No. 741,589. PATENTED OCT. 13, 1903.

D. D. McBEAN.

MASONRY WATER STOPPER.

APPLICATION FILED MAY 9, 1903.

NO MODEL.

Fig.1

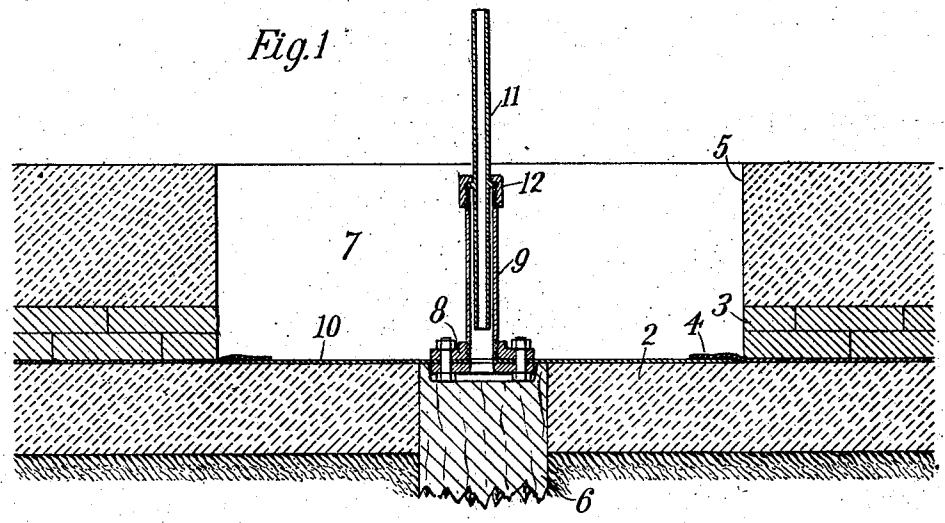


Fig.2

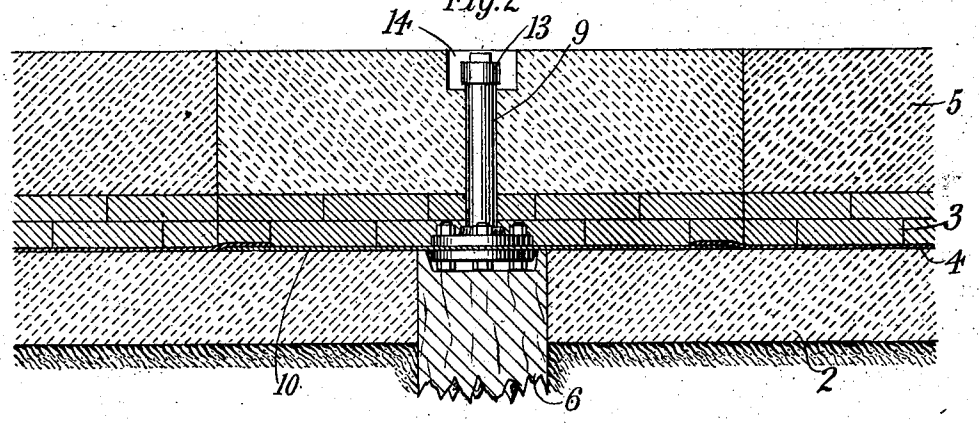
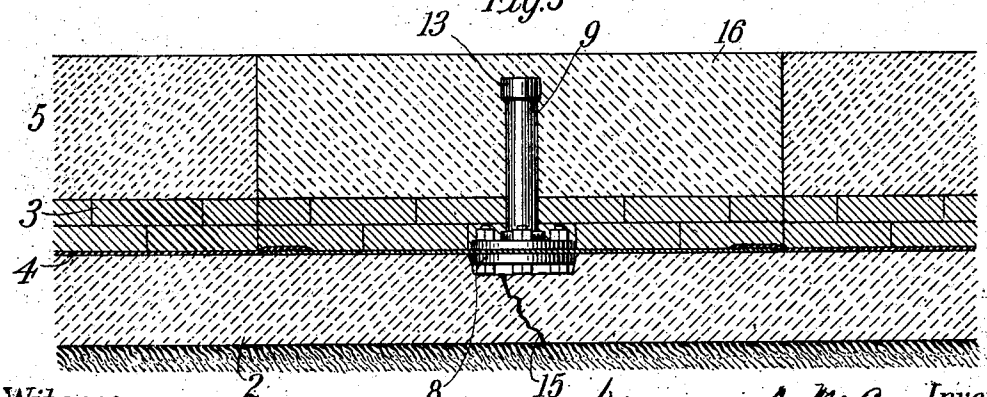


Fig.3



Witnesses:
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No. 741,589. Patented October 13, 1903.

UNITED STATES PATENT OFFICE.

DUNCAN D. McBEAN, OF NEW YORK, N. Y.

MASONRY WATER-STOPPER.

SPECIFICATION forming part of Letters Patent No. 741,589, dated October 13, 1903.

Application filed May 9, 1903. Serial No. 156,411. (No model.)

To all whom it may concern:

Be it known that I, DUNCAN D. McBEAN, of the city, county, and State of New York, have invented a new and useful Improvement in Masonry Water-Stoppers, of which the following is a specification.

My invention relates to improvements in the construction and repair of waterproof masonry, its object being to provide means for the shutting off of water which may be allowed to flow through openings at certain points in the process of construction to be afterward closed or through leaks which may occur in the masonry structure after being built; and it consists in the features of construction hereinafter described and claimed.

In order to shut off the flow or leakage of water under pressure with masonry and waterproofing, it is necessary to control the water so that it will not rise and wash out or lift up the newly-laid material and to keep it under control until the newly-laid masonry has had time to set or harden sufficiently to withstand the pressure of the water when shut off. If a pipe be inserted in the opening through which the water flows and the water pumped out through the pipe until the masonry is built and hardened, it is difficult to keep the water flowing to the bottom of the pipe, and it is liable after the masonry is all in place to leak up around the outside of the pipe. To overcome these difficulties, I provide a conduit for drawing off the water from the opening, with connections so sealed as to prevent any lateral leakage, and then lay the masonry around the conduit and over the seal, and after the masonry has thoroughly set and hardened, so as to withstand the pressure of the water underneath, the conduit itself is closed and the flow of the water thus permanently and successfully checked. The means which I employ are hereinafter more particularly described, and covered in the claims and shown in the accompanying drawings, forming part of this specification, in which—

Figure 1 is a cross-sectional view of a masonry structure, the lower stratum being laid around the head of a pile, a space or well being left around the pile by the temporary omission of the other strata of the structure, the leakage of water being through and around the pile, my improvement being shown in place over the head of the pile and unsealed. Fig. 2 is a similar cross-section showing my improvement sealed and the well or space around the same filled in with masonry; and Fig. 3 is a similar view of a masonry floor in which a crack or fissure has formed after construction, showing the fissure sealed by means of my improvement.

In the drawings, 2 represents the lower stratum or layer of concrete, upon which are superposed, as shown, a layer of brick 3 and an interposed layer 4 of tarred paper or other waterproof material and a top or finishing layer 5 of concrete.

6 is the head of a pile which has been driven into the earth beneath, serving as part of the foundation, and which has been cut off after the laying of the concrete 2 even with the top of the same, a space or well 7 being left around the head of the pile in which the brick and superposed concrete have not been laid, permitting the leakage of water through and around the head of the pile.

8 is a flanged coupling seated upon the head of the pile, with which is connected a short stand-pipe 9, and between the flanged members is clamped a piece of cloth 10, dipped in asphalt or other waterproofing, of sufficient size to cover the bottom of the open space or well 7. The edges of the cloth 10 are shown underlapping the projecting edges of the waterproofing 4, the two fabrics being sealed together, so as to hermetically close the opening in and around the pile except through the stand-pipe 9.

11 is a suction or other pipe inserted into the stand-pipe 9 and held in place by a cap 12, by means of which the water rising into the same may be drawn off by pump or by siphon action. After these features are in place the well 7 is then filled by the layers of brick and superposed concrete, as shown in Figs. 2 and 3, the water is drawn off from the stand-pipe 9, and sufficient suction may be given to produce a partial vacuum under the cloth 10 to enable the cloth to be the more readily sealed to the adjoining waterproofing 4 and permit the masonry to be laid upon the same free of water and to remain undisturbed by the water until it has sufficiently hardened to resist its pressure. After that a cap-nut 13 is screwed upon the stand-pipe 9, finally

shutting off the flow of water, after which the masonry structure, with its waterproof layer, will effectually withstand the pressure of the water beneath. For convenience I sometimes leave a cup-shaped space 14 around the cap-nut 13, so that the same can be removed from the stand-pipe if occasion ever requires it. Similarly I am enabled to repair leakages in masonry after it has been laid through the forming of a fissure 15, as shown in Fig. 3. In this case I excavate around the fissure a space like that of 7 in Fig. 1 and place the flanged coupling and stand-pipe above the fissure, with the waterproof cloth held by the coupling and sealed to the waterproof 4 in the same manner as in the case of the structures shown in Figs. 1 and 2. Afterward the space is filled in and in due time the stand-pipe is sealed up, as above described.

I claim—

1. A device for sealing leaks in masonry, comprising a conduit for drawing off the water from the opening and preventing its lateral escape at a point below the masonry surface, a filling of masonry around said conduit and above said point, and means for sealing said conduit after the filling has set or hardened.

2. A device for closing leaks in masonry, comprising an impervious sheet arranged over the opening and extended laterally, means for sealing the joint between the edges of the sheet and the masonry, and a conduit communicating with the opening under the sheet for drawing off the water flowing therethrough.

3. A device for sealing leaks in masonry, comprising an impervious flexible sheet covering the opening, its extended edges being sealed in or to the adjacent material, and being adapted to receive a layer of superposed masonry, and means for draining off the flow of water from underneath the sheet until the superposed masonry has set and afterward closing the same.

4. Sealing devices in masonry structures, comprising in combination, a flanged coupling superposed above the opening, an impervious sheet clamped between the flanges and having its edges sealed to prevent lateral leakage, and means for sealing the opening through the coupling.

5. Sealing devices for masonry structures, comprising in combination, a flanged coupling seated above the opening and within an excavated space in the masonry, an impervious sheet clamped between the flanges and having its edges sealed to a surrounding impervious sheet embedded in the adjacent masonry wall, and means for sealing the opening through the coupling.

6. In masonry structures, means for sealing leaks therethrough, comprising a stand-pipe and connected flanged coupling arranged over the opening, an impervious sheet clamped between the members of the coupling, its outer edges being sealed to a similar impervious sheet in the adjacent masonry, a filling of masonry above said coupling and sheet, and a seal for the top of said stand-pipe, substantially as and for the purposes set forth.

Signed at New York city this 4th day of May, 1903.

DUNCAN D. McBEAN.

Witnesses:
ANNA W. McBEAN,
J. T. CRANE.