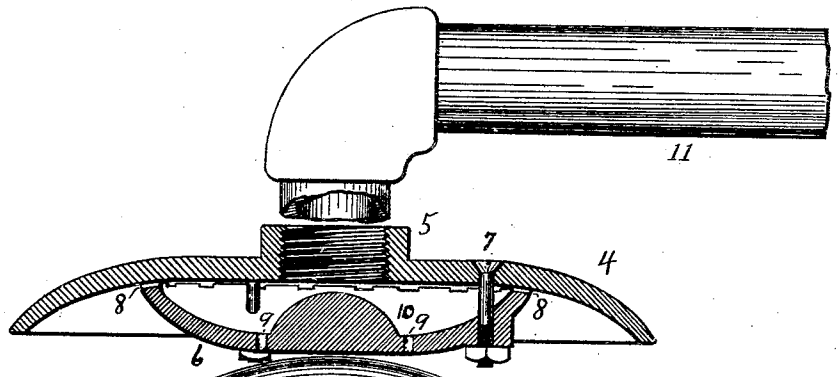
W. G. FRAZEUR.

GAS BURNER.

APPLICATION FILED JAN. 17, 1907.

931,051. Patented Aug. 17, 1909.

Fig. 1



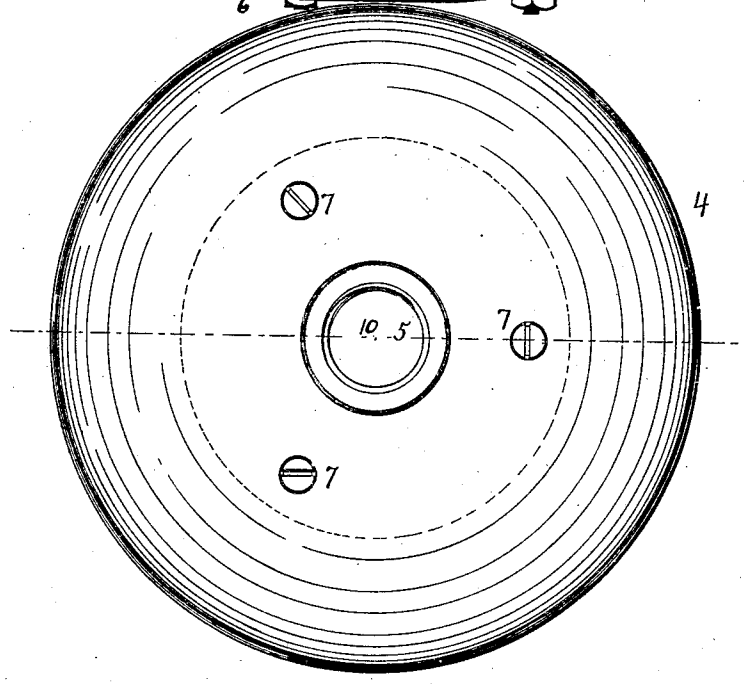
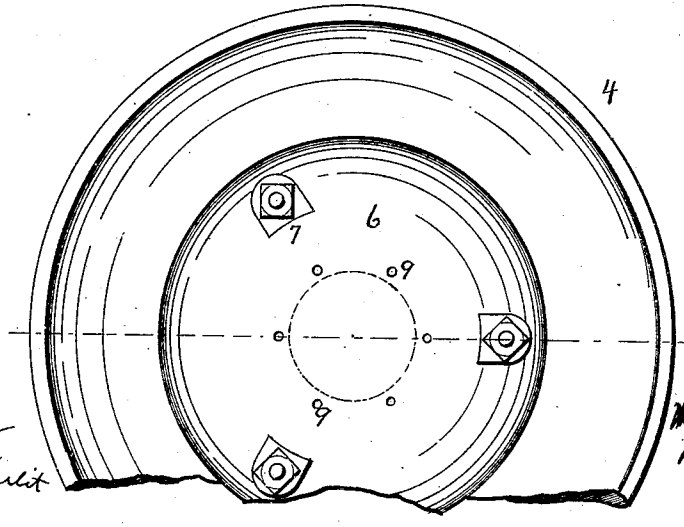


Fig. 2

Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

WALTER G. FRAZEUR, OF TOPEKA, KANSAS.

GAS-BURNER.

No. 931,051. Specification of Letters Patent. Patented Aug. 17, 1909.

Application filed January 17, 1907. Serial No. 352,792.

To all whom it may concern:

Be it known that I, WALTER G. FRAZEUR, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented a new and useful Improvement in Gas-Burners, of which the following is a specification.

The invention relates to gas burners adapted for use in stoves, furnaces, and the like; and is especially adapted to be put into any ordinary coal stove or furnace in converting the stove or furnace to the use of gas, instead of coal, as fuel. The invention is therefore a gas burner attachment for stoves, furnaces, and the like, and adapted for use in connection therewith.

Objects are: to improve generally upon gas burners, and as well upon gas burner attachments for stoves, furnaces, and the like; to simplify the construction of the burner itself, and also to provide a gas burner which may be more easily applied to an ordinary stove or furnace in converting same to the use of gas; to provide a burner adapted to produce a greater radiation of heat to the bottom portions of the stove than has heretofore been possible; to provide a burner which throws the flame downwardly and outwardly against the bottom and sides of the stove, in order to secure greater radiation from the lower part of the stove and thus prevent loss of heat through the flue; to provide a burner in which all the outlets shall be through the bottom and the inlet shall be from above.

The invention consists of the parts, improvements, and combinations herein set forth and claimed.

In the drawings accompanying and forming part of this specification and in the description thereof, I have shown my invention in its preferred form and the best mode of applying the principles thereof; but it is to be understood that I contemplate changes in form, proportions, and materials, the transportation of parts, and the substitution of equivalent members without departing from the spirit of the invention.

Figure 1 is a center sectional view of an improved gas burner constructed in accordance with my invention, showing a detached portion of the gas inlet pipe. Fig. 2 is a top view, and Fig. 3 is a bottom view, of the burner.

Like reference numerals indicate like or corresponding parts throughout the several views.

4 is a circular plate having convex upper and concave lower sides; and 5 is a centrally disposed opening into which the inlet pipe 11 may be fitted.

6 is a circular plate of about one-half the diameter of the larger plate 4, and having concave upper and convex lower sides. The two plates are secured together with their concave faces together by means of a number of bolts 7, 7, 7. Around the edge of the smaller plate are a number of notches which form slits 8, 8 when the two plates are secured together; also the smaller plate is perforated 9, 9, and is provided on its concave side with a centrally disposed dome-like deflector 10. When the plates are fastened together as described, a chamber is formed between them, to which the opening 5 forms an inlet and the slits 8 and perforations 9 form the outlets. It is an essential part of this invention that the large plate shall be above and the smaller plate below, and that the outlets shall be through the underside of the burner. It is preferable that the inlet shall be through the top plate, and it is important that said inlet shall be centrally disposed. The inlet pipe 11 may obviously be the mixer commonly used in gas-burners.

As the upper parts of the stove or furnace are usually made of thinner material than the lower parts, and as they are also more accessible, it is easier to attach my improved burner to a stove or furnace than it is to attach a burner in which the gas is brought in from underneath. With my improved burner all the flame is directed downwardly against the bottom portion and outwardly against the sides of the stove; instead of outwardly and upwardly; and hence a greater proportion of the heat is radiated to the lower portions of the stove. Also by diverting all the flames around the edge of the large plate the flames are directed against the sides of the stove. I thus avoid the necessity of the cumbersome heat retainers, the burner itself may be made of lighter material, the danger of the fire accidentally going out is much reduced, and the radiation to the lower part of the stove is made more direct from the flame than where the flames are directed outwardly and upwardly. The concave lower face of the large plate is

material for the purpose of confining and directing the flame and heat downwardly. The discharge openings being all through the under side of the burner, they are not liable to become obstructed with dirt or foreign matter falling therein from the outside.

What I claim is:

1. A gas burner attachment for stoves, furnaces, and the like, comprising a circular upper plate having convex upper and concave lower sides and a centrally disposed opening; an inlet gas pipe fitted from above into said opening; a perforated circular lower plate of smaller diameter than the upper plate, having concave upper and convex lower sides, and having a series of notches or slits around its edge; a dome-like deflector centrally disposed on the concave side of the lower plate; and bolts for securing said two plates together; said two plates being secured together concentrically with their concave faces together and forming a chamber between them to which said opening forms the inlet and said perforations and slits form the outlet.

2. A gas burner attachment for stoves, furnaces, and the like, comprising a circular upper plate having convex upper and concave lower sides; a perforated circular lower plate of smaller diameter than the upper plate, having concave upper and convex lower sides, and having a series of notches or slits around its edges; said two plates being secured together concentrically with their concave faces together and forming a chamber between them; a gas pipe leading concentrically into said chamber, and a dome-like deflector within said chamber and opposite said inlet gas-pipe.

3. A gas burner attachment for stoves, furnaces, and the like comprising the combination of a circular upper plate and a circular lower plate concentrically secured together with a chamber therebetween; an inlet pipe leading into said chamber, and gas outlets arranged around the outer edge of the lower plate and below the upper plate; the upper plate being of larger diameter than the lower plate, and its under surface beyond the edge of the lower plate extending outwardly in a gentle downward slope from said gas outlets.

4. A gas burner attachment for stoves, furnaces, and the like comprising the combination of a circular upper plate and a circular lower plate, bolts securing said plates concentrically together with a chamber therebetween; an inlet pipe leading into said chamber, and gas outlets arranged around the outer edge of the lower plate and below the upper plate; the upper plate being of larger diameter than the lower plate and forming a broad flange extending out beyond the edge of the lower plate, and the under surface of said flange forming a guide for the burning gas extending outwardly and slightly downwardly from said gas outlets.

5. A gas burner attachment for stoves, furnaces, and the like comprising the combination of an upper and a lower plate secured together with a chamber therebetween; an inlet pipe leading into said chamber, and gas outlets at the edge of the lower plate and under the upper plate, said upper plate extending out beyond the lower plate and forming a broad flange extending out beyond the gas outlets, the under face of said broad flange forming a guide for the burning gas extending outwardly and slightly downwardly from said gas outlets.

In testimony whereof, I have hereunto signed my name in the presence of witnesses.

WALTER G. FRAZEUR.

Witnesses:
Z. T. FISHER,
C. G. ROSEN.