

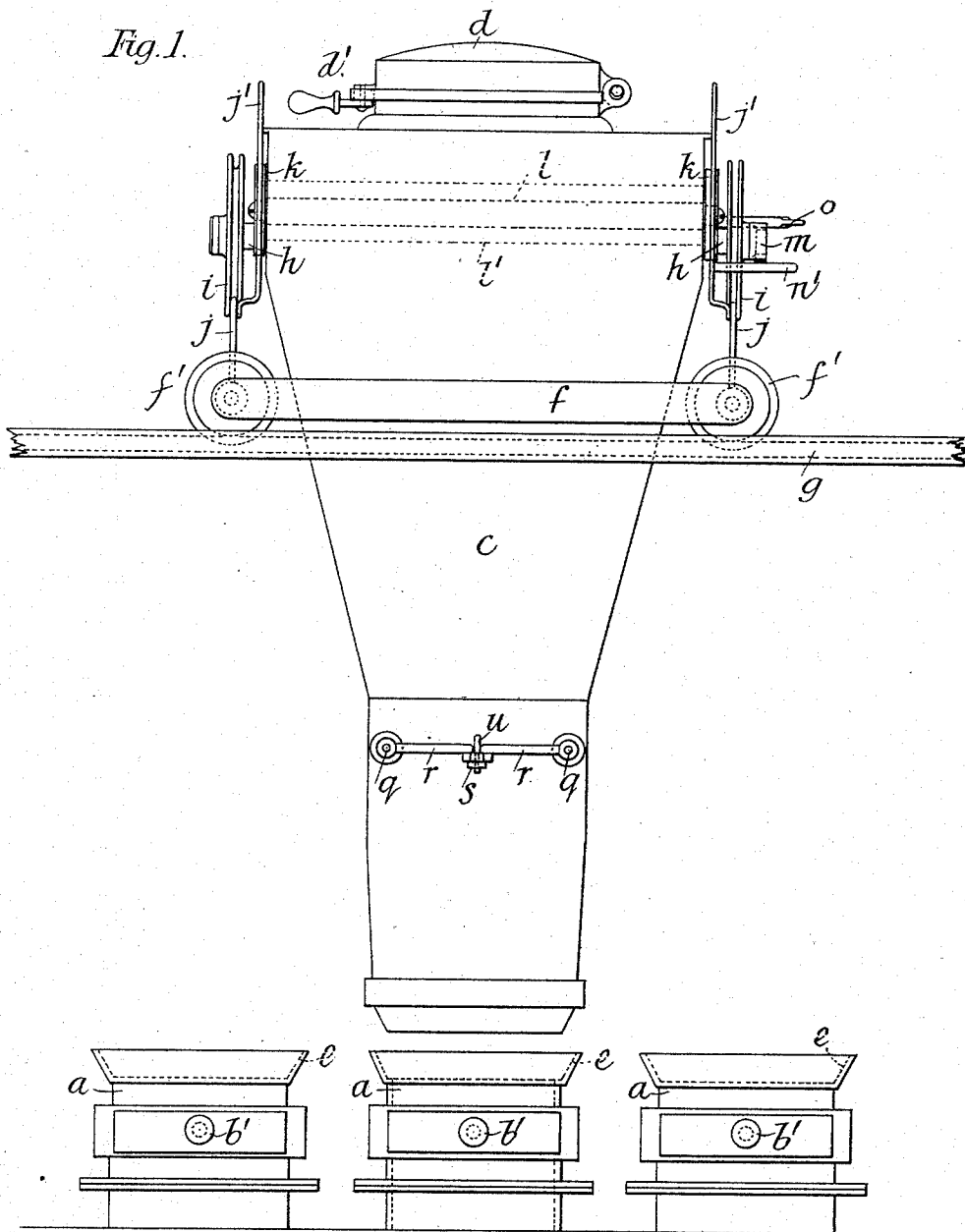
(No Model.)

4 Sheets—Sheet 1.

J. C. CHANDLER.
APPARATUS FOR CHARGING GAS RETORTS.

No. 522,705.

Patented July 10, 1894.



Witnesses.

John E. Dousfield.
W. C. Brockmire

Inventor.

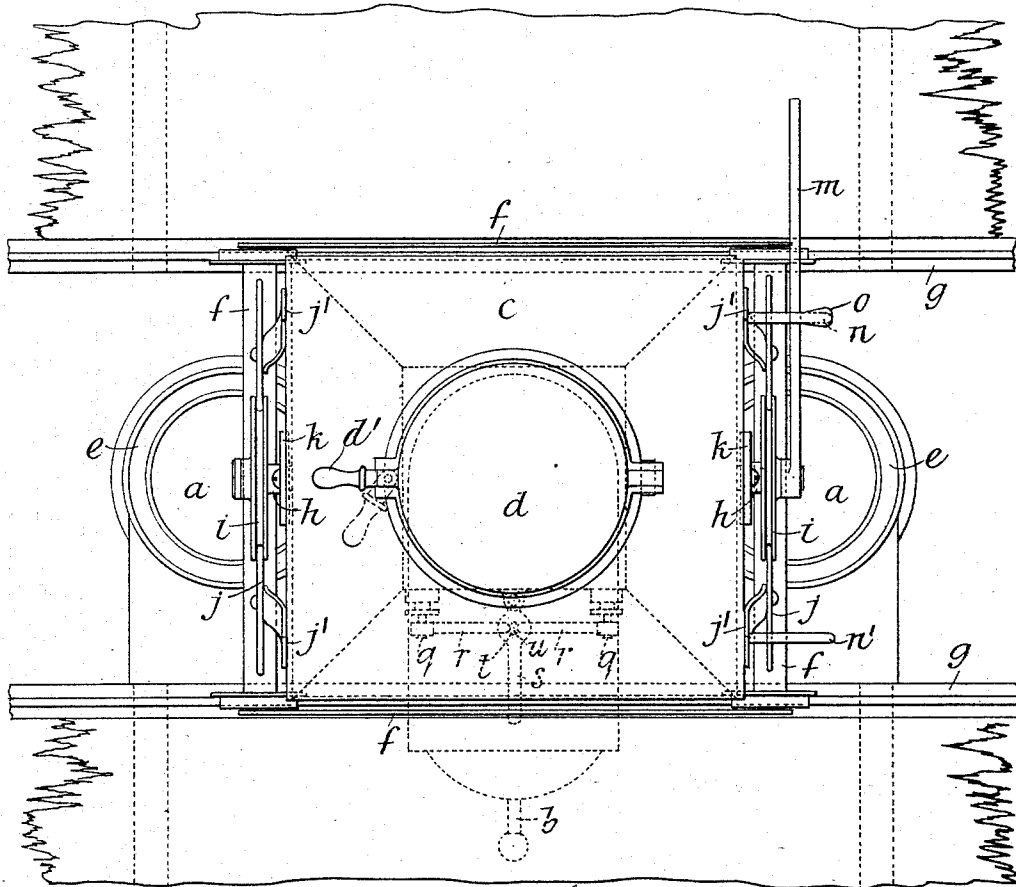
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Fig. 3.



Witnesses.

John E. Dousfield.
W. C. Braxton

Inventor.

J. C. Chandler

UNITED STATES PATENT OFFICE.

JOSIAH CLEMENT CHANDLER, OF LONDON, ENGLAND.

APPARATUS FOR CHARGING GAS-RETORTS.

SPECIFICATION forming part of Letters Patent No. 522,705, dated July 10, 1894.

Application filed November 29, 1890. Serial No. 373,054. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH CLEMENT CHANDLER, a subject of the Queen of Great Britain, residing at London, England, have invented
5 new and useful Improvements in Apparatus for Charging Gas-Retorts, of which the following is a specification.

This invention relates to the charging of inclined gas retorts and to the construction
10 and application thereto of apparatus for automatically effecting such charging, whereby the loss of gas and the rush of flame which now generally take place when the retorts are
15 charged are prevented.

In carrying out my invention I apply to the charging end of the retort what I call a charging receiver, which is advantageously made
20 somewhat in the form of a hopper, and I provide two sets of gas-tight closing doors or valves whereby the communication between the charging receiver and the retort can be
25 opened or closed as required.

To enable my invention to be fully understood I will describe the same with reference
30 to the accompanying drawings, in which—

Figure 1 is an elevation of my improved charging apparatus shown as mounted upon
35 rails in order that it may be moved for charging several retorts. Fig. 2 is a side view of the same; and Fig. 3 is a plan. Fig. 4 is a section of the said charging apparatus on the
40 line *x, x* Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

35 *a, a* indicate the mouths of a series of retorts to be charged, each of which is provided with a valve *b* for opening and closing the said mouth, this valve having a slide rod *b'* for operating it.

40 *c* is the receiver which, at its upper end, is provided with a charging door *d* having a handle *d'* and at its lower end is shaped, for instance, as shown in the drawings, to fit into a seat *e* formed on each retort mouth *a*. This
45 receiver is mounted upon a carriage *f* provided with wheels *f'* running upon rails *g, g* on the charging platform, so that it may be moved to bring it into position for charging a number of retorts. As in practice the mouths
50 of the retorts will frequently get out of align-

ment, owing to expansion and contraction, the said receiver is adapted to move transversely upon the said carriage, and for this purpose I provide it with axles or trunnions *h, h* carried
55 on wheels *i, i* designed to run upon rails or guides *j, j* attached to the carriage *f*; horns *j', j'* being provided for preventing the turning of the receiver relatively to the carriage. As shown in the drawings the lower end of the
60 receiver is at some distance above the retorts so that the latter will offer no obstruction to its movement upon the rails *g, g*. In order to move the said receiver so that its lower end will rest in the seat *e* of the retort being
65 charged, I provide means for lowering and raising it, and I advantageously effect this by eccentrically securing the axles or trunnions
70 *h, h* to two disks *k, k* upon the ends of a shaft *l* passing through the receiver. It will be obvious that when the disks *k, k* are moved
75 from the positions shown in Figs. 1, 2 and 4, for instance, by means of a lever *m* secured to one of the axles *h* that the said receiver will be lowered. The shaft *l* is surrounded
80 by a tube *l'*, as shown, in order to protect it and its bearings and also to prevent the escape of gas.

n, n' are pins secured to the horns *j' j'* for preventing the lever *m* from being moved too far in either direction; and *o* is a removable
85 pin adapted to be introduced into a hole in one of the horns *j'* for preventing the lever from being moved while the receiver is being traversed along its rails.

85 *p, p,* are doors within the receiver for temporarily supporting a charge, which doors are provided with elongated axles or pivots *q, q* having secured to them arms *r, r* designed, when the doors are in their closed positions,
90 as shown in Fig. 4, to rest upon a lever *s*. This lever is pivoted to move in a lateral direction in such a manner that, when moved to the left, the arm *r* of the right hand door
95 will be unsupported and so allow the said door to drop, and when moved to the right, the arm of the left hand door will be unsupported and so allow the said left hand door to drop to discharge the contents of the hopper or receiver, the action of the two doors
100 being practically simultaneous. A hole *t* is

formed in the lever between the ends of the arms *r, r* as shown in Fig. 3, so that when a pin *u* is introduced into the said hole, as shown in Fig. 1, the lever *s* is prevented from being moved.

The operation of charging a retort with my improved apparatus is as follows: The doors *p, p* are closed and secured as described and the necessary charge having been placed into the receiver through the door *d*, the latter is tightly closed to prevent any escape of gas; the lever *m* is then thrown over in the direction of the arrow, Fig. 2, to lower the receiver onto the retort, the valve *b* is opened to establish communication between the retort and the receiver, and the lever *s* is moved, say, first to the left and then to the right, the doors *p, p* then drop whereby the charge of coal falls into the retort, the valve *b* is then again closed and the doors *p, p* are lifted as also is the receiver; the latter can then be again filled ready for the next charging operation.

It will be readily understood that owing to the fact that there is no communication between the external air and the interior of the retort, during the time of the charging, practically no gas escapes from the retort and no flame issues therefrom, thereby preventing inconvenience to the stokers.

In the foregoing description I have only referred to the movable receiver; it is to be understood, however, that in small gas making structures or plants a separate charging receiver may be used with each retort as probably the cost of a few extra receivers would

be less than that of the carriage and the raising and lowering mechanism.

In cases where separate receivers are employed it is obvious that the said receivers may be permanently connected to their retorts.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In apparatus for charging inclined gas retorts, the combination of a vertical receiver having an air-tight cover, and within it and above its discharging mouth a pair of doors serving to temporarily support the charge, a carriage on which such receiver is mounted, and a lever and cam whereby the receiver may be lowered to connect its discharging mouth with the receiving mouth of the retort, all substantially as set forth.

2. In apparatus for charging retorts, the combination with the hopper or receiver and with the carriage on which it is mounted and with the rails on which the carriage is supported and travels, of the means substantially as described for moving the receiver transversely on its carriage, consisting of trunnions *h. h.*, wheels *i. i.*, and guide rails *j. j.* attached to the carriage.

JOSIAH CLEMENT CHANDLER.

Witnesses:

JOHN E. BOUSFIELD,

Of the firm of G. F. Redfern & Co., 4 South Street, Finsbury, London, Patent Agents.

W. C. BROKENSHERE.