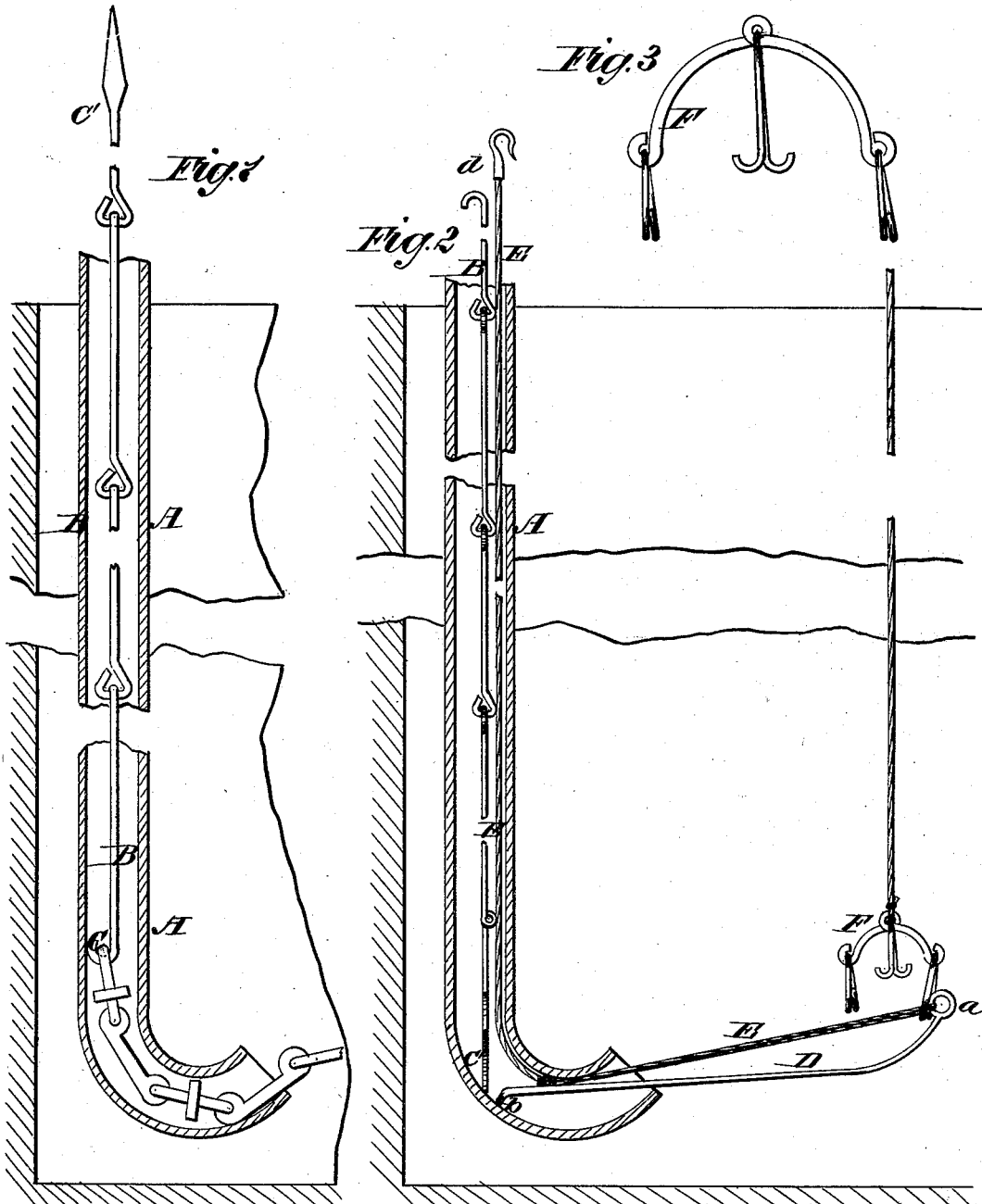


J. B. BROWN.  
Pump-Chain Adjuster.

No. 165,207.

Patented July 6, 1875.



WITNESSES:  
*Francis McArdle.*  
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# UNITED STATES PATENT OFFICE.

JAMES B. BROWN, OF HANNIBAL, MISSOURI.

## IMPROVEMENT IN PUMP-CHAIN ADJUSTERS.

Specification forming part of Letters Patent No. **165,207**, dated July 6, 1875; application filed May 22, 1875.

*To all whom it may concern:*

Be it known that I, JAMES B. BROWN, of Hannibal, in the county of Marion and State of Missouri, have invented a new and Improved Pump-Chain Adjuster, of which the following is a specification:

In the accompanying drawing, Figures 1 and 2 represent vertical central sections of a cistern or well and chain-tube, with my device for adjusting pump-chains; and Fig. 3, a side view of the grapple used therewith.

Similar letters of reference indicate corresponding parts.

The object of my invention is to produce a device for adjusting pump-chains, so as to overcome easily any difficulty that can arise from the breaking of the pump-chain, or by the knotting, twisting, or wedging of the same in the chain-tube, or by any other obstructing agency.

The invention consists of an adjusting-chain with long links, or of a continuous rod of suitable length, provided with a grappling-hook at the end, and a spear-shaped head at the other, to be used for raising the pump-chain, in connection with a conductor of flexible wire, that is passed through the chain-tube and attached to a cord of suitable length, being lowered by the spear-head until forced beyond the shoe of the tube, where it is grappled, so that the cord may be employed for drawing the chain down through the tube, and up again for repair and adjustment.

In the drawing, A represents the chain-tube, which extends down to the bottom of the well or cistern, and ends in the curved shoe customary in chain-pumps. For the purpose of readjusting and repairing the broken or otherwise obstructed pump-chain without the trouble and expense of raising the tube from the well, I have constructed a device that consists of a chain, B, with long links, or of a continuous rod of the required size and length. One end of this chain or rod B is provided with a short grappling-hook, C, while the other end is formed into or armed with a spear-shaped point, as shown in Fig. 1.

The adjusting chain or rod is either used separately for feeling for the chain in the tube, and raising the same when caught by the hook, or it is used in connection with a conductor,

D, that is made of bent wire, of suitable size and length, which is slightly curved, and formed into an eye or ring, *a*, at one end, while the other end is bent at right angles to the main part into a second ring or eye, *b*, of such shape that the spear-head of the adjusting chain or rod fits into the same.

A strong cord, E, being in length about twice the depth of the cistern or well, is attached to end and side rings of the conductor D, and provided with a hook or spring-catch, *d*, at the opposite end, for applying readily any suitable grappling device, F, as, for instance, that shown in Fig. 3.

The adjusting device is operated as follows: When the pump-chain is broken the tube is first sounded with the rod or chain of long links, with the hook downward. If it be found that the chain has lodged in the tube, catch it with the hook as near the end of the chain as possible, as, in case the hook should pass down along the side of the chain and catch far below the end, the chain will bind, and cannot be drawn up, so that it will be necessary to jostle the chain until it releases the pump-chain, which is then hooked at an upper link. The pump-chain is then drawn to the top of the tube, and secured to the grappling-cord E. The other end of the pump-chain is then grappled at the bottom of the well, either by the hook or chain, or by the grappling device F, and drawn up to the top of the well. Should the chain not be grappled near its end it will be necessary to pass the other end of the chain down the tube by the cord attached to it. As soon as the grappled part of the chain comes up, the end of the same is also fastened to the cord, and the chain then drawn through the tube, linked together, and placed over the wheel. When the operator finds that there is no part of the pump-chain in the tube, he must grapple for it and draw it out of the well. The conductor is then inserted in the tube, with the curved end downward, and with the spear-head of the adjusting chain or rod seated in the eye of the same. The conductor is now gradually pushed, with the cord, down into the tube, keeping the cord moderately tight, so as to prevent the detaching of the conductor from the spear-head until the flexible conductor is forced by the pressure of the

spear-head to the outside of the shoe and the spear-head, situated at the bottom part of the tube. The grapple is now let down into the well, and the conductor hooked and drawn to the top of the well, care being taken that the other end of the cord is not allowed to pass down into the tube. The adjusting-chain is withdrawn from the tube, and the end of the cord at the chain-tube attached to the end of the pump-chain, which is then gradually drawn down the tube, keeping the cord outside of the tube moderately tight by drawing it up as the pump-chain is let down. After the pump-chain is drawn through the tube, the same is drawn up again to the top of the well, where the ends are connected and placed on the wheel.

In this manner a broken chain may be mended, or a new chain passed down into the well, without disturbing the other parts of the pump, or injuring the cistern or its contents. Any person of average intelligence may read-

ily attend to it without requiring the services of several experienced hands, as at present, so that chain-pumps may be repaired with economy, rapidity, and facility.

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

1. The adjusting device for chain-pumps, composed of an adjusting chain or rod, with hook and spear ends, a flexible conductor, and a grappling-cord attached thereto, to be operated substantially in the manner and for the purpose set forth.

2. The spear-shaped end of the adjusting chain or rod, in combination with the socket-eye of the conductor, for forcing the same through the chain-tube and bottom shoe, as specified.

JAMES B. BROWN.

Witnesses:

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