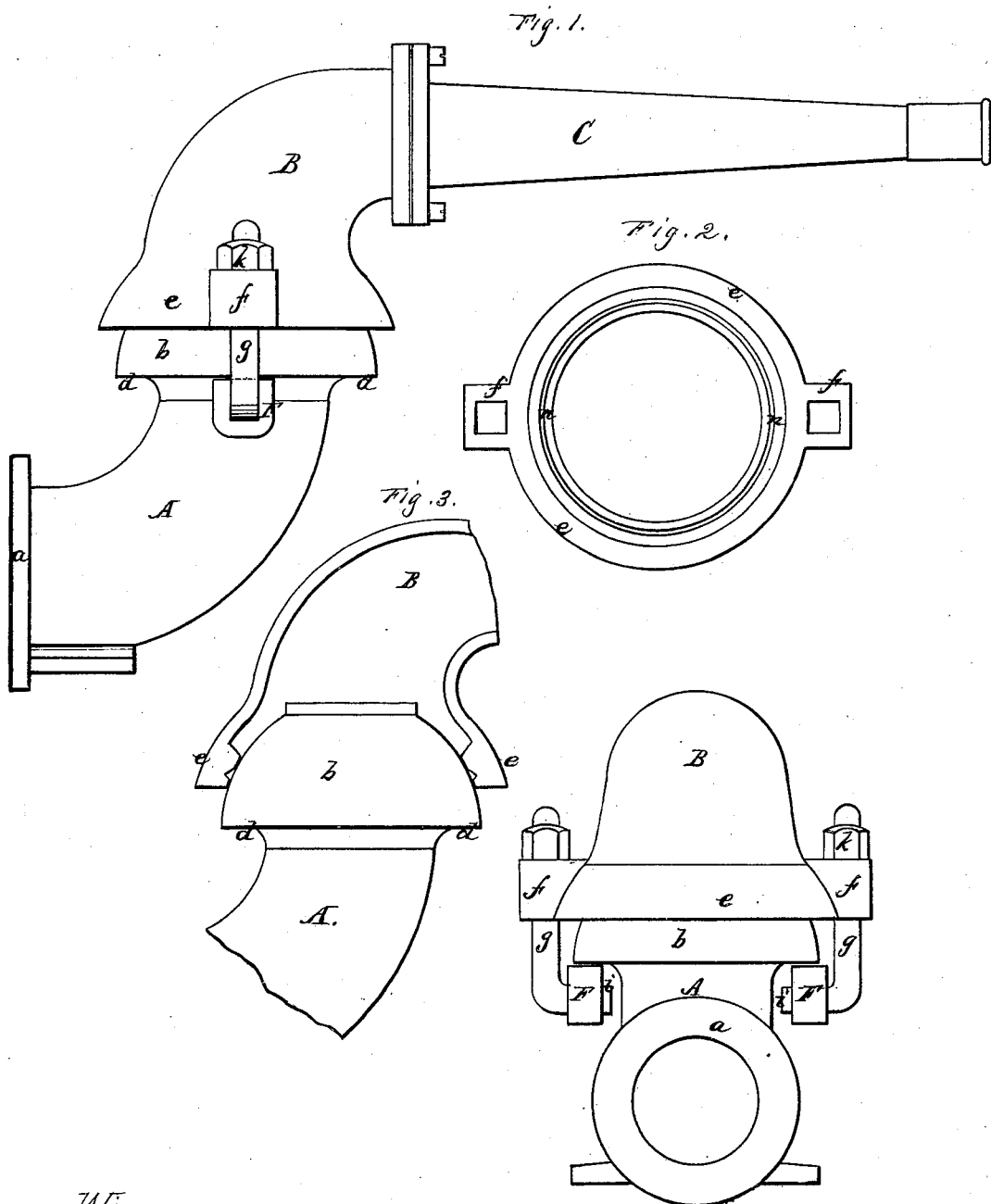


T. Watson,

Nozzle.

No. 108658.

Patented Oct. 25. 1870.



Witnesses.
Geo. H. Strong,
Chas. Brown

Inventor.
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By his attys
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THOMAS WATSON, OF NEVADA CITY, CALIFORNIA.

Letters Patent No. 108,658, dated October 25, 1870.

IMPROVEMENT IN HYDRAULIC MINING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THOMAS WATSON, of Nevada City, in the county of Nevada, State of California, have invented an Improved Hose-Nozzle; and I do hereby declare that the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

My invention relates to an improved device for coupling nozzles to water-pipes, such as are used in hydraulic mining, for conveying the water from a reservoir to the place where it is to be used for washing down the earth. The nozzles which are used with these pipes must necessarily be so attached to the water-pipes that they can be directed either up or down, or to the right or left, as desired, in order to do the work effectually, thus necessitating a moving joint at the point of coupling.

My coupling is so constructed that the pressure of the water in the pipe and nozzle will cause the joint to work with greater freedom than when there is no pressure upon them, thus doing away with the bolt which is usually employed to counteract the pressure in order to allow the nozzle to be directed to various points.

In order to describe my invention so that others will be able to understand its construction and operation, reference is had to the accompanying drawing forming a part of this specification, in which—

A represents a curved section of water-pipe, which can be secured by bolts or otherwise to the end of the main pipe, by means of the flange *a*.

The opposite end of the curved section A is provided with a surrounding cap or rim, *b*, whose upper portion, from the opening in the pipe to the lower edge, is made upon a true curve, while the lower portion or shoulder, *d*, forms a plane surface, as shown, thus forming a solid curved rim entirely around the end of the pipe.

The section B, to which the nozzle C is secured, is also curved.

This section has one end, *e*, made much larger than the other, this end being provided with a socket, which fits down over the curved circular rim of the section A.

Near the bottom of the socket an annular groove, *n*, is made in the face which forms the joint, so that it may be packed, if found necessary.

Lugs *f* are cast upon opposite sides of the end *e* of the section B.

Bars *g* pass vertically through holes in these lugs, and are secured at their upper ends by means of nuts, *h*.

These bars extend below the rim *b* on the section A, and have pins, *i*, which serve as journals, projecting at right angles to them, so as to be directly beneath the plane surface *d*.

Slides *F* are placed upon the journals *i*, so that their upper sides will bear against the projecting flange or plane surface. This latter described device serves to hold the sections B and C together, while it allows the ball-and-socket joint to be moved to various positions.

The projection or flange *o*, at the top of the head *b*, limits the motion of the joint, as may be desired.

By uniting the two sections, A and B, together, with the above-described joint, the pressure inside will be chiefly on the section B, thus causing the joint to work more freely than when there is no pressure whatever in the pipe, whereas all other constructions of the ball-and-socket joint are effected in a distinctly opposite manner by the internal pressure, and require a bolt, or other equivalent device, to counteract or relieve the pressure on the moving parts.

Besides the advantages above stated, my coupling can be constructed much more cheaply than any other that I am aware of being now in use in the mines on this coast.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. In combination with the hemispherical head *b*, provided with a flange or rim *d*, the corresponding cap or socket B, connected to it by the bars *g*, provided with pivots *i*, working in the traversing slides *F*, substantially as described.

2. The flange on the top of the head *b*, in combination with the lip or flange on the inside of the socket B, to limit the motion of the socket on the head, substantially as described.

In witness that the above-described invention is claimed by me, I have hereunto set my hand and seal.

THOMAS WATSON. [L. S.]

Witnesses:

GEORGE GRANT ALLAN,
AUGUSTUS JISVORD.