A. E. HAUCK.

LOW PRESSURE OIL BURNER WITH AN ATTACHED COMBUSTION BOX.

APPLICATION FILED JAN. 8, 1920.

1,383,720. **Patented July 5, 1921.**

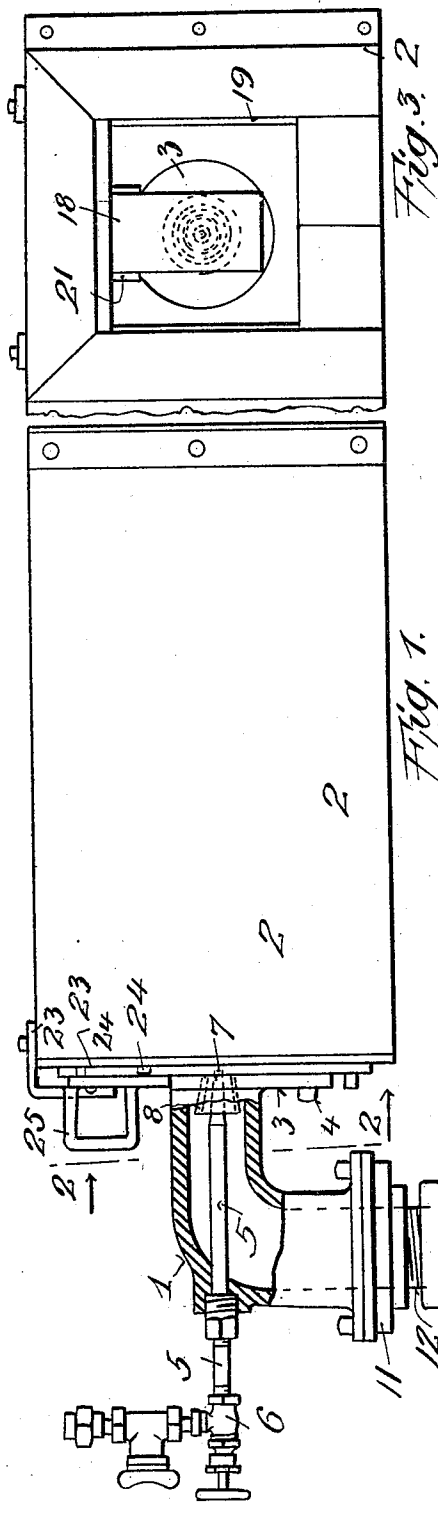


Fig. 1.

Fig. 3.

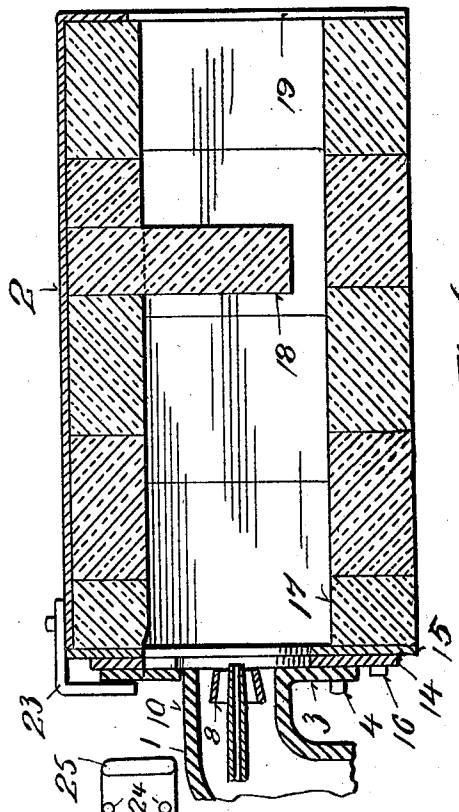


Fig. 4.

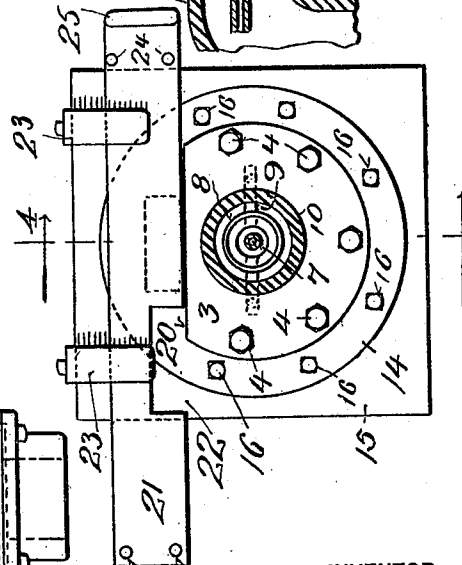


Fig. 2.

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LOW-PRESSURE OIL-BURNER WITH AN ATTACHED COMBUSTION-BOX.

1,383,720. Specification of Letters Patent. Patented July 5, 1921.

Application filed January 8, 1920. Serial No. 350,149.

To all whom it may concern:

Be it known that I, ARTHUR E. HAUCK, a citizen of the United States, and a resident of the city of New York, county of Kings, and State of New York, have invented a new and useful Improvement in Low-Pressure Oil-Burners with Attached Combustion-Boxes, of which the following is a specification.

The object of my invention is to provide a device of this character in which fuel oil may be burnt with air supplied by a fan blast or other low pressure source of supply so as to afford sufficient heat for any desired purpose, as for forging or operating a steam boiler. This object is accomplished by my invention, one embodiment of which is hereinafter more particularly set forth.

For a more particular description of my invention, reference is to be had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a side elevation of my improved device.

Fig. 2 is a sectional view of the same, taken on the line 2—2 of Fig. 1, looking in the direction of the arrows.

Fig. 3 is a rear end elevation of the same.

Fig. 4 is a sectional view, taken on the line 4—4 of Fig. 2, looking in the direction of the arrows.

Throughout the various views of the drawings, similar reference characters designate similar parts.

My improved oil burner 1 is attached to a combustion box 2 by a flange 3 and cap screws 4 or in any other suitable manner. The burner 1 receives oil from a supply pipe 5 which is provided with a regulating valve 6 of the conventional kind and such other fittings as are customary in such devices. The outer end of this pipe 5 may be reduced to form a nozzle 7, if desired, although this is not essential. Immediately outside the nozzle 7 is a flared sleeve 8 which has transversely disposed straps 9 by means of which it is held in place, as indicated. It will be noted that the sleeve 8 is flared toward the source of oil supply and also toward the source of air which comes through the exterior casing 10 of the burner 1, and this casing is secured by a coupling 11 to the air pipe 12, in the usual manner. A valve 13 determines the amount of air which may be admitted to the burner.

The burner is opposite the combustion chamber 2 which has a front plate 14 to which the flange 3 is secured, as above described, and this front plate engages the casing 15 of the combustion chamber and is secured thereto by means of suitable cap screws 16. This combustion chamber 2 is lined with fire brick 17, which extend about the same, and one brick 18 is allowed to extend into the interior, as shown in Figs. 3 and 4, so as to part the flame and its heat tends to make uniform the temperature of all the products of combustion which issue from the rear opening 19 of the combustion chamber. The opening of the plates 14 and 15 is extended upwardly to be above the level of the flange 3 which is cut away, as shown at 20, and a slide 21 with a recess 22 slides above and on this flange 3, as shown in Fig. 2. The slide is held in position so it can move only in the direction of its length by the flange 3 and also by two guides 23 which are fixed on top of the combustion chamber 2 and extend downwardly, as shown. Suitably placed pins 24 near each end limit the movement of this slide 21 in the direction of its length. A handle 25 facilitates the shifting of the slide, as is obvious. In Fig. 2 this slide is shown at its closed position. By pulling on the handle 25 toward the right, the recess 22 is made to register with the openings in the plates 14 and 15 and then burning waste may be dropped through this hole and air and oil may be turned on to the burner in the conventional way and so the burner may be started. After the waste has been dropped through, as above described, the slide 21 is returned to its initial position.

In view of the foregoing, the use of my improved burner and combustion chamber will be readily understood. After ignition in the manner above set forth, air rushes through the burner and about the pipe 5 and through the sleeve 8 where it is jetted about this pipe and causes the oil issuing therefrom to vaporize so that it will burn easily and efficiently. As there is space between the sleeve 8 and the exterior casing 10,

not all air in the casing is so jetted, but some passes free of the sleeve and about the same so as to afford sufficient air for a perfect combustion. The flame issuing from the burner, and in the combustion chamber, heats the interior of the combustion chamber, and particularly the projecting fire brick 18 and the flame and products of the combustion pass by the same and out of the opening 19. If, for any cause, the amount of fuel should vary or the air pressure change as it sometimes does when fan blasts are used, as above set forth, the heat which accumulates in the combustion chamber and in this fire brick 18 will tend to equalize this variation and supply what is lacking so that products of combustion of a uniform temperature or substantially a uniform temperature, will always issue through the opening 19. The position of the brick 18 together with its great heat also performs the function of perfecting the combustion.

While I have shown and described one embodiment of my invention, it is obvious that it is not restricted thereto, but is broad enough to cover all structures that come within the scope of the annexed claim.

Having thus described my invention, what I claim is:

In a combined burner and combustion chamber, a burner adapted to throw a flame and a combustion chamber adapted to receive said flame, said combustion chamber being provided in its upper portion with a downwardly extending fire brick which receives the impact of the flame and becomes heated and deflects the flame and thereby permits a uniform and complete combustion in the chamber.

ARTHUR E. HAUCK.