2 Sheets-Sheet 1.

H. Allen,

Water Pipe Stop.

No. 3,315. Patented Oct. 25, 1843.

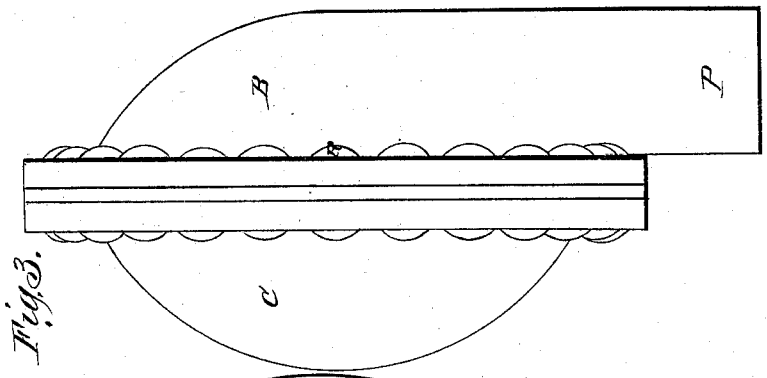

Fig. 3.

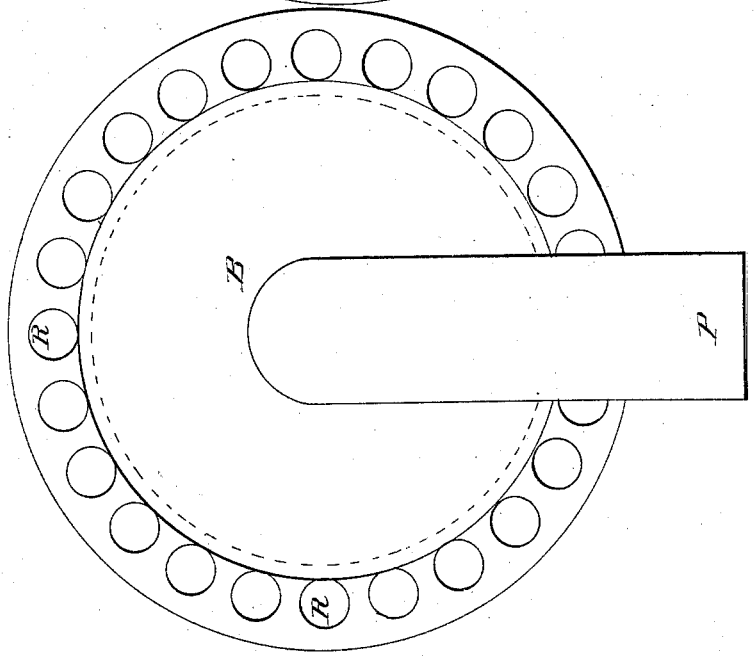

Fig. 1.

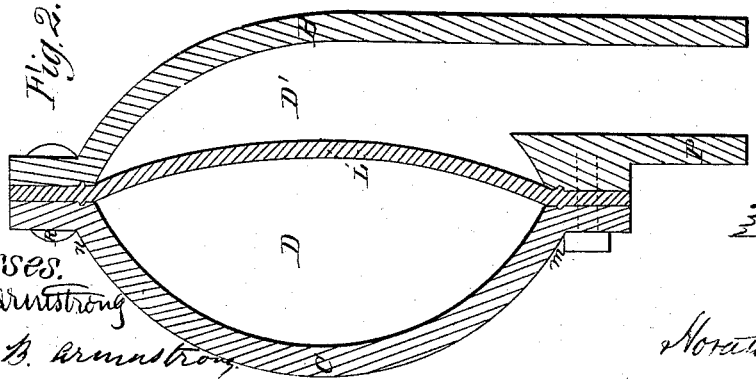

Fig. 2.

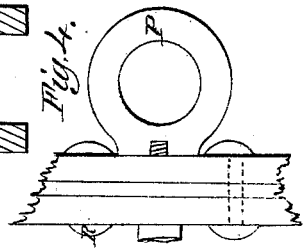

Fig. 4.

Witnesses.
H. B. Armstrong
Henry B. Armstrong

Inventor.
Horatio Allen.

2 Sheets-Sheet 2.

H. Allen,

Water Pipe Stop.

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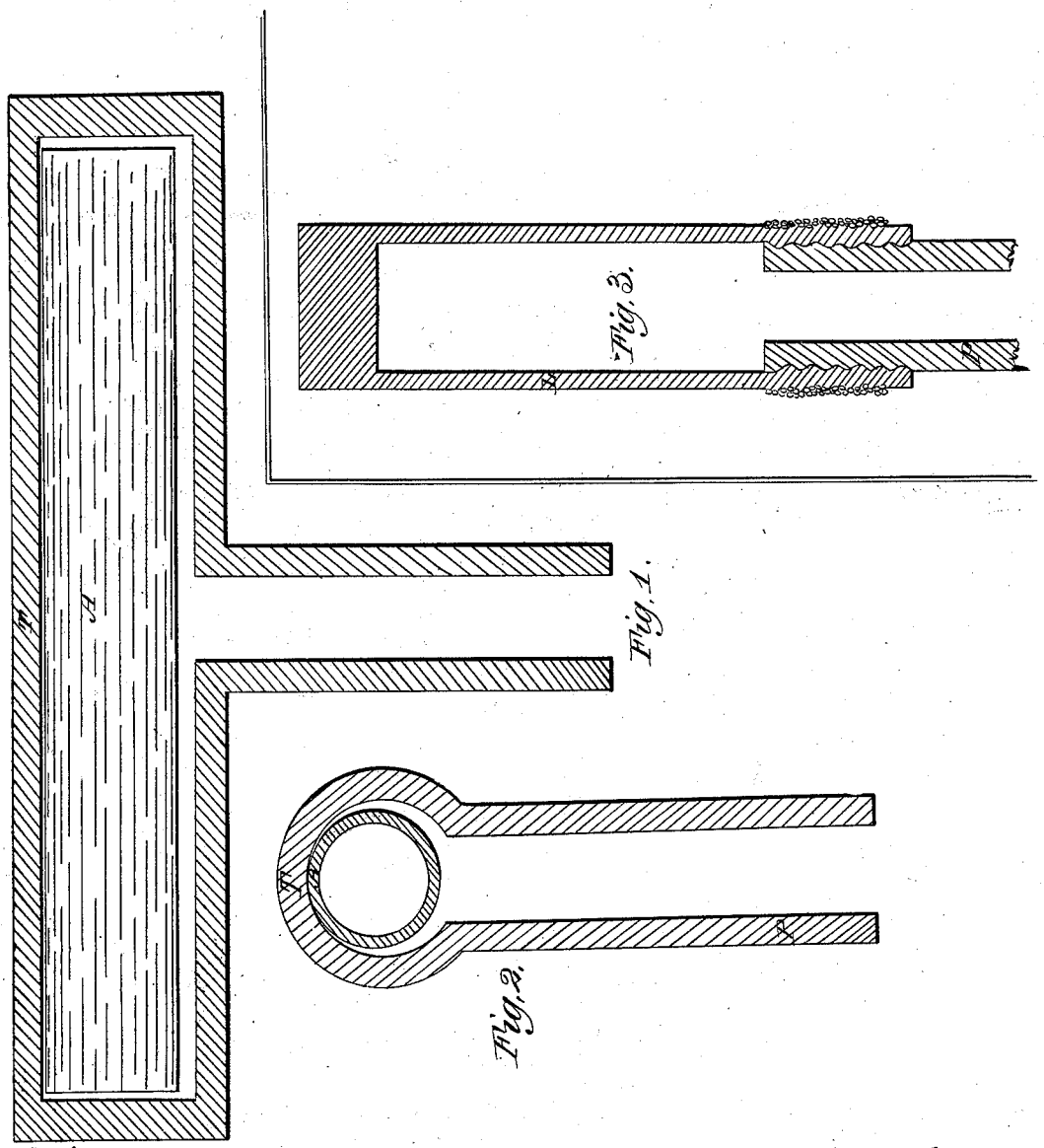

Witnesses.

H. B. Armstrong

Henry B. Armstrong Jr.

Inventor.

Horatio Allen.

UNITED STATES PATENT OFFICE.

HORATIO ALLEN, OF NEW YORK, N. Y.

ELASTIC WATER-STOP FOR CHECKING THE FORCE OR MOMENTUM OF WATER IN PIPES.

Specification of Letters Patent No. 3,315, dated October 25, 1843.

To all whom it may concern:

Be it known that I, HORATIO ALLEN, of the city and State of New York, have invented a new and useful Machine called an "Elastic Water-Stop," of which the following is a full and exact description.

The combination which I have invented consists in placing in contact with the water in water pipes containing water under pressure, an elastic material within which, or on the opposite side of which is a volume of air or other elastic body under the same pressure with the pressure of the water. By such an arrangement, when the water, flowing from a pipe containing water under pressure, is suddenly stopped, the momentum of the water in motion acts on the elastic body, which yielding to the impact relieves the pipe from the concentrated strain and unpleasant noise which attend the sudden stopping of flowing water in a pipe not provided with some elastic resistance.

Figures 1 and 2, plate I, illustrate the arrangement, when a vessel containing air or other elastic body, is introduced in the pipe, Fig. 1 being a longitudinal and Fig. 2 a cross section.

A is the vessel, being a tube or globular vessel of some elastic material, closed at the ends, and perfectly air and water tight, and containing air or other elastic body as spiral springs, &c., under the same pressure with the water, to which the apparatus is to be applied. T is the chamber in which the vessel A is placed; P the projection, by which the chamber is attached to the water pipe.

Plate 11 illustrates the arrangement when one side only, of the vessel containing the elastic body, is in contact with the water, and that side is of an elastic material.

Fig. 1, is a front external view; Fig. 2, a vertical cross section; Fig. 3 is a side external view; Fig. 4 a view from below.

The chamber is formed of two parts B and C. I is a piece of leather, or other elastic material, interposed between the two parts B and C. The two parts are thus riveted together, by the rivets R, R, so that the joints where the flanges come together, are air and water tight. The leather will thus divide the interior of the chamber into two divisions D and D′. D′, through the pipe P, is in free communication with the water pipe, and therefore when the apparatus is attached to a water pipe is full of water. The division D contains air or other elastic body, as spiral springs, &c., under the same pressure with the water in the pipes, to which the apparatus is to be applied. If spiral or other springs or elastic body other than air, be used in the division D, then it is not necessary that from *m* to *n* be a continuous air tight surface, but may be only a frame, to contain and control the action of the springs, &c.

For certain pressures, the elastic material I in contact with the water, may be made of such dimensions as will under either air or other elastic body be unnecessary, and therefore they, as well as the interior part from *m* to *n*, may be dispensed with, and the elasticity of the material I only be made use of. When such an arrangement is used, the best form is that shown in Fig. 3, plate 1, when a tube I of adequately strong india rubber or other elastic material, is fastened on the end of the pipe P, which contains water under pressure.

I claim—

The combinations herein described, whereby an elastic inclosing material or an elastic separating material is interposed between the air or other elastic body, and the water, whose momentum is to be provided for; and also the combination of an elastic sheet or tube with the pipe containing water under pressure, whereby the elastic material forms a part of the inclosure of the water, and by its elasticity, a yielding resistance is provided for the momentum of the water.

In testimony whereof I the said HORATIO ALLEN hereto subscribe my name in the presence of the witnesses whose names are hereto subscribed on the thirteenth day of September, A. D. 1843.

HORATIO ALLEN.

Signed in our presence:

H. B. ARMSTRONG,

JOSEPH MARTIN.