(No Model.)

J. BAKER.

DEVICE FOR HINGING AND SUPPORTING DOORS OF PROCESS KETTLES.

No. 319,169. Patented June 2, 1885.

Fig. 1.

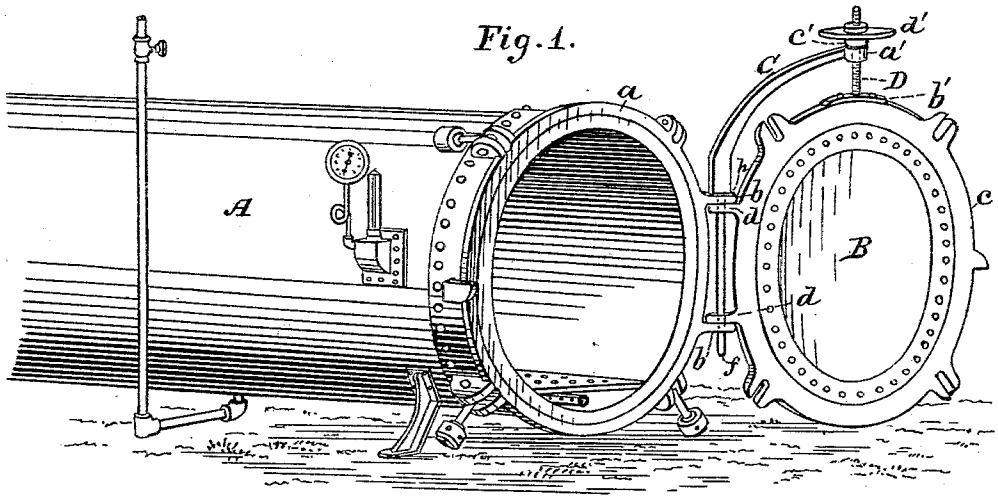
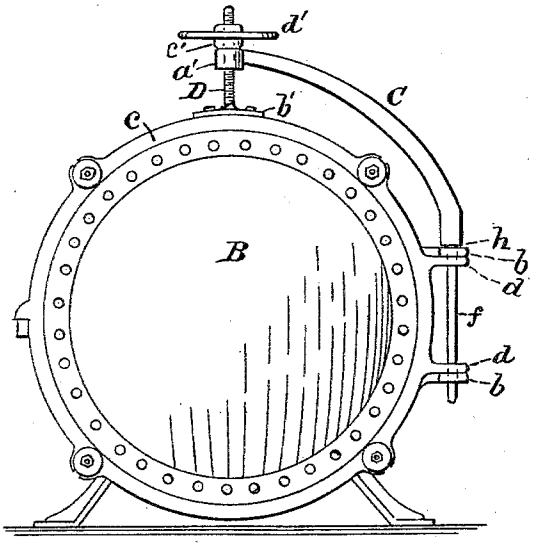


Fig. 2.



WITNESSES

G. B. Fowles.

Thomas P. Simpson.

INVENTOR

John Baker

By J. P. Burris.

Attorney

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN BAKER, OF MUSCATINE, IOWA.

DEVICE FOR HINGING AND SUPPORTING DOORS OF PROCESS-KETTLES.

SPECIFICATION forming part of Letters Patent No. 319,169, dated June 2, 1885.

Application filed January 20, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN BAKER, a citizen of the United States of America, residing at Muscatine, in the county of Muscatine and State of Iowa, have invented certain new and useful Improvements in Devices for Hinging and Supporting Doors of Process-Kettles, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improved devices for hinging and supporting heavy doors of horizontal retorts, boilers, or other vessels. It is found in use that heavy doors arranged to swing horizontally, supported only by their hinges, are liable to sag, rendering them difficult to be opened and closed.

The object of my invention is to remedy this difficulty, which I accomplish by means of a crane provided with a shank inserted, at the hinge-pin through hinge-lugs formed on the vessel and the door, and having a bearing-shoulder to support the crane on the upper hinge-lug, the crane being constructed to extend over the center of the door, and having its end provided with a vertical hole to receive a threaded bolt, the lower end of which is bolted to the top of the door, and the upper end of the bolt is provided with a threaded hub or nut having formed on it a hand wheel or levers for taking up and preventing the sagging of the door, as hereinafter fully set forth.

The construction and operation of my improvement is illustrated in its application to my improved horizontal process-kettle, patented July 22, 1884, No. 302,314; but it is evident that the improvement may be applied to any horizontal vessel having a door hung to swing horizontally.

In the accompanying drawings, Figure 1 is a perspective view showing my improvement applied to my horizontal process-kettle, with the door open. Fig. 2 is an end elevation showing the door closed.

A designates a horizontal boiler or kettle having an annular door-frame, *a*, provided with the hinge-lugs *b b*.

B is a door having the annular frame *c*, provided with the hinge-lugs *d d*.

C is a crane having a shank, *f*, formed to serve as the hinge-pin, inserted through holes in the hinge-lugs *b d*. The crane is formed with a shoulder, *h*, at the upper portion of the shank, which shoulder rests upon the upper hinge-lug, *b*, of the kettle, and the upper portion of the crane is constructed to extend over the door, and its upper end, *a'*, is provided with a hole to receive a threaded bolt, D, which is provided with a base-plate, *b'*, bolted to the top and at the center of the door. The upper portion of this threaded bolt, above the crane, is provided with a threaded nut or hub, *c'*, which is provided with a hand-wheel, *d'*, for adjusting the nut or hub in position to take up and prevent the sagging of the door, the weight of the door being partly supported upon the upper end of the crane.

It is readily seen that the required position of the door may be secured and the sagging may be entirely prevented by the proper adjustment of the threaded nut *c'*. Whenever there is any sagging, so that the door swings too low, the nut is turned down, thus raising the door, and if it should swing too high the nut is turned backward till the door is in the required position vertically, where it is held by the nut resting on the top of the end *a'* of the crane.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a door hinged to a vessel, to swing horizontally, of a crane having its shank constructed for and inserted through holes in the hinge-lugs on the vessel and door, and having its upper end extended over and connected with the door by adjustable devices, substantially as and for the purpose described.

2. The combination, with a door, B, hinged to a vessel, A, to swing horizontally, of the crane C, provided with the hinge-pin shank *f*, inserted through the hinge-lugs *b d*, and provided with the bearing-shoulder *h*, and having its upper end extended over the door, and the threaded bolt D, attached to the door and provided with the threaded nut *c'*, substantially as and for the purposes described.

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

JOHN BAKER.

Witnesses:
CHAS. PAGE,
JOSEPH STARAL.