(No Model.)

J. BIRD.

APPARATUS FOR DETECTING LEAKAGE IN FURNACE BLOCKS.

No. 382,792. Patented May 15, 1888.

Fig. 1.

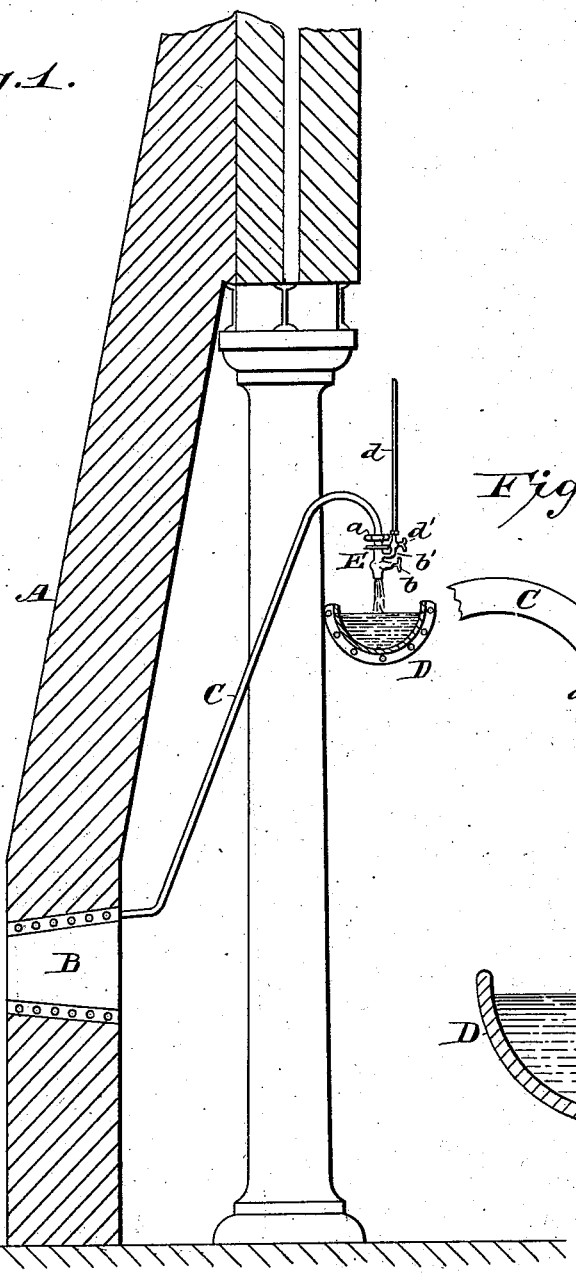
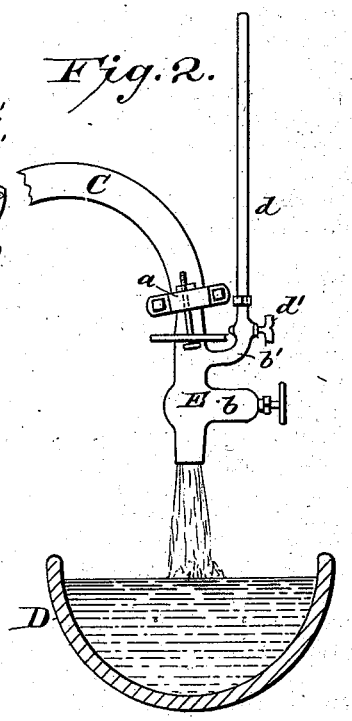


Fig. 2.



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APPARATUS FOR DETECTING LEAKAGE IN FURNACE-BLOCKS.

SPECIFICATION forming part of Letters Patent No. 382,792, dated May 15, 1888.

Application filed August 17, 1887. Serial No. 247,176. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BIRD, of Saxton, in the county of Bedford and State of Pennsylvania, have invented certain new and useful Improvements in the Detection of Leakage in Furnace-Blocks and Similar Fluid-Receptacles, of which the following is a full, clear, and exact description.

My invention relates to an improved apparatus for detecting leaking in furnace-blocks and similar fluid-receptacles, &c., and in devices thereof, and has for its object to provide a simple and effective means of detection readily understood and capable of application by any workman.

The invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation illustrating the attachment of my device, and Fig. 2 is a detached and enlarged side elevation of the same.

In carrying out the invention, A represents a section of a furnace-bosh; B, a water-block contained therein; C, a discharge-pipe leading from the water-block, and D a trough prepared to carry the waste water from the furnace.

To the end of the discharge-pipe C a faucet, E, is detachably attached, which faucet is made to enter the mouth of the pipe, and the joint is embraced by a sectional collar, *a*, united to the faucet and provided with a suitable packing, as shown in Fig. 2; or the connection may be made in any other appropriate or approved manner.

Above the valve *b* of the faucet, upon the same side, a branch, *b'*, is projected upward, provided with a gage-glass, *d*, projecting upward and closed at its upper end, and below said glass with a stop-cock, *d'*.

In operation, if it is suspected that the block B is leaking, the device is secured to the mouth of the discharge-pipe, as above set forth, the valve *b* is opened, and the stop-cock *d'* is closed, and the pressure of water feeding into the block is so reduced that it will flow from the faucet in a full gentle stream. The stop-cock *d'* is now opened, and if the water does not rise in the glass the valve *b* is closed until the water rises in the glass to a point indicating the normal pressure, the blast being upon the furnace during the above operation. The blast is now taken off, and if the blocks, &c., are tight the water will stand steadily in the glass. If not, the water will fall in proportion to the magnitude of the leak. The operation may be repeated, if desired, if the first results are doubtful.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the discharge-pipe of a furnace-block, of a stop-valve, a gage-glass closed at its upper end, and a stop-cock between the pipe and gage, substantially as set forth.

2. A device for detecting the leakage of blocks in furnaces, consisting of a faucet provided with a valve near the lower end, an upwardly-extending branch near the opposite end, a gage attached to the end of said branch, a stop-cock in said branch and closed at its upper end below the gage, and means for attaching the faucet to the water-discharge pipe of a furnace, substantially as shown and described.

3. The combination, with the water-blocks of a furnace and the discharge-pipe leading out therefrom, of a faucet detachably connected to said discharge-pipe, provided with a valve near the lower end, an upwardly-extending branch above said valve, a glass tube supported by said branch and closed at its upper end, a stop-cock below said tube, and the sectional collar *a*, attaching the faucet to the discharge-pipe, substantially as described.

JOSEPH BIRD.

Witnesses:
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