

S. S. Ayers. Tube Wells.
assigned to Self & Abram Sebring
Fig. 1

105882

PATENTED AUG 2 1870

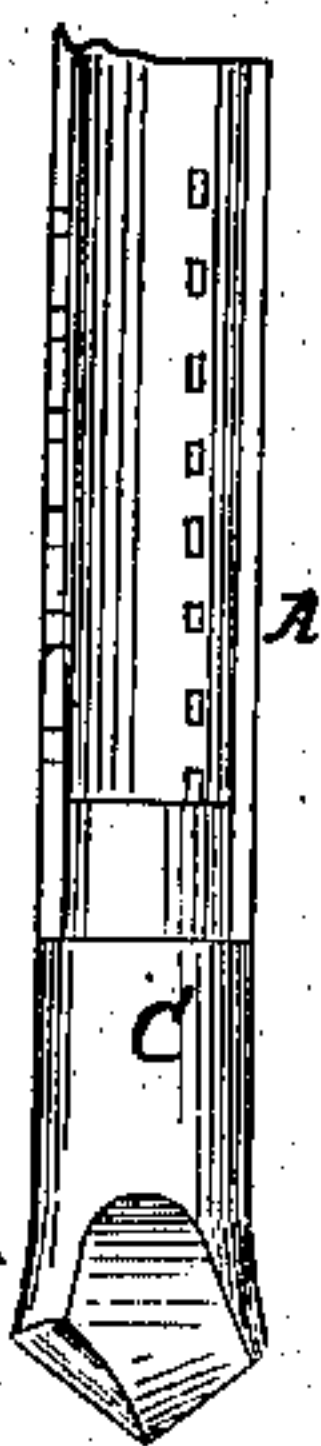
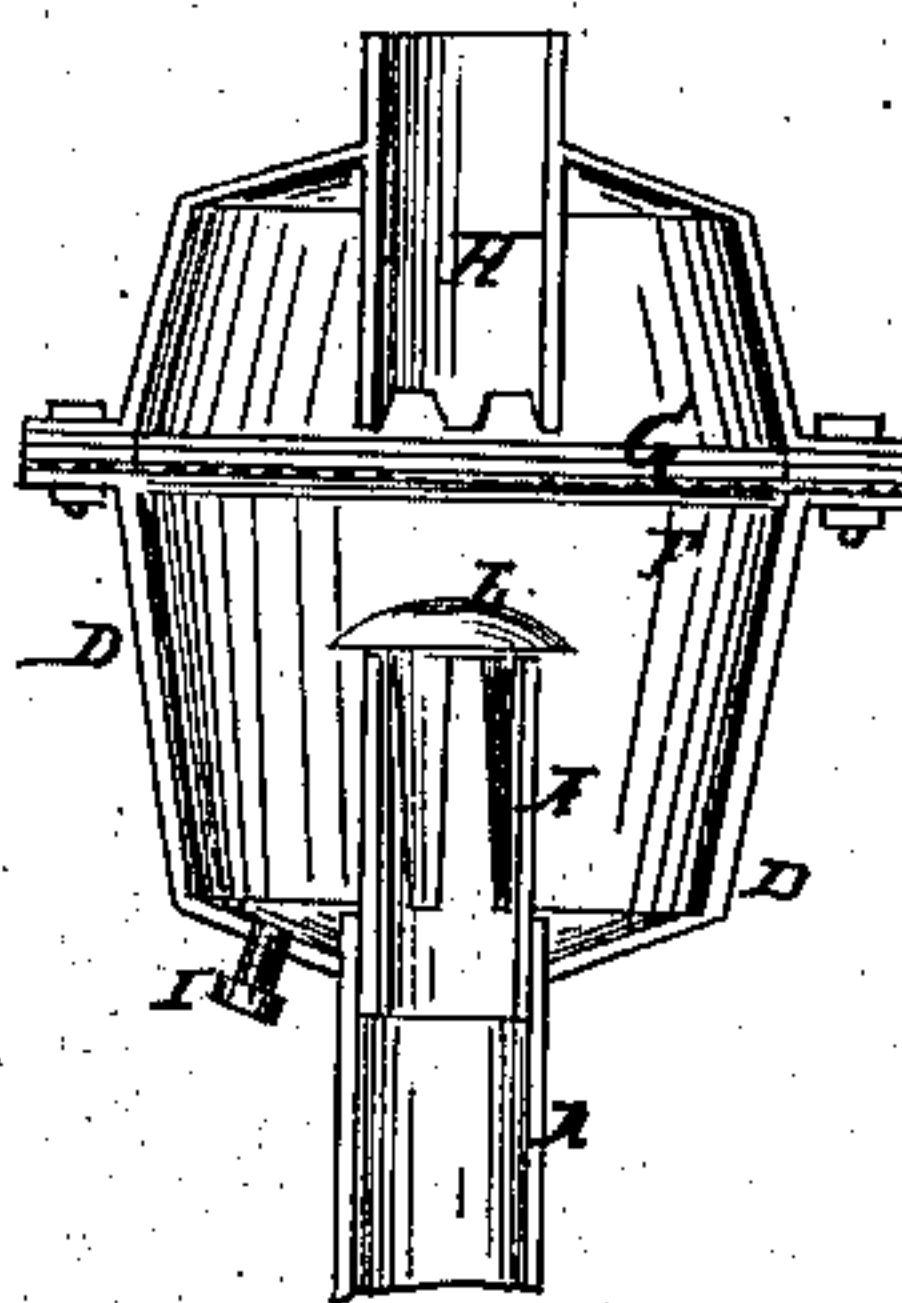


Fig. 2.



Witnesses:
A. W. Alvord
W. F. Clark

Inventor:
S. S. Ayer
PER *[Signature]*
Attorneys.

United States Patent Office.

SAMUEL S. AYERS, OF PLAINFIELD, NEW JERSEY, ASSIGNOR TO HIMSELF
AND ABRAM SEBRING OF SAME PLACE.

Letters Patent No. 105,882, dated August 2, 1870.

IMPROVEMENT IN TUBE-WELLS.

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, SAMUEL S. AYERS, of Plainfield, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Tube-Wells; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 is a detail sectional view of my improved tube-well, furnished with a drill point.

Figure 2 is a detail side view of the lower part of the tube, furnished with an ordinary point.

My invention has for its object to furnish an improved drive-well, which shall be so constructed and arranged as to prevent the well from being choked up with sand or gravel, and which will enable the tube to force its way through slaty rocks or soils; and

It consists in the construction and combination of the various parts as hereinafter more fully described.

A is the tube, the lower part of which is perforated with numerous long and narrow slots, as shown in figs. 1 and 2. This manner of perforating the tube A renders the application of screens to the lower part of said tube wholly unnecessary, and prevents the perforations from becoming choked up with sand or gravel, as is the case with tubes otherwise perforated, causing the well to dry up.

In some sections of country, where tube-wells are used, the tube, when being sunk, encounters a slaty rock, which the tube, when furnished with the ordinary point B, cannot penetrate.

To enable the tube A to force its way through such rocks, I furnish its lower end with a drill-point, C, as shown in fig. 1.

The upper end of the tube A enters and projects into the sand-receiver D, which is securely attached to the upper part of said tube.

In the upper end of the tube A is placed a check-valve, E, which is kept in place upon the upper end of said tube by one or more stems extending downward into said tube.

F is a bar extending across the receiver D, at such a distance above the upper end of the tube A that

the valve E, when raised by the upward pressure of the water, will strike against it before the valve-stem or stems rise out of said tube, so that the valve E will always fall back to its place when the upward pressure of the water ceases.

The bar F also serves as a guard to prevent the screen G from being injured by the valve E striking against it.

G is a screen extending across the upper part of the receiver D, to prevent the sand that may be brought up by the water through the tube A from passing into the upper part of the receiver D and entering the tube H, to which the pump is attached.

The lower end of the tube H extends downward nearly to the screen G, so that the upper part of the receiver D may serve as an air-chamber in raising the water.

By this construction and arrangement of the various parts of the tube-well, when sand is raised with the water through the tube A, it strikes the valve E, and is deflected so as to fall into the lower part of the receiver D, instead of falling back into the tube, the screen G guarding against any of it passing into the tube H, and passing out with the water, or injuring the valves of the pump.

In the lower part or bottom of the receiver D is formed an opening, closed with a screw-plug, I, or other stopper, so that, by removing the said plug, the sand may at any time be conveniently drawn off from the said receiver.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent--

The combination and arrangement of the tube A, perforated in its lower part with long and narrow slots, sand-receiver D, valve E, guard-bar F, screen G, and pump-tube H, with each other, substantially in the manner herein set forth and described.

The above specification of my invention signed by me this 13th day of August, 1869.

SAMUEL S. AYERS.

Witnesses:

ABRAM SEBRING,
JAMES T. GRAHAM.