(No Model.)

F. W. ROBERTSHAW & J. M. COOPER.

GAS STOVE.

No. 526,791. Patented Oct. 2, 1894.

FIG. 1

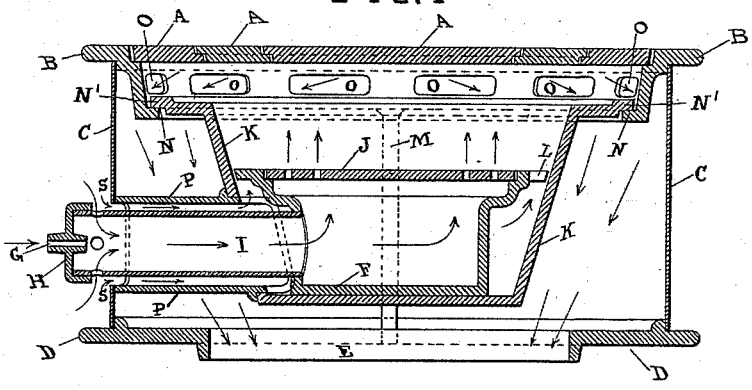
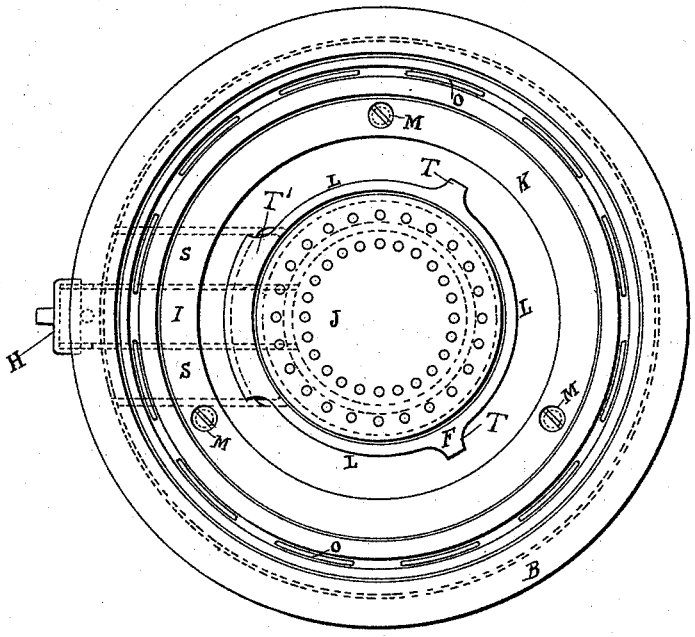


FIG. 2



WITNESSES:

Henry Thurmann

Charles E. King

INVENTORS

Frederick W. Robertshaw.

John M. Cooper.

By Benj. R. Catlin ATTORNEY.

UNITED STATES PATENT OFFICE.

FREDERICK W. ROBERTSHAW, OF PITTSBURG, AND JOHN M. COOPER, OF BELLEVUE, PENNSYLVANIA.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 526,791, dated October 2, 1894.

Application filed April 16, 1894. Serial No. 507,689. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK W. ROBERTSHAW, a resident of Pittsburg, and JOHN M. COOPER, a resident of Bellevue, county of Alleghney, State of Pennsylvania, have invented certain new and useful Improvements in Gas-Stoves; and we 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.

The invention relates to gas stoves for cooking, of the kind sometimes styled "summer stoves," and has for its object to provide a simple and economical device adapted to be used in combination with the pot hole and exit flues of an ordinary range or cook stove that will avoid the following objections to such devices as are now in most common use. Some of these latter discharge the products of combustion through openings in the skeleton or openwork tops and vitiate the air of the room in which they are situated. Others employ burners of the Argand type by which a considerable current of cold air is introduced through the center of the stove and delivered immediately below the center of any vessel seated in the pot hole above the burner with the effect to keep down the temperature at the point where the greatest heat is desired. This effect is aggravated by the draft which being situated laterally with respect to the central air supply tube draws the hot products aside in such manner as to permit the inflowing air, more or less of it, to pass above or by the products and strike the stove top or the vessel seated thereon. In yet another class the products of combustion are drawn down through a flue centrally situated in the burner with the effect to induce cool air to flow against the outer edge of the vessel occupying a pot hole above such burner.

By our improvement the introduction of cold air is avoided and all drafts of air around the bottom of the cooking vessel or against it are prevented. The products of combustion are all conducted to the range or stove flues connected with the chimney or other ventilating flue and heat remaining in said products after they have done their work in heating the cooking vessel is utilized to warm the air supply; and these several advantages are secured by a construction of great simplicity, durability and economy.

The invention consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings Figure 1 is a vertical central section. Fig. 2 is a plan.

Reference letters B and D denote respectively the top and bottom plates and C the body of the stove. The top plate supports a pot hole cover A preferably of the kind composed of annular sections surrounding a circular center. The top plate B also has a frusto-conical flange or skirt provided at its foot with an annular ledge N adapted to support a fire pot or casing K by means of a flange N'.

Bolts are denoted by M which connect the upper part of the casing K with the bottom plate D and hold them in fixed relation. These bolts through the medium of the flange N' and the ledge N, hold the top plate upon the body C and clamp the latter between the top and bottom plates as shown. These plates are provided with suitable shoulders to receive the body, and the bottom plate has a central opening provided with a rim to fit the pot hole of a stove or range.

F denotes a burner and J a burner plate. The latter in the present case is provided with two annular rows of burner perforations inclosing an imperforate central part of the plate. It is important that this central part have no perforations or relatively very few in order that an interior space above the same may be left free for the inward expansion and combustion of gas ascending through the annularly disposed burner openings.

T, T denote lugs and T' a stop plate which keep the burner centrally situated in the fire pot, the plate T' being also adapted to deflect inflowing air laterally as will be described.

I denotes a tube having a screw threaded connection with the burner and provided with air and gas inlets as usual in air and gas mixing attachments for gas burners.

P denotes a flattened tube or casing bolted

to the fire pot or casing K and fitted to an opening therein and to an opening in the body C.

S denotes an air inlet situated between tubes I and P and adapted to supply air to the space L between the walls of the fire pot and burner and ultimately to the outer part of the combustion chamber above the burner plate J. To prevent the air entering through space or conduit S from rising directly from the mouth of pipe P into the combustion chamber a deflecting or air-stopping plate T' is provided which deflects the larger part of the inflowing air laterally from the mouth of said tube by which means it will pass around the burner and be drawn upwardly on all sides thereof. This air is heated by contact with the tube P and casing K which are themselves heated by the waste products of combustion after their work upon any vessel seated in the pot hole or on the stove top. Said products escape through the oblong exits O and are drawn down around the casing K and tube or casing P thereby imparting to them heat which is conducted to the inflowing air as stated, resulting in great economy of heat and avoiding the possibility of cold air currents striking the stove top from within the stove.

Preferably the stove body will be made of sheet metal and the rest of the stove of cast metal, though the tubes and casings can also be made of sheet metal.

The tube I may be supported entirely from the burner and the air tube P from the casing K. In assembling the parts the tube P can be first bolted to casing K and then inserted with the latter through the opening in the top plate until said casing rests on the ledge N. The tube I can be subsequently screwed into the burner, or in some cases it may be first attached to the burner and then both inserted by properly tilting and pushing the tube out through tube P.

Having thus described our invention, what we claim is—

1. In a gas stove the combination of the top and bottom plates, the body, the casing K and burner F provided with a stop plate T' having an air heating chamber between them, with the gas and air inlet tube I and the air inlet tube P, the former communicating with the burner and the latter with said air space all substantially as set forth, whereby the impact of air currents on the top plate is avoided and whereby the preheating of air admitted for combustion is secured.

2. In a gas stove the combination of the body, the top and bottom plates, said top plate having a ledge N and exits O, the casing K, the burner having a perforated plate and air and gas inlets adapted to introduce the entire air and gas supply below said burner plate and below the level of the exits and the current of escaping gases, substantially as set forth.

3. In a gas stove the combination of the stove body, the top plate having a pot hole and cover and a frusto-conical body provided with exits situated near the outer edge of the cover, a burner plate having one or more annular rows of perforations surrounding an imperforate central part, and air and gas inlets adapted to deliver the entire air and gas supply below the level of said burner plate whereby cool air currents are kept from the top plate, substantially as set forth.

4. In a gas stove the body, the top and bottom plates, said top having exits O, a frusto-conical body and a ledge N, a casing K, and bolts N', whereby the casing and bottom plate are fastened together and the top and bottom plates clamped on the body, the burner F seated in the casing, the tube I supported in the burner, and the air tube P' supported by the casing K, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

FREDERICK W. ROBERTSHAW.
JOHN M. COOPER.

Witnesses:
HENRY WEISKETTLE,
WILLIAM WARDROP.