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RETORT FOR DISTILLING GASES AND VAPORS.
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922,407.

Patented May 18, 1909.

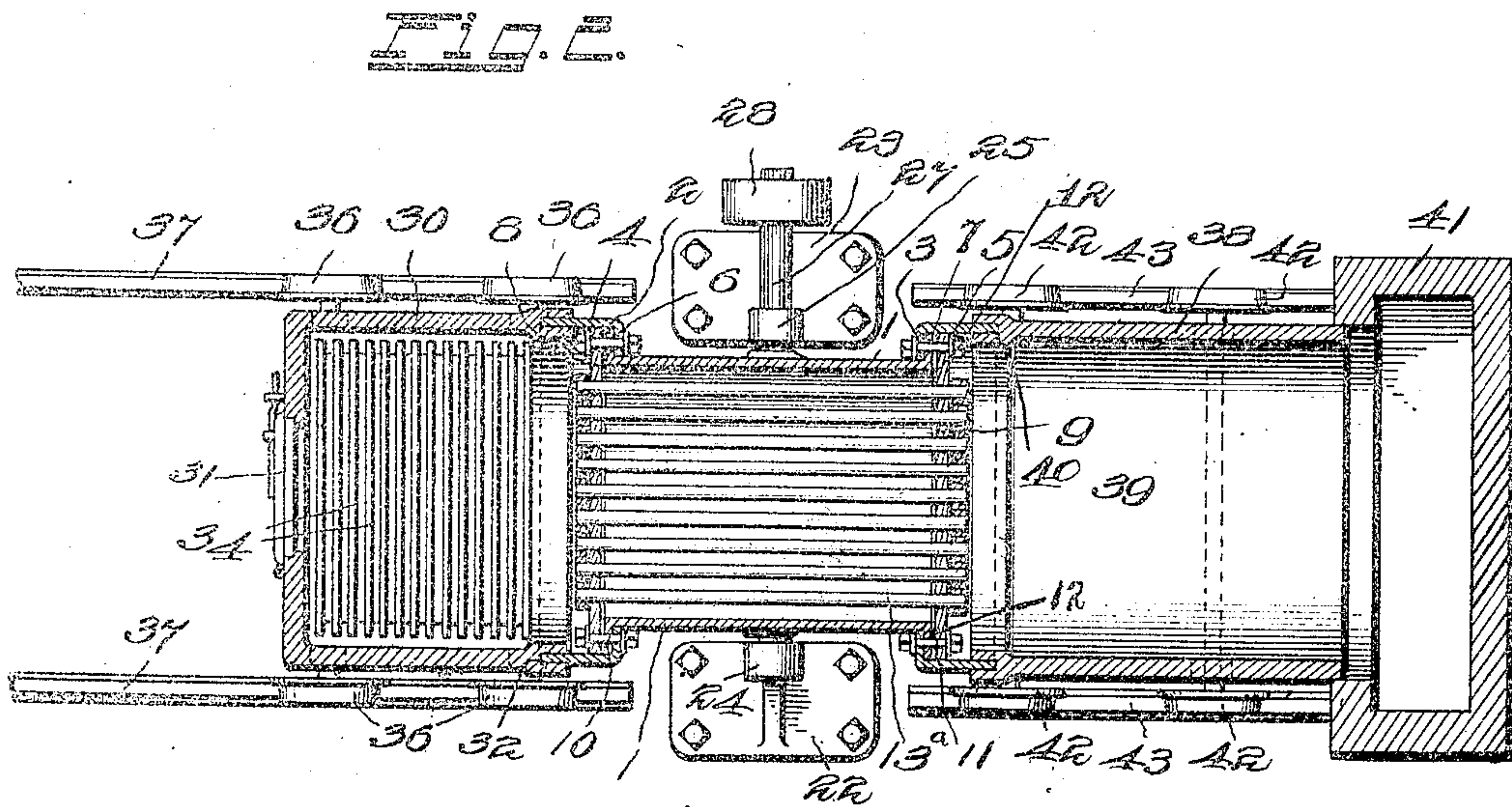
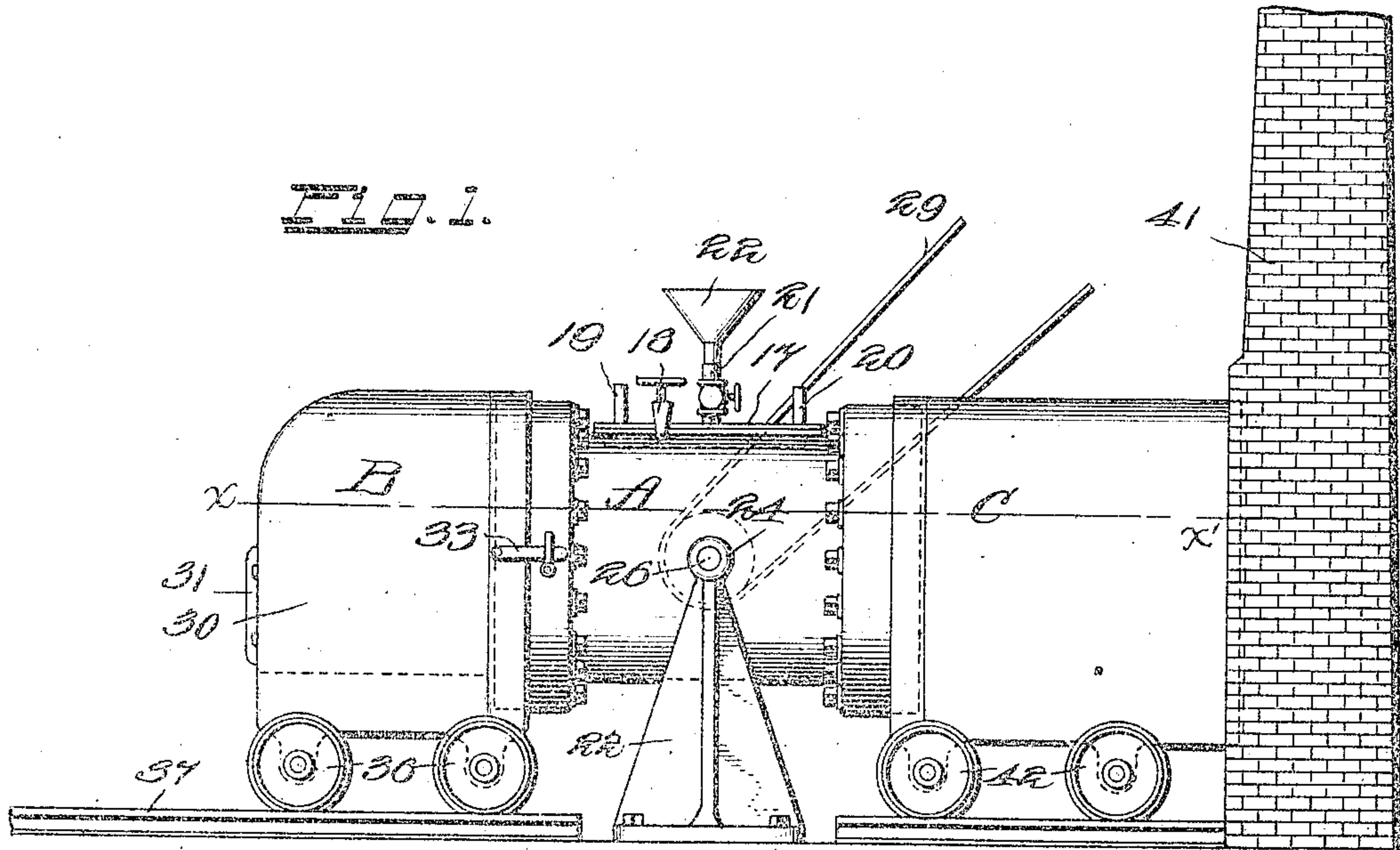


FIG. 3.

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RETORT FOR DISTILLING GASES AND VAPORS.

No. 922,407.

Specification of Letters Patent.

Patented May 18, 1909.

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To all whom it may concern:

Be it known that I, PHILIP A. EMANUEL, a citizen of the United States, residing at Aiken, in the county of Aiken and State of South Carolina, have invented certain new and useful Improvements in Retorts for Distilling Gases and Vapors; 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.

This invention relates to retorts and particularly that class of retorts utilized for the purpose of making gas for fuel or lighting purposes from coal, oils, resins or other similar products.

The object of the invention is the construction of a retort capable of being heated to an exceedingly high temperature and in which the simplicity of the structure is so predominant that the replacing of any broken or damaged part is rapidly and easily accomplished.

Another object of the invention is to provide means for mixing and stirring the contents of the retort at any desired time whether same be at a high temperature or not.

The invention further consists in constructing a furnace portion and a smokestack connecting portion both adapted to detachably connect with the retort at opposite ends to permit of the retort being effectively heated, while the removal of the furnace portion and the smokestack connection portion completely detaches the retort from any heating means and renders same capable of being rotated on its transverse axis for the purpose of mixing the products therein.

With the above and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawing, wherein like characters of reference denote corresponding parts in the several views and in which,

Figure 1 is a side elevation of my invention; the retort, furnace portion and smokestack connecting portion being assembled in position for heating the retort; Fig. 2, a section on the line $x-x$ of Fig. 1; and Fig. 3 a detail view showing the method of closing

the ends of the retort and of securing the flue pipes thereof in place.

Referring to the drawings, A is the retort; B, the furnace portion and C the smokestack connecting portion.

The retort A is constructed of an open end cylindrical boiler like cover 1, having formed at each end outwardly projecting annular flanges 2 and 3. Annular portions 4 and 5 are provided with oppositely disposed angular ends 6 and 7 which overlap the flanges 4 and 5 respectively, are secured thereto in conjunction with closing end plates 8 and 9 through the medium of bolts 10 and 11, after asbestos packing 12 and 13 has been placed between the respective end closing plates and flanges of the retort cover. The end closing plates 8 and 9 are provided with a plurality of corresponding apertures in which are respectively supported the flue pipes 13^a of the retort. The flue pipes 13^a have their ends threaded and are secured in place through the medium of the nuts 14 traveling in their threaded ends, a washer 15 and an asbestos packing 16 being inserted between the nut and end closing plates. Mounted on the cover through the medium of suitable hinges is a wedge shaped door 17 provided with latch 18 for locking same securely closed. Pipes 19 and 20 enter the retort through the door 17, said pipes are suitably valved and serve the function of permitting gas to escape from the retort when desired. A valved supply pipe 21 also enters the retort through door 17 and has a funnel shaped member 22 screwed or otherwise suitably secured to its outer end through the medium of which the retort may be charged with the desired material. The retort A is rotatably mounted on standards 22 and 23 which are provided at their tops with trunnion bearings 24 and 25 in which the trunnions 26 and 27 formed on the retort are respectively adapted to rotate. The trunnion 27 is extended beyond its bearing and has a driving wheel 28 secured thereto which is operatively connected by a belt 29 with a suitable source of power whereby the retort is adapted to be rotated on its transverse axis when desired.

The furnace portion B is formed of a hood shaped cover 30 having its end adjacent the retort open, the front end thereof being closed and provided with a door 31 for the purpose of feeding fuel to the furnace. The open end of the furnace is formed circular to correspond with the adjacent end of the retort and

has an annular groove 32 formed in the end of the cover 30 adapted to receive the annular portion 4 of the retort whereby the furnace portion and the retort may be detachably secured together through the medium of a latch 33. The furnace portion is provided with the usual grate bars 34 and is mounted on wheels 36 adapted to travel on tracks 37; said tracks being laid down equidistant from the longitudinal axis of the retort whereby the furnace may be moved to and fro and brought into and out of operative connection with the retort A.

The smokestack connecting portion C is formed of a hood shaped cover 38, a horizontal base 39 and having its ends open. The end of the portion C adjacent the retort is formed circular to correspond with the adjacent end of the retort and is provided with an annular groove 40 adapted to receive the annular portion 5 of the retort when it is desired to secure the retort and smokestack connecting portion in operative connection, a suitable latch, not shown, being utilized to maintain such connection. The outer end of the portion C is adapted to telescope in a corresponding opening in a chimney 41 and is mounted on wheels 42 adapted to travel on tracks 43 laid down in a line with tracks 37, whereby the portion C has a limited movement between the retort and the rear of the chimney 41.

To operate a mechanism of the character described it is only necessary, after opening the valve in pipe 21, to charge the retort with the desired material through the funnel 22 and said pipe 21, and then close the valve of said pipe. The latches connecting the portions B and C to the retort are then unfastened, said portion moved in opposite direction away from the retort. Said retort is then rotated on its transverse axial bearings through the medium of belt 29 and wheel 28 and the contents thereof thoroughly mixed and agitated. The portions B and C are then moved into operative connection with the retort and the furnace fired thus instituting the production of gas within the retort which is conveyed through prolongations of pipes 19 and 20 to any desired locality. While the rotation of the retort has been described as taking place immediately after charging it will be noted that the time for this operation is merely selective and may be repeated any number of times after the furnace is fired; the necessity for repeated rotations of the retort being governed by the nature of the material with which it is charged.

It will be noted that while I have described a preferred form of my invention I wish it understood that I do not limit myself to the exact details of construction described and shown, as the mechanism may be varied in numerous ways without departing from the scope of my invention.

What I claim is:—

1. The combination of a furnace, a retort, a smoke stack, and means connecting said retort and said smoke stack, said furnace and said connecting means being movably mounted with respect to said retort and said smoke stack, substantially as described. 70

2. The combination of a retort, a furnace constructed to be moved into and out of operative relation with one end of the retort, a smoke stack, and a member for connecting the retort and smoke stack, constructed to be moved into and out of operative relation with the other end of said retort, substantially as described. 75

3. The combination of a retort, a furnace constructed to be moved into and out of operative connection with said retort, a smoke stack, a member for connecting the retort and the smoke stack constructed to be moved into and out of operative relation with one end of said retort, and means for rotating said retort, substantially as described. 80

4. The combination of a retort, a furnace constructed to be moved into and out of operative connection with one end of said retort, means for interlocking said retort and furnace when brought together, a smoke stack, a member for connecting the retort and smoke stack and adapted to be moved into and out of operative connection with the other end of the retort, and means for interlocking said retort and said member when together, substantially as described. 85

5. The combination of a rotatable retort, a furnace adapted to be moved into and out of operative relation with one end of said retort, a smoke stack, a member for connecting the retort and smoke stack and constructed to be moved into and out of the other end of the retort, means for rotating said retort when said furnace and said member are out of operative relation therewith, and means for locking said furnace, retort, and member together, substantially as described. 90

6. The combination of a rotatable retort, a furnace constructed to be moved into and out of operative relation with one end of said retort, a smoke stack, a member for connecting the retort and smoke stack, constructed to be moved into and out of operative relation with the other end of the retort, standards on each side of said retort, trunnions on said retort adapted to rotate in said standards, and means for rotating said trunnions, whereby said retort may be rotated when out of operative relation with said furnace and said member, substantially as described. 95

7. The combination of a retort, a furnace constructed to be moved into and out of operative relation with one end of the retort, said furnace being provided with an annular groove on one end and said retort being provided with a flange constructed to enter said groove, a smoke stack, and a member for con- 100

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necting the retort and smoke stack and constructed to be moved into and out of operative relation with the other end of said retort, said member being provided with an annular
5 groove in its end, adjacent to the retort, and said retort being provided with a flange adapted to enter said groove, substantially as described.

8. The combination of a retort, standards
10 in which said retort is rotatably mounted, means for rotating said retort, a wheeled furnace constructed to be moved into operative relation with one end of said retort, a smoke

stack, a wheeled member constructed to be moved into operative relation with the other
15 end of said retort and with said smoke stack, said retort, furnace, and member being provided with interlocking grooves and flanges, and means for securing said three parts together, substantially as described. 20

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

PHILIP A. EMANUEL.

Witnesses:

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S. L. DAVIS.