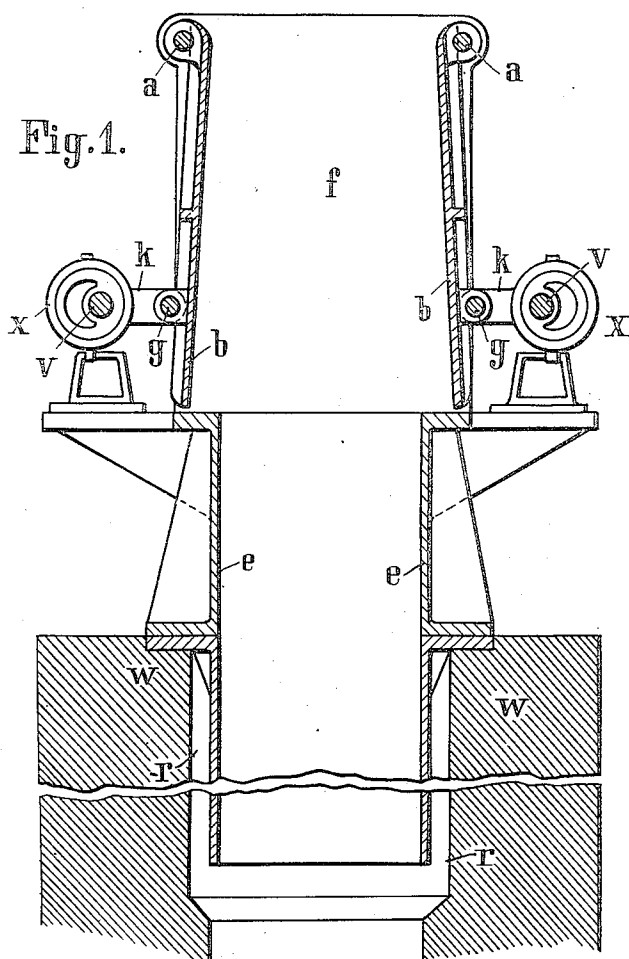
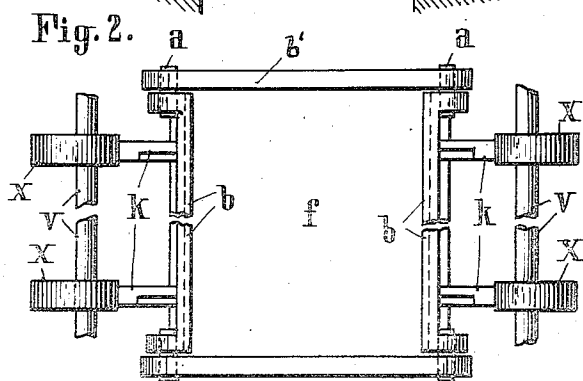


E. HEIDERICH.
CHARGING MEANS FOR DISTILLATION RETORTS.
APPLICATION FILED MAR. 30, 1914.

1,174,979.

Patented Mar. 14, 1916.



Witnesses:

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UNITED STATES PATENT OFFICE.

EMIL HEIDERICH, OF ZEEBRUGGE, BELGIUM.

CHARGING MEANS FOR DISTILLATION-RETORTS.

1,174,979.

Specification of Letters Patent.

Patented Mar. 14, 1916.

Application filed March 30, 1914. Serial No. 828,370.

To all whom it may concern:

Be it known that I, EMIL HEIDERICH, citizen of the German Empire, residing at Zeebrugge, Belgium, have invented certain new and useful Improvements in Charging Means for Distillation-Retorts, of which the following is a specification.

This invention relates to improvements in charging means for distillation retorts and is generally applicable, but is more specifically intended, for use with vertical retorts.

The object of the invention is to supply the fuel to the retort in compressed and shaped form. For this purpose the fuel passes through a duct or hopper where it is subjected to side pressure. This duct or filling hopper is provided with movable side walls which in their motion compress the fuel and shape it into a form corresponding substantially to the cross section of the retort. The fuel is, so to speak, compressed into the form of a briquet or cake, the cross section of which, although corresponding in shape to that of the retort, is preferably slightly less than the cross sectional area of the retort so as to allow for expansion. When this expansion occurs therefore the fuel does not jam on the side walls of the retort or remain clinging thereto when coked.

The shape of the side walls, which are movable, depends upon the shape of the retort and these walls are preferably arranged to exercise an increasing amount of side pressure on the body of the fuel descending through the hopper into a filling spout, of the retort. This may be effected by a suitable inclination or tapering of the walls. The progressive application of side pressure has the effect of producing a relatively firm and cohesive block with smooth side surfaces and with an internal structure which is not readily disturbed or broken up by the increasing heat owing to the expulsion of the bulk of the air between the interstices of the fuel.

The invention is illustrated in one convenient form by way of example in the accompanying drawings, in which:

Figure 1 is a vertical section through the filling spout and feed hopper according to the present invention. Fig. 2 is a plan of the device.

The invention is illustrated in the accompanying drawing as applied to a vertical

retort of rectangular cross section. The retort walls are indicated at *w*. A space *r* is left between the retort walls and the filling piece *e* for the egress of gas. On the top of the filling piece *e* there are provided ledges which support bearings for two transverse shafts *v*. These transverse shafts have mounted thereon eccentrics *x* which are connected by links *k* to movable side walls *b* of the filling hopper *f*. The links *k* are pivotally connected at *g* to these movable side walls.

The movable side walls *b* together with the stationary walls *b'* constitute the duct through which the fuel passes downward to the retort. The movable walls *b* together with the mechanism for moving them constitute means for applying a gradually increasing degree of compression on the fuel as it progresses downward through the duct.

In the form illustrated, the movement of the side walls is a continuous oscillating movement about centers or pivots *a* these centers being arranged at the upper end, while the connection from the eccentrics *x* is located near the lower ends of the walls *b*. By means of this device the amount of lateral movement of the walls which of course determines the degree of side pressure applied to the fuel, increases as the fuel moves downward away from the center of oscillation *a*. The amount of side movement and consequently the amount of side pressure applied is therefore a gradually increasing one so that the air in the interstices between the particles of fuel is expelled and the fuel before its entry into the filler *e* and retort *w* is brought into the form of a more or less cohesive block. For other shapes of retort the side walls *b* are correspondingly modified. The retorts may be either circular in cross section, elliptical or of other form, although those mentioned are the principal forms in use. The nature of the movement of the walls *b* described above is found suitable, but other means may be applied and other forms of moving walls may be used. The essential in every case is that a side pressure is applied to the fuel passing to the retort so as to expel air and make a more or less consolidated block for feeding to the retort. With retorts working continuously a continuous block is formed which has an advantageous effect on the distillation owing

to the uniformity obtained. In horizontal or inclined retorts the device is arranged in front of the filler or filling hopper.

I claim:

- 5 1. The combination with an upright gas retort, of a fuel duct leading thereinto and an upright fuel receptacle above the duct provided with laterally reciprocable side walls having a range of movement from a
10 position of separation greater than the width of the duct to a position of approach less than the width of the duct and having their closest approach adjacent to the receiving end of the duct.
- 15 2. The combination with an upright gas retort, of a fuel duct leading thereinto and an upright fuel receptacle above the duct provided with laterally reciprocable side walls having a range of movement from a
20 position of separation greater than the width of the duct to a position of approach less than the width of the duct, said side walls being pivotally supported at the ends remote from the duct and having means for causing
25 the reciprocation of the walls acting upon the latter near the ends adjacent to the entrance to the duct.
3. The combination with a gas retort, of a fuel duct of corresponding shape to and
30 leading into such retort, and means for causing lateral compacting of the fuel while moving toward the duct.
4. The combination with a gas retort, of

a duct through which fuel passes to the re-
35 tort, and means for subjecting the fuel in its progress toward said duct to gradually increasing compression.

5. The combination with a retort, of a filling piece therefor and a hopper leading
40 to said filling piece and comprising two relatively movable lateral wall sections in substantially fixed relation at the ends remote from the filling piece and having a range of movement adjacent to the filling
45 piece from a position of greater spread than the width of the filling piece to a position of less spread than the width of the filling piece.

6. In combination with a retort, a fuel filling hopper comprising lateral wall sec-
50 tions pivoted at the ends remote from the retort and having means for moving the other ends adjacent to the retort toward and from each other.

7. The combination with a gas retort, of
55 filling means therefor provided with means for gradually and progressively compressing the material fed into the retort while traveling toward said retort.

In testimony whereof I have signed my
60 name to this specification in the presence of two subscribing witnesses.

EMIL HEIDERICH.

Witnesses:

JULIN M. HEY,
M. BRACKE.