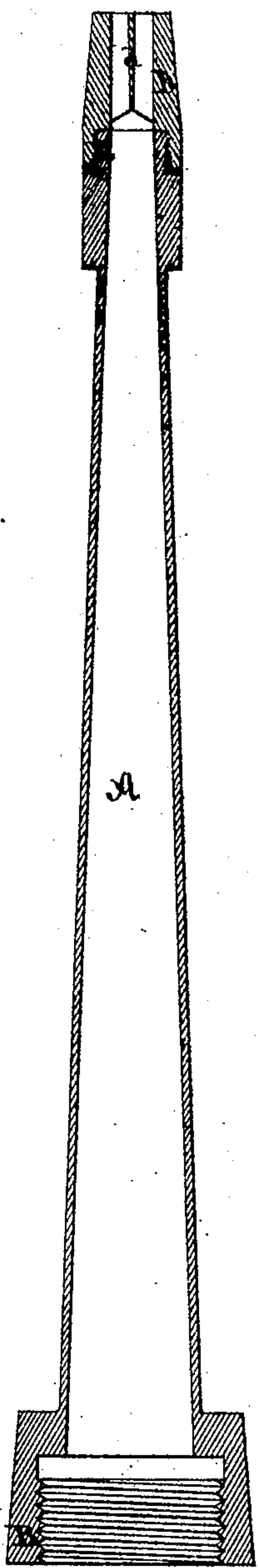
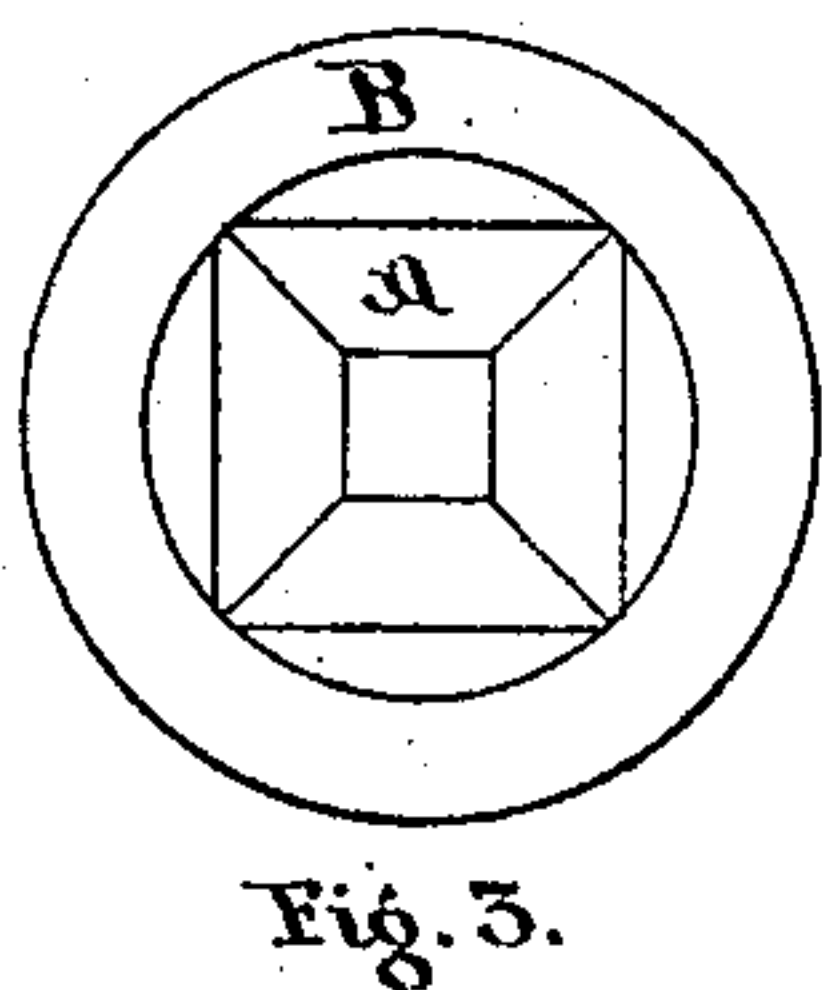
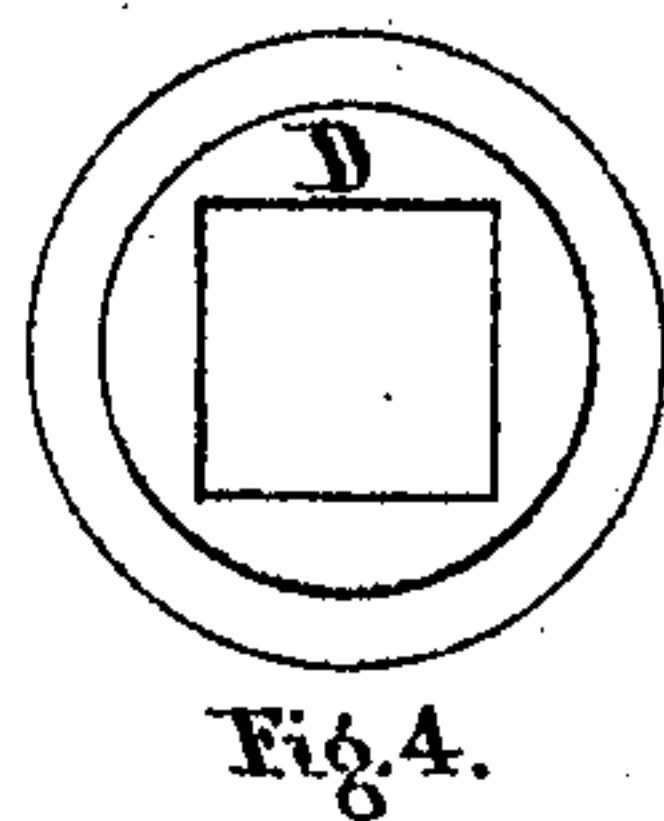
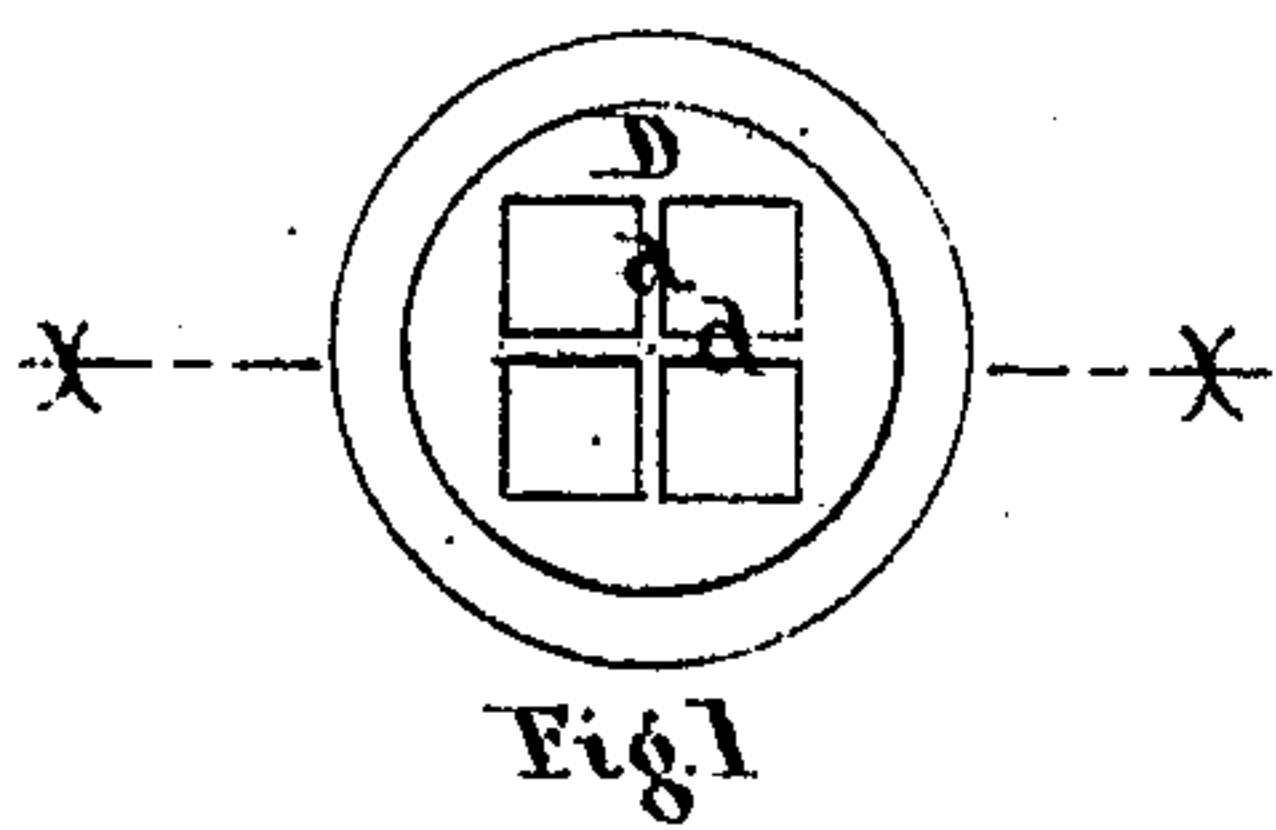


A. LOVIE.

Discharge-Pipe and Nozzle.

No. 130,927.

Patented Aug. 27, 1872.



William H. Low

James Pettit

Alexander Lovie

Witnesses.

# UNITED STATES PATENT OFFICE.

ALEXANDER LOVIE, OF ALBANY, NEW YORK.

## IMPROVEMENT IN DISCHARGE-PIPES AND NOZZLES.

Specification forming part of Letters Patent No. **130,927**, dated August 27, 1872.

*To all whom it may concern:*

Be it known that I, ALEXANDER LOVIE, of the city and county of Albany and State of New York, have invented certain Improvements in Discharge-Pipes and Nozzles for attaching to Fire-Hose, &c., of which the following is a full and exact description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is an end view of my "spray"-nozzle; Fig. 2, a reduced longitudinal section of the pipe and nozzle through the line *xx*; Fig. 3, an end view of the "butt" of the pipe; and Fig. 4, an end view of my nozzle with a single orifice.

The nature of my invention consists in making the opening through the pipe and nozzle of a rectangular form; and in "spray"-pipes, subdividing the orifice of the nozzle by means of partitions into a number of smaller rectangular openings; the object of it being to increase the range of the stream by overcoming the rotatory motion of water when forcibly discharged from a circular orifice.

A is the body of the pipe, having a square opening through it, tapering in size, as shown. At its lower end it has a screw-"butt," B, for coupling it to the hose; and at its upper end a screw, C, for attaching the nozzle. D is the nozzle, (whose external form I make circular,) the openings through it being of the same form, and of a size to correspond with the orifices of the pipe to which it is attached. For the purpose of spreading the stream to cover a greater extent of surface, and where the stream is not required to be carried to a great distance, I divide the orifices of the nozzle by means of the partitions *d d* into four smaller openings, as shown in Fig. 1; but where it is required to force the stream to a great dis-

tance a single square opening, as shown in Fig. 4, should be used.

In discharging water under great pressure from a circular orifice the stream acquires a rapid rotatory motion, which produces a broken and spray-like discharge at a short distance from the nozzle of the pipe, which continues to increase in its dimensions as the distance increases, until the stream is divided into so great a number of particles that the discharging force is no longer able to sustain it, thereby destroying, in a great measure, the effect due to the impelling force. This destructive effect, though not entirely overcome in my improvement, is remedied to such a degree that a solid stream is maintained to a much greater distance than can be obtained with a round discharge of the same area, and its effectiveness is thereby greatly increased.

It will be readily seen that my improved nozzles may be applied to discharge-pipes with round bodies; but, as a much greater effect is produced by the increased length of the square opening, I prefer to construct it as herein shown and described.

I claim as my invention—

1. A discharge-nozzle for fire-hose when constructed with a rectangular discharge-orifice, as and for the purposes herein specified.
2. For the purpose set forth, a discharge-nozzle with a rectangular orifice divided by the partitions *d d*, as herein described.
3. The combination of the nozzle D, having one or more rectangular openings, with the pipe A, when constructed as and for the purpose set forth.

ALEXANDER LOVIE.

Witnesses:

WILLIAM H. LOW,  
JAMES PETTIT.