

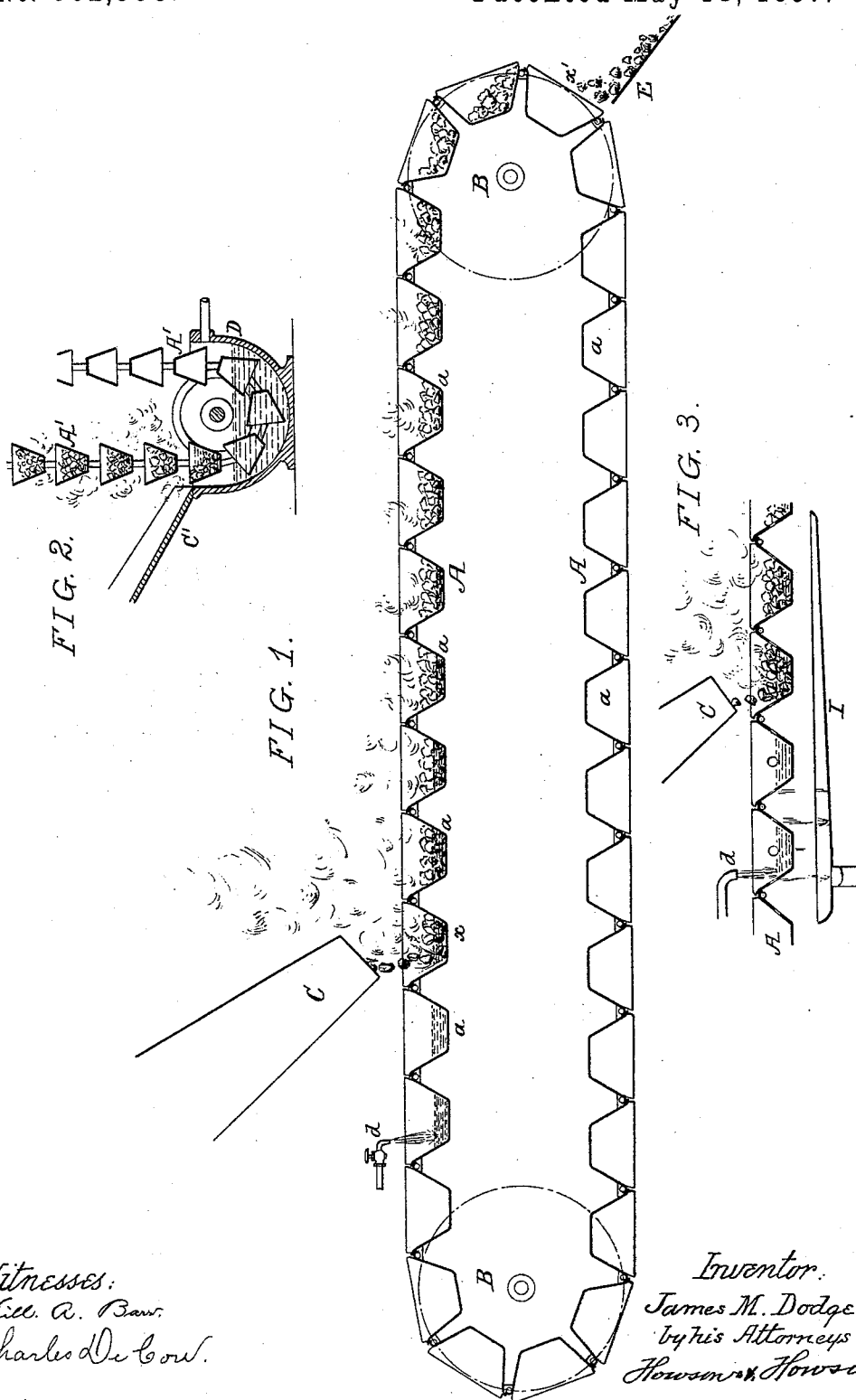
(No Model.)

J. M. DODGE.

CONVEYER FOR COKE OR ANALOGOUS MATERIALS.

No. 582,903.

Patented May 18, 1897.



Witnesses:
Wm. A. Barr,
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UNITED STATES PATENT OFFICE.

JAMES M. DODGE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
LINK BELT ENGINEERING COMPANY, OF SAME PLACE.

CONVEYER FOR COKE OR ANALOGOUS MATERIALS.

SPECIFICATION forming part of Letters Patent No. 582,903, dated May 18, 1897.

Application filed February 6, 1897. Serial No. 622,340. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. DODGE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Conveyers for Coke or Analogous Materials, of which the following is a specification.

The object of my invention is to provide means for conveying and cooling coke and
10 like material and at the same time prevent the warping of the buckets and pans in which the material is conveyed.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a conveyer,
15 illustrating my invention. Fig. 2 is a view of another form of conveyer, and Fig. 3 is a view showing the buckets with drainage-openings.

Heretofore it has been almost impossible to
20 convey coke directly from the retorts, except by the hand process, owing to the fact that the heat of the coke soon distorts the buckets or pans and makes the working parts of the conveyer useless in a very short time, and,
25 furthermore, the coke conveyed to a pile without being sprayed by water will soon burn away until it is practically destroyed.

By my invention I am enabled to convey the coke directly from the retorts and at the
30 same time quench the fire immediately and deliver the coke at the end of the conveyer in a cooled condition and without distorting the buckets or pans.

Referring to Fig. 1, A is an endless-chain
35 conveyer consisting in the present instance of two chains having buckets *a* mounted between them, the buckets being secured to the links. The chains pass around wheels B B at each end. One of the wheels may be the
40 driving-wheel. It will be understood, however, that the conveyer or buckets may be modified without departing from my invention. The bottoms of the buckets are preferably water-tight, so as to hold sufficient
45 water for the purpose described hereinafter.

C is a chute which extends over the conveyer and is so situated that when the coke is drawn from the retorts it can be discharged into the chute and the chute in turn will
50 charge into the buckets of the conveyer. There can be arranged along the conveyer a

series of these chutes, if necessary, in front of the retorts, and a chute can be provided with mechanism by which the material can be fed to the conveyer in given quantities. 55

E is a chute at the opposite end of the conveyer, onto which the coke is discharged and from which it may pass to a pile or to another conveyer of any of the common forms, by which it is carried to the bins, cars, or boats. 60

Directly back of the chute C is a water-pipe *d*, provided with a suitable valve, and this pipe discharges into the buckets of the conveyer, and the discharge is so regulated that during the travel of each bucket under the
65 outlet of the pipe a certain amount of water will flow into the bucket, so that when the bucket passes under the chute C to be charged with coke the hot coke will be deposited in the bucket containing the water, and the heat
70 of the coke will immediately tend to vaporize the water, and the water at the same time will cool the coke, so that as the conveyer-bucket moves forward the coke will be gradually
75 vaporized until the bucket reaches the point of discharge *x*, when the coke will be comparatively cool and the water will be vaporized, so that the coke is not destroyed by the
80 slow burning process, as the fire is quenched immediately, and as the buckets contain water when first charged with the coke they do not warp, and consequently the machinery is not impaired by the handling of the heated material. 85

It will be understood that my invention may be used for conveying other heated material than coke which is not injured by plunging it into a body of water or other liquid.

In Fig. 2 I have shown a bucket-elevator
90 A', the boot D of which forms a reservoir for water or other liquid, and above this boot at one side is the feed-chute C' for the coke, so that as the buckets pass around the lower guide-wheel they enter the water and scoop
95 up a certain amount, and as they pass the feed-chute they will be charged with coke, which will be cooled by the water in the buckets.

In order to regulate the amount of water
100 in the buckets, drainage-openings may be formed therein, as shown in Fig. 3, so that a

certain amount of water will escape when the buckets are charged with coke, and when the flow of water is irregular a pan or gutter I may be arranged under the buckets to receive the escaping water.

I claim as my invention—

1. The combination in apparatus for conveying coke and like material, of the conveyer, having buckets, a chute adapted to direct the heated coke into the buckets of the conveyer, with a water-supply so situated that the buckets will be charged with water prior to being charged with the heated coke, substantially as described.

2. The combination in an endless-chain conveyer having buckets adapted to travel in a horizontal plane, a pipe for admitting water to the buckets, a spout for discharging heated coke into the buckets after they are partially filled with water, substantially as described.

3. The combination in an endless-chain conveyer having buckets, a chute adapted to direct the heated coke into the buckets of the conveyer and a water-supply adapted to charge the buckets with water in advance of the chute, the conveyer being so proportioned that prior to the discharge of the coke from the buckets the water will be vaporized, substantially as described.

4. The combination in an endless-chain conveyer having buckets adapted to travel in a horizontal plane, a pipe for admitting water to the buckets, a spout for discharging

heated coke into the buckets after they are partially filled with water, and a discharge-spout at the end of the conveyer, the conveyer being of such a capacity and being driven at such a speed that the water will be vaporized before the coke is discharged from the conveyer, substantially as described.

5. The combination of an endless-chain conveyer having buckets thereon with drainage-openings, a chute for coke, and a water-supply in advance of the coke-chute so that water will be admitted to each bucket prior to its being charged with coke, the surplus water escaping through the drainage-openings, substantially as described.

6. The combination of an endless-chain conveyer having buckets thereon with drainage-openings, a charging-chute, a water-supply in advance of the charging-chute so that each bucket will be supplied with water prior to being charged with coke or other material, and a pan or gutter mounted under the buckets and adapted to receive the surplus water escaping from the buckets, substantially as described.

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

JAMES M. DODGE.

Witnesses:

WILL. A. BARR,
JOS. H. KLEIN.