

July 11, 1933.

E. WEST

1,917,746

VERTICAL GAS RETORT AND COKE EXTRACTOR THEREFOR

Filed Jan. 6, 1932

2 Sheets-Sheet 1

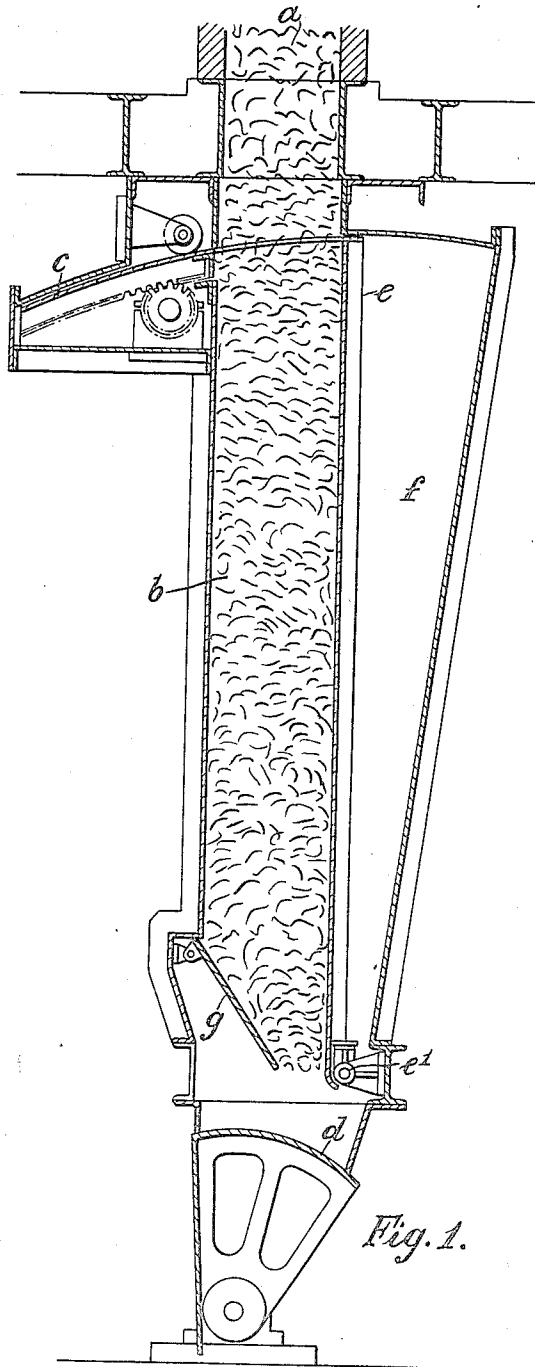


Fig. 1.

E. West
INVENTOR

By: *Marks & Clerk*
ATTYS.

July 11, 1933.

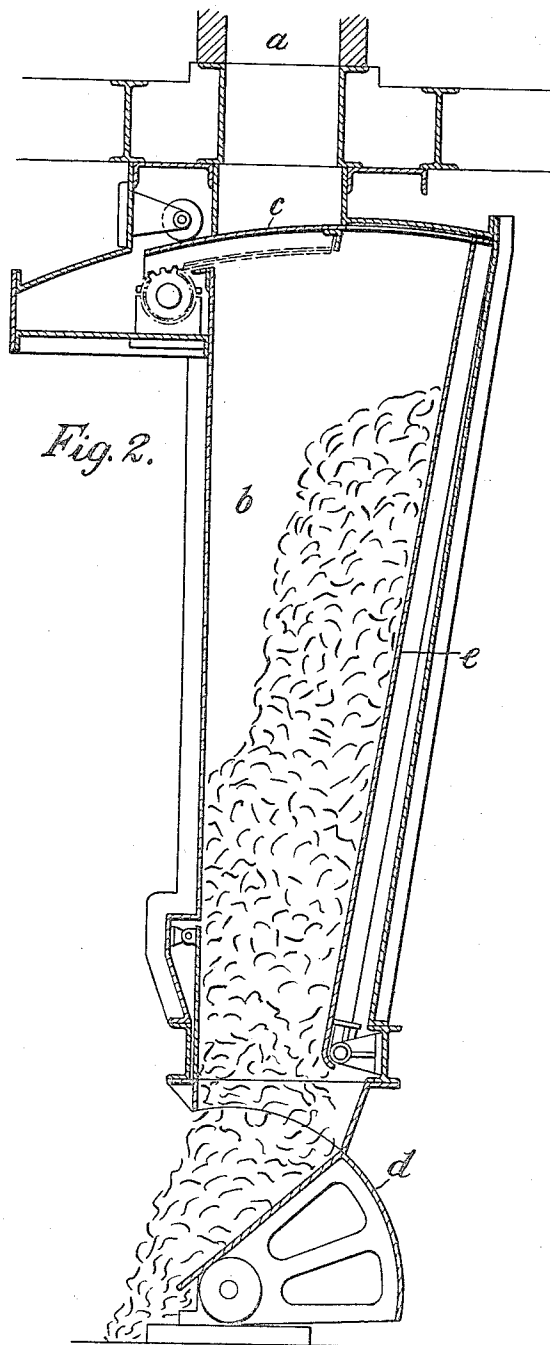
E. WEST

1,917,746

VERTICAL GAS RETORT AND COKE EXTRACTOR THEREFOR

Filed Jan. 6, 1932

2 Sheets-Sheet 2



E. West
INVENTOR

Markes & Clark
ATTY.

B7

UNITED STATES PATENT OFFICE

ERNEST WEST, OF MANCHESTER, ENGLAND, ASSIGNOR TO WEST'S GAS IMPROVEMENT COMPANY, LIMITED, OF MANCHESTER, ENGLAND, A BRITISH COMPANY

VERTICAL GAS RETORT AND COKE EXTRACTOR THEREFOR

Application filed January 6, 1932; Serial No. 585,066, and in Great Britain February 5, 1931.

This invention is an improvement in or modification of the invention described in my Patent No. 1,891,129, granted Dec. 13, 1932.

5 In the specification of such prior application, I have described coke extracting means comprising a coke chamber fixed beneath a retort to form a continuous chamber there-
10 with and having an opening at its lower end, a table movable in the coke chamber, a rear inclined wall of the coke chamber, a false back tiltable towards the inclined wall to facilitate coke discharge from the coke chamber, an enclosed shutter for cutting off
15 the retort from the coke chamber, and a door for sealing the opening at the lower end of the coke chamber.

According to my present invention, I do away with the table which in my prior applica-
20 tion was movable in the coke extractor chamber, and arrange the plant so that it works intermittently, that is to say, after a period of carbonization in the retort the shutter which separates the retort from its
25 coke extractor chamber is withdrawn, so as to allow the coke to fall into the coke extractor chamber.

Steaming of the coke with cooling of the latter then takes place, and when this has
30 been carried to the desired stage, the shutter is closed across the top of the coke chamber so as to separate the latter from the retort and simultaneously the coke chamber is enlarged by the tilting of its inclinable wall.
35 The door upon the coke chamber can then be opened and the coke discharged. The retort is again filled and carbonization carried on as before.

With this arrangement, it will be seen that
40 the coke chamber is filled immediately the shutter is withdrawn, and there is not that slow filling of the coke chamber which occurs with the arrangement described in my patent.

45 I provide means at a short distance above the discharge door of the coke extractor chamber to hold up the charge in the coke extractor chamber whilst the latter is being filled from the retort. When the holding up
50 means are withdrawn, they allow a short de-

scent of the complete charge in the coke chamber and the retort before the discharge door is actually opened. The attendant can then ascertain from such short descent that the coal which is in a sticky or tenacious condition at the top of the retort, is free and
55 not adhering to the retort walls; and may poke it round to release it before a new charge is introduced.

It will be understood that the arrangement
60 of the coke extractor chamber with its movable wall and with the shutter, may be the same as are described in my prior Patent No. 1,891,129.

Referring to the accompanying explan-
65 atory drawings:—

Figure 1 is a sectional elevation showing coke extracting means arranged in accord-
70 ance with my present invention, the parts being in the positions they occupy after carbonization and during steaming and prior to coke discharge.

Figure 2 is a view similar to Figure 1, but showing coke discharge taking place.

The bottom of the retort to which the coke
75 chamber is attached is shown at *a*, and the coke chamber at *b*. The shutter for cutting off the retort from the coke chamber is indicated at *c* and the door which permits of coke discharge from the bottom of the coke
80 chamber at *d*. The tiltable wall of the coke chamber is indicated at *e* and the space into which it moves to enlarge such chamber when coke discharge is to take place is shown at *f*.
85 The wall *e* is fulcrumed at *e'* and is interconnected with the shutter *c*.

There is a hinged flap *g* at the base of the coke chamber which in its service position holds up the coke charge and prevents its
90 bearing upon the door *d* as shown in Figure 1. The flap *g* when turned into its out-of-service position as shown in Figure 2 lies in a recessed part of the coke chamber wall so as not to obstruct the free discharge of
95 coke from the said chamber.

Assuming that carbonization of the charge in the retort has been completed and that the lower part of the carbonized charge has been allowed to fall into the coke chamber,
100 the parts will be in the positions shown in

Figure 1, the shutter *c* being open, the flap *g* obstructing the descent of the coke charge on to the door *d*, and the wall *e* in line with the retort wall above. Steaming of the coke charge in the chamber *b* can now take place. The charge is now in condition for discharge. The flap *g* is first moved into the out-of-service position in Figure 2, which should permit the charge to fall on to the door *d*. The attendant makes an observation to see if the coal at the top of the retort has fallen and if not he pokes round it to release it. The shutter *c* is now moved to the position shown in Figure 2 to cut off the material in the retort from the material in the coke chamber and simultaneously the wall *e* is moved to the position shown in Figure 2 to enlarge the coke chamber. When the door *d* is now opened, the charge falls freely out of the coke chamber along the side *d'* of the door.

After discharge is completed and the retort has been re-charged and the new charge carbonized, the parts are returned to the positions shown in Figure 1, and the cycle of operations repeated.

What I claim is:—

1. The combination with a vertical carbonization retort, of an unobstructed coke chamber fixed beneath said retort to form a continuous chamber therewith and having an opening at its lower end, a rear inclined wall of said coke chamber, a false back tiltable towards said inclined wall to facilitate coke discharge from said coke chamber, an enclosed shutter for cutting off said retort from

said coke chamber, and a door for sealing said opening at the lower end of said coke chamber.

2. The combination with a vertical carbonization retort, of an unobstructed coke chamber fixed beneath said retort to form a continuous chamber therewith and having an opening at its lower end, a rear inclined wall of said coke chamber, a false back tiltable towards said inclined wall to facilitate coke discharge from said coke chamber, a shutter provided on said false back for cutting off said coke chamber from said retort when said false back is tilted, and a door for sealing said opening at the lower end of said coke chamber.

3. The combination with a vertical carbonization retort, of an unobstructed coke chamber fixed beneath said retort to form a continuous chamber therewith and having an opening at its lower end, a rear inclined wall of said coke chamber, a false back tiltable towards said inclined wall to facilitate coke discharge from said coke chamber, an enclosed shutter for cutting off said retort from said coke chamber, a door for sealing said opening at the lower end of said coke chamber, and coke hold-up means in said coke chamber above said door movable clear of the path of the coke during discharge of coke from said coke chamber.

In testimony whereof I have signed my name to this specification.

ERNEST WEST.

40

105

45

110

50

115

55

120

60

125

65

130