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WATER TUBE FOR FURNACE WALLS

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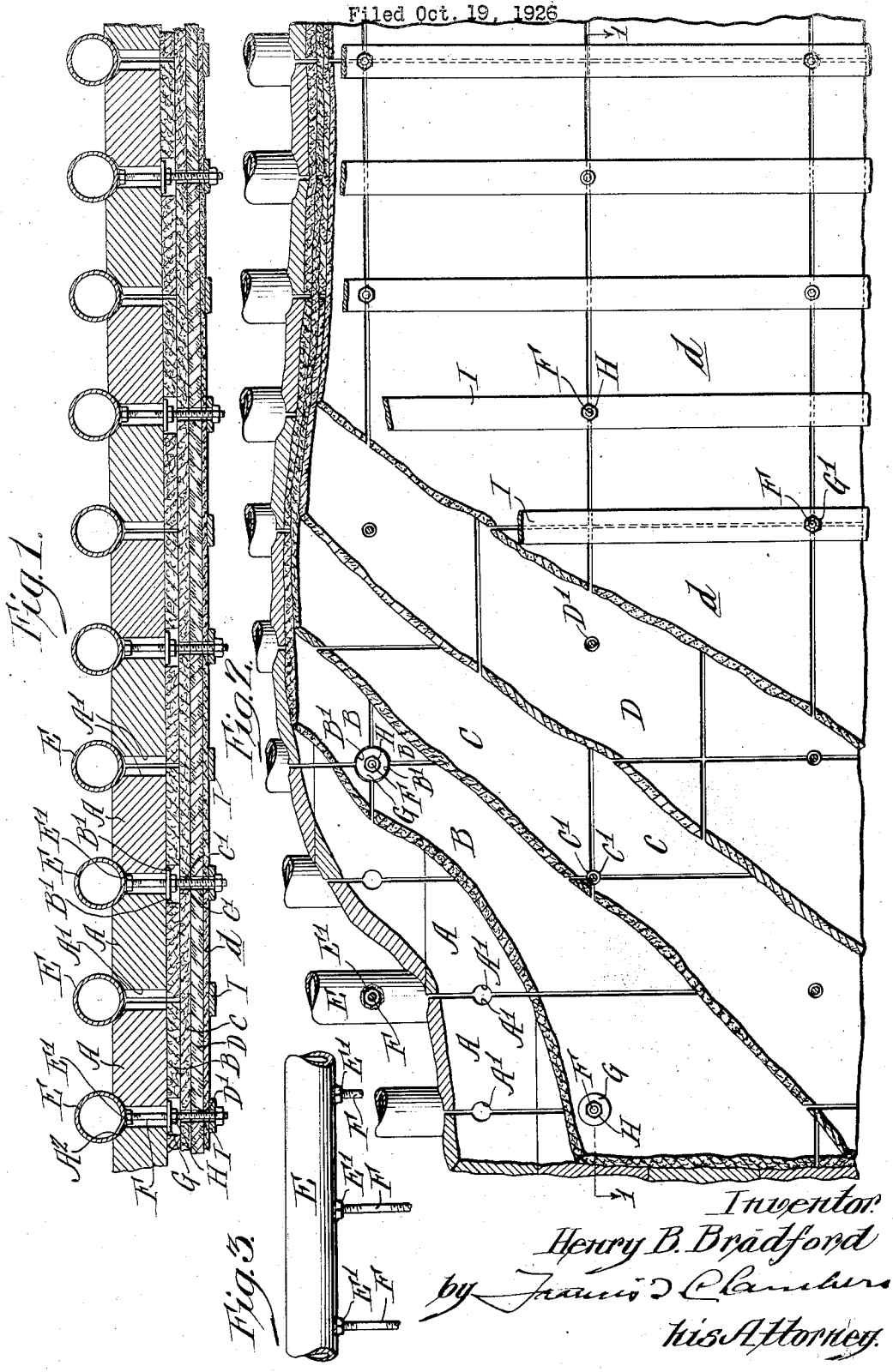


Fig. 1.

Fig. 2.

Fig. 3.

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WATER TUBE FOR FURNACE WALLS.

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My invention relates to furnace walls of the type in which a wall built up of refractory blocks and preferably having its outer portion built up of non-conducting blocks or slabs, is provided with a series of water pipes abutted against the inner face of the wall and tied into the wall structure through which pipes water from a boiler or the like is circulated. As heretofore constructed it has been found difficult to provide satisfactory means for tying the water pipes to the wall and the object of my invention is primarily to provide a means for tying the water pipes into the wall structure which will be at once simple strong efficient and free from liability to be broken off, bent or displaced.

Broadly speaking my invention consists in securing to water pipes adapted to form in part the inner wall of a furnace a series of spaced threaded nuts welded to the outside of the pipes and adapted to receive threaded bolts extending therefrom through the wall, and serving by means of outer clamps and the water pipes to secure the blocks and slabs forming the wall together.

My invention will be best understood as described in connection with the drawings forming part of the specification and in which

Figure 1 is a cross section of my furnace wall taken as on line 1—1 of Fig. 2.

Figure 2 is an elevation of the wall viewed from the outside and having parts broken away to show its detached construction and

Figure 3 is a view showing a section of the water pipe used in the wall construction with threaded studs shown as screwing into the welded nuts.

A, A, etc. are refractory blocks built up from the inner wall of the furnace, the inner corners of the blocks are notched as shown at A^2 to form seats for the water pipes and notches A^1 are formed on abutting faces of the blocks to form a passage for the studs to be described. B, B, etc., are non-conducting slabs built against the outer face of the blocks A and formed as shown with recesses B^1. C, C, etc., and D, D, are similar non-conducting slabs fitted against slabs B so as to break joints therewith and with each other, recesses C^1, D^1 being provided to give passage to the studs. *d* is an outer facing for the wall.

E, E, etc., are water pipes fitting against the inner face of the wall, as shown, and having a spaced series of threaded nuts E^1 welded to them. F, F, etc. are threaded studs screwing into nuts E^1 and extending through the wall as shown. G, G, are washers surrounding the studs and fitting against the outer faces of blocks A against which they are clamped by nuts H. I, I, are clamping strips lying against the outer face of the wall and clamped against it by nuts G^1.

In constructing my wall the inner wall is built up of blocks A. The water pipes E having nuts E^1 welded to them so as to register with openings A^1 and the threaded studs F screwed into the nuts are placed against the inner face of the wall as shown with their studs extending through the openings and then, preferably, washers G are placed against the outer face of the blocks A and the blocks clamped between the water pipes and the washers by the nuts H. The slabs C, D and *d* are then placed in position and the clamping strips I are forced against the outer face of the wall by nuts H^1.

The special construction of the water pipe elements E with their spaced and welded nuts E^1 is of practical importance as it enables the pipes to be shipped without risk of bending or breaking attachment thereto and to be used in the make up of the wall by simply screwing studs into the nuts.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

Water tubes for application to the inside of a furnace wall having a row of threaded nuts welded to them and adapted to receive clamping bolts.

HENRY B. BRADFORD.