E Rice,

Pipe Coupling.

No. 1869 Patented Nov 26, 1840.

Fig. 3.

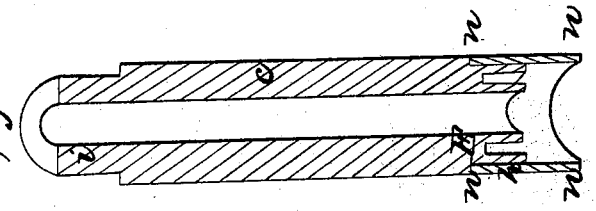

Fig. 2.

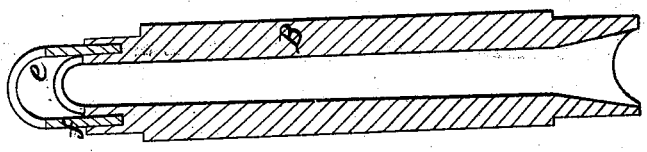

Fig. 1.

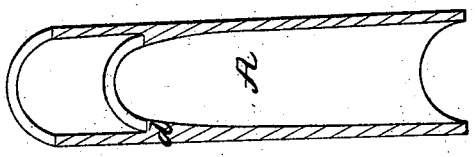

Fig. 4.

UNITED STATES PATENT OFFICE.

EBENEZER RICE, OF SALINA, NEW YORK.

APPARATUS FOR SINKING WELLS IN ALLUVIAL SOILS.

Specification of Letters Patent No. 1,869, dated November 26, 1840.

To all whom it may concern:

Be it known that I, EBENEZER RICE, of the town of Salina, in the county of Onondaga and State of New York, have invented a new and Improved Mode of Tubing for Sinking Wells for Salt or Fresh-Water Minerals or Mineral Waters in Marshy Ground or Loose Alluvial Soils, which I denominate "The Hydraulic Wooden Tubing," to be used where iron tubing has usually been required; and I do hereby declare that the following is a full and exact description thereof.

The nature of my invention consists in the use of any kind of wood of sufficient strength to sustain the pressure in sinking, with holes bored of such size as circumstances may require, from four to twelve inches in diameter and of any convenient length from five to ten feet, the outside turned smooth of such size as to leave the thickness of the timber from two to three inches, the ends of the tubes to be turned square so as to fit closely together and connected by letting in a band or hoop of cast or sheet iron in each of the joints of from four to six inches in width (if cast iron one half of an inch, or if sheet iron one fourth of an inch in thickness) one half of its width in each end of the tubes so connected, at equal distance from the inner and outer surface of the tube, and also a band of sheet iron from eight to twelve inches wide and one fourth of an inch in thickness let in even with the outer surface of the tube with from four to eight holes perforated near each edge of the band from $\frac{1}{4}$ to $\frac{1}{2}$ an inch in diameter, in which are to be inserted iron pins or nails reaching nearly through the wood to keep the bands secure. The bottom tube to consist of cast or sheet iron from four to eight feet long and from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch in thickness according to the strength required, with a shoulder inside eight or ten inches from the top running to a point in a conical form about twelve inches from the shoulder. The wooden tube which is connected with the iron tube at the bottom to be turned with a shoulder on the outside of the thickness of the iron tube so that the surfaces of each will be even. The wooden tube is inserted into the iron tube, the shoulder resting on the top of the iron tube outside, and on the top of the shoulder of the iron tube inside, the wood to be of the same thickness as the shoulder, and then made firm with several iron pins of the description above named and on the joints. The bottom of the iron tube to be sharpened the more readily to cut its way through the soil that it passes. When the whole is put together a cast iron follower is placed on the top, made with a flange on the under side about half an inch wide to fit on the top of the tube like the lid to a snuff box, and two heavy ears on the outside opposite each other to which is to be suspended chains for the purpose of pressing down the tubes in the ordinary manner of sinking iron tubes. The follower is cast in a circular form with a hole in the inside corresponding with the caliber of the tube, the thickness of the iron about four inches from the hollow inside to the outside.

The use and particular object of this improvement consists in its simplicity and cheapness, the expense of which is not more than one fourth of the ordinary iron tubing with less perplexity in sinking and making them air tight. The lightness of the wooden tubes also gives them an advantage over the iron, as much expense has frequently been incurred and difficulty experienced in suspending the iron tubing to prevent them from settling into tight soil, and stopping the free influx of the water. Another advantage is, that in the various geological experiments making in the new Western States it is too difficult and expensive to procure iron tubing. Many experiments have been abandoned which might have terminated in great national benefit with the use of the improvement here described. The durability of the wooden tubing cannot be questioned, as there is no decay of wood in salt water, nor in fresh when not exposed to atmospheric air.

In the following Figure 1, represents the longitudinal inside view of iron tube; Fig. 2, a sectional longitudinal inside view of the wooden tube prepared for its connection with the iron tube at the bottom, and the top end for its connection with another wooden tube; Fig. 3, a sectional longitudinal view of a tube prepared at the bottom for its connection with Fig. 2; Fig. 4 the half of the follower.

Letter A, the iron tube, B wooden tube to be connected with the iron tube, C the body of tube Fig. 3, *d* the inner shoulder and conical form, *e* the joint prepared for connection with the iron tube, *f* the connecting

band or hoop set in the wood, *g* the channel cut for the reception of letter *f*, letter, *h* the outside land, *i* the upper end of Fig. 3 prepared for the outer band, J, J, the ears of the follower, K the flange, L the hole in the center, *m* the body of the follower, *n n n n* the iron pins.

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

The method of sinking wells in alluvial soils and marshy grounds, by means of wooden tubing formed in lengths, connected together by metal bands or hoops sunk in the ends, together with a metal band on the outside, and provided with a metal tube at the bottom and also the follower on the top, constructed and applied in the manner and for the purposes described in the above specification.

EBENEZER RICE.

Witnesses:
ISAAC R. QUEREAU,
JULIUS M. ARNTS.