

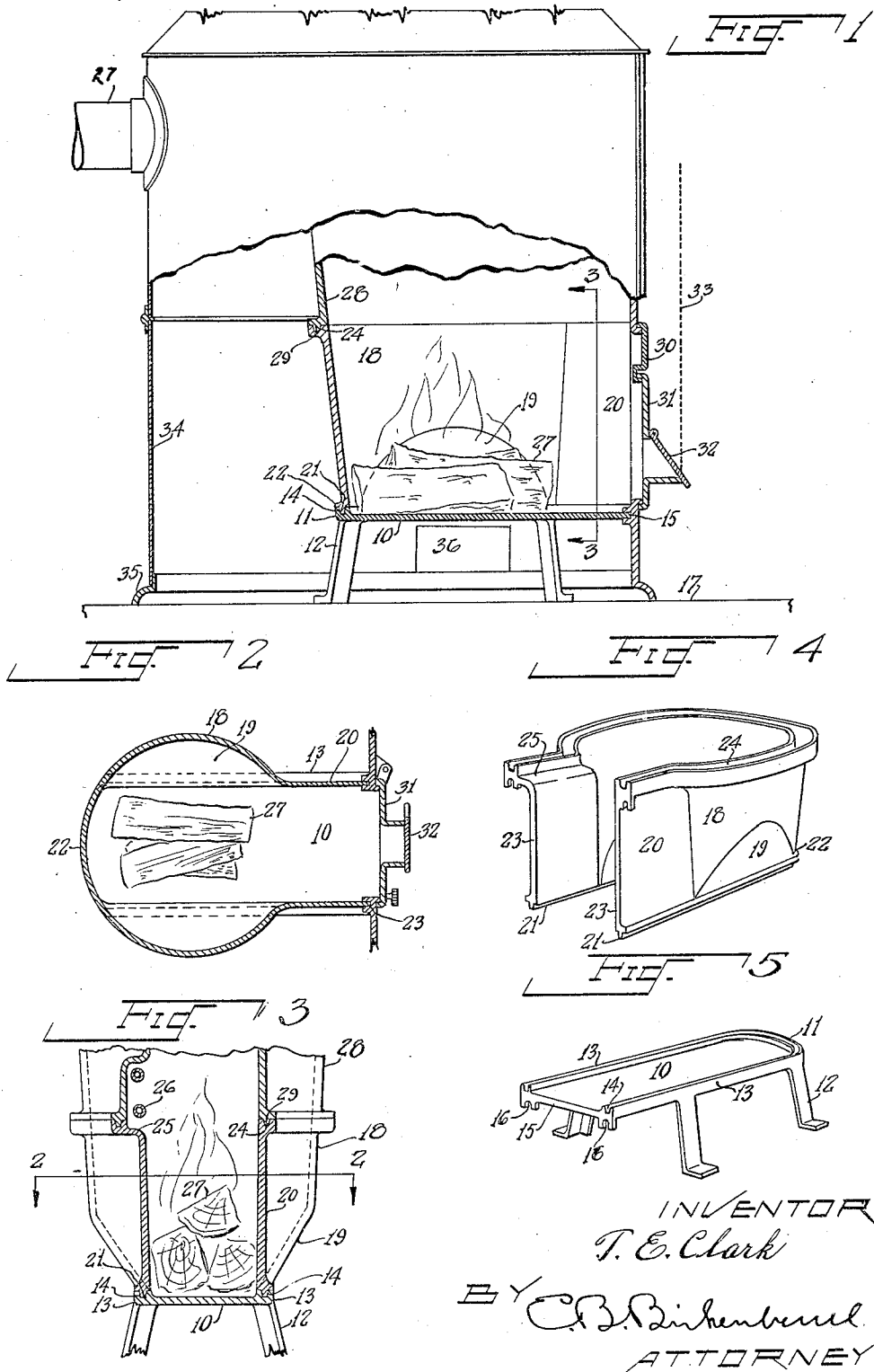
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WOOD BURNING FURNACE

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WOOD BURNING FURNACE

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This invention relates generally to heating appliances, and particularly to those especially adapted to the burning of wood.

The main object of this invention is to provide a wood burning furnace possessing the natural advantages of a circular fire pot without the disadvantages arising from the fact that wood often hangs up on the sides of a round fire pot causing the fire to die down.

The second object is to employ an elevated base for the purpose of reducing the distance to which one must stoop to fire the furnace, and to greatly improve the circulation thereof.

The third object is to reduce the total weight of a furnace of a given capacity, but to increase the weight of those portions of the furnace coming in direct contact with the heat, which are ordinarily the first to give out.

These, and other objects, will become more apparent from the specification following as illustrated in the accompanying drawings, in which:

Figure 1 is a partial vertical section through a furnace in which my device is employed. Figure 2 is a horizontal section taken along the line 2—2 in Figure 3. Figure 3 is a vertical section taken along the line 3—3 in Figure 1. Figure 4 is a perspective view of the fire pot. Figure 5 is a perspective view of the base.

Similar numbers of reference refer to similar parts throughout the several views.

Referring in detail to the drawings, there is illustrated a base 10 which is somewhat rectangular and having one rounded end 11, which base is held at an elevated position by means of the legs 12. Around the sides 13 and the end 11 of the base 10 is formed a channel 14, and on the under side of the front edge 15 are formed the bolt lugs 16. The legs 12 rest upon the floor 17.

Upon the base section is placed the fire pot 18 which is somewhat cylindrical in form, although preferably tapering slightly toward the bottom, and having the sides 19 of its bottom flattened out to form a straight line which is in the same plane as the wings 20, which are cast integral with the fire pot 18.

A tongue 21 is formed along the lower edges of the portions 19 and 20 and around the rear 22 of the fire pot 18. This tongue conforms with the channel 14, and in practice would of course be laid in cement.

The front edges 23 of the wings 20 are flush with the front edge 15 of the base 10. Around the top of the fire pot 18 is formed a channel 24 which extends all the way around the fire pot and along the top of the wings 20 to the front edges 23.

It will be noted that the left side of the opening formed between the wings 20 is provided with an offset 25 to make room for the water coils 26, which are directly above same.

It will also be noted that the space between the wings 20 now constitutes the passage through which fuel 27 can be fed into the fire pot without dropping same into the fire, as is the usual practice where the fire pot is a complete cylinder.

In practice it is desirable to strengthen the junction of the wings 20 and the fire pot 18 by ribbing or thickening the casting at that point.

Above the fire pot 18 is placed an upper fire pot section 28 which conforms closely to the shape of the present feed section of existing furnaces. The lower edge of the section 28 is provided with a tongue 29 which extends into the channel 24. Obviously, there is now no need for an opening into the section 28, but the section 18 is provided with the double doors 30 and 31, the door 31 being provided with a damper 32 which can be controlled from the floor above by a chain 33 as is now the practice.

The outer casing 34 is bolted against the edges 15 and 23 and rests upon the base ring 35, which completely encloses the heating section of the furnace.

The usual cold air inlet 36 is of course placed near the bottom of the section 34 and will admit cold air to the under side of the base 10, not only carrying away its heat but protecting same against destruction by over-firing, and since the ability of a furnace to circulate air depends largely upon the difference in temperature between the air at the point of inlet and outlet of the furnace, it

can be seen that this function will be performed in the best possible manner, owing to the fact that the cold air is taken directly into the furnace and almost instantly heated causing same to rise rapidly and naturally pass out to the rooms being warmed in a relatively short space of time, causing an ideal circulating action.

It will also be noted that fuel in the form of wood 27 can be placed directly upon the floor or base 10 in full sight of the operator, and also that there is no tendency to hang up on the side walls, as must be the case where the fire pot is a complete tapering cylinder.

It can be seen that by permitting the air to pass underneath the fire box that the heat radiating area of the furnace is greatly increased, the result being a transfer of the heat from the fuel to the air being warmed without super-heating of any portion of the air or furnace. In other words—all of the heat extracted from the fuel is distributed over a relatively large area of metal from which it is carried away by the passing air currents. The gaseous products of combustion escape from the fire pot 28 through the smoke outlet pipe 27 which passes through the outer casing 34 and connects directly with the fire pot 28.

I claim:

1. A wood burning furnace having a base constituting a floor upon which the fuel is burned, a circular fire pot mounted on said base, said fire pot having an opening in the side thereof, said opening having parallel vertical sides the full height of the fire pot through which fuel can be fed thereto, and a closure for said opening.

2. In a wood burning furnace, a circular fire pot having opposite sides thereof flattened along the lower edges and converging to form a pair of straight bottomed edges, and a pair of extensions integral with said fire pot forming an entrance thereto in continuation of said lowermost side edges and extending the full height of said fire pot, said extensions lying parallel to each other in vertical positions.

3. A base for wood burning furnaces consisting of a flattened surface upon which wood can be burned, means for elevating said flat surface for the circulation of air under said base, a fire pot section constituting a frusto-conical member mounted on said base having the lower edges thereof flattened to form a pair of parallel bottom edges and having vertical extensions thereon forming continuations of said parallel edges extending the full height of said fire pot, and connecting means between said fire pot and base.

4. In a furnace the combination of a circular fire pot having parallel wing walls forming an opening on one side thereof for the

insertion of fuel extending the full height of the fire pot section, a fire door forming a closure for said opening, and a casing enclosing said fire pot section.

5. A fire pot section for furnaces consisting of a frusto-conical member having its larger end uppermost and having one side thereof provided with an opening extending the full height of the fire pot, said fire pot having a pair of parallel wings formed along the sides of said opening, the lower portion of said conical part having angularly flattened faces formed thereon the lower edges of which form continuations of the lower edges of said wings, the entire top edge of said cylindrical section and wings having a continuous channel formed therein.

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