Nov. 5, 1974 W. D. EDGAR ETAL 3,846,252

COKE DISCHARGING SYSTEM

Original Filed Dec. 27, 1971 2 Sheets-Sheet 1

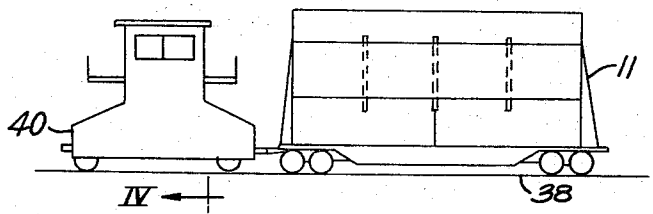


FIG. 1

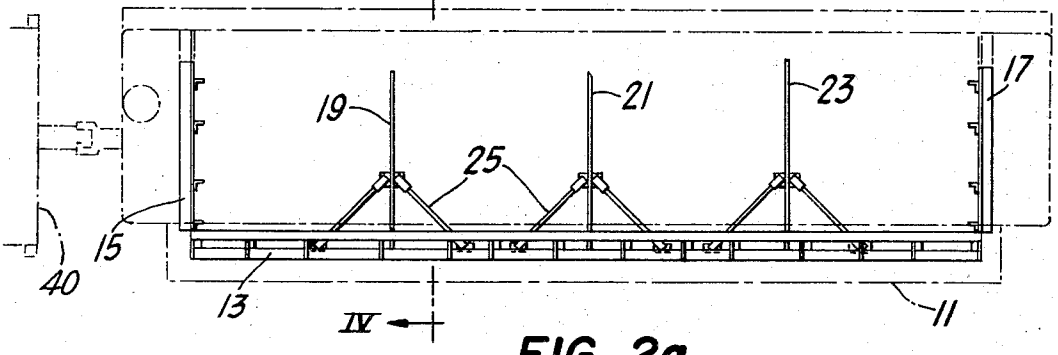


FIG. 2a

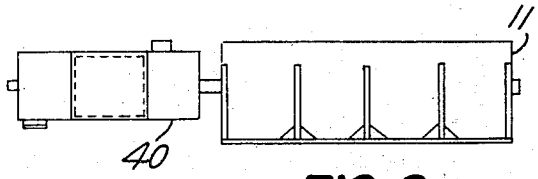


FIG. 2

FIG. 1a

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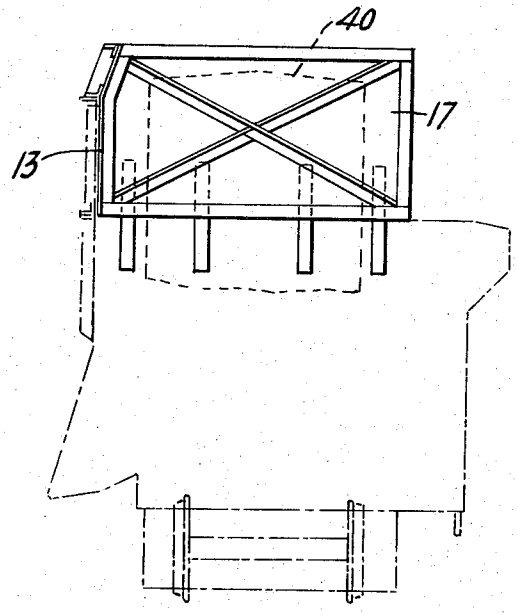


FIG. 3

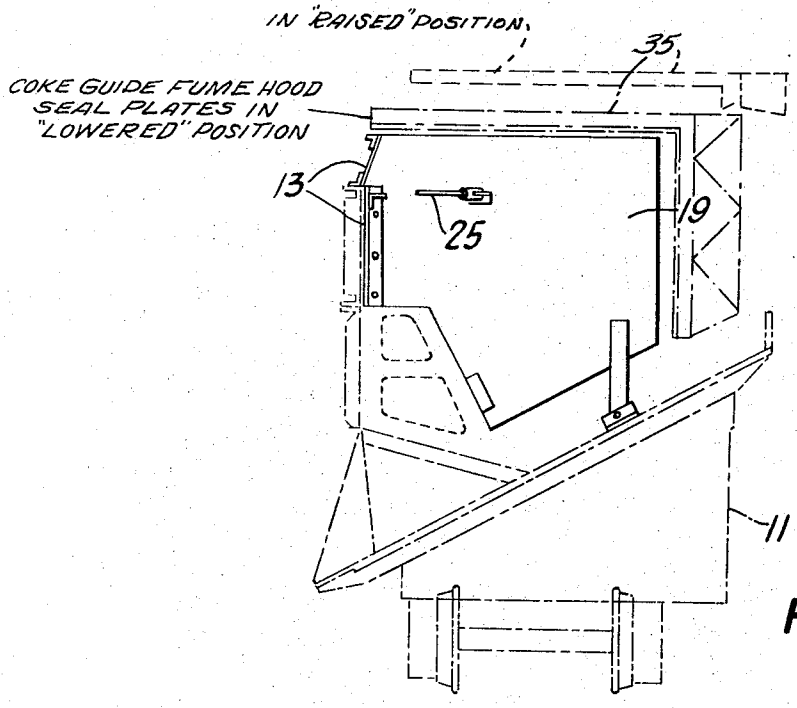


FIG. 4

United States Patent Office

3,846,252

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3,846,252

COKE DISCHARGING SYSTEM

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Original application Dec. 27, 1971, Ser. No. 212,570, now Patent No. 3,788,236. Divided and this application Oct. 26, 1973, Ser. No. 409,948

Int. Cl. B61d *3/16;* C10b *39/14*

U.S. Cl. 202—262 1 Claim

ABSTRACT OF THE DISCLOSURE

A coke quenching car is provided with a plurality of transversely extending baffles that reduce the gap between the quenching car and the coke guide hood. The end walls and one side of the car, like the baffles extend above the top of the quenching car locomotive.

CROSS REFERENCE TO RELATED APPLICATION

This is a division of application Ser. No. 212,570, filed Dec. 27, 1971, and now U.S. Pat. No. 3,788,236.

BRIEF SUMMARY OF THE INVENTION

A conventional coke quenching car is provided with a raised longitudinal side; particularly the side opposite the coke oven battery. The interior of the quenching car is subdivided by spaced apart internal baffle plate extending transversely of the car. The end walls of the car are also extended vertically.

For a further understanding of the invention and for features and advantages thereof, reference may be made to the following description and the drawing which illustrates a preferred embodiment of equipment in accordance with the invention which is suitable for practicing the method of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a schematic elevational view of a coke quenching car of the invention and a locomotive for moving such car;

FIG. 1*a* is a schematic side elevation view of an improved coke quenching car in accordance with the invention;

FIG. 2 is a schematic plan view of the locomotive and car of FIG. 1;

FIG. 2*a* is a plan view of the car of FIG. 1 without the hood shown therein;

FIG. 3 is an end view of the car of FIG. 1; and

FIG. 4 is a sectional view along line IV—IV of FIGS. 1*a* and 2*a*.

DETAILED DESCRIPTION

Referring to FIG. 1*a*, a conventional coke quenching car **11** is indicated in phantom outline. To the car **11** there has been added a longitudinally extending side plate **13**, two upwardly extending end walls **15, 17**, and three spaced apart transversely extending interior baffle plates **19, 21, 23**.

Each interior baffle plate **19, 21, 23** is bolted or otherwise suitably connected to the side wall and to the bottom of the coke quenching car **11**, and is provided with a pair of conventional turnbuckles **25**. The turnbuckles **25** connect to the baffle plates **19, 21, 23** at one end, and to the upwardly extending side plate **13** at the other end. These turnbuckles **25** are adjustable so as to keep and maintain the baffle plates **19, 21, 23** about perpendicular to the longitudinal side walls of the coke quenching car **11**.

It will be noted from FIGS. 3 and 4, that the upwardly extending end walls **15, 17** and the interior transversely

extending baffles **19, 21, 23** do not extend transversely across the full width of the coke quenching car **11**, since it has been found that this is not necessary.

FIG. 1*a* also shows in outline form a coke guide fume hood **27** like that described in copending application, Ser. No. 170,926 filed Aug. 11, 1971, and now U.S. Pat. No. 3,785,933. The hood **27** is shown in the drawing in an aligned position at a coke oven chamber **29** from which coke **31** is being pushed, and coke already fills one interior space in the quenching car, as at **33**. The hood **27** has a pair of horizontally extending covers **35, 37** which are about as extensive lengthwise as the distance between adjacent baffles **19, 21** or **21, 23**, or between a baffle and an end wall.

Investigation has shown that the efficacy of a hood for collecting smoke, dust and fumes from coke as it is being pushed from a coke oven chamber depends upon the control exercised to limit the amount of air that contacts the incandescent coke. Earlier forms of hoods, that are disclosed in the prior art and that are used in the industry, had a wide gap between the quenching car and the hood, which gap was required to permit the unobstructed passage of the quenching car locomotive under the hood. This wide gap admitted much air and cross winds that greatly affected the control of the emission of smoke, dust and fumes.

From FIG. 1*a* it will be noted that the coke **33** has already filled the space in the quenching car between baffle **23** and end wall **17** and that, as the coke quenching car moves in the direction of the arrow A, the resident coke **33** is covered by the cover **37**. The falling coke **31** is filling the next adjacent space in the quenching car between the baffles **21, 23** and the cover **35** covers the space between the baffles **19, 21**.

The coke guide hood **27** and the covers **35, 37** are spaced apart about two inches above the top edge of the baffles and the same distance above the end walls while coke is being pushed. The covers **35, 37**, as described in the aforementioned copending application, may be raised when coke pushing has ended, and may be lowered just before and maintained during the coke pushing period. Therefore, there is very little open area for air and cross winds to contact the hot coke and to cause great amounts of smoke, dust and fumes to be emitted.

From the foregoing description of one embodiment of the invention, those skilled in the art should recognize many important features and advantages of it, among which the following is particularly significant:

That, because reasonably well heated coke emits dust and fumes during its movement through the coke guide, during its fall into the quenching car, and for a few seconds thereafter while resident in the quenching car, little or no undesirable emissions occur since the covers and internal baffles effectively isolate the falling coke and any fumes and dust that do evolve are carried away in the hood.

Although the invention has been described herein with a certain degree of particularity it is understood that the present disclosure has been made only as an example and that the scope of the invention is defined by what is hereinafter claimed.

What is claimed is:

1. In a system for guiding coke through a coke guide and a quenching car that is adapted for movement by a locomotive for receiving the coke, the improvement comprising:

(a) a plurality of cantilevered baffles installed to one side of and within and extending transversely of said quenching car, with the top edge of said baffles being above the top of said locomotive, said baffles dividing said quenching car into a plurality of coke carrying

spaces and being spaced apart from the bottom and from the other side of said car;

(b) means connected to said one of the sides and to each baffle supporting it in a transverse position in said car; and

(c) a cover on said coke guide that extends over at least two of said coke carrying spaces as coke is being received in said quenching car.

References Cited

UNITED STATES PATENTS

3,716,457	2/1973	Schon	202—227
1,105,948	8/1914	Wright	105—254
1,697,475	1/1929	Pinder	105—254
3,099,229	7/1963	Wethly	105—254
3,017,622	1/1962	Horstall	214—23 X
705,761	7/1902	Hulett	105—254
218,689	8/1879	Sabbaton	214—23
975,861	11/1910	Harrigan	105—251
1,317,253	9/1919	Wright	105—254
1,362,977	12/1920	Wilputte	214—41 X
1,422,997	7/1922	McGregor	214—41 X
3,067,890	12/1962	Veyrie	214—64.2 X

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U.S. Cl. X.R.

214—41; 202—227, 263; 105—254