(No Model.)

2 Sheets—Sheet 1.

H. T. NYE.

HOT WATER HEATER.

No. 492,695. Patented Feb. 28, 1893.

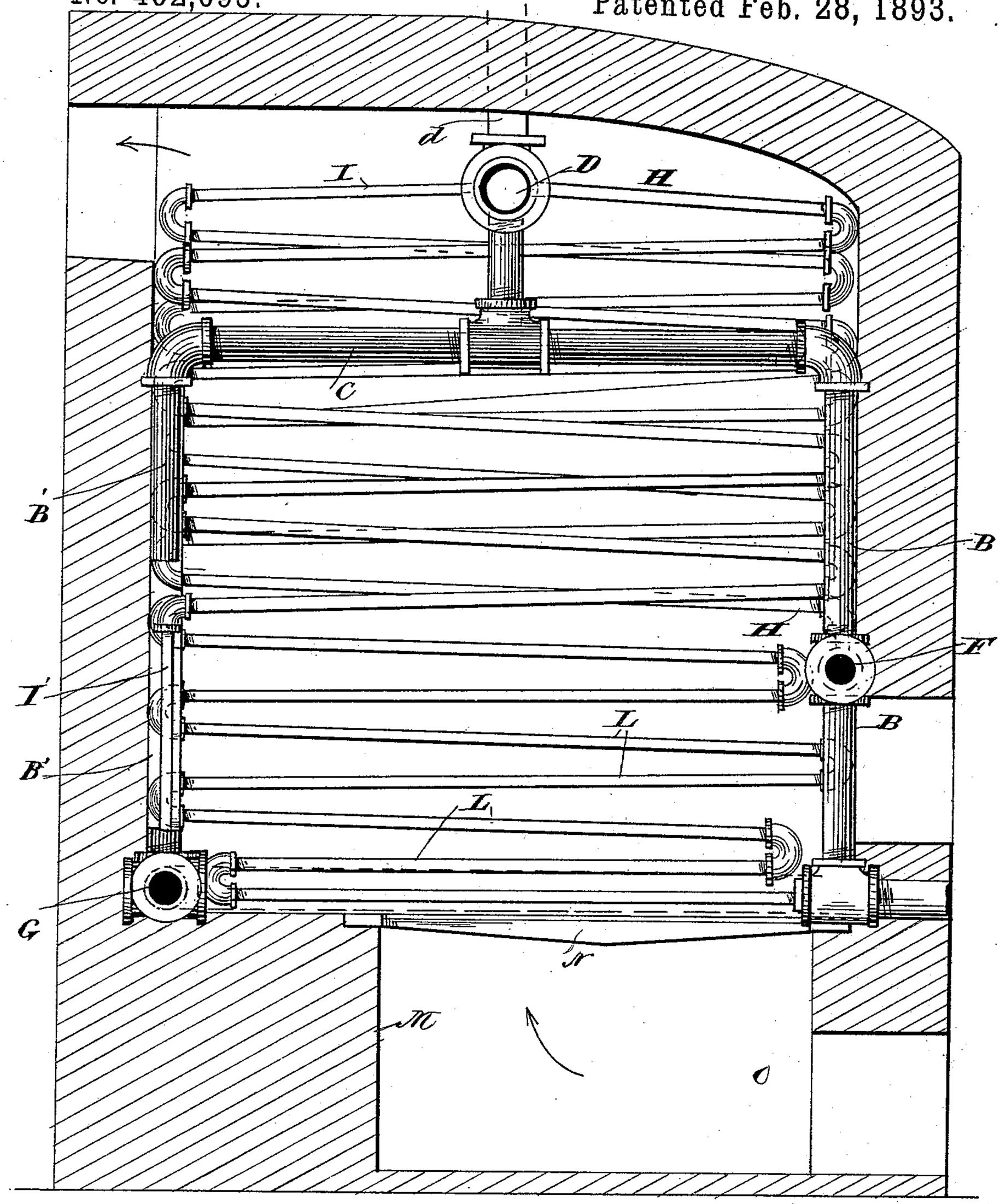

Fig 1.

Witnesses
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E. C. Green.

Inventor
Harvey T. Nye
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(No Model.) 2 Sheets—Sheet 2.

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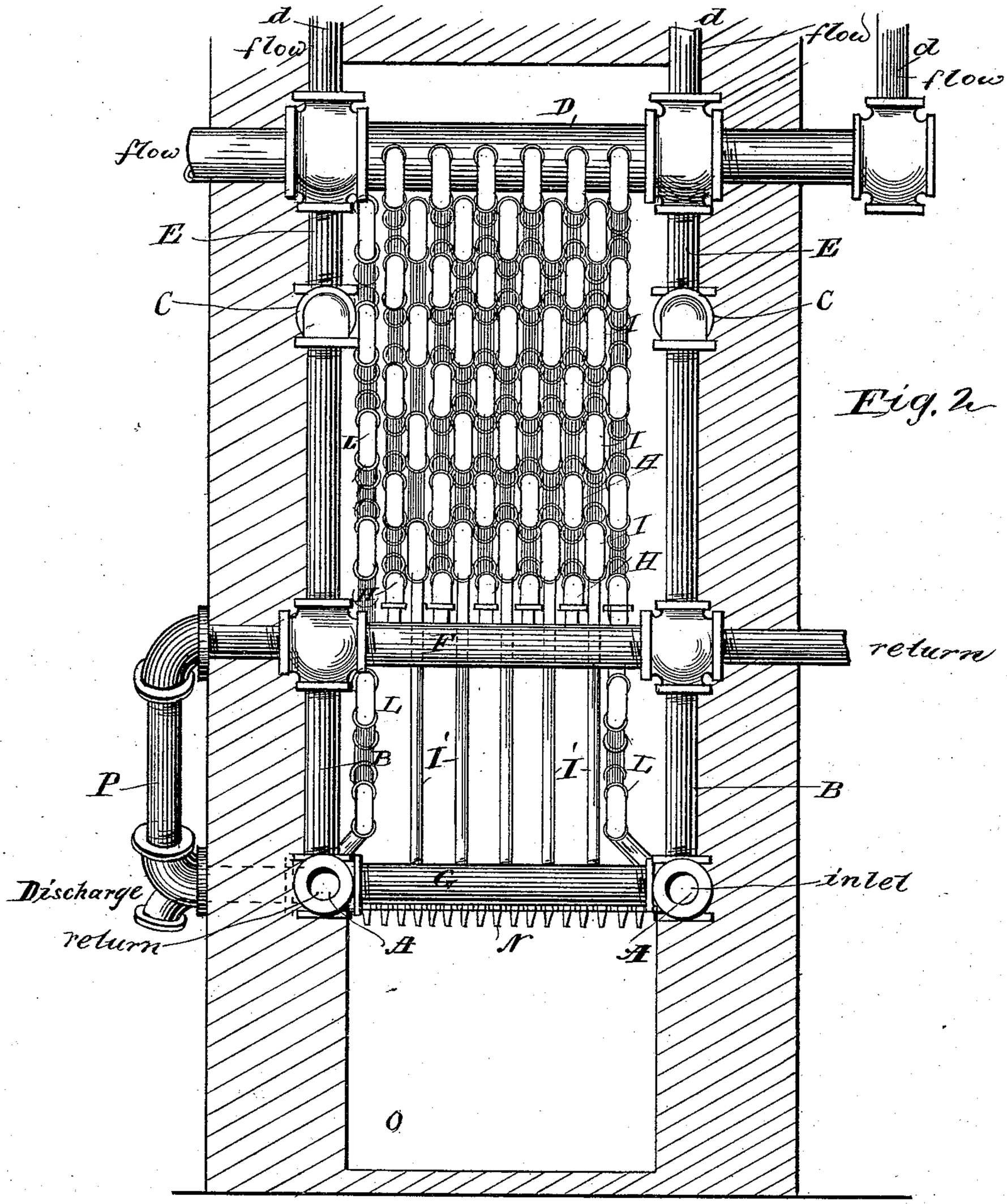

Fig. 2.

Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

HARVEY T. NYE, OF CLEVELAND, OHIO.

HOT-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 492,695, dated February 28, 1893.

Application filed June 20, 1892. Serial No. 437,530. (No model.)

To all whom it may concern:

Be it known that I, HARVEY T. NYE, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Hot-Water Heaters, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in hot water sectional flue heating apparatus and its objects are to provide the greatest amount of heating surface with the minimum requirement of fuel, together with a form of construction which will insure equal expansion and contraction of all parts. I obtain these advantages by means of the combination and arrangement of parts and details of construction shown in the accompanying drawings, described herein and more specifically pointed out in the claims.

In the accompanying drawings Figure 1 is a front elevation of the furnace with the walls partially removed showing the arrangement of flues. Fig. 2 is a side elevation of the same showing walls in vertical central section.

A in the drawings represents the inlet water pipes.

B and B′, are vertical supply pipes, connected on either side of the heater by the horizontal pipes C, C, which communicate with the header D by means of the short vertical connections E.

Cross headers F just above the fire-box in front of the heater and cross header G in the rear of the fire-box serve as lower supports for a series of pipe bends H, and I which completely fill the space between the side frames formed by the pipes B B′, and C and enter the header D from either side. It will be seen that there are two sets of bends, H and I; one set H entering the cross pipe F above the fire-box and the other set I entering the cross pipe G at the farther and lower end of the fire-box after forming its vertical rear wall as seen at I′. A further set of pipe L on either side of the heater extends from the inlet pipe A in diagonal bends to the header D, and thus with the vertical pipes I′ inclose the fire-box upon three sides. A bridge wall M supports the inner extremities of the grate bars N and an ash pit O is formed below the heater.

In operation cold water is introduced from the mains or other convenient source into the lower extremities of the pipes B B′ until the heater is filled with water.

The header D is provided with any desired number of outlet nozzles *d* which communicate with pipes leading to radiators in convenient parts of the building containing the heater which are also filled with water the return pipes leading into the cross pipes or headers F and G as shown. It will be seen that when the whole system of pipes has been filled with water and heat applied to the fire-box the heated water will ascend and cool water descend, keeping up a constant circulation and warming equally all parts of the building provided with radiators.

In the drawings P is an additional pipe connecting the headers F and G for the purpose of preventing an unequal flow of water through one system of pipe bends, to the exclusion of the others. Blow off cocks may also be attached to the inlet pipes. One of the chief advantages of this construction is found in the fact that a smaller or larger heater can be constructed by merely cutting off or lengthening the longitudinal pipes all other portions especially the cast headers remaining the same, nor need the grates be changed.

I believe myself to be the first to employ this specific form of heater for water.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a sectional heater, the combination of vertical inlet pipes B and B′, forming the corner supports to the heater, transverse headers F and G connecting the vertical pipes across the heater, pipes C connecting the vertical pipes longitudinally, a transverse header D supported upon the pipes C by means of vertical sections E, and a double series of pipe bends secured at their upper extremities to the header D, and at their lower extremities the one to the header F, and the other terminating in vertical pipes forming the rear wall of the fire-box and secured to the header G, substantially as and in the manner set forth.

2. In a water heater, of sectional pipe con-

structions a fire-box provided with vertical corner posts consisting of inlet pipes B and B′, transverse header pipes F and G, in combination with a double system of bent pipes communicating with the said headers F and G and common header D, the lower portion of the system of pipes communicating with header F being vertical and forming the rear wall of fire-box substantially as and for the purpose described.

3. In a sectional hot water heater the combination of vertical corner inlet pipes, B and B′, transverse headers F and G and D and longitudinal pipes C connecting the inlet pipes, circulating pipe P connecting headers F and G, circulating pipe bends connecting header D with headers F and G, the pipes connecting header D and headers F forming the rear wall of the fire-box, and auxiliary circulating pipe L located at either side of fire-box substantially as described.

4. In a hot water heater the combination of vertical inlet pipes B, B′, transverse headers D, F and G, connecting said pipes, circulating flues connecting the headers F and G, with the header D, and a system of circulating flues on either side of the heater and fire box connecting the header D, with one of the lower extremities of the inlet pipes, substantially as described.

HARVEY T. NYE.

Witnesses:
WM. M. MONROE,
F. H. MOORE.