

F. PROUDFOOT.
Fire-Places.

No. 139,813. x

Patented June 10, 1873.

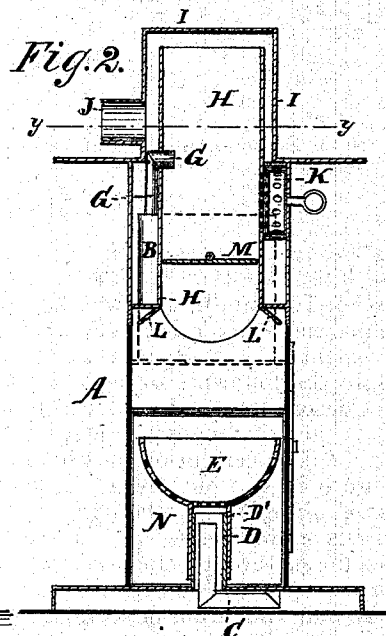
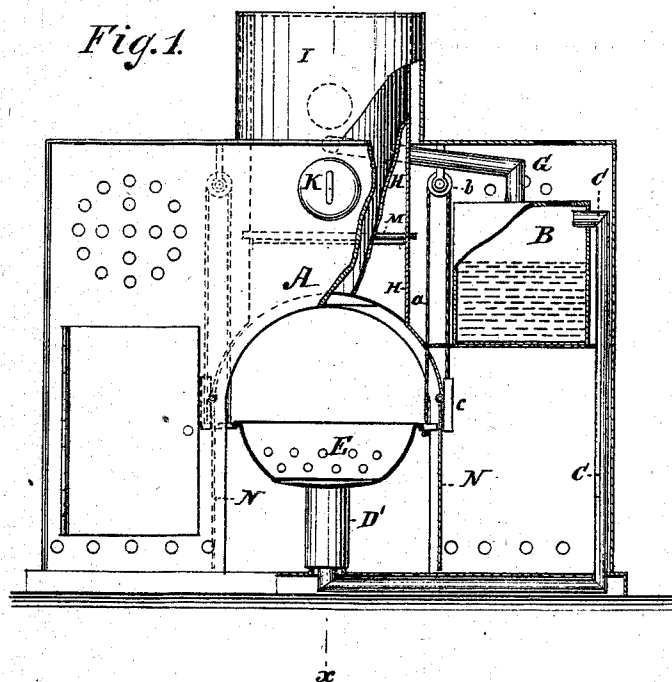
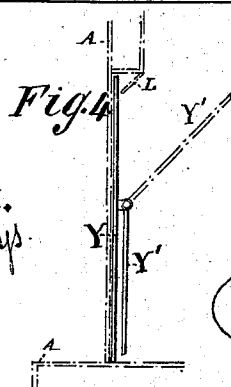
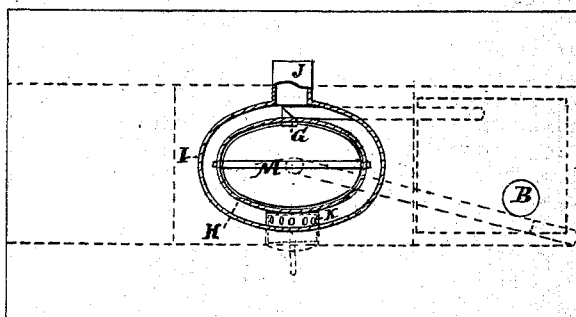


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

FREDERICK PROUDFOOT, OF TORONTO, CANADA.

IMPROVEMENT IN FIRE-PLACES.

Specification forming part of Letters Patent No. **139,813**, dated June 10, 1873; application filed January 25, 1873.

To all whom it may concern:

Be it known that I, FREDERICK PROUDFOOT, of Toronto, in the Province of Ontario, Canada, have invented a new and useful Improvement in Fire-Places; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a front elevation, partly in section, of a fire-place embodying my invention. Fig. 2 is a transverse central section of the same taken through the line *xx*. Fig. 3 is a plan or top view of the fire-place, with the smoke-flue and drum in section. Fig. 4 is a detail view illustrating the detachable fire-back with its hinged deflecting-plate.

The invention consists in the provision of a suspended fire or fuel basket located in the chamber of the fire-place, and possessing a tubular shank which is adjustable on a stationary tubular post, said basket being also provided with counter-balance weights to cause the same to be elevated into the chimney when the fuel is removed. The invention also consists in the use or combination with such a fire-place of a steam-generating boiler or tank and pipes to convey steam to the fire-basket for aiding the combustion of the fuel while the surplus steam is conveyed to the dome for radiation and finally to the chimney. The invention also consists in the provision of a detachable metallic back or panel for application to either the front or back of the fire-place to convert the latter into a single fire-place, said detachable back being provided with a hinged shield or fire-back susceptible of being thrown and held at an angle to the fire for the outward deflection of the heat.

The fire-place designated by A may be constructed of terra cotta, clay, cast-iron, or other metals, and is provided with two fronts correspondingly alike, and is designed to be set into partition-walls of rooms, so that the fire can be fed and employed for heating two adjacent apartments. In one or both of the lateral chambers formed in the fire-place is situated a water-tank or boiler, B, for the generation of steam by the heat from the fuel. Said tank is provided with suitable water induction and eduction orifices, and may also

be provided with faucets or stop-cocks for drawing off hot water when desired. A sufficient amount of the steam generated in the boiler B is conveyed by means of a pipe, C, beneath the fire or fuel basket or grate E for aiding the combustion of the fuel. Said fire-basket is suitably perforated, or it may be made of a skeleton form, and is provided with a tubular shank, D', which is fitted and slides on a vertical tubular post, D, secured to the base-plate of the fire-place. The discharge end of the steam-pipe C extends up into said tubular post D, and terminates immediately below the bottom of the fire-basket, as shown in Fig. 2. The tubular shank of the fire-basket is provided with a suitable number of openings, so as to enable the same to be adjusted vertically and retained at any desired height by means of a pin or bolt passed through either one of said openings over the upper end of the tubular post D.

It is desirable, when the fire place is not in use, to have the fuel-basket or grate elevated into the mouth of the chimney or smoke-flue so as to be out of the way and concealed from view; and for effecting this result I suspend the same from chains, cords, or ropes *a*, passing over pulleys *b*, and carrying weights *c*, which, when the fuel is removed from the fire-basket, will counterbalance the weight of the same, and thus serve to draw it up into the chimney. The basket or grate may also be provided with tongues or projections which travel in slotted guides applied to the sides of the fire-chamber.

The products of combustion from the fire pass into the flue H, which is located immediately above the fire-basket, open at both ends, and surmounted at its upper end by a drum or closed hood I, which is so arranged as to leave an annular space or chamber between it and the flue, as shown.

For aiding the draft I conduct a steam-pipe, G, from the boiler into the flue H for discharging steam above the fire. It will, of course, be obvious that suitable cocks may be arranged in the two steam-pipes for regulating or entirely arresting the flow of steam. The products of combustion escaping into the flue H are discharged at its upper end into the annular space between the flue and drum I,

thus creating a downward draft for causing the heat to be more effectually utilized before its escape through the pipe J into the chimney. A suitable damper, M, situated in the throat of the flue H, is employed for confining the heat in the fire-place when desired. At one or both sides of the central fire-chamber are arranged hinged doors M, which are capable of being thrown upward into the lateral hot-air chambers of the fire-place for enabling wood or fuel in long lengths to be burned in the fire-chamber. A register, K, is arranged in proper relation to the flue H, and with a hot-air space which surrounds the fire-chamber and communicates with the room for permitting the heated air to be conducted into said space, direct from the flue H, or cool air in summer, as is obvious. Said register is in the present instance composed of a cylindrical shell, perforated on its periphery and inner end, and combined with a correspondingly perforated seat and wall of the flue H for conducting the hot or cool air into the air-space surrounding the fire-chamber when the openings are caused to register with each other.

As above described, the fire-place possesses a fire-chamber opening into two apartments, but when it is desired to form a single fire-place, I close one of the fronts by means of a panel or back, Y, which is inserted into and retained in position by means of caps or ledges L at the upper end of the fire-chamber. For deflecting the heat into the room, I apply to the back of said shield Y a hinged plate, Y',

which is susceptible of being thrown at any desired angle in relation to the fire for performing the functions specified.

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

1. The fire-basket or grate E, provided with a tubular shank, D', adjustable on the hollow post D, and combined with suitable fastening devices for retaining it at any desired elevation, as and for the purpose set forth.

2. The fire-basket or grate E suspended by chains carrying counter-balance weights, and combined with the tubular shank D' and post D, as and for the purpose specified.

3. In a fire-place constructed as described the water-tank or steam-boiler B, and the pipes C G, suitably arranged to convey the steam to the fire-basket and to the smoke-flue or chimney, as and for the purpose set forth.

4. In a double-front fire-place, the detachable back or shield Y, provided with a hinged plate, Y', susceptible of being thrown at an angle to the fire for deflecting the heat into the room, as shown and described.

5. In a fire-place constructed as described, the hinged door or doors N, arranged in relation to the fire chamber and lateral chambers of the fire-place in the manner shown, and for the purpose specified.

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