

J. P. RYAN.
Funnels for Chain-Pumps.

No. 219,983.

Patented Sept. 23, 1879.

Fig. 1.

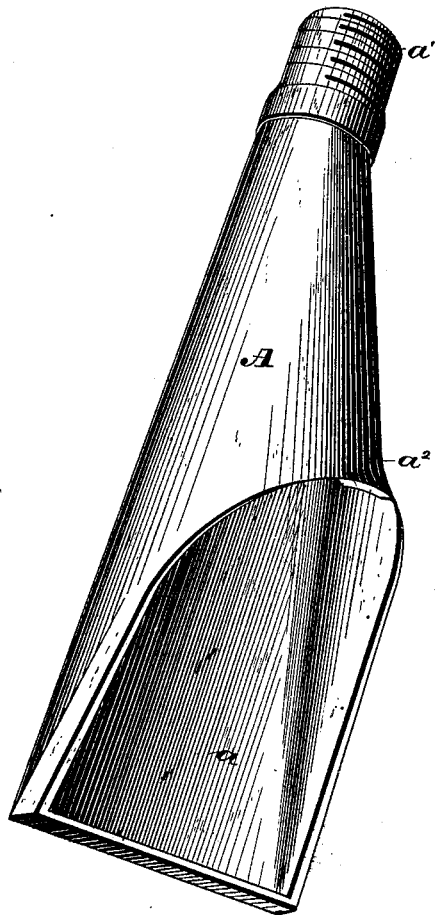
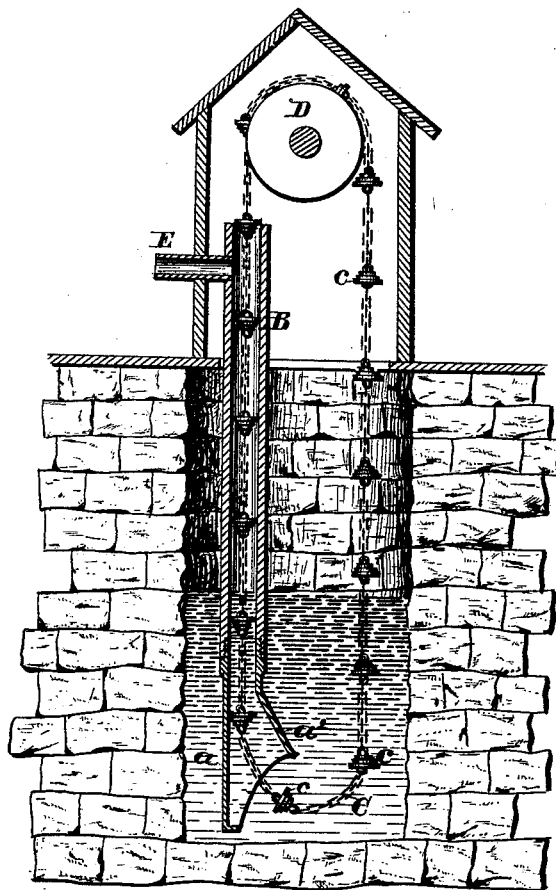


Fig. 2.



Attest:

J. Henry Kaiser.
J. A. Rutherford.

Inventor:

John P. Ryan

By James L. Norris
Atty.

UNITED STATES PATENT OFFICE.

JOHN P. RYAN, OF SARDIS, MISSISSIPPI.

IMPROVEMENT IN FUNNELS FOR CHAIN-PUMPS.

Specification forming part of Letters Patent No. **219,983**, dated September 23, 1879; application filed July 14, 1879.

To all whom it may concern:

Be it known that I, JOHN P. RYAN, of Sardis, in the county of Panola and State of Mississippi, have invented certain new and useful Improvements in Funnels or Guides for Chain-Pumps, of which the following is a specification.

This invention relates to a metal funnel or guide for directing the chain of a disk-chain or button-chain pump into the foot of the water-tube, and is more especially intended for application to iron pump-tubes.

Its object is to guide the buttons or disks squarely into the tube, and thus promote an easy operation of the pump and steady flow of water.

In the accompanying drawings, Figure 1 is a perspective view of my improved pump-tube-foot funnel or guide. Fig. 2 is a vertical section of a button-chain pump provided with my improvement.

It has heretofore been customary to make the water-tube of this class of pumps of wood, the bore of the tube flaring at its foot to serve as a funnel or guide for the buttons or disks; but, owing to the rapidity with which wood decays and is worn away, iron or iron-lined tubes have very generally now come into use for pumps, as they last for a long time, are cleanly, and do not injuriously affect the water. Such tubes have not, within my knowledge, been used for button or disk chain pumps, for the reason that there has not been any means of guiding the buttons into the foot of such a tube, the orifice of which, of course, is about equal in size to the buttons, the swinging of which upon the flexible chain would cause them to catch upon the edge of the tube and retard the operation of the pump.

Flaring metallic mouth-pieces have been fitted around the bottoms of pump-tubes; but, so far as I am aware, the side walls of such mouth-pieces have been of uniform length, and they have not been constructed to prevent undue vibration of the chain.

The letter A indicates my improved foot-funnel or chain-guide, the body of which is somewhat similar in shape to an ordinary liquid-funnel. It has one straight flat wall, a , which is in longitudinal line with the wall of the nozzle or neck a^1 , and widens toward its outer end, while the opposite wall, a^2 , flares and is curved to join the straight wall. The

curved flaring wall a^2 is cut away, so that it is not, in the present instance, more than about half the length of the wall a .

Referring to Fig. 2, the neck a^1 of the guide is screwed into the foot of the iron water-pipe B, and the straight wall a stands in the path of the chain C, so as to prevent said chain from swinging outwardly beyond the foot of the water-tube, and the flaring curved wall a^2 embraces such a space as to permit the buttons or disks c to freely enter the guide, and extends such a distance that when one of the buttons or disks has struck the straight wall, if it rebounds it will strike said curved wall, and as the diameter of the guide gradually decreases the buttons or disks are guided smoothly into the water-pipe, and will, by the action of the wheel D, be caused to raise the water in a continuous stream to the pump-trough E, from which it will be discharged by a suitable spout.

It is not essential that a lower chain-guide wheel be used when the water-tube is provided with my guide, as it will be readily seen that however freely the chain may swing, if it is given such a length as not to extend below the end of the straight wall a of the guide, the buttons or disks will enter the guide and be directed smoothly into the water-tube.

I do not, of course, confine myself to the exact form shown in the drawings, as the cross-section of the guide may be round, rectangular, or any other suitable shape to accord with the shape of the buttons or disks and the water-tube.

What I claim is—

1. The foot-funnel or chain-guide A, having the straight wall a , neck a^1 , and flaring cut-away wall a^2 , substantially as described.
2. The combination, with the tube B and chain-carrying disks or buttons c , of the guide A, having its neck attached to the lower end or foot of the tube, and increasing in diameter downwardly, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

JOHN P. RYAN.

Witnesses:

JAMES N. GIBSON,
ALONZO L. DAVIS.