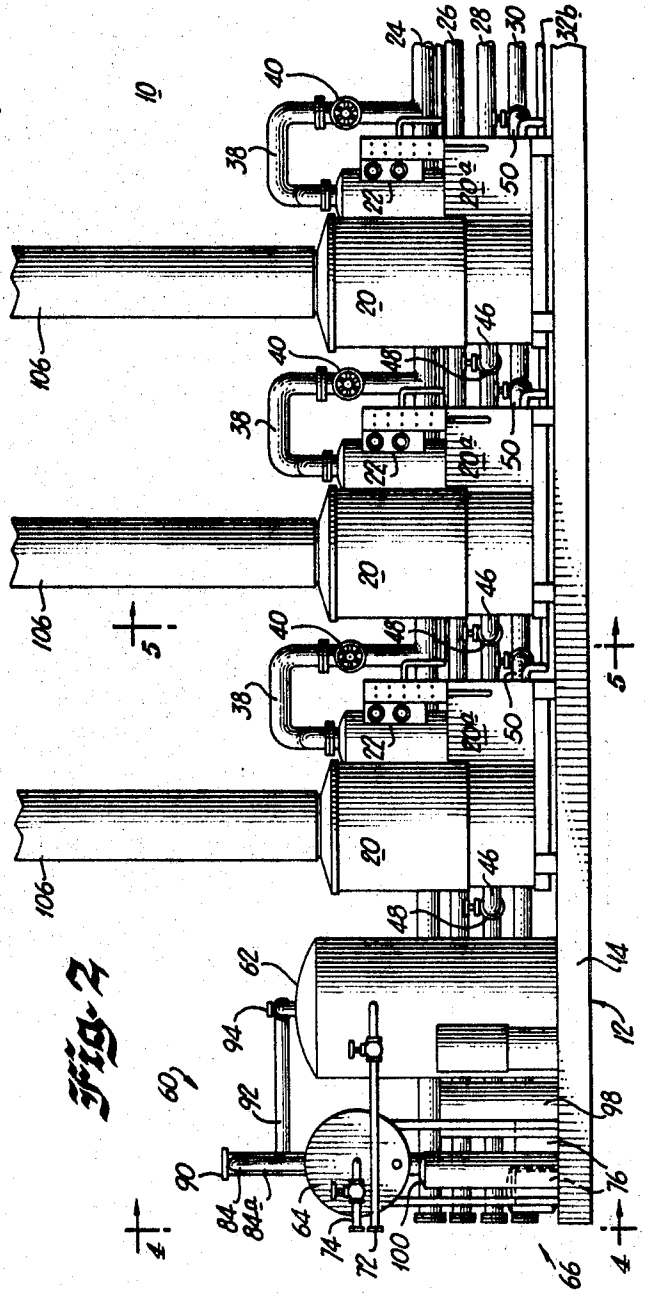

Fig. 2

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Filed May 13, 1968 4 Sheets-Sheet 2

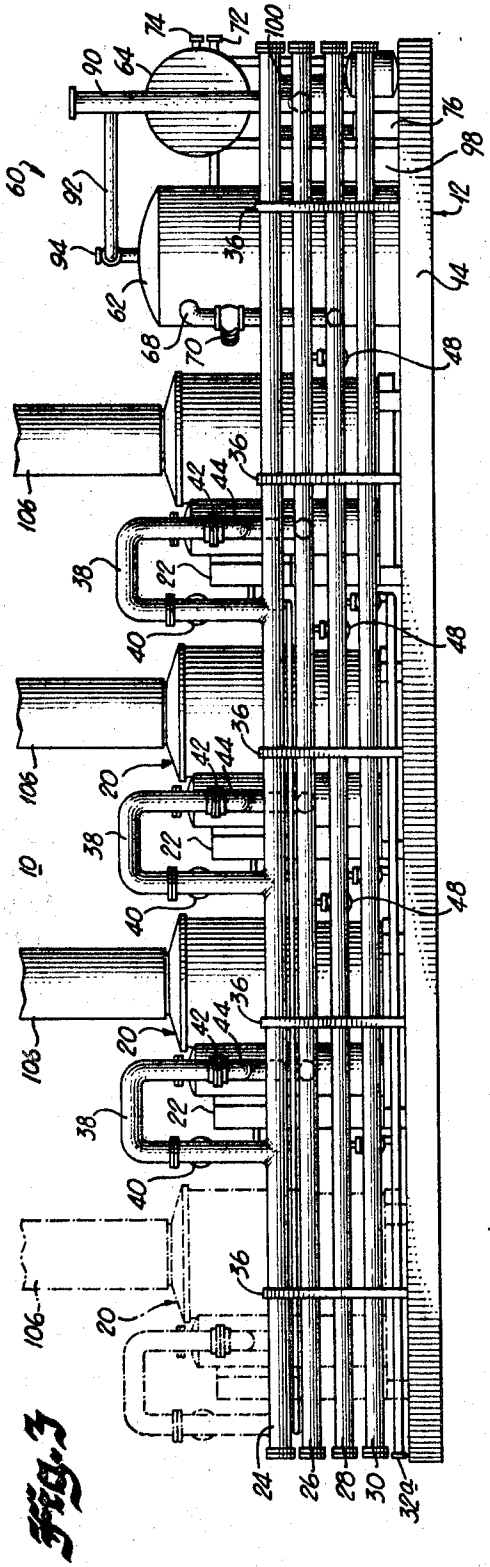

Fig. 3

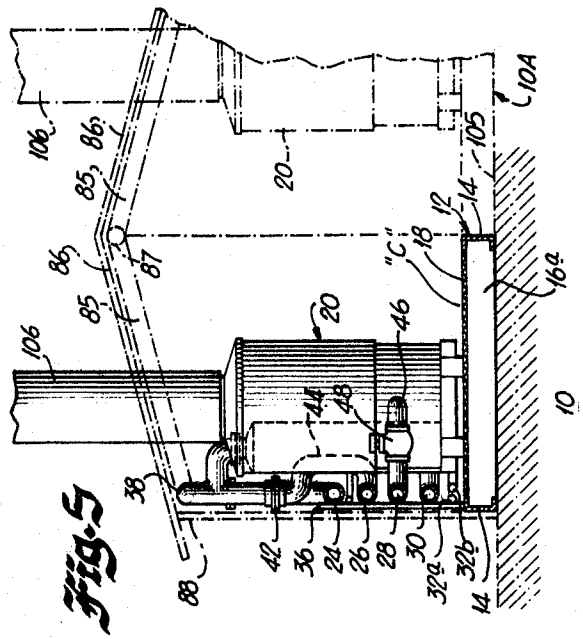

Fig. 5

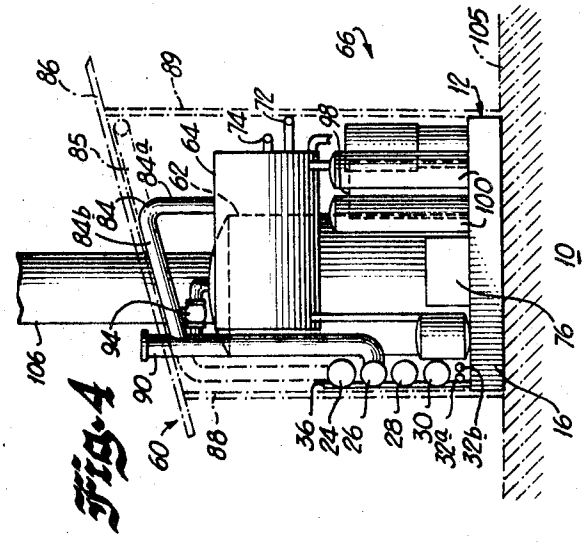

Fig. 4

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PREFABRICATED STEAM GENERATING PACKAGE

Filed May 13, 1968 4 Sheets-Sheet 3

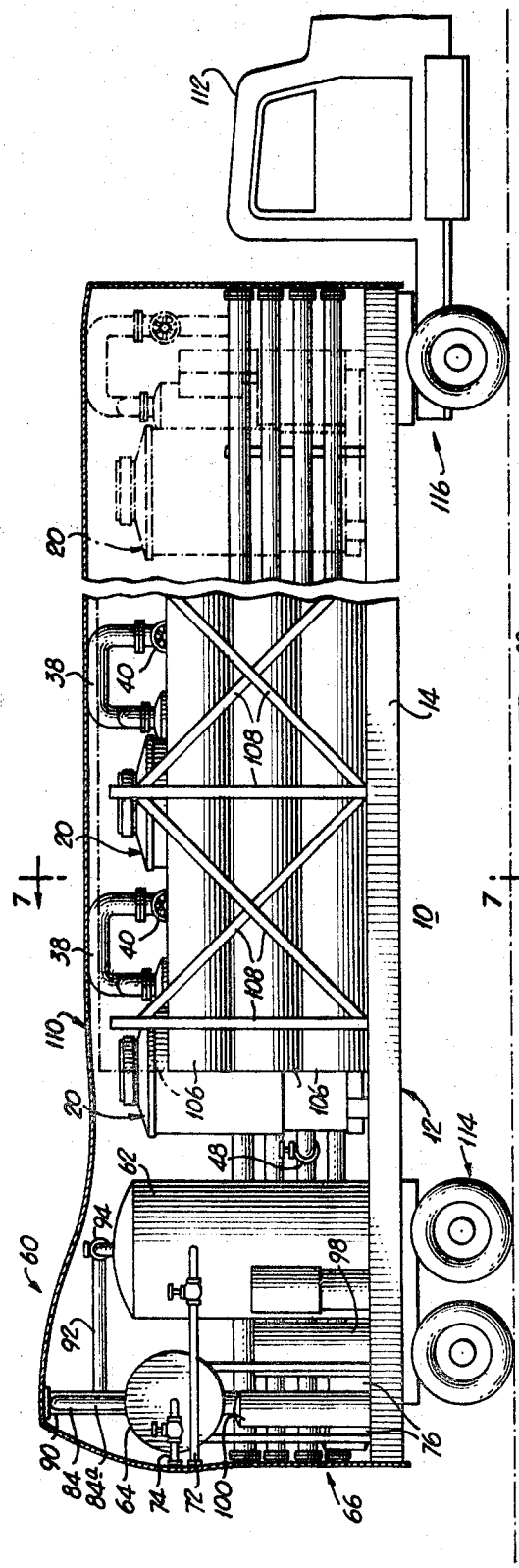

Fig. 5

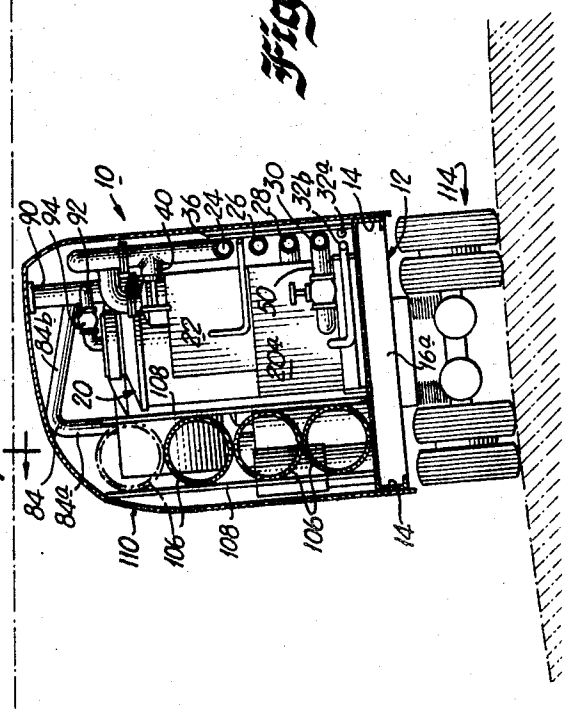

Fig. 7

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PREFABRICATED STEAM GENERATING PACKAGE

Filed May 13, 1968 4 Sheets-Sheet 4

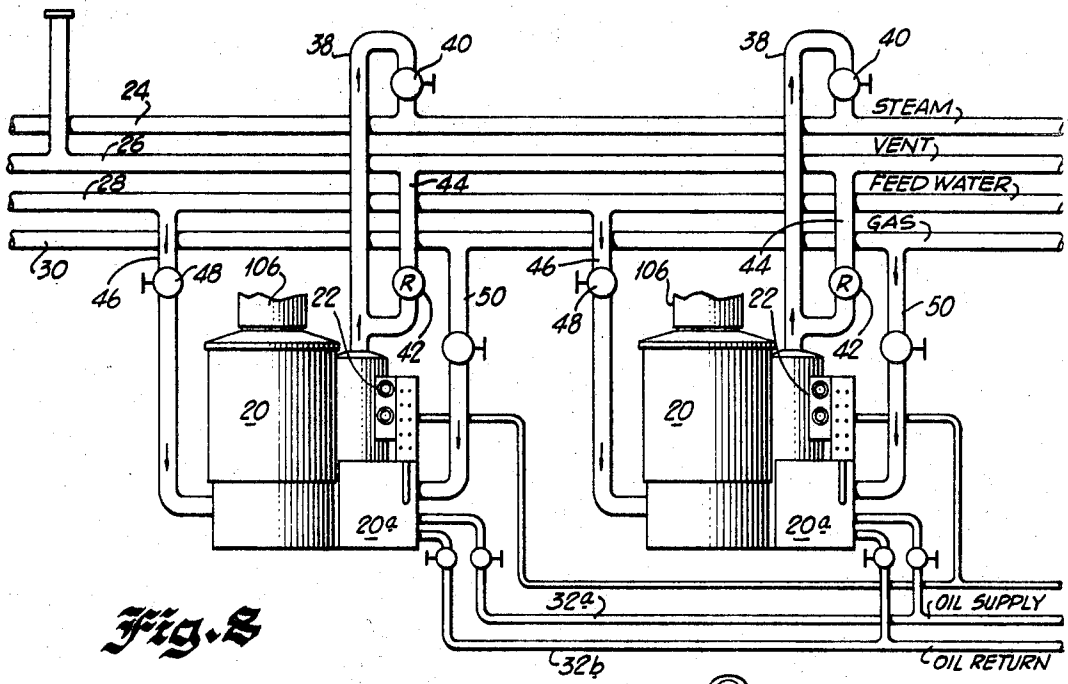

Fig. 8

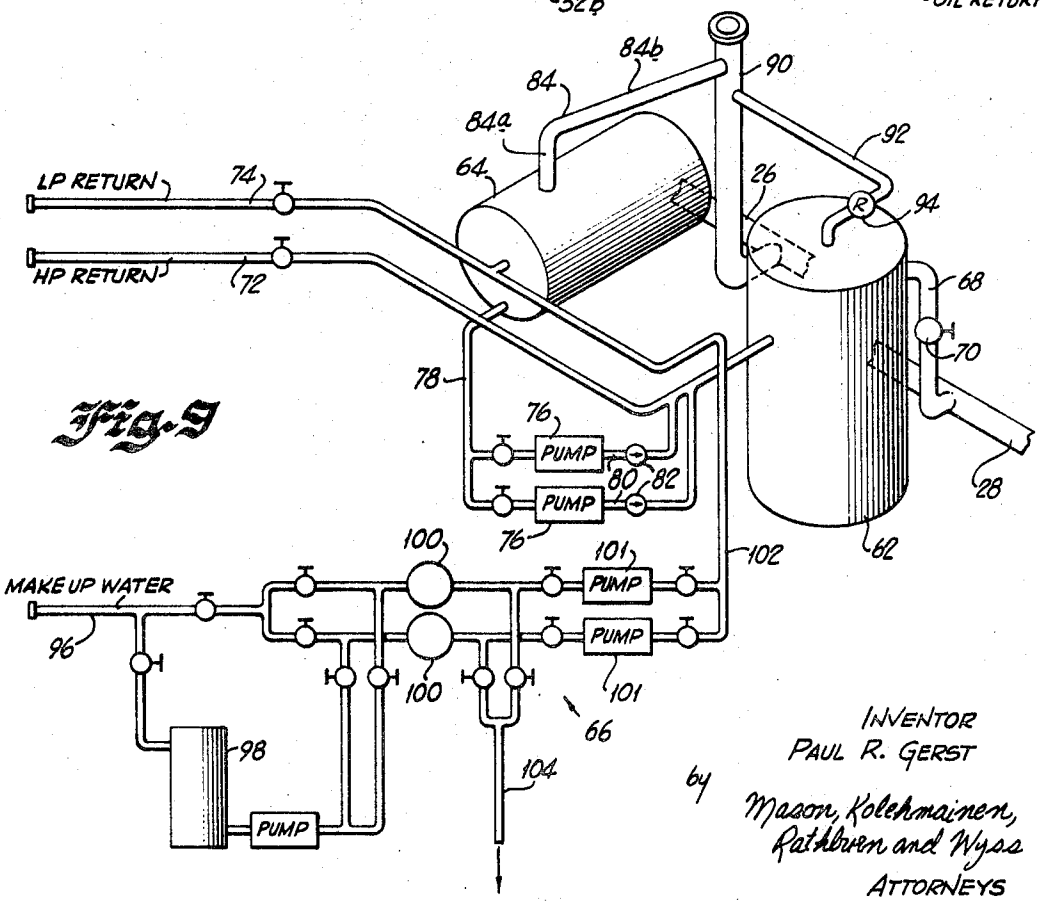

Fig. 9

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United States Patent Office 3,465,726
Patented Sept. 9, 1969

3,465,726

PREFABRICATED STEAM GENERATING PACKAGE

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Filed May 13, 1968, Ser. No. 728,655
Int. Cl. F22b 33/00
U.S. Cl. 122—1 9 Claims

ABSTRACT OF THE DISCLOSURE

A prefabricated, steam generating unit or package adapted for easy transit to a jobsite and rapid installation for operation thereat, comprising an elongated, rectangular, permanent support base structure, one or more separate steam generators permanently mounted on said base structure in a row parallel and eccentric of a longitudinal center axis of base structure, each of said steam generators having controls facing one side and an opposite back side and a width between said sides less than the width of said base structure. Said generators are positioned on the base with the back sides thereof adjacent one longitudinal edge of the base structure and the control sides are spaced inwardly of the opposite longitudinal side of the base structure providing an elongated aisle space for permitting direct access to the controls on the generators. A plurality of vertically stacked, horizontally extending headers, including at least a steam and feed water header, are permanently mounted along said one longitudinal side of the base structure outwardly of the back sides of the generators and permanently connected up therewith ready for operation, the headers affording protection for the unit or package from damage during transit and installation at the jobsite.

The present invention relates to a new and improved prefabricated steam generating unit or package which is especially adapted for easy shipment and transit, without crating, to a remote jobsite and upon arrival at the installation site is easily and rapidly installed with a minimum of time, skill, and labor being required.

In the past it has been the practice when supplying relatively large capacity and complex steam generating systems for various types of service, such as heating systems and the like, for the mechanical contractor on the job to order the individual components making up the system and having the components shipped separately and individually to the jobsite or place of installation. Scheduling the arrival times for the components requires time and planning and often after the components arrive problems arise in the storage and protection thereof as well as in uncrating, mounting, and connecting up of the various units to form the integrated system. Oftentimes the labor force available at the jobsite is not familiar with the design of the integral system, and accordingly, connecting pipes and headers are sometimes cut to the wrong length and other problems arise, resulting in a much greater length of time and labor expended than need be before the complete system is ready for operation. Moreover, individual crating of the components, including the larger ones such as steam boilers, tanks, feed water pumps, water conditioning systems, and the like, is expensive, and adds considerably to freight costs. Moreover, the problem of coordinating the shipments of the various components for arrival at the jobsite at the right time so that installation can begin on schedule is sometimes an extremely complex operation.

It is therefore an object of the present invention to provide a new and improved prefabricated steam generating unit or package which is especially adapted for easy transit

to a jobsite and which can be rapidly installed and put into operation after arrival at the site with a minimum of time and labor.

Another object of the present invention is the provision of a new and improved prefabricated steam generating unit having one or more individual separate steam generators mounted on a common, elongated base which serves as a skid for supporting the package during shipment and which serves as a permanent base for the unit after installation in place for operation.

Yet another object of the present invention is the prosion of a new and improved prefabricated steam generating unit or package in which steam, feed water, and other headers are mounted in vertically stacked arrangement along one side of the unit, thereby affording protection for the package during shipment and installation.

Another object of the present invention is the provision of a new and improved prefabricated steam generating unit of the character described, wherein a minimum number of connections are required to place the unit in operation, once it arrives at the jobsite.

Another object of the present invention is the provision of a new and improved prefabricated steam generating unit wherein a plurality of separate steam generators are mounted on a common, elongated, permanent support base structure in a row parallel and eccentric of a longitudinal center axis of the base structure, thereby providing a longitudinal working space or aisle for operators to afford direct access to the control units of the individual generators.

Another object of the present invention is the provision of a new and improved prefabricated steam generating unit wherein the space above the working space or aisle is occupied by the exhaust stacks of the individual generators during shipment of the unit, and the exhaust stacks are arranged to extend horizontally along one side of the unit in a vertically stacked arrangement, thereby affording protection for the integral package on the opposite longitudinal side.

Still another object of the present invention is the provision of a new and improved prefabricated steam generating unit of the character described in the preceding paragraphs wherein a flexible cover is draped over the unit to protect it from the elements, and the cover is supported by the stacked headers on one side of the unit and the horizontally arranged exhaust stacks on the opposite side of the unit without further means being required.

Another object of the present invention is the provision of a new and improved prefabricating steam generating unit including a water treatment and storage system permanently mounted adjacent one end of the support base structure and integrally connected up with the individual steam generators.

Still another object of the present invention is the provision of a new and improved prefabricated steam generating unit of the character described wherein the base structure is used as a structural member or body of a trailer which can be pulled by a conventional over-the-road tractor from the initial fabrication point to the jobsite. In this connection, a detachable road wheel assembly is provided for supporting one end of the unit or package and a detachable kingpin assembly is provided adjacent the other end for connection with the kingpin receiving assembly of an over-the-road tractor used for transporting the prefabricated unit to the jobsite.

Another object of the present invention is the provision of a new and improved prefabricated steam generating unit of the character described in the preceding paragraph wherein the road wheel and kingpin assemblies are detachably mounted on the base structure of the unit and orientated whereby the steam generators or row of generators is aligned on the left-hand side of the central axis

of the base structure, as viewed forwardly toward the tractor, so that the center of gravity of the unit is eccentric toward the high side of the road, resulting in a greater stability for the tractor and unit being pulled thereby.

Another object of the present invention is to provide a new and improved prefabricated steam generating unit employing a plurality of separate steam generators connected to common header systems, whereby wide variations in steam output capacity can be easily provided by shutting down or firing up selected steam generators of the integral unit to better accommodate the output required.

Still another object of the present invention is the provision of a new and improved prefabricated steam generating unit of the type described which occupies a minimum of floor space and volume and thereby provides a high boiler horsepower output for its weight and size.

Along this line, another object of the present invention is the provision of a new and improved prefabricated steam generating unit of the type described wherein the unit is small enough in size so that it may be easily loaded into the van of a conventional commercial over-the-road trailer without incurring oversize penalties or requiring special handling because of excessive loads or width and height dimensions.

Still another object of the present invention is the provision of a new and improved prefabricated steam generating unit which is flexible in operation and which can be easily and rapidly installed ready for operation at the site of installation with a minimum amount of labor, time, and skill being required.

Another object of the invention is the provision of a new and improved steam generating unit or package of the character described including a housing structure enclosing said unit permanently installed thereon.

Another object of the invention is the provision of a new and improved steam generating unit of the character described in the preceding paragraph including longitudinal and transverse headers supporting and connected with wall and roof portions of said housing structure.

These and other objects and advantages of the present invention are accomplished in one embodiment thereof by a new and improved, prefabricated steam generating unit or package especially adapted for easy transit and shipment to the jobsite and upon arrival at the installation site is easily and rapidly installed, ready for operation. The unit includes an elongated, rectangular, permanent, support base structure and one or more separate, individual steam generators or boilers which are permanently mounted on the base structure in a row parallel and eccentric of the longitudinal center axis thereof. Each of the steam generators includes control and monitoring equipment facing one side and an opposite or back side with a lateral width between the sides somewhat less than the width of the base structure, thereby providing an elongated, narrow aisle or work space extending along the opposite longitudinal side of the base structure to provide direct access for workmen and operators for installing and controlling the system in operation. A plurality of horizontally extending headers, including at least a steam and feed-water header are permanently mounted along said longitudinal side of the base structure outwardly of the back side of the generators in vertical, stacked relation and the headers are permanently connected to the steam generators, ready for operation. The headers afford protection for the steam generators from damage during transit along one side of the unit and relatively large diameter exhaust stacks required by each steam generator are arranged in a horizontally extended vertically stacked configuration above the aisle space on the opposite side of the unit during transit. The exhaust stacks afford protection for the opposite side of the package and, after the unit arrives at the installation the exhaust stacks are removed from their vertically stacked horizontal configuration in the aisle space and are erected in place on top of the boilers to carry the exhaust gases into the atmosphere.

In one embodiment of the invention, a building structure is permanently affixed to enclose the unit, and a wall and/or roof of the building enclosure is supported and connected by the headers of the unit.

For a better understanding of the present invention, reference should be had to the following detailed description taken in conjunction with the drawings, in which:

FIG. 1 is a top plan view of a new and improved prefabricated, steam generating unit or package constructed in accordance with the present invention;

FIG. 2 is a side elevational view of the package of FIG. 1 shown as it is installed in place at the jobsite with the exhaust pipe for the steam boilers in place;

FIG. 3 is a side elevational view of the package of FIG. 1 as it is installed in place and showing especially the header system for interconnecting the generator units;

FIG. 4 is a transverse cross section taken substantially along lines **4—4** of FIG. 2 and illustrating the unit as installed in place with a housing structure shown in phantom;

FIG. 5 is a transverse cross-sectional view taken substantially along lines **5—5** of FIG. 2 and similar to FIG. 4;

FIG. 6 is a side elevational view of the new and improved prefabricating steam generating unit of FIG. 1 shown as it is being transported to the jobsite with the exhaust stacks of the generators knocked down and vertically stacked along one side of the unit in the aisle space;

FIG. 7 is a transverse cross section of the unit of FIG. 6 during transit taken substantially along lines **7—7** thereof; and

FIGS. 8 and 9 are a schematic piping and wiring diagram for the prefabricated steam generating unit of the present invention.

Referring now, more particularly, to the drawings, therein is illustrated a new and improved, prefabricated steam generating unit or package referred to generally by the reference numeral **10** and illustrated in FIGS. 1 through 5 as the unit is installed in place at a jobsite ready for connection into the system of the load for operation.

The prefabricated steam generating unit **10** of the invention includes an elongated, rectangular, permanent, support base structure **12** having a pair of longitudinally extending opposite members **14** joined together at opposite ends by cross members **16**. In addition, the base structure **12** includes a plurality of intermediate cross members, not shown, extending between the longitudinal side members **14** and the entire frame structure is preferably covered with steel grating or pouring material **18**. The longitudinal side members **14** and cross members **16**, making up the base structure frame are of suitable shape and strength to support the loading design for the unit, and the base structure **12** is adapted to remain as a permanent base for the unit **10** when it is installed in place at the jobsite and connected up for operation.

In accordance with the present invention, the prefabricated steam generating unit **10** includes one or more separate, individual, steam generators or boilers **20** permanently mounted on the base structure **12** in a single row as represented by the dotted line A (FIG. 1) which is parallel to the longitudinal center axis of the support base represented by the line B in FIG. 1. Because of the off-center or eccentric arrangement of the boilers **20** along one longitudinal side or edge of the support base structure, an open area or aisle, space C (FIG. 1) extending longitudinally along the opposite side of the base structure, is provided for access to the individual steam boilers **20** and the controls thereon.

In accordance with the invention, each of the steam boilers **20** includes a front side or control side on which gauges and electrical burner and temperature controls **22** are mounted for viewing by an operator walking along

the aisle space C, and the opposite or back sides of the boilers are positioned to face outwardly toward the longitudinal side of the support frame or base structure **12** opposite the aisle C. In an embodiment constructed in accordance with the present invention, the base structure **12** was fabricated to be 7.75 feet in width and 33 feet long, a size which is readily handled in commercially available vehicles for transit, and the boilers **20** were rated at 175 boiler horsepower each and manufactured by the Clayton Manufacturing Company. The boilers **20** were approximately 4 feet in width between the front or control base and the back side and, because of the off-center location thereof the aisle space C was approximately 2½ feet in width, which is ample space for a workman or operator in controlling the unit and watching the operation thereof. Accordingly, when three boilers **20** of the 200 boiler horsepower capacity were mounted on the frame, the total output capacity of the unit **10** was 600 boiler horsepower, and by the addition of a fourth boiler, shown in FIGS. 1 and 3, this output could be increased to 800 boiler horsepower, if desired. Moreover, relatively small size boilers having high boiler horsepower outputs are presently available by use of superheating equipment therein to further increase the output capacity of the unit if desired. In any event, the boilers **20** are permanently mounted on the base structure **12** as the prefabricated steam generating unit is initially built, and provisions may be made for leaving additional space at one end of the base structure for adding one or more additional units, if and when the need arises.

In accordance with the present invention, a plurality of headers extending longitudinally along the back sides of the boilers **20** are permanently affixed to the support base **12** and arranged in a vertically stacked relation to one another, as best shown in FIG. 3. The plurality of headers includes a steam header **24**, a vent header **26**, a feed-water header **28**, and a gas header **30** if gas is to be used for firing the boilers **20**. On the other hand, if oil is to be used for firing the boilers, as an alternate fuel, an oil supply header and return header **32***a* and **32***b*, respectively, may be additionally provided, as best shown in FIGS. 4 and 5. The specific sizing and capacity of the various headers is designed to accommodate the specific needs of the steam generating unit **10** and, preferably, the headers extend the complete length of the support base structure **12**, as best shown in FIG. 3. The headers are arranged in vertically stacked relation and are supported by suitable upright members **36**, and thus form a structurally strong protective wall, or the like, for one longitudinal side of the prefabricated generating unit for protecting the boilers **20** and other components of the unit from damage during transit and installation. Each boiler **20** is connected into the steam header **24** by a piping segment and valve **40** so that individual boilers in the unit can be connected on or taken off the line as desired when the capacity required by the load varies, and preferably the connecting pipes **30** are extended upwardly of the header in inverted U-shaped configuration, as shown in FIG. 3, to provide additional support for a removable covering curtain of flexible material which may be thrown over the unit during shipment, as will be described hereinafter.

Referring now to FIGS. 3 and 5, one leg of each steam connector pipe **38** upstream of the valve **40** is provided with a release valve **42**, and a vent pipe **44** is connected between the release valve and the vent header **26** which is spaced below the steam header **24**. The release valves **42** may be adjusted so that excessive boiler pressure will be relieved by venting the steam directly into the vent header **26**. Feed water for the boilers **20** is supplied from the feed-water header **28**, and each boiler is connected to the header by a short pipe **46** and valve **28**, as best shown in FIG. 5. Preferably, each boiler **20** includes an independent feed-water pump which is controlled by the control panel instruments **22** thereon, so that the output of each boiler can be regulated in accordance with the desired operating conditions. The lower gas header **30** is adapted to supply natural gas as a fuel to the boilers **20** and for this purpose a plurality of individual supply pipes **50** (FIG. 1) are connected to the header and extend into the burner sections **20***a* of the boilers (FIG. 2) which are regulated by the controls on the panels **22**.

Referring now to the schematic diagram of FIGS. 8 and 9, the burner units **20***a* may also be supplied with oil for a fuel from the oil supply lines **32***a* and oil return lines **32***b*, and the installation of the oil supply lines will depend upon the fuel available at the jobsite. Consequently, if natural gas is not available, the lower gas supply header **30** can be eliminated from the stack of headers along the side of the steam generating unit.

In accordance with the present invention, the prefabricated steam generating unit or package **10** also includes a feed-water supply and storage system **60** mounted at one end of the support base **12**. Components making up the feed-water supply and storage system **60** may vary considerably, depending upon the specific installation and type of operation for which the steam generating is used. In the embodiment illustrated and in the embodiment constructed in accordance with the present invention, the feed-water supply and storage system included an upright high-pressure storage vessel **62**, a horizontal low pressure storage tank **64**, interconnected therewith, and a water softening system **66**, best shown in FIGS. 2, 4, 8, and 9. Because of the wide variations of feed-water storage and supply systems and conditioning systems that can be used, a typical installation will be described for use with boilers of the type commonly used in the construction of the prefabricated steam generating unit of the present invention, but it is not intended that the system shall be so limited to include only those components described herein. The main feed-water header is supplied with high temperature feed water from the high pressure storage vessel **62** through line **68** (FIGS. 8 and 9) and control valve **70**, and water is supplied to the inlet side of the high pressure vessel **62** through a high pressure return line **72**. Low pressure return fluid is supplied to the low pressure tank **64** through a low pressure return line **74**, and these lines are preferably fabricated and connected in place so that at the jobsite it is a relatively simple matter to connect the prefabricated steam generating unit to the load. In order to supply water from the low pressure vessel **64** to the high pressure storage vessel **62**, a pair of pressure pumps **76** are provided (FIGS. 8 and 9) and these pumps are connected on the inlet side to the low pressure vessel **64** through a supply line and valve arrangement **78**. Output of the pumps is connected directly to the inlet side of the high pressure vessel **62** or to the high pressure return line through a pair of lines **80** having suitable check valves **82** therein.

Preferably, the low pressure water tank **64** is at atmospheric pressure and is vented at the top through an elbow **84** having an upstanding portion **84***a* in a laterally outwardly and downwardly leg **84***b*. As best shown in FIG. 4, the slope of the leg **84***b* is approximately the same as a building roof line or enclosure in which the prefabricated steam generating unit may be placed before or after shipment to the jobsite, and this roof line is indicated by the dotted lines **86**.

Referring again to FIGS. 4 and 5, the enclosure or building includes an upright sidewall **88** indicated in dotted lines extending parallel to and structurally connected with the pipe header system, including the headers **24**, **26**, **28**, and **30** and the upright support members **36**. The lower edge of the sidewall is connected to the base, and the sidewall is outside of the headers. The roof section **86** is supported by and connected with the sloping leg portion **84***b* of the vent elbow **84** and, if desired, one or more sloping cross headers **85** (FIG. 4), transverse and connected into the header system **24**, **26**, **28**, and **30** along the outside of the unit, may be provided and arranged for additional

supporting connection with the roof structure **86**. The outer end of the vent elbow **84***b* is connected to a vertically extending vent stack **90** having a flange at one end and mounted adjacent the feed-water storage system **60** on the mounting base structure **12**. The vent stack **90** is interconnected to the longitudinal vent header **26**, as best shown in FIG. 3, to carry the vented vapors upwardly and outwardly through the roof of a building or other enclosure in which the prefabricated generating unit is installed. If desired, an additional stack may be connected to the flange at the upper end of the vent stack **90** to carry the vapors to a higher level. In order to protect the high pressure storage vessel **62** from overpressure, a relief line **92** and relief valve **94** are interconnected between the vessel and the vent stack, as best shown in FIGS. 1, 2, 8, and 9.

As previously stated, the water treatment system can be of various types and is interconnected with the feed-water storage systems in a suitable manner. Briefly, a typical treatment or softening system includes make-up or fresh feed water supplied to the water treatment system through a make-up header **96** which is connected through suitable valving to a brine tank **98** and a pair of chemical treatment tanks **100** in parallel. Feed water passing through the tanks **100** is then supplied to the low pressure storage vessel **64** via a pair of pumps **101** and a line **102** also provided with suitable valving therein. In addition, a drain line **104** is connected into the circuit to drain the brine as it is used when flushing either of the chemical treatment tanks **100**. It is to be understood, of course, that other suitable water treatment systems employing the ion exchange principle may be used if required, instead of the system described briefly herein.

From the foregoing it will be seen that once the prefabricated steam generating unit **10** of the present invention is moved to the jobsite and set in place, as shown in FIGS. 4 and 5, with the support base structure **12** resting on the floor structure or skids or other structure **105**, it is a relatively simple matter to get the system into operation by making suitable connections with the headers **24** through **30**, the low pressure and high pressure return lines **74** and **72**, respectively, a make-up or fresh water line **96** and a suitable drain for the line **104**. If oil is to be used for firing the boilers **20**, connection will be made to storage facilities for fuel oil into the lines **32***a* and **32***b*. Also, in accordance with the present invention and referring specifically to FIGS. 2, 8, and 9, the control systems and electrical power for the control boxes **22** on the boilers and the feed-water treatment storage and pumping systems are prewired at the factory before shipment and so that the unit **10** merely needs to be connected up to the suitable electrical power source through a circuit breaker or the like for these controls to function.

According to another important aspect of the present invention, each boiler **20** is provided with a relatively large diameter exhaust flue or stack **106**. During transit or shipment of the prefabricated steam generating unit, the exhaust stacks **106** for each boiler **20** are arranged to extend horizontally and are vertically stacked in the aisle area C, as best shown in FIGS. 6 and 7. In this configuration, the exhaust stacks are supported by suitable removable frameworks **108**, and when in place, provide a crating type of protecting for the control side or inside faces of the unit from damage during transit. Moreover, the exhaust stacks **106**, when arranged as shown in FIGS. 6 and 7, help to balance the loading of the entire unit for transit to somewhat offset the eccentric loading of the heavier boiler or steam generators **20**. The exhaust stacks **106** also serve to support one side of a covering enclosure **110** of canvas or other protective material which is easily draped over the prefabricated unit and secured along the outer edges of the support base frame members **14** and **16**.

If the unit is shipped with the building enclosure permanently in place (FIGS. 4 and 5), the protective covering **110** can be used to cover the open side of the unit adjacent the exhaust stacks **106**. On the other hand, the building structure may include an upright wall **89** (FIG. 4) opposite the wall **86** enclosing the opposite side of the unit and in such case no covering **110** would be required. In installation wherein two or more generating units **10** and **10**A are to be used, the units can be placed in side-by-side relation (FIG. 5) with the roof structures **88** intersecting at the center of the double unit and the aisle spaces C adjacent one another. In this application the transverse headers **85** from the two units may be interconnected together adjacent the center of the building and one or more common longitudinal headers **87** may be provided running the length of the building along the ridge of the roof structure.

It will be seen that the unit, in accordance with the present invention, is easily transported in conventional tractor-trailer van or on a flat bed-type vehicle. Because of the limited width and height of the unit, transportation can be readily obtained for a relatively high boiler horsepower unit. When the unit arrives at the jobsite, the support base **12** is moved into permanent place and the bracing **108** which supports the stacks **106** is removed and the stacks **106** are then assembled in place, as shown in FIGS. 1 through 5, on the exhaust openings of the respective boilers **20**. The aisle space "C" provides a needed open space for the knocked down horizontally extended exhaust stacks **106** during transit and after the stacks have been erected in place on the jobsite, the aisle space "C" is available to the operators of the equipment and provides ready access to the controls of the respective boilers **20**.

In accordance with another important aspect of the present invention, the prefabricated, steam generating unit **10** is adapted to serve as a self-contained trailer body for pulling by an over-the-road tractor unit **112** (FIG. 6), and for this purpose a detachably removably bogey wheel assembly **114** can be affixed to the rearward end portion of the support base **12** while a removable kingpin receiving assembly **116** is provided adjacent the forward end of the unit for connection with the tractor. It will thus be seen that the unit **10** is easily shipped and, once it arrives at the jobsite, the removable road wheel assembly **114** is dismantled as well as the kingpin assembly **114** before setting the base **12** in place. The tractor **112** then can take the kingpin assembly **116** and road wheel assembly or bogey **114** back to the point of origin and thus transportation expenses are reduced considerably.

Referring specifically to FIG. 7 of the drawings, it will be seen that the preferred loading arrangement for a truck or a trailer, as shown, is obtained by orienting the support base **12** so that the center of gravity of the row of boilers **20** is offset from the longitudinal center of the support base toward the high side of the road. Because most road surfaces are sloped towards the outer edge, as exaggerated in FIG. 7, by placing the boilers **20** towards the high side of the road, better road stability is achieved with the load.

From the foregoing description it will be seen that the prefabricated steam generating unit **10** of the present invention provides many advantages over the heretofore practiced art wherein the individual components making up the system are simply shipped to a jobsite without proper scheduling, and may sit around in crates for periods of time before assembly. Moreover, the skilled artisans available may not know exactly how the configuration of the components is to be made, and this results in further time delay.

The present invention provides a means for relatively large horsepower steam generating units to be prefabricated at a plant and then easily transported over the road by truck or freight car to the jobsite and readily installed at the jobsite with a minimum of time and labor expended. Moreover, fabrication of the units as shown becomes more automated and results in economic benefits on the part of both the user and the fabricator. The load is adequately protected during transit by the pipe headers and the exhaust stack arrangements as well as a removable flexible cover which can be thrown over the entire

package or unit. In addition, the unit can be shipped in a building enclosure, as shown in FIGS. 4 and 5, which enclosure further provides protection during transit, installation, and operation. Moreover, the assembled unit provides good roadability and reduces handling problems of trucks and the like used to haul the units to the site. It is to be understood that various different feed or other supply and storage systems can be utilized with the arrangement of the present invention and different water treatment systems may also be used without departing from the spirit and scope of the invention as defined in the appended claims.

While there has been illustrated and described a single embodiment of the present invention, it will be appreciated that numerous changes and modifications will occur to those skilled in the art, and it is intended in the appended claims to cover all those changes and modifications which fall within the true spirit and scope of the present invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A packaged, prefabricated, steam generating unit for easy transit to a jobsite and rapid installation thereat comprising, an elongated, rectangular, permanent support base structure, one or more separate steam generators permanently mounted on said base structure in a row parallel and eccentric of a longitudinal center axis of said base structure, each of said steam generators having controls facing one side and an opposite back side and a width between said sides less than the width of the said base structure, said generators positioned on said base structure with the back sides thereof adjacent one longitudinal edge of said base structure and said one side spaced inwardly of the opposite longitudinal side of said base structure providing an elongated aisle space for access to said general controls when said unit is in place, and a plurality of vertically stacked, horizontally extending headers, including at least a steam and feed-water header permanently mounted along said one longitudinal edge of said base structure outwardly of the back sides of said generators and permanently connected thereto for operation, said headers affording protection for said generators from damage during transit.

2. The packaged, prefabricated, steam generating unit of claim 1 including an exhaust stack for each generator, sections of exhaust stacks arranged horizontally and longitudinally of said base structure along said aisle space and removably mounted in vertical stacked configuration during transit, affording protection to said generator controls along the opposite longitudinal side of said base structure.

3. The combination of claim 2 including a flexible covering material draped over said unit and supported on opposite sides of said base structure by said vertically stacked headers and said vertically stacked generator exhaust stack sections.

4. The combination of claim 3 including a feed water treatment and storage system for said generators, permanently mounted on said base structure adjacent one end and permanently connected with at least said feed water header of said plurality of vertically stacked headers.

5. The combination of claim 4 wherein said plurality of headers includes a vent header, a vertical vent stack connected to said vent header and mounted adjacent said water treatment and storage system, and vent pipe means from said system connected to said vent stack extended transversely of said base structure and sloping downwardly from the center thereof toward said one edge for supporting said flexible covering material during transit.

6. The combination of claim 2 including a detachable road wheel assembly supporting one end of said base structure and a detachable kingpin receiving assembly adjacent the other end of said base structure for connection with an over-the-road tractor and for transporting said unit to the jobsite with said base structure acting as a trailer body.

7. The combination of claim 6 wherein said road wheel assembly and kingpin receiving assembly are attached to said base structure in orientation whereby said row of generators is aligned on the left-hand side of the central longitudinal axis of the base structure when viewed forwardly toward said over-the-road tractor connected thereto for transit.

8. The combination of claim 2 including a building structure for housing said unit, said building structure including an upright sidewall structurally interconnected to said stacked headers.

9. The combination of claim 8 wherein said building structure includes a roof structure, and including one or more cross headers extended transversely of said stacked headers and interconnected therewith, said cross header being structurally interconnected with said roof structure.

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