

(No Model.)

C. H. PAGE, Jr.
GAS MIXER.

No. 507,748.

Patented Oct. 31, 1893.

FIG. 1

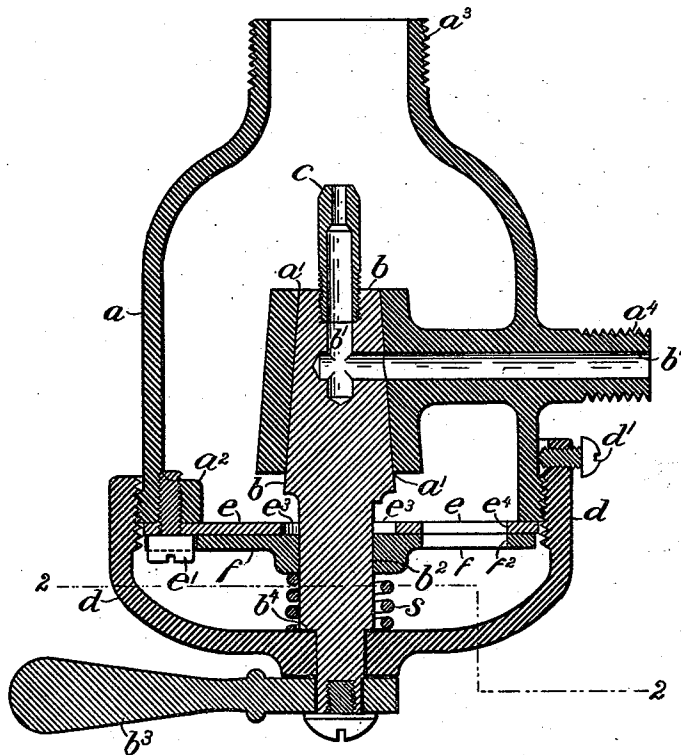
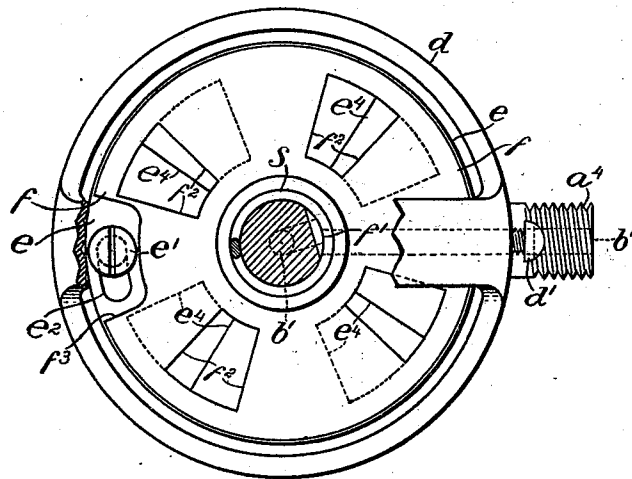


FIG. 2



WITNESSES:

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GAS-MIXER.

SPECIFICATION forming part of Letters Patent No. 507,748, dated October 31, 1893.

Application filed February 4, 1893. Serial No. 460,956. (No model.)

To all whom it may concern:

Be it known that I, CARTER H. PAGE, Jr., a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Mixers, of which the following is a specification.

My invention relates in general to gas mixers in which air is supplied to and mixed with the gas before it is delivered to the burner; and it relates more particularly to that type of such mixers which are especially adapted for use in connection with so-called gas stoves.

The principal objects of my invention are first, to provide a compact, efficient and comparatively inexpensive gas mixer in which air is supplied to and mixed with gas prior to its delivery to a burner; second, to construct and arrange the parts of the mixer for operation in such manner that the plug or cock thereof may be readily and rapidly removed without disconnecting the mixer from the gas supply pipe or burner and in order to change the nozzle; and third, to provide the mixer with simple and reliable means for automatically excluding the supply of air before the supply of gas is completely shut off, whereby firing back into the mixer or popping of the gas is prevented.

My invention consists of a gas mixer comprising a housing or cap having a seat and gas supply and burner connections, a plug mounted in said seat and carrying a nozzle, and a yoke detachably connected with the housing and adapted to maintain said plug to its seat and to permit of the removal of the plug from the housing or cap without disturbing the gas connections.

My invention further consists of a gas mixer provided with a pair of perforated baffle-plates or shutters, whereof one is attached to the gas plug and adapted to shut off the supply of air prior to the complete closing of the gas-way; and my invention further consists of the improvements in gas mixers hereinafter fully described and particularly pointed out in the claims.

The nature, characteristic features and scope of my invention will be more fully understood from the following description taken

in connection with the accompanying drawings forming part hereof; and in which—

Figure 1, is a view illustrating a central section of a gas mixer embodying features of my invention; and Fig. 2, is a sectional view taken on the line 2—2, of Fig. 1, and showing the parts of the device in position for partially excluding the supply of air and gas.

In the drawings *a*, is a housing or cap having a conical seat *a'*, a lug *a²*, a nipple *a³* for attachment to the induction pipe of an atmospheric burner, and a nipple *a⁴*, for attachment to the gas supply pipe, cast integral therewith.

b, is a plug provided with radially and axially disposed communicating gas passages *b'*, and adapted to the seat *a'*, in such manner that it may be detached therefrom in a downward direction.

c, is a nozzle detachably mounted upon the plug *b*. The lower extremity of the spindle *b²*, of the plug *b*, is provided with a handle *b³* and with a flange *b⁴*, seated upon a yoke *d*, detachably connected with the housing or cap *a*, in such manner that it may be adjusted upward and downward. In the present instance this result is accomplished by threading the periphery of the housing or cap *a*, and tapping the interior of the yoke *d*, and providing a set screw *d'*, for clamping the yoke to place in respect to the housing.

e, is a baffle plate or shutter secured to the lug *a²*, by means of a binding screw *e'*, having the shank thereof working in a slot *e²*, in the plate *e*, Fig. 2, in order to permit of the proper adjustment of the plate, for a purpose hereinafter set forth. This plate *e*, is provided with a central opening *e³*, through which the plug *b*, may pass and with air inlet apertures *e⁴*.

f, is a second baffle-plate or shutter provided with a central opening *f'*, Fig. 2, having the form of a segment of a circle and adapted to engage a correspondingly shaped portion of the spindle *b²*, of the plug, so that the rotation of the plug causes a corresponding movement of the baffle-plate *f*, as will be hereinafter more fully described.

f², are air inlet apertures cut or otherwise formed in the plate *f*, and adapted to register with the apertures *e⁴*, in the plate *e*, in order

to permit of the admission of air to the interior of the cap or housing and to be shifted out of alignment therewith, in order to exclude the supply of air.

5 f^3 , Fig. 2, is a slot cut or otherwise formed in the periphery of the plate or shutter f , for the accommodation of the head of the binding screw e' , and the end walls of this slot f^3 , by contacting with the binding-screw e' , serve
10 to limit the range of motion of the plug b .

s , is a spiral spring interposed between the yoke d , and the plate f , in order to maintain the latter normally in contact with the plate e .

The mode of operation of the hereinabove
15 described gas mixer is, as follows:—In order to light the burner not shown, the handle b^3 , is turned in position for causing the plug b , to open the gas-way b' , and to shift the plate f , into position for opening the air inlet apertures e^4 , as shown in Fig. 1. Under these circumstances the gas jet issuing from the nozzle c , serves to draw a supply of air into the housing or cap a , through the apertures e^4
20 and f^2 , and this mixture of air and gas is supplied to the burner through the nipple a^3 , and its connections. The movement of the handle b^3 , in a reverse direction, causes the plate f , to close the air inlet apertures e^4 , prior to the complete closing of the gas way b' . This
25 result is readily accomplished by adjusting the plate e , by means of the binding screw e' , and is important, because the arrest of the current of air prevents the firing back of the gas in the cap or housing a , or popping of the
30 gas, as it is sometimes called. It is well known that the opening in the nozzle c , as well as the length of the nozzle itself, must correspond with the pressure and quality of the gas consumed. In my invention the plug b ,
35 and the nozzle c , may be withdrawn from the casing or housing a , by the simple operation of detaching the yoke d , whereupon the nozzle c , may be readily detached from the plug and replaced by a nozzle having the proper
40 size of opening and of the proper length, and the plug b , may then be returned to place. This is important, because it enables the nozzle c , to be readily and quickly detached and replaced by another nozzle of proper size without in any wise disturbing or otherwise affecting the connections of the nipples a^3 and a^4 .
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Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

55 1. A gas mixer comprising a cap or housing having a seat and gas connections, a plug carrying a nozzle and detachably adapted to said seat, and a yoke adapted to support said plug and detachably connected with the housing,
60 substantially as and for the purposes set forth.

2. A gas mixer comprising a cap or housing having a seat and gas and burner nipple connections integral therewith, a plug provided with a nozzle, and a yoke for detachably connecting the plug and housing or cap,
65 substantially as and for the purposes set forth.

3. A gas mixer comprising a cap or housing having a seat and gas connections, a tapped yoke engaging the threaded periphery of the cap or housing, and a plug adapted to said seat and provided with a flange engaging the yoke, substantially as and for the purposes set forth.
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4. A gas mixer comprising a cap or housing 75 having a seat and gas connections, a yoke detachably engaging the cap or housing, a set-screw for clamping the yoke to the housing, and a plug adapted to said seat and engaging said yoke, substantially as and for the
80 purposes set forth.

5. In a gas mixer, a housing or cap, a pair of perforated baffle plates or shutters, whereof one is adjustably attached to the housing or cap and the other is mounted on the shank of 85 the gas plug, and a spring tending to maintain said plates or shutters in contact with each other, substantially as and for the purposes set forth.

6. In a gas mixer, a pair of perforated baffle-plates or shutters, whereof one is fixed 90 and the other is mounted on the shank of the gas plug and a spring tending to maintain said plates or shutters in contact with each other, substantially as and for the purposes set forth. 95

7. In a gas mixer, a cap or housing having a seat and gas connections, a plug carrying a nozzle and detachably adapted to said seat, a pair of perforated baffle-plates or shutters attached respectively to the plug and cap, and a yoke adapted to support said plug and detachably connected with the housing, substantially as and for the purposes set forth. 100

8. In a gas mixer, a pair of perforated baffle-plates or shutters, whereof one is fixed and the other is provided with an opening having the form of a segment of a circle and engaging a correspondingly shaped part of the spindle of the plug and a spring tending to maintain 110 said plates or shutters in contact with each other, substantially as and for the purposes set forth.

9. A gas mixer provided with a housing or cap, a pair of perforated baffle-plates or shutters, whereof one is adjustably attached to the housing or cap and the other is provided with an opening having the form of a segment of a circle and engaging a correspondingly shaped part of the spindle of the plug and a spring tending to maintain said plates or shutters in contact with each other, substantially as and for the purposes set forth. 115

10. A gas mixer comprising a cap or housing having a seat and gas connections, a plug adapted to said seat, a detachable yoke for supporting said plug, a pair of perforated baffle-plates or shutters, whereof one is attached to the housing, and the other is mounted on the shank of the plug, and a spring interposed between the yoke and the plate carried by the plug, substantially as and for the purposes set forth. 125

11. In a gas mixer, a pair of perforated 130

baffle-plates or shutters, whereof one is attached to the housing and the other is mounted on the shank of the plug, a detachable yoke for supporting the plug, and a spring interposed between the yoke and the plate mounted on the shank of the plug, substantially as and for the purposes set forth.

12. A gas mixer provided with a perforated baffle-plate or shutter attached to the housing by a binding-screw a second perforated baffle-plate or shutter carried by the shank of a revoluble plug and provided with a slot, whereof the end walls are adapted to engage the binding-screw to limit the range of movement of the plug a detachable yoke and a spring interposed between the yoke and last mentioned baffle-plate, substantially as and for the purposes set forth.

13. A gas mixer provided with a perforated baffle-plate or shutter attached to the housing by a binding-screw, a second perforated baffle plate or shutter carried by the shank of the revoluble plug and provided with a slot, whereof the end walls are adapted to engage the binding-screw, and a spring tending to maintain said plates or shutters in contact with each other, substantially as and for the purposes set forth.

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

CARTER H. PAGE, JR.

Witnesses:

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RICHARD C. MAXWELL.