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APPARATUS FOR DISCHARGING RETORTS USED IN THE MANUFACTURE OF COAL GAS AND THE LIKE.

APPLICATION FILED OCT. 10, 1908.

912,679. Patented Feb. 16, 1909.

3 SHEETS—SHEET 1.

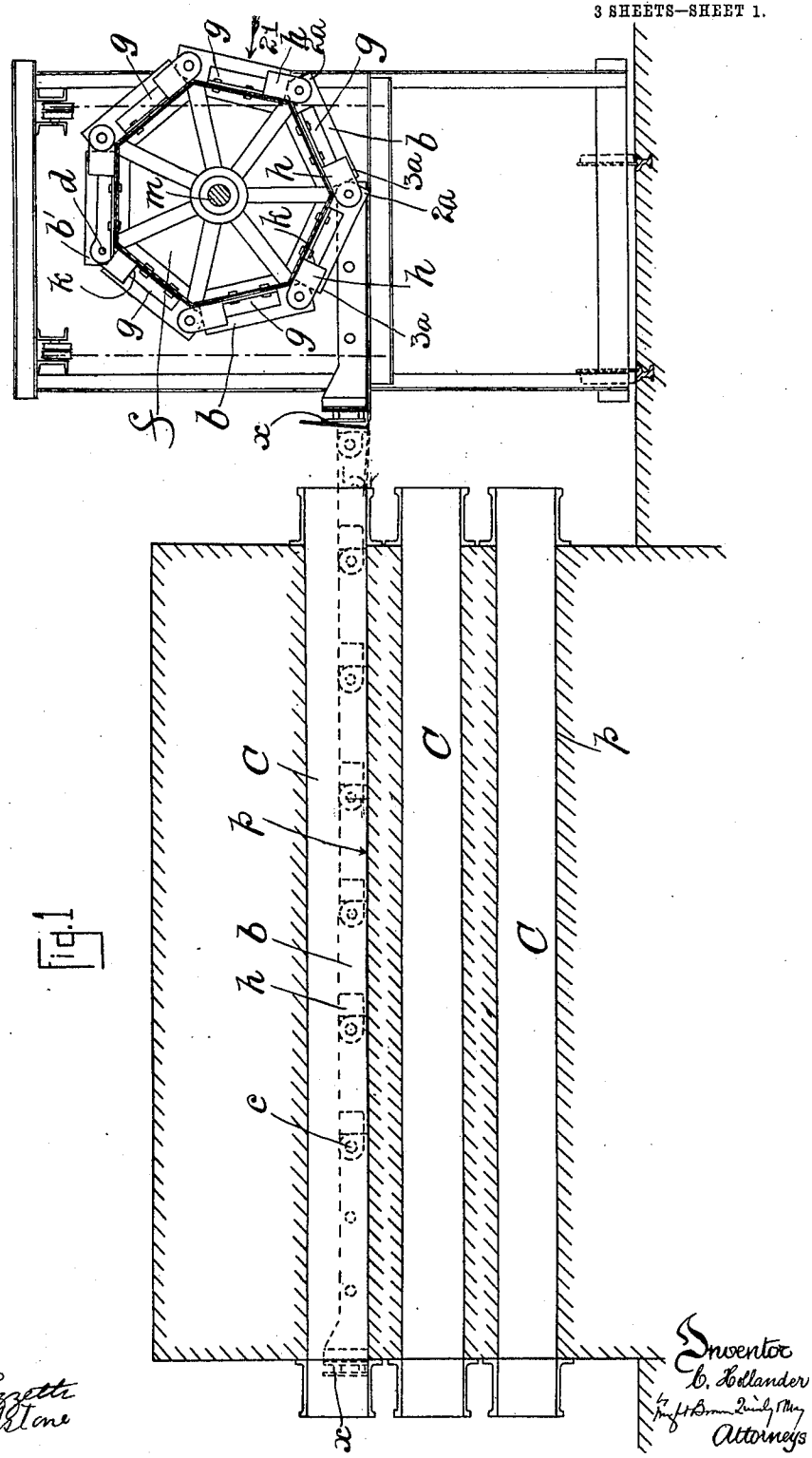


Fig. 1.

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3 SHEETS—SHEET 2.

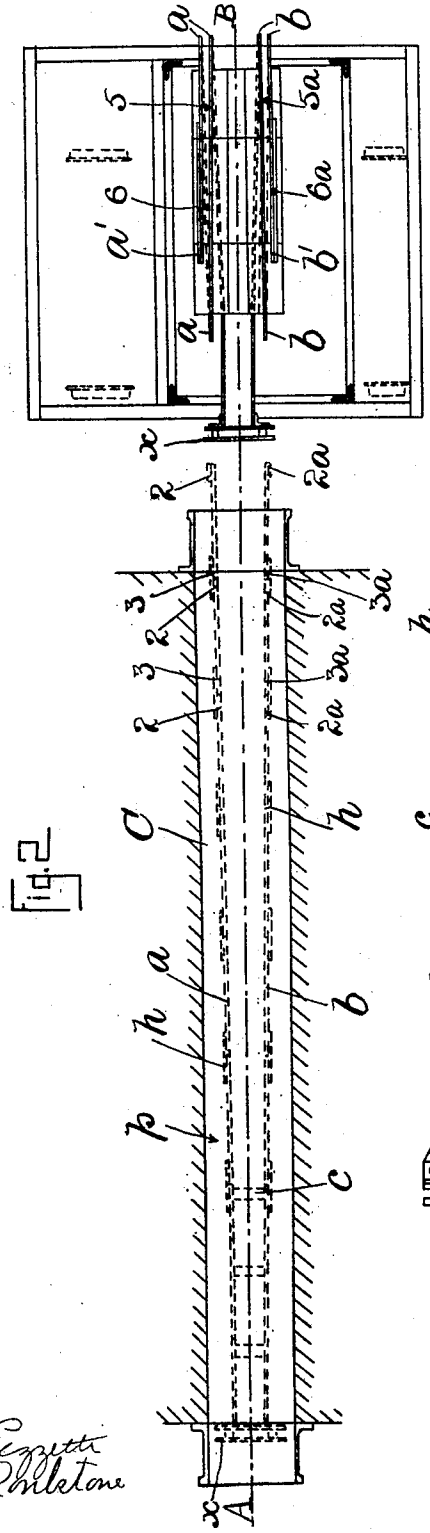


Fig. 2

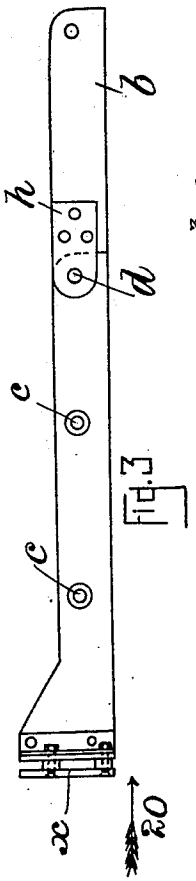


Fig. 3

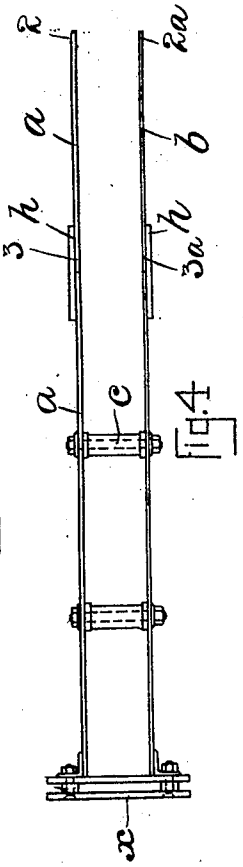


Fig. 4

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3 SHEETS—SHEET 3.

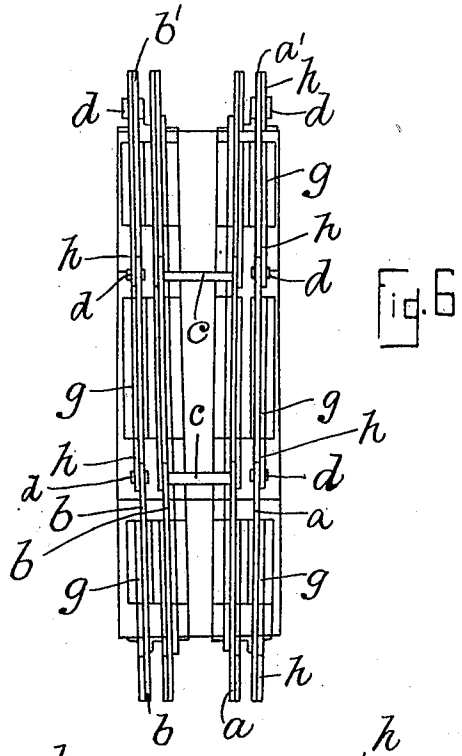


Fig. 6

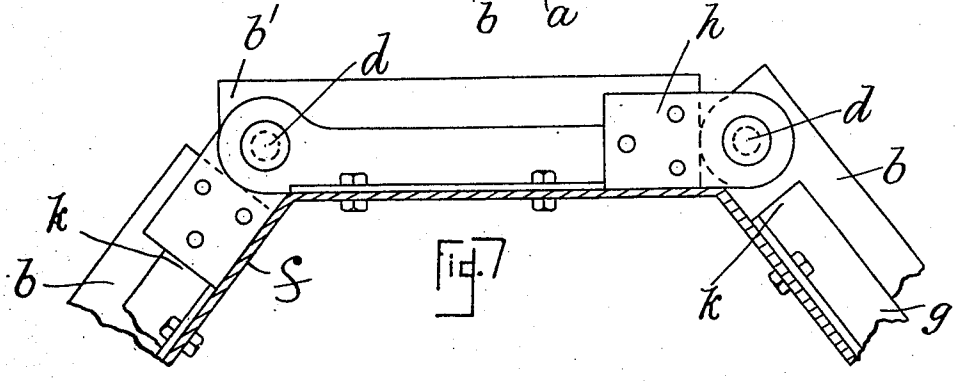


Fig. 7

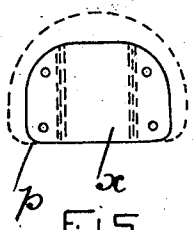


Fig. 5

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UNITED STATES PATENT OFFICE.

CORNELIUS HOLLANDER, OF MANCHESTER, ENGLAND, ASSIGNOR TO DRAKES LIMITED, OF OVENDEN, HALIFAX, ENGLAND, A COMPANY.

APPARATUS FOR DISCHARGING RETORTS USED IN THE MANUFACTURE OF COAL-GAS AND THE LIKE.

No. 912,679. Specification of Letters Patent. Patented Feb. 16, 1909.

Application filed October 10, 1908. Serial No. 457,069.

To all whom it may concern:

Be it known that I, CORNELIUS HOLLANDER, a subject of the King of Great Britain, and resident of 900 Chester road, Manchester, in the county of Lancaster, England, have invented a certain new and useful Improvement in Apparatus for Discharging Retorts Used in the Manufacture of Coal-Gas and the Like, of which the following description, wherein reference is made to the accompanying drawings, is a specification.

It relates to apparatus for discharging or removing the coke or spent substance from retorts used in the manufacture of coal gas and the like, said retorts being of the class known as "through" retorts in connection with which a push or pressing plate may be made to enter the opening at one end thereof to travel to move through same and carry with it so as to force out the coke, or substances to be removed therefrom, through the opening at the other end of said retort. And my said invention has especial reference to that class of discharging apparatus wherein a sectional or jointed push-bar is made use of, such sectional parts or links being so jointed together as to form a rigid bar when advancing through the retort while when being withdrawn therefrom the sectional parts may be wound around a drum.

The object of my said invention is to construct said sectional parts of the push bar and hinge or pivotally connect them together in such a manner that on being wound around the drum the diameter of same is not increased although two or more coils may be wound thereon while the direction of thrust is always in perfect alinement with the longitudinal center of the distended links and parallel with their path of motion without necessitating the transmission of lateral motion to their actuating drum during the time that it is being rotated and by the same method of construction the surface of the base of the retort over which said bar has to slide is not abraded, worn away or deteriorated so rapidly as when jointed bars of former construction are employed.

In the accompanying sheets of drawings which form part of this specification:—Figure 1 is part sectional side elevation of apparatus made in accordance with my invention. Fig. 2 is a plan or view of parts shown by Fig. 1 as seen from above. Figs. 3 and 4 are side view and plan respectively showing the extending end of push-bar and one of the links connected therewith, the same being drawn to an enlarged scale. Fig. 5 is end elevation of parts shown by Fig. 3 as seen in the direction of the arrow 20. Fig. 6 is a view of parts shown by Fig. 1 as seen in the direction indicated by the arrow 21 and drawn to an enlarged scale. Fig. 7 is a drawing in detail illustrating a method of hinging or connecting the links to their drums.

In carrying my invention into effect I construct the push-bar (which has the usual end push-plate x mounted thereon) in pairs of links a, b the links in each pair being held apart by their cross-stay-pieces c and by their attachment to the drums f so that their rear ends 2, 2^a are a greater distance apart than are the advancing ends 3, 3^a, thus when the whole series of links a b are connected together all the links in each series are in alinement with each other, yet the series a are at an angle to the series b as well as being at an angle to their path of motion indicated by the chain line A—B in Fig. 2; in this manner the two series of links a, b may be said to assume the form of a truncated-isosceles-triangle in contradistinction to a parallelogram as is the case when both series of links are parallel to each other.

Those links a, b which are held apart by the stay-pieces c (see Figs. 1 and 2) may have such stay-pieces to form their pivotal connections, while those links which are not held apart by the stay-pieces, have pivotal pins or studs d as their mountings. And as said links have to be coiled or wound upon the drum f I may only use the stay-pieces c on such a number of them as will make up the last coil thus the space between the other coils of links is free of them to enable said last coil to lie in its proper position upon the periphery of the drum f.

The drum f upon which the series of links a, b forming the push-bar, are to be mounted and by which they have to be moved into and out of one or other of the retorts C, is so constructed by having guiding and engaging plates or projecting flanges g upon its periphery that by the rearmost links a^1, b^1 being coupled to said drum f (as by the pivotal connection d shown by Figs. 6 and 7) on this latter being rotated, all the links of both of the series a and b will be wound thereon or

unwound therefrom as the case may be, and as these series of links *a* and *b* are at an angle to their path A—B, on being wound upon their drum *f* their courses will be in the form of a double helix so that each succeeding coil of links will fall upon the periphery of the drum *f* to lie between the preceding coils as do the coils 5, 5ª, between the coils 6, 6ª shown by Fig. 2; hence the outer diameter of said coils of links when wound on the drum *f* is the same whether there is only one of such coils thereon or whether there are two or more of same.

The series of links *a* and *b* are formed to be pivoted together as shown, and so that they may have lateral projecting surfaces or parts as at *h* in order that the outer ends *k* of the projecting plates or flanges *g* may engage with them as shown by Fig. 1, to force them along their path through the retort as the drum *f* is being rotated to unwind them from it.

Motion is transmitted to the shaft *m*, upon which the drum *f* is fixed, or otherwise direct to said drum *f* by any appropriate worm and wheel or other gearing and the whole is mounted upon framework carrying hoisting mechanism and running on rails in manner and for purposes well understood.

By the pivoted links *a* and *b* being in the relative positions described, as they are moving through the retort each succeeding pair of plates will travel over a different part of the retort's surface *p* which supports them, hence said retorts are not thereby worn into grooves or furrows as is the case when the series of plates are in alinement with their path of motion.

Such being the nature and object of my invention what I claim is:—

1. In apparatus of the class described, a push bar formed in two series of sections or links one series of said links being arranged to be at an angle to the other series, substantially as specified.

2. In apparatus of the class described a push bar formed in two series of sections or links one series of the said links being arranged to be at an angle to the other series and a drum for actuating the same arranged and operating substantially as described.

3. In apparatus of the class described a push-bar formed in two series of sections or links one series of the said links being arranged to be at an angle to the other series, lateral projections on the said links, a drum for actuating the push bar and plates or flanges or their equivalent on the said drum all arranged and operating substantially as described.

In testimony whereof I have hereunto affixed my signature in presence of two witnesses.

CORNELIUS HOLLANDER.

Witnesses:
JOHN WILLIAM WALLIS,
SAMUEL HEY.