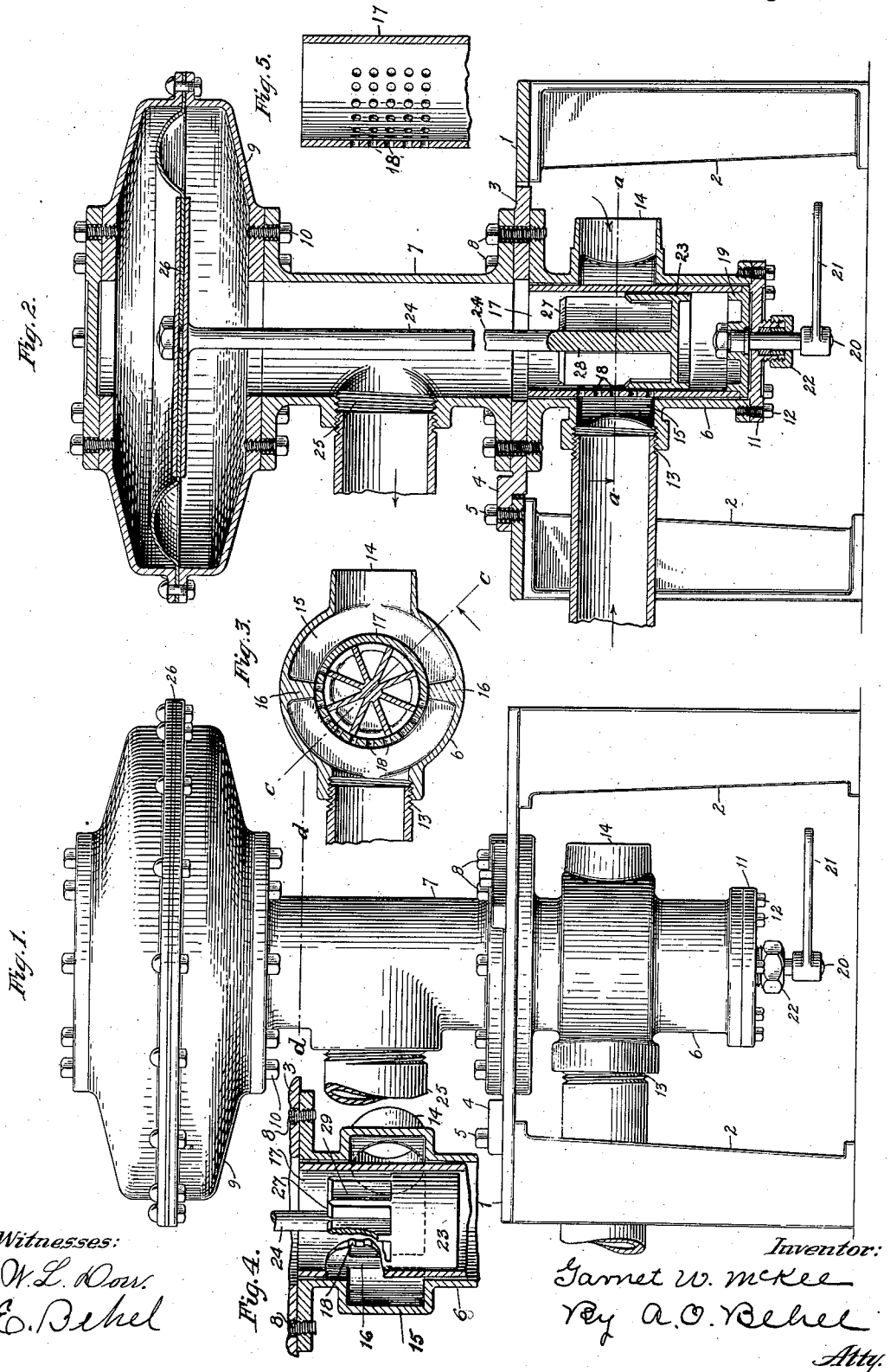


G. W. McKEE.
GAS MIXER AND REGULATOR.
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1,036,133.

Patented Aug. 20, 1912.



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UNITED STATES PATENT OFFICE.

GARNET WOLESLEY McKEE, OF ROCKFORD, ILLINOIS, ASSIGNOR TO ECLIPSE FUEL ENGINEERING COMPANY, OF ROCKFORD, ILLINOIS, A CORPORATION OF ILLINOIS.

GAS MIXER AND REGULATOR.

1,036,133.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed December 12, 1910. Serial No. 597,003.

To all whom it may concern:

Be it known that I, GARNET WOLESLEY McKEE, a subject of Great Britain, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Gas Mixers and Regulators, of which the following is a specification.

The object of this invention is to automatically regulate the quantity of gas and air mixture according to the amount used, in order that a varying number of machines can be supplied.

The further object of this invention is to regulate the richness of the mixture of gas and air.

In the accompanying drawings, Figure 1 is an elevation of my improved gas mixer and regulator. Fig. 2 is a section on dotted line *b b* Fig. 4. Fig. 3 is a section on dotted line *a a* Fig. 2. Fig. 4 is a section on dotted line *c c* Fig. 3. Fig. 5 is a vertical sectional view of the shell showing its interior.

My improvements are supported upon a platform 1 supported by the legs 2. A plate 3 is connected to the platform by the lugs 4 through which screws 5 pass. The lower section 6 and the intermediate section 7 are connected to the plate 3 by the screws 8, and to the upper end of the intermediate section is connected a diaphragm section 9 by the screws 10. The lower section 6 is cylindrical in cross section and has a bottom plate 11 held in place by the screws 12. A gas supply pipe 13 has a connection with the lower section 6, and an air inlet 14 is located opposite the gas supply pipe. A chamber 15 is divided by the partition 16, and the space one side of these partitions communicate with the gas supply opening 13, and the space the other side of these partitions communicate with the air inlet 14.

Within the lower section 6 is located a shell 17 provided with openings 18. This shell is connected to a head 19 and to the head is connected a stud 20. A lever 21 is connected to the stud 20, and a stuffing box 22 surrounds the stud. By means of the le-

ver 21, the shell 17 can be oscillated which will present more or less number of the openings 18 into the space of the chamber 15 communicating with the air inlet 14. Within the shell 17 is located a plunger 23 capable of a reciprocating movement therein. To this plunger is connected a rod 24. This plunger has its lower portion solid while its upper portion is open and formed by the ribs 27 connecting with the center 28 which form vertical passage ways 29. The upper edges of these ribs 27 are beveled, and the upper edge of the lower portion of the plunger is beveled which will prevent the lodgment of dust particles thereon, and the dust particles will fall into the interior of the plunger. The intermediate section 7 has a gas and air mixture outlet 25. The upper section 9 supports a diaphragm 26, and the rod 24 connects with this diaphragm. The diaphragm 26 moves up and down according to the pressure of the mixture of gas and air, which will move the plunger with it. As the pressure falls, the plunger will drop and expose more of the openings 18 in the shell, thereby allowing more gas and air to flow through the outlet 25, and when the pressure is raised, the plunger will rise, thereby reducing the quantity of the mixture. The cause of the reduction in the pressure of the mixture is brought about by the use of more or less machines consuming the mixture. The vertical passage ways 29 will direct the flow of gas and air in the lengthwise direction of the intermediate section 7 thereby insuring a thorough mixture.

The grade of mixture is regulated by the oscillations of the shell, and should the shell be turned sufficiently to expose the same number of openings to the inlet of the gas as is exposed to the inlet of air, the mixture will be equally proportioned, and a less rich mixture can be accomplished by exposing more holes to the entrance of air than to the entrance of gas.

I claim as my invention.

A gas mixer and regulator, comprising a chamber having a gas inlet opening and an

air inlet opening, a perforated oscillatory
shell located within the chamber, a reciprocating
plunger located within the shell and
a diaphragm connected with the plunger,
5 the plunger formed with a closed lower section
and a ribbed upper section, the ribs
forming vertical passage ways.

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

GARNET WOLESLEY McKEE.

Witnesses:

A. O. BEHEL,

E. D. E. N. BEHEL.