June 20, 1939. A. J. RADDATZ 2,163,291

AGITATOR INSERT FOR STOKER RETORTS

Filed April 17, 1937

Fig. 1.

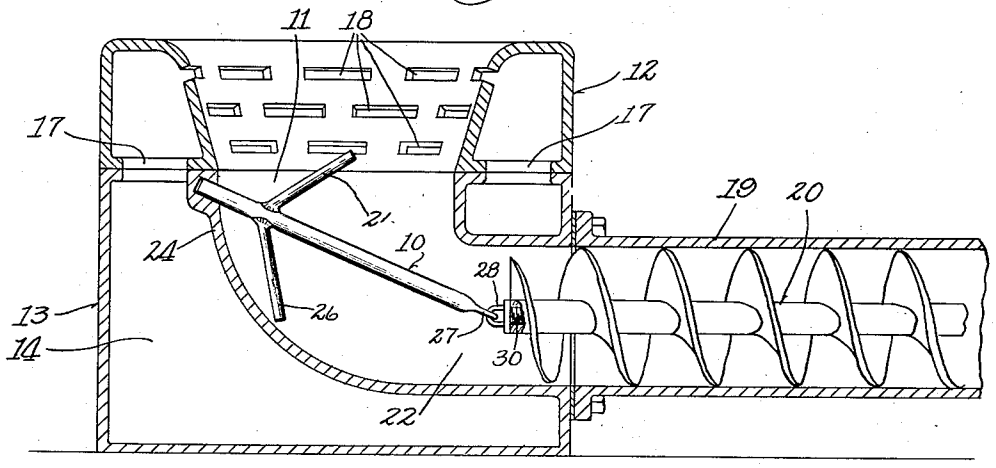
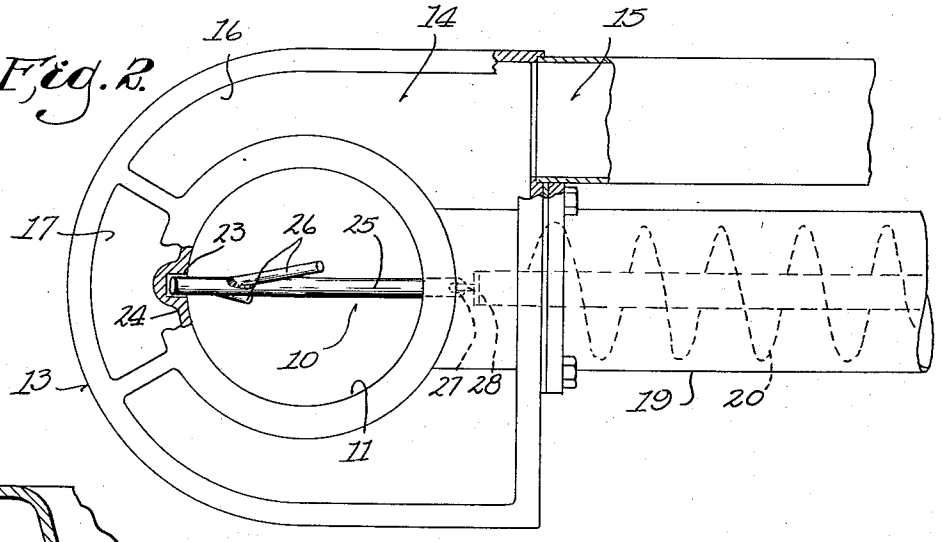


Fig. 2.



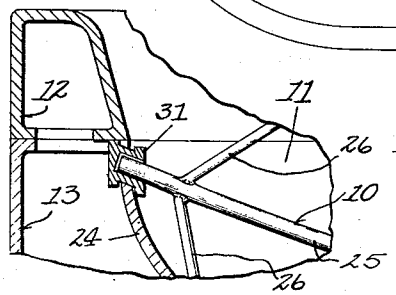


Fig. 3.

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AGITATOR INSERT FOR STOKER RETORTS

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2 Claims. (Cl. 110—45)

My invention relates to improvements in agitator inserts for stoker retorts.

The object of my invention is to provide an agitator insert for the retort of a stoker.

More particularly stated, it is the object of my invention to provide an agitator for a stoker retort, such agitator being so devised as to be directly motivated and operated by the mechanical device which passes fuel to the retort and to so dispose the agitator in the retort that the agitator structure of my device may be easily inserted in the retort in the assembly of the various parts of the stoker.

In the drawing:

Figure 1 is a vertical section through the fuel feed tube and retort of a conventional type of domestic stoker and showing my agitator device coupled to the fuel feeding device and provided with a bearing in the retort wall.

Figure 2 is a plan view of the structure shown in Figure 1 with the tuyère section removed and showing a portion of the retort broken away to exhibit the bearing for my agitator.

Figure 3 is a detail of a bearing construction alternative to that shown in Figure 1 and disclosing a pocket in the retort wall with a portion of the tuyère section to complete the top surface or closure for the bearing pocket.

Like parts are designated by the same reference characters throughout the several views.

One of the difficulties encountered in the day to day operation of a domestic stoker is the blocking of the retort because of the "coking" of the fuel in the retort with the result that air supply for the support of combustion in and above the retort is shut off and the carefully predetermined proportions of fuel and air necessary to the proper operation of the stoker are thus disturbed. I have therefore provided improved means for agitating the fuel in the zone where the serious results of such "coking" take place. I am aware that agitators for the retorts of stokers have heretofore been provided but they have been so constructed as to require complicated and expensive power connections. One of the important features of my invention is the simplicity of mechanical structure involved in my agitator and its power connections.

In the drawing disclosed, my agitator 10 is disposed in the retort 11 of a somewhat conventional domestic type stoker. In such a stoker as shown in the drawing the retort 11 includes a superposed tuyère section 12 mounted upon a box-like housing 13. In the operation of the stoker air is supplied to the interior 14 of the housing 13 through an air supply tube 15 and is passed around the retort 11 and through openings 16—17 into the interior of the tuyère section 12 and the air, being under pressure, is ejected from ports 18 into a zone of combustion of the fuel in the retort.

Fuel is fed to the retort through a feed tube 19 in which is a revoluble feed screw which terminates at 21 in the throat 22 of the retort.

My agitator device 10 includes a rod-like member 25 with branch arms 26 and extends from a point adjacent the terminal 21 of the feed screw 20 upwardly angularly to a bearing point 23 in the wall 24 of the retort. By means of interlocked staples 27 and 28 secured to the member 25 and to the terminal 21 of the feed screw respectively, I provide power connection between the feed screw 20 and my agitator device 10. By means of these staples I provide universal power connection so that my agitator may extend angularly upwardly and the arms 26 may swing adjacent the air ports 18 where the effect of the coking heretofore referred to is directly reflected.

It will be noted that in Figure 1 that I have shown staple 28 forming part of a threaded plug 30 extending into threaded connection with the feed screw 20. Such a connection may easily be made by any mechanic so that my agitator may be installed in any stoker which has a feed screw and which has a configuration of retort wall 24 in conjunction with which a bearing may be established as shown in Figure 3, since the simplest type of bearing socket 31 may be chiseled in the upper surface of the housing 13 whereby the placing of the tuyère section 12 thereabove may complete a pocket into which the end of the stem or rod 25 of my agitator may be received.

It will be seen from the above description that I have provided an extremely simple agitator device easily installable in conjunction with any stoker which is provided with a rotatably fuel feed member such as the screw 20, and the construction of my agitator is such that the coked fuel in the region of the tuyère section is broken up so as to liberate the air through ports 18.

I claim:

1. A retort for the reception and combustion of fuel, a tube and a rotary fuel feeding device therein for passage of fuel to the retort, said rotary device having a terminal portion adjacent the connection of the tube with the retort, an agitator device extending substantially across retort and angularly disposed with reference to the axis of rotation of the fuel feeding device

and a power connection between the fuel feeding device and the agitator.

2. A fuel feeding and burning structure including a tube and a rotary fuel feeding device therein, a retort comprising a chamber-forming enlargement at the end of said tube and opposite the terminal portion of the fuel feeding device, a fuel agitator extending angularly from said terminal portion of the fuel feeding device extending substantially across the retort and provided with a bearing support associated with a wall of the retort at a point spaced from the tube and a power transmitting connection between the rotary fuel feeding device and the agitator.

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