No. 646,779. Patented Apr. 3, 1900.

W. J. WOOD.

WATER BACK FOR STOVES OR RANGES.

(Application filed Dec. 8, 1899.)

(No Model.)

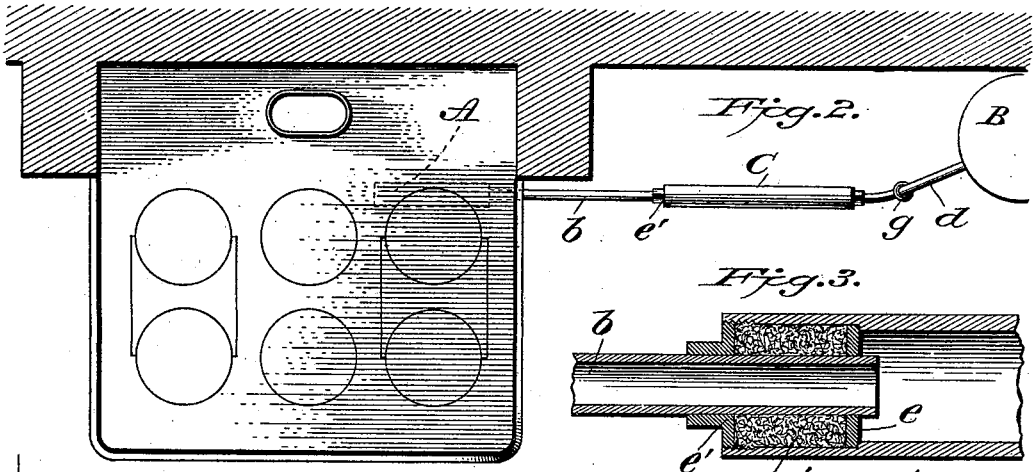


Fig. 1.

Fig. 2.

Fig. 3.

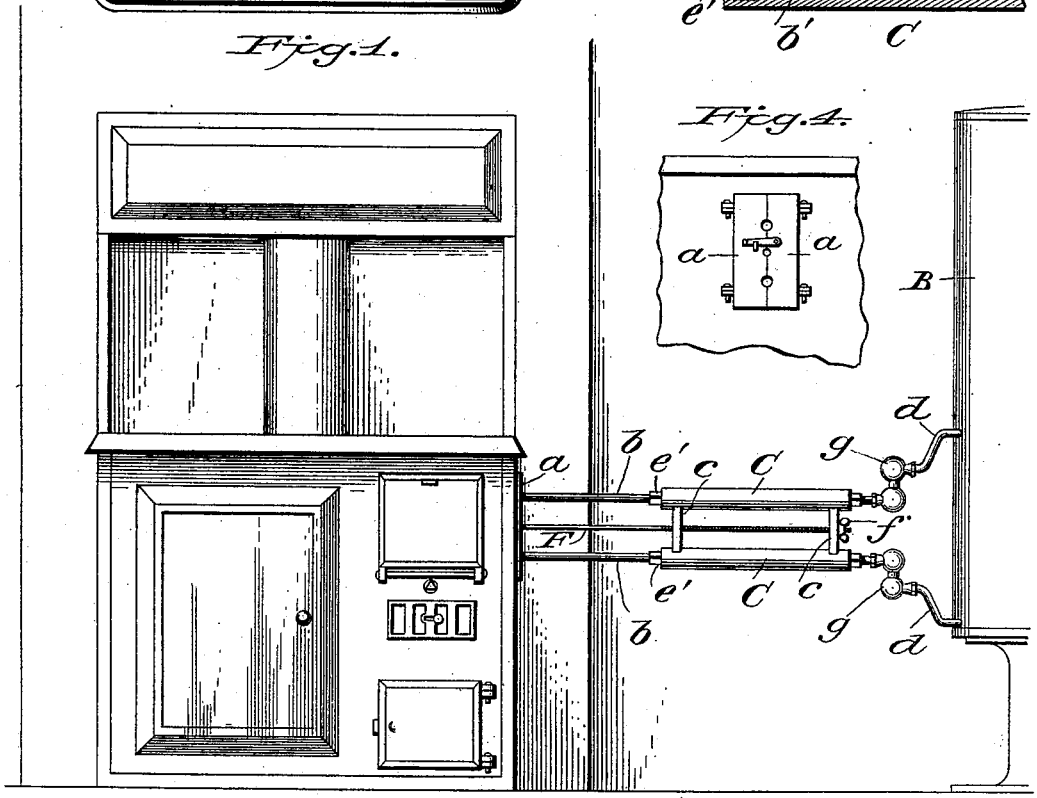
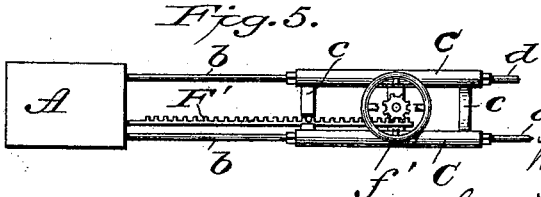


Fig. 4.

Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

WALTER J. WOOD, OF ATLANTA, GEORGIA.

WATER-BACK FOR STOVES OR RANGES.

SPECIFICATION forming part of Letters Patent No. 646,779, dated April 3, 1900.

Application filed December 8, 1899. Serial No. 739,687. (No model.)

To all whom it may concern:

Be it known that I, WALTER J. WOOD, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Water-Backs for Stoves or Ranges, of which the following is a specification.

This invention relates to improvements in stoves and furnaces, the object being to provide means whereby a water-back of a stove or range can be readily removed from the fire-pot without the necessity of separating or disconnecting the water-supply pipes; and with the above object in view my invention consists in the combination, with a water-back, stand-boiler, and connecting-pipes, of a telescopic or sliding connection for the supply and exit pipes, whereby when the coupling is contracted by sliding one part of the same within the other part the water-back may be removed from the fire-pot of the stove, which permits the same to be used with safety in case of a failure of the water-supply or when the water in the water-back, stand-boiler, or pipes is frozen.

The invention further consists in the construction and combination of the parts, as will be hereinafter set forth, and specifically pointed out in the claims.

In the drawings which form a part of this specification, Figure 1 is a front elevation showing means constructed in accordance with my invention for connecting a water-back of a stove or furnace to a stand-boiler. Fig. 2 is a plan view. Fig. 3 is a detail sectional view of a part of the sliding joint or coupling which forms a part of the piping between the water-back and stand-boiler. Fig. 4 is a detail view of a part of the end of a stove, showing one form of door which closes the opening through which the water-back is inserted and removed; and Fig. 5 is a side elevation showing a modification of the means for operating the telescopic joint or coupling between the water-back and stand-boiler.

The fire-pot of the stove or range is constructed to receive a water-back of any suitable type made so as to admit of its removal, and in order that the water-back may be separated from the stove one of the side walls thereof is provided with an opening which is closed by a door *a*, which may be constructed as shown in Fig. 4—that is to say, the door is made of two sections, which are hinged to the side wall of the stove, so that when swung toward each other they will close an opening through the side wall, which is of an area to admit the water-back, and said doors are provided with means for holding them closed and with recesses which abut against the supply and exit pipes.

The water-back A is connected to a stand-boiler B by the pipes and telescopic connections, as shown, and said boiler receives water from a supply under pressure through pipes in the usual manner. From the water-back A extend parallel pipes *b b*, which enter concentric tubes C C, said tubes being coupled to each other by cross-pieces or bridges *c c*. The concentric tubes are connected to pipes *d d*, which lead to the stand-boiler. A simple and effective manner of constructing the packing-boxes *b'* is to ream out the ends of the tubes C C to provide a shoulder or bearing for a disk *e* and thread internally the ends of said tubes, so that they will receive a head *e'*, between which head and the disk is placed a packing. By this construction when the head *e'* is turned the packing can be compressed and a water and steam tight joint is provided, which will permit the pipes being slid or telescoped within the concentric tubes. As the packing necessarily presses with considerable force upon the pipes *b*, power will be required to move the pipes, and in order that the water-back may be moved from the fire-pot and stove without the employment of tools or skilled labor I provide means for accomplishing this end, which means, as shown in Fig. 1, may consist of a bar or rod F, one end of which is attached to the water-back, while the other end is provided with a thumb-nut or turn-button *f*, which works upon a threaded portion of the rod and bears against one of the bridge-pieces, the bridge-pieces having apertures through which the rod F passes.

Another means for withdrawing the water-back is shown in Fig. 5, and when such construction is employed a rack-bar F' is used, the teeth thereof being engaged by a cog-wheel mounted on a shaft which is suitably supported by the concentric pipes C, the shaft having a hand-wheel *f'*.

The pipes *d* between the concentric tubes C and the stand-boiler are preferably provided with swinging or turning couplings *g g*, which will permit the water-back being swung horizontally when removed from the stove or range, and when the opening and the door through the side wall of the stove are of sufficient size these couplings permit the water-back to be moved toward the center of the fire-pot, so that the fire can be made on both sides of the water-back when it is desired that a large amount of hot water may be supplied quickly.

This improvement is susceptible of numerous modifications and the advantages are obvious, as it provides means whereby the stove is not thrown out of use by reason of a failure of the water-supply.

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

1. In a stove or range, the combination with a water-back having pipes which project therefrom, of a stand-boiler having pipes and tubes which are coupled thereto, the tubes being of a greater diameter than the diameter of the pipes which project from the water-back, the length of the pipes and tubes being greater than the length of the water-back, whereby the water-back may be removed from the stove by sliding the pipes attached thereto into the tubes, substantially as set forth.

2. In a stove or range, the combination with a water-back having parallel pipes which project therefrom, of a stand-boiler provided with parallel tubes connected at one end to the boiler by pipes provided with interposed swinging couplings the other ends of said tubes being provided with packings through which the pipes from the water-back enter the tubes, the pipes and tubes being of a greater length than the length of the water-back, and means attached to the water-back which means is engaged by means carried by the tubes for effecting the withdrawal of the fire-back from the stove or range, substantially as shown.

3. The combination with a range or stove having an opening through the side wall thereof which leads to a fire-pot, a stand-boiler and water-back, pipes connecting the stand-boiler with the water-back, of telescopic couplings comprising tubes having packings at one end which tubes are maintained parallel to each other and receive the smaller pipes which extend from the water-back, substantially as shown.

4. In combination with a stove or range having an opening through one of the side walls thereof and doors for closing the opening, of a water-back having parallel inlet and outlet pipes, of a stand-boiler having pipes with swing-joints, parallel tubes connected to the swing-joints, said tubes being of a larger diameter than the pipes which project from the water-back and packing through which the pipes pass carried by the ends of the tubes, substantially as shown, whereby the water-back may be positioned in or removed from the fire-pot without disconnecting the water-supply pipes.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WALTER J. WOOD.

Witnesses:
C. B. BOOTENREITER,
W. H. ZACHRY.