

(No Model.)

J. J. SPEAR.

APPARATUS FOR REDUCING NOISE OF WATER FLOWING INTO TANKS.

No. 560,287.

Patented May 19, 1896.

Fig. 2.

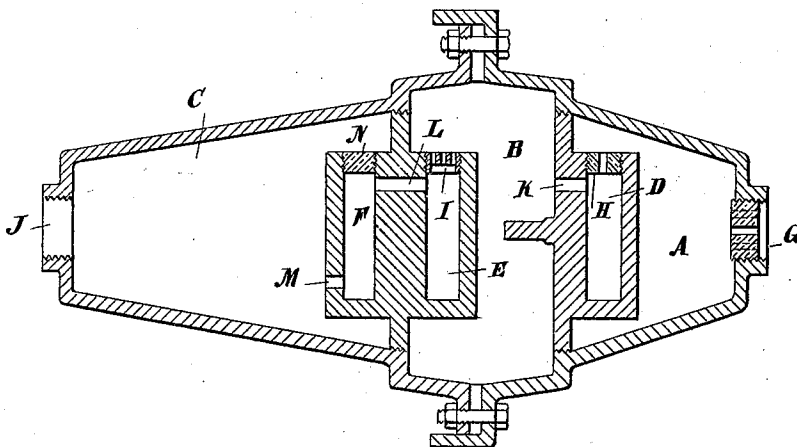
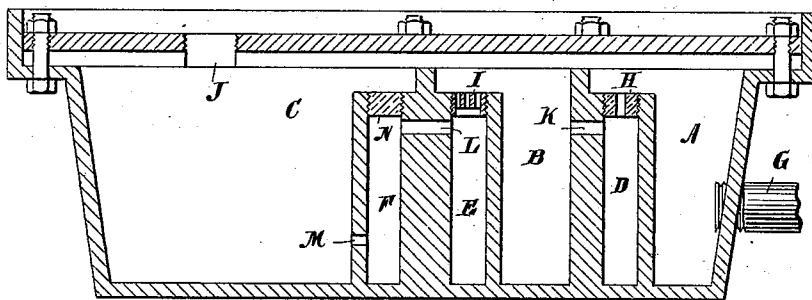


Fig. 1.



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JOHN JAMES SPEAR, OF LANDPORT, ENGLAND.

APPARATUS FOR REDUCING NOISE OF WATER FLOWING INTO TANKS.

SPECIFICATION forming part of Letters Patent No. 560,287, dated May 19, 1896.

Application filed September 26, 1895. Serial No. 563,709. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES SPEAR, glass merchant, a subject of the Queen of Great Britain, residing at No. 70 Crasswell Street, Landport, Hampshire, England, have invented certain new and useful Improvements in Apparatus for Reducing Noise of Water Flowing into Tanks, of which the following is a full, clear, and exact specification.

In tanks supplied with water under pressure, especially water-closet cisterns and domestic supply-tanks, it is desirable to minimize the noise of the inrush of water when the tank is being filled. The apparatus which I have devised effects this object in a simple and efficient manner without interfering materially with the flow and without the use of moving parts which might possibly get out of order in use and interfere with its regular automatic working. The apparatus consists, essentially, of three successive chambers communicating with each other by means of passages or barrels the orifices of which are provided with screw-plugs designed to diminish the flow, and consequently the pressure at the exit. It may be constructed in various forms to suit special requirements, two of which are hereinafter described, and illustrated in the accompanying drawings, or may be cast in one piece with the cistern to which it is attached.

I will now proceed to describe my invention in detail and with reference to the drawings accompanying my application, in which—

Figure 1 shows a section of the apparatus, of the usual construction, of more or less rectangular oblong shape. Fig. 2 shows a modification adapted to fit to the corner of a water-tank.

Like parts are indicated by the same letters in each figure.

A indicates the first chamber, B the second chamber, and C the third chamber; D the first passage, E the second passage, and F the third passage.

G is the main water-inlet; H, brass plug with hole in center; I, brass plug with three holes; J, outlet-union; K, inlet from D to B; L, inlet from E to F; M, inlet from F to C; N, brass plug.

The apparatus is preferably cast of suitable metal, such as iron, lead, brass, or the

like; but may obviously be formed of many other materials without departing from the principle of the invention. I prefer to construct it about twelve inches long, about six and a half inches wide, and about four inches deep. The top of the pattern illustrated in Fig. 1 is provided with an inch flange with a raised rim one inch high from the outside, upon which the lid or cover is secured and made tight with rubber or leather packing. The rounded pattern shown in section at Fig. 2 is cast in two pieces and bolted together with an intervening layer of packing in the manner shown in the drawings. The brass plugs are preferably made so as to be easily removable in case of need.

The operation of the device is as follows: The water from the main or other source of supply enters at G. This inlet is provided with a cap or dome pierced with holes, preferably five in number and of about one-sixteenth of an inch diameter. This cap arrests any chips or solid bodies which might block up the apparatus. From G the water flows into the first chamber A and thence through the plug H, which has a hole about one-eighth of an inch in diameter for the purpose, into the conduit D. Thence the stream passes through inlet K into the second chamber B, where its impetus is further checked and its speed reduced by the configuration of the same. From B the stream passes through the brass plug I by means of three holes each of one thirty-second of an inch diameter into the conduit E, out of E by passage L to conduit F, and thence through outlet M into the last chamber C, finally escaping through the brass union J.

It should be observed that the dimensions of the various inlet and outlet holes may be somewhat modified to suit different initial pressures, those given above being calculated to reduce the pressure from about twenty-five pounds per square inch to under seventeen pounds until the tank is filled, while doing away with the objectionable hissing sound of rushing water. In many cases the apparatus also acts as a water-waste preventer.

Having fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with an inlet-pipe, of a

series of chambers connected with each other through small orifices, the said inlet-pipe leading into the first chamber, and an outlet-pipe leading from the last chamber, for the purpose set forth.

2. The combination with an inlet-pipe, of a series of chambers connected with each other through small orifices the said inlet-pipe leading into the first chamber, a partition having small orifices interposed between the inlet-pipe and the first chamber, and an outlet-pipe leading from the last chamber, for the purpose set forth.

3. The combination with an inlet-pipe, of a closed chamber into which water passes from said inlet-pipe, a second closed chamber connected with the first-mentioned chamber through a conduit having small inlet and outlet orifices, a third closed chamber connected with the second closed chamber through con-

duits having small inlet and outlet orifices, and an outlet-pipe leading from the third chamber, for the purpose specified.

4. In an apparatus for reducing the noise of water flowing into a tank, a combination of two hollow truncated conical castings bolted together by their bases, diaphragms in said castings dividing the apparatus into three chambers communicating with each other through small passages formed in said diaphragms, and inlet and outlet pipes entering the truncated apices of the cones.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN JAMES SPEAR.

Witnesses:

WALTER LANGER,
ERNEST EDWARD GILLET.