

(No Model.)

J. H. JOHNSON & J. MORAN.
FURNACE.

No. 485,762.

Patented Nov. 8, 1892.

FIG. 1.

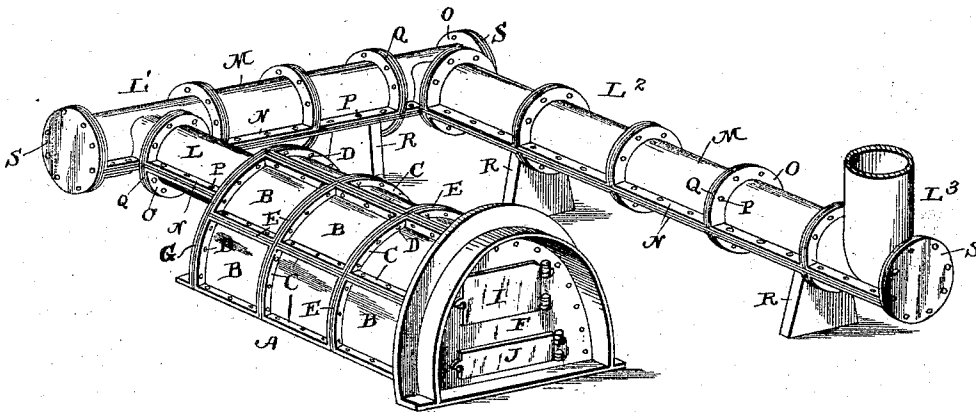


FIG. 2.

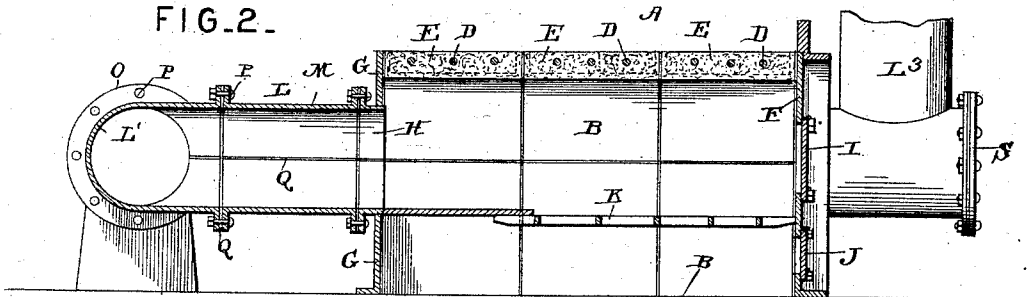
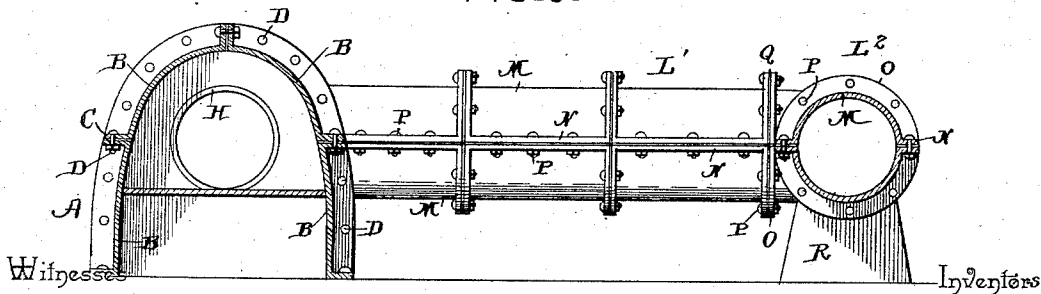


FIG. 3.



Witnesses

Inventors

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UNITED STATES PATENT OFFICE.

JOHN H. JOHNSON AND JAMES MORAN, OF ORANGE, TEXAS.

FURNACE.

SPECIFICATION forming part of Letters Patent No. 485,762, dated November 8, 1892.

Application filed March 22, 1892. Serial No. 425,897. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. JOHNSON and JAMES MORAN, citizens of the United States, residing at Orange, in the county of Orange and State of Texas, have invented a new and useful Furnace, of which the following is a specification.

This invention relates to furnaces; and it has for its object to provide an improved furnace especially adapted to be located at the side of a kiln or drying-house, which furnace shall be so constructed as to be simple, durable, and inexpensive, and the parts of which may be readily put together or separated, as may be desired.

To this end it is the primary object of this invention to provide important improvements over our former patent, No. 462,354, dated November 3, 1891.

With these and many other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a furnace constructed in accordance with our invention. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a vertical transverse sectional view.

Referring to the accompanying drawings, A represents the casing of our improved furnace, which casing is composed of a semicircular series of sets of rectangular metal plates

B. The plates forming the top and a portion of the side of the casing are curved, so that when all of the plates are clamped together the said furnace-casing will be approximately semicircular in cross-section. Each of the rectangular plates B are provided with the encircling flanges C, which surround all four sides thereof and meet the adjacent flanges of the adjacent plates of each series and set, all of said flanges thereby closely fitting each other to form a continuous and unbroken casing, which is firmly held together by passing bolts D through all of the meeting flanges. It will be readily seen by this construction that any particular portion of the casing may be removed without disturbing the other parts thereof for the purpose of repairs, &c., and also that the entire casing can be disassembled,

if so desired. Interposed between the meeting flanges of all the plates is the asbestos packing E, which not only forms a tight joint, but serves as a cushion to allow for the expansion and contraction of the various plates. The meeting flanges of the end plates of the casing form continuous semicircular end flanges, to which are secured the front and rear end plates F and G, respectively, from which rear end plate projects the annularly-flanged collar H, while the front end plate is provided with the doors I and J, which communicate with the fire-box and ash-pit, respectively. The interior of the casing accommodates the ordinary grate K, separating the ash-pit from the fire-box.

Securely and detachably connected to the flanged collar H is the sectional flue L. The said flue L, which is connected to said collar in rear of the furnace, extends rearwardly a short distance, thence laterally, as at L', and then forwardly, as at L², to the stack L³, which extends upwardly at the front end of the furnace. The said flue comprises reversely-arranged pairs of semicircular sections or plates M, which sections are provided with the straight horizontal flanges N along the sides thereof, while their ends are also provided with the semicircular flanges O. The said semicircular sections or plates comprising the flue are placed one above the other and having the several flanges thereof closely in contact, which flanges are securely, yet detachably, bolted together by means of the bolts P, and also have interposed therebetween the asbestos packing and cushion Q for the same purpose as the similar packing and cushion between the flanges of the casing-plates. The lower semicircular plates or sections of the flue rest upon a series of suitably-located supports R, which thus support the lower sections of the flue and allow any one or all of the upper semicircular sections to be removed and replaced when desired without a disturbance of the other parts, thus securing an important advantage over ordinary furnace-flues.

The ends of the flue portions L' and L², respectively, have their open ends terminate in circular flanges formed by the meeting semicircular flanges of the upper and lower flue

sections or plates, and said ends are inclosed by the removable cap-plates S, which are securely bolted to said flanges, and which may be also readily removed for cleaning, &c.

5 In operation any desired number of improved furnaces may be arranged at the sides of a kiln or drying-house, as will be quite apparent to those skilled in the art.

The construction is not only simple, but
10 also provides for the ready detachment of every part of the casing and flues for removal or repair.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

15 1. A furnace comprising semicircular series of sets of metal plates, said plates being each provided with flanges encircling all the sides thereof and meeting the adjacent flanges of
20 the adjacent plates of each series and set, meeting to form an approximately-semicircular casing and semicircular end flanges, the front and rear end plates secured to said semicircular end flanges, and bolts passing through
25 the meeting flanges, substantially as set forth.

2. In a furnace, the casing consisting of semicircular series of sets of rectangular curved plates forming the sides and top of the same, said plates being each provided with
30 flanges surrounding all four sides thereof and meeting the adjacent flanges of the adjacent plates of each series and set to form an approximately-semicircular casing and semicircular end flanges, front and rear end plates
35 secured to said semicircular end flanges, asbestos packing interposed between the various meeting flanges to form a cushion-joint, the

flue extending from one of said end plates, and bolts passing through the several meeting flanges, substantially as set forth. 40

3. In a furnace, the combination, with the casing having a flanged collar projecting from the rear end thereof, of the sectional flue comprising a series of independent reversely-arranged pairs of semicircular plates having
45 straight horizontal flanges along the sides thereof and semicircular flanges at their ends, the flanges of the plates and flue-sections abutting and bolted together, substantially as set forth. 50

4. The combination, with the furnace, of the sectional flue connected with said furnace and consisting in a series of reversely-arranged pairs of upper and lower independent semicircular plates having straight horizontal
55 flanges along the sides thereof and semicircular flanges at their ends, the flanges of the plates and flue-sections abutting the ends of section of the flue terminating in circular flanges, cap-plates removably secured to said
60 circular flanges, asbestos packing interposed between the various meeting flanges to form a cushion-joint, the supports receiving the lower semicircular sections of the flue, and bolts abutting the flanges together, substantially as set forth. 65

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JOHN H. JOHNSON.
JAMES MORAN.

Witnesses:

JOHN GRIFFITH,
H. STARKS.