

No. 747,660.

PATENTED DEC. 22, 1903.

H. T. SWEARINGEN.
GUARD FOR BRIDGE PIERS.
APPLICATION FILED SEPT. 16, 1902.

NO MODEL.

Fig. 1.

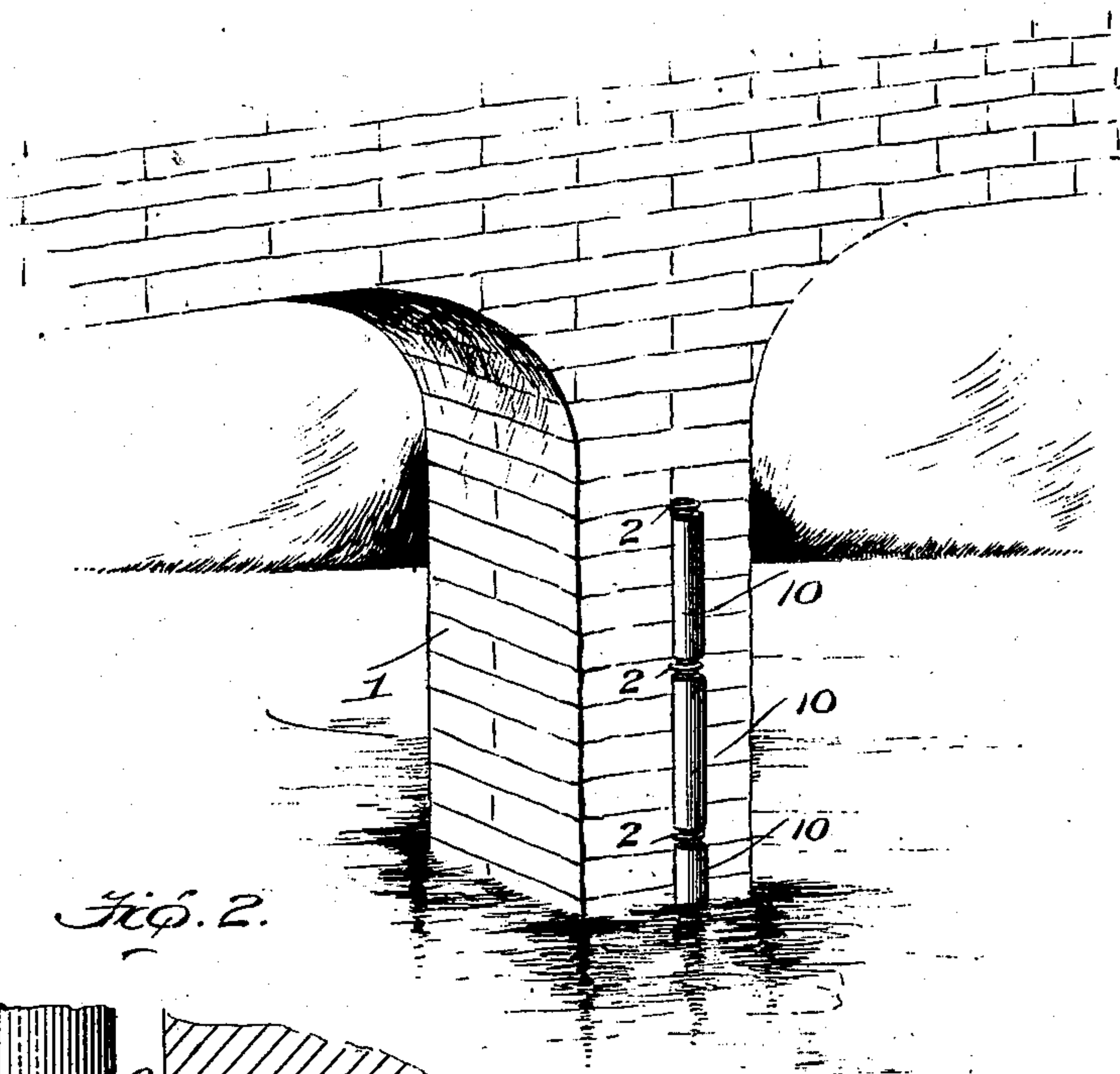


Fig. 2.

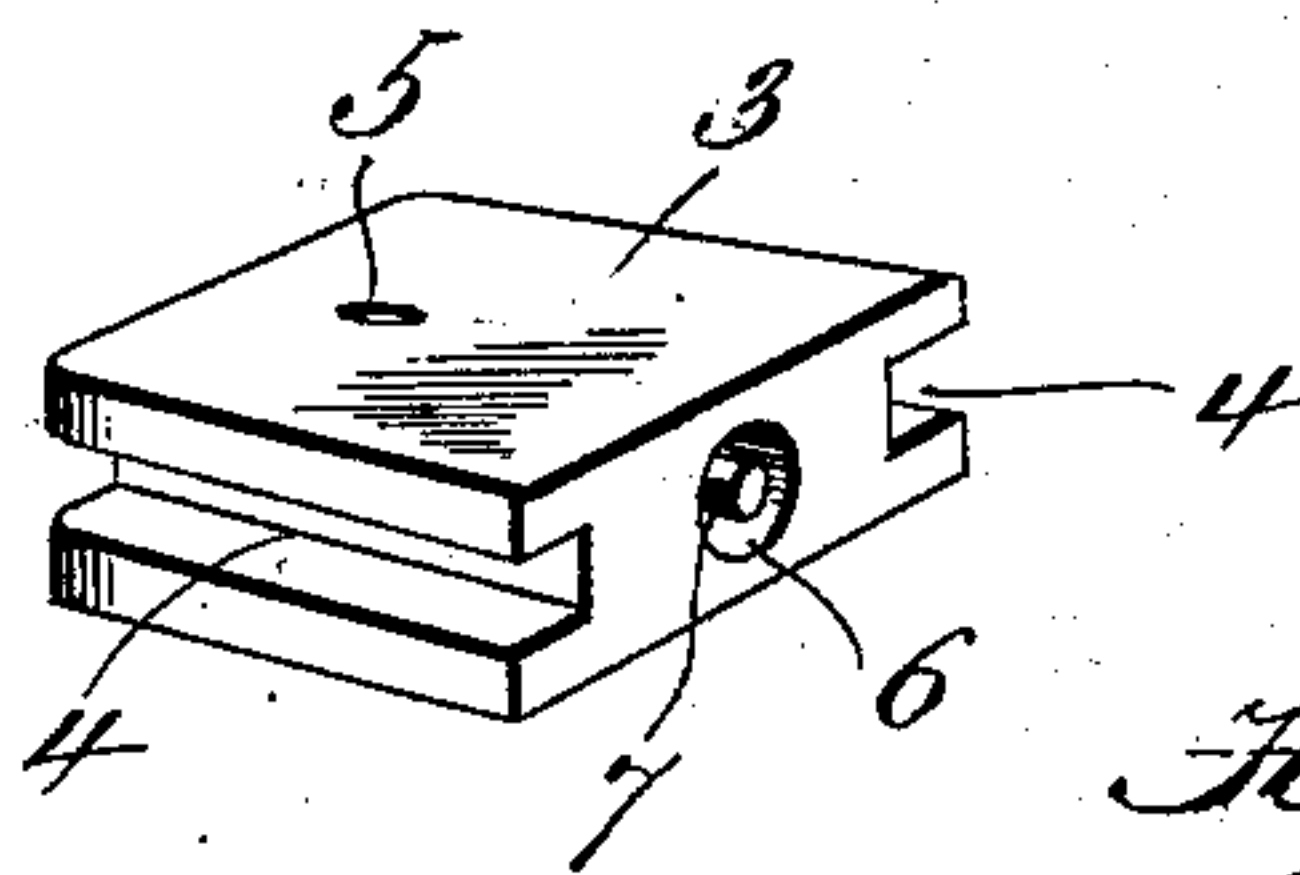
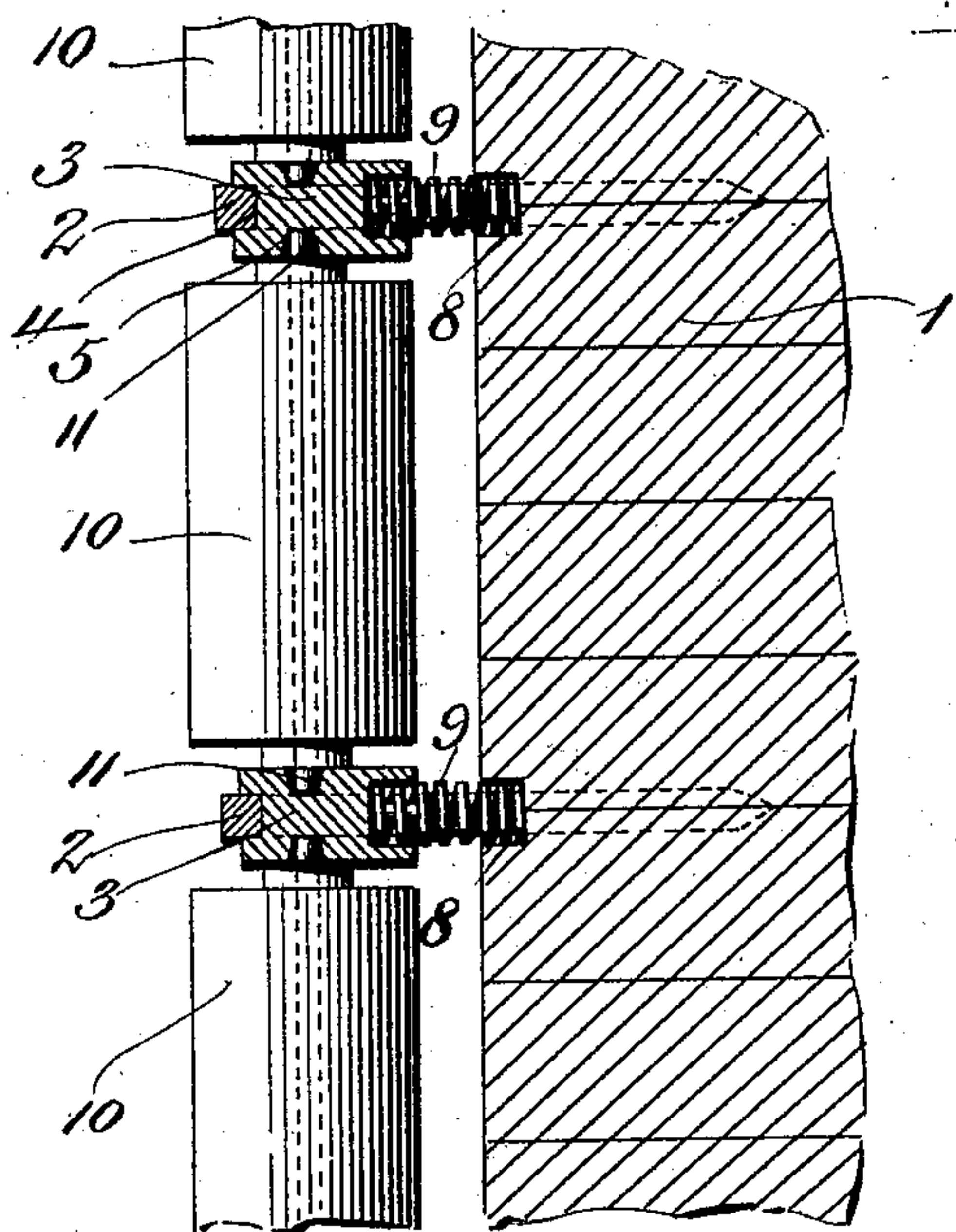
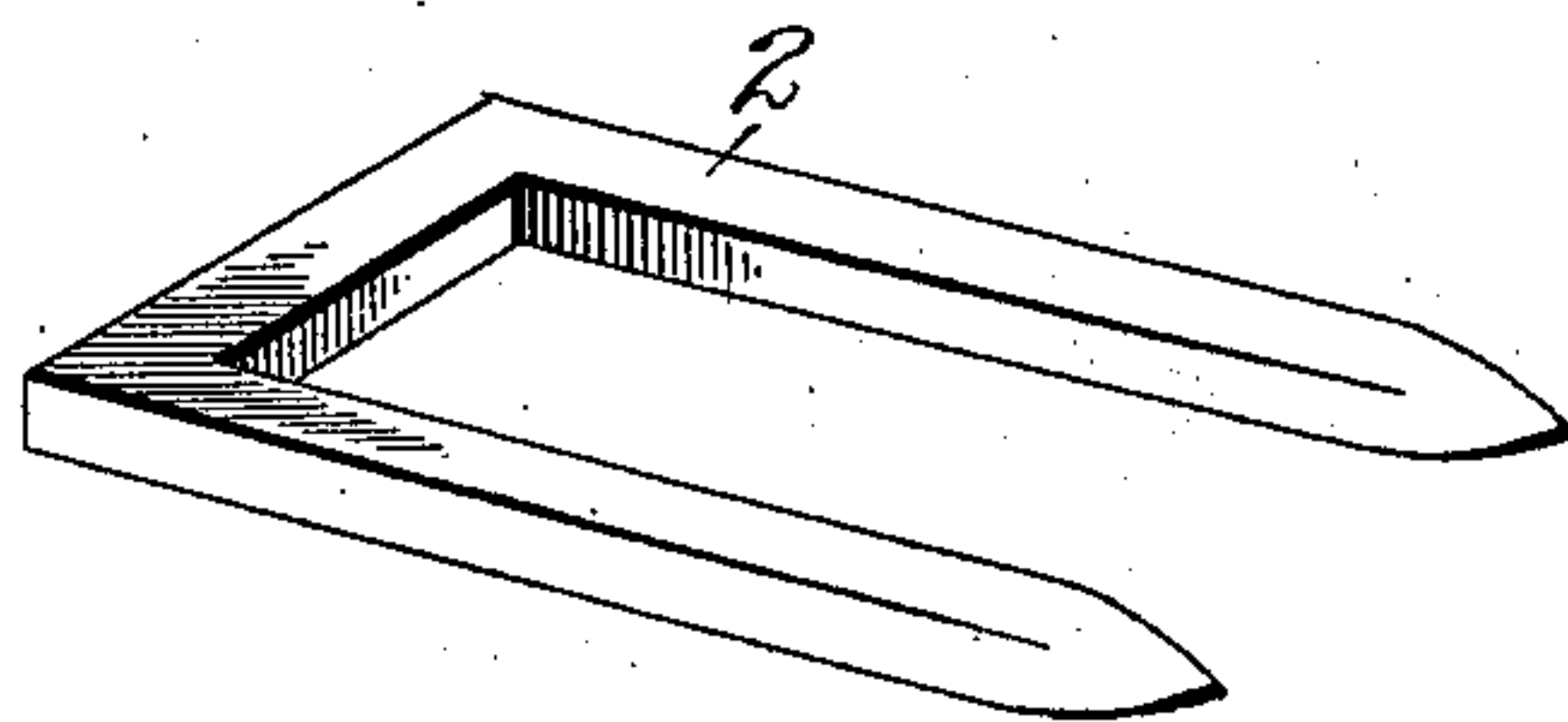


Fig. 3.



Witnesses -

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UNITED STATES PATENT OFFICE.

HANNON THEODORE SWEARINGEN, OF GUTHRIE, OKLAHOMA TERRITORY.

GUARD FOR BRIDGE-PIERS.

SPECIFICATION forming part of Letters Patent No. 747,660, dated December 22, 1903.

Application filed September 16, 1902. Serial No. 123,603. (No model.)

To all whom it may concern:

Be it known that I, HANNON THEODORE SWEARINGEN, a citizen of the United States, residing at Guthrie, in the county of Logan and Territory of Oklahoma, have invented new and useful Improvements in Guards for Bridge-Piers, of which the following is a specification.

This invention relates to improvements in guards for piers of bridges and intended to prevent the gorging of ice, &c., against the same, whereby their existence is endangered.

The principal objects in view are to produce a simple and effective guard adapted to be applied to the usual form of bridge-pier and which while yielding to the impact of ice, &c., yet will readily shed or divert the same in its course, whereby the guard will be preserved against danger of breakage by reason of such impact and the gorging or damming up of the ice will be prevented.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of a bridge-pier of the conventional type, showing my invention applied thereto. Fig. 2 is a central vertical sectional view of a pier provided with a guard constructed in accordance with my invention. Fig. 3 comprises details of construction hereinafter referred to.

The pier 1 is of the usual type, rectangular in cross-section, though it may be of any shape desired, and a guard may be applied to one, two, or more of its faces or corners, but preferably to its face opposing the current of the stream. However, the positioning of the guards is immaterial so far as this invention is concerned.

The guard itself comprises a series of vertically-aligning substantially U-shaped frames 2, (see Fig. 3,) the ends of each of which are let into the pier 1, in which position they are secured. In each frame 2 is mounted for horizontal reciprocal movement a bearing-block 3, the sides and outer end of which are grooved, as at 4, to fit the said frame. Each bearing-block is, furthermore, provided at op-

posite sides with bearing-cavities 5, flared toward their outer ends, and at its inner end each block may be provided with a countersunk seat 6, from which may project a stud 7, said seat 6 being directly opposite and aligning with a countersunk seat 8, formed in the pier 1. Located in these seats 6 and 8 of each block 3 is a heavy coiled spring 9, the studs 7 entering the same and serving to maintain them in place. These springs are compressed into position, and hence serve to force the blocks outwardly into the outer ends of the frames 2.

10 designates roller-buffers, the same having axial bearings 11, which loosely engage in the bearing-cavities 5 of the opposing blocks. A series of these roller-buffers are employed, the same substantially aligning vertically. The series of rollers are free to revolve as may be caused by the impact of the ice, and hence the latter can find no lodgment against the pier to which such guards may be applied. The springs serve to enable the roller-buffers to yield independently to such impact, thus in a measure breaking the force of the blow, and hence materially aiding in the preservation of the guard and by their subsequent expansion serving to force the ice away from the pier, such yielding to and pushing of the ice continuing until it glances and is carried off by the stream or current.

It will be understood that the guards may be located as desired on the pier and any number employed; also, that the construction of said guards is subject of modification as to details of construction without departing from the spirit or sacrificing the advantages of my invention.

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

1. The combination, with a pier or the like, of a series of rotatable buffers, and means for supporting the same and for independent lateral movement.

2. The combination, with a pier or the like, of a vertical series of independently-rotatable buffers, and means for yieldingly and independently supporting each buffer adjacent to the pier.

3. The combination, with a pier or the like, of a series of frames disposed therefrom in vertical alinement, bearing-blocks mounted therein, and roller-buffers axially journaled in the blocks. 5

4. The combination, with a pier or the like, of a series of frames disposed therefrom in vertical alinement, grooved bearing-blocks seated therein, roller-buffers axially jour-

naled in the blocks, and springs interposed between the pier and the blocks.

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

HANNON THEODORE SWEARINGEN.

Witnesses:

H. M. ADAMS,
WM. R. BENHAM.