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APPARATUS FOR CHARGING VERTICAL RETORTS OR CHAMBERS.

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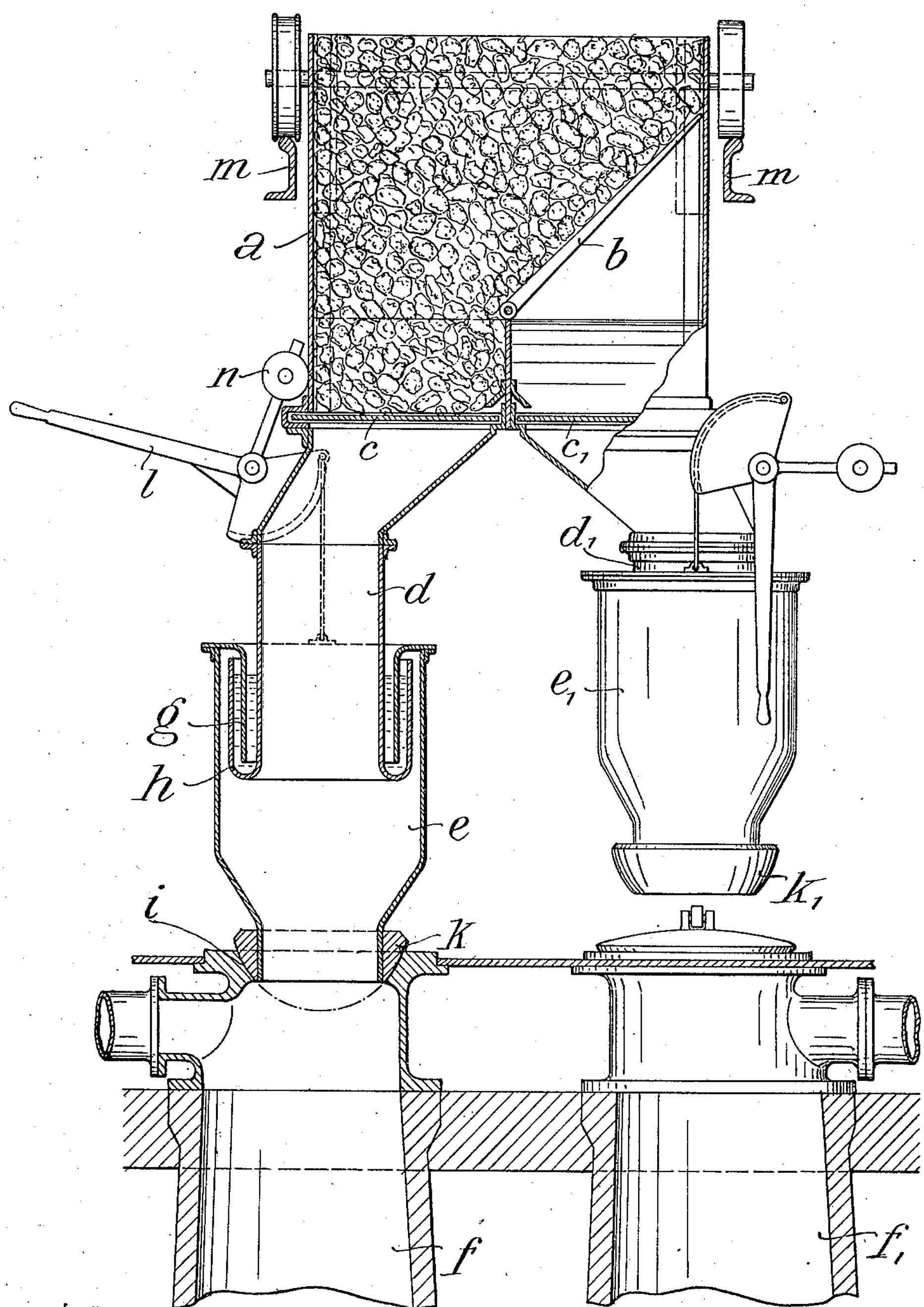
997,742. Patented July 11, 1911.



Witnesses:

[signature]

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APPARATUS FOR CHARGING VERTICAL RETORTS OR CHAMBERS.

997,742. Specification of Letters Patent. Patented July 11, 1911.

Application filed September 27, 1909. Serial No. 519,846.

To all whom it may concern:

Be it known that I, CHRISTIAN BOLZ, a subject of the German Emperor, residing at Budapest, in the Kingdom of Hungary, have invented certain new and useful Improvements in Apparatus for Charging Vertical Retorts or Chambers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in apparatus for charging vertical retorts or chambers.

Vertical retorts are most commonly charged by dumping the coal into the same from the top of the upper floor after opening the retort. If this is done, gases mixed with coal dust escape from the retort which are exceedingly troublesome for the workmen charged with the filling operation.

The object of my improvements is to construct the charging apparatus or the funnel connected therewith in such a way, that no gas can escape from the retort so as to trouble the workmen.

With this object in view my invention consists in providing a funnel or discharge tube for the charging apparatus the discharge end of which fits airtight on the upper or charging end of the retort.

For the purpose of explaining the invention an example embodying the same has been shown in the accompanying drawing which shows a vertical cross-section of the upper part of a pair of retorts and of the charging apparatus.

As shown in the said drawing, *a* is a receptacle of any preferred construction by which the coal is conveyed to the retorts. The said receptacle is movable on rails *m*. In the example illustrated the receptacle is constructed in such a way, that it can supply the coal to two rows of retorts *f* and f^1, for which purpose it is provided with an inner hinged partition wall *b*. The receptacle *a* has a capacity which is sufficient for one charge of a retort. From its bottom discharge funnels or tubes *d* and d^1 extend downward which can be closed by slide valves or gates *c* and c^1. When opening the said valves, the coal is discharged into one of the retorts *f* or f^1.

One feature of my invention consists in providing means whereby the funnels or tubes *d* and d^1 are independent of the lack of alinement of the discharge end of the funnel and the charging end of the retort. For this purpose the said funnels are provided with flexible joints *e* and e^1. In the example shown the said joint *e* (and e^1) consists of a tube having at its upper end an inner flange *g* which is bent downward into the said tube. The funnel or tube *d* extends within the tube *e* and it is provided with an outer flange *h* which is bent upward so as to form an annular chamber adapted to be filled with some sealing liquid such for example as water. The flange *g* extends into the said annular chamber and it has a vertical and a rotary movement therein as well as a slight lateral movement, as will readily be understood from the drawing.

In a charging apparatus for retorts a flexible connecting member between the charging receptacle and the mouth of the retorts is of considerable importance, because, on account of the expansion of the oven by the heat and on account of irregularities in the position of the receptacle, the discharge end of the latter and the axis of the retort can not be held in exact alinement. Therefore, if the discharge tube or funnel is rigidly connected to the conveying device, it is exceedingly difficult to make the said tube *e* fit closely on the charging end of the retort.

To insure a tight closure between the retort and the tube *e* in case the latter is in an inclined position, the tube *e* is formed with a spherical lower end *k* (and k^1 in case of the tube e^1), and the charging end of the retort is formed with a corresponding spherical hollow *i*.

The tubular joint *e* can easily be raised or lowered by means of a lever *l*, and its weight is preferably balanced by a counterpoise *n*.

The advantage of the construction of the charging apparatus described resides in the fact, that when charging the retort with coal the workmen are not troubled by gases escaping from the retort. Any gases which might escape will be conducted upward through the tube *e*, the funnel *d*, and the receptacle *a*, and when escaping from the latter they can not injure the workmen, because the upper end of the said receptacle is higher than the heads of the workmen.

I claim:

1. In an apparatus of the class specified, the combination, with a vertical retort having its mouth piece formed with a spherical seat; of a charging vessel located above said retort; a depending funnel carried by said vessel; a vertically movable tube loosely connected at its upper end with said funnel, to permit it to assume an inclined position with respect thereto and to said retort, said tube having a spherical discharge end adapted to automatically center itself in said spherical seat to form a fluid-tight joint therewith; and means for raising and lowering said tube relatively to said funnel and said retort.

2. In an apparatus of the class specified, the combination, with a vertical retort having its mouth piece formed with a spherical seat; of a traveling charging vessel located above said retort; a track on which said vessel is adapted to travel; a depending funnel carried by said vessel; a vertically movable tube loosely connected at its upper end with said funnel, to permit it to assume an inclined position with respect thereto and to said retort, said tube having a spherical discharge end adapted to automatically center itself in said spherical seat to form a fluid-tight joint therewith; and means for raising and lowering said tube relatively to said funnel and said retort.

3. In an apparatus of the character described, the combination, with a retort having its mouth piece provided with a seat; of a charging vessel located above said retort; a depending funnel carried by said vessel; a vertically and laterally movable tube; and means for bodily raising and lowering said tube relatively to said funnel and said retort, said tube having its upper end loosely connected with said funnel to permit its discharge end to automatically center itself in said seat.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CHRISTIAN BOLZ.

Witnesses:

MICHAEL TÓMÓR,

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