J. G. W. ALDRIDGE.

CHARGING MACHINE FOR GAS RETORTS AND THE LIKE.

APPLICATION FILED DEC. 23, 1912.

1,066,874.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

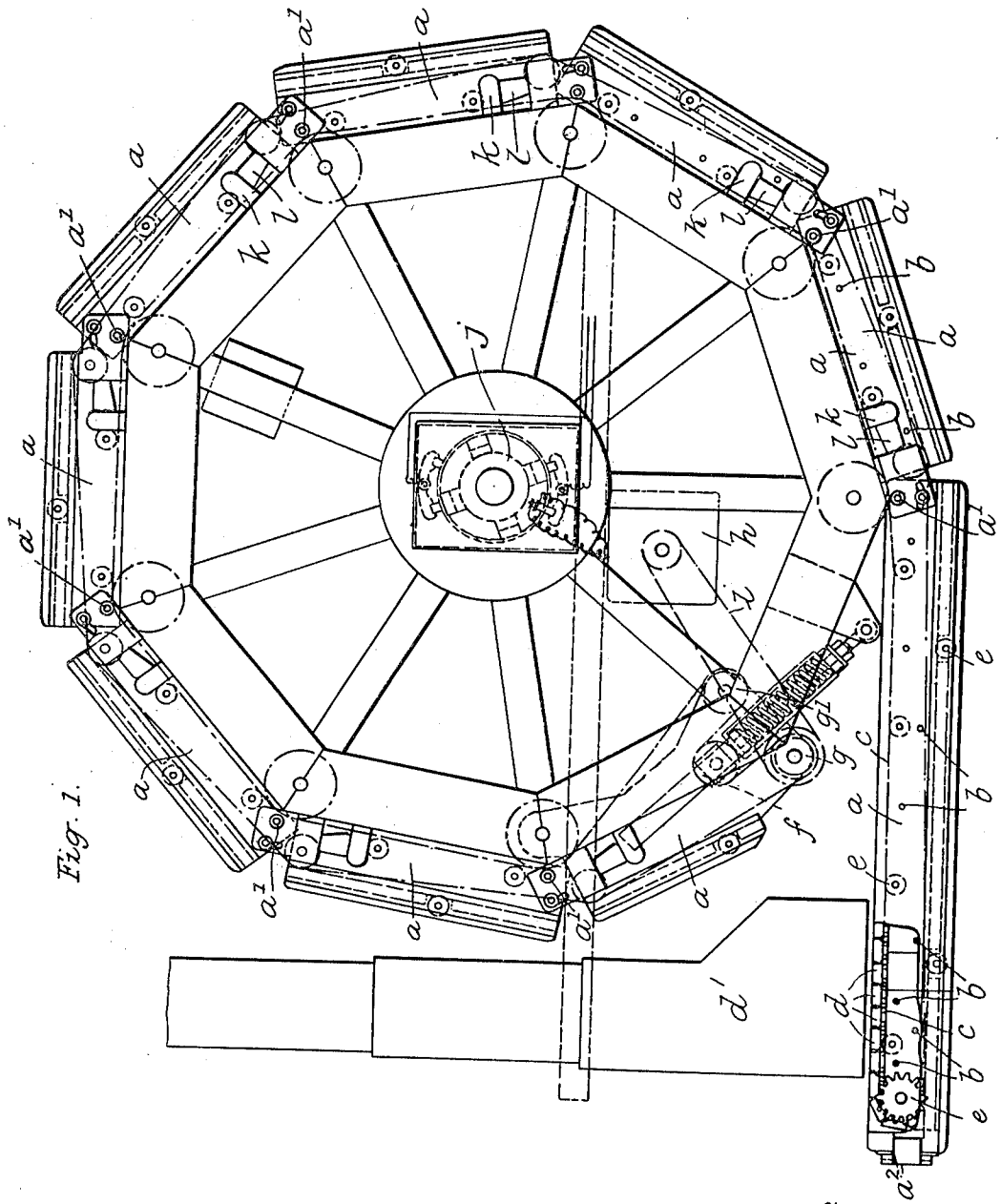


Fig. 1.

Witnesses.
E. D. Haines.
A. Van Loock

Inventor.
James G. W. Aldridge.

By A. Bellisson & Co
Attorneys.

J. G. W. ALDRIDGE.

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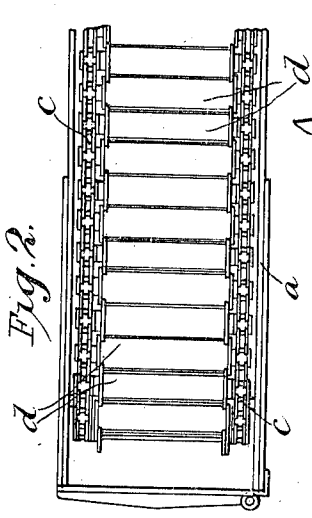


Fig. 2.

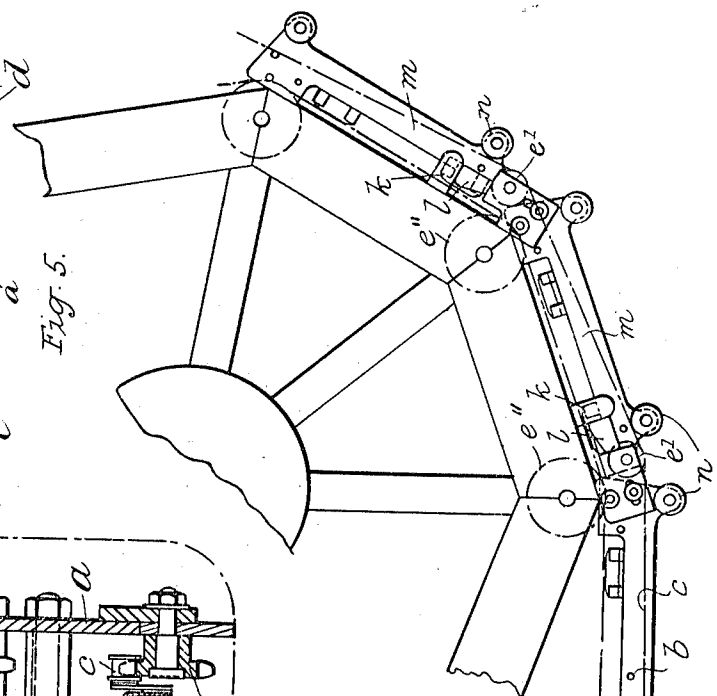


Fig. 5.

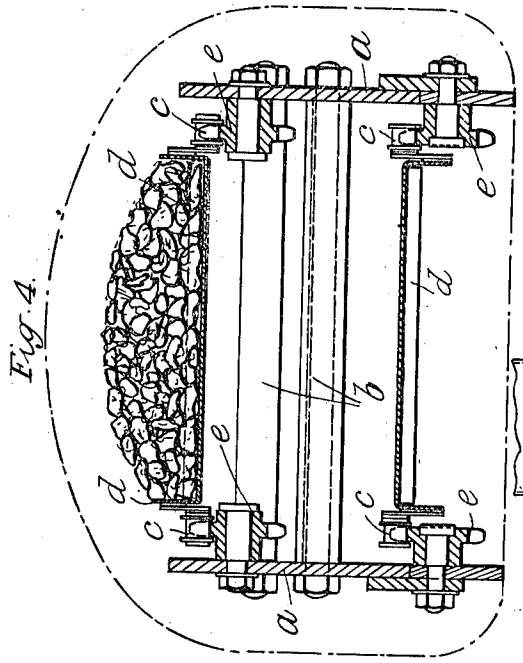


Fig. 4.

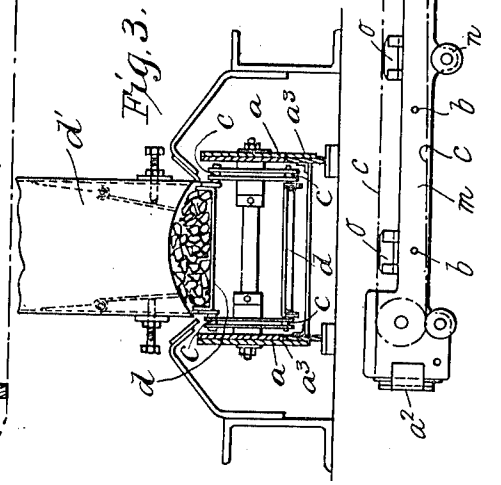


Fig. 3.

Witnesses.
E. D. Haines.
A. Van Loock.

Inventor
James G. W. Aldridge.

By H. B. Wilson & Co
Attorneys

UNITED STATES PATENT OFFICE.

JAMES GEORGE WILLCOX ALDRIDGE, OF WESTMINSTER, LONDON, ENGLAND.

CHARGING-MACHINE FOR GAS-RETORTS AND THE LIKE.

1,066,874. Specification of Letters Patent. Patented July 8, 1913.

Application filed December 23, 1912. Serial No. 738,301.

To all whom it may concern:

Be it known that I, JAMES GEORGE WILLCOX ALDRIDGE, a subject of the King of Great Britain and Ireland, residing at 39 Victoria street, Westminster, London, S. W., England, have invented certain new and useful Improvements in Charging-Machines for Gas-Retorts and the Like, of which the following is a specification.

This invention for improvements in charging machines for gas retorts and the like, consists in mounting an endless chain conveyer on a carrier capable of introducing the endless conveyer into the retort.

The carrier consists of jointed side plates or supporting members connected together by distance pieces.

The carrier and chain conveyer both enter the retort together, the chain conveyer not being actuated to deposit the charge until the far end of the retort is reached, when the conveyer is started and as the carrier chain and endless conveyer are withdrawn, the conveyer completely fills up the retort with coal.

The carrier may be provided with the usual front push plate to force out the coke in a through retort. The conveyer may be driven from an electric motor mounted on the charger carriage.

In one way of carrying out this invention the carrier chain consists of two side plates held together by distant pieces and each side consists of a series of links either solid or skeleton. Friction rollers or guide sprocket wheels are fitted at intervals between the side plates to carry the conveyer chain. At the back of the front push plate and between the side plates are fixed sprocket wheels, over which the chain conveyer carrying the coal passes. This chain conveyer runs the full length of the carrier chain so that we have one chain inside another. At the inside or anchor end of the carrier chain is mounted the driving sprocket geared to a motor. By forming the carrier with jointed side plates it is enabled to adapt itself to unevenness or distortion in the retort. In some cases the charger is wound on a drum as hereinafter described. Compensating gear provides for the difference in length when the carrier chain is wound on a drum. The conveyer which is continuous passes over the sprocket wheels at the back of the front push plate, and over the guide pulleys provided on each link, to the compensating gear, and then around the driving sprocket wheel on the anchor section. Slates of asbestos or other suitable material may be fitted on the lower part of the carrier chain, beneath the conveyer, to protect it from the heat of the floor of the retort.

Instead of, or in addition to the guide rollers, the conveyer may pass over horizontal guide blocks secured on the sides of the carrier chain.

The accompanying drawings illustrate three practical forms of the present invention, Figure 1 being a side elevation showing the carrier chain wound on the drum. Fig. 2 is a plan of the end of the carrier chain showing the chain conveyer. Fig. 3 is a transverse section through the chains and the coal hopper. Fig. 4 is a transverse section of the chain showing its position relative to the retort. Fig. 5 is a side elevation of a modified carrier chain arranged on the drum.

As shown in Figs. 1 to 4 the carrier chain is composed of side plates a which are connected by distance pieces b and are linked together at their ends a to form a chain. The front end of the carrier chain is provided with a hinged push plate a^2, by means of which the coke is discharged. The side plates are protected with asbestos slates as is usual with charging dischargers of this kind; and may be fitted with removable wearing strips (not shown) on their lower edges.

The chain conveyer comprises a pair of endless roller chains c which are connected together by trays d adapted to carry the coal. This chain conveyer runs the whole length of the carrier chain and is supported at its ends and at intervals on sprocket wheels e arranged on the side plates a of the carrier chain. Other sprocket wheels or rollers e' are arranged at the ends of the side plates and e'' at angles of the chain drum for carrying the chain conveyer when the charger is wound on the drum. At the anchored end of the carrier chain a compensating gear is provided, comprising a pair of spring mounted sprockets f mounted between two pairs of fixed sprockets g g' over which the chain conveyer runs. This center pair of wheels f absorbs any shocks or takes up the slack in the chain conveyer. The carrier chain and chain conveyer are passed beneath a hopper or coal chute d'

from which the coal is fed into the conveyer before entering the retort.

The chain conveyer is driven preferably from an electric motor *h* arranged on the chain wheel or drum and connected to the sprocket wheel *g* by an endless belt or chain *i*. The electric current is fed to the motor by a suitable distributing device *j* arranged around the spindle of the chain wheel. The chain wheel is provided with the usual driving arms *k* which engage blocks *l* for driving the charger into the retort.

In the modified form of carrier chain shown in Fig. 5 the side plates *m* are constructed of skeleton pattern, and are provided with rollers *n* arranged on lugs on their lower edges. The chain conveyer *c* is mounted to slide over guide blocks *o*, sprocket wheels being provided at the ends of the carrier chain and angles of the chain drum as before. In this arrangement the intermediate sprocket wheels are obviated.

The carrier is mounted on the usual traversing carriage which is provided with the gear necessary for moving and operating the charger.

The action is as follows:—The carrier first pushes out the coke and the motor actuating the chain conveyer is preferably not started until the far end of the retort is reached so that the charge is deposited in the retort as the charger is being withdrawn, the coal being carried over the sprocket wheel at the inner end and filling the retort.

I have described this machine as applied to a gas retort but the same is also applicable to coke ovens and the like.

What I claim and desire to secure by Letters Patent is:—

1. A discharging charger for gas retorts comprising a carrier chain anchored at one end, an endless conveyer mounted within said carrier chain, a positioning gear at the anchor end of the carrier chain for absorbing shocks and taking up slacks in the conveyer, means for projecting and withdrawing said chains simultaneously into and from the retort, and means for actuating said conveyer within and independently of said carrier.

2. A discharging charger for gas retorts comprising a carrier chain composed of side plates, links connecting the ends of said side plates, spacers connecting the plates at opposite sides of said carrier, sprocket wheels arranged at intervals on the inner face of said side plates, a chain conveyer comprising endless roller chains mounted to run on the sprocket wheels of said carrier chain, trays connecting said roller chains, means for projecting and withdrawing said chain in unison, and means for actuating said conveyer chain independently of the carrier chain.

In testimony whereof he has affixed his signature, in presence of two witnesses.

JAMES GEORGE WILLCOX ALDRIDGE.

Witnesses:
W. CHOWLES,
EUSTACE H. BARKER.