

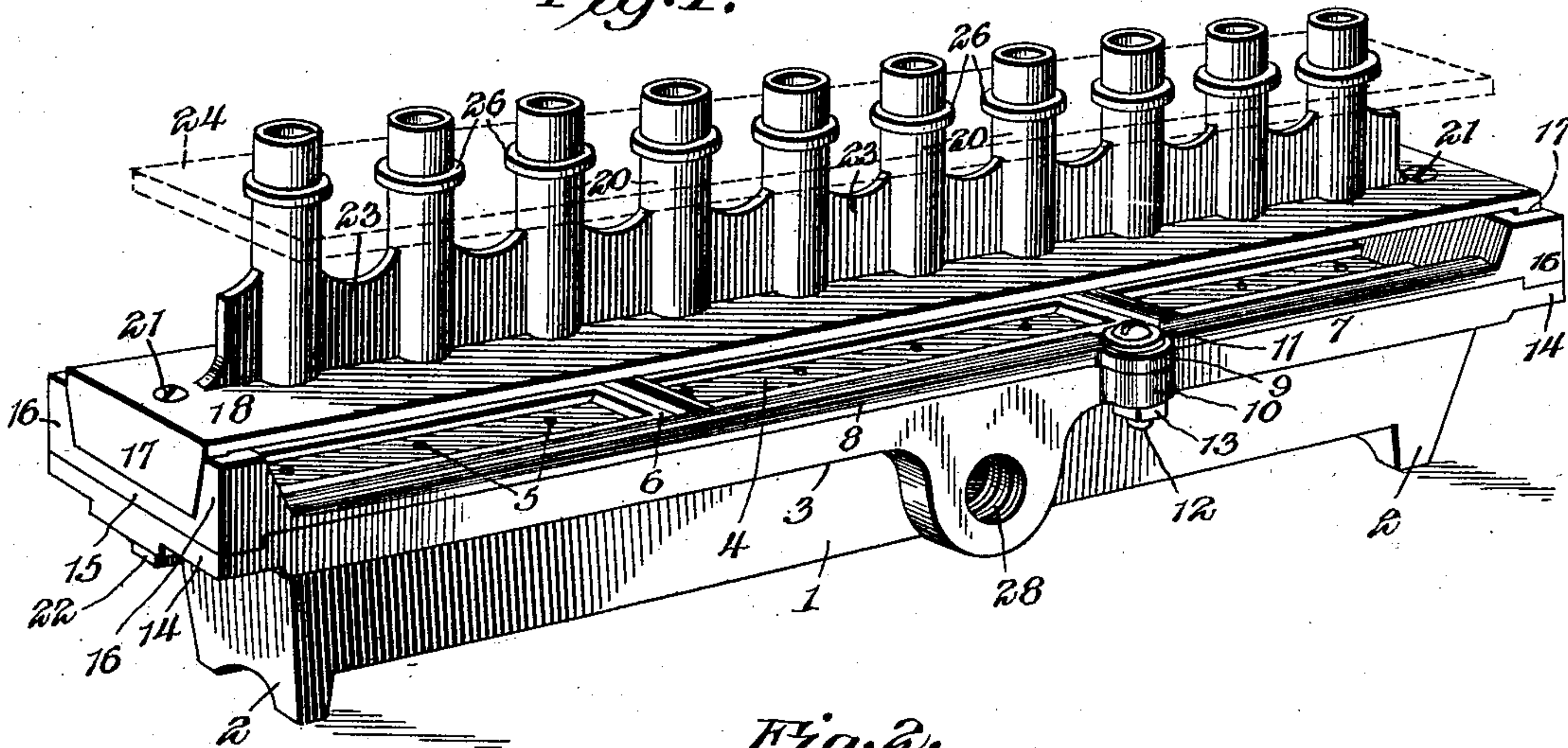
No. 720,303.

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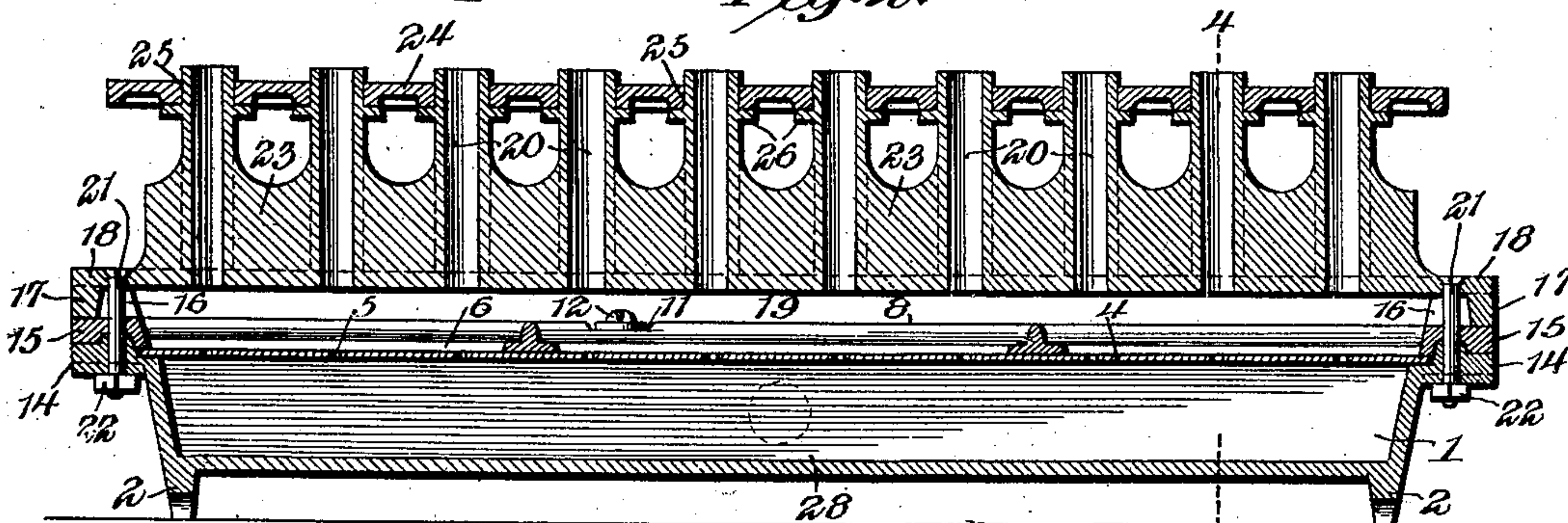
C. F. WILSON.  
GAS BURNER FOR STOVES.  
APPLICATION FILED MAY 28, 1902.

NO MODEL.

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

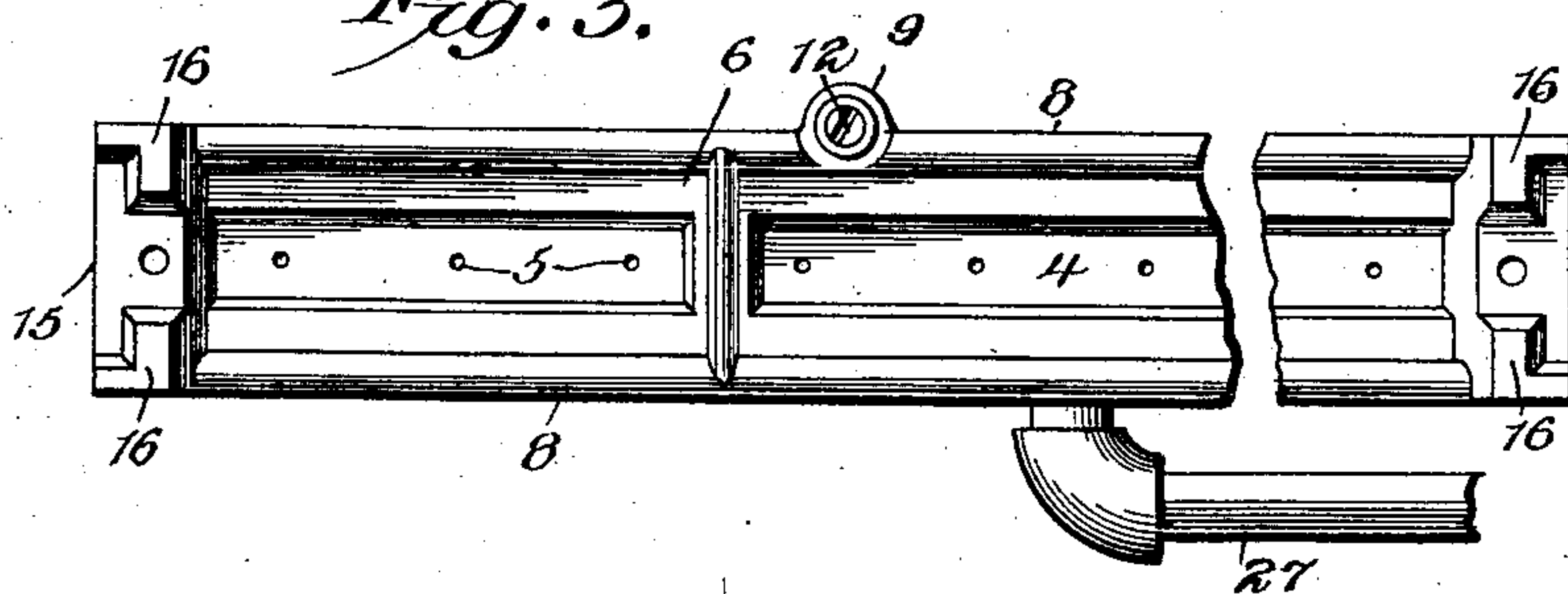
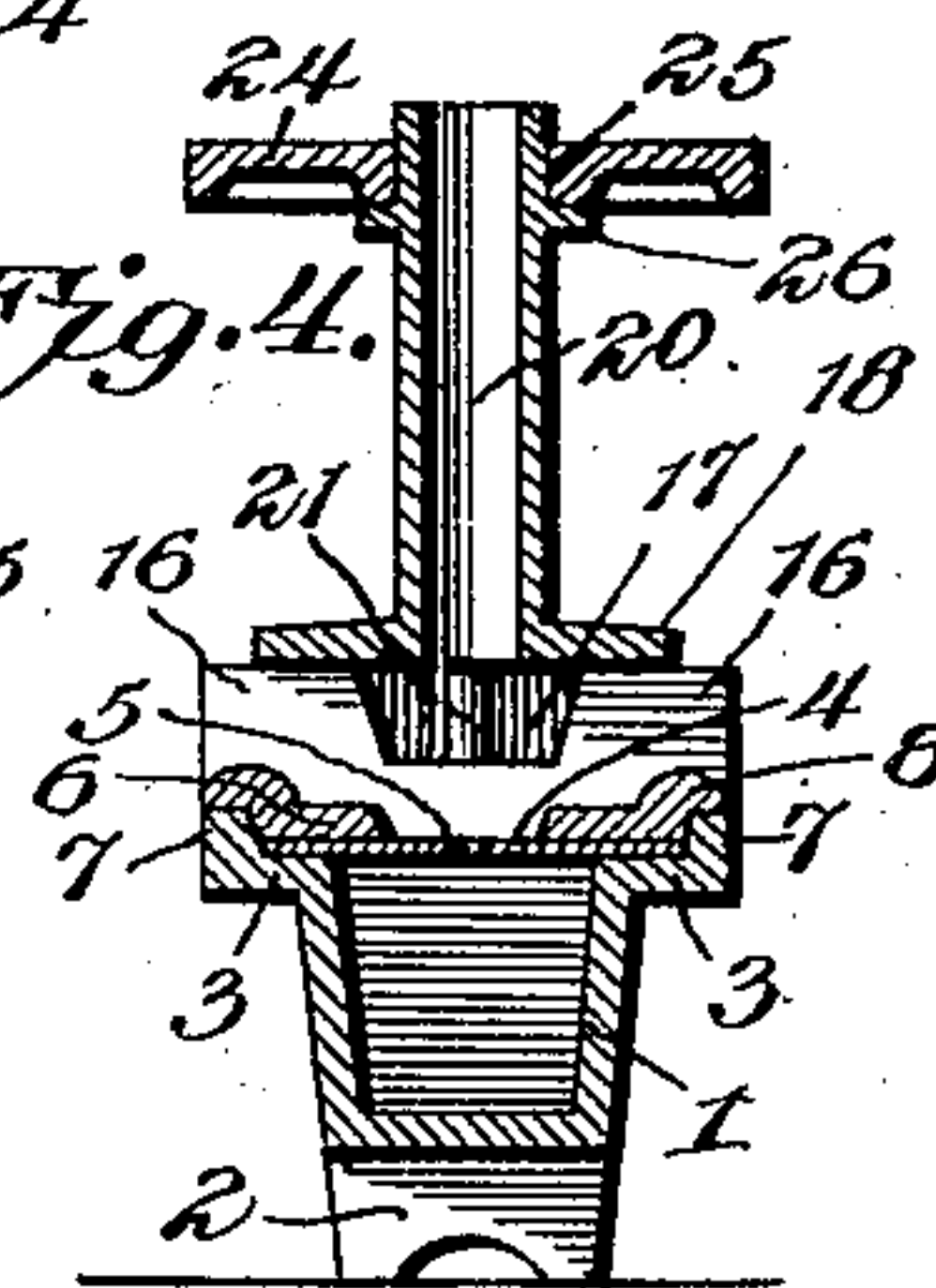


Fig. 4.



*Charles F. Wilson, Inventor,*

 $\mathbb{R}_Y$ 

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## Witnesses

Howard W. Cor.  
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# UNITED STATES PATENT OFFICE.

CHARLES FREMONT WILSON, OF CATLETTSBURG, KENTUCKY.

## GAS-BURNER FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 720,303, dated February 10, 1903.

Application filed May 28, 1902. Serial No. 109,354. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES FREMONT WILSON, a citizen of the United States, residing at Catlettsburg, in the county of Boyd and State of Kentucky, have invented a new and useful Gas-Burner for Stoves, of which the following is a specification.

This invention relates to a novel gas-burner for gas-stoves, and while applicable for use in various connections is designed with special reference to the equipment of that class of stoves exemplified in my concurrent application, Serial No. 109,355. Stoves of this character are designed to utilize a fluid fuel—as, for instance, natural or artificial gas—and primary considerations are economy in manufacture and the complete consumption of the fuel to prevent the smoking of the stove.

My object, therefore, is to produce a burner of inexpensive construction which may be composed almost entirely of cast parts capable of being quickly assembled and readily disorganized by an unskilled person.

A further object of the invention is to produce a novel arrangement of parts which will insure the proper mixing of the gas with a suitable quantity of air to form a perfectly combustible vapor the combustion of which will not be accompanied by the liberation of noxious gases or the production of any considerable quantity of smoke or soot.

To the employment of the objects stated and others subordinate thereto the invention consists in those features of construction and arrangement which will be hereinafter described, illustrated in the accompanying drawings, and succinctly defined in the appended claims.

In said drawings, Figure 1 is a perspective view of my burner complete, the position of the guard-plate being indicated in dotted lines. Fig. 2 is a longitudinal sectional view. Fig. 3 is a plan view with the tube-plate removed, and Fig. 4 is a transverse sectional view on the line 4 4 of Fig. 2.

Like numerals of reference are employed to designate corresponding parts throughout the views.

The receiver 1 is in the form of an oblong or trough-shaped receptacle, preferably constructed of cast metal and formed with feet 2, which hold the receiver slightly elevated

above the bottom of the stove or other supporting-surface to permit a free circulation of air. Around its upper edge the receiver is provided with a transversely-angular flange 3, constituting a seat for the edges of a jet-plate 4, closing the upper side of the receiver, and provided with a longitudinal series of jet-openings 5. It is of course essential that this jet-plate be retained in a manner to prevent the escape of gas around the edges thereof. I therefore provide what may be termed a "clamping-frame" 6, seated upon the jet-plate 4 and fitting snugly within the upstanding portion or rim 7 of the angular flange 3. The clamping-frame is of skeleton or open form, as shown in Figs. 1 and 4, so as to expose the middle portion of the jet-plate, in which the jet-openings 5 are formed. The means for retaining the clamping-frame and for drawing the same down to effect a tight joint between the plate 4 and the walls of the receiver may be varied within wide limits, but a simple construction and one which facilitates the assembling of the parts is shown in the drawings.

The clamping-frame is formed around the edges thereof with an angular flange 8, fitting over the upstanding portion 7 of the flange 3, and at its opposite sides is formed with laterally-disposed ears or lugs 9, disposed over similar ears or lugs 10, extending from the opposite sides of the receiver and disposed below cut-away portions or recesses 11, formed in the upper edges of the flange 3 for the accommodation of the ears 9 of the clamping-frame. The coincident ears of the clamping-frame and receiver are designed for the reception of draw-bolts 12, passed through the ears and retained by nuts 13, which latter when screwed up serve to draw down the clamping-frame with sufficient force to effect a close joint between the jet-plate and the upper edge of the receiver.

At the opposite ends of the receiver the flange 3 is extended somewhat beyond the vertical portion, as indicated at 14, for the reception of the similarly-extended ends 15 of the clamping-frame. The extension of these ends is designed for the accommodation of angular rests 16, formed upon and preferably cast integral with the clamping-frame and designed to interfittingly receive the termi-



nal supporting-flanges 17 of a tube-plate 18. The tube-plate is elevated a sufficient distance above the jet-plate 4 to define an intermediate mixing-chamber 19, open along its opposite sides and designed to permit the jets of gas issuing through the jet-openings 5 to commingle with a sufficient quantity of air to form a highly-combustible vapor supplied to the burner-tubes 20, extending vertically from the tube-plate 18 and located directly above the jet-openings 5. (See Fig. 2.)

The tube-plate, as shown in Fig. 2, is retained in position by the interfitting of the supporting-flanges 17 with the angular rests 16 of the clamping-frame and is held down in proper position by draw-bolts 21, passed through the ends of the tube-plate and through the end flanges of the clamping frame and receiver, respectively, and secured by nuts 22 in an obvious manner. It will thus be seen that the entire assemblage of parts are so proportioned that they interfit without special adjustment and are secured in place by the bolts 12 and 21, which may be quickly and conveniently removed when the disorganization of the parts of the burner is desired for the purpose of replacement or repair.

While the burner-tubes may be secured to the tube-plate 18 in any suitable manner, they are preferably formed integral therewith, as shown, and are connected by integral webs 23, which serve to materially stiffen the structure and to prevent the heat from warping the tube-plate or tubes, which would otherwise result in throwing the tubes out of proper parallelism and would interfere with the effective operation of the burner. This rigid retention of the tubes in proper position is further insured by what may be termed a "guard-plate" 24, having a series of openings 25, which permit the plate to be passed over the upper ends of the tubes and to be seated upon annular flanges 26, formed on each of the tubes for its support. This plate, while serving the purpose stated, also constitutes a guard which receives any small amount of sooty or oily deposit produced at the point of ignition. As this plate is removable, it may be quickly cleared of such deposits and replaced without necessitating the disorganization of the general structure, and the burner may thus be kept perfectly clean and in condition for effective operation with very slight attention.

The manner of feeding gas to the receiver 1 is immaterial; but a gas-supply pipe 27, leading from a suitable source of gas-supply, is preferably screwed into an inlet-opening 28, which may be formed in one side of the receiver or at any other convenient point.

The operation of the burner is as follows: Gas admitted to the receiver 1 from the supply-pipe 27 will issue in jets through the jet-openings 5 and into the tubes. The proper amount of air drawn into the mixing-chamber 19, defined between the jet and tube plates, will commingle with the gas to form

a highly-combustible vapor, which is ignited at the upper ends of the burner-tubes 20. Any sooty or oily accumulations at the points of ignition will drop upon the guard-plate 24, which may be readily removed and cleaned, as stated. If the disorganization of the entire structure is desired, it may be quickly effected by the removal of the several bolts 12 and 21, or if it is desired to remove the tubes and tube-plate without disconnecting the receiver, the jet-plate, and clamping-frame it will simply be necessary to remove the bolts 21 and lift the tube-plate from its rests.

It is thought that from the foregoing the construction and operation of my novel gas-burner will be readily comprehended; but while the illustrated embodiment of the invention is believed at this time to be preferable I do not limit myself to the structural details defined, as, on the contrary, I reserve the right to effect such changes, modifications, and variations of the illustrated structure as may be fairly comprehended within the scope of the protection prayed.

What I claim is—

1. In a gas-burner of the character described, the combination with a gas-receiver, having a removable jet-plate constituting one wall of the receiver and formed with a series of jet-openings, of a tube-plate spaced from the jet-plate to form an intermediate mixing-chamber, and a series of tubes extending from and terminating in the plane of the tube-plate and disposed coincident with the jet-openings.

2. In a gas-burner of the character described, the combination with a gas-receiver, having a removable jet-plate formed with jet-openings, of a tube-plate disposed above the jet-plate, tubes extending from the tube-plate and arranged coincident with the jet-openings, terminal spacing means interposed between the receiver and tube-plate to provide an intermediate mixing-chamber having open sides, and securing means common to the receiver, jet-plate and tube-plate.

3. In a gas-burner of the character described, the combination with a gas-receiver, and a separate jet-plate constituting one wall of the receiver and formed with jet-openings, of a clamping-frame retaining the jet-plate, and a tube-plate carried by the clamping-frame and provided with tubes coincident with the jet-openings.

4. In a gas-burner of the character described, the combination with a gas-receiver, and a jet-plate constituting one wall of the receiver and formed with jet-openings, of a clamping-frame retaining the jet-plate in position, a tube-plate supported by the clamping-frame in spaced relation to the jet-plate, and having tubes coincident with the jet-openings, and securing devices connecting the receiver, clamping-frame and tube-plate.

5. In a gas-burner of the character described, the combination with a gas-receiver having a seat formed at its upper edge, of a



jet-plate formed with jet-openings and having its edges resting in the seat, a clamping-frame resting upon the jet-plate, draw-bolts connecting the receiver and frame, and burner-tubes disposed above the jet-openings.

6. In a gas-burner of the character described, the combination with a gas-receiver having an angular flange formed at its upper edge, of a jet-plate having jet-openings, and seated at its edges in said flange, a clamping-frame imposed upon the jet-plate and secured to the receiver, and burner-tubes disposed over the jet-openings.

7. In a gas-burner of the character described, the combination with a gas-receiver and a clamping-frame, having interfitted angular flanges, of an interposed jet-plate having jet-openings, means for securing the clamping-frame to the receiver, a tube-plate disposed above and in spaced relation to the jet-plate, and tubes extending from the tube-plate and arranged above the jet-openings.

8. In a gas-burner of the character described, the combination with a gas-receiver, and a jet-plate formed with jet-openings, of a clamping-frame retaining the jet-plate and having upstanding rests, a tube-plate seated upon the rests, and tubes extending from the tube-plate and disposed directly above the jet-openings.

9. In a gas-burner of the character described, the combination with a gas-receiver, and a jet-plate formed with jet-openings, of a clamping-frame retaining the jet-plate and having upstanding rests, a tube-plate having drop-flanges interfitted with the rests, and tubes extending from the tube-plate.

10. In a gas-burner of the character described, the combination with a gas-receiver,

and a jet-plate formed with jet-openings, of a clamping-frame retaining the jet-plate and provided with angular rests at its ends, a tube-plate resting upon and having terminal flanges fitting into the rests, tubes extending from the tube-plate and located directly above the jet-openings, and securing devices for detachably connecting the receiver, clamping-frame and tube-plate.

11. In a gas-burner of the character described, the combination with a gas-receiver and a clamping-frame, having interfitted angular flanges at their edges, of an interposed jet-plate having its edges seated in the flange of the receiver and formed with jet-openings, angular rests upstanding from the opposite ends of the clamping-frame, a tube-plate having terminal drop-flanges interfitted with the rests, a series of burner-tubes upstanding from the tube-plate directly over the jet-openings, draw-bolts connecting the receiver and clamping-frame, and other draw-bolts connecting the tube-plate, clamping-frame and receiver.

12. In a gas-burner of the character described, the combination with a tube-plate, of a series of burner-tubes extending from the tube-plate, and formed adjacent to their upper ends with annular flanges, a guard-plate resting upon said flanges and having openings for the tubes, and means for supplying gas to said tubes.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES FREMONT WILSON.

Witnesses:

H. F. PRICE,  
H. KIRSH.