

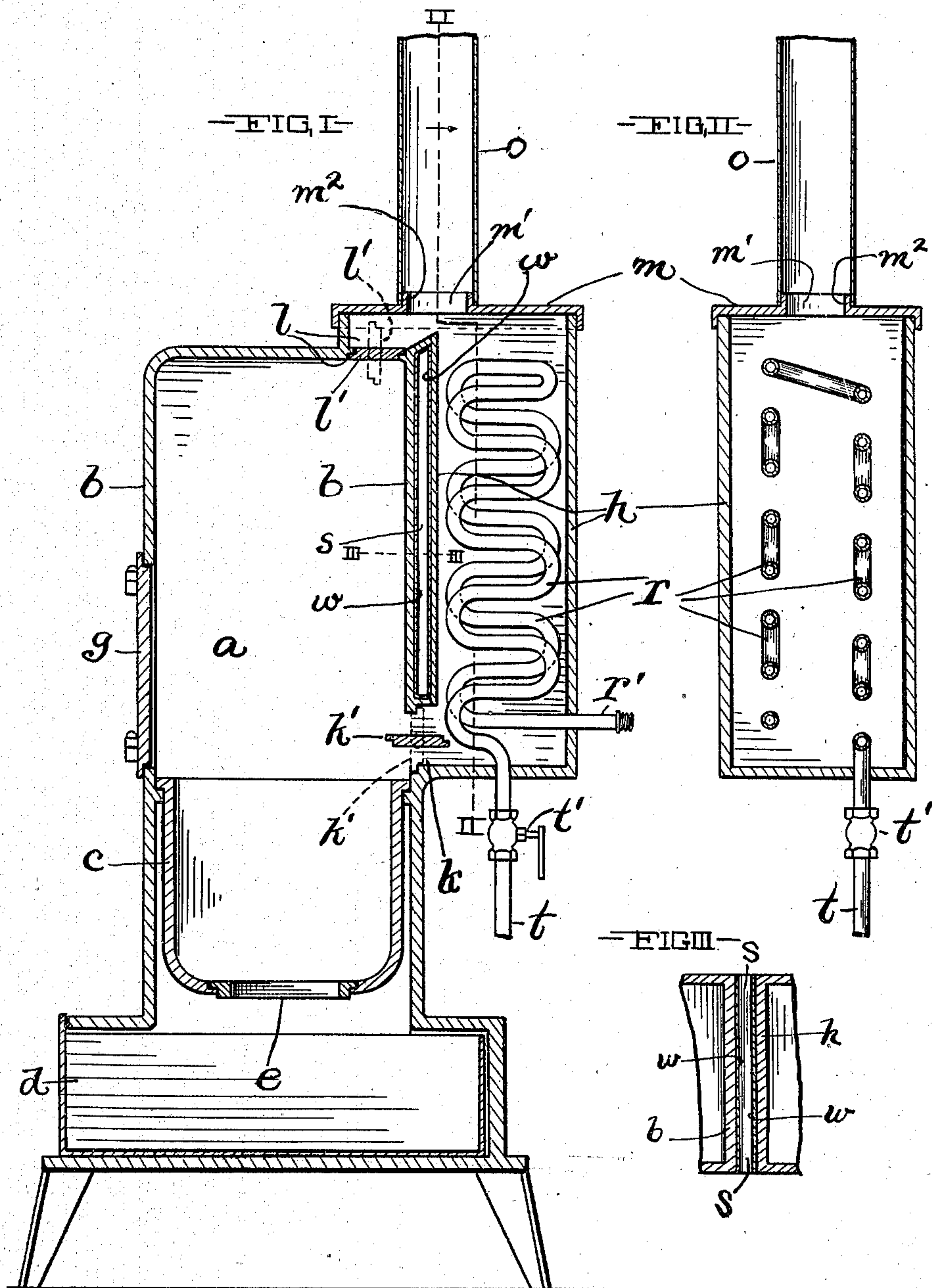
No. 681,245.

Patented Aug. 27, 1901.

A. MUIR.  
HEATING STOVE AND ATTACHMENT.

(Application filed Jan. 7, 1901.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALEXANDER MUIR, OF CLEVELAND, OHIO.

## HEATING-STOVE AND ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 681,245, dated August 27, 1901.

Application filed January 7, 1901. Serial No. 42,357. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER MUIR, a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Heating-Stoves and Attachments; and I do hereby 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 pertains to make and use the same.

My invention relates to improvements in heating-stoves and attachments, and especially to a water-heating attachment for a stove more especially designed for use in liveries, tailor-shops, laundries, and other shops where hot or warm water is used at intervals during the day.

This invention consists, essentially, in certain peculiarities of construction and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure I is a side elevation, largely in vertical section, of a stove provided with my improvements. Fig. II is a vertical section on line II II, Fig. I, looking in the direction indicated by the arrow. Fig. III is a transverse section in detail on line III III, Fig. I.

Referring to the drawings, *a* designates the fuel-receiving and combustion chamber of a stove that is formed in any approved manner by a suitably-constructed casing *b*, and the fire-pot *c* is placed within the lower portion of the casing *b*. The fire-pot *c*, the ash-pit *d* below the said pot, the grate *e* between the ash-pit and the fire-pot, and the door *g*, affording access to the chamber *a*, are of any approved form and constitute no part of the invention that forms the subject-matter of this application.

The casing *b* of the stove extends a suitable distance above the fire-pot, and a vertically-arranged drum *h* is formed upon and at one side of the casing *b*. The drum *h* extends from the fire-pot to the top of the casing *b*. A short duct *k* connects the lower end of the chamber of the drum *h* with the chamber *a* next above the fire-pot. A short duct *l* extends upwardly from the chamber *a* at the top of the casing *b* next to the drum *h*. A cover *m* forms the top of the duct *l* and the top of the drum *h* and is removable from the

said duct *l* and the said drum *h* to afford access to the interior of the said parts *h* and *l*. The cover *m* has an upwardly-flanged aperture *m'*, in open relation with the drum *h* and the duct *l*, and the smoke-flue *o* of the stove is slipped over the flange *m'* around the said aperture. A suitably-applied and suitably-operated damper *l'* is arranged within and adapted to interrupt or establish communication through the duct *l*, according as it is closed or opened. A suitably-applied and suitably-operated damper *k'* is arranged within the duct *k* and adapted to establish or interrupt communication through the said duct, according as it is opened or closed.

By the construction hereinbefore described it is obvious that the products of combustion or heat arising from any burning fuel within the fire-pot *c* will when the dampers *k'* and *l'* are open and closed, respectively, as shown in solid lines, Fig. I, pass through the duct *k* into the drum *h* and thence to the smoke-flue, whereas when the said dampers *k'* and *l'* are closed and open, respectively, as shown in dotted lines, Fig. I, the products of combustion or heat will pass into the flue *l* and thence into the smoke-flue.

Within the chamber of the drum *h* is arranged a convolved water-pipe *r*, having its receiving end extending below the drum *h* and connected with the valved water-supply pipe *t* and having its discharging end extending laterally outside of the said drum *h*, as at *r'*. Practically the whole of the drum *h*, or at least the pipe-containing portion of the said drum, is arranged below the top of the stove, so that the products of combustion or heat do not have to travel far before reaching the pipe in the said drum during the operation of the drum, and water flowing through the pipe *r* is quickly heated, and the flow of water through the said pipe is regulated by the valve *t'* of the water-supply pipe *t*.

The drum *h* between the ducts *k* and *l* is separated somewhat from the casing *b* of the stove, so as to form an air-space *s* between the drum *h* and the casing *b*, which space communicates at opposite sides of the drum *h*, as shown in Fig. III, with the external atmosphere, and consequently participates in the establishment of a circulation of air all around the drum *h*, so as to prevent overheating.



ing of the pipe within the said drum when the drum is not in operation. Preferably the side walls of the open air-space *s*—that is, the opposing surfaces of the casing *b* and the drum *h*—are lined or covered with a layer *w* of asbestos or other suitable material that is light and fireproof and a good non-conductor of heat, and the said fireproof layers, obviously, are instrumental in preventing overheating of the casing or shell of the drum *h*.

What I claim is—

1. A stove having a combustion-chamber which is formed within the casing of the stove, and having, also, the following: a drum *h* arranged or formed at one side of the said casing and, in the main, below the top of the stove and extending downwardly to near the fire-pot; a water-conducting pipe-line extending through the drum; a duct connecting the lower end of the chamber of the drum with the combustion-chamber; a damper controlling communication through the said duct; a duct leading from the combustion-chamber upwardly from the top of the stove next to the drum; a damper for controlling communication through the last-mentioned duct; a cover *m* forming the top of the last-mentioned duct and the top of the drum, which cover has an aperture *m'* in open relation with the last-mentioned duct and the chamber of the drum, and the smoke-flue extending from the said aperture, substantially as and for the purpose set forth.

2. A stove having a combustion-chamber which is formed within the casing of the stove, and having, also, the following: a drum arranged or formed at one side of the said casing and, in the main, below the top of the stove and extending downwardly to near the fire-pot; a water-conducting pipe-line extending through the drum; a duct connecting the lower end of the chamber of the drum with the combustion-chamber; a damper controlling communication through the said duct; a duct leading from the combustion-chamber at the top of the stove; a smoke-flue in open relation with the last-mentioned duct and with the upper end of the chamber of the drum; a damper controlling communication through the last-mentioned duct; and the arrangement of the drum relative to the casing of the stove being such that an air-space *s* is formed between the opposing walls of the said drum and the said casing, substantially as and for the purpose set forth.

3. A stove having a combustion-chamber; the casing inclosing the said chamber; a drum arranged or formed at one side of the said casing and, in the main, below the top of the stove and extending downwardly to near the

fire-pot; a water-conducting pipe-line extending through the drum; a duct connecting the lower end of the chamber of the drum with the combustion-chamber; a damper controlling communication through the said duct; a duct leading from the combustion-chamber at the top of the stove; a smoke-flue in open relation with the last-mentioned duct and with the upper end of the chamber of the drum; a damper controlling communication through the last-mentioned duct; and a layer of fireproof material between the drum and the casing of the stove, substantially as and for the purpose set forth.

4. A stove having a combustion-chamber; a casing inclosing the said chamber; a drum *h* arranged or formed at one side of the stove-casing and largely below the top of the stove, and separated from the stove-casing to form an air-space *s* between the opposing walls of the drum and the stove-casing; a water-conducting pipe-line extending through the said drum; a duct connecting the lower end of the chamber of the drum with the combustion-chamber; a damper controlling communication through the said duct; a duct leading from the combustion-chamber at the top of the stove; a smoke-flue in open relation with the last-mentioned duct and with the upper end of the chamber of the drum; a damper controlling communication through the last-mentioned duct, and fireproof material lining or covering the opposing side walls of the aforesaid air-space.

5. A stove having a combustion-chamber formed within its casing and having, also, the following: a drum *h* arranged or formed at one side of and extending up and down the said casing substantially below the top of the stove; a water-conducting pipe-line arranged at an elevation below the stove-top and extending through the drum; a duct connecting the lower end of the chamber of the drum with the combustion-chamber; a damper controlling communication through the said duct; a duct leading from the aforesaid combustion-chamber at the top of the stove contiguous to and adjoining the upper end of the drum, the smoke-flue in open relation with the last-mentioned duct and with the upper end of the chamber of the drum at the junction of the said chamber and duct, and a damper controlling communication through the last-mentioned duct, substantially as and for the purpose set forth.

Signed by me at Cleveland, Ohio, this 3d day of January, 1901.

ALEXANDER MUIR.

Witnesses:

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