

E. RAMSAY.
 APPARATUS FOR CONVEYING COKE FROM COKE OVENS.
 APPLICATION FILED JUNE 15, 1903.

933,666.

Patented Sept. 7, 1909.

3 SHEETS—SHEET 1.

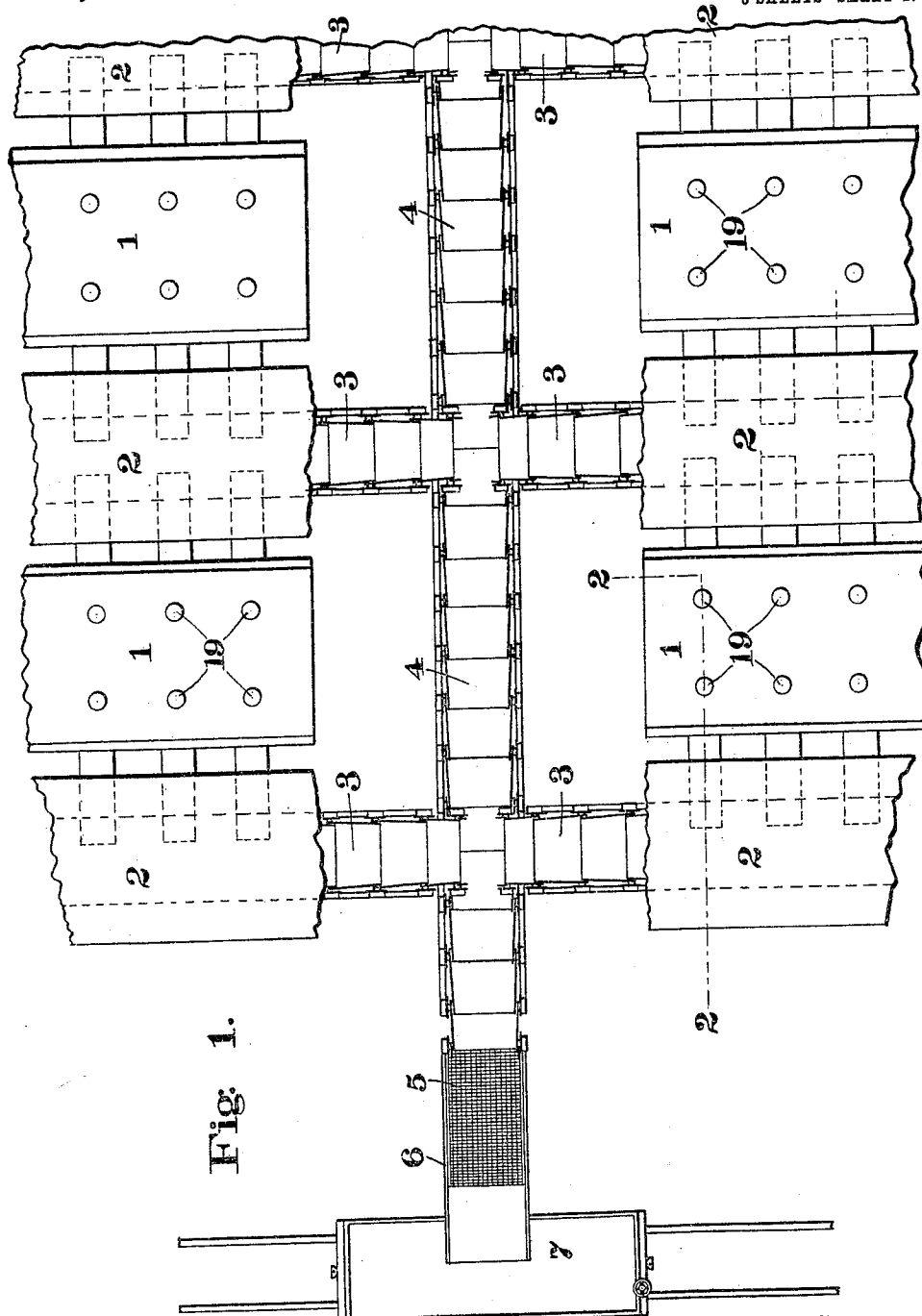


Fig. 1.

Witnesses

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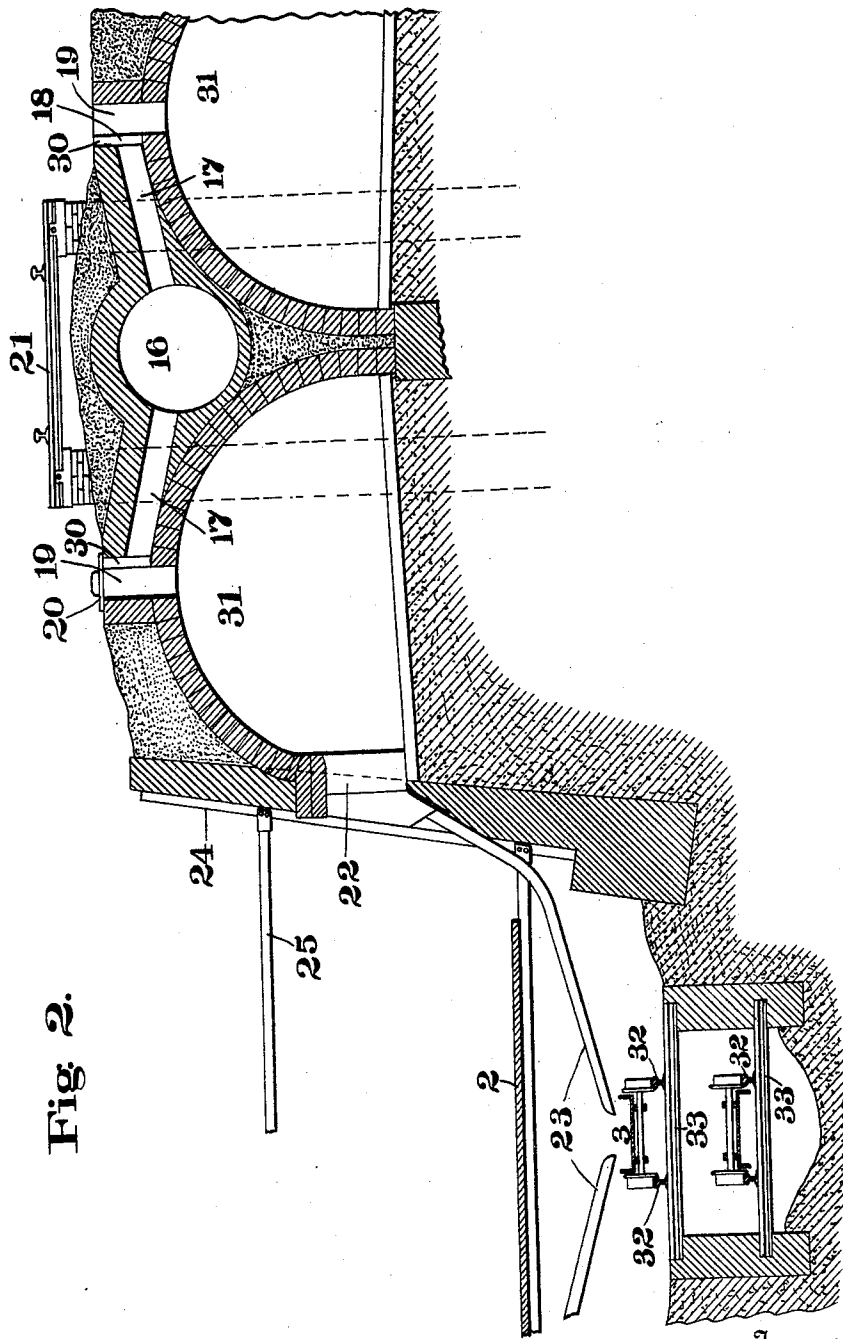


Fig. 2.

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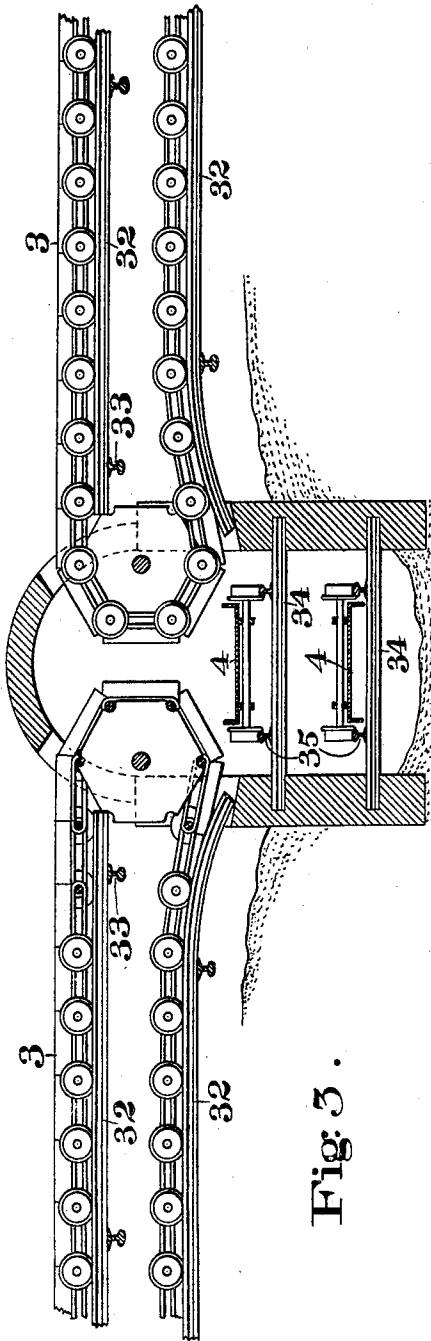


Fig. 3.

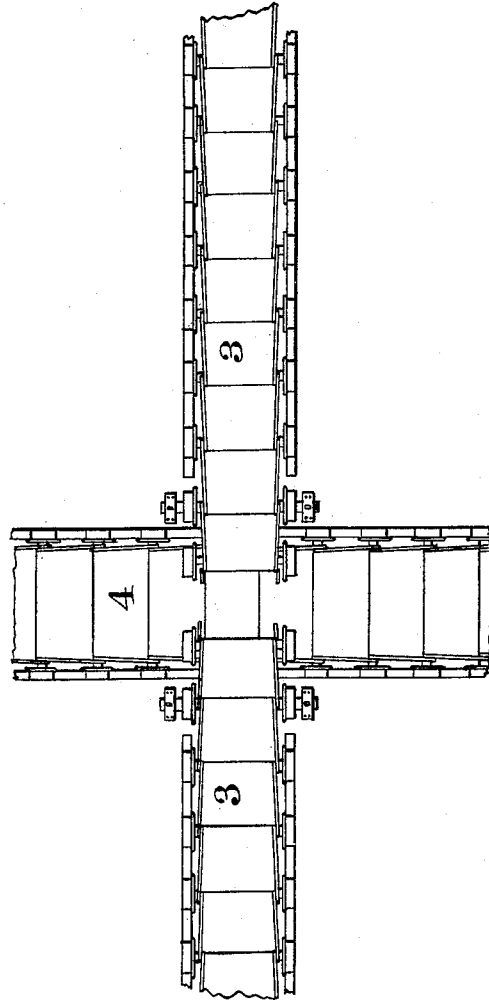


Fig. 4.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR CONVEYING COKE FROM COKE-OVENS.

933,666.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed June 15, 1903. Serial No. 161,545.

To all whom it may concern:

Be it known that I, ERSKINE RAMSAY, a citizen of the United States, and a resident of Birmingham, Jefferson county, State of Alabama, have invented certain new and useful Improvements in Apparatus for Conveying Coke from Coke-Ovens, of which the following is a specification.

My invention relates to coke ovens and more particularly to apparatus for conveying the coke drawn or discharged from such ovens directly to cars or other suitable receptacles.

It has been the common practice to draw the coke from the ovens by coke drawing tools manipulated by workmen standing upon the yard in front of the oven doors, the coke falling from the oven doors upon the yard in piles. It is forked into cars or into barrows and then wheeled into cars, or conveyed to a suitable place of deposit near railroad cars, when there are no cars and the coke must be "stocked", whence it is forked into the cars for shipment. In the process of drawing considerable space is taken up by the accumulation of the coke in front of the ovens, interfering with the work of the workmen, and much inconvenience and discomfort result to the workmen, by reason of the great heat which rises from the pile of coke, especially in the summer months. Besides, the breeze or ashes is only more or less perfectly separated from the larger coke, in the forking operations. This waste left on the yard after the coke has been forked must be hauled or carted away and is sometimes used as a waste product for fills or ballast by the railroads. It has been proposed to utilize conveyers running in front of the oven doors, onto which the coke is to fall from the said doors as it is drawn from the oven by the workmen, but such conveyers, so located, not only take up considerable room, thereby making it inconvenient for the workmen to properly draw the charge, as it makes it difficult and laborious to get close enough for the purpose, but it necessitates the use of a conveyer for each line of ovens.

By my invention I overcome all the objections noted, since my conveyers are located underneath the platform, and are out of the workmen's way, and a single conveyer will serve two lines or rows of ovens, and, acting in conjunction with a main conveyer, will deliver the coke directly from the ovens

as it is drawn therefrom to railroad cars ready for shipment, or to any other suitable place.

With this object in view, my invention consists in the novel construction and the details thereof as hereinafter described, with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the drawings, Figure 1, is a plan view illustrating the application of my invention to several batteries of coke ovens; Fig. 2, is an enlarged transverse detail section on the line 2—2, Fig. 1; Figs. 3 and 4, are enlarged detail side and plan views of the delivery end of the supplemental or auxiliary conveyers.

Referring to the drawings, in which the same reference characters relate to the same or corresponding parts in all the views, the numeral 1 indicates two batteries of beehive coke ovens, each comprising double rows or lines of retorts 31, any suitable number of which may be constructed with an intervening space between them in which the main conveyer 4 operates.

As shown in Fig. 2, the beehive coke ovens are preferably constructed in pairs each having a retort 31, provided with a door 22, a feed or charging opening 19 closed by a cover 20 and communicating by a cross flue 17 with the main flue 16, which preferably conducts the waste gases to a boiler plant, which are there utilized in generating steam. Each flue 17 is preferably provided with a removable brick damper 18, which can be readily dropped into a recess or groove 30 at the junction of said flue with the feed opening 19, thereby cutting off at will any particular retort from the main gas flue 16, such cutting off of the retort being very desirable when the oven door is open for watering or cooling and discharge of the coke, the corresponding cover 20 being removed during such times, allowing the steam and gases to escape directly into the atmosphere during such interval, or at any other time desired. The top of each double line of ovens is surmounted by a suitable track 21, intermediate two rows of ovens, upon which the cars travel for carrying the coal to the respective ovens for filling the same. The oven retaining walls are preferably braced by vertical braces 24 tied together by transverse braces 25 extending between said vertical braces 24 on opposite series of ovens.

From each door 22, I extend a chute 23 which is adapted to discharge into an auxiliary conveyer 3 located below the platform 2, on the latter of which the coke drawer 5 stands. It will be observed that this conveyer is located below the platform, and in such position as to receive the coke from any number of ovens constituting opposite rows of ovens in opposite batteries, each such conveyer thus serving two rows of ovens. This conveyer may be of any suitable form, but I have indicated a preferable form in which buckets or pans are carried by traction rollers running upon rails 32 supported by beams or cross ties 33, and each auxiliary conveyer is adapted to discharge its load onto a similarly constructed main conveyer 4, running transversely thereto on rails 35 supported upon beams 34. The delivery end of the main conveyer is arranged to discharge the coke onto a suitable snaking screen 5, along which the large coke travels, freed of the smaller particles, and falls onto a chute at the delivery end of a similar shaking screen 6, underneath said screen 5, and thence into a car 7, the smaller lumps of coke passing through the meshes of the screen 5 onto the screen 6, and such smaller lumps as are not finally separated by said screens likewise passing into the car 7.

It is sometimes necessary or desirable to load the coke into a box car instead of an open top, and for this purpose I provide a suitable chute.

By the use of the conveying apparatus, as herein described, it will be seen that I am not only enabled to load the coke directly into cars from the ovens in an expeditious way, without inconvenience or discomfort to the workmen on the coke drawing platform, but such coke is put into the cars ready for shipment much freer from breeze than by the prior methods of loading, and a greater percentage of the useful product is saved, while at the same time the smaller particles of separated coke not sent to the cars and heretofore lost are graded into the different commercial sizes all at one operation, and with the least expenditure of time and labor.

It will be observed that, in the operation of my apparatus, there is no attempt to separate the breeze from the coke at the ovens as has been the custom, but it is all carried by the conveyers to the screens, where the separation is mechanically and positively

effected without interruption to the loading function, and the small coke instead of being wasted as heretofore is discharged from the primary screen into the grading screen, and there separated into the commercial sizes, the only loss being the dust.

While I have indicated conventionally shaking screens, it will be understood that any suitable kind of screens may be used, and while it is the primary purpose of my invention to effect the loading of the coke upon cars, it will be understood that the use of my apparatus to convey the coke to some desired point or bin is within the scope and spirit of my invention. Furthermore, my improved conveying apparatus may be used in connection with coke ovens of other form than the bee-hive, the latter being selected as a familiar type to which my invention may be readily adapted.

I claim as my invention:

1. In an apparatus for conveying coke from a coke oven, the combination with adjacent rows of coke ovens with a platform located between the rows of ovens below the plane of the oven doors, having a space between its sides and the ovens, a single conveyer centrally located beneath each platform, inclined chutes extending from the ovens through said space to the conveyer, and a single independent main conveyer traveling under and at right angles to the first conveyers adapted to receive the coke and deliver the same to a car or other suitable place, substantially as described.

2. In an apparatus for conveying coke from coke ovens, the combination of opposite batteries of ovens, platforms between the adjacent rows of ovens having spaces between the sides thereof and the ovens, single conveyers located centrally under each of said platforms, chutes extending from the ovens through said space for receiving the coke from the coke ovens and depositing the same by gravity in said conveyers, a single independent conveyer traveling transversely to said conveyers between the opposite batteries of ovens adapted to receive the coke from each of said first conveyers.

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

ERSKINE RAMSAY.

Witnesses:

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