

UNITED STATES PATENT OFFICE.

AUGUSTIN R. PEALE, OF PHILADELPHIA, PENNSYLVANIA.

STOVE OR RANGE.

SPECIFICATION forming part of Letters Patent No. 616,726, dated December 27, 1898.

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To all whom it may concern:

Be it known that I, AUGUSTIN R. PEALE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Stoves or Ranges; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of stoves or ranges which are equipped with water-backs, and it contemplates providing such stoves or ranges with a water-arm communicating with the water-back and extending laterally therefrom into the fire-box, the said arm having for its purpose to accelerate the heating of the water in the back and being adapted to be readily connected to and disconnected from the water-back.

With the foregoing in view the invention will be fully understood from the following description and claim when taken in conjunction with the annexed drawings, in which—

Figure 1 is a vertical section of a stove equipped with my improved water-arm. Fig. 2 is a plan view of the water-arm removed from the stove; and Figs. 3 and 4 are sections of the same, taken in the planes indicated by the lines *xx* and *yy*, respectively, of Fig. 2.

In the said drawings similar letters designate corresponding parts in all of the views, referring to which—

A designates a stove having a water-back B, which is designed to be connected with a source of water-supply and with a domestic boiler in the ordinary manner, and C designates my improved water-arm, which comprises a casing *a* and a horizontally-disposed partition *b*. The casing *a* of arm C is preferably of T form, with the inner end of its stem *c* communicating with the interior of the water-back B and its head *d* resting in the fire-box of the stove. The horizontal partition *b*, which rests midway of the height of the casing *a*, so as to divide the same into upper and lower chambers, is also preferably of T form and extends from the inner end of the stem *c* to points adjacent to the ends of the head *d*, so as to afford the passages *e*.

(See Fig. 4.) In virtue of this construction it will be seen that when the stove is in operation the cold water from the lower portion of the water-back will enter the lower portion of the water-arm and will traverse the same until it reaches the passages *e*, when it will pass upwardly through said passages *e* and through the upper portion of the water-arm—that is to say, above the partition *b* back into the water-back. This circulation of the water will be maintained so long as the stove is in operation, and since the water is compelled to traverse the lower side of the arm and said arm is directly above the fire in the fire-box it will be seen that the water will be very quickly and highly heated and kept in such state.

In the preferred embodiment of my invention the casing *a* is not only of T form, but the end of its stem *c* is screw-threaded, as indicated by *f*, and is connected to the inner wall of the water-back by screwing it into a threaded aperture *g* therein. This mode of connection permits of the water-arm being readily connected to stoves of the ordinary construction, it being simply necessary to tap the wall of the water-back, as indicated by *g*, and screw the end of the arm into the same. This mode of connection is also advantageous, because the water-arm may be readily removed and cleansed of sediment and as readily replaced when desired.

The T form of the casing is advantageous because it affords a considerable heating-surface and at the same time permits of the water-arm being connected to the wall of the water-back in the manner described—*i. e.*, by being screwed into a threaded aperture therein. Said T form of casing is further advantageous because its head serves as a handle for the convenient turning of the arm by hand incident to the connection and disconnection of the same. This latter is an important advantage, for it will be appreciated that if it were necessary to employ a wrench to turn the stem of the water-arm in and out of the screw-tapped aperture *g* the manipulation of the wrench, because of the location of the water-arm, would be attended with considerable difficulty.

The T form of water-arm described is further advantageous because it affords a large

heat-absorbing surface and yet extends but a slight distance into the fire-box of the stove.

It will be appreciated from the foregoing that while exceedingly cheap, simple, and easily applicable to ordinary stoves my improved water-arm is calculated to materially increase the efficiency of a stove as a water-heater and this without diminishing the capacity of the fire-box or interfering with the operation of any part of the stove.

I am well aware that a range-boiler having a threaded aperture and a screw-tapped water-arm taking into said threaded aperture and extending into the fire-box of the range is broadly old, and I therefore make no claim to the same.

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

The combination with a stove comprising a fire-box, and a water-back having a threaded aperture in its wall contiguous to the fire-box; of the water-arm described arranged in

the fire-box and consisting essentially of the casing having one of its ends exteriorly threaded and screwed into the aperture of the water-back wall and a T-head at its opposite end whereby its heat-absorbing surface is increased and a handle is formed for the convenient turning of the arm, and a horizontal partition of T form arranged in the horizontal center of the casing and extending the full width of said casing and from the inner end thereof to points adjacent to the ends of the T-head so as to divide the casing into upper and lower chambers and form the passages *e* connecting the same, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

AUGUSTIN R. PEALE.

Witnesses:

AUGUSTIN RUNYON PEALE, Jr.,
JOHN M. WILBOUR.